Local Indigenous Biodiversity Strategy

Hamilton City Pilot Project

September 2018

Contents

Report written by:
Matthew Vare, Waikato Regional Council
Paula Rolfe, Hamilton City Council

Doc #10890785

1. Background

Enhancing biodiversity and restoring ecosystem processes in urban landscapes is at the "cutting-edge" of biodiversity management. This is particularly relevant in Hamilton City where urban development has led to extensive habitat loss and modification. Currently Hamilton City has around 2% indigenous habitat cover. It is considered that 10% habitat cover is an appropriate target to improve ecological functioning and resilience for such urban areas.

Biodiversity management is a multi-faceted undertaking and is the responsibility of many public agencies, private landowners and business/sector groups. While co-operative approaches involving key stakeholders offer important opportunities, facilitating and co-ordinating collaborative efforts also present major challenges.

The Local Indigenous Biodiversity Strategy (LIBS) programme is an innovative approach to biodiversity that allows for co-operation and integration (within and across organisations) and is underpinned by a strong values base (economic, social, cultural, and environmental). This approach enables a shift to discussing and managing biodiversity and development rather than biodiversity or development in a way that can deliver a range of social and economic opportunities and complement traditional rule-based approaches.

The Hamilton City LIBS pilot project has tested this innovative approach to biodiversity within an urban environment. It complements a pilot project in the Waihou-Piako catchment (Source to Sea: Te Puna o Waihou ki Tīkapa te Moana) which tested this approach in a largely rural catchment. Together the learning from both pilot projects can be combined to inform a more effective framework to enhance biodiversity and to identify and test a range of processes and tools to deliver this. This work will inform a Regional Restoration Framework; Restoring Nature – Connecting Communities.

2. Executive Summary

CREATING :
A Collective Impact Framework and Toolbox to Restore Nature and Connect Communities
Haumaru Taiao - Tūhono Hapori

BY ESTABLISHING :
- a shared vision for change
- agreed ways to measure and report success
- activities aligned and coordinated
- on-going and effective communication
- support structure and funding to deliver

SCIENCE

GOVERNANCE

STRATEGIC DIRECTION

PEST CONTROL

COMMUNICATION

SUPPORT

COMMUNITY

PLANTING

COORDINATION

GOAL

TO ACHIEVE OUR GOAL :

NOW 2% 3% 4% 5% 6% 7% 8% 9% 10%

1%

RESTORATION INDEX

ENVIRONMENTAL
Restoring Natural Environments

SOCIAL
Connecting Local Communities

CULTURAL
Supporting Kaitiakitanga

ECONOMIC
Supporting Local Economies

Hamilton City Council

Waikato Regional Council

3. The Pilot Project

(1) Purpose, goal and objectives

Protection of Indigenous biodiversity within Hamilton City, managing any further loss to areas of biodiversity value and restoring and enhancing sites is critically important. At least 10% (and preferably 20%) of remnant habitat cover is needed across a landscape in order to protect biodiversity and maintain the functions of ecosystems. Currently only 2% of Hamilton City is covered by ecologically significant habitat. A 10% target for urban areas such as Hamilton is considered appropriate, practical and feasible.

To provide the most appropriate combination of regulatory and non-regulatory tools to help restore and enhance biodiversity in Hamilton City, a Local Indigenous Biodiversity Strategy (LIBS) process was developed in accordance with the Waikato Regional Policy Statement.

The LIBS Programme is an innovative approach to biodiversity that allows for co-operation and integration (within and across organisations) and is underpinned by a strong values base (economic, social, cultural and environmental). This values-based approach broadens the conversation around biodiversity enhancement and enables a shift to discussing and managing biodiversity <u>and</u> development rather than biodiversity <u>or</u> development in a way that can deliver a range of social and economic opportunities.

This Pilot Project with Hamilton City tests this approach to biodiversity within an urban environment. It seeks to apply an innovative approach to improve biodiversity management and outcomes and to test concepts, processes and tools to achieve this. With its focus on addressing strategic capacity needs, including improved understanding of ecosystem processes, enhanced biodiversity management ability and stronger working partnerships, the LIBS Pilot Project constitutes a timely opportunity for Waikato Regional Council (WRC) and Hamilton City Council (HCC) to improve its ability to meet its statutory obligations, to test its philosophy of working with others, and to support a growing family of partners with similar interests and complementary capacities.

The key outcome of the pilot was to develop a framework for biodiversity implementation and a range of tools and processes that can be used to deliver more effective implementation.

The process was a partnership between Hamilton City Council and Waikato Regional Council and involved tangata whenua, landowners, and other key stakeholders. The pilot occurred between September 2016 and June 2018, with funding contribution split between both councils'.

The objective of the pilot was to:

Test a range of concepts, processes and tools for subsequent use to increase the level of biodiversity in Hamilton City from 2% to 10% over time.

The goal of the pilot was to:

Build on Lessons learned and experience gained by tangata whenua, Enviroschools, gully restoration groups, landowners, Waikato Regional Council (WRC) and Hamilton City Council (HCC) staff and others, our collective capacity to enhance indigenous biodiversity in an urban landscape and to restore ecosystem processes in a co-ordinated network of natural areas is improved.

(2) Project scope

The pilot project had a tightly defined timeframe (end of June 2018). A significant portion of the project was about disseminating and co-ordinating existing biodiversity work and looking at how this work could be better shared and co-ordinated to enhance biodiversity (and other) goals.

In scope was:

- Production of future-state ecological network map for the Central Waikato Zone and Hamilton City
- Spatial analysis of natural and social capital (existing SNA's, enviro school locations, community group locations, etc)
- Development of ecological targets and milestones for aquatic and terrestrial biodiversity within a multiple benefit monitoring framework reflecting parallel Mātauranga Māori and citizen science components
- Engagement with identified key pilot stakeholders (specifically identified through Te Ha o te Whenua o Kirikiriroa (THAWK) and engagement focus areas) to assist mana whenua and landowner participation, undertake needs and aspirations assessment and share resources
- A set of tools/actions to achieve improved implementation such as a funding toolkit and site prioritisation methodology
- Develop and report outputs and learning from the pilot project with partner TA's

(3) Pilot location

Hamilton City provides the focus for the pilot project, see Figure 1, however it was realised that ecosystems and ecosystem functions are not constrained by "human" boundaries, so a 5km "buffer" was added to at least partially take account of the need to look beyond the city boundary, especially in terms of connectivity and ecological processes.
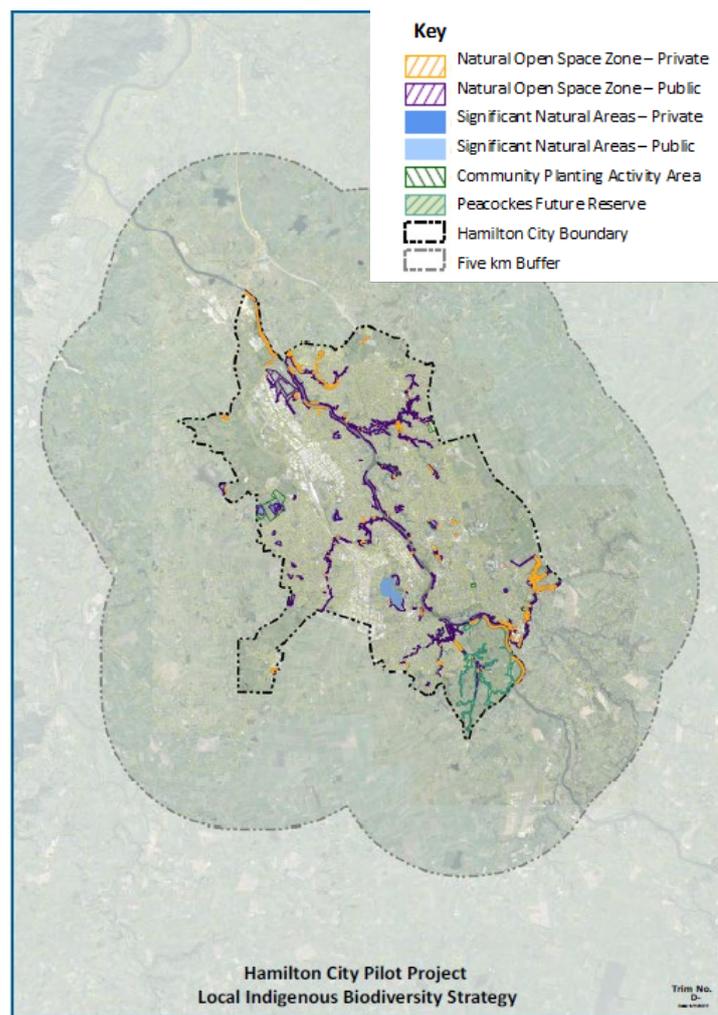
Figure 1. Hamilton City Pilot Project – Local Indigenous Biodiversity Strategy

(4) Project governance

The development of the project plan and subsequent progress of the pilot has been guided by two key groups; an Internal Governance Group and an External Advisory Group.

The Internal Governance Group reflected the need to link effectively across the two Councils' and to connect within HCC to the various parts of the organisation that can play a role in biodiversity delivery. This group met for the first time on 17 July 2017 as part of finalising the project management plan, and consisted of:

- Luke O Dwyer – Economic Growth & Planning Manager – Hamilton City Council
- Annika Lane – Integration and Infrastructure Manager – Waikato Regional Council
- Maria Barrie – Parks and Recreation Unit Manager – Hamilton City Council
- Muna Wharawhara – Māori Relationships Advisor – Hamilton City Council

This group was supported by the project team which was led by Paula Rolfe at HCC (Project Manager) and Matt Vare from WRC, alongside the WRC Zone Manager (Michelle Archer/Bruce Peploe) and HCC Parks and Recreation Manager (Maria Barrie/Zeke Fiske).

The make-up of the External Advisory Group reflected a values-based approach (economic, social, cultural, environment) that aligned well with the pilot project and its goal of achieving biodiversity improvements alongside social, cultural and economic goals. The key role of the advisory group was to provide governance to the project through experience, ideas, and connections, largely through regular advisory group meetings.

The advisory group kindly gave their time to the project at no cost. Meetings were largely hosted at Rhode Street School.

Table 1:   External Advisory Group

Value	Who	Organisation/network
Environment	Prof Bruce Clarkson	University Of Waikato – Dean, Faculty of Science and Engineering. Head of Environmental Research Institute.
Cultural	Shane Ngatai	Principal Rhode Street School, Green/Gold Enviroschool
Social	Dell Hood	Waikato District Health Board (DHB) – Population Health. Medical Officer of Health (now retired). Member of ACRE (Advisory Committee for the Regional Environment) and trustee of Native Forest Restoration Trust.
Economic	Don Scarlet	Mercury Energy – Key Relationships Manager. Trustee of Waikato Catchment Ecological Enhancement Trust. Director of Hamilton and Waikato Tourism.

(5) Project plan

A full project plan has been developed for the pilot project and is saved in the Hamilton City document management system HPE Content Manager [Document D – 2267107].

4. Collective Impact for Biodiversity Restoration

One of the key aspects of the LIBS process was to develop a framework (along with a range of tools) that enabled communities alongside Councils to deliver more effective and joined-up biodiversity action, and therefore more effective implementation and better "bang for buck" from investment.

In undertaking the community engagement component of the pilot project the Collective Impact Framework (CIF) was identified and applied to that work (information was summarised and analysed using the CIF).

The collective impact framework is designed to guide multi-stakeholder and community-led programmes such as LIBS. Collective impact is defined as "an advanced form of collaboration which brings together different sectors for a common agenda to solve large, complex problems" (Tamarack Institute, 2017). The Institute identified five of the main success factors of community-led change programmes, using evaluation research. The CIF is now the evidence-based framework used by community-led change organisation, Inspiring Communities. It is "built upon five interconnected success factors to produce a strong alignment and lead to large-scale results:

The Collective Impact Framework

- **A common agenda** – All participants share a vision for change that includes a common understanding of the problem and a joint approach to solving the problem through agreed-upon actions;
- **Shared measurement** – All participating organizations agree on the ways success will be measured and reported, with a short list of common indicators identified and used for learning and improvement;
- **Mutually reinforcing activities** – A diverse set of stakeholders, typically across sectors, coordinate a set of differentiated activities through a mutually reinforcing plan of action;
- **Continuous communication** – All players engage in frequent, structured and open communication to build trust, assure mutual objectives, and create common motivation; and
- **Backbone support** – An independent, funded staff dedicated to the initiative provides ongoing support by guiding the initiative's vision and strategy, supporting aligned activities, establishing shared measurement practices, building public will, advancing policy, and mobilizing resources (Tamarack Institute, 2017)."

The project team and project governance consider that the above framework is one that is logical (and advantageous) to apply to joined-up biodiversity activity both in Hamilton City and potentially for the region as a whole. The CIF is therefore used as the structure to this report.

RECOMMENDATION:

1. That the "Collective Impact Framework" be used to underpin Biodiversity Restoration in Hamilton City and the Waikato Region.

(1) A Common Agenda

Sharing a biodiversity vision for change within Hamilton City is a critical factor in delivering collective impact. This also includes a common understanding of the problem and a joint approach to solving the problem through agreed upon actions.

a) About the biodiversity goal

Indigenous vegetation in the Hamilton Ecological District (ED) has been severely depleted. Leathwick et al, (1995) calculated that less than 2% of all indigenous ecosystems remains within the Hamilton ED. Since human settlement, the original, indigenous-dominated forest ecosystem cover has been largely replaced by ecosystems dominated by exotic species and/or urban development, particularly in the flatter to rolling country of the Hamilton basin floor.

For indigenous ecosystems to function and to be able to support a range of biodiversity (plant and animal species) at least 10% of each ecosystem type is considered necessary. This 10% target is identified in the Operative Hamilton City District Plan as a key policy direction. Ideally the minimum target is 20% as identified (criterion 4 representativeness) of the Waikato Regional Policy Statement (RPS). However for highly modified urban environments the 10% target is appropriate and pragmatic.

The amount of each ecosystem type is not the only consideration. Connectivity between different ecosystem types and the ongoing management of these areas (for example through pest and weed control) are also important.

b) Mapping what we have and what we need for biodiversity - Overview

This is an important component of developing a common agenda. It can provide the strategic element missing from current biodiversity decision-making and help to make the transformational change necessary to achieve large scale habitat restoration in the city. Ecological information is important to underpin the strategy and assist people to rally behind the vision, but it is not the vision itself – it is a case of science on tap not science on top.

An initial analysis for the Central Waikato Zone (Figure 2) provided useful context and helped to describe the original ecosystem pattern in and around Hamilton City and identify what now remains of those original ecosystems. Importantly this information provides for some identification of sites within a regional context and ranking. However it became clear that this analysis (and the information that the model is based on) is limited at an urban scale and needs to be augmented with local information on ecological values as well as community and cultural information for sites. This local information has helped to provide an initial priority list of sites (noting that the cultural assessment and scoring still needs to be completed) and is provided in Table 2 (overleaf).

Ecological Restoration Opportunities in the Central Waikato Zone

An analysis of historical and surviving ecosystem remnants and identification of conservation opportunities was undertaken for the Central Waikato Zone (Leathwick, 2016). The data sets used in this analysis do not allow a more detailed focus on Hamilton City itself, however they do provide for useful context (for Hamilton City and surrounds), to support an ecological network type approach, and help to describe the original ecosystem pattern, what now remains, and where some opportunities exist for restoration within a regional context.

Table 2. Estimated Potential extent of indigenous ecosystems in the Central Waikato Zone, and their representation on sites supporting primary or secondary indigenous cover or exotic dominated cover.

