Appendix D Badham and Warren s32 Documents

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23 March 2018

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Attention: Proposed Regional Plan for Northland Hearing Panel

Proposed Regional Plan for Northland – Response to Hearings Panel Minute No.1 dated 30 January 2018 on behalf of Whangarei District Council and Far North District Council

On behalf of Whangarei District Council and Far North District Council, please find attached the following documents:

- Section 32 Evaluation for GMO provisions in the pRPFN.
- Attachment 1 – Proposed GMO provisions in the pRPFN.

We have provided both PDF and Word copies of these documents so that they are easily annotated by members of the Hearings Panel.

These documents are provided in response to the Hearings Panel minute No.1 dated 30 January 2018. Minute 2 provided an updated deadline of 4pm 23 March 2018.

If you require any further information or clarification regarding the attached documents, please do not hesitate to contact me directly in the first instance. Otherwise, we trust that we have provided all necessary information to respond to the request in minute 1 from the Hearings Panel.

Ngā Mihi,

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Genetically Modified Organisms (GMOs) – Section 32 Evaluation Report

Prepared for Whangarei District Council and Far North District Council

Executive Summary

The proposed Regional Plan for Northland ('**pRPFN**') was publicly notified and did not include any provisions to regulate Genetically Modified Organisms ('**GMOs**'). This includes the management of GMOs in the Coastal Marine Area ('**CMA**'). This was despite opposition from members of the Te Tai Tokerau Māori Advisory Working Party and significant interest from other members of the public through the consultation on the draft regional plan.[1] No section 32 evaluation was provided by Northland Regional Council ('**NRC**') to justify the decision to not regulate GMOs in the pRPFN.

Whangarei District Council ('**WDC**') and Far North District Council ('**FNDC**') along with a number of other submitters made submissions regarding the non-inclusion of GMO provisions in the pRPFN. The Hearing Panel issued Minute 1 on 30 January 2018 which requested that section 32 Evaluations be prepared for provisions which were not assessed by NRC. Accordingly, this section 32 evaluation considers options for provisions for the management of GMOs in the CMA within the pRPFN.

There is jurisdiction under the Resource Management Act 1991 ('**RMA**') to manage GMOs. This has been confirmed by decisions from the Environment Court and High Court. The Proposed Regional Policy Statement ('**Proposed RPS**') includes provisions for the management of GMOs that are subject to appeal. Proposed Policy 6.1.2 of the RPS adopts a precautionary approach to the management of GMOs. Further, Auckland Council has adopted a precautionary approach to GMOs in the Auckland Unitary Plan, with these provisions being included in the recommendation of the Auckland Unitary Plan Independent Hearing Panel (chaired by Judge Kirkpatrick). WDC and FNDC have also adopted a precautionary approach to GMOs in their district plans via PC18 and PC131, which are currently subject to appeals.

The resource management issue to be addressed is that there is scientific uncertainty regarding the potential environmental effects of the use and discharge of GMOs within the CMA. GMOs may adversely affect the environment, economy, and social and cultural resources and values, and could result in significant costs.

Consideration has been given to the appropriateness of objectives for the management of GMOs in the pRPFN. The pRPFN currently only includes one objective in F.0.1 which effectively repeats the sustainable management purpose of the Act in section 5. It is considered that objectives should be included for the management of GMOs and two objectives have been proposed as outlined in **Attachment 1**. These proposed Objectives are considered the most appropriate to achieve the Part 2 purpose of the RMA.

Four management options have been identified and assessed in terms of their efficiency and effectiveness for achieving the proposed Objectives:

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[1] A summary of the feedback on the draft regional plan can be found here: https://www.nrc.govt.nz/contentassets/506f48db06744ab782c65e56acd19dde/draft-plan-submission-summary-v4.pdf 47 submissions were made regarding the non-inclusion of GMO provisions. These are summarised on page 126 of the summary document.

- Option A – Status Quo (no specific regulation)
- Option B – Control of GMOs in the CMA consistent with the Auckland Unitary Plan Approach.
- Option C – Control of GMOs to prohibit all use of GMOs within the CMA.
- Option D – Control of GMO Discretionary Consent for Release.

Management Option B is the preferred approach. The proposed provisions under this option are summarised below and detailed in **Attachment 1**:

GMO activities[2] not specifically provided for or prohibited in the CMA.	GMO field trials within the CMA (including any associated structure)	Use of GMO veterinary vaccine subject to specified requirements	Use of GMO veterinary vaccine not meeting specified requirements.	GMO releases (food and non-food related)– within the CMA (including any associated structures) except as specifically provided for.
Permitted	Discretionary	Permitted	Discretionary	Prohibited

Option B ensures consistency between the planning provisions of the various councils and adopts an adaptive management approach to GMOs in the CMA that adequately addresses the scientific uncertainty and potential for significant adverse effects on the environment, economy and social and cultural well-being. On this basis it is considered that Management Option B is the most efficient and effective option for achieving the proposed Objectives.

Background

In 2003, Northland Regional Council, Whangarei District Council, Far North District Council, and Auckland Council, formed an Inter-Council Working Party on GMO Risk Evaluation and Management Options ('**The Working Party**') in response to significant community concerns regarding the outdoor use of GMOs. As part of its investigations, the Working Party commissioned a number of reports to investigate the risks and benefits of GMOs, along with a comprehensive survey by Colmar Brunton to gauge public support for local or regional management of GMOs in July and August 2009. Since then, other councils within the Working Party, namely Auckland Council, Whangarei District Council and Far North District Council, have undertaken plan changes to include provisions in their planning documents to regulate the outdoor use of GMOs. All three councils have sought to prohibit the release of GMOs on land and made field trials a discretionary activity with performance standards in regard to liability and the posting of bonds. Auckland Council (as a Unitary Authority) has also sought to prohibit the release of GMOs in the CMA and made field trials within the CMA a discretionary activity with performance standards in regard to liability and the posting of bonds. Planning provisions relating to Whangarei District Council and Far North District Council and Auckland Council are all currently subject to appeals.

[2] Including research within contained laboratories, medical applications, and veterinary applications involving use of non-viable genetically modified products.

Relevant Provision

The pRPFN does not currently have any provisions relating to GMOs. Due to unresolved appeals on the GMO provisions in the proposed RPS, NRC reserved its decision on whether to include provisions that regulate GMOs in the plan, with the intent that these could be added later by way of a plan change if necessary.

To maintain consistency with other member councils on the Working Party and in anticipation of operative precautionary provisions in the RPS, Whangarei District Council and Far North District Council submitted on the pRPFN seeking that the Council should include provisions relating to GMOs in the CMA.

Legal Background

Resource Management Act 1991

Section 6(a) in Part 2 of the Resource Management Act 1991 ("**RMA**") requires that "the preservation of the natural character of the coastal environment (including the coastal marine area), wetlands, and lakes and rivers and their margins, and the protection of them from inappropriate subdivision, use, and development" be recognised and provided for as a matter of national importance. Section 7 requires that particular regard is given to kaitiakitanga; the ethic of stewardship; intrinsic values of ecosystems; maintenance and enhancement of the quality of the environment; protection of the habitat of trout and salmon; and the effects of climate change.

Section 12 of the RMA sets out restrictions on use of the CMA. The general presumption is that resource consent is required (coastal permit) to undertake any activities (such as the placement of a structure, the disturbance of foreshore or seabed or reclaiming or draining the foreshore) unless the activity is expressly allowed by a National Environmental Standard ("**NES**") or a rule in a Regional Coastal Plan.

Section 15(1) of the RMA sets out that no person may discharge any contaminant into water unless expressly allowed by a NES, rule in a regional plan or proposed regional plan, or a resource consent.

Section 67(3) requires a regional plan to give effect to any national policy statement, New Zealand coastal policy statement, national planning standard, and any regional policy statement.

Section 66(2) requires that when Council is preparing a regional plan, they should "have regard" to any proposed regional policy statement; the Crown's interests in the CMA; any management plans or strategies prepared under other Acts; regulations relating to ensuring sustainability of fisheries resources; and the extent to which the regional plan needs to be consistent with the plans of other adjacent regional councils. The Proposed RPS includes policy 6.1.2 which adopts a precautionary approach towards the effects of introducing GMO into the environment where they are scientifically uncertain, unknown, or little understood, but significantly adverse. Auckland Council (the adjacent unitary authority) also contains similar provisions promoting a precautionary approach to the management of GMOs.

Section 66(2A) requires that the council take into account any relevant planning document recognised by an iwi authority, to the extent that their content has a bearing on the resource management issues of the region.

These documents are addressed in the 'planning documents' section below.

Hazardous Substances and New Organisms Act 1996

Councils have jurisdiction under the RMA to set rules for GMOs that act in addition to those that may be set under the Hazardous Substances and New Organisms Act 1996 ("**HSNO Act**") or by the Environmental Protection Authority ("**EPA**"), through inserting provisions into the District / Regional Plan pursuant to sections 66 and 74 of the RMA. There is nothing in the HSNO Act to preclude a local authority imposing greater levels of control in its District / Regional Plan for RMA purposes than those imposed by the EPA under the HSNO Act. The preparation of a section 32 report is therefore entirely appropriate to evaluate possible local/regional management of outdoor GMOs.

The purpose of the HSNO Act are set out in sections 4, 5 and 6. These sections are as follows:

> *4 Purpose of Act*
>
> *The purpose of this Act is to protect the environment, and the health and safety of people and communities, by preventing or managing the adverse effects of hazardous substances and new organisms.*
>
> *5 Principles relevant to purpose of Act*
>
> *All persons exercising functions, powers, and duties under this Act shall, to achieve the purpose of this Act, recognise and provide for the following principles:*
>
> *(a) the safeguarding of the life-supporting capacity of air, water, soil, and ecosystems:*
>
> *(b) the maintenance and enhancement of the capacity of people and communities to provide for their own economic, social, and cultural well-being and for the reasonably foreseeable needs of future generations.*
>
> *6 Matters relevant to purpose of Act*
>
> *All persons exercising functions, powers, and duties under this Act shall, to achieve the purpose of this Act, take into account the following matters:*
>
> *(a) the sustainability of all native and valued introduced flora and fauna:*
>
> *(b) the intrinsic value of ecosystems:*
>
> *(c) public health:*
>
> *(d) the relationship of Maori and their culture and traditions with their ancestral lands, water, sites, waahi tapu, valued flora and fauna, and other taonga:*
>
> *(e) the economic and related benefits and costs of using a particular hazardous substance or new organism:*
>
> *(f) New Zealand's international obligations.*

The purpose of the RMA is set out in section 5.

> *5 Purpose*
>
> *(1) The purpose of this Act is to promote the sustainable management of natural and physical resources.*
>
> *(2) In this Act, sustainable management means managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural well-being and for their health and safety while—*

(a) *sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and*

(b) *safeguarding the life-supporting capacity of air, water, soil, and ecosystems; and*

(c) *avoiding, remedying, or mitigating any adverse effects of activities on the environment.*

The RMA also provides communities with the ability to set rules that embody community determined outcomes, including the level of risk it is willing to accept with respect to activities such as the management of GMOs. Further, Council, under section 35 of the RMA, has a duty to undertake monitoring and may set conditions to provide for monitoring at the cost of the applicant. The functions of the EPA under the HSNO Act are different from those for regional authorities under section 30 of the RMA.

Overall, it is concluded that the relevant RMA provisions are not in conflict with those of the HSNO Act and the two statutes can operate side by side and complement each other, rather than duplicate functions. The HSNO Act and the RMA have different purposes and roles in relation to GMOs. The HSNO Act's purpose and role is to assess new organisms (including GMOs) for approval (or not) for introduction into New Zealand. Once released in New Zealand, they are no longer considered new organisms and the HSNO Act has no further role. The RMA, on the other hand, is a comprehensive statute that regulates the use of all natural and physical resources in an integrated manner over time so as to achieve the sustainable management of those resources. Natural and physical resources, as defined in the RMA, encompasses GMOs. Such a function includes regional and district considerations and responses.

Jurisdiction to Regulate GMOs under the RMA

The management of GMOs under the RMA has been subject to a number of appeals.

The Proposed RPS GMO provisions were appealed to the Environment Court. A preliminary hearing concerning jurisdiction took place in 2015 and a decision supporting jurisdiction to manage GMOs under the RMA was delivered by the Environment Court in May 2015. Federated Farmers appealed this decision to the High Court on points of law. A decision from the High Court was issued in September 2016 which reaffirmed jurisdiction to manage GMOs under the RMA. This was subsequently appealed again to the Court of Appeal, but this appeal was withdrawn in November 2017. As such it has been determined through the Courts that local authorities do have jurisdiction under the RMA to regulate GMOs in planning documents.

Planning Documents

New Zealand Coastal Policy Statement

Section 67(3) requires a regional plan to give effect to any national policy statement and New Zealand coastal policy statement. National policy statements are instruments issued under section 52(2) of the Resource Management Act 1991 and state objectives and policies for matters of national significance. Under the RMA, the only mandatory national policy statement is the New Zealand Coastal Policy Statement (**"NZCPS"**). Its purpose is to state policies in order to achieve the purpose of the Act in relation to the coastal environment of New Zealand.

The relevant policy in the NZCPS that are directly relevant to GMOs are Policy 2 and 3:

Policy 2 The Treaty of Waitangi, tangata whenua and Māori heritage

In taking account of the principles of the Treaty of Waitangi (Te Tiriti o Waitangi), and kaitiakitanga, in relation to the coastal environment:

(a) recognise that tangata whenua have traditional and continuing cultural relationships with areas of the coastal environment, including places where they have lived and fished for generations;

(b) involve iwi authorities or hapū on behalf of tangata whenua in the preparation of regional policy statements, and plans, by undertaking effective consultation with tangata whenua; with such consultation to be early, meaningful, and as far as practicable in accordance with tikanga Māori;

(c) with the consent of tangata whenua and as far as practicable in accordance with tikanga Māori, incorporate mātauranga Māori1 in regional policy statements, in plans, and in the consideration of applications for resource consents, notices of requirement for designation and private plan changes;

(d) provide opportunities in appropriate circumstances for Māori involvement in decision making, for example when a consent application or notice of requirement is dealing with cultural localities or issues of cultural significance, and Māori experts, including pūkenga2, may have knowledge not otherwise available;

(e) take into account any relevant iwi resource management plan and any other relevant planning document recognised by the appropriate iwi authority or hapū and lodged with the council, to the extent that its content has a bearing on resource management issues in the region or district; and

> *(i) where appropriate incorporate references to, or material from, iwi resource management plans in regional policy statements and in plans; and*
>
> *(ii) consider providing practical assistance to iwi or hapū who have indicated a wish to develop iwi resource management plans;*

(f) provide for opportunities for tangata whenua to exercise kaitiakitanga over waters, forests, lands, and fisheries in the coastal environment through such measures as:

> *(i) bringing cultural understanding to monitoring of natural resources;*
>
> *(ii) providing appropriate methods for the management, maintenance and protection of the taonga of tangata whenua;*
>
> *(iii) having regard to regulations, rules or bylaws relating to ensuring sustainability of fisheries resources such as taiāpure, mahinga mātaitai or other non commercial Māori customary fishing; and*

(g) in consultation and collaboration with tangata whenua, working as far as practicable in accordance with tikanga Māori, and recognising that tangata whenua have the right to choose not to identify places or values of historic, cultural or spiritual significance or special value:

> *(i) recognise the importance of Māori cultural and heritage values through such methods as historic heritage, landscape and cultural impact assessments; and*
>
> *(ii) provide for the identification, assessment, protection and management of areas or sites of significance or special value to Māori, including by historic analysis and*

archaeological survey and the development of methods such as alert layers and predictive methodologies for identifying areas of high potential for undiscovered Māori heritage, for example coastal pā or fishing villages.

Policy 3 Precautionary approach:

(1) Adopt a precautionary approach towards proposed activities whose effects on the coastal environment are uncertain, unknown, or little understood, but potentially significantly adverse.