Ecosystem type	Potential ha	Primary ha	%	Secondary ha	%	Exotic-dom. ha	%
Tawa mangeao forest (MF7-1)	16,703	18.1	0.1	72.3	0.4	746.1	4.5
Tōtara, matai, ribbonwood forest (WF2)	11,165	12.6	0.1	167.6	1.5	488.2	4.4
Kahikatea, pukatea forest (WF8)	12,789	38.5	0.3	98.2	0.8	407.8	3.2
Tawa, kohekohe, rewarewa, hīnau, podocarp forest (WF13)	12,345	1,264	10.2	344.6	2.8	624.1	5.1
Bog Mosaic (WL2/3)	9,980	203.9	2.0	6.5	0.1	19.8	0.2
Swamp mosaic (WL)	83	2.2	2.7	0.3	0.4	32.8	39.5
Total	63,065.9	1,540.0	2.4	689.5	1.1	2,318.8	3.7
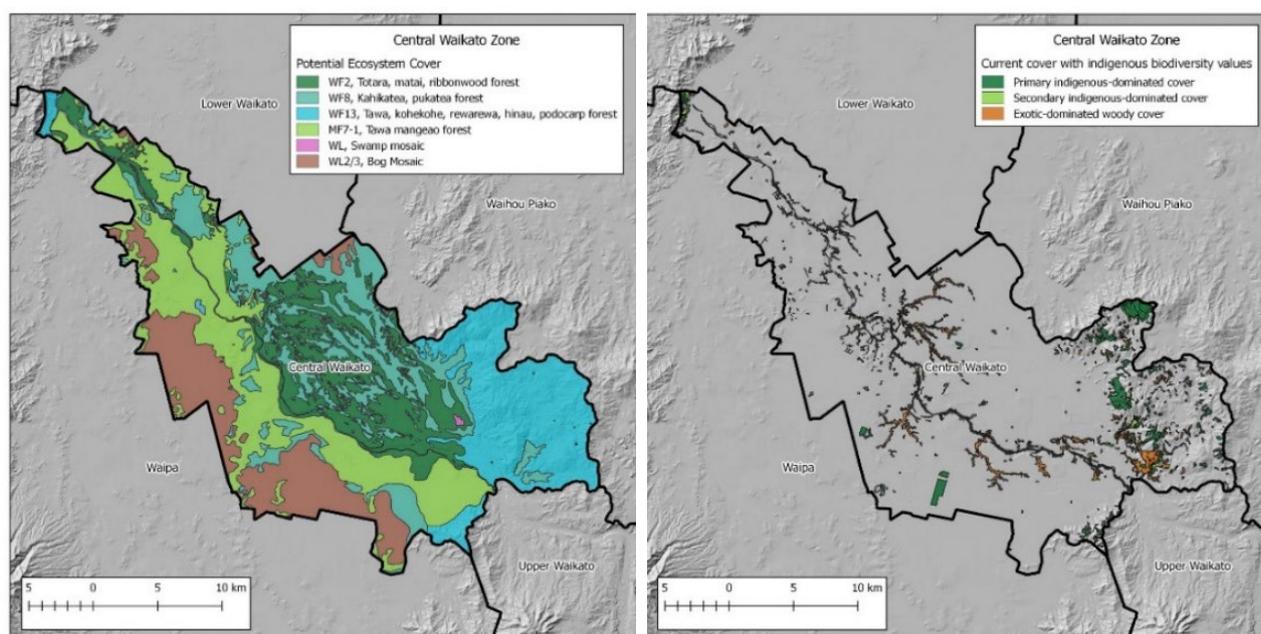
Figure 2. Comparison of potential ecosystem cover of the Central Waikato Zone as mapped by Singers (Unpubl.) and current distribution of ecosystems with potentially significant biodiversity value

The maps above demonstrate the major losses of indigenous-dominated ecosystems that have occurred in the central Waikato Zone, with three forest ecosystems reduced to 0.3% or less of their former extent, and wetland ecosystems reduced to around 2-3% of their former extent. Tōtara-dominant forests (WF2) and tawa-mangeao forests (MF7-1) both of which occupied well drained sites on the basin floor appear to have suffered the greatest losses, with no known surviving primary examples of these ecosystems. Providing representation of these ecosystems would inevitably require their reestablishment through the restoration of sites providing suitable environmental conditions but now occupied by other species.

Kahikatea-dominant forests occur in a number of remnants, and offer greater opportunities for the active management of existing primary stands; there is also considerable potential for their expansion through the use of restoration planting around existing sites, particularly on gully floor sites where their surrounds often consist of woody cover containing a mix of indigenous and exotic species.

The future management of wetlands offers an intermediate challenge. Wetlands such as the Moanatuatua Peat Scientific Reserve and to a lesser extent peat lakes such as Maratoto and Rotomanuka have suffered extensive alteration of the hydrological conditions that led to their development and remain vulnerable to weed invasion and nutrient alteration because of their relative lack of buffering. The ongoing maintenance of their values may be enhanced through a whole of catchment approach to restoration as is currently being applied at Waiwhakareke/ Horseshoe Lake within Hamilton City.

Some Opportunities for Hamilton City and immediate surrounds

In an initial assessment of the larger clusters of primary remnants, only two (Whewells Bush and Swallow Lane) lie near Hamilton City. Both are examples of remnant kahikatea-pukatea forest (WF8), with the Whewells Bush site ranking in the top 12% of sites regionally.

Further analysis also identified smaller high-ranked clusters (in a regional context, Leathwick 2016 b).
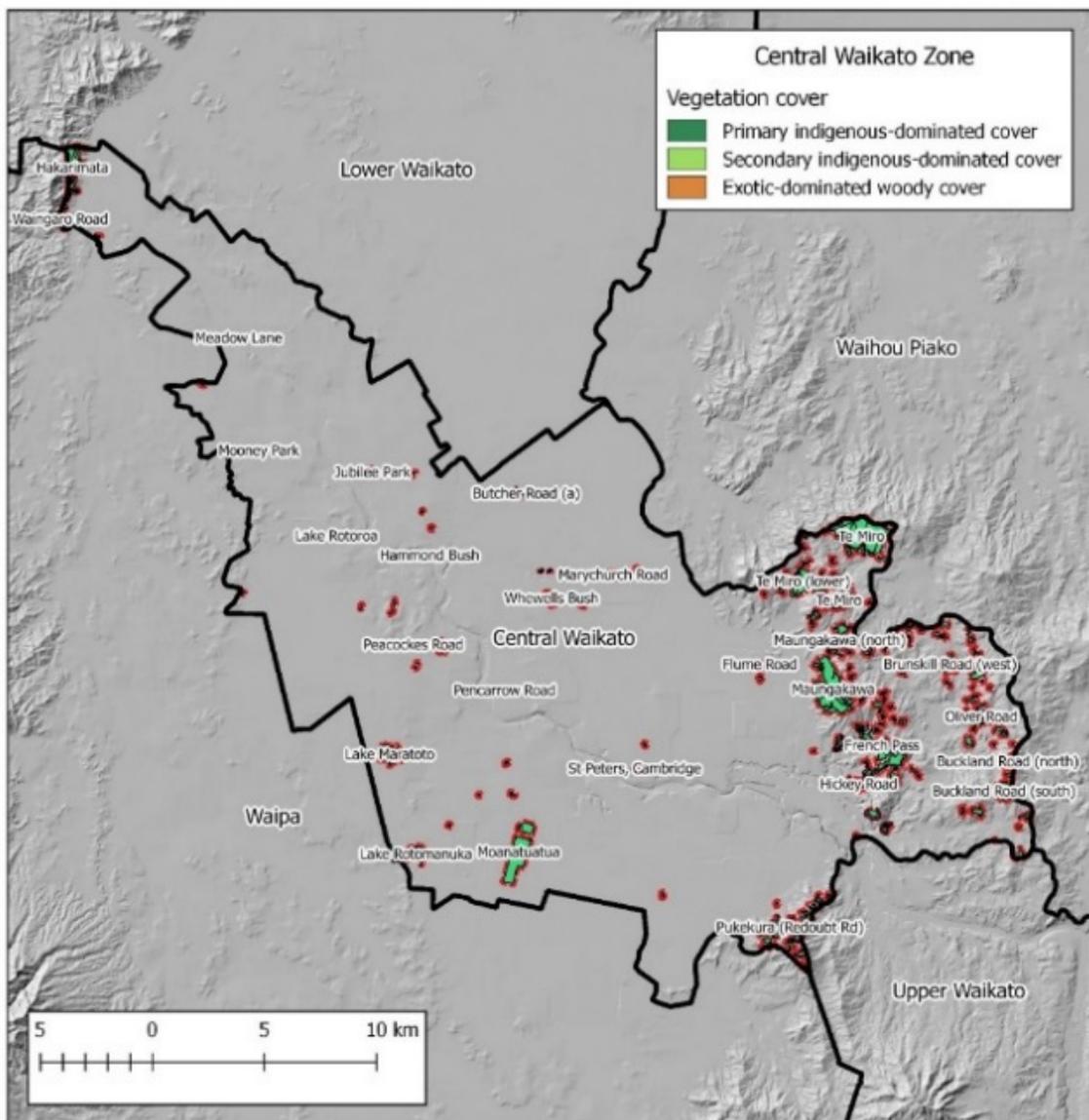
Figure 3. Clusters of primary remnants of indigenous-dominated ecosystems surviving within the Central Waikato Zone

Only two of these sites are within Hamilton City while two others are within the 5km buffer around the city.

1. Hammond Bush (rank – 0.051) is located on a terrace on the north bank of the Waikato River, near Malcolm Street in Hillcrest. This small remnant of modified primary forest (c. 2 ha) contains pukatea, swamp maire, tawa and tītoki. It is already receiving some active management, and there is potential to extend this into adjacent secondary stands that contain a mix of indigenous and introduced plant species.
2. Peacockes Road - (primary extent 1.6 ha, rank – 0.281) – an elongated stand of dense kahikatea-pukatea forest (WF8) located on a poorly drained valley floor, and surrounded by farmland – several other smaller stands are in the immediate vicinity.
3. Lake Maratoto – Mānuka dominated wetlands that surround Lake Maratoto, which is located on what was the eastern margin of the former Rukuhia Peat Bog. This site is ranked within the top 11% of sites regionally and is within the 5km buffer around Hamilton.
4. Marychurch Road (primary extent 6.1 ha, rank – 0.244) – a compact stand of dense kahikatea-pukatea forest (WF8) surrounded by farmland and rural residential properties within the 5km buffer of Hamilton City.

Issues of scale and the need to focus on local Hamilton opportunities

Many other sites offer significant opportunities for conservation management, but were not well identified by this analysis. In large measure, this reflects the difficulty in adapting a ranking approach designed for assigning broad scale priorities for the Waikato Region, in those parts of the landscape where indigenous-dominant cover has been reduced to just a fraction of its former extent.

The most notable example of under-estimation of conservation value in this analysis is the 5.5 ha stand of kahikatea-dominant forest (WF8) in Jubilee Park at Claudelands. The area occupied by this reserve was identified by Singers (unpubl.) as having an historic cover dominated by tawa and mangeao (MF7-1). If the kahikatea-dominance of this remnant has been identified prior to the calculation of regional rankings, it would have likely received a rank like that for Whewells Bush, ie, within the top 12-15% of sites regionally. It should therefore be treated as a much higher priority than is indicated by this analysis. Similar comments apply to the nearby smaller stand of kahikatea-dominant forest in Southwell School, and to other small stands of kahikatea-dominant forest, e.g., in Mooney Park in Rotokauri, and at the junction of Te Kowhai and Burbush Roads (within the 5km buffer around Hamilton City).

Another omission from these results, given its focus on primary ecosystem remnants, is consideration of sites that are currently dominated either by secondary indigenous-dominated ecosystems, or by a mix of indigenous and exotic species. Extensive efforts are being made by the City Council, community groups and/or private individuals to restore indigenous dominated ecosystems at many sites in the gully systems drained by smaller tributaries of the Waikato River. An ambitious restoration project is also underway in the 60 ha Waiwhakareke Natural Heritage Park, centred on the peat lake Waiwhakareke or Horseshoe Lake, and involving the reestablishment of indigenous cover on land formerly managed for agriculture.

More localised Hamilton City Mapping

To overcome the issue of scale identified above, the project partners initiated a further level of mapping and information collation based largely on Cornes et al, 2012 (Key Ecological Sites of Hamilton City) and its predecessor. This enabled a more detailed focus on the small remnant ecological sites within the river and gully system which remained allusive to the broader scale central Waikato

analysis reported above. In addition it enabled sites to be picked up that are reflective of micro-habitat drivers (such as degree of tolerance to poor drainage) that will subtly change the broad scale ecosystem pattern as described above.

A significant amount of background information research, ecological survey information, management plans and restoration guides about the ecological sites and restoration being undertaken in the city already exists. This information was collated with the intention of linking it to the web-based GIS site information to enable easy access to this wealth of existing information. This work also highlighted available information on social or cultural values of the sites (for example whether community groups or schools were involved in local restoration or education programmes linked to the sites).

The key layers of information include:

- Restoration and management plans for individual sites
- Ecological, botanical and fauna surveys of individual sites and of key ecological sites of Hamilton City
- Information and maps of vegetation types across the city and wider Central Waikato Zone
- Restoration guidelines

c) Prioritisation

Knowing where to expend effort and to target resources is an important element of biodiversity management. Not everything can be managed. The analysis undertaken for the Central Waikato Zone struggled to identify many of the locally important sites (often within the river and gully system) that also need to be considered.

In addition, this prioritisation of sites is purely based on ecological grounds. Biodiversity management is as much a social exercise as an ecological one. Community and cultural drivers are a critical element of habitat restoration, particularly in an urban context such as Hamilton City. The ability to prioritise sites needs to reflect social and cultural elements as well as ecological or environmental ones.

A draft methodology (Myers, 2017) was initially informed by the approach used in the report Key Ecological Sites of Hamilton City, an ecological description of 67 sites based on ecological characteristics, significance, ecological condition and spatial distribution and context. Ranking systems in other methods (e.g. Greater Wellington) and Investment Framework for Environmental Resources (INFER) – (Waikato and Waipa Restoration Strategy) were also used to inform the final draft prioritisation method.

The Māori cultural values component was initially based on key elements from the Waikato-Tainui Iwi Environmental Management Plan and was further refined by staff from WRC Tai Ranga Whenua Team to provide the level of detail necessary for application of the values and measures within the draft prioritisation method. The draft method/tool was tested with mana whenua groups within Hamilton guided by Te Hā o te Whenua o Kirikiriroa to ensure an appropriate and effective level of tangata whenua involvement. A workshop helped to explain and refine the tool and clarify a way forward to complete the scoring of sites.

An example page of the 3 components of the prioritisation table are provided below, the full table is provided as Appendix 1.

1. Ecological Priority Score

Value	Measure	Score
Protection Status	1. Private land – no legal protection 2. Public land – no legal protection 3. Natural Open Space zoning 4. Private land - reserve (QEII or similar)/ willing landowners 5. Public Reserve (DOC, TLA)	Score from 1-5
Ecological Significance	1. Not identified SNA 2. Potential with restoration 3. SNA[2] – moderate ecological significance value, e.g. moderate ecological diversity and representativeness 4. SNA – high value e.g. high diversity and representativeness value 5. SNA – very high value – e.g. high representativeness value, priority ranked natural ecosystem[3]	Score from 1-5
Landform Type	Range of landform types (hills, gullies, alluvial plain, peatland)	Number of landform types present Score from 1-4
Fauna and flora value[4]	1. few or no native species present, 2. common native species present 3. key native species present, e.g.	Score from 1-5

2. Māori cultural values score

Value	Measure	Criteria
Taonga tuku iho Abundance and procurement of resources	1. Absent 2. Rare/depleted 3. Abundant 4. Capacity to restore	All criteria considered as a whole. *Final score between 1-4*
Mātauranga-a-rohe (Site(s) specific knowledge and understanding)	1. Ability to access mātauranga Māori (inadequate, functional) 2. Ability to apply or exercise mātauranga Māori to resources (high, low) 3. Opportunities to exchange mātauranga Māori (inter-generational) (yes/no)	All criteria considered as a whole. *Final score between 1-3*
Mana whakahaere (Access to site(s) and taonga)	1. No access 2. Limited access 3. Open	*Final score between 1-3*
Tikanga-a-rohe	1. Taonga tuku iho	An accumulative score

3. Local Community Involvement Score

Value	Measure	Score
Level of Community Participation	1. Nil – no community activity/interest; 2. moderate to low – occasional restoration activity from residents; 3. moderate – community restoration being undertaken but not part of restoration group; 4. High – organised community restoration group, school, support from agencies (Council, Project Watershed).	Score 1-4
Achievability of project for volunteer/community group, e.g. extent and difficulty of weed and pest control; availability of resources to do the work. Is the project 'do-able'?	1. Difficult – [6]would require contractors to undertake most of work, e.g. large amounts of weeds or difficult site to access (steep bank). Resources not available. 2. Moderate difficulty, resources	Score 1-3

How should sites be prioritised in Hamilton City?

Once the scoring of cultural sites is completed, the prioritisation table can rank sites for ecological values, community values and cultural values and then provide an overall additive score. A lower score may reflect a lack of information on an aspect (such as cultural information) but this is explicit and can be used to trigger a process to provide that information in the future. Providing weightings to the 3 different elements and what those weightings are still need to be determined as part of the process. Ultimately all prioritised sites will be mapped (and included as part of the on-line mapping tool) to enable resource allocation to highest priority sites and to support other investment decisions.

A risk-based approach can then be undertaken that focuses restoration at sites:

- On public land
- On private land where there are willing landowners (or groups of landowners)
- On land that would deliver other benefits (such as riparian margins) where restoration would also enhance bank stability, water quality and other ecosystem services of importance to the city

The existing habitat fragments provide the nuclei from which to undertake these restorations.