(2) In particular, adopt a precautionary approach to use and management of coastal resources potentially vulnerable to effects from climate change, so that:

(a) avoidable social and economic loss and harm to communities does not occur;

(b) natural adjustments for coastal processes, natural defences, ecosystems, habitat and species are allowed to occur; and

(c) the natural character, public access, amenity and other values of the coastal environment meet the needs of future generations.

Proposed Regional Policy Statement

The operative RPS does not contain provisions relating to GMOs. However, following hearings on a proposed RPS, as part of a review the Hearings Commissioners recommended provisions be included prescribing a precautionary approach to GMOs in the environment. As outlined above, the jurisdiction to manage GMOs under the RMA was appealed and subsequently upheld by the courts. However, the Environment Court is still to hear the appeal on the substantive matters arising from the proposed RPS provisions.

Section 66(2) requires that when Council is preparing a regional plan, they should "have regard" to any proposed regional policy statement. The relevant provisions of the proposed RPS are as follows, and direct Councils to take a precautionary approach (notwithstanding that they are subject to appeal).

2.6 Issues of significance to tangata whenua – natural and physical resources

The following issues have been identified by iwi authorities as regionally significant as they relate to the state of, and pressures on, natural and physical resources:

...

(m) The use of genetic engineering and the release of genetically modified organisms to the environment.

Explanation

...

GE / GMO management regime

The use of genetic engineering (GE) and release of genetically modified organisms (GMOs) to the environment is an issue of significance to tangata whenua in the region. GE / GMO is

managed under the Hazardous Substances and New Organisms Act 1996. However, to recognise this as an issue for tangata whenua and to respond to community concern, the RPS includes a policy (Policy 6.1.2) which requires a precautionary approach be taken towards activities whose effects are scientifically uncertain, unknown, or little understood but potentially significant. This precautionary approach includes GE / GMO.

6.1.2 Policy - Precautionary approach

Adopt a precautionary approach towards the effects of climate change and introducing genetically modified plant organisms to the environment where they are scientifically uncertain, unknown, or little understood, but potentially significantly adverse.

Explanation:

Climate change and the introduction of genetically modified plant organisms to the environment have a greater potential for significant but scientifically uncertain adverse effects than other natural processes and activities. Taking a precautionary approach means that where there are threats of significant or irreversible adverse effects, and there is scientific uncertainty as to the extent of those effects, decision-makers shall assume the threat of significant or irreversible effects is a reality. The response should be in proportion to the degree of significance and irreversibility of the threat and the degree of scientific uncertainty. When adopting a precautionary approach decision-makers may apply the following criteria:

Consideration of the degree of significance or irreversibility:

- *the scale of the threat;*
- *the value of the threatened environment;*
- *whether the possible adverse effects are able to be managed or contained;*
- *the level of public concern; and*
- *whether there is a rational or scientific basis for the concern.*

Consideration of the degree of scientific uncertainty:

- *what would constitute sufficient evidence;*
- *the level of scientific uncertainty; and*
- *the potential to reduce scientific uncertainty.*

6.1.5 Method – Statutory plans and strategies

The regional and district councils should apply Policy 6.1.2, when reviewing their plans or considering options for plan changes and assessing resource consent applications, but should not include plan provisions or resource consent conditions that attempt to address liability for harm.

Explanation:

Method 6.1.5 implements Policy 6.1.2. The method discourages councils from attempting to

change the liability regime for potential harm from genetically modified plant organisms because there is no strong basis for regional or local liability controls.

Far North and Whangarei District Plans

Far North and Whangarei District Councils have collaboratively prepared and notified Plan Change 18 ('**PC18**') and Plan Change 131 ('**PC131**') to their respective district plans. The wording of PC18 and PC131 are generic and provide the same precautionary approach with adaptive responses to the outdoor use of GMOs, albeit with some variation in structure to allow for formatting differences in the WDC and FNDC district plans. The plan provisions are based upon, and are in substance the same, as those outlined in the document "Draft Proposed Plan Change to the District/Unitary Plan" produced by the Working Party (with formatting differences). The GMO provisions in the Auckland Unitary Plan (Operative in Part) ('**AUP (OP)**') are also the same but extend into the CMA as Auckland Council is a unitary authority. The AUP (OP) is discussed in further detail below.

PC18 and PC131 were both notified in July 2014. Hearings were held in June 2016 and a decision from the hearings panel released in July 2016 and adopted by FNDC and WDC in September 2016. The decisions version of the plan provisions has been appealed to the Environment Court and is still awaiting a hearing on the appeal. No date has currently been set for a hearing on the PC18 and PC131 provisions.

PC18 and PC131 are both supported by technical evidence. This includes a statement of Evidence by Professor Jack Heinemann.[3] This clearly demonstrates that there is scientific uncertainty regarding the use of GMOs, and as such there are scientific grounds to exercise precaution as is proposed in the PC18 and PC131 provisions. Further, a statement of evidence from Dr John Small supports PC18 PC131.[4] Dr Small's evidence concludes that there is a significant economic benefit from taking a precautionary approach to the release of GMOs and that the potential costs are modest.

Auckland Unitary Plan

In addition to the matters that a regional plan is required to give effect to under section 67(3) of the RMA, the council is also required to have regard to the extent to which the regional plan needs to be consistent with the regional policy statements of adjacent regional councils, pursuant to section 66(2)(d). As the management of GMOs could give rise to cross boundary issues, and there has historically been a co-operation and joint approach to investigating the risks associated with GMOs through the Working Party, it is considered that the pRPFN should have regard to the provisions in the AUP (OP) to ensure a consistent approach.

The GMO related provisions in the AUP (OP) are located in a number of chapters.

Policy B8.3.2 promotes a precautionary approach towards activities within the coastal environment whose effects are uncertain unknown or little understood, but could be significantly adverse. This

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[3] A copy of Professor Heinemann's evidence can be viewed at this link: http://www.wdc.govt.nz/PlansPoliciesandBylaws/Plans/DistrictPlan/DistrictPlanChanges/Documents/PC-131-GMO/5-Hearing/Section-42a-Joint-Hearing-Report.pdf

[4] A copy of Dr Small's evidence can be viewed at this link:

http://www.wdc.govt.nz/PlansPoliciesandBylaws/Plans/DistrictPlan/DistrictPlanChanges/Documents/PC-131-GMO/5-Hearing/Section-42a-Joint-Hearing-Report.pdf

policy is consistent with policy 3 of the NZCPS. It is not subject to appeal.

Chapter B10 provides regional policy statement objectives and policies for environmental risk. This includes an objective and policy in B10.5 and further explanatory text in B10.6. These provisions are subject to appeal.

Chapter E37 provides provisions for the management of GMOs. These provisions are generic and provide the same precautionary approach with adaptive responses to the outdoor use of GMOs as PC18 and PC131, albeit with some variation in structure to allow for formatting differences in the AUP (OP). The other key difference is that these provisions also relate to the CMA as the Auckland Council is a unitary authority that has jurisdiction over the CMA, whereas the Far North and Whangarei District Councils do not.

Iwi Management Plans

Section 66A(a)) of the RMA requires council to take into account any relevant planning document recognised by an iwi authority, to the extent that its content has a bearing on the resource management issues of the district.

There are 12 Iwi / Hapu Management Plans in the Northland Region[5]:

- Te Iwi o Ngātiwai Iwi Environmental Policy Documents 2007
- Ngātiwai Aquaculture Plan 2005
- Ngati Rehia Environmental Management Plan 2007 (updated 2015 yet to be formally lodged with council)
- Hapū Environmental Management Plan 2014
- Ngā Tikanga mo te Taiao o Ngāti Hine 2008
- Kororareka Marae Environmental Hapū Management Plan 2009
- Te Uri o Hau Kaitiakitanga O Te Taiao 2012
- Whakatakoto Kaupapa Mo Te Hapū o Ngāti Kuta ki Te Rawhiti
- (Ngāti Korokoro, Ngāti Wharara, Te Poukā) Hapū Environmental Management Plan 2008
- Kia Matau, kia mohia e ora ana Te U Kaipo 2011
- Hapu Environmental Management Plan 2016
- Whatitiri Resource Management Plan 2016

These documents generally oppose the release of GMOs to the environment and advocate a precautionary approach to GMOs. Some advocate local management of GMOs. Having reviewed each document and taking into account the provisions, it is considered that the proposed GMO provisions sought by the Far North and Whangarei District Council are consistent with, and in some respects will help achieve, the outcomes sought in these documents.

Recent RMA Amendments

The Resource Legislation Amendment Act 2017 obtained Royal Assent on 18 April 2017. Some

[5] Sourced from pRPFN section 32 report, pages 25-26.

changes took immediate effect, others (mainly relating to the majority of changes to the resource consent process) came into force six months after enactment, on 18 October 2017.

Section 116 of the Amendment Act included a new section 360D for the RMA:

> *360D Regulations that prohibit or remove certain rules*
>
> *(1) The Governor-General may, by Order in Council made on the recommendation of the Minister but subject to subsection (2), make regulations to prohibit or remove specified rules or types of rules that would duplicate, overlap with, or deal with the same subject matter that is included in other legislation.*
>
> *(2) Subsection (1) does not apply to rules or types of rules that regulate the growing of crops that are genetically modified organisms.*
>
> *(3) In subsection (2), genetically modified organisms has the meaning given in section 2(1) of the Hazardous Substances and New Organisms Act 1996.*
>
> *(4) Regulations made under this section may require that rules inconsistent with those regulations be withdrawn or amended—*
>
> (a) *to the extent necessary to remove the inconsistency; and*
>
> (b) *as soon as practicable after the date on which the regulations come into force; but*
>
> (c) *without using any of the processes under Schedule 1 for changing a plan or proposed plan.*
>
> *(5) If regulations include a requirement under subsection (4), their withdrawal or amendment must be publicly notified by the local authority not later than 5 working days after they have been withdrawn or amended.*
>
> *(6) Regulations made under this section—*
>
> (a) *may specify, in relation to a rule made before the commencement of the regulations,—*
>
> *(i) the extent to which a matter that the regulations apply to continues to have effect; or*
>
> *(ii) the period for which a matter that the regulations apply to continues to have effect; and*
>
> (b) *may apply—*
>
> *(i) generally; or*
>
> *(ii) to any specified district or region; or*
>
> *(iii) to any specified part of New Zealand.*
>
> *(7) Section 360(2) and (4) applies to regulations made under this section.*

It is understood that the intent of this regulation-making power in 360D was to reduce duplication between different legislation by removing or prohibiting rules where a council makes rules that either needlessly duplicate, or overlap with, the provisions of another Act.[6] Sub-section (2) specifically excludes rules that relate to rules that regulate the growing of

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[6] See page 8 of this MfE fact sheet: http://www.mfe.govt.nz/sites/default/files/media/Fact%20Sheet%201%20-%20New%20options%20for%20national%20direction.pdf

crops that are GMOs. Previous versions of the draft Amendment Act did not include this exclusion. It is understood that this was a late exclusion negotiated by the Government of the time and the Māori Party, who were specifically opposed to central government overruling local authority decisions to regulate GMOs within their districts and regions. It is considered that Section 360D(2) provides further justification that local authorities do have the jurisdiction to manage GMOs within their planning documents.

The Problem, Opportunity and / or Requirement

The resource management issue to be addressed is that there is scientific uncertainty use of GMOs within the CMA may adversely affect the environment, economy, and social and cultural resources and values, and could result in significant costs, as has been extensively researched through the Working Party's investigations.

The absolute and relative benefits associated with the development and use of GMOs is continually being redefined as this and other forms of applied biotechnology advance. However there remains scientific uncertainty with respect to potentially significant adverse effects of GMOs on natural resources and ecosystems. The risks could be substantial and certain consequences irreversible, and could include the following:

- Environmental risks, including adverse effects on other species and ecosystems by way of GM species becoming invasive and disrupting ecosystems; altered genes transferring to other organisms; and development of herbicide or pesticide resistance;
- Economic risks, including loss of income associated with actual or perceived contamination of non-GMO food products; negative effects on marketing and the international NZ 'green' image; and costs associated with environmental damage; and
- Social and cultural risks, including effects on Māori cultural beliefs; ethical concerns; and actual or perceived effects on human health of GMO foods.

Once released into the environment, most GMOs would be very difficult to eradicate even if the funding were available for this, irrespective of the consequences. If the GMO is related to a food product, the "GE Free" food producer status of a district or region would likely be permanently lost, along with any marketing advantages that status confers.

Local regulation can address key gaps that have been identified in the national regulatory regime for the management of GMOs, in particular the absence of liability provisions and the lack of a mandatory precautionary approach. Benefits of local level regulation, in addition to the controls set by the EPA, include:

- Ensuring GM operators are financially accountable in the long-term through bonding and financial fitness provisions for the full costs associated with the GMO activity. This includes accidental or unintentional contamination, clean-up, monitoring and remediation;
- Adoption of a precautionary approach to manage potential risks (economic, environmental, social and cultural) associated with the use of GMOs within the CMA;
- Protection of local/regional marketing advantages through reducing risks associated with market rejection and loss of income from GM contamination of non-GM species, and negative effects on marketing, branding and tourism opportunities; and

- Addressing cultural concerns of Maori, particularly given that Maori make up a considerably greater proportion of the population in Northland than is represented nationally.

Given a council's general duties of care for its financial position and that of its constituents, there is a ready justification for the Council to enforce mandatory conditions to provide for both financial accountability and avoidance of economic damage. These controls would act in addition to those that may be set by the EPA under the HSNO Act.

Appropriateness of the Objectives in achieving the purpose of the Act

Section 32(3)(a) of the RMA requires the evaluation to examine the extent to which each objective is the most appropriate way to achieve the purpose of the Act. This section of the report considers the role of the objectives in achieving the purpose of the Act and in achieving the sustainable management of natural and physical resources in Northland.

As currently drafted, the pRPFN includes only one objective in F.0.1. This essentially replicates the sustainable management purpose of the RMA in section 5 and provides no further guidance as to which specific objectives are appropriate to address resource management issues and to achieve the purpose of the RMA in the Northland region context. This is then supported by a limited number of policies in section D of the pRPFN which set out how the overall sustainable management purpose objective will be achieved. This policy framework and the reasons for including one objective is explained in section 1.5 of the NRC section 32 Evaluation.

Given the significance of the management of GMOs to the Northland region and the local communities it encapsulates, it is appropriate that consideration is given to objectives for the management of GMOs in the pRPFN. An analysis in this regard is provided below.

Options

Two options have been identified in terms of objectives for the management of GMOs in the pRPFN:

- *Option 1 – No objective for the Management of GMOs (Status Quo)*: this option represents the status quo in the notified version of the pRPFN. As such there is no objective for the management of GMOs in the pRPFN and the only objective would be F.0.1.
- *Option 2 – Include two objectives for the Management of GMOs (Preferred Option):* this option would see the inclusion of two proposed objectives which are consistent with the WDC, FNDC and Auckland Council approaches to the management of GMOs. The two objectives are worded as follows (see full recommended text in **Attachment 1**):

F.0.2.1

Objective

"The coastal marine area is protected from potential adverse effects associated with the use, occupation, cultivation, harvesting, processing or transportation of GMOs through the adoption of a precautionary approach, including adaptive responses, to manage uncertainty and lack of information.

F.0.2.2

Objective

The sustainable management of the natural and physical resources of the coastal marine area with respect to the use of GMOs, a significant resource management issue identified by the community."

The proposed Objectives in option 2 are assessed below in terms of their appropriateness of achieving Part 2 of the Act. No separate assessment is provided for option 1 as this option represents no objective, and the objective proposed in F.0.1 simply repeats the section 5 purpose of the Act without responding to the specific issue relating to the management of GMOs.

Part 2 of the RMA

5 Purpose

(1) The purpose of this Act is to promote the sustainable management of natural and physical resources.