Emerging Priorities for Hamilton

A process for undertaking the ecological and community based prioritisation of sites in Hamilton City has been completed. From this work we have been able to determine a draft prioritisation list of the top 10 sites for ecological, community and combined ecological – community scores. The overall scores may be amended once the cultural prioritisation scoring has been completed. These sites will provide the core for achieving ecological restoration in the city and expanding ecological connections. See Appendix 2 for full table including description.

Community Priority	Ecological Priority	Combined Priority
1. Waiwhakareke	1. Waiwhakareke	1. Waiwhakareke
2. Te Papanui (Claudelands Bush)	2. Te Papanui (Claudelands Bush)	2. Te Papanui (Claudelands Bush)
3. Seeley's Gully	3. Seeley's Gully	3. Seeley's Gully
4. Mangaiti Park	4. Lake Rotokaeo (Forest Lake/Minogue Park)	4. Mangaiti Park
5. Hammond Bush	5. Hammond Bush	5. Hammond Bush
6. Gully near Hammond Bush 1	6. Mangaiti Park	6. Lake Rotokaeo (Forest Lake/Minogue Park)
7. Hillcrest Kahikatea	7. Mangaonua Esplanade	7. Lake Rotoroa (Hamilton Lake)
8. Grove Park Kahikatea	8. Te Awa O Katapaki Esplanade	8. Gully near Hammond Bush 1
9. Lake Rotoroa (Hamilton Lake)	9. Hamilton Gardens	9. Hillcrest Kahikatea
10. Lake Rotokaeo (Forest Lake/Minogue Park)	10. Kirikiriroa Gully, Harrowfield	10. Lake Rotokauri

Table 3: Draft Priority List – Top 10 sites based on ecological and community score assessment, with no weighting.

While the ecological scoring is being driven by the type of habitat, its size (viability) and connectivity, the community information is driving a change in ecological priorities based on community interest and support and achievability (sites that are small and easy to access and maintain). Of the overall combined priorities, only one – Hammond Bush, was identified by the broader central zone analysis,

reinforcing the need to reflect local information and to favour social aspects that can help to drive community restoration activity.

d) The need to look at connectivity

It is important to be able to take a broader "landscape scale" view of biodiversity that recognises that individual sites will function better as a connected whole rather than isolated fragments and that species (such as bats and fish) need to move between different areas to survive. In both cases the river and gully system in Hamilton is critical to their survival. Long-tailed bats and some species of fish such as giant kōkopu are threatened species, their presence triggers the application of criterion 3 of the Regional Policy Statement which highlights the significance of threatened species habitat and the need for its protection.

Hamilton Bat Modelling

Many acoustic surveys of long-tailed bats have been carried out in Hamilton between 2011 and 2017. These acoustic surveys have resulted in the availability of presence absence data, enabling modelling of long-tailed bat distribution. Whilst gullies and vegetation have been shown to be the key predictors of bat presence, the likelihood of presence is also influenced (positively and negatively) by nearby land cover types. Bat presence is reduced in areas where housing and street lighting are most dense. Recorded presence data shows most detections occurring in clusters on the periphery of urban Hamilton, predominantly in the south and southeast, and only extending north to the east of the city in areas of pasture containing linear features such as hedges, and where housing and street lighting density is very low.

Hamilton City - Presence of Bats
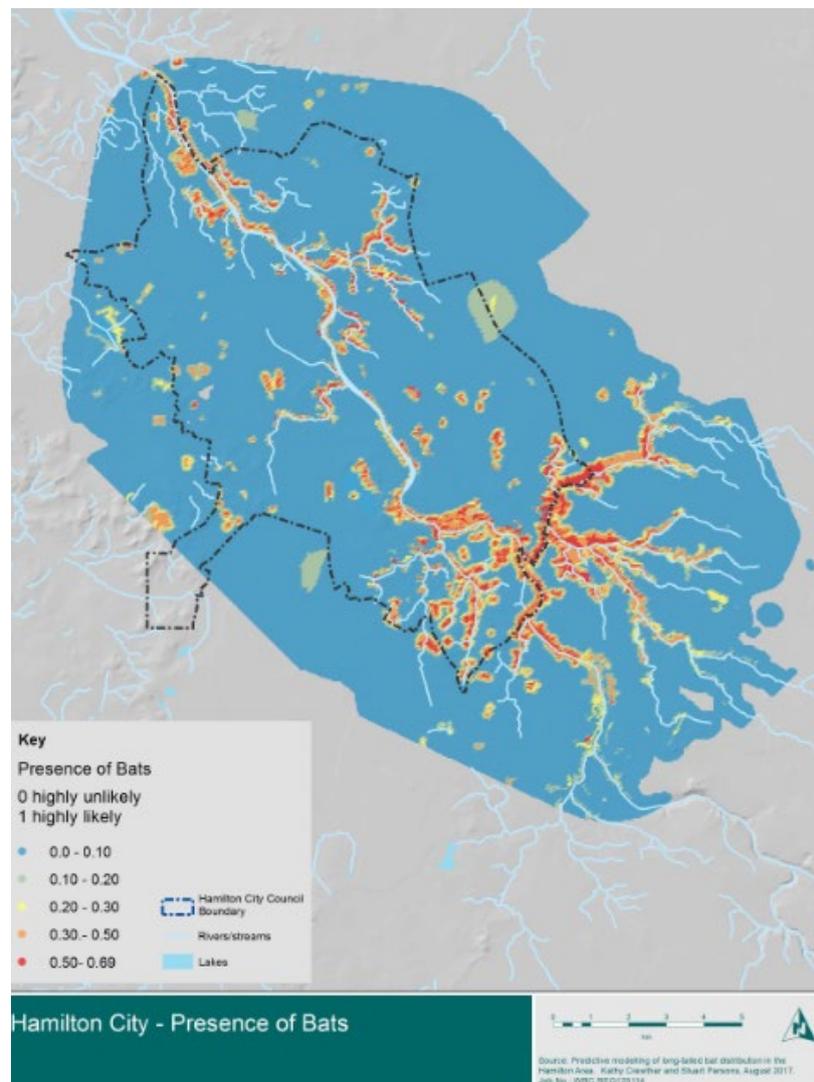
One potential way of mapping species habitat requirements for threatened fauna such as bats could be by using heat maps linked to modelled presence data. This would also support and highlight the need to look at connectivity between sites and landscape-scale (e.g. whole of gully) requirements for biodiversity.

e) Standardisation

As well as being able to prioritise sites for management it is also advantageous to achieve a level of standardisation around what happens at those sites, that is how restoration projects are set up and staged. In attempting a restoration of a gully site for example, it is important to recognise that many species characteristic of long established vegetation are not tolerant of the conditions at the outset of a restoration project. It is best to try to mimic natural successions and plant early successional species first. Later, once an initial cover is established, mid and late successional species can be added by enrichment planting or spreading of seed.

This is, of course, just one component of the restoration. Preparing the site for planting and undertaking weed control and ongoing maintenance of the plantings is critical to survival, as is pest control. If the restoration involves a focus on streams and aquatic species, then things like barriers to fish passage, and requirements for riparian planting and spawning habitat need to be considered. Monitoring is another crucial aspect that is often overlooked. Before undertaking any restoration work a baseline survey of existing conditions is useful to track progress and measure effectiveness over time. Defining the type of monitoring, the method to use and frequency all needs to be considered (this is covered in more detail in the next section). This information can be important as it shows potential funders that investment is being well targeted and is effective and if monitoring is set up in the right way then information collected by the community can be used to complement monitoring being undertaken by agencies.

f) Restoration Plan – template for gullies

Developing a template for gully restorations (or ecological restorations generally) was considered to be a useful tool that could be used to guide and assist community groups within Hamilton (and be transferable to other locations). During the LIBS pilot a relationship with the Fairfield Gully Group and the Kukutāruhe Education Trust has developed, based initially on looking at how this community can be fully engaged and supported in biodiversity management, and their needs and aspirations better understood.

Fairfield Gully Group are looking at a holistic and community-based gully restoration project and have been successful in gaining funding from Waikato River Authority (WRA) to support this process. They have agreed to use their project and its scope to provide for an example of a "gully restoration template" that provides them with a robust restoration project plan and which can be used as one of the tools by the LIBS pilot to be shared to guide others undertaking similar projects (see Appendix 3).

Restoration plan and template structure

A draft project management plan template has been developed and will be tested and amended with the Fairfield Gully Group so that it meets their needs and the needs of the LIBS pilot project. An initial meeting was held on the 7th November 2017 to discuss the draft with the group, and with University of Waikato (Centre for Biodiversity and Ecological Research). The key outcomes from this first discussion were that two levels of planning were necessary. The first a plan or vision, covering vision, goals and objectives for the project and the development of a range of principles for a range of key elements. The second being a more specific management plan (for specific areas within the gully) that is operational in nature and can cover the staging and sequencing necessary to deliver on the overall vision or big plan.

Key elements and principles

- Planting
- Weed and pest control
- Education
- Monitoring (including baseline monitoring)
- Stormwater management

The principles would set out how to approach each of the key elements identified above, such as when and how to monitor, as a way of ensuring consistency and delivering best practice.

Summary and recommendations

Tools and processes linked to developing a shared vision can help the shift necessary to provide for clearer leadership around biodiversity and clearly defined boundaries around roles and responsibilities that give greater confidence to act, improve accountability, and provide coherence.

There are many agencies and other parties involved in biodiversity management, developing a shared vision using the tools and processes outlined here (and recommendations for further work identified later in this report) can provide the platform for clear boundaries of responsibility and roles of all players, a collective agenda for action, and co-ordination of activities: ie collective strategic decision-making.

RECOMMENDATIONS:

2. To increase indigenous vegetation cover from 2% to 10% with a river and gully focus.
3. To identify and prioritise sites for restoration that include a range of representative examples of indigenous ecosystems in the city.
4. To provide connections between key sites through restoration of adjoining areas especially along the river and gully system.
5. Ensure the Waikato Biodiversity Forum and community coordinators are part of a backbone support infrastructure necessary to provide a common agenda. (See also recommendation 18)
6. To ensure that all ecological/ biodiversity mapping continues to be integrated between agencies, hapū and community groups and is effectively communicated. (See also recommendation 18)
7. Develop partnerships with the Waikato University and Crown Research Institutes to support local action.

Tools from this section – Common Agenda

Common Agenda

- Central Waikato conservation opportunities Map & analysis
- Hamilton Sites map & information collation
- Site prioritisation methodology
- Gully restoration project plan template
- Connectivity and monitoring of species
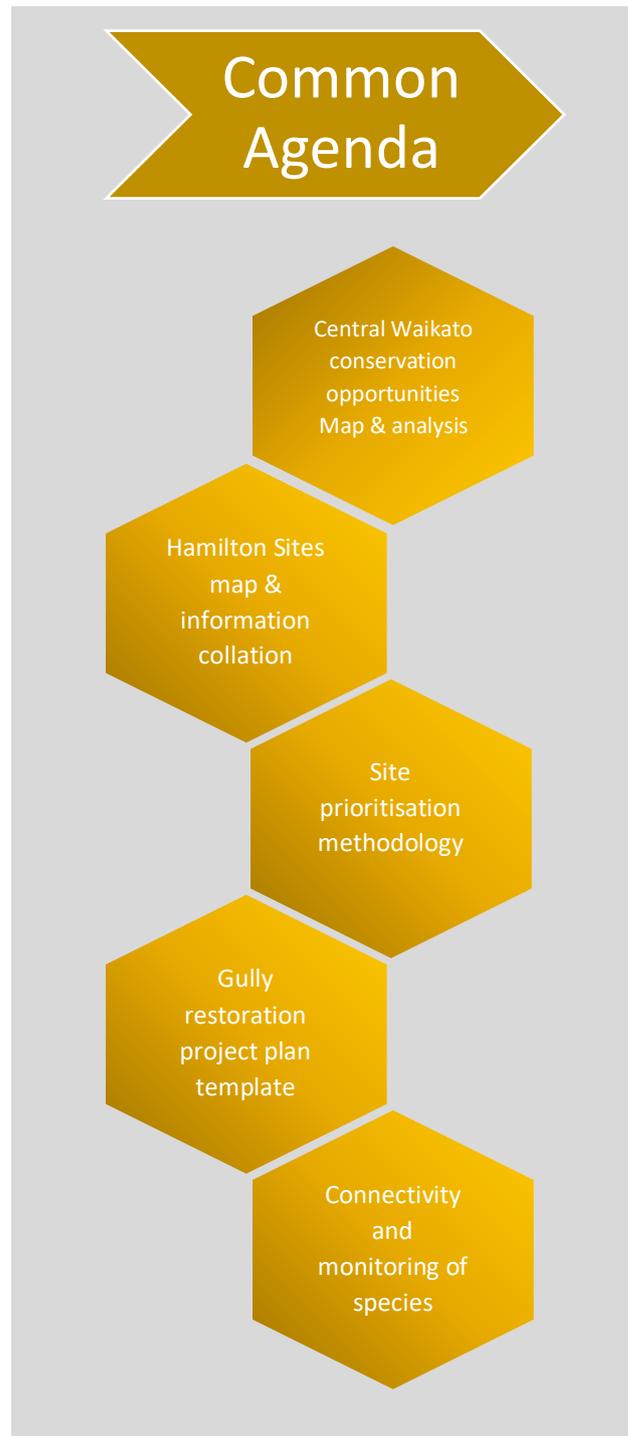
(2) Shared Measurement

All participants agree on the ways success will be measured and reported, with a short list of common indicators identified and used for learning and improvement.

a) Towards a Consistent Biodiversity Monitoring Methodology for Hamilton City-Collation of monitoring activity

Phase 1 of developing a consistent and systematic monitoring framework involved finding out about who was undertaking biodiversity monitoring in the city, what it was they were monitoring and how was this being done. Existing information on monitoring being undertaken in Hamilton City was gathered. Key people (15 in total) from agencies and organisations who are involved in or have knowledge of biodiversity monitoring in Hamilton City were contacted and asked a series of questions via an on-line survey monkey. This included the type of monitoring being undertaken, what methods are being used, the indicators being measured, how the results of the monitoring are being reported, and social and culture measures.

b) Results

Eleven responses were received to the questionnaire. Responses were received from University of Waikato, Landcare Research-Manaaki Whenua, Waikato Regional Council, community groups and private consultants. It covered terrestrial biodiversity, aquatic biodiversity and pest monitoring.

A Mātaurunga Māori tool is being developed to assess state of the environment from Te Ao Māori view point for mahinga kai sites (Manaaki Whenua). This tool was tested with Waikato-Tainui and is currently being further refined.

c) Terrestrial Biodiversity Monitoring

University of Waikato has permanent vegetation monitoring plots set up through its research projects in Key Ecological Sites throughout the city and at Waiwhakareke Heritage Park. Resources are needed to establish this on a more permanent basis. Bird counts are being measured throughout city by Landcare Research, and animal pest monitoring is being undertaken by Waikato Regional Council. Monitoring of long tailed bats was undertaken by Kessels Ecology at 20 key habitats in the southern and eastern edges of the city. Monitoring of specific bird species such as bellbird and kererū is also being undertaken.

d) Freshwater Monitoring

Waikato Regional Council is monitoring freshwater fish populations in Gibbons stream, Mangakōtukutuku, Te Awa o Katapaki, Bankwood Stream, and Lake Rotokauri. Mangakōtukutuku stream care group is monitoring mudfish at Sandford Park.

Site specific wetland monitoring is being undertaken at Waiwhakareke by Bev Clarkson, Landcare Research.

As part of the People+Cities+Nature MBIE project Landcare Research is planning to set up bird nesting, lizard and invertebrate monitoring in the city.

e) Monitoring Gaps

The existing biodiversity monitoring work identified as part of the survey covers terrestrial vegetation, bats, animal pests, birds, native fish and wetlands. Some is site specific, e.g. mudfish monitoring at Mangakōtukutuku and wetland monitoring at Waiwhakareke. Other monitoring is focussed on species, e.g. long tailed bats, native fish and birds.

Key gaps are identified in Appendix 4 and include:

- Establishing landscape level monitoring of fragmentation, indigenous vegetation cover, and restoration of ecological corridors and connections, to allow reporting on progress with establishing ecological connections and corridors across the city;
- Comprehensive monitoring of vegetation and restoration success across whole of city (e.g. restoration of key ecosystem types, increasing indigenous cover, success with weed control and replacing exotics with natives) – existing research plots established by University of Waikato could be built on;
- Cultural and social measures of the success of restoration work and the multiple benefits that can stem from restoration (Ecosystem Services framework);
- Mātauranga Māori state of the environment monitoring – could be developed from work being undertaken by Manaaki Whenua-Landcare Research;
- Monitoring by individual community groups;
- Wetland monitoring across the city;
- Monitoring of survival and restoration of key native plant species, threatened and uncommon plants in the city.

f) A basis to move forward?

The existing work being undertaken is quite comprehensive. It is robust and is largely being undertaken by existing agencies and research institutions including University of Waikato, CRIs and regional council. It includes city-wide monitoring of vegetation, birds, and animal pests. There is also specific monitoring of key species such as native birds, fish, and long-tailed bats. Standard methods such as 5-minute bird counts, permanent vegetation plots, Response To Intervention (RTI) pest monitoring and bat recording is being used. The existing monitoring has been developed in response to the restoration activities being undertaken in the city. It forms a very good basis to develop a more comprehensive and co-ordinated city-wide monitoring programme to measure the effectiveness of restoration efforts and a framework to integrate both citizen science and mātauranga based measurement. A more co-ordinated monitoring programme could be set up by standardising methods, sharing information and reporting, and filling in gaps.

g) The Indicators

A set of indicators are proposed to measure progress with restoring and enhancing the biodiversity of Hamilton City (see Appendix 4 for more detail). They are based on the following key elements:

1. Increasing extent/percentage cover of indigenous vegetation across the city:
    a. Increasing total indigenous vegetation cover towards the 10% target;
    b. Increasing cover (the proportion) of threatened ecosystem types.
2. Restoring health and condition of significant natural areas/ key sites in the city.
3. Restoring viable populations of iconic indigenous species in the city:
    a. Plants (swamp maire);
    b. Fish – giant kōkopu
    c. Bats;
    d. Birds (tūī, bellbird, kererū)
4. Restoring streams/waterways – increasing riparian planting (ensuring effective maintenance of planting), and connectivity of gullies, and habitat for iconic species (native fish).

Further work is required to ensure that the collation and co-ordination of the above indicators occurs and that it can be reported effectively. Ideally the results can be reported as part of the on-line mapping tool once developed. Developing Memorandum of Understandings (MOU's) with agencies

that collect the monitoring information can help with co-ordination as well as to assess options for funding the work (possible shared service). Further work is also required to assess the feasibility for the monitoring framework and sub-set of indicators to be used at a larger scale (ie: regionally).

h) Options for Mātauranga Māori

There is potential to look at the Mahinga Kai assessment tool developed and trialled in the Waikato by Landcare Research and Waikato-Tainui. The involvement and empowerment of Māori in freshwater and biodiversity decision-making can be facilitated by tools that enable Māori organisations such as iwi/hapū to assess their condition.

The tool helps provide a robust, holistic, and complementary data set when used alongside scientifically based quantitative attributes and measures, to inform freshwater management within a kaupapa-based assessment framework and tool to measure progress towards or away from stated iwi/hapū aspirations and outcomes. The structure of the tool can be tailored for use by any other iwi/hapū/kaitiaki group wanting to apply their own values and attributes, while the methodology, measures, and process are consistent and generic.

The opportunity to test and integrate this tool at a local level in Hamilton City is currently being discussed. Criteria developed as part of the Hamilton LIBS pilot for prioritising the cultural values of sites can provide measurements of the cultural values of biodiversity in the city.

WAI ORA MOBILE APP

Is a kaupapa Māori monitoring tool which aligns with the National Objectives Framework (NOF)

Based on the additional national values from the NPSFM

This tool is a rich mosaic of biophysical qualitative measures which provides a holistic framework to evaluate water quality.
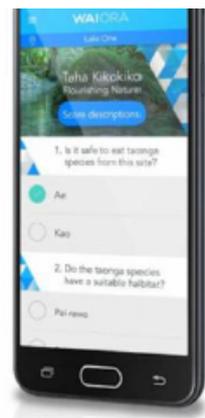
i) Options for Ecosystem Services and Citizen Science

Providing for an ecosystem services lens to the monitoring framework is useful as it can reflect the complementary benefits that accrue from biodiversity restoration and protection. This is particularly important for Hamilton City, especially around cultural services (recreation, tourism, mahinga kai and other cultural values, and community connectedness). Another important aspect are the regulating services linked to water because the Hamilton gullies are a key part of the stormwater system.

Citizen science can play a significant role in providing supplementary information and data for key indicators, including species presence, animal pest control, and volunteer effort with restoration planting and weed control. Significant restoration work is being led and implemented by community groups, Tangata Whenua and schools in the city.

Summary and Recommendations

Better information is the key to better decision-making. The ability to sustain long-term, continuing investment in biodiversity (public or private sector), depends on the ability to tell a convincing story about the need for that investment and the effectiveness of past and future investment. Developing an agreed and more systematic monitoring framework is therefore critical.

RECOMMENDATIONS:

8. To standardise and align indicators for the on-going monitoring of biodiversity.
9. To utilise the biodiversity monitoring framework in Hamilton City and assess their suitability for the rest of the region.
10. To develop a storage and on-line monitoring site for the gathering of results and reporting on progress in conjunction with all other tools. (See recommendation 16)

Tools from this section – Shared Measurement
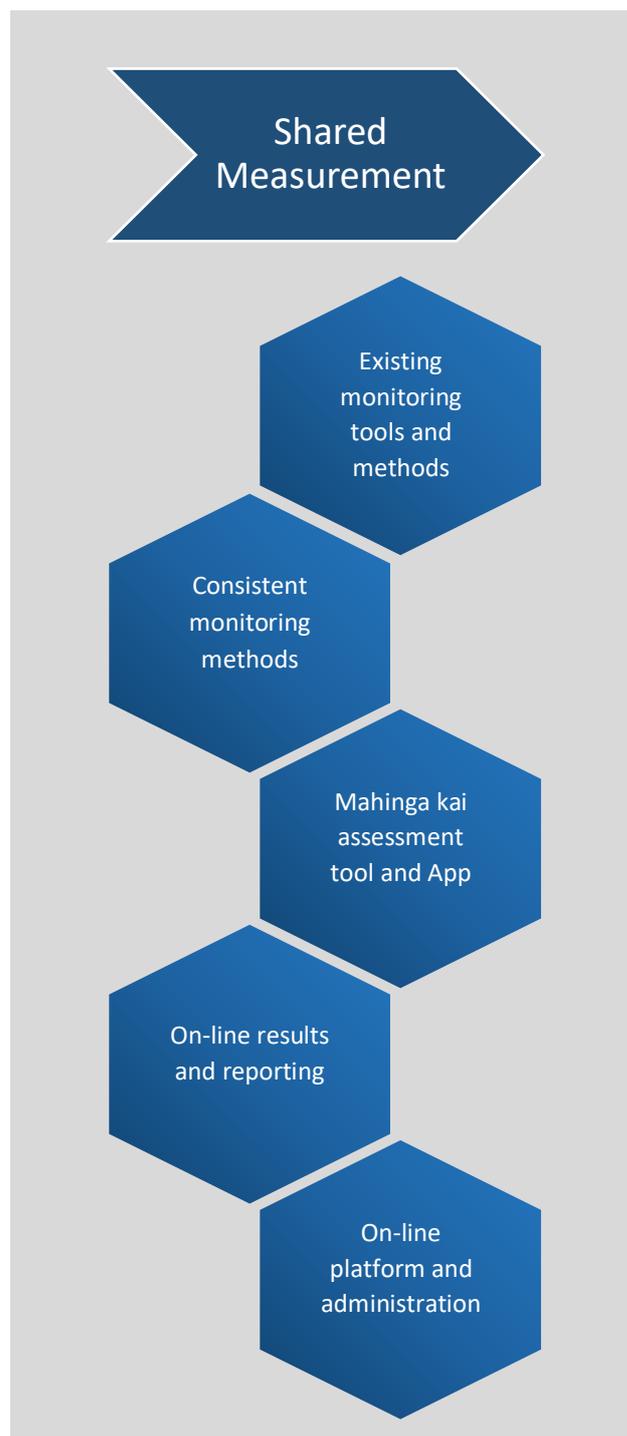
(3)   Mutually Reinforcing Activities

A diverse set of stakeholders, typically across sectors, co-ordinate a set of differentiated activities through a mutually reinforcing plan of action. Planning and delivering joined-up action.

There are numerous players involved in biodiversity management and action. Currently, too much biodiversity planning occurs in parallel to, rather than in partnership with, the biodiversity activity of other agencies and organisations and thereby fails to capture the maximum benefits from the available funding.

a) Who are the stakeholders

Stakeholder mapping was an initial focus of planning for the pilot project (see Appendix 5). Undertaking a stakeholder analysis, including looking at potential level of interest and involvement, led to the development of the stakeholder register which is included in the project plan [Content Manager Document D – 2267107].

b) Stakeholder engagement - scoping

A scoping exercise was undertaken to understand current biodiversity activity in Hamilton City. The purpose was to understand what these groups are doing, and how their activities might be supported and extended. Key staff from Hamilton City Council (HCC), as well as representatives of community groups, are often amongst those best-placed to guide the implementation of regional policy, such as LIBS. They can provide insights into biodiversity-related groups and activities, identify opportunities to support this action and enable the LIBS programme to be tailored to better meet local needs.

Information relevant and potentially valuable for the successful implementation of the Hamilton LIBS pilot programme were summarised and analysed against the five (5) components of the Collective Impact Framework (CIF).

c) Key informant interviews

Key informant interviews were undertaken to increase knowledge of current stakeholder and community activity, and understand tools and approaches that increase the success of these organisations and groups. Seven interviews were conducted and one community meeting was attended with community and organisational representatives to fill out the picture of biodiversity-related action in and around Hamilton City.

Participants were asked:

1. What actions are community groups and other organisations already carrying out?
2. What helps and hinders these actions?
3. What can be done to increase biodiversity in Hamilton City? What are the opportunities?

The key points made by those interviewed are summarised under each of the Collective Impact Framework sections.

d) Mana Whenua engagement - scoping

Effective and appropriate engagement with mana whenua was identified early on by the External Advisory Group as a critical component of the pilot project. In addition, the need to build (or at least assess) the capacity of marae, hapū and Iwi was identified as a critical gap to be filled if mana whenua were to be successfully engaged in supporting (and driving) biodiversity protection and restoration work.

e) Mana Whenua engagement - process

The LIBS pilot project was first presented to Te Haa o te Whenua o Kirikiriroa (THAWK) in February 2017. THAWK represent the individual and collective interests of the five hapū who hold mana whenua within Hamilton City in relation to matters of kaitiakitanga (stewardship) of natural and physical resources. At this meeting THAWK agreed to consider which one of the hapū with interests in Hamilton City would be best placed to engage with the pilot given its tight timeframe.

The chosen approach was to engage with Ngāti Hauā. Hui were held with representatives of Ngāti Hauā Iwi Trust (NHIT) and Ngāti Hauā Mahi Trust (NHMT), a review of a previous restoration project engagement was undertaken and an assessment of the interactions with HCC, from the perspective of NHMT were identified. This work was a pre-cursor to discussions about a potential partnership approach between NHMT and HCC to restoration projects in gullies like the Mangaonua, as part of a Local Indigenous Biodiversity Strategy. This work is progressing towards the development of a draft Memorandum of Understanding (MOU) at an operational level.

The importance of developing MOU was also highlighted in the first LIBS pilot in the Waihou-Piako, where Ngāti Hinerangi and WRC are progressing a partnership document to set the framework for collaborative biodiversity restoration work in the Mangapiko catchment. Having an agreed partnership document and approach can provide the framework for ongoing communication, information sharing and restoration work that meets council and Iwi/hapū policy goals.

In terms of governance issues, NHIT noted that the finalisation of their Iwi Environmental Management Plan is imminent. As part of sharing that document and seeking its joint implementation with others, NHIT identified their preferred option of developing MOU's with councils directly to look at options for joint implementation.

This work provides a sound basis for the pilot in terms of engaging with tangata whenua, that can be taken back to Hamilton City's liaison group THAWK, to share progress and see if this approach has wider application with others holding mana whenua in the Hamilton area.

f) Cultural expertise

In addition to mana whenua engagement, the External Advisory Group also noted the importance of engaging with known biodiversity-related cultural expertise and knowledge for Hamilton City (Kirikiriroa). A process to talk with a key holder of this knowledge (Wiremu Puke), collate a list of publications on the topic, and conduct a literature review of these documents is now complete and the report "Cultural Values of Indigenous Biodiversity in Hamilton – An Annotated Bibliography" produced.

g) Activities funded through Project Watershed

Project Watershed provides a specific revenue stream to fund flood protection, soil conservation and river management for the Waikato and Waipa catchments. Funds for that part of the catchment within the Central Waikato Zone that align with Hamilton City boundary are passed to HCC (three waters section). Works to improve biodiversity align strongly with both flood protection (e.g. wetland enhancement) and soil conservation (river and gully planting). Opportunities exist for WRC and HCC to co-ordinate and align budget allocation to maximise biodiversity restoration at priority sites to deliver multiple benefits.

h) Engagement with Matawaka

Around 70 percent of Māori living in Hamilton have no (known) genealogical connections to Waikato-Tainui. While consulting and engaging mana whenua was a critical part of the pilot project, it was also highlighted that a process to engage with Matawaka would also potentially engage a significant component of the Hamilton population.

Although a proposed process has been defined which can link this work into, and complement the community engagement workstream of LIBS, due to time constraints this has not been undertaken. The key steps would have been to have:

- discussions with members of urban marae (Kirikiriroa Marae)
- discussions with Te Rūnanga o Kirikiriroa

The potential to undertake this work in the next financial year could be explored.

i) Cultural prioritisation of biodiversity sites in Hamilton

This work focused on how to bring cultural values into prioritising sites under a range of criteria (ecological and social/community). A draft cultural criteria tool was developed and a workshop was run to test this with iwi representatives. Feedback was received on the tool and some participants expressed a readiness to take this process further, engaging with their own people on the cultural prioritisation process.

Once this work is completed it will allow sites to be prioritised according to different values – ecological, community and cultural. It will also allow for an overall prioritisation score to be determined incorporating the three values. This is important as site restoration driven by cultural values may be able to be supported and resourced through different funding paths than either community or ecological value-based restoration.

j) Enviroschools programme and education opportunities

Engaging young people and local communities in the restoration of biodiversity and waterways is a significant opportunity. There are over 30 schools in Hamilton involved in the Enviroschools programme, which includes biodiversity as an element of the programme. Although many schools are at different stages (from Bronze to Green/Gold) some are leading the way driving community-led change around biodiversity restoration. Opportunities exist to weave together the various projects within Hamilton City into one larger scale programme to support and align with biodiversity goals.

Summary and Recommendations

A strategic shift towards much closer collaboration with other players such as community groups, iwi and hapū, Department of Conservation (DOC), regional and district councils, business and the philanthropic sector is required. More collaboration will assist but an increase in investment in biodiversity will also be critical. Partnerships that involve leveraging new investment for biodiversity are becoming commonplace. Demonstrating a common understanding and clear priorities for delivering joined-up action in the most efficient and effective ways possible will help to unlock these new sources of funding.

RECOMMENDATIONS:

11. All relevant Plans (Management Plans, District Plan, ICMPs, etc) be developed/updated to reflect this strategy.
12. That the annual programme and funding under Project Watershed aligns with and supports the prioritised biodiversity sites. (See also recommendations 2-4)
13. To encourage funders to align and support restoration to achieve the overall biodiversity goal. (See also recommendation 18)
14. Additional engagement with Te Haa o Te Whenua o Kirikiriroa (THAWK) to encourage further use of Memorandum of Understandings with mana whenua in Hamilton.
15. To align and build greater links between current and future biodiversity action with the Enviroschools programme. To build connections with the community that enable the protection of biodiversity sites and other areas of ecological value.