(2) In this Act, sustainable management means managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural well-being and for their health and safety while—

(a) *sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and*

(b) *safeguarding the life-supporting capacity of air, water, soil, and ecosystems; and*

(c) *avoiding, remedying, or mitigating any adverse effects of activities on the environment.*

F.0.2.1 seeks to protect the CMA from potential adverse effects of GMOs by the adoption of a precautionary approach in response to the scientific uncertainty regarding the management of GMOs and their potential for significant adverse environmental effects. This objective seeks to safeguard the life-supporting capacity of the CMA, a natural resource, in order to meet the reasonably foreseeable needs of future generations while avoiding potentially significant adverse effects on the environment associated with the release of inappropriate GMOs.

F.0.2.2 seeks promote the sustainable management of the CMA from the risk of the use of GMOs. This has been identified as a significant resource management issue for the Northland community, through previous consultation and feedback for the previous Working Party plan changes and as is evident in the draft pre-notification feedback and submissions from various parties on the pRPFN.

Overall, the proposed Objectives meet Section 5 of the Act as they promote sustainable management of the CMA by taking a precautionary approach in response to the scientific uncertainty and potential for significant adverse effects relating to the release of GMOs.

The Objectives also ensure unacceptable risks to the community from release of GMOs in the CMA are avoided. The Objectives recognises the value of natural and cultural resources in the Northland Region, and the need to protect these values within the CMA from the use of GMOs.

The Objectives will sustain the physical resources of the Northland Region, now and for future generations, in particular the life supporting capacity of air, water and soil ecosystems, and through the adoption of effective policies, rules and methods, significant potential adverse effects on the environment can be avoided.

The Objectives will enable people and communities to provide for their social, economic and cultural well-being and for their health and safety by protecting existing primary producers from possible economic harm through GMO contamination and loss of markets, protecting marketing and branding advantages and price premiums for primary producers, marketing and branding advantages for the tourism sector, and respecting socio-cultural differences, particularly the cultural values of Māori. The evidence of Dr Small referred to earlier in particular demonstrates the significant economic benefit that a precautionary approach would have in terms of marketing and branding advantages.

The Objectives adopt a precautionary approach to the management of GMOs. The essence of the precautionary principle involves assessing and responding to potential risks or effects before they eventuate. There are uncertainties about the scope and scale of risks arising from the use of GMOs. This scientific uncertainty is demonstrated in the evidence of Professor Heinemann referred to previously. Where the risks are high or difficult to assess or quantify by conventional risk analysis, or the potential effects are significant or uncertain, caution should be exercised before permitting and/or undertaking the activity in question, until more is known about the risks and potential effects. The adoption of a precautionary approach, as set out in Objective 1.4.1, to manage the outdoor use of GMOs to minimise the risk to the environment, economy and sociocultural resources and values, is inherent in the Act. The Objectives also reflect community preferences (reflecting social, cultural and economic values) for a precautionary approach to address the issue of outdoor uses of GMOs.

6 Matters of National Importance

In achieving the purpose of this Act, all persons exercising functions and powers under it, in relation to managing the use, development, and protection of natural and physical resources, shall recognise and provide for the following matters of national importance:

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

(b) the protection of outstanding natural features and landscapes from inappropriate subdivision, use, and development:

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

(d) the maintenance and enhancement of public access to and along the coastal marine area, lakes, and rivers:

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

(f) the protection of historic heritage from inappropriate subdivision, use, and development:

(g) the protection of protected customary rights:

(h) the management of significant risks from natural hazards.

It is considered that the proposed objectives appropriately recognise and provide for the matters of national importance in section 6 of the RMA.

In particular, will ensure the relationship of Māori and their culture and traditions with their

ancestral lands, water, sites, wāhi tapu and other taonga are recognised and provided for.

The cultural effects associated with the outdoor use of GMOs in the Northern Peninsula have most clearly and consistently been raised by Māori. While there is no single Māori view on GM, cultural concerns consistently expressed by the majority of Māori in Hui, surveys and in Iwi and Hapu Management Plans on GMOs include:

- Transgenics (breaking down of species barriers and mixing of genes from unrelated species) is a breach of the integrity of species and an offence to whakapapa.
- A breach of whakapapa is the resulting harm to the environment or community health, resulting in local iwi feeling they have failed to fulfil their duties as kaitiaki.

7 Other Matters

In achieving the purpose of this Act, all persons exercising functions and powers under it, in relation to managing the use, development, and protection of natural and physical resources, shall have particular regard to—

(a) kaitiakitanga:

(aa) the ethic of stewardship:

(b) the efficient use and development of natural and physical resources:

(ba) the efficiency of the end use of energy:

(c) the maintenance and enhancement of amenity values:

(d) intrinsic values of ecosystems:

(e)[Repealed]

(f) maintenance and enhancement of the quality of the environment:

(g) any finite characteristics of natural and physical resources:

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

(i) the effects of climate change:

(j) the benefits to be derived from the use and development of renewable energy.

Overall, the objectives meet Section 7 of the Act because they have particular regard to the relevant matters in section 7. In particular, the objectives have given particular regard to the concept of kaitiakitanga with regard to the desire of Māori to protect the environment from the scientific uncertainty and potentially significant physical and cultural adverse effects of GMO releases.

The proposed objectives provide for the intrinsic values of ecosystems by protecting ecosystems within the CMA from the introduction of GMOs where there is scientific uncertainty as to their effects on the environment.

8 Treaty of Waitangi

In achieving the purpose of this Act, all persons exercising functions and powers under it, in relation to managing the use, development, and protection of natural and physical resources, shall take into account the principles of the Treaty of Waitangi (Te Tiriti o Waitangi).

Having taking into account the principles of the Treaty of Waitangi pursuant to section 8 of the

RMA, it is considered that the proposed objectives are consistent with and appropriately take into account the relevant provisions of the Treaty of Waitangi for the reasons discussed above. NRC would also be better meeting their Treaty obligations by showing partnership and enabling Māori to exercise kaitiakitanga on this issue which has been clearly identified as an issue of significance to mana whenua.

Conclusion

On the basis of the above assessment, it is considered that the Objectives outlined in option 2 represent the most appropriate way to achieve Part 2 of the Act. Consideration has been given to the alternative (status quo) option 1. It is determined that option 2 is more appropriate that option 1 as the Objectives give more direction regarding the management of GMOs in the CMA rather than simply restating the purpose of the Act. This is important as the Objectives in option 2 provide the basis and direction for the policies and rules that are assessed below and outlined in Attachment 1.

Management Options

This section summarises the management options for GMOs within the CMA. The approach taken is to identify the different approaches to management of GMOs and then as a sub set of this explore the methods and rules best applied to achieve this management direction.

The key difference between the options identified is the specific control of GMOs in the CMA, and the associated activity status applied.

Option A: Status Quo (no specific regulation)

Overview: No specific objectives, policies or rules are included in the pRPFN which relate to the use of GMOs in the CMA.

Background: NRC has, as stated[7] on its website reserved its decision on including provisions in the Plan on regulating genetically modified organisms (GMOs). Due to the outstanding appeals on the matter at the time of notification of the pRPFN. NRC will review whether it will proceed with a plan change to include provisions regulating GMOs once the appeals have concluded. A GMO release in the CMA would therefore be a discretionary activity given it would be a discharge without a specific rule (refer to section 15 of the RMA).

GMO activities[8] not specifically provided for or prohibited[9] in the CMA.	GMO field trials within the CMA (including any associated structure)	Use of GMO veterinary vaccine subject to specified	Use of GMO veterinary vaccine not meeting specified requirements.	GMO releases (food and non-food related)– within the CMA (including any associated

[7] http://consult-nrc.objective.com/portal/planning_and_policy/proposed_regional_plan/prp?pointId=1941857 and page 32 of the section 32 report https://www.nrc.govt.nz/contentassets/506f48db06744ab782c65e56acd19dde/section-32-proposed-regional-plan-september-2017-final---web.pdf

[8] Including research within contained laboratories, medical applications, and veterinary applications involving use of non-viable genetically modified products.

[9] Including research within contained laboratories, medical applications, and veterinary applications involving use of non-viable genetically modified products.

		requirements[10]		structures) except as specifically provided for.
Discretionary	Discretionary	Discretionary	Discretionary	Discretionary

Option B: Control of GMO consistent with the Auckland Unitary Council Approach (preferred approach)

Overview: Objectives, policies or rules are included in the pRPFN relating to the use of GMOs in the CMA consistent with those in the AUP (OP).

Background: This option acknowledges that not all categories of outdoor GMO carry the same level of risk, and therefore do not need to be regulated with the same degree of precaution. Field trials are proposed to be considered as Discretionary Activities as there are strict controls around GMO trials that can be applied, although the Discretionary status allows for greater protection through the ability to impose a comprehensive suite of conditions on these activities. GMO releases are proposed to be a Prohibited Activity due to the level of risk and uncertainty surrounding these activities, and therefore applying a precautionary approach. Periodic reviews can still allow for particular classes or individual GMOs to be included as Discretionary Activities in the future (through a Plan Change process) should sufficient evidence become available. Veterinary vaccines would be provided for as a Permitted Activity as they do not tend to persist in the environment and therefore appear to be low risk.

The provisions have also been proposed in the Far North, and Whangarei District Plans (subject to minor formatting to match the structure of each district plan) as they relate to land based GMO activities, therefore these provisions will provide a uniform framework between all authorities across the Northern Peninsula. As well as providing a clear and consistent framework for industry across the region, this approach will ensure cross-boundary effects between districts, and between land and the CMA, can also be consistently considered.

GMO activities[11] not specifically provided for or prohibited in the CMA.	GMO field trials within the CMA (including any associated structure)	Use of GMO veterinary vaccine subject to specified requirements	Use of GMO veterinary vaccine not meeting specified requirements.	GMO releases (food and non-food related)– within the CMA (including any associated structures) except as specifically provided for.
Permitted	Discretionary	Permitted	Discretionary	Prohibited

Option C: Control of GMO to Prohibit all use of GMOs

[10] Of a specific dose supervised by a veterinarian

[11] Including research within contained laboratories, medical applications, and veterinary applications involving use of non-viable genetically modified products.

Overview: Objectives, policies, and rules are included in the pRPFN prohibiting the use of all GMOs in the CMA.

Background: under this option no application would be able to be made to the regional council for any use of GMOs in the CMA, including field trials or any other GMO activity that is considered to be low risk (such as veterinary vaccines). This approach has not been used in any other planning document in the Northern Peninsula.

GMO activities[12] not specifically provided for or prohibited in the CMA	GMO field trials within the CMA (including any associated structure)	Use of GMO veterinary vaccine subject to specified requirements	Use of GMO veterinary vaccine not meeting specified requirements	GMO releases (food and non-food related)– within the CMA (including any associated structures) except as specifically provided for
Prohibited	Prohibited	Prohibited	Prohibited	Prohibited

Option D: Control of GMO Discretionary Consent for Release

Overview: Objectives, policies or rules are included in the pRPFN relating to the use of GMOs in the CMA consistent with those in the Auckland Unitary Plan, with the exception of GMO releases to be provided for as a Discretionary Activity.

Background: This option differs from Option B above as it provides for GMO releases as a Discretionary Activity instead of prohibiting these activities. Providing for GMO releases as a Discretionary Activity will transfer greater liability to NRC to understand and potentially remediate the adverse effects of GMO releases, where supporting information on the adverse effects of releases may be insufficient.

GMO activities[13] not specifically provided for or prohibited in the CMA	GMO field trials within the CMA (including any associated structure)	Use of GMO veterinary vaccine subject to specified requirements	Use of GMO veterinary vaccine not meeting specified requirements	GMO releases (food and non-food related)– within the CMA (including any associated structures) except as specifically provided for
Permitted	Discretionary	Permitted	Discretionary	Discretionary

Screening the Management Options

[12] Including research within contained laboratories, medical applications, and veterinary applications involving use of non-viable genetically modified products.

[13] Including research within contained laboratories, medical applications, and veterinary applications involving use of non-viable genetically modified products.

As the intent of the provisions is to apply a precautionary approach to the use of GMOs in the CMA, and to provide consistency of provisions across the Northern Peninsula, those options that do not provide for these matters are not considered to be an appropriate management option to achieve the outcomes sought. These options have therefore been excluded as identified

Option A: Status Quo – This option is not considered to adequately address the issue of appropriate control of GMO activities as it is inconsistent with higher order policy documents with no specific provisions or policy framework in the pRPFN to give direction on the control of GMOs, or additional level of caution to be applied to any GMO-related activity. This will not adequately apply the precautionary approach in light of scientific uncertainty as to the safety of GMO releases and the potential for significant adverse environmental, economic, social and cultural effects.

Option C: Control of GMO to Prohibit all use of GMOs – This option does not allow for consent to be applied for in relation to any use of GMOs in the CMA. This option would be inconsistent with land-based provisions in the Northern Peninsula with respect to the Far North District, Whangarei District, and Auckland Councils, and CMA-related controls for Auckland Council as a unitary authority. The option also does not allow for the controlled use of GMOs which may have evidence available to support their use with appropriate controls in place, or for activities considered low-risk such as the use of veterinary vaccines subject to specified requirements. In this regard, the GMO provisions need to be adaptive as well as precautionary. It is important that the GMO provisions do not totally foreclose potential opportunities for the outdoor use of GMOs in the CMA in the future, should sufficient new evidence demonstrate that a particular GMO is safe and provides a net benefit.

High Level Objectives

Section 32 of the Act requires an assessment of the efficiency and effectiveness of the provisions in achieving the objectives. The NRC section 32 has done this by assessing the management options against a set of high level objectives or measures.[14]

In this instance, an assessment of specific objectives for the management of GMOs has been undertaken above under the heading "Appropriateness of the Objectives in Achieving the Purpose of the Act". This has demonstrated that the two proposed Objectives in F.0.2.1 and F.0.2.2 as drafted in **Attachment 1** are the most appropriate in terms of achieving the purpose of the Act. With this in mind, it is therefore considered appropriate to undertake the assessment of the efficiency and effectiveness of the provisions in terms of achieving these proposed Objectives as this is what Section 32 specifically requires.

Evaluating the Management Options

Certainty

With regard to the risks of GMOs and particularly to the general release of these, the level of uncertainty that surrounds the impacts of GMOs means that significant adverse effects could arise if an appropriate level of precaution is not taken.

Time and time lags

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[14] See page 18 of the NRC section 32 report https://www.nrc.govt.nz/contentassets/506f48db06744ab782c65e56acd19dde/section-32-proposed-regional-plan-september-2017-final---web.pdf

As other Councils in the Northern Peninsula have adopted provisions relating to the control and use of GMOs it is considered an appropriate time to also address these under the pRPFN to ensure that a consistent approach is achieved at the same time. For example, if provisions relating to GMOs are not included in the pRPFN at this time, over the life of the plan or even the time in which a plan change could be enacted, there is the potential for GMO activities to occur in the CMA. Additionally, given the nature of GMOs, any adverse effects are likely to be complex to manage as the outdoor use of GMOs is not constrained by jurisdictional boundaries. Therefore, not including provisions within the pRPFN at this time also jeopardises the ability of adjoining jurisdictions from achieving outcomes sought in their policy documents.

Risk of acting or not acting

Section 32(4)(b) of the RMA requires the s32 evaluation to take into account the risk of acting or not acting, specifically "if there is uncertain or insufficient information about the subject matter of the policies, rules, or other methods".

There are less costs to the Council to include the proposed provisions at this time when compared with undertaking a separate plan change at a later date once the proposed RPS provisions are confirmed. The GMO provisions can be introduced at the same time as the introduction of the new regional plan, these costs are reduced in comparison to a standalone plan change solely to address GMOs.

While there may be less cost to Council associated with introducing these provisions, there would be costs associated with monitoring of activities which may not be a requirement of EPA approval, or in response to community request, and exposure to clean-up costs. Other risks associated with not addressing the control of GMOs include potential adverse socio-cultural effects including effects on tangata whenua cultural values and economic well-being; environmental risks such as adverse effects on non-target species; invasiveness of GM plants and altered gene transfer; and economic losses to constituents from GMO contamination. These are significant risks.