Tools from this section – Mutually Reinforcing activities

Mutually Reinforcing Activities

Cultural knowledge report & bibliography

Stakeholder engagement reports

Stakeholder register & list

Mana whenua engagement report

Draft MOU – NHMT & HCC
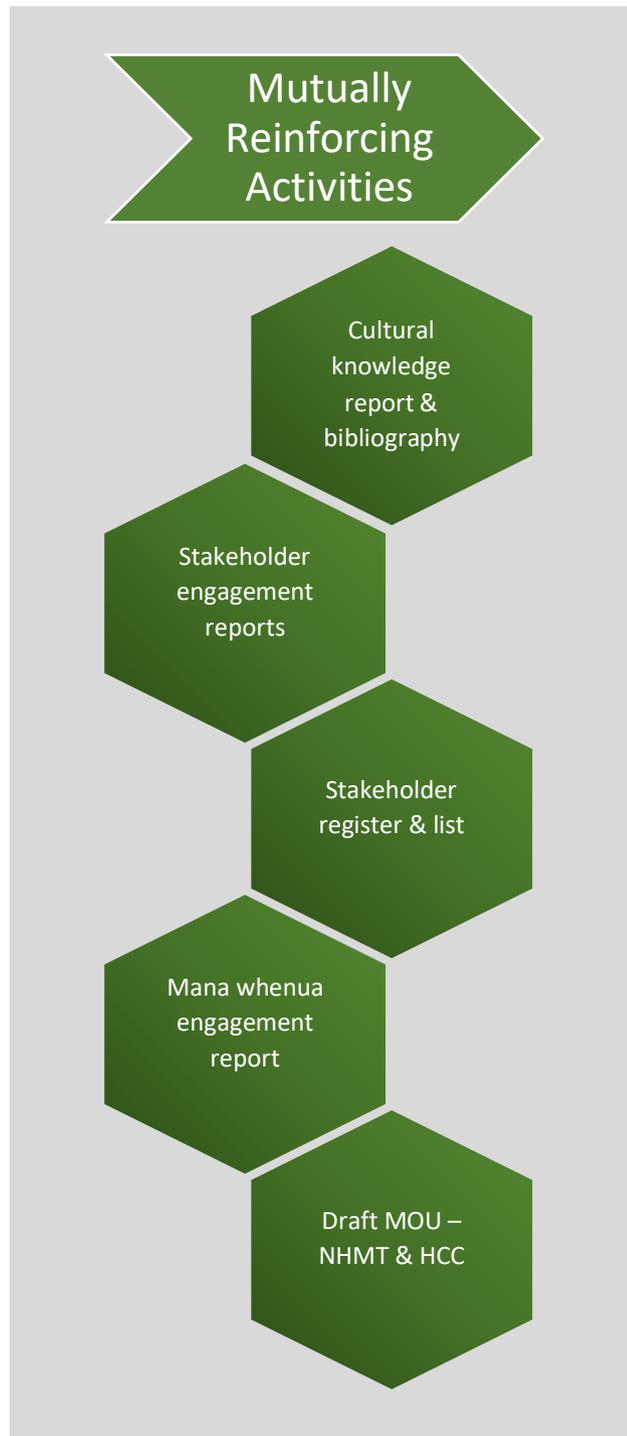
(4)　　　Continuous Communication

The diverse set of stakeholders engage in frequent, structured and open communication to build trust, assure mutual objectives, and create common motivation.

As we have seen from the previous section, co-ordinating the multiple stakeholders who are playing a role in biodiversity management and action is one of the most fundamental improvements we can make to collective biodiversity impact.

a) Follow up on initial engagement

The engagement with Ngāti Hauā provides a sound basis for the pilot in terms of engaging with tangata whenua, that can be taken back to Hamilton City's liaison group THAWK, to share progress and see if this approach has wider application with others holding mana whenua in the Hamilton area.

As part of ongoing stakeholder engagement it would be advantageous to engage with Matawaka via discussions with members of urban marae (Kirikiriroa Marae) and with Te Rūnanga o Kirikiriroa as a significant proportion (around 70%) of urban Māori do not affiliate to any of the five hapū who hold mana whenua in and around Hamilton.

Key informant interviews highlighted that by connecting with tribal groups, gully groups had learnt stories of their local area, bringing the gully history alive and motivating them to continue their work. For example: "[One Hapū] shared local history of this area with us, local stories and information about fish breeding. It's about caring for this information and planning around this knowledge." Many gully groups had Hapū representatives on their Trusts and/or held events or planting days with marae.

Community engagement and the scan of existing information also highlighted the numerous resources, publications and web-based information that exist. For example the Te Aho Tū Roa and Toimata Foundation, Te Ara I Takahia resource for young people in Te Reo and English. Others include:

1. The Waikato Biodiversity Forum website.
2. The Mangakōtukutuku Streamcare Group includes a presentation showing planting work undertaken for aquatic biodiversity (mudfish), ensuring a focus on both land and water-based biodiversity.
3. Hamilton-based citizen scientist, Monica Peters, publishes a contemporary example of community biodiversity action on her website.
4. "From the Roots Up" an animation telling the story of the lonely Tōtara developed by Shepherd Isaac and Artmakers is on the GoEco website.
5. Environmental restoration around Hammond Park and the Riverlea area can be found on Riverlea Environment Society Inc. website, and ecological restoration work in the Mangaiti Gully can be found on the Mangaiti Gully Restoration Trust website.

This information is currently scattered across a multitude of different sources and its effectiveness is therefore diluted. To achieve collective impact this information needs to be brought together onto a shared platform and structured to suit varying audiences and needs.

b) Communications and branding

Increasing visibility and getting community buy-in are vital ingredients in any shared vision and communications strategy. Developing a brand is one component – but a brand is more than a logo, name or slogan – it's the entire experience your audience has with your company, product or service. Your brand sets the promise you make to your audience and your reputation is how you deliver on that promise.

Brand Strategy

To gather ideas and information to form the LIBS brand strategy, two workshops were run; one with the advisory group and one with the student council from Rhode Street School. From these workshops, three themes became apparent for this brand strategy: locality, environment and inspiration (see Appendix 6 for more details).

Brand name and tag lines

Brand name recommendation (based on brand strategy and brainstorms): Boost Natural Hamilton

Primary tag line (for consistency across Waikato project): Restoring nature, connecting communities

Where to with brand strategy and logo

Concepts were debated and advice received from the External Advisory Group noted the potential for confusion with a regional and local brands (logos). The idea of nesting a local (HCC) brand within a regional brand was suggested.

The whakataukī, 'Nā tō rourou, nā tāku rourou ka ora ai te iwi', 'With your food basket and my food basket the people will thrive', sits well with Restoring Nature and Connecting Communities. This has inspired the concept of a bowl shaped rourou with room to accommodate the logos of those involved with the project, possibly in each weave of the flax, or inside the bowl.

An initial logo design is complete and a brand strategy is being developed to support this.

c) Internal information management - HCC

An opportunity exists to provide a "biodiversity lens" and integrate biodiversity information into HCC watercourse management for the city. This will enable the explicit recognition of biodiversity values into watercourse and stormwater operations. Linking and integrating information in this way can ensure efficient and effective connection of biodiversity information into councils' business.

d) Mapping and website development – shared biodiversity platform

The pilot project has started to pull together and collate a lot of existing information around biodiversity and link it to maps. Utilising maps to set up an interactive conversation around biodiversity in the city – the idea of a biodiversity information commons, would greatly assist communication flow. Opportunities to link WRC and HCC websites as part of a "restoring nature – connecting communities" regional programme needs to be considered and further developed. A joint website could be used as a platform for the multitude of existing biodiversity resources so people have a one stop shop for this information.

The conservation opportunities, biodiversity site and community activity maps can be utilised to set up active conversations and information flow so we know who is doing what and where for biodiversity in the city and how it aligns with biodiversity and other goals (see diagram overleaf). These maps can then be used for a variety of purposes such as to match priority sites to people and to funding; connect people starting a restoration project to existing restoration groups and information; or match people who want to undertake restoration work with groups who need assistance.

e) Phone APPs

The development of phone Apps can make it easy for people to collect and share information but requires careful thought about how to set this up. As part of the national terrestrial and wetland indicators programme co-ordinated by Landcare Research on behalf of regional councils, WRC have initiated development and testing of a phone App to help with information flow around two key indicators – community contribution to habitat restoration and community contribution to weed and animal pest control and reduction programmes.

Information on the number and location of community groups in Hamilton collated as part of the LIBS pilot is being used to inform this project. Ideally the App will capture information linked to both polygons and point data for a range of community-related biodiversity restoration activities including planting, pest and weed control, fencing, monitoring and habitat creation.

This App is being tested in Hamilton currently (June 2018). It is hoped that the approach can then be extended to other parts of the region (and potentially nationally) to underpin measurement of the two national indicators. Knowing where activity is going on and being able to plot this information in a user-friendly way will increase alignment and co-ordination of those activities and deliver collective impact.

Example of shared, on-line biodiversity site with sample functions:
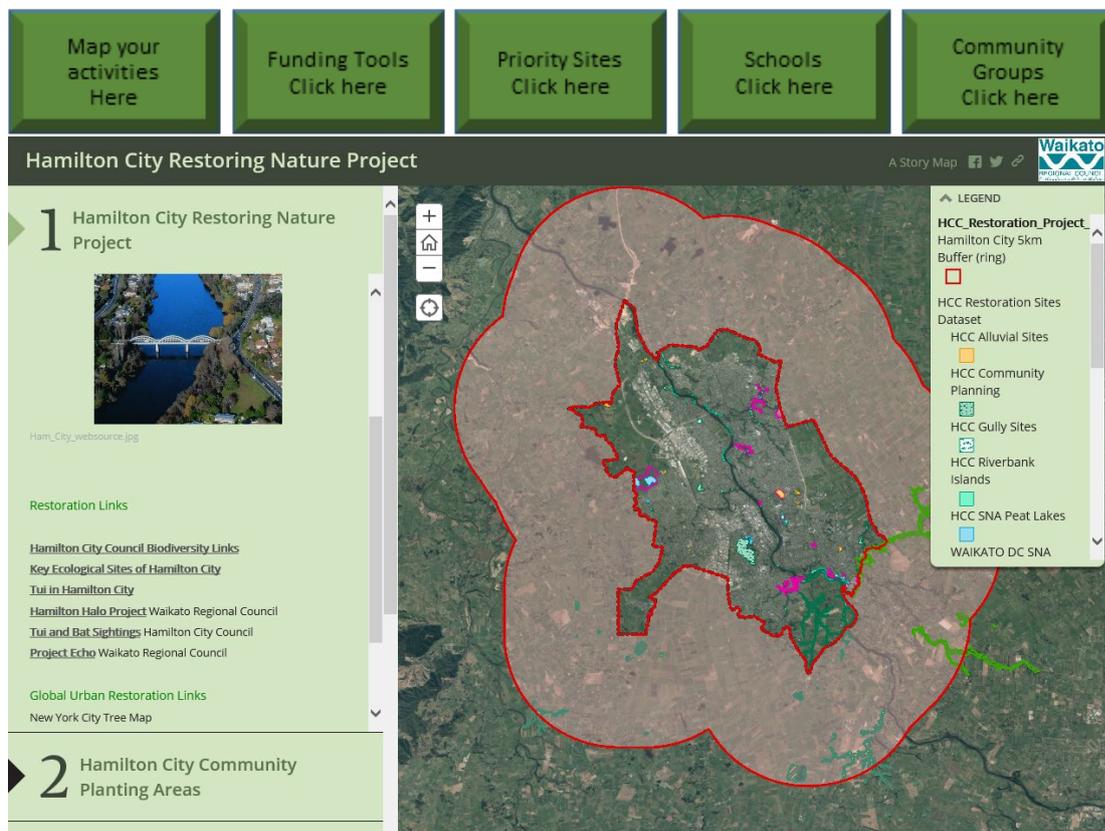
f) User-friendly on-line tools

A wide range of technical and other information resources are already available targeted at different audiences. One example is the "Hamilton Gully Restoration Guide" published by HCC which supports local gully groups. An on-line ecological mapping tool that builds on the gully guide is currently being developed. It is intended that this tool provides a higher level of interaction for users, extends the scope from gully restoration to restoration of a range of other habitats in the city, and allows for other information (such as Mātauranga Māori) to be applied.

Phase 1 of the project which covered soils mapping, digital elevation modelling, and alignment of soils boundaries to topographic features and Phase 2 of the work involving land unit, vegetation type and plant assemblage alignment and description are now complete. Aligned to phase 2 is the collection and spatial depiction of cultural-based biodiversity information linked to place. This Mātauranga Māori information can provide additional context for restoration projects and be used to highlight specific culturally relevant plants or plant assemblages that can form an integral part of a restoration or planting plan.

Phase 3 will involve developing an on-line and interactive mapping tool based on the above information. This is the most critical part of the tool as it will potentially enable a much larger number and range of users to access and interact with the information.

Summary and recommendations

The pilot project has made a start in building the picture of who is involved and where, and engaging with stakeholders and mana whenua to understand the needs and aspirations of the different players. Building on this initial engagement and understanding as we move on from the pilot will be critical to success. Having the right structures, processes and communication tools in place can assist and streamline the continuous communication process.

RECOMMENDATIONS:

16. To develop a shared on-line biodiversity site for Hamilton to enable all tools and resources, and monitoring of progress to be available as a one stop shop for agencies and the community.
17. Ensure collaboration with adjoining agencies to ensure the gully networks in and out of the city are considered as part of the overall restoration plan.

Tools from this section – Continuous Communication

Continuous Communication

- Communication plan & brand strategy
- On-line Eco Mapping tool
- Website & shared biodiversity platform
- Community restoration activity info App
- HCC Watercourse management database

(5)   Backbone support

An independent, funded staff dedicated to the initiative provides ongoing support by guiding the initiative's vision and strategy, supporting aligned activities, establishing shared measurement practices, building public will, advancing policy, and mobilising resources.

a) A structure to deliver Collective Impact

A potential support structure is emerging which could help to deliver collective impact for biodiversity, not only for Hamilton but at a regional scale. The community engagement and activity scoping work (summarised on page 28) highlighted that some of the elements required to provide this backbone support already existed but needed to be either scaled-up or better co-ordinated. It also identified that there were gaps, specifically the lack of a coherent and consistent strategy to empower community groups.

The best opportunity to improve alignment, increase funding scope, and provide connections, tools and support is through the development of a 3-tiered structure (Figure 4) that connects a high level governance and strategic decision-making & funding tier (possibly a Trust) to an expanded Waikato Biodiversity Forum (tier 2) allowing for full collaboration and co-ordination and acting as a funnel to a third tier which includes co-ordinated community hubs – where action on the ground is undertaken, aligned with strategic decisions from tier 1.

Figure 4: Backbone support structure concept
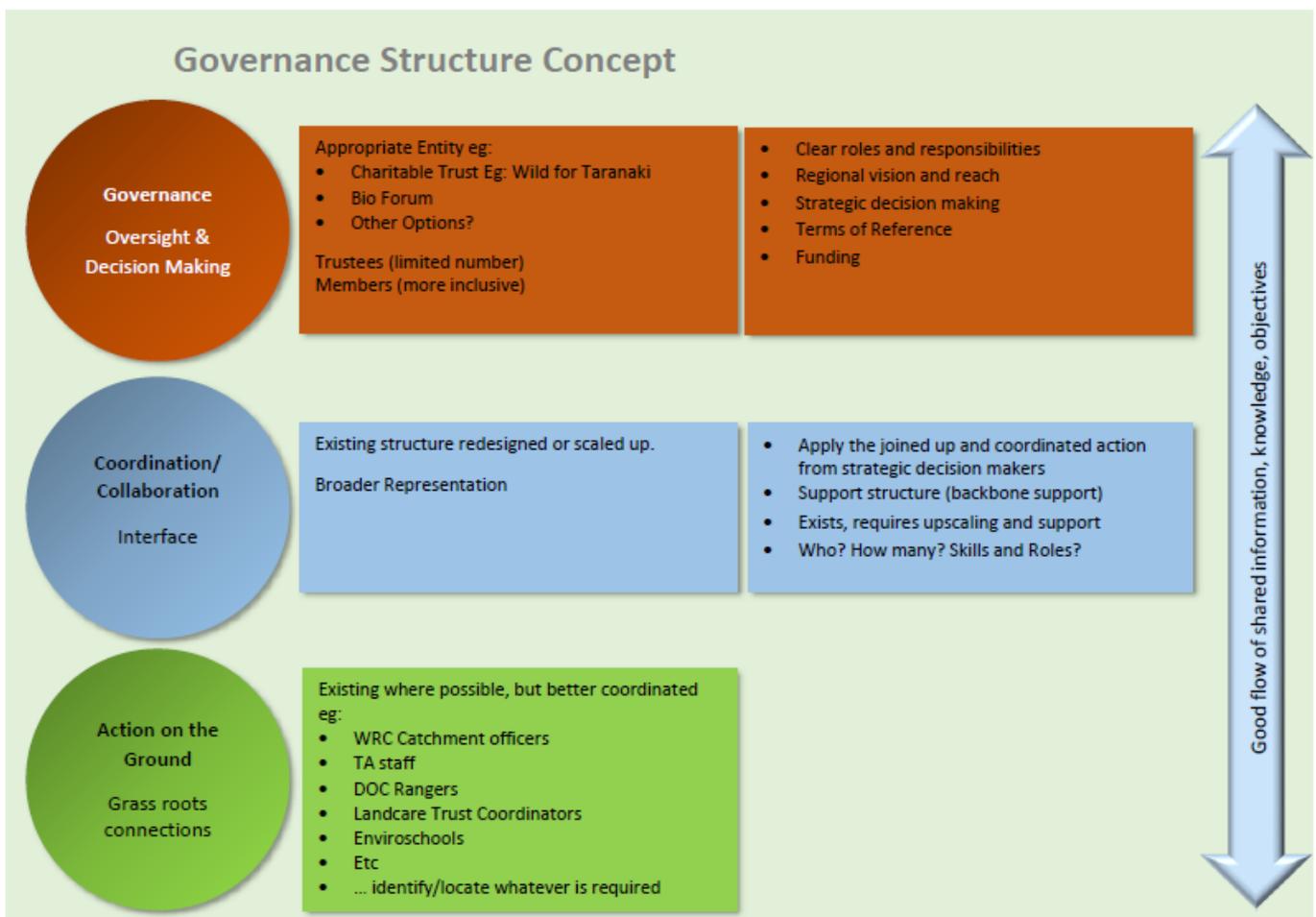
b) Funding strategy and funding toolkit

Although discussion during the LIBS pilot project identified a need for a robust funding strategy, as a way of targeting and improving impact investment for biodiversity, this aspect is still progressing. The project team has identified, through contact with the Philanthropic sector in Hamilton that significant appetite exists from funders to support community-led biodiversity and environmental projects, especially ones that are part of a larger, connected regional or city-wide programme.

The development of a funding strategy or biodiversity impact investment strategy looking at these options would be of benefit. The strategy could also identify how to engage with the corporate sector as well as aligning existing investment in a more efficient manner (e.g. regional and city council funds and DOC funds). It should also ensure that an appropriate level of funding goes into maintenance of existing biodiversity works to "maintain the gains" from past investment.

The funding or impact investment strategy should be closely linked to the biodiversity site prioritisation work so that it is clear how many of the priority sites can be managed, what that management will cost and who will be contributing to it.

A practical funding toolkit was developed as part of the LIBS pilot, developed in association with HCC funding advisors. The toolkit provides a how to guide on applying for biodiversity funding as well as a funding calendar (who funds projects and when) and other tips and information.

c) Other Funding Options – Opportunities for Carbon Forestry

Another option for mobilising resources to assist ecological restoration is through carbon forestry. An assessment of the opportunities for exotic and native carbon forestry on HCC land was undertaken by Carbon Forest Services Ltd[1], with a focus on indigenous forest restoration. As part of this work a desktop assessment was made of land owned by HCC to determine carbon eligibility under the Emissions Trading Scheme (ETS).

---

[1] Opportunities for Carbon Forestry on Hamilton City Council Land, June 2018. Carbon Forest Services Ltd.

This work highlighted that the biggest opportunity exists in the open space areas defined as Parklands-Settlements-Pasture, where around 725ha is eligible for Post-1989 ETS or Permanent Forest Sink Initiative (PFSI) forestry if established in trees (see table 4 and figure 5 below).

Name	Area (Ha)	Comment
Natural Forest – Pre-1990 Native	39	Pre-1990 vegetation. Likely native forest
Planted Forest – Pre-1990 Exotic	230	Pre-1990 vegetation. Likely exotic forest
Planted Forest – Post 1989 Exotic	12	Possible Post-1989 Forest
Planted Forest – Post-1989 Native	26	Post-1989 vegetation. Possibly eligible Post-1989 Forest
Parkland (Settlements, Other, pasture)	725	Mostly parks, though includes some built areas

Table 4: High Level Classification of HCC Land for Carbon Forest Eligibility

Councils objectives for this variety of open space would need to be considered in any discussions around opportunities, however some options are available adjacent to existing priority biodiversity sites such as Lake Rotokaeo (Forest Lake) and Waiwhakareke. Restoration planting of these (and similar) areas could be part funded through ETS or PFSI.

Figure 5: Carbon Forest Eligibility Map
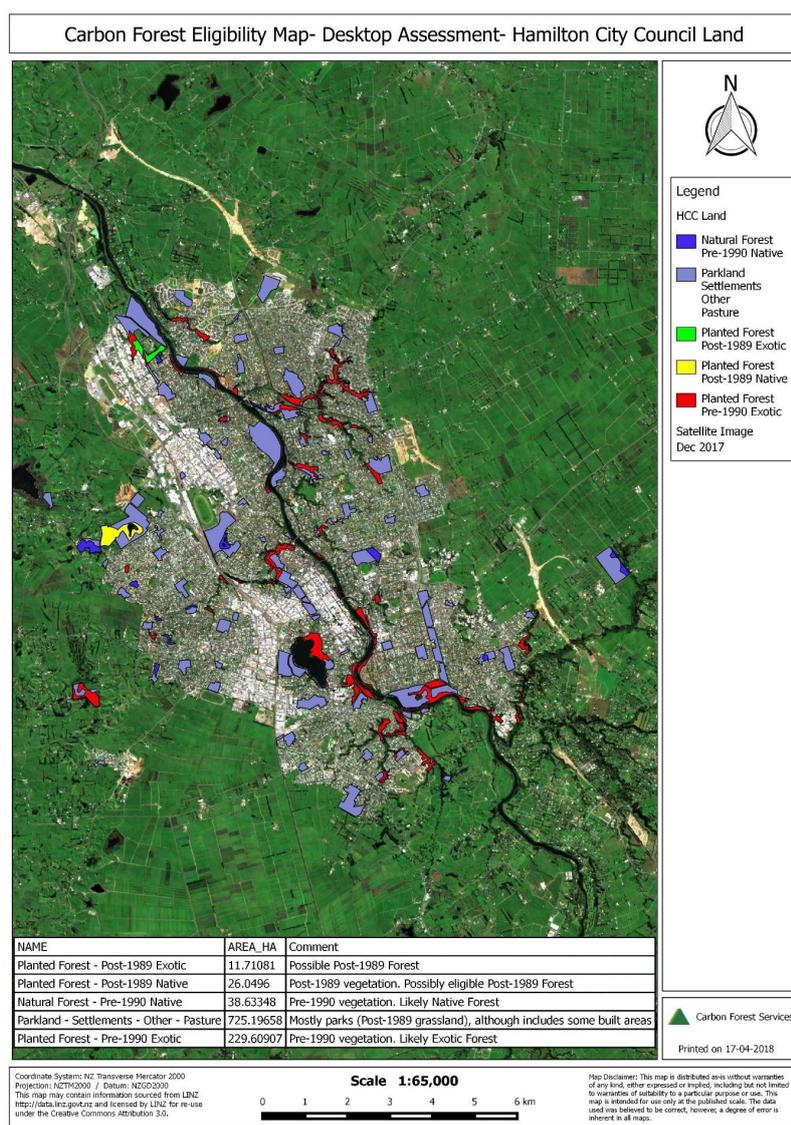
A targeted desktop assessment of Waiwhakareke Natural Heritage Park was also undertaken to determine carbon eligibility. This area has been chosen by HCC as an area of interest that is likely to be eligible for post-1989 carbon forestry as it has involved restoring farmland into indigenous forest since 2004 through direct planting.

Approximately 20.22ha across 12 forest stands are identified as potentially eligible planted native forest, being established since 1990 on previously non-forest land. A simple cash flow was then provided based on a flat carbon price of $21/NZU. Over 10 years the projects average net income would be $3,900/year.

Summary and Recommendations

There are many agencies and other parties involved in biodiversity management in Hamilton. What is needed is an established forum within which issues associated with boundaries of responsibility, a collective agenda for action, co-ordination of activities and shared funding can be discussed and resolved. That is a structure that brings together key players for collective strategic decision-making. Such a forum requires the backbone support necessary to enable it to function over the long-term and be responsive to community needs and aspirations, while also providing the big picture and framework for communities to operate within.

RECOMMENDATIONS:

18. To develop a support structure, including a Trust, to provide the backbone support for organisations such as Waikato Biodiversity Forum, and opportunities for enhancement of biodiversity within the City.
19. Consider registering Waiwhakareke for carbon credits under Emissions Trading Scheme (ETS) or Permanent Forest Sink Initiative (PFSI) as a test case that can be further built on as more restoration projects are identified and developed.
20. Further assess the options for restoration on parks and reserves that are adjacent to priority biodiversity sites and seek their registration under ETS or PFSI. Explore options of mixed forest (native and exotic) to boost carbon sequestration and lower cost of establishment.
21. Consider the development of a carbon forest policy to explore future cash flow opportunities.

Tool from this section – Backbone Support

Backbone Support

Support Structure

Funding Strategy

Council Structure to Support Collective Action

Carbon Strategy

5. Where to from here?

The HCC LIBS pilot project has, within a tight timeframe, provided a potential framework for collective biodiversity impact, collated a range of existing information, resources and tools, and developed some new tools to assist effective biodiversity implementation. The challenge is to keep momentum going and to initiate a co-ordinated approach – throughout HCC and across organisations (WRC and HCC and others). One of the key ways to support this is to understand the key connections into various parts of council activity and where best to integrate and implement biodiversity goals.

Council structure to support a forum for collective action

During the pilot project a project team structure emerged that assisted greatly in information sharing across Hamilton City and Waikato Regional Council and also acted as an efficient conduit back through into the respective "sections" of the two councils. This structure would be an important component of supporting any proposed scaled-up forum for collective decision-making and would provide for the integration of a biodiversity lens across numerous council functions and departments. See diagram.

Council Structure to Support Collective Action
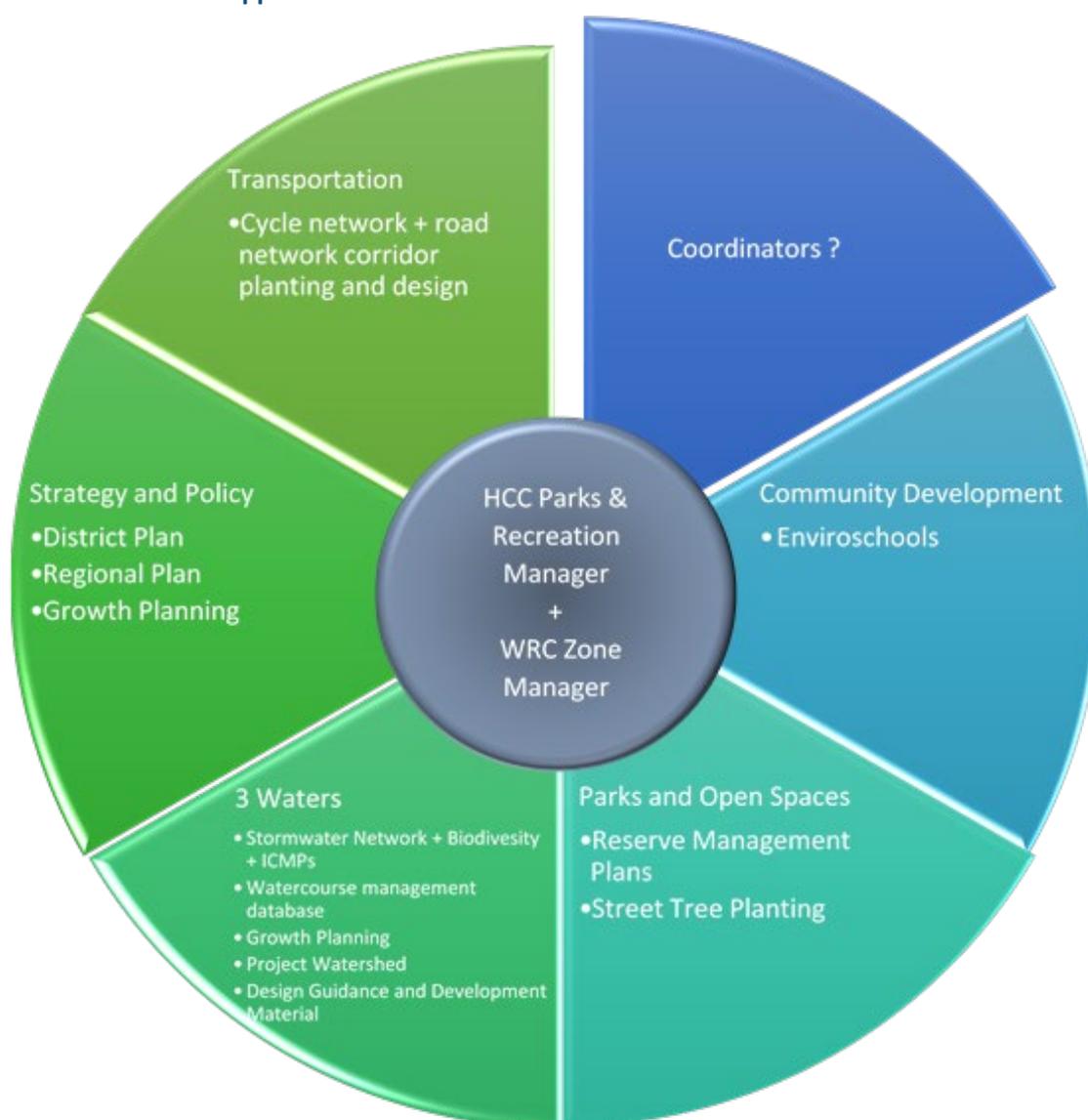
6. Recommendations and Key Actions

Recommendations	Key Actions
Collective Impact Framework	
1. The "Collective Impact Framework" be used to underpin Biodiversity Restoration in Hamilton City and the Waikato Region.	Endorsement by Council
A Common Agenda	
2. To increase indigenous vegetation cover from 2% to 10% with a river and gully focus.	To complete site prioritisation (scoring of cultural values of sites), and use it as an overarching plan for Hamilton to highlight sites as a focus for biodiversity action.
3. To identify and prioritise sites for restoration that include a range of representative examples of indigenous ecosystems in the city.	To ensure biodiversity values are incorporated into the design of new growth areas to assist in the achievement of the 10% indigenous habitat target.
4. To provide connections between key sites through restoration of adjoining areas especially along the river and gully system.	Finalise mapping of existing fauna data to augment the largely vegetation-based site prioritisation information.
	That any mitigation required as part of any RMA regulatory decisions for development take into consideration the ecological footprints of the prioritised sites in Hamilton.
5. Ensure the Waikato Biodiversity Forum and community coordinators are part of a backbone support infrastructure necessary to provide a common agenda. (See recommendation 18)	
6. To ensure that all ecological/biodiversity mapping continues to be integrated between agencies, hapū and community groups and is effectively communicated. (See recommendation 18)	
7. Develop partnerships with the Waikato University and Crown Research Institutes to support local action.	Work with the Kukutaruhe Education Trust to support the development of a gully restoration plan template.

Shared Measurement	

8. To standardise and align indicators for the on-going monitoring of biodiversity.
 	
9. To utilize the 6 indicators as the standardised biodiversity monitoring framework in Hamilton City and assess their suitability for the rest of the region.
 • Increasing extent/percentage cover of indigenous vegetation across the city:
  o Increasing total indigenous vegetation cover towards the 10% target;
  o Increasing cover (the proportion) of threatened ecosystem types.
 	
 • Restoring health and condition of significant natural areas/ key sites in the city.
  o Restoring viable populations of iconic indigenous species in the city: Plants (swamp maire); Fish – Giant kokopu Bats; Birds (tui, bellbird, kererū)
 	
 • Restoring streams/waterways – increasing riparian planting (ensuring effective maintenance of planting), and connectivity of gullies, and habitat for iconic species (native fish).
	To develop Memorandum Of Understandings between agencies to ensure the ongoing collection and collation of biodiversity monitoring is undertaken and assess options for funding this work.
	
	To encourage the testing of the Mahinga Kai assessment tool within Hamilton City to give effect to Te Ture Whaimana o Te Awa o Waikato and to assess options for Mātauranga Māori and citizen science to be incorporated into the monitoring framework.

10. To develop a storage and on-line monitoring site for the gathering of results and reporting on progress in conjunction with all other tools. (See recommendation 16)	To continue with the testing of the Biodiversity App for the gathering of information on community activity. To develop the site.
Mutually Reinforcing Activities	
11. All relevant Plans (Management Plans, District Plan, ICMPs, etc) be developed/updated to reflect this strategy.	That any future environmental and social impact assessments for roads consider further encouragement of street side plantings with a focus on native species to create ecological linkages. To continue with Low Impact Urban Design principles through the development of infrastructure which improves ecological values. To update Reserve Management Plans which include significant natural areas, gully and river reserves to enhance habitat protection and improve ecological connectivity.