While it is acknowledged that benefits could be achieved from GMOs, including increased productivity in both plants and animals, environmental management and pest control, and biopharming (the modification of organisms for pharmaceutical purposes), the degree of scientific uncertainty associated with the use of GMOs and potential scale of the risks involved currently outweigh the benefits, and these uses should be controlled by a precautionary approach consistent with that applied by Whangarei District, Far North District and Auckland Councils. At such time that greater scientific certainty and consensus is achieved about the environmental risks, and it can be demonstrated that the economic benefits would outweigh environmental and cultural effects, a Plan Change could be sought to enable release of GMOs into the CMA.

The do-nothing approach also does not address concerns raised by the community regarding outdoor GMO risk (as evidenced by the 2009 Colmar Brunton survey and submissions on annual plans, LTCCPs, LTPs and district plans), or concerns raised by Māori.

In summary, the information behind the policies and methods promoted in provisions adopted by other Councils in the Northern Peninsula is based on international and national evidence and there is little risk associated with the proposed provisions in **Attachment 1** going ahead. They are consistent with a precautionary approach that prohibits activities in the face of uncertainty, particularly where the potential costs are significant and may be irreversible. The provisions are also adaptive. The discretionary activity status for field trials is part of the wider adaptive management approach taken as it is important the proposed GMO provisions do not totally

foreclose potential opportunities for the outdoor use of GMOs in the future, should new evidence demonstrate that a particular GMO is safe and provides a net benefit. The risk of not acting (not adopting the proposed policies and rules) is that the significant Resource Management Issue remains unresolved and the resources of the Northern Peninsula are not managed sustainably or consistently across the various local authorities.

Ability to deliver a precautionary approach

As above, a precautionary approach is considered important due to the inherent uncertainty and risk of significant environmental, economic, social and cultural effects posed by outdoor use of GMOs. While the HSNO Act makes reference to exercising precaution, this is not a requirement of the HSNO Act. There are also no national policy statements or environmental standards relating to GMOs. Therefore, with no other national guidance documents there are significant gaps in the national regulation of GMOs, in particular the absence of adequate liability provisions and applicant financial fitness requirements, the absence of a mandatory precautionary approach, and a lack of surety of outcome for local government and communities.

Conversely, the RMA provides a statutory framework for the regulation of activities on land and within the CMA that the Courts have ruled inherently contains a precautionary approach. In particular, under the meaning of effect, section 3(f) states that the term "effect" includes "any potential effect of low probability which has a high potential impact." The application of the precautionary approach is also replicated in the higher order planning documents such as policy 3 of the NZCPS and policy 6.1.2 of the proposed RPS[15] Given the scientific uncertainty that surrounds aspects of GMOs, where the risk is known but the probability of significant adverse effects is unknown, or if neither the nature of the risk nor the probability is known, then a precautionary approach as provided for under the RMA is an appropriate approach in guiding decision making.

By introducing provisions relating to the control of GMOs in the CMA, NRC will have a meaningful opportunity to exercise precaution, that is in line with the actions of other councils in the Northern Peninsula, and consistent with the provisions of the NZCPS and the proposed RPS provisions relating to GMOs.

Adopting a precautionary approach does not require the same level of control to be applied to all aspects of GMOs. Field trials can be treated as discretionary activities under a precautionary approach as the national legislation already prescribes strict conditions, including prohibiting the flow of altered genes from the trial site and requiring removal of heritable material upon completion.

The appropriate precautionary approach to GMO releases however is to prohibit these under an adaptive management regime, with the plan change process available to provide for the ability to include any future approvals of GMOs by the EPA. In the absence of this testing by the EPA, it would be very difficult for NRC to meet their requirements under section 30 of the RMA to obtain the information required to adequately inform policy, if this information was even available.

While EPA approval may provide specific information on a particular GMO release, this information will only inform the local impact that a GMO release could have, and not the wider implications of this elsewhere throughout the region as a whole. Therefore, general release of

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[15] This policy in the proposed RPS is subject to appeal as it relates to GMOs.

GMOs as a Discretionary Activity will still provide further financial burden to the Council in order to consider the more widespread impacts of allowing GMO releases, beyond the consideration of a resource consent application. Instead, a Prohibited Activity status means that an applicant will still have the ability to undertake a private plan change, but at this point the onus is on the applicant to provide information to confirm the wider impacts of allowing a particular GMO to be released, with the costs borne by the applicant rather than the Council (and ratepayers). A Prohibited Activity status will also ensure that community determined outcomes can be achieved by the Council, as with a Discretionary Activity an application may be called in by the Minister, removing the local decision-making opportunity.

A Prohibited Activity status is also considered appropriate as it still provides for an adaptive decision-making framework. The status does not automatically preclude the future inclusion of provisions relating to general GMO releases provided that the Council is satisfied the information available to it is sufficient to understand the impacts of allowing for the particular activity.

Appropriateness, Costs and Benefits of Policies, Rules and Other Methods

Two reasonably practicable options have been identified for achieving the proposed Objectives. These are identified below and assessed in the table. These two options represent the management options that remain following the "screening of management options" undertaken previously.

Management Option B: Precautionary approach with adaptive management (preferred option): This option is consistent with the Whangarei District and Far North District Plan Changes and Auckland Council AUP (OP). The proposed provisions are as drafted in **Attachment 1**. This would seek to adopt a precautionary approach by:

- prohibiting the general release of a GMO in the CMA.
- making outdoor field trials of a GMO, and the use of viable genetically modified veterinary vaccines not of a specific dose and supervised by a veterinarian a discretionary activity, and to ensure that a resource consent granted for the outdoor field trials of a GMO is subject to conditions that ensures the consent holder is financially accountable (to the extent possible) for any adverse effects associated with the activity, including clean-up costs and remediation, including via the use of bonds.

Management Option D: Discretionary Activity Consent for GMO release: This option would enable resource consent applications as a discretionary activity for general releases subject to an AEE assessment.

Policy/Rule/Method	Assessment under section 32(4)(a) of the Act		Assessment under section 32(3)(b) of the Act
	Benefits	Costs	Having regard to their efficiency and effectiveness, the appropriateness in achieving the objective
Option #1			
To adopt a precautionary approach by prohibiting the general release of a GMO in the CMA.	This approach specifies what outdoor GMO activities can be undertaken in the	The prescriptive nature of the approach results in prescriptive rules, thus foreclosure of potential	This approach will achieve the proposed Objectives as it will incorporate a prescriptive rule regime that

	Northland Region /Coastal Area, and **prohibits** those activities that are considered inconsistent with the proposed Objectives. The outdoor use of GMOs has the potential to cause adverse effects on the environment, economy, and social and cultural well-being. As the level of risk inherent in the release of a GMO is not tolerable to the community for economic, environmental and cultural reasons, this option adopts a precautionary approach by **prohibiting** the outdoor release of GMOs (other than vaccines). This will provide certainty to the community as to the nature of GMO activities that cannot be undertaken, and avoid the risk to the environment, economy and socio-cultural values from such activities. The approach requires outdoor field trials to gain consent as a **discretionary** activity enabling Council the ability to decline an activity where the potential risks are deemed to be too great, and to attach conditions to a consent approval to address liability and monitoring requirements. Community consultation has determined that a precautionary approach in the management of GMOs is warranted. The policy achieves this. If the community were to depend on the EPA approval process as currently is the case, there is no requirement for the EPA to be precautionary, and community	opportunities associated with certain GMO developments that could benefit the district or region. This cost is remedied through the ability to reverse a **prohibited** activity in a plan. A council or a GMO developer can initiate a plan change, if it were to become evident during the field trial stage, and in light of new information, that a particular GMO activity would be of net benefit to the **Northland Region/Coastal Area**. The lead time involved in gaining an EPA consent would be similar to that required to achieve a plan change. Processing a plan change would however result in costs to the Council and/or the applicant, and would be specific to a particular class or GMO variety. Administration costs to the Council to receive and process an application for a field trial as a discretionary activity and associated compliance monitoring costs. This cost is partially remedied as the application costs and costs of monitoring are fully recoverable from the applicant. General compliance costs are also generated by all other activities under a plan.	prohibits outdoor releases of GMOs in order to protect against potentially significant adverse effects where there is scientific uncertainty. This is appropriate as it recognises that the outdoor use of GMOs is a significant resource management issue to the Northland Region community, including tangata whenua, and ensures potential adverse effects will be addressed at the outset, and are appropriately avoided, remedied or mitigated. There are significant benefits to be gained by this policy, and the relatively minor opportunity costs incurred by prohibiting GMO releases can be largely remedied through the ability to initiate a plan change. The prescriptive rule regime provides certainty to the community, including Māori, and achieves both efficiency and effectiveness that is not achieved with the status quo. This approach is also effective as the direction it provides is very clear that general releases of GMOs are prohibited. It is also consistent with the approach adopted by other Councils in the Northland Region. If a particular GMO or group of GMOs demonstrates potential to provide net benefits then a plan change could make them subject to discretionary activity status. This approach is therefore efficient and effective in ensuring any potential future benefits of GMOs are provided for.

	preferences may not be achieved.		
To adopt a precautionary approach by making outdoor field trialing of a GMO, and the use of viable genetically modified veterinary vaccines not of a specific dose and supervised by a veterinarian a discretionary activity, and to ensure that a resource consent granted for the outdoor field trialing of a GMO is subject to conditions that ensures the consent holder is financially accountable (to the extent possible) for any adverse effects associated with the activity, including clean-up costs and remediation, including via the use of bonds.	Due to the weak liability and financial assurance arrangements under the HSNO Act, councils are exposed to meeting the costs of clean-up if the polluter does not pay. The Ministry of Primary Industries is only obliged to clean up illegal releases, not those approved by the EPA that have unexpected effects. Further, GMO contamination could have a potentially significant impact on returns to non-GM growers in the district or region and could affect other parts of the country as well. This approach requires the consent holder to be financially accountable for adverse effects to the extent possible, reducing risk to the community and environment, and provisions for potential clean-up costs to be met. The community has indicated a desire that a liability regime be implemented that requires those engaging in a GM release to pay compensation for any harm caused by an approved release, as this is not provided for under the HSNO Act. This policy is designed to avoid the costs for clean-up being met by the Council or its constituents, and greatly reduces the burden of proof required by Council to obtain compensation, as well as the time and costs involved in doing so.	Some costs for the Council in respect to administering the bond, clean-up activities, and any remediation required.	This approach is efficient and effective in achieving the proposed Objectives by ensuring that costs of damages associated with outdoor field trials or GM vaccines that have not been properly managed are recoverable. This approach also provides for medical applications involving the manufacture and use of non-viable GM products, and vaccines, where these are not supervised or controlled appropriately, as specified to be considered a permitted activity. The benefits of ensuring the consent holder is financially accountable for any adverse effects associated with a GMO activity far exceed the cost. This approach ensures that the environment is protected from adverse effects associated with outdoor field trials as it enables the Council to manage any potential effects through conditions, and is therefore efficient and effective in achieving the Objectives. Overall, this approach is appropriate to ensure that a suitable level of accountability can be achieved commensurate with the desired outcomes in relation to the issue.
Option #2 – Enable GMO field releases as a discretionary activity	It is recognised that while GM techniques are expected to offer benefits	There is a cost to Council to monitor compliance with conditions. There is	Overall, this approach is not considered appropriate to achieve the proposed

subject to AEE assessment	in many sectors, there are risks associated with their use. These risks could be substantial and certain consequences irreversible. This policy enables Council to apply more stringent measures than those required under the provisions of the HSNO Act, to manage potential risks.	an opportunity cost in forgoing the potential release of GMOs, however traditional non- GM techniques as well as new techniques (for example MAS) are currently capable of producing the same deliverables as GM varieties. There is also a potential cost should there be unforeseen damage caused by the GMO's in respect to administering, clean-up activities and any remediation required.	Objectives as the resource consent process does not provide sufficient ability for Council to fully understand the potential adverse effects of allowing GMO releases. Given that the effects may be irreversible or very difficult to remedy, Council needs to be sure that sufficient information is available to inform a GMO release. The scope of the resource consent process is such that only site-specific information is likely to be obtained, and the expense of further investigation will fall to Council (and the community). The consideration of outdoor GMO releases as a Discretionary Activity is also inconsistent with the approach being taken by other Councils in the Northland Region. Therefore, this approach is not considered to be either an efficient or effective way to achieve the outcomes sought.

The Preferred Option

Management Option B is the preferred option. The application of the precautionary approach to the use of GMOs in the CMA is consistent with the approach taken within the AUP (OP), PC18 and PC131 and promotes consistency in terms of the management of GMOs within the Northern Peninsula. It also appropriately responds to the scientific uncertainty associated with the outdoor release of GMOs in the CMA and the potential to cause significant adverse effects on the environment, economy, and social and cultural well-being.

Genetically Modified Organisms (GMOs)

B Definitions

Definitions have the same meaning in the singular and plural. Terms defined in the Resource Management Act 1991 are not repeated.

Genetically Modified Organism (GMO)	Unless expressly provided otherwise by regulations, any organism in which any of the genes or other genetic material: (a) have been modified by in vitro techniques; or (b) are inherited or otherwise derived, through any number of replications, from any genes or other genetic material which has been modified by in vitro techniques. This does not apply to genetically modified products that are not viable and are no longer genetically modified organisms, or products that are dominantly non-genetically modified but contain non-viable genetically modified ingredients, such as processed foods.
Genetically Modified Organism Field Trials (tests)	The carrying on of outdoor trials, on the effects of the organism under conditions similar to those of the environment into which the organism is likely to be released, but from which the organism, or any heritable material arising from it, could be retrieved or destroyed at the end of the trials.
Genetically modified organism release	To allow the organism to move within New Zealand free of any restrictions other than those imposed in accordance with the Biosecurity Act 1993 or the Conservation Act 1987. A Release may be without conditions (s34, HSNO Act) or subject to conditions set out s38A of the HSNO Act.
Genetically Modified Veterinary Vaccine	A veterinary vaccine that is a genetically modified organism as defined in this Plan.
Genetically modified medical applications	The manufacture, trialling or use of viable and/or non-viable genetically modified organisms for medical purposes recognised as medicines under the Medicines Act 1981 and approved as safe to use by the Ministry of Health, including EPA approved releases, except for the outdoor cultivation of pharmaceutical producing organisms.
Viable Genetically Modified Veterinary Vaccine	means a genetically modified veterinary vaccine that could survive or replicate in the environment or be transmitted from the inoculated recipient.

C Rules

Legal effect of rules

Under Section 86B of the Resource Management Act 1991 (RMA), all rules have immediate legal effect from notification of the Proposed Regional Plan.

Interpretation of rules

The rules have the force and effect of regulations in statute, which means they are legally binding. They determine whether the proposed activity can be undertaken without a resource consent (permitted activities) or whether it requires resource consent. The rules may also make some activities prohibited, which means a resource consent application cannot be made for that activity. An activity needs to comply with all relevant rules in the Regional Plan, unless the rule itself states otherwise.

If an activity is covered by more than one rule, then the more specific rule for the relevant activity, area or resource applies. This does not apply where a proposal includes a number of activities which trigger separate specific rules. In that case, all rules are considered when assessing the proposal.

Unless the rule states otherwise, all rules that regulate discharges (Section 15, RMA) apply to the whole region including the coastal marine area. For example the rules relating to the discharge of GMOs within the CMA are specifically controlled by Rules in C.1.8.

Rules in section E 'Catchments' take precedence over other rules (whether more or less restrictive). With the exception of the rules contained within Chapter C.x.x in relation to GMOs.

To make it easier to apply for resource consents and to reduce the number of separate resource consents required to undertake any particular activity, this Plan has, where practicable, adopted the concept of 'rule bundling'. Rule bundling is used in this Plan to combine several permissions which may be required under Section 9 and Sections 13 to 15 of the RMA into one rule. One application for resource consent can therefore be made under the bundled rule.

From time to time, central government makes regulations. These must be read in conjunction with the plan provisions because the regulations are generally not repeated in the plan and in most cases the regulations prevail over rules in the plan.

An exception is the application of a precautionary approach to the use, storage, cultivation, harvesting, processing or transportation of genetically modified organisms in Northland has been identified by the community as a priority, requiring additional control at a regional and district level. Within the Northland region this means that field trialling of a genetically modified organism within the CMA (with prior approval of the Environmental Protection Authority (EPA)) requires consent from the Regional Council and the release of a genetically modified organism is prohibited (and cannot be applied for). Genetically modified medical applications involving the use of viable and/or non-viable genetically modified organisms (including EPA approved releases, vaccines and medical research) are permitted under this Plan.

District Plan provisions are also applicable and control and prohibit outdoor trials and release of genetically modified organisms on land (outside the CMA).

C.1 Coastal activities

This is an index and guide to the rules in this section. It does not form part of the Plan. Refer to specified rules for detailed requirements.

General structures

Rule	Page
C.1.1.1 'Existing Structures-permitted activity'	29
...	

GMOs in the CMA (including discharges subject to section 15)

Rule	Page
C.1.8.1 General – permitted activity	xx
C.1.8.2 GMO Field Trials- discretionary activity	xx
C.1.8.3 GMO Veterinary Vaccines- permitted activity	xx
C.1.8.4 Viable GMO Veterinary Vaccines - discretionary activity	xx
C.1.8.5 GMO releases – prohibited activity	xx

C.1.1 General structures

C.1.1.1

Existing structures – permitted activity

The following structures in the coastal marine area that:

...

C.1.8 GMOs in the CMA (including discharges subject to section 15)

C.1.8.1

General – permitted activity

Research and trials within the contained laboratories involving the use of genetically modified organisms, medical applications involving the use of viable and/or no-viable Genetically modified organisms (including genetically modified vaccines), veterinary applications involving the use of non-viable genetically modified organisms and any other genetically modified organism release or use not specifically provided for or prohibited.

The RMA activities this rule covers:

- Erection or placement or alteration of structures (s12(1)(b)).
- Damage, destruction or disturbance of the foreshore or seabed (s12(1)(c), (e) and (g)).
- Deposition onto the foreshore or seabed (s12(1)(d)).
- Introduce or plant any exotic or introduced plant in, on, or under the foreshore or seabed s12(1)(f)
- Occupation of space in the common marine and coastal area (s12(2)(a)).
- Activities in the coastal marine area (s12(3)).
- Discharge of contaminants (s15(1)(a)).

C.1.8.2

GMO Field Trials- discretionary activity

Genetically modified organism field trials within the coastal marine area (including any structure intended to house, or otherwise contain, plants and animals which are associated with the conducting of genetically modified organism field trials) are a discretionary activity provided:

1. The GMO activity has the relevant approval from the Environmental Protection Authority; and is undertaken in accordance with Environmental Protection Authority approval conditions for the activity.
2. Council requires the applicant for the resource consent to provide a performance bond, with an approved trading bank guarantee, in respect of the performance of any one or more conditions of the consent, including conditions relating to monitoring required of the GMO activity (prior to, during and after the activity). This bond is to be available for payment to redress any adverse environmental effects and any other adverse effects to third parties (including economic effects) that become apparent during or after the expiry of the consent. The form of, time and manner of implementing and discharging the bond shall be decided by, and be executed to the satisfaction of Council.

   Note: All of the following matters will be considered when determining the amount and type of the bond:

   (a) what adverse effects could occur and the potential significance, scale and nature of those effects, notwithstanding any measures taken to avoid those effects;
   (b) the degree to which the consent holder for the activity has sought to avoid those adverse effects, and the certainty associated with whether the measures taken will avoid those effects;
   (c) the level of risk associated with any unexpected adverse effects from the activity;
   (d) the likely scale of costs associated with remediating any adverse effects that may occur;

The following information shall be provided in support of the application:

- Evidence of approval from the EPA for the specific GMO for which consent is sought. The duration of any consent granted will be aligned with EPA approval terms.
- Details of proposed containment measures for the commencement, duration and completion of the proposed activity.
- Details of the species, its characteristics and lifecycle, to which the GMO activities will relate.
- Research on adverse effects to the environment, cultural values and economy associated with the activity should GMOs escape from the activity area, and measures that will be taken to avoid, remedy or mitigate such effects.
- Evidence of research undertaken that characterises and tests the GMO, and the certainty associated with the accuracy of that information.
- A management plan outlining on-going research and how monitoring will be undertaken during, and potentially beyond, the duration of consent.
- Details of areas in which the activity is to be confined.
- Description of contingency and risk management plans and measures.

Notification:

Any application for resource consent under rule C.1.8.4 must be publicly notified:

The RMA activities this rule covers:

- Erection or placement or alteration of structures (s12(1)(b)).
- Damage, destruction or disturbance of the foreshore or seabed (s12(1)(c), (e) and (g)).
- Deposition onto the foreshore or seabed (s12(1)(d)).
- Introduce or plant any exotic or introduced plant in, on, or under the foreshore or seabed s12(1)(f)
- Occupation of space in the common marine and coastal area (s12(2)(a)).
- Activities in the coastal marine area (s12(3)).
- Discharge of contaminants (s15(1)(a)).

C.1.8.3

GMO Veterinary Vaccines- permitted activity

The use of any viable (and non-viable) genetically modified veterinary vaccine of a specific dose supervised by a veterinarian are a permitted activity.

The RMA activities this rule covers:

- Erection or placement or alteration of structures (s12(1)(b)).
- Damage, destruction or disturbance of the foreshore or seabed (s12(1)(c), (e) and (g)).
- Deposition onto the foreshore or seabed (s12(1)(d)).
- Introduce or plant any exotic or introduced plant in, on, or under the foreshore or seabed s12(1)(f)
- Occupation of space in the common marine and coastal area (s12(2)(a)).
- Activities in the coastal marine area (s12(3)).
- Discharge of contaminants (s15(1)(a)).

C.1.8.4

Viable GMO Veterinary Vaccines - discretionary activity

The use of any viable genetically modified veterinary vaccine not otherwise provided for is a discretionary activity provided:

1. The GMO activity has the relevant approval from the Environmental Protection Authority; and is undertaken in accordance with Environmental Protection Authority approval conditions for the activity.
2. Council requires the applicant for the resource consent to provide a performance bond, with an approved trading bank guarantee, in respect of the performance of any one or more conditions of the consent, including conditions relating to monitoring required of the GMO activity (prior to, during and after the activity). This bond is to be available for payment to redress any adverse environmental effects and any other adverse effects to third parties (including economic effects) that become apparent during or after the expiry of the consent. The form of, time and manner of implementing and discharging the bond shall be decided by, and be executed to the satisfaction of Council.

The following information shall be provided in support of the application:

- Evidence of approval from the EPA for the specific GMO for which consent is sought. The duration of any consent granted will be aligned with EPA approval terms.

- Details of proposed containment measures for the commencement, duration and completion of the proposed activity.
- Details of the species, its characteristics and lifecycle, to which the GMO activities will relate.
- Research on adverse effects to the environment, cultural values and economy associated with the activity should GMOs escape from the activity area, and measures that will be taken to avoid, remedy or mitigate such effects.
- Evidence of research undertaken that characterises and tests the GMO, and the certainty associated with the accuracy of that information.
- A management plan outlining on-going research and how monitoring will be undertaken during, and potentially beyond, the duration of consent.
- Details of areas in which the activity is to be confined.
- Description of contingency and risk management plans and measures.

Notification:

Any application for resource consent under rule C.1.8.4 must be publicly notified.

The RMA activities this rule covers:

- Erection or placement or alteration of structures (s12(1)(b)).
- Damage, destruction or disturbance of the foreshore or seabed (s12(1)(c), (e) and (g)).
- Deposition onto the foreshore or seabed (s12(1)(d)).
- Introduce or plant any exotic or introduced plant in, on, or under the foreshore or seabed s12(1)(f)
- Occupation of space in the common marine and coastal area (s12(2)(a)).
- Activities in the coastal marine area (s12(3)).
- Discharge of contaminants (s15(1)(a)).

C.1.8.5

GMO releases – prohibited activity

Genetically modified organism releases – both food-related and non-food related within the coastal marine area and any structure intended to house or otherwise contain plants and animals which are associated with outdoor genetically modified organisms releases, except as specifically provided for

The RMA activities this rule covers:

- Erection or placement or alteration of structures (s12(1)(b)).
- Damage, destruction or disturbance of the foreshore or seabed (s12(1)(c), (e) and (g)).
- Deposition onto the foreshore or seabed (s12(1)(d)).
- Introduce or plant any exotic or introduced plant in, on, or under the foreshore or seabed s12(1)(f)
- Occupation of space in the common marine and coastal area (s12(2)(a)).
- Activities in the coastal marine area (s12(3)).
- Discharge of contaminants (s15(1)(a)).

D Policies

D.7 Genetically modified organisms (GMOs)

D.7.1 Precautionary principle

To adopt a precautionary approach by prohibiting outdoor *genetically modified organism release* and by making *genetically modified organism field trials* and the use of viable genetically modified veterinarian vaccines not of a specific dose and supervised by a veterinarian a discretionary activity.

D.7.2 Medicinal and veterinary

Provide for the use of Environmental Protection Authority approved non-viable and/or viable genetically modified medical applications (including genetically modified vaccines) as a permitted activity.

D.7.3 Financial Accountability

To ensure that a resource consent granted for the *genetically modified organism field trials* of a *genetically modified organism* is subject to conditions that ensures that the consent holder is financially accountable (to the extent possible) for any adverse effects associated with the activity, including clean-up costs and remediation, including via the use of bonds.

D.7.4. Risk Avoidance

To ensure that a resource consent granted for *genetically modified organism field trials* are subject to conditions that serve to avoid, as far as can reasonably be achieved, risk to the environment, the mauri of flora and fauna, and the relationship of mana whenua with flora and fauna from the use, storage, cultivation, harvesting, processing or transportation of a *genetically modified organism*.

D.7.5. Monitoring Costs

To ensure that a resource consent granted for the *genetically modified organism field trials* is subject to a condition requiring that monitoring costs are met by the consent holder.

D.7.6. Liability

To require consent holders for a *genetically modified organism* activity to be liable (to the extent possible) for any adverse effects caused beyond the site for which consent has been granted for the activity.

D.7.7. Adaptive Approach

To adopt an adaptive approach to the management of the outdoor use, storage, cultivation, harvesting, processing or transportation of a GMO in the district through periodic reviews of these plan provisions, particularly if new information on the benefits and/or adverse effects of a GMO activity becomes available.

D.7.8 Mitigation Requirements

Require, where appropriate, more stringent measures than those required under the provisions of the Hazardous Substances and New Organisms Act 1996 to manage potential risks.

F Objective

F.0.1

Objective

Manage the use, development, and protection of Northland's natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural well-being and for their health and safety while:

1) sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations, and

2) safeguarding the life-supporting capacity of air, water, soil, and ecosystems, and

3) avoiding, remedying, or mitigating any adverse effects of activities on the environment.

F.0.2.1

Objective

The coastal marine area is protected from potential adverse effects associated with the use, occupation, cultivation, harvesting, processing or transportation of GMOs through the adoption of a precautionary approach, including adaptive responses, to manage uncertainty and lack of information.

F.0.2.2

Objective

The sustainable management of the natural and physical resources of the coastal marine area with respect to the use of GMOs, a significant resource management issue identified by the community.

PLANNING
NETWORK SERVICES

23 March 2018

Ben Lee – Policy Development Manager
Northland Regional Council
36 Water street,
Whangarei 0110

By Email: benl@nrc.govt.nz

PROPOSED NORTHLAND REGIONAL PLAN
RESPONSE TO HEARINGS PANEL MINUTE NO.1 DATED 30 JANUARY 2018

May it please the Panel,

I am an independent planning consultant instructed by Soil and Health Association of New Zealand Incorporated (Soil & Health) and GE Free Tai Tokerau to address the request for a section 32 evaluation in respect of Soil & Health's and GE Free Tai Tokerau submissions concerning Provision for Genetically Modified Organisms (GMO) under the Proposed Northland Regional Plan (**PNRP**).

In addition, I provide a brief update on the amendments sought under Soil & Health's submission to the PNRPs provision for agrichemicals.

My planning experience, including planning provision for GMOs, is set out under **attachment "A"**.

1 Panel Directions

By its **Minute 1**, dated 30 January 1018, the Hearings panel gave the following direction:

> [10] Accordingly, pursuant to section 41C(2) of the RMA, the Hearing Panel requests that the submitters listed in Appendix 1 provide further information (if such information has not already been provided in their original submissions), being both precise details of the new provisions requested (for example the actual wording of any new definitions, rules or policies addressing the matter raised) and an analysis of the merits of any such new provisions. Submitters addressing the same matter (for example genetically modified organisms) are encouraged to join together to provide a single set of this information, as this will avoid the Panel having to consider multiple analyses of the same matter.
>
> [11] The Hearing Panel recommends that the submitters refer to the Councils Section 32 analysis report for guidance on the type of analysis that would be of most assistance to the Panel.
>
> [12] It is important to note that any further information provided should not seek to materially change or expand the scope of the additions to the Plan that were sought in the original submission.

By Minute 2, the Panel granted an extension of time for listed submitters until 23 March 2018, for which the Soil & Health Association and GE Free Tai Tokerau is grateful.

2. Submitters represented

John Sanderson
Puhipuhi Mining Action Group (contact: Jenny Kirk)
Ursula Eisenmann
Shani Eisenmann
Erwin Eisenmann WAIMA HILL BEEF (Hokianga)
Patuharakeke Te Iwi Trust board (Juliane Chetham contact person)
Lynette Hewland
Rowan Tautari
Organics Aoteraoa NZ (OANZ) (Brendan Hoare contact person)
Lesley Jones
Martin Robinson/ Kerikeri Organics
Ross Clark
Ned Collie
Gail Pearcy
David McClement
Auckland GE Free Coalition (AGEFC)
Hokianga Environmental Protection Group
Mary McDonald
Jon Carapiet
Shushila Ajani
GE FREE NZ
Bob Jones
Rolf Mueller Glodde
Vision Kerikeri
Inge Bremmer
Dr. Benjamin Pittman
Mary Wilson
Zelka Linda Grammer
Margaret Hicks
Physicians & Scientists for Global Responsibility Charitable Trust (NZ)*
Lisa Er
Reuben Porter Taipari
Bream Bay Coastal Care Trust*
Ian Cambourn
Annie Frear
Mike Trott
Far North Organic Growers (FNOG)
David Lourie
Richard Alspach

3. Attachments

The following documents are attached

Attachment "A" Vernon Warren qualifications and experience

Attachment "B" Proposed amendments to the PNRP with respect to GE/GMOs.

Attachment "C" Inter-council Working Party Draft Section 32 report January 2013;

Attachment "D" Section 32 Report with respect to the proposed additions about GMOs to the PNRP; and

Attachment "E" Copy of Chapter 37, Genetically modified organisms from the Auckland Unitary Plan (operative in Part).

4. Jurisdictional Matters

I note that there is a jurisdictional matter arising from appeals against the Northland Regional Policy Statement that is relevant to the inclusion of GMO provisions under the PNRP. Until those appeals are determined, the GE/GMO provisions of the NRPS cannot be certain or become operative. Federated Farmers of NZ (**FF**) has withdrawn its appeal against the GMO provisions under the NRPS. I understand Whangarei District Council's (**WDC**) appeal remains live, as FF has sought to address a second jurisdictional question as to whether GE/GMO provisions under the RMA is limited to plants and crops. I understand the remaining issues under WDC's appeal concern inclusion of the word "plant" in policy 6.1.2 and the discouragement in method 6.1.5 against including liability for harm in Plans (WDC and Soil & Health).

I understand that all parties are now in agreement that there is clear jurisdiction to include GE/GMO provisions, that the word "plant" in policy 6.1.2, and the liability for harm references in Method 6.1.5 should be deleted. These positions have been recorded by memoranda from the various parties to the Court.