	To undertake a district plan change to avoid or mitigate the loss of the City's gully system.
12. That the annual programme and funding under Project Watershed aligns with and supports the prioritised biodiversity sites. (See recommendations 2-4)	HCC planting programme funded by Project Watershed delivers ecological benefits to priority sites. Undertake a joint approach to develop the year 1 Project Watershed Plan.
13. To encourage funders to align and support restoration to achieve the overall biodiversity goal. (See also recommendation 18)	
14. Additional engagement with Te Haa o Te Whenua o Kirikiriroa (THAWK) to encourage further use of Memorandum of Understandings with mana whenua in Hamilton.	To complete operational MOU with Ngāti Hauā and Parks and Open Spaces.
15. To align and build greater links between current and future biodiversity action with the Enviroschools programme. To build connections with the community that enable the protection of biodiversity sites and other areas of ecological value.	Further encourage and support Enviroschools programme to encourage restoration of gullies and development of ecological areas.
Continuous Communication	
16. To develop a shared on-line biodiversity site for Hamilton to enable all tools and resources, and monitoring of progress to be available as a one stop shop for agencies and the community.	Ensure completion of the on-line ecosystem mapping tool and incorporation of a Mātauranga Māori layer. To consider the development of motion picture graphics to effectively communicate key elements of this project. (Recommendation 18)
17. Ensure collaboration with adjoining agencies to ensure the gully networks in and out of the city are considered as part of the overall restoration plan.	
Backbone Support	
18. To develop a support structure, including a Trust, to provide the backbone support for organisations such as Waikato Biodiversity Forum, and opportunities for enhancement of biodiversity within the City.	A funding strategy to target and improve biodiversity impact investment be developed by the Trust. Continue with a project team structure to enable information sharing across and within Councils.

19. Consider registering Waiwhakareke for carbon credits under Emission Trading Scheme (ETS) or Permanent Forest Sink Initiative (PFSI) schemes as a test case that can be further built on as more restoration projects are identified and developed.	To work with stakeholders to consider options and opportunities that the new legislation will provide.
20. Further assess the options for restoration on parks and reserves that are adjacent to priority biodiversity sites and seek their registration under ETS or PFSI. Explore options of mixed forest (native and exotic) to boost carbon sequestration and lower cost of establishment.	Assessment to be undertaken as part of review of Reserve Management Plans.
21. Consider the development of a carbon forest policy to explore future cash flow opportunities.	Parks and Recreation to research opportunities to develop a policy.

7. Summary of Toolbox/Matrix

The Collective Impact Framework

8. Appendices

Appendix 1: Draft Prioritisation Method for Restoration Sites

1. Ecological Priority Score

Value	Measure	Score
Protection Status	1. Private land – no legal protection 2. Public land – no legal protection 3. Natural Open Space zoning 4. Private land - reserve (QEII or similar)/ willing landowners 5. Public Reserve (DOC, TLA)	Score from 1-5
Ecological Significance	1. Not identified SNA 2. Potential with restoration 3. SNA[2] – moderate ecological significance value, e.g. moderate ecological diversity and representativeness 4. SNA – high value e.g. high diversity and representativeness value 5. SNA – very high value – e.g. high representativeness value, priority ranked natural ecosystem[3]	Score from 1-5
Landform Type	Range of landform types (hills, gullies, alluvial plain, peatland)	Number of landform types present Score from 1-4
Fauna and flora value[4]	1. few or no native species present, 2. common native species present 3. key native species present, e.g. regionally or locally uncommon flora or fauna species 4. provides habitat for migratory or mobile species, (e.g. as stepping stone), or for key part of the life cycle of a species (e.g. breeding, feeding, nesting) 5. threatened or at risk species present	Score from 1-5
Size	1. <0.1, 2. 0.1 - <1ha; 3. 1ha - <5ha; 4. 5ha - <10ha; 5. >10ha	Score from 1-5

---

[2] based on Cornes et al 2012 ranking
[3] Leathwick 2006. Integrated biodiversity ranking and prioritisation for the Waikato region
[4] requires survey and monitoring to assess values, e.g. bird counts, botanical surveys

Threats (e.g. from weed and animal pest species; urban development)	1. Weed species dominant, e.g. understorey/canopy dominated by weed species; animal pest species abundant (e.g. rabbits); High urban development threats (e.g. fragmentation). 2. Moderate level of weed impacts; moderate level of threat from animal pests; some threat from urban growth and development. 3. Weed presence minimal – regeneration of native species in understorey. No development threats.	Score 1-3
Risks	1. High risk - Not practical, no landowner support[5], no iwi support, substrate/soils not suitable for planting (e.g. dump site) 2. Moderate risk 3. Low risk – achievable, landowner support, iwi support.	Score 1-3
Ecological Connectivity	1. Isolated (more than 500m from a similar ecosystem type/area); 2. potential to increase connectivity through open space zoning; 3. stepping stone for wildlife (e.g. for bird species) 4. part of significant ecological corridor or buffering significant ecological area (e.g. peat lake, wetland)	Score 1-4
Catchment Services	Contribution to improving water quality, preventing soil erosion and sedimentation, or flood control: 1. Will not contribute to any of the following - either improving water quality, preventing soil erosion/sedimentation or provide flood control. 2. Will contribute to one of the following - improving water quality, preventing soil erosion/sedimentation or provide flood control. 3. Will contribute to two of the following - improving water quality, preventing soil	Score 1-4

---

[5] for example: time, resources, funding

	erosion/sedimentation or provide flood control. 4. Will contribute to all of the following - improving water quality, preventing soil erosion/sedimentation or provide flood control	
Total Score (Ecological values)		Total between 9 – 29. The higher the score, the higher the priority.

2. Māori cultural values score

Value	Measure	Criteria
Taonga tuku iho Abundance and procurement of resources	1. Absent 2. Rare/depleted 3. Abundant 4. Capacity to restore	All criteria considered as a whole. *Final score between 1-4*
Mātauranga-a-rohe (Site(s) specific knowledge and understanding)	1. Ability to access mātauranga Māori (inadequate, functional) 2. Ability to apply or exercise mātauranga Māori to resources (high, low) 3. Opportunities to exchange mātauranga Māori (inter-generational) (yes/no)	All criteria considered as a whole. *Final score between 1-3*
Mana whakahaere (Access to site(s) and taonga)	1. No access 2. Limited access 3. Open	*Final score between 1-3*
Tikanga-a-rohe (Traditional and customary use in accordance with tikanga) Includes ability to exercise cultural beliefs, values and practices	1. Taonga tuku iho 2. Mātauranga-a-rohe 3. Mana whakahaere	An accumulative score using previous measures ranging from 3 to 9, where 3=low and 9=high. For example a score of 3 implies that the ability to exercise traditional or customary use is limited *Final score between 3-9*
Total Score (Māori cultural values)		Total score

3. Local Community Involvement Score

Value	Measure	Score
Level of Community Participation	1. Nil – no community activity/interest; 2. moderate to low – occasional restoration activity from residents; 3. moderate – community restoration being undertaken but not part of restoration group; 4. High – organised community restoration group, school, support from agencies (Council, Project Watershed).	Score 1-4
Achievability of project for volunteer/community group, e.g. extent and difficulty of weed and pest control; availability of resources to do the work. Is the project 'do-able'?	1. Difficult – [6]would require contractors to undertake most of work, e.g. large amounts of weeds or difficult site to access (steep bank). Resources not available. 2. Moderate difficulty, resources sparse 3. Easy – can be undertaken by volunteers or landowners; resources available.	Score 1-3
Level of Maintenance/Monitoring	1. High level of maintenance required, e.g. weed species will require ongoing control, will require significant resources 2. Moderate level of maintenance 3. Easy to maintain restoration effort, e.g. few weed species present, compact site	Score 1-3
Recreational values	1. Low/ Nil access 2. moderate – limited access provided 3. High recreational access (e.g. boardwalks, paths throughout reserve); 4. Very High recreational connectivity – part of cycle way, extensive reserve network	Score 1-4
Educational values	1. No schools/education programmes involved 2. Moderate involvement of school(s), education institutes, kindergartens (at least one school)	Score 1-3

---

[6] dependent on community group expertise

	3. High educational involvement – e.g. local Enviroschools heavily involved in restoration (more than one Enviroschool involved)	
Total Score (Local Community Involvement)		Total score between 5-17

Overall Priority Score for Restoration Sites

Measure	Score
Ecological Priority Score PLUS	
Māori Cultural Values Score PLUS	
Local Community involvement score	
Total Priority Score	

Appendix 2: Top 10 Priority Sites – Draft List

Rank	Community	Score (out of 18)	Description	Ecological	Score (out of 37)	Description	Cultural	Total	Combined (Ecology and Community	Combined Score	Description
1	Waiwhakareke	16	Lots of people involved. Needs ongoing maintenance, will reduce once canopy grows	Waiwhakareke	36	Nationally rare planted restiad peatland. Successive plantings have taken place over the years and to date some 31 hectares have been planted (2016). Create pest free self-sustaining sanctuary that represents the original ecosystem of the Hamilton Basin			Waiwhakareke	52	See ecology and community descriptions
2	Te Papanui Claudelands Bush	16	High - organised longstanding community group. Jubilee Care Group; local residents. Restoration has been undertaken and requires ongoing maintenance, needs specialist knowledge	Te Papanui Claudelands Bush	29.5	Best and largest remnant alluvial plain forest in Hamilton City. Kahikatea forest once widespread but is now severely under-represented. Remnant in good health.			Te Papanui Claudelands Bush	45.5	See ecology and community descriptions
3	Seeley Gully	16	Largest privately restored gully in Hamilton City (gifted to HCC 2004, now A J Seeley Gully Reserve) and is also a very good example of regenerating native vegetation. Community Trust with aims of continuing restoration of gully. Introduction of rare and endangered plants, requires support for maintenance.	Seeley Gully	29	Kahikatea forest and raupō reed land are under-represented vegetation types in Hamilton City. Indigenous wetland habitat supporting a small patch of raupō. Largest privately restored gully in Hamilton City and is also a very good example of regenerating native vegetation.			Seeley Gully	45	See ecology and community descriptions

Rank	Community	Score (out of 18)	Description	Ecological	Score (out of 37)	Description	Cultural	Total	Combined (Ecology and Community	Combined Score	Description
4	Mangaiti Park	16	Very organised group (trust) but don't want to expand. Weed control, pest control, planting and building tracks and boardwalks. Working on defined area but needs to expand. Includes private landowners. Rototuna school, Hikinui school.	Forest Lake/ Minogue Park	29	Kahikatea forest under-represented. Indigenous wetland habitat. Lake Rotokaeo is the 2nd largest key site in Hamilton City. Healthy indigenous vegetation: Abundant regeneration of native vegetation at this site. Diverse riparian vegetation and third largest peat lake.			Mangaiti Park	44.5	See ecology and community descriptions
5	Hammond Park	15	Riverlea Environment Society, Residents, HCC, WRC. Very organised. Difficult access, river margins, steep. Management Plan. Part of extensive cycle network. University involved. Kindy. Lots of potential	Hammond Park	28.5	Best riverside forest with rare vegetation types for the Waikato. Supports the best example of kānuka dominated vegetation in southern Hamilton City. Kānuka forest is under-represented in Hamilton City. Vegetation type covers a relatively large area of riverbank and contributes to the connectivity of the native vegetation along this bank of the Waikato River.			Hammond Bush	43.5	See ecology and community descriptions
6	Gully near Hammond Bush 1	15	Great connection to river for swimming, utilised for running, walking cycling at present, path links to Hamilton Gardens and Peacocks subdivision in future. Local schools, kindergartens, University and Polytec students all utilise.	Mangaiti Park	28.5	Developed planted Carex dominated wetland and scrubland. Largest wetland. Wetlands are under-represented in Hamilton City. A relatively large area of native vegetation. Healthy, wetland system. Largest Astelia grandis population. Part of significant ecological corridor in Kirikiriroa Gully and along river			Lake Rotokaeo Forest Lake/ Minogue Park	41	See ecology and community descriptions

Rank	Community	Score (out of 18)	Description	Ecological	Score (out of 37)	Description	Cultural	Total	Combined (Ecology and Community	Combined Score	Description
7.	Hillcrest Kahikatea	15	High potential as ecological seed source, good access for all ages of children from kindergarten to college. Local scout group has a hall in middle of stand, local rare long tailed bats frequent site, bat houses installed by WINTEC arboriculture students, scouts and enviro school projects from time to time. High value for local residents as off road access, good boardwalk and connecting street pathways, links to local sports groups, and residential properties surrounding bush block.	Mangaonua Esplanade	28	Large area of indigenous forest. Mangaonua Gully system contains the most key sites of all gullies. Long tailed bat passage. Supports healthy indigenous vegetation with regeneration. Linkage with other native vegetation, corridor along Mangaonua gully. Large kahikatea. Second largest Astelia grandis population.			Lake Rotoroa Hamilton Lake	40	See community description. Largest peat lake. The tōtara forest and mixed native forest type are under-represented in Hamilton City. Significant regeneration and representation of native species attests to the health of the plantings. Many of the marginal lake vegetation communities are under-represented in Hamilton City.
8	Grove Park Kahikatea	15	The stand is over 50 remnant kahikatea that were in poor health, fenced off and edges planted by community (neighbours Frankton School), ongoing small infill plantings. Utilised by local neighbourhood children for uncontrolled play. Good link for historic investigation and plant studies, small site limits potential.	Te Awa O Katapaki Esplanade	28	Third largest key site within Hamilton and the largest within a gully system. Significant natural regeneration. This site helps with connectivity in Hamilton's gully systems, and with the nearby Waikato River			Gully near Hammond Bush 1	39	See community description. Connected to Hammond Bush making it an important area for extending ecological corridors and for buffering this highly ecologically significant site.
9	Hamilton Lake (Lake Rotoroa)	13	Lots of volunteers for planting but not weeding. High recreation value. University research.	Hamilton Gardens	27.5	Under-represented vegetation types in Hamilton City (kamahi-mamaku forest). Best examples (in terms of health and representativeness) of riverside forest in Hamilton City.			Hillcrest Kahikatea	39	See community description. Third largest kahikatea forest. Kahikatea forest is under-represented in Hamilton City. Healthy forest stand with native dominant understorey.

Rank	Community	Score (out of 18)	Description	Ecological	Score (out of 37)	Description	Cultural	Total	Combined (Ecology and Community	Combined Score	Description
10	Grove Park	13	Smallest kahikatea forest (50 remnant trees). Kindy, local residents, school (no trust) involved. Fenced, planted edges, infill planting	Kirikiriroa Gully, Harrowfield, Riverbank North	27.5	Best and only example of māhoe-patē forest in the northern half of Hamilton City. Regenerating. A relatively large area of native vegetation. Provides connectivity within the Kirikiriroa Gully system. Part of significant ecological corridor to east and along river			Lake Rotokauri	38	Largest of more than 40 lakes between Te Kauwhata and Te Awamutu. Good community involvement, e.g. Fish and Game, Waikato District. Not functional group yet. Structure Plan developed with community consultation.
11	Lake Rotokaeo Forest Park/ Minogue Park	12	Restoration started by local resident and now being finished by Forest Lake School. Restoration of lake and margins continues with community involvement. Some effective control for young alder & willow trees. Boardwalk, recreation & community use, Sports events, playground.								

Local Indigenous Biodiversity Strategy

Hamilton Pilot Project

Project Management Plan Template

Name of Project:

Prepared

By: --------------------   ----------------------

                  --------------------   -----------------------

                  --------------------   -----------------------

Date: --------------------

1. **Introduction**

Restoring and enhancing biodiversity within Hamilton City is critically important. At least 10% of remnant habitat cover is needed across a landscape in order to protect biodiversity and to maintain functions of ecosystems. Only 1.5% of Hamilton City is covered by ecologically significant land. Hamilton City will need to keep maintaining and restoring sites as well as enhance significant natural areas to cover a variety of landforms and vegetation types within Hamilton City.

This Project Management Plan is about assisting with the restoration and enhancement of biodiversity within Hamilton.