However, until the Court issues its decision, the GE/GMO provisions of the NRPS remain "proposed". I suggest that given the position of the parties and previous decision of the Environment Court and the High Court on GMO matters, it would be appropriate to continue to hear and determine the submissions to the PNRP on this topic with final decision to include any decisions of the Panel deferred until the decision of the Environment Court on the NRPS appeals has been issued. I understand from legal counsel for Soil & Health that the final decision on jurisdiction should not be that far off.

5. Proposed GMO provisions for the PNRP

The Panel will be well aware of the history of development of GMO provisions in the regional and district plans in the Northern Peninsula. In brief, significant research and work was undertaken by the Inter-Council Working Party (**WP**) set up by the Regional and District Councils. The WP produced model draft provisions and s.32 analysis for consideration by the Councils for inclusion in regional and district policy and plans.

The most recent application of the WP draft provisions has been in the Auckland Unitary Plan (**AUP**). I haveused the AUP provisions and s.32 report as a starting point to develop proposed wording of GMO provisions for inclusion in the PNRP.

These include additions to the following:

- Part B Definition: To add definitions relative to GE/GMO terminology;
- Part C Rules: To add a new section C9 for the management of GMOs in the CMA; and
- Part D Policies: T add a new section D5.28 to introduce policies for managing the effect of the use of genetic engineering or the release of genetically modified organisms.

These proposed provisions (apart from the definitions) have been drafted to apply only to the CMA to avoid any potential overlap of regulation of GMOs between regional and district

plans. Model provisions have been amended and adapted to fit the particular format of the PNRP whilst maintaining continuity of approach across all planning documents in the Northern Peninsula.

However, there is one exception. The Kaipara District has not, as yet, introduced GE/GMO provisions into its district plan. Unless the NRC introduces GMO provisions to its NRP to cover the land and water areas of the Kaipara District, there will be a significant gap in the GMO regulatory coverage within the Northern Peninsula. The continuity of approach sought by the Councils through the work of the Inter-Council Working Party would be undermined.

For that reason, I consider that it would be good environmental practice for the policies and rules proposed for the CMA in Attachment B to thius response to apply also to the land and water areas of the Kaipara District until such time as GMO provisions are introduced to the Kaipara District Plan and have become effective under the Act.

I consider that the time for which these provisions of the NRP would remain effective could be managed by a sunset clause. Such a clause would provide that the GMO provisions of the NRP would cease to apply to the land and water of the Kaipara District at such time as GMO provisions have been inserted in the Kaipara District Plan and become effective or operative.

One approach could be to include these provisions in a Transitional Provisions section of the NRP.

6. Section 32 analysis

Again, I have relied on the s.32 analysis used for the GMO provisions in the AUP a starting point. I have reviewed and adapted this analysis for application to the proposed GMO provisions for CMA in the PNRP. I consider that this analysis satisfies the requirements of s.32 for the inclusion of the GMO provisions sought by Soil & Health and GE Free Tai Tokerau in their submissions on the PNRP.

7. Amendments to the PNRP about Agrichemicals.

The Panel has not sought further information about the relief sought by Soil & Health for the inclusion of additional control of the use of certain identified agrichemicals.

I consider that the relief sought and the reasons given are sufficiently detailed and clear that further information is not necessary at this stage. I am advised that Soil & Health intends to call evidence in support of its agrichemical and GMO submissions.

8. Conclusions

In conclusion, S&H consider that the information now provided is sufficient for the relief sought in its submission to be fully understood by all submitters and the Council and to satisfy the requirements of s.32 of the Act.

S&H consider that it is particularly important to achieve continuity in the management of GMOs through Regional and district policy and plans throughout the Northern Peninsula. It is important that this continuity be achieved at both regional and district levels. Although still subject to appeals, significant progress has been made with district plans (except for Kaipara), Regional Policy statements and the Auckland Unitary Plan.

On the jurisdictional front, it is clear through the decisions of the Environment Court and the High Court, that there is jurisdiction for local and regional councils to control GE/GMOs

within the framework of the RMA. While S&H appreciate that undetermined appeals against the GE/GMO provisions in the NRPS, it submits that the most efficient way to proceed is to finalise GMO provisions for the PNRP through these provisions subject only to the outcome of the RPS appeals on that topic.

AUTHOR

Vern Warren

Vern Warren
Director

ATTACHMENT A
QUALIFICATIONS AND EXPERIENCE OF VERNON RICHARD CROSS WARREN

Qualifications

My full name is Vernon Richard Cross Warren. I am a resource management planning consultant and am the managing director of Planning Network Services Limited.

I hold the following qualifications and professional memberships: MA(Hons) (Massey), DIP T&RP (Melbourne), and I am a member of the Planning Institute of Australia and the New Zealand Planning Institute.

Experience

My 50 plus years of planning experience have been divided between the public and private sectors in Australia and New Zealand. In Australia I held the position of Director of Strategic Planning (State Planning Policy and Regional Planning) with the Town & Country Planning Board of the State of Victoria. In New Zealand, from early 1980 to August 1989, I held the post of Director of Planning & Community Development with the Auckland City Council. Since then I have been in private practice as the founding principal of Planning Network Services, now a Limited Company.

In 2001 the New Zealand Planning Institute presented me with its Distinguished Service Award.

My planning experience has encompassed all facets of Regional Policy and District Plan preparation and administration, and includes a wide scope of small and large-scale activities from residential to education, commercial and industrial, mining, rural and coastal developments. I am experienced in all stages of plan preparation and resource consent processes, and the preparation of assessments of effects on the environment.

As Director of Planning (Strategic) for the Town & Country Planning Board of Victoria, I drafted and processed to approval 10 State Statements of Planning Policy including for sensitive environmental management areas such as the lignite rich Latrobe Valley and the Gippsland Lakes.

Since 1989 I until 2012 I advised The National Trading Company of New Zealand Limited ("**NTC**") and its parent company, Foodstuffs (Auckland) Limited on numerous developments in the company's Auckland region (Taupo and northwards) preparing applications and assessments of effects in that regard. For NTC, I have prepared District Plan changes and have given advice

from submissions to Environment Court hearings with respect to The Auckland Regional Policy Statement and the Auckland Region Growth Strategy, and most of the District Plans in the Auckland region, and many subsequent plan changes.

Since 1992 I have also been the principal resource management advisor to The Warehouse Group Limited and have been responsible for preparation of applications and assessments of effects for most of their new developments throughout New Zealand since that time.

My experience has included providing advice to a range of iwi organisations including to Tainui, Ngapuhi, Ngai Tahu and the Tauranga Coastal Iwi.

For the former Auckland City Council and subsequently for private sector clients, I have provided detailed advice, reporting and evidence with respect to a range of public works and designation procedures.

With respect to genetically modified organisms, I have provided advice and expert evidence for the Soil & Health Association of New Zealand with respect to regional policy statements, regional plans and district plans in the Hawkes Bay, Bay of Plenty, Auckland and Northland Regions. I have appeared as an expert witness on planning aspects of this topic at district, regional and Environment Court hearings.

Vern Warren

21 March 2018

ATTACHMENT B

AMENDMENTS TO THE PNRP REQUESTED BY THE SOIL & HEALTH ASSOCIATION

B DEFINITIONS

Add the following definitions.

Adaptive management approach
A systematic, iterative process of decision making in the face of uncertainty, with an aim of reducing uncertainty over time through system monitoring and changes to management in response to the results of monitoring. This does not apply to genetically modified products that are not viable and are no longer genetically modified organisms, or products that are dominantly non-genetically modified but contain nonviable genetically modified ingredients, such as processed foods.

Genetically modified organism
Unless expressly provided otherwise by regulations, any organism in which any of the genes or other genetic material:
- have been modified by in vitro techniques; or
- are inherited or otherwise derived, through any number of replications, from any genes or other genetic material which has been modified by in vitro techniques.

Genetically modified veterinary vaccine
A veterinary vaccine that is a genetically modified organism as defined in this Plan.

Genetically modified organism field trials
The carrying out of outdoor trials, on the effects of the organism under conditions similar to those of the environment into which the organism is likely to be released, but from which the organism, or any heritable material arising from it, could be retrieved or destroyed at the end of the trials.

Genetically modified organism release
To allow the organism to move within New Zealand free of any restrictions other than those imposed in accordance with the Biosecurity Act 1993 or the Conservation Act 1987. A release may be without conditions under section 34 of the Hazardous Substances and New Organisms Act 1996 or subject to conditions set out in section 38A of Hazardous Substances and New Organisms Act 1996.

Viable genetically modified veterinary vaccine
A genetically modified veterinary vaccine that could survive or replicate in the environment or be transmitted from the inoculated recipient

D POLICIES

Except for policies D1 and D1.1 add the following policies to this section. Policies D1 and D1.1 are already in the PNRP but are included here as it they complement the proposed package of policies below.

D.1 Tangata whenua

D.1.1 When an analysis of effects on tangata whenua and their taonga is required

A resource consent application must include in its assessment of environmental effects an analysis of the effects of an activity on tangata whenua and their taonga(1) if one or more of the following is likely

4) the use of genetic engineering and the release of genetically modified organisms to the environment, or

Note: The continued inclusion of clause 4 in this policy depends on the outcome of the appeals on the matter in the Regional Policy Statement.

D.2 General

D.2.3 Application of policies in the Regional Policy Statement for Northland to non-complying activities

The following policies in the Regional Policy Statement for Northland apply when considering a resource consent for a non-complying activity under Section 104D of the RMA:

Add the following policy reference:

6.1.2 Policy - Precautionary approach

Add the following policies

D.2.9 Managing effects of use of genetic engineering and or the release of genetically modified organisms on the environment.

D.5 COASTAL

Add a new section of policies

D5.28 Managing the effects of the use of genetic engineering or the release of genetically modified organisms

(1) Adopt a precautionary approach by prohibiting the outdoor release of a genetically modified organism, and by making outdoor field trialling of a genetically modified organism and the use of viable genetically modified veterinary vaccines not of a specific dose and supervised by a veterinarian a discretionary activity.

(2) Provide for the use of Environmental Protection Authority approved non-viable and/or viable genetically modified medical applications (including genetically modified vaccines) as a permitted activity.

(3) Require that the holder of a resource consent granted for the outdoor field trialling of a genetically modified organism is financially accountable (to the extent possible) for any adverse effects associated with the activity, including clean-up costs and remediation, including through the use of bonds.

(4) Require outdoor field trialling of genetically modified organisms to avoid, as far as can reasonably be achieved, risks to the environment or to the mauri of flora and fauna or to the relationship of Mana Whenua with flora and fauna from the use, storage, cultivation, harvesting, processing or transportation of a genetically modified organism.

(5) Require all monitoring costs to be met by the consent holder.

(6) Require that the outdoor use of genetically modified organisms does not result in migration of genetically modified organisms beyond the area designated by:

(a) ensuring adequate site design, construction and management techniques;

(b) preventing the escape of genetically modified organisms from transporting vehicles or vessels; and

(c) ensuring all heritable material is removed upon the conclusion of the activity.

(7) Adopt an adaptive approach to the management of the outdoor use, storage, cultivation, harvesting, processing or transportation of a genetically modified organism through periodic reviews of these plan provisions, particularly if new information on the benefits and/or adverse effects of a genetically modified organism activity becomes available.

(8) Require, where appropriate, more stringent measures than those required under the provisions of the Hazardous Substances and New Organisms Act 1996 to manage potential risks.

C RULES

C.1 Coastal activities

Add a new section C.9 Genetic engineering and genetically modified organisms and set out below and amend the Index at the beginning of C.1 accordingly

C.9 Genetic engineering and genetically modified organisms

C.9.1 Research and Trials

Research and trials within contained laboratories involving the use of genetically modified organisms is a permitted activity.

The RMA activities this rule covers

s.12(1), (2) and (3)

C9.2 Medical applications

Medical applications involving the use of viable and/or non-viable genetically modified organisms, (including genetically modified vaccines) are permitted activities

The RMA activities this rule covers

s.12(1) and (3)

C9.3 Veterinary applications

Veterinary applications involving the use of non-viable genetically modified organisms are permitted activities

The RMA activities this rule covers

s.12(1) and (3)

C9.4 Veterinary applications involving viable genetically modified vaccines

(1) The use of any viable genetically modified veterinary vaccine of a specific dose supervised by a veterinarian is a permitted activity

(2) The use of any viable genetically modified veterinary vaccine not otherwise provided for is a discretionary activity

The RMA activities this rule covers

s.12(1) and (3)

s.15(1) and (2)

C9.5 Any other GMO release

Any other genetically modified organism release or use not specifically provided for or prohibited is a permitted activity.

The RMA activities this rule covers

s.12(1) and (3)

C9.6 Field Trials

Genetically modified organism field trials within the coastal marine area and any structure intended to house, or otherwise contain, plants and animals which are associated with the conducting of genetically modified organism field trials are discretionary activities.

The RMA activities this rule covers

s.12(1), (2) and (3)

C9.7 Genetically modified organism releases

(1) Genetically modified organism releases – food-related within the coastal marine area and any structure intended to house or otherwise contain plants and animals which are associated with outdoor genetically modified organisms releases, except as specifically provided for is a prohibited activity;

(2) Genetically modified organism releases – non food-related within the coastal marine area and any structure intended to house or otherwise contain plants and animals which are associated with outdoor genetically modified organism releases, except as specifically provided for

The RMA activities this rule covers

s.12(1), (2) and (3)

C9.8 Notification

(1) Any application for resource consent for the following activities must be publicly notified:

(a) genetically modified organism field trials on land and within the coastal marine area and any structure intended to house or otherwise contain plants and animals which are associated with the conducting of genetically modified organism field trials; or

(b) the use of any viable genetically modified veterinary vaccine not otherwise provided for.

(2) Any application for resource consent for an activity listed in Table E37.4.1 Activity table and which is not listed in E37.5(1) above will be subject to the normal tests for notification under the relevant sections of the Resource Management Act 1991.

The RMA activities this rule covers

Sections 95A to 95G inclusive

C9.9 Standards

All activities listed as a discretionary activity in Table E37.4.1 Activity table must comply with the following discretionary activity standards. These standards are in addition to any controls/conditions imposed by the Environmental Protection Authority.

The RMA activities this rule covers

s.67(2)

C9.9.1. Approvals

(1) All genetically modified organism discretionary activities must:

(a) have the relevant approval from the Environmental Protection Authority; and

(b) be undertaken in accordance with Environmental Protection Authority approval conditions for the activity.

The RMA activities this rule covers

s.67(1) and (2)

C9.9.2. Bond requirements

(1) The Council requires the holder of a resource consent for an activity involving the use of a genetically modified organism to provide a bond in respect of the performance of any one or more conditions of the consent, including conditions relating to monitoring required of the genetically modified organism activity (prior to, during and after the activity), and that this bond be available to pay or reimburse any costs incurred by, or on behalf of, the Council to avoid, remedy or mitigate any

adverse environmental effects and any other adverse effects to, or on, third parties (including economic effects), that become apparent during the exercise or after the expiry of the consent.

(2) The exact time and manner of implementing and discharging the bond will be decided by, and be executed to the satisfaction of, the Council.

(3) All of the following matters will be considered when determining the amount and type of the bond:

(a) what adverse effects could occur and the potential significance, scale and nature of those effects, notwithstanding any measures taken to avoid those effects;

(b) the degree to which the consent holder for the activity has sought to avoid those adverse effects, and the certainty associated with whether the measures taken will avoid those effects:

(c) the level of risk associated with any unexpected adverse effects from the activity;

(d) the likely scale of costs associated with remediating any adverse effects that may occur;

(e) the timescale over which effects are likely to occur or arise; and

(f) the extent of monitoring that may be required in order to establish whether an adverse effect has occurred or whether any adverse effect has been appropriately remedied.

The RMA activities this rule covers

s.109

C9.9.3. Monitoring

(1) A discretionary activity for a genetically modified organism may require monitoring during, and beyond, the duration of consent. Monitoring is to be carried out by either the Council, or the consent holder, with appropriate reporting procedures to the relevant regulatory authority.