2. **Care Group Name**

3. **Trust, Society or Company Details**

4. **Background to the Trust, Society or Company Details**

5. **Contact Details**
    a. Postal address
    b. Email
    c. Phone

6. **Property Description**

7. **Identify land ownership to the Stream/Gully/Area for Restoration and show on a map**

8. **Objectives –** identify what the proposal is about – eg to remove woody weeds, construct fencing and to establish native plants to restore a steep sided gully and associated riparian wetlands within the upper reaches of Jo Bloggs Stream with the primary objective of:
    a. Improving local and downstream water quality and biodiversity values by shading the stream and tributary drains to reduce summer water temperatures and reducing localised areas of bank stream erosion
    b. Replacing willow and woody weed species with appropriate indigenous riparian vegetation to enhance the biodiversity of Hamilton

9. **To achieve the objectives the following works will be required:**
    a. --------
    b. --------
    c. -------
    d. --------
    e. -------

10. **Background to the Stream/Gully/Area for Restoration**

Describe the area for restoration

11. Map the area to be restored showing areas to be worked on each year

12. Insert photos of the areas to be restored

13. Description of Issues and Proposed Solutions

14. Identify the works to be taken each year in a table

Year 1		Year 2		Year 3	
Works	Costs	Works	Costs	Works	Costs

List Assumptions for above eg:

- Woody weed control per m2
- cost per m2 weed control
- fencing costs
- native plants and planting per m2
- Plant maintenance

15. Responsibilities

Outline the on-going responsibilities of the landowner/Trust/Society

Eg: fencing, vegetation, grazing management, pest control

16. On-going Monitoring

17. Risks

Appendix 4: Framework for LIBS Monitoring in Hamilton City, including methods

Level	Ecosystem Service	Measure	Method	Frequency/ Timing	Who by?	Community involvement
City wide						
Indigenous vegetation cover	Provisioning of habitat Soil formation and retention Erosion regulation Carbon storage Water and air purification Nutrient cycling Social and cultural benefits	- Percentage cover - Percentage cover of depleted ecosystems	- Bioveg 1:15,000 scale?) (10% target) - Systematically map vegetation/gullies and classify (%native, %exotic)	5 yearly	HCC, WRC, use summer students to classify gully systems	
Significant Natural Areas/ Key sites	Provisioning of habitat Soil formation and retention Erosion regulation Carbon storage Water and air purification Nutrient cycling Social and cultural benefits	Regular check – are they still there? Condition/health	Aerial photos – check if still present Permanent vegetation plots (I Tree method)	5 yearly	University, students	
Viable populations of Iconic Species						
Birds	Provisioning of habitat Pollination	Bird abundance Presence/absence Breeding success	5-minute bird counts; fledging success; surveys of species (playing bird calls); nest monitoring	biennial	LCR, part of existing monitoring programme and Peoples+Cities+Nature research programme	Yes – bird surveys, Garden bird survey

Level	Ecosystem Service	Measure	Method	Frequency/Timing	Who by?	Community involvement
Bats	Provisioning of habitat Pollination	Presence/absence Habitat suitability	Bat detectors – each site surveyed once for five consecutive nights Habitat heat maps Retention of large old trees (native and exotic) – regular check of Tree Schedule	annual	Project Echo	Volunteer support – data collection
Plants	Provisioning of habitat Soil formation and retention Carbon storage Water and air purification	Change in population of iconic species (swamp maire)	Population count – numbers of individuals (trees, saplings, seedlings) Increasing, declining, stable population (expand to include plantings)	5-yearly	Population survey by students	Yes – supplementary data
Streams/ waterways - Freshwater fish	Provision of habitat Nutrient and water cycling Flood control Erosion regulation	Giant kōkopu presence, abundance, spawning sites Increased site connectivity through riparian planting	Spotlighting, otolith microchemistry, netting, instream habitat creation Minnow traps	Annual	NIWA Streamcare groups Catchment Management Plans HCC, WRC - Monitoring of stormwater consents (e.g. for riparian planting)	yes

Level	Ecosystem Service	Measure	Method	Frequency/Timing	Who by?	Community involvement
Cultural	Cultural services – ethical, spiritual, well-being, mauri	Mātauranga Māori tool	Success of involvement Kaitiakitanga Cultural health indicators (e.g.) - food procurement (mahinga kai) - natural productivity (hua o te whenua) - nature of water (āhua o te wai) - nature of land (āhua o te whenua) - nature of the forest (āhua o te ngahere) - spiritual dimension (taha wairua) - physical health (taha kiko-kiko) mental health (taha hinengaro)		HCC, WRC, iwi	yes

Appendix 5: Stakeholder Register

Stakeholder	Project Interest
Waikato Tainui	Iwi Environmental Management plan shared outcomes. Delivery with marae partnerships.
Te Ha o te Whenua o Kirikiriroa (THAWK)	Oversight of hapū-based engagement in the pilot project and guidance around process.
Ngāti Wairere	Key Hapū for Hamilton City. Holistic approach to LIBS pilot aligns with Hapū worldview. Delivery of co-management at place aligned to Treaty Settlement timeframe.
Ngāti Mahanga	Hapū with overlapping interest in Hamilton City and biodiversity restoration.
Ngāti Hauā	Hapū with overlapping interest in Hamilton City and biodiversity restoration, especially around the Mangaonua gully.
Ngāti Korokī Kahukura	Hapū with overlapping interest in Hamilton City and biodiversity restoration.
Ngāti Tamainupo	Hapū with overlapping interest in Hamilton City and biodiversity restoration.
Waikato Regional Council – (WRC)	Location and community networks. Interest is more in location than topic.
Central Zone Catchment Committee - WRC	Interest will potentially be higher due to landowner & stakeholder involvement on this committee. Provides a conduit for information sharing across various levels, including into the community, hapū such as Ngāti Wairere & Ngāti Kahukura, agencies (staff & political) and can provide champions for the pilot and the programme going forward. Also links directly into WRC catchment management and delivery.
Hamilton City Council	Project Partner to achieve Biodiversity Goals
Hamilton City Council Key Staff	Staff buy-in and co-ordination, especially Parks & Open Spaces. Engagement through the pilot will include key messaging around partnering for the LIBS programme and adding value to existing projects or programmes.
Department of Conservation (DOC)	Whilst the Pilot is not a current priority for DOC & resources are limited. Engagements through pilot will future-proof connection to LIBS where programme priorities more strongly intersect.
Relevant Parties from RPS appeals process: Mercury, Contact Energy, Trustpower, Genesis	The LIBS process was key in getting sign-off from the parties as part of the appeals to the RPS. Though interest is relatively low these parties may be interested in the pilot project and its outcomes.

Environmental Defence Society (EDS)	Strong interest around biodiversity management. Key influence EDS has is in sharing information through their networks which are extensive and influential. Ability to disseminate learning of pilot and share is key opportunity. Actual engagement with pilot is limited.
Federated Farmers (FF)	The focus of the pilot is on engagement, however FF are important in assisting and providing support for the grass roots approach, providing links to Healthy Rivers process & outcomes and bringing more credibility to the project.
Fonterra	Focus for pilot will be supporting landowner (sector) requirements identified in needs assessment. Alignment around improved on farm environmental (biodiversity) performance and meeting industry standards, resource sharing and potential models for integrated delivery vis LIBS programme. Important to set up partnership approach to assist with the delivery of LIBS programme.
Ngā Whenua Rāhui	Interest in biodiversity intersects with pilot on Māori land. Interest is high and influence, especially in delivery as part of LIBS programme, is also high. For purposes of the pilot want to engage with key messaging around partnering for LIBS programme.
Queen Elizabeth II National Trust	Interest in biodiversity intersects with pilot on private land. Interest is high and influence, especially in delivery as part of LIBS programme, is also high. For purposes of the pilot want to engage with key messaging around partnering for LIBS programme.
Hamilton City Gully Restoration Groups	These are landowners/ land managers who are already undertaking biodiversity enhancements and environmental improvements as part of their business. They represent the positive agents of change who can influence their peers and provide guidance as to how other key stakeholders can assist further eco enhancement.
Brian Perry Charitable Trust	There is a strong overlap between recreation and tourism goals of the river trails and ecological restoration and enhancement via networks. Power and interest likely to be medium at this stage – need to engage as part of workshop looking at scaling up existing projects and linking eco networks and recreation/biking networks together. Interest and investment in bike trails is gaining traction rom TA's and a good way to integrate eco restoration into these. Look at AIP moving into LIBS programme of delivery.
Te Awa River Trails	As above
WINTEC	Interest is more likely medium – there is interest (based on contact with Catchment Officer) in linking into social enterprise and workforce/training components. More targeted at delivery and setting up process for this to occur Vis LIBS programme.
WINZ	Possibilities for resourcing for restoration projects and support communities
Enviroschools – Toimata Foundation	Power to influence is medium though existing links with enviro schools are in place and can be further enhanced.
Greenfleet	Power to influence is likely to be medium. Potential to provide economic incentive for restoration linked to carbon offsetting requirements of business. Interested in land "pipeline" with which to match corporate clients.
Ngāti Hauā Mahi Trust	Power to influence more likely to be medium. Important part of any social enterprise, esp around linking ongoing planting and maintenance to education, training and employment. Options around scaling up.

Waikato Biodiversity Forum	Strong alignment of interest around biodiversity co-ordination. Important information around biodiversity networks and contacts and experience in bringing people together.
Tourism Waikato	There is a strong overlap between recreation and tourism goals of the river trails and ecological restoration and enhancement via networks. Power and interest likely to be medium at this stage – need to engage as part of workshop looking at scaling up existing projects and linking eco networks and recreation/biking networks together.
Waikato University – Predator Free Hamilton	Interest in biodiversity intersects with Predator Free Hamilton. Interest is high and influence, especially in delivery as part of LIBS programme, is also high. For purposes of the pilot want to engage with key messaging around partnering for LIBS programme.
Landcare Research	Research – align biodiversity research by directly applying in the field.
AgResearch	Research – align biodiversity research by directly applying in the field.
Trust Waikato & Momentum Foundation (plus others)	Need to be able to tell the story about the pilot process and approach that highlights the step change that it can provide and the way it connects environment and community. Ongoing and lasting funding of work programme that falls out of pilot programme could depend on large scale funding from the sector.
Fairfield Project	Strong interest with biodiversity and holistic approach to community connectedness.
Peacocke Landowner	Passionate eco restoration supporter and farmer in the Peacocke area
NZ Transport Agency	Interest in providing ecological corridors as part of the development of infrastructure
Waikato Catchment Ecological Trust	Interest in providing funding for habitat enhancement projects linked to the Waikato River.
Waikato/Tainui Partnership	Potential overlap of ecological restoration and the health and wellbeing of the Waikato River (Vision and Strategy).
Ministry of Education	Potential for integration of biodiversity restoration into education curriculum more broadly (than enviro schools programme).
Hamilton Cycle Action Group and Bike On Trust	Interest in potential for overlap between recreation and ecological networks.
Environment Centre	Important source of environment-based information and conduit for links to key contacts.
Sky City Trust	Interest in funding community-based projects.
Trust Waikato	Interest in funding and supporting community and environmental projects.

Local Indigenous Biodiversity Strategy (LIBS)

DRAFT BRAND STRATEGY

A brand is more than a logo, name or slogan – it's the entire experience your audience has with your company, product or service. Your brand sets the promise you make to your audience and your reputation is how you deliver on that promise.

To gather ideas and information to form this strategy, two workshops were run; one with the advisory group and one with the student council from Rhode Street School.

From these workshops, three themes became apparent for the purposed of this brand strategy: locality, environment and inspiration.

Purpose/Mission – why we exist

To increase biodiversity throughout Hamilton and create a programme the community can take ownership of and generate a sense of excitement.

Brand position statement – how we want to be perceived and make people feel/think

An empowering and inspiring initiative positively changing Hamilton's natural landscape making the community proud and wanting to be involved.

Unique Value proposition – what makes us different

Hamilton is New Zealand's largest inland city with a broad spread of natural assets including the Waikato River and gully systems.
There is strong influence from Waikato Tainui – mana whenua – as well as the current pockets or successful projects already underway in the city.
Waikato Regional Council and Hamilton City Council are committed to supporting the community lead the project.

Why you can believe our claims – proof supporting our proposition

The project is backed by the Waikato Regional Council and Hamilton City Council who have a genuine want to be supportive.
The pilot project run in a neighbouring area was a success.

Brand attributes – what reflects the brand's belief system and personality

It's important the brand embraces being environmentally-friendly, versatile, easy to use and understand, and distinctly Hamilton.
Emotional connection is vital to express through all aspects of the brand to enhance the sense of pride and ownership.

High-level tone for the brand's messaging and visual components:
- Positive
- Inspirational
- Personal and relatable
- Simple and easy to understand

Local Indigenous Biodiversity Strategy (LIBS)

DESIGN BRIEF

GENERAL INFORMATION

CLIENT*	Hamilton City Council – Paula Rolfe Waikato Regional Council – Matthew Vare
KEY CONTACT (for job)	
DEADLINE	*Note: Designer to advise on achievable date for first proof of logo concepts*

DESIGN REQUIREMENTS

JOB	Logo creation and associated look and feel for Boost Natural Hamilton. • Logo • Fonts and colours • Associated graphics • Poster template for information and events • Web banners • Video template (intro, outro and captions) • Guide for use Please start with a couple of logo concepts based on the information below. Once the logo is approved, the additional tactics can be developed.
OBJECTIVE	Create a look and feel for Boost Natural Hamilton which embraces the brand's positing statement: • An empowering and inspiring initiative positively changing Hamilton's natural landscape making the community proud and wanting to be involved. Make the content/designs easy to use for people, community groups and schools who may not have access to design software. Incorporate Te Reo with respect and cultural consideration given to mana whenua.
TARGET AUDIENCE	Hamilton-based schools, community groups, land owners who have an interest or are currently involved in environmental restorative work.

	Hamiltonians who wouldn't traditional be involved, care about or see the importance in environmental restorative work.
TONE	High-level tone for the brand's messaging and visual components: • Positive • Inspirational • Personal and relatable • Simple and easy to understand
MANDATORIES (Items which must be included in the job)	**Logo information:** **Official name -** Naturally Boost Hamilton **Tag line -** Restoring nature, connecting communities
	Unique visual elements to take into consideration: • Waikato River • Gullies • City scape • Kōwhai • Tūī • Bellbird
	The associated collateral should also include the Waikato Regional Council and Hamilton City Council's logos.
APPROVAL	Hamilton City Council – Paula Rolfe Waikato Regional Council – Matt Vare The Biodiversity Advisory Group.
FINAL ARTWORK FILES	Final design files (including working files) need to be supplied to both Waikato Regional Council and Hamilton City Council

9. References

Belton, O. (2018). *Opportunities for Carbon Forestry on Hamilton City Council Land.* Report prepared for Hamilton City Council, Hamilton, New Zealand.

Boyce, W., Rolfe, P, Vare, M. (2017). *Implementing the Local Indigenous Biodiversity Strategy in Hamilton City: A Scan of Existing Information.* Report prepared for Hamilton City Council and Waikato Regional Council, Hamilton, New Zealand.

Clarkson, B.D., Clarkson B.R., Downs, T. M. (2007). *Indigenous Vegetation Types of Hamilton Ecological District*. CBER Contract Report 58, Centre for Biodiversity and Ecology Research, Department of Biological Sciences, The University of Waikato, Hamilton.

Cornes, T.S, Thomson, R.E., Clarkson, B.D, (2012). *Key Ecological Sites of Hamilton City – Volume 1.* CBER Contract Report 121.

De Lange, P. J. (1996). *Floristics and microclimate of Hammond Bush, a Hamilton basin forest remnant.* Wellington Botanical Society Bulletin 47: 63–80.

Green, J. D., Lowe, D. (1985). *Stratigraphy and development of c. 17 000 year old Lake Maratoto, North Island, New Zealand, with some inferences about postglacial climatic change*. New Zealand Journal of Geology and Geophysics 28: 675–699.

Leathwick, J.R., Clarkson, B.D., Whaley, P.T. (1995). *Vegetation of the Waikato region: current and historical perspectives. Landcare Research contract report LC9596/022.*

Leathwick, J. R. (2016a). *Notes on lowland indigenous forest remnants on the alluvial flood-plains of the Waihou-Piako Zone, Waikato*. Unpublished report to the Waikato Regional Council.

Leathwick, J.R. (2016). *Opportunities for conservation of primary indigenous-dominated ecosystems in the central Waikato zone.* Report prepared for Waikato Regional Council and Hamilton City Council, Hamilton, New Zealand.

Myers, S. (2017). *Methodology for Prioritising Sites for Restoration in Hamilton City.* Report for Hamilton City Council and Waikato Regional Council.

Singers, N. J. D. unpublished. *Potential Vegetation of the Waikato Region (2014)*. Updated in 2015 and based upon N J D Singers & G M Rogers (2014). A classification of New Zealand's terrestrial ecosystems. Science for Conservation 325. Department of Conservation, Wellington.

Tamarack Institute, (2017). *Collective Impact Framework.* (*http://www.tamarackcommunity.ca/collectiveimpact*)

Trower, S. (2018). *Cultural Values of Indigenous Biodiversity in Hamilton – An Annotated Bibliography.* Report for Waikato Regional Council and Hamilton City Council.

Waikato Regional Council, Hamilton City Council. *GIS layers.*

Waikato Regional Council. (2014). Waikato Regional Council, Biodiversity Vegetation (BIOVEG), Version 2012, 1:10,000. Waikato Regional Council, October 2014.