(2) A monitoring strategy for a discretionary activity for a genetically modified organism can include all of the following matters:

(a) inspection schedules for the site, storage areas and equipment (daily, weekly, monthly, events based);

(b) testing of procedures (e.g. accidental release response);

(c) training programmes for new staff, and updates for existing staff;

(d) audits of sites and site management systems; and

(e) sample testing of plants, soils and water in neighbouring properties or localities for the presence of migrated genetically modified organisms.

The RMA activities this rule covers

s.67(2) (e) and (h)

C9.9.4 Reporting

(1) Reporting requirements by the consent holder must be stipulated in the consent conditions.

The RMA activities this rule covers

S67(2)(h)

C9.10 Special information requirements

(1) An application for:

(a) the use of any viable genetically modified veterinary vaccine not otherwise provided for; or

(b) for genetically modified organism field trials on land and within the coastal marine area and any structure intended to house or otherwise contain plants and animals which are associated with the conducting of genetically modified organism field trials must be accompanied by all of the following:

(i) evidence of approval from the Environmental Protection Authority for the specific genetically modified organism for which consent is sought;

(ii) details of the proposed containment measures for the commencement, duration and completion of the proposed activity;

(iii) details of the species, its characteristics and lifecycle, to which the genetically modified organism activities will relate;

(iv) research on adverse effects to the environment and economy associated with the activity should genetically modified organisms escape from the activity area, and measures that will be taken to avoid, remedy or mitigate such effects;

(v) evidence of research undertaken that characterises and tests the genetically modified organisms, and the certainty associated with the accuracy of that information;

(vi) a management plan outlining on-going research and how monitoring will be undertaken during, and potentially beyond, the duration of consent;

(vii) details of areas in which the activity is to be confined; and

(viii) a description of contingency and risk management plans and measures.

The RMA activities this rule covers

s.67(2) (g)

Auckland Council, Far North District Council, Kaipara District Council and Whangarei District Council

Draft Proposed Plan Change to the District / Unitary Plan

Managing Risks Associated with Outdoor Use of Genetically Modified Organisms

Draft Section 32 Report

January 2013

TABLE OF CONTENTS

LIST OF TABLES

VOLUME 2 - SUPPORTING DOCUMENTATION TO THE SECTION 32 REPORT

- Community Management of GMOs: Issues, Options and Partnership with Government. Simon Terry Associates, March 2004.
- Community Management of GMOs II: Risks and Response Options. Simon Terry Associates and Mitchell Partnerships, May 2005.
- Community Management of GMOs III: Recommended Response Option. Simon Terry Associates and Mitchell Partnerships, September 2010.
- Colmar Brunton Genetically Modified Organisms - Survey Results for Aggregated Northland Area, November 2009.
- Colmar Brunton Genetically Modified Organisms - Survey Results Prepared for Auckland Regional Council, November 2009.
- Letter from Working Party to Minister for the Environment, December 2006.
- Response from Minister for the Environment to the Working Party, March 2007.
- Letter from Working Party to Minister for the Environment, June 2010.
- Response from Minister for the Environment to the Working Party, August 2010.

1. INTRODUCTION

1.1 Scope and Purpose of the Report

This report has been prepared by the Auckland Council, Far North District Council, Kaipara District Council and Whangarei District Council ("**the Northern Councils**") to fulfil the statutory requirements of section 32 of the Resource Management Act 1991 ("**RMA**" or "**the Act**"). The report relates to the proposal to introduce new provisions via a Plan Change to the Northern Councils' respective District / Unitary Plan, to manage outdoor activities involving genetically modified organisms ("**GMOs**").

Section 32 of the Act requires that before adopting any objective, policy, rule or other method, the Council shall have regard to the extent to which each objective is the most appropriate way to achieve the purpose of the Act, and whether the policies, rules or other methods are the most appropriate for achieving the objective. A report must be prepared summarising the evaluation and giving reasons for the evaluation. This report is an evaluation of the "*Proposed Plan Change to the District / Unitary Plan – Managing Risks Associated with the Outdoor Use of Genetically Modified Organisms*" ("**Plan Change**") as required by section 32 of the Act. It should be read together with the text of the Plan Change. The Plan Change applies to proposed provisions for land use and for activities in the Coastal Marine Area ("**CMA**").

For the purposes of the Plan Change, the "Northern Peninsula" is defined as the geographic area from the southern boundary of the Auckland Council to the northern tip of New Zealand.

As the risks associated with the outdoor use of GMOs are not constrained by jurisdictional boundaries a unified approach from all Northern Councils provides an optimal framework. However, individual councils are able to tailor the generic provisions to their specific District / Unitary Plan, and particularly with regard to ensuring that the generic provisions give effect to, or address the absence of, provisions of the relevant Regional Policy Statement.

This report (and the accompanying Plan Change) outlines the mechanisms proposed by the Northern Councils in respect to managing risks associated with the outdoor use of GMOs, including in the CMA. The next step to inserting the Plan Change provisions governing GMO activities into the relevant District / Unitary Plan is targeted consultation and discussion with key interest groups and the community. Feedback received during consultation will assist the Northern Councils in refining the Resource Management Issue, and in determining the appropriateness, costs and benefits of the Plan Change.

This section 32 report is a working draft. It will continue to be refined and adjusted in relation to any consultation that occurs, or in relation to any new information that may arise. It will be finalised at the time a Plan Change or a Notified Proposed Plan is formally introduced.

1.2 Development of the Plan Change

The Plan Change has been progressively developed over the last 10 years. During this time community concerns over the potential use of GMOs in the Northern Peninsula have been demonstrated through numerous submissions on annual plans,

Long Term Council Community Plans ("**LTCCP**"), Long Term Plans ("**LTPs**"), district plans, and a 7,000 plus signature petition to Whangarei District Council in 2001/2002 which called for *"Whangarei District and environment to be free of any genetic engineering trials or crops grown within our district".* In addition, tangata whenua have expressed on-going concerns over genetic engineering in iwi/hapu management plans and other forums. A comprehensive Colmar Brunton survey of community attitudes to GMOs commissioned by Northland and Auckland councils in 2009 revealed significant community concern over GMOs in the environment and support for local/regional management of GMOs in the Northern Peninsula.

As a consequence of on-going community concerns, all councils in Northland and three in the Auckland Region (prior to November 2010 amalgamation) included policy statements in their LTCCPs/LTPs[1] that provided for a precautionary approach to the use of GMOs in the environment.

Local authorities in the Northern Peninsula responded to community concerns about GMO use by forming an Inter-council Working Party on GMO Risk Evaluation and Management Options ("**the Working Party**") in 2003[2]. The focus of the Working Party is to evaluate risks to local bodies and their communities in the Northern Peninsula from the outdoor use of GMOs, together with response options to those risks, including regulation of GMO land and water uses under the RMA.

As part of its investigations, the Working Party commissioned a series of reports to investigate the nature and extent of risks local authorities could expect to face from outdoor activities involving GMOs, and the response options available to address those risks. The reports and results of the Colmar Brunton survey commissioned form part of the section 32 evaluation and should be read in conjunction with this section 32 report. They are provided in Volume 2 to this document and include:

- *Community Management of GMOs: Issues, Options and Partnership with Government.* Simon Terry Associates, March 2004.
- *Community Management of GMOs II: Risks and Response Options.* Simon Terry Associates and Mitchell Partnerships, May 2005.
- *Community Management of GMOs III: Recommended Response Option.* Simon Terry Associates and Mitchell Partnerships, September 2010.
- Colmar Brunton Genetically Modified Organisms Survey, aggregated results prepared for the Northland Area and Auckland Regional Council.

The first report (Simon Terry Associates, 2004) investigated options for local authority management of GMOs. The second report commissioned (Simon Terry Associates and Mitchell Partnerships, 2005) examined in detail risks to local authorities and communities from outdoor use of GMOs and response options to manage those risks. It also recommended a joint community consultation programme as the next stage in the GMO evaluation process, to ascertain the level of risk the community was prepared

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1 The Far North District Council, Whangarei District Council, Kaipara District Council, Northland Regional Council, Rodney District Council, Waitakere City Council ("GE free in field and food") and Auckland Regional Council.

2 The Working Party initially comprised the Far North District Council, Kaipara District Council, Rodney District Council, Whangarei District Council, Waitakere City Council, Northland Regional Council and Auckland Regional Council. Auckland City Council and North Shore City Council were observers on the Working Party. Following the amalgamation of Auckland Regional Council and the seven previous city/district councils in 2010, the new Auckland Council became a representative on the Working Party.

to accept in respect to GMO use and whether regulations in respect to the management of GMOs should be set (and in what form) at the local level in addition to national level regulation.

The third report (Simon Terry Associates and Mitchell Partnerships, 2010) extended the earlier research by examining options available to councils under the RMA for managing the outdoor use of GMOs and identified a preferred response option (via a plan change).

The reports commissioned by the Working Party, and the results from the community survey undertaken (as recommended in the second report and detailed in Section 2.4 of this document) informed the development of the Plan Change and this section 32 evaluation.

1.3 Structure of the Report

This report has been prepared to meet the evaluation requirements of section 32 of the RMA and is set out in six sections as follows:

Section 1: This introduction.

Section 2: Provides a background to the rationale for the Plan Change, including outlining the potential use of GMOs in the Northern Peninsula, benefits and risks associated with the outdoor use of GMOs, identifies gaps in the national regulatory regime for GMOs and the absence of assurance of a precautionary approach, and outlines community opinions in respect to outdoor GMO use.

Section 3: Describes the scope of the Plan Change and defines the significant Resource Management Issue.

Section 4: Provides an evaluation of the Plan Change against the RMA and the section 32 legislative framework.

Section 5: Outlines the next steps recommended to progress the Plan Change and this draft section 32 report.

Section 6: Is the conclusion.

2. GENETICALLY MODIFIED ORGANISMS

2.1 Introduction

Genetic modification ("**GM**") refers to a set of techniques that alter genetic makeup by adding, deleting or moving genes (within or between species) to produce new and different organisms. GMOs are products of genetic modification. Another term often used to refer to the same technique is genetic engineering ("**GE**").

A wide range of GM products are being researched and developed for commercialisation. While the GMOs commercialised to date are in general directed at reducing harvest losses by combating pests and viruses, research into future varieties is attempting to considerably widen the scope of GM uses. This includes improved growth in plants, improved tolerance to environmental conditions and creating entirely new products and sectors of economic activity in agriculture, horticulture, plantation forestry, dairying, aquaculture and medicine.

GM techniques have been in wide use in laboratory-based research in New Zealand since the 1980s. The techniques are used by research institutes, private companies, universities and medical organisations primarily to:

- Identify genes and understand their functions.
- Investigate pests and diseases in animals and plants.
- Understand, diagnose and treat human disease.
- Investigate the control of environmental problems.
- Teach and educate future users of GM techniques.

New Zealand also conducts research into the social and environmental impacts of GM.

Most GM use in New Zealand is in contained environments, such as laboratories, and it is predominantly used as a tool for research. At present there are no GM crops grown commercially in New Zealand and only two field trials operating.[3]

Pastoral farming, horticulture and forestry are the predominant land uses in the Northern Peninsula, and are major contributors to the local economy. Aquaculture is also a rapidly growing industry with the Northern Peninsula due to the area's extensive coastline, isolation from heavily populated and polluted areas (particularly north of the urban Auckland area), temperate climate and high water quality. The Northern Peninsula is an ideal area for growing seafood and further development of the aquaculture industry is expected in the future. Therefore it is anticipated that GMO developers will consider the outdoor use of GMOs in the Northern Peninsula that relate to these activities. Potential GMO activities of relevance include GM food crops, trees, grasses, animals and pharma crops, but exclude research within contained laboratories involving GMOs, medical applications involving the manufacture and use of GM

[3] Trials are being conducted by Scion (a Crown Research Institute) involving two species of pine and with a focus on herbicide tolerance, reproductive traits, growth and quality traits, while AgResearch has approval to conduct experiments on nine different types of pasture animals and is mostly trialling GM cattle for a range of potential attributes and uses.

products, and food containing GM products that are not viable. Field trials and outdoor releases to the environment are the focus of the Plan Change.

2.2 Benefits and Risks

This section outlines the benefits and risks associated with the outdoor use of those types of GMOs which could be subject to approval under the Hazardous Substances and New Organisms Act 1996 ("**the HSNO Act**") and could be trialled or released within the Northern Peninsula. Potential risks are addressed in more detail than benefits as benefits do not influence the design of mechanisms to manage GMOs to the same extent that risks do.

2.2.1 Benefits

As outlined, the Northern Peninsula's main land- and water-based industries are dependent upon the productive and environmental characteristics of a range of plants and animals. GM is one of the techniques available to change the existing characteristics of plants and animals, and carries the potential to improve productivity in agriculture, horticulture, plantation forestry, aquaculture and medicine.

Research and development into GMOs and associated benefits that could be used outdoors in the Northern Peninsula includes:

- Increased productivity in plants and animals, including forage grasses, horticulture produce, trees, cattle and fish.
- Environmental management and pest control.
- Biopharming[4].

Details of the benefits and risks associated with the outdoor use of GMOs are contained in Simon Terry Associates (March 2004) and Simon Terry Associates and Mitchell Partnerships (May 2005) (Appendix 1) and are summarised below.

Increased Productivity in Plants and Animals

The scope of GM research being undertaken with the objective of enhancing the productive capacity of plants and animals, or to produce new products or varieties, includes the following:

- Grasses research targeting cultivars that produce more biomass, have better resistance to drought, or result in lower greenhouse gas emissions. These would be principally intended for use in the dairy sector.
- Research on GM trees investigating the modification of genetic traits of trees such as *Pinus radiata* to improve wood quality and develop herbicide resistant trees (reducing use of toxic chemicals and potentially reducing the number of times a crop needs to be sprayed). A focus on breeding for resistance to diseases is also developing.

[4] Biopharming is a sub-sector of the biotechnology industry that involves the process of genetically engineering plants so that they can produce certain types of proteins. The proteins can then be harvested and used to produce pharmaceuticals.

- Research on a range of horticultural crops is ongoing with the aim of developing varieties that are pest or herbicide resistant, have enhanced growth or storage characteristics, and are tolerant of a wider range of environmental conditions (for example, drought).

- The development of transgenic[5] cattle has a range of focuses, from higher performing animals to deriving new specialist milks (such as those that are hypoallergenic).

- GM salmon are a focus of research in the United States and were experimented with in the Marlborough Sounds in the 1990s. Research targets include temperature and disease resistance, along with increased body mass.

- New hormones, vaccines and diagnostic products for sheep using GM techniques, and the development of transgenic sheep modified to produce greater amounts of wool.

Environmental Management and Pest Control

Scientists at Landcare Research and Massey University are using GM technology in the laboratory to assist in the protection of endangered and other native animal species, including the kakapo, kiwi, tuatara, and black and bush robins. The GM technology is used in a variety of ways, including assessing the genetic variation between species for taxonomic (classification) purposes.

GM is also being investigated for pest control, including:

- Research using genetically modified bacteria from the gut of wasps to produce a toxin that could kill wasp species.

- Possum control with GM carrots that deliver an oral contraceptive that results in infertility in female possums. Plants, bacteria or nematode parasites could then be genetically modified to produce possum-specific 'infertility proteins' so that the growth of the possum population is halted.

- Releasing sterile blowflies which will mate with fertile females and ensure they cannot lay any eggs. This could provide an environmentally friendly way of controlling flies that cause sheep strike.

Biopharming

In the United States, investment in plant biopharming is being made on the basis that plants, including GM varieties, will prove capable of reproducing certain pharmaceutical and industrial substances at costs lower than alternative production routes. This application of GM techniques is still at an early stage of development but will ultimately increase the range of potential GMOs that developers may wish to cultivate in the Northern Peninsula. These include GMOs that produce pharmaceutical proteins (so-called pharma crops) and GMOs that provide the raw feedstock for industrial uses (such as biofuels and plastics). An example of such an application in the outdoor developmental stage is corn that produces proteins for a vaccine to combat porcine transmissible gastroenteritis (in field trial phase in the United States).

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[5] Produced from a genetically manipulated egg or embryo.

2.2.2 Risks

GM is one of a number of applied biotechnology techniques that together are forecast to offer benefits in many sectors (as outlined above). However, there are risks (both known and unknown) and scientific uncertainty with respect to GM techniques. These risks could be substantial and certain consequences irreversible. GM is a relatively new and fast developing technology and its effects, particularly over the long term, are not completely understood. There is a lack of scientific certainty and/or agreement over many issues relating to GMOs ranging from the safety of GM food products to long term environmental effects and effects on ecosystems and ecological processes from releases of GMOs into the environment.

Sources of risk from the outdoor use of GMOs in the Northern Peninsula include:

- Economic risk through accidental or unintentional migration of GMOs resulting in GMO contamination appearing in non-GM crops/species.
- Environmental risks such as adverse effects on non-target species, invasiveness of GM plants and altered gene transfer.
- Cultural effects arising from the mixing of genes from unrelated species, ecological effects, threats to the integrity of nature, and adverse effects on mauri, whakapapa and tikanga involving kaitiakitanga.

These are summarised below.

Economic Risks

The key economic risk associated with the outdoor use of GMOs is economic damage through trace GM contamination appearing in non-GM crops and/or species beyond a GMO operator's boundary (termed "spillover" effects).

Specific risks (both real and perceived) that are capable of causing economic damage associated with GMO contamination in the Northern Peninsula include:

- Market rejection and loss of income from:
  - An individual company's product due to trace GM contamination.
  - One type of product from a region or country due to trace contamination from a GM product.
  - One type of product from a region or country due to concern about inability to separate GM and non-GM products.
  - Perceived contamination of a non-GM product.
- Negative effects on marketing and branding opportunities, including to regional initiatives such as the "Naturally Northland" brand, and to tourism.
- Costs associated with environmental damage, such as clean-up costs for invasive weeds and pests in reserves, parks, open space and the CMA.
- Opportunity costs (i.e., foreclosure of future options for organic or conventional farming).

High levels of consumer resistance to GM foods in Europe and the wealthier Asian nations such as Japan and Korea, has led to market rejection of conventional foods due to trace GM contamination. Major food retailers and manufacturers in Europe and Asia have responded by adopting GM free sourcing policies, and there is a trend towards greater labelling of foods for the use of GM feed in the production of meat and dairy goods.

Market resistance to GM produce has had major economic impacts. For example, within a few years of introduction of GM crops, almost the entire $300 million annual United States maize exports to the European Union ("**EU**") and the $300 million annual Canadian rape exports to the EU had disappeared. In 1996 GM canola was introduced in Canada and two years later CAD$300 - 400 million of annual sales to Europe ceased. Similarly, GM contamination of pollen has resulted in lost markets for Canadian Honey.[6]

The scale of potential financial loss resulting from trace or perceived contamination can be substantial and potentially irreversible. For example, in 2003 a Japanese pizza maker rejected corn which routine testing showed to have 0.05% trace contamination (probably from seed stock). The Gisborne based company, Sunrise Coast, which supplied the corn product estimated losses in the order of $500,000. For organic farmers, GM contamination means that the produce cannot be sold as organic and lower returns must be sought in alternative markets.[7]

More examples of economic harm associated with GMO contamination are detailed in *Community Management of GMOs II: Risks and Response Options*, (Simon Terry Associates and Mitchell Partnerships, 2005) provided in Volume 2 to this report.

Environmental Risks

Research into potential environmental effects of GMOs is limited due to the relative newness of the technology, the limited range of GMOs that have gained commercial approval, and gaps in research and monitoring information. Based on the current state of knowledge, and noting that the potential for, and consequences of, environmental effects will vary in magnitude and significance depending on the organism, GM trait and the receiving environment, key potential environmental risks associated with the outdoor use of GMOs in the Northern Peninsula include:

- Effects on non-target species (plant, animal or microbial) - either directly by harming or killing the organism, or indirectly through the food web affecting organisms that are not directly exposed to the GMO. Overseas research has found that BT insecticide producing crops have had toxic effects on non-target insect populations including butterflies, and beneficial pest predators such as ladybirds and lacewings[8]. Similarly, a government trial in the United Kingdom found that the cultivation of GM herbicide resistant crops reduced wildlife populations and damaged biodiversity[9].

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6 Simon Terry Associates and Mitchell Partnerships, *Community Management of GMOs II: Risks and Response Options*, 2005, p. 13.

7 Simon Terry Associates and Mitchell Partnerships, *Community Management of GMOs II: Risks and Response Options*, 2005, p. 13.

8 Antoniou M, Robinson C, and Fagan, J. GMO *Myths and Truths: An evidence-based examination of the claims made for the safety and efficacy of genetically modified crops*. June 2012, Earth Open Source, UK: 51-52.

9 Antoniou M, Robinson C, and Fagan, J. GMO *Myths and Truths: An evidence-based examination of the claims made for the safety and efficacy of genetically modified crops*. June 2012, Earth Open Source, UK: 84.

- Invasiveness - increased persistence, invasiveness and competitiveness of GMOs with existing native or exotic plant species which could alter population dynamics and ecological balances.

- Rare events - an incident that introduces consequences or effects of a disastrous magnitude in circumstances where little was known about the risk in advance. For example, the emergence of bovine spongiform encephalopathy ("**BSE**") in United Kingdom cattle when it was not considered possible for the disease to transfer to humans through consumption of meat products.

- Development of herbicide or pesticide resistance creating "super-weeds" or "super-pests". Overseas experience with GMOs has resulted in the development of herbicide tolerant volunteers and weeds. There are now GM herbicide tolerant canola varieties being grown commercially in North America which are resistant to three different herbicides. Hybrids of canola and weed species containing two herbicide tolerant transgenes have also been identified[10].

It is noted that unintended environmental effects may only manifest later, being triggered by different environmental conditions, and that new generations of GMOs will increase the levels of unpredictability of ecological risks associated with current GMOs as they will differ markedly from the properties of known crops/species that form the baseline for current risk assessment. There is also uncertainty with respect to the effect of GMOs on soil ecosystems and effects arising from the use of plants to produce pharmaceuticals and other materials.

More examples of environmental effects associated with GMO contamination are detailed in *Community Management of GMOs II: Risks and Response Options*, (Simon Terry Associates and Mitchell Partnerships, 2005) provided in Volume 2 to this report.

Socio-cultural Risks

Cultural beliefs and attitudes are informed by and defined through knowledge systems (sciences, including ecology, agriculture and medicine, and technologies), spiritual beliefs and relationships (rights and responsibilities) to other human beings and cultures, and to the non-human world.

In that regard, the potential range of socio-cultural impacts (whether positive or negative) arising from the outdoor use of GMOs encompasses a wide terrain, including environmental and public health, ethics and social justice and they may be far-reaching in their effects on a community, its practices, future opportunities and relationship with the world (human and non-human).

The cultural effects associated with the outdoor use of GMOs in the Northern Peninsula have most clearly and consistently been raised by Māori. This is unsurprising as Māori make up a considerably greater proportion of the population in Northland than is represented nationally[11]. While there is no single Māori view on GM, cultural concerns

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[10] Antoniou M, Robinson C, and Fagan, J. GMO *Myths and Truths: An evidence-based examination of the claims made for the safety and efficacy of genetically modified crops*. June 2012, Earth Open Source, UK: 74-76.

[11] For example, in the Far North District 39.6% of population identify as Māori, 23.6% in Whangarei District and 21% in Kaipara District, compared with 14% nationally (Census 2006).

consistently expressed by the majority of Māori in Hui, surveys and in Māori institutional policy on GM include:

- Transgenics (breaking down of species barriers and mixing of genes from unrelated species) is a breach of the integrity of species and an offence to whakapapa.

- A breach of whakapapa is the resulting harm to the environment or community health, resulting in local iwi feeling they have failed to fulfil their duties as kaitiaki.

Overseas experience in countries that have adopted GMO production has sometimes resulted in a number of adverse social and cultural effects. For example, some farming communities in parts of North America have experienced serious social and cultural effects from GM contamination, resulting in widespread and on-going litigation over liability and compensation for loss of income, loss of market premiums and patent infringements. This has affected all levels of the industry (farmers, seed suppliers, manufacturers, exporters, retailers, consumers and the major biotech companies), and fragmented the farming community.[12]

The introduction of high tech, GM industrial farming into small third world farming communities has had a profound effect on the social mores and cultural values and traditions of farming in those countries. For example, in India the introduction of GM crops, mainly cotton, and the high price of seed and licensing, along with the necessity of purchasing new seed each year, has pauperised many farmers.[13] The practice of saving seed in developing countries is ingrained in their farming practices and farming culture and is often essential to economic survival. Having to purchase new seed every year along with an annual licence fee to foreign biotech companies is a profound change of farming practice and farming culture. Moreover sharing GM seed is prohibited under licencing arrangements and can result in prosecution through the courts.

2.3 Risk Management and Precaution

The use of GMOs is controlled at the national level by the HSNO Act. It establishes the legal framework for assessments by the national regulator, the Environmental Protection Authority ("**EPA**"). The EPA is responsible for regulating all research, development, importation, field testing and release of GMOs, and must hold public hearings on any applications to field test, conditionally release or release a GMO.

The HSNO Act sets minimum national standards against which proposed GMO activities are to be judged, and provides for the EPA to set conditions specific to approved GMO activities once it has weighed the costs and benefits. However, neither the HSNO Act nor any government policy statements provide meaningful guidance as to how high level provisions in the HSNO Act are to be interpreted nor the outcomes expected.

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[12] Warwick H, Meziani G. *Seeds of Doubt: North American Farmers experiences of GM Crops, Soil Association*, UK 2002. Saskatchewan Organic Directorate, presentation to the Canadian House of Commons, standing committee on agriculture and agri-food, 29 January 2002.

[13] Doherty A, Lopez Villar J, Freese B (eds) *Agriculture and Food: who benefits from GM crops – an analysis of the global performance of GM crops (1996 – 2006)*. Friends of the Earth International, January 2007: 42-54.

The HSNO Act and the EPA methodology that derives from it make many important features subject to their discretion. Those sections that focus on the actual evaluation generally require that the EPA only "take into account" and "consider" a variety of matters.[14] There are thus remarkably few limitations on the outcomes the EPA can deliver.[15]

The lack of surety over the outcomes that the EPA will deliver is especially important with respect to the degree to which precaution will be exercised. The precautionary principle was devised essentially as a response to analysis of the long-term effects of certain substances and organisms that had demonstrated alarming adverse effects that were unforeseen when first approved.[16] The wording that has been the basis for most of the international agreements incorporating the precautionary principle in law is that established at the Rio Earth Summit in June 1992, and specifies:[17]

> "Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation."

However, the HSNO Act does not embrace the precautionary principle, nor does it mandate that the EPA be precautionary. Instead, as the regulator itself states with respect to section 7:[18]

> "The wording in the Act is very permissive, such that the [EPA] would be acting lawfully in deciding that caution was not warranted, provided it explained why. In practice, the [EPA] has generally exercised caution."

Precaution is thus an option for the EPA, not a requirement, and if it is utilised, there is still uncertainty over what level of precaution will be adopted.

The wide uncertainty of outcome posed by the HSNO process raises difficulties for councils given their LGA responsibilities, including those relating to the LTPs. As Local Government New Zealand has noted:[19]

> "It is not apparent how the management framework outlined within [HSNO] will allow communities to preserve the opportunities they have identified, and agreed to pursue, as part of their own strategic goals. For example, a district (or a grower association) may wish to brand and market its grapes, wine, oranges, apples, lamb, milk, cut flowers or other crop or produce as GE Free."

The core issue is a community's tolerance for risk. There is no objective standard as to what is a correct level of risk as it is not an objectively determinable factor. However, as communities are the ultimate risk bearers, a council will look to ensure it can meet standards indicated by its constituents – rather than leave outcomes as uncertain.

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[14] The notable exception is section 36. This requires that if a release would be "likely" to cause "significant" harm to the environment or human health, it may not be made. As it is difficult to imagine responsible decision-makers approving a release which they thought at the time was likely to cause significant harm, it is also difficult to view this as a strong bottom line.

[15] See Sustainability Council *Submission in Respect of Revisions to the ERMA Methodology* (October 2003).

[16] See Parliamentary Commissioner for the Environment *Key Lessons from the Long History of Science and Technology: Knowns and Unknowns, Breakthroughs and Cautions* (2001), and Colborn, T., Dumanoski, D. and Peterson Myers, J. *Our Stolen Future* (1996), Penguin Books.

[17] Principle 15 of the Rio Declaration on Environment and Development, to which New Zealand is a signatory.

[18] ERMA (2002) *Approach to Risk*, p. 3.

[19] LGNZ (2003) *Submission to Parliament with respect to the New Organisms and Other Matters Bill*, p. 8.

Even when there is a common understanding on appropriate risk levels, a further issue highlighted by local government is the potential for councils and their constituents to suffer financial and economic costs as a consequence of outdoor GMO activities. Under the HSNO Act, an agent using GMOs is not financially liable to cover costs resulting from a GMO activity, as long as it abides by the conditions of an EPA approval.

Common law actions will very rarely be an effective remedy so affected parties will tend to bear any losses arising from unexpected events and ineffective regulation of GMOs. While economic damage resulting from GM contamination will, in the first instance, fall on individual constituents, such damage can occur across wide groupings of producers and thus become a community concern. Councils may also be exposed to financial costs as the government is only obliged to eradicate the unauthorised presence of a GMO, not one that was approved and is later shown to be invasive.

Similarly, the HSNO Act does not require the EPA to ensure that an applicant is financially fit and so able to pay compensation should adverse effects result from the activity. The HSNO Act instead places a heavy reliance on controls and penalties for breaching these but this requires the regulator accurately foreseeing all the circumstances in which something could go wrong, and being able to prescribe for these in advance. However, an important source of risk now recognised in respect of GMOs is unexpected adverse effects. A liability regime based on "perfect" foresight is therefore not suited to these risks.[20]

The absence of adequate liability provisions and the lack of surety of outcomes for local government are key gaps that have been identified in the national regulatory regime for GMOs. Where a local authority has determined that particular GMO risks are of concern to its community and that a precautionary approach is warranted, it can take action using other statutes. The RMA provides communities with the ability to set rules that embody community determined outcomes, including the level of risk it is willing to accept with respect to activities such as the management of GMOs.

2.4 Consultation

2.4.1 Community Concerns Regarding GMO Use

Community concern over the outdoor use of GMOs began to feature in the LTCCPs of many of the Northern Councils from 2003 and 2004. Submissions to the Northland Regional Council, Whangarei District Council and Far North District Council in particular evidenced large numbers of submitters (in relative terms) focusing on the GMO issue and these almost universally advocated a precautionary stance.[21] In response, the Northern Councils established the Working Party to evaluate risks to local authorities and their communities, and to identify response options to those risks, including regulation of GMO use on the land and in the water, under the RMA. Subsequently, the former Auckland Regional Council responded to "overwhelming opposition to GMOs" in submissions by adopting in principle in its LTCCP, a policy of opposing the release of GMOs as a precautionary approach.[22]

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[20] Simon Terry Associates and Mitchell Partnerships, *Community Management of GMOs II: Risks and Response Options*, 2005, p. 21.

[21] Simon Terry Associates and Mitchell Partnerships, *Community Management of GMOs II: Risks and Response Options*, 2005, p. 2 and 3.

[22] "The ARC has adopted a policy, in principle, that it is opposed to the release of genetically modified organisms (GMO) in the field and in the production of food", ARC, LTCCP 2009 to 2019, p 86; and "ARC Regional Strategy and Planning Chair Paul Walbran says the Council adopted the policy in

To ascertain community views on the management of GMOs in the Northern Peninsula, and to gauge the level of support for local/regional regulation under the RMA (as recommended in Simon Terry Associates & Mitchell Partnerships (2005)), a Colmar Brunton survey was undertaken in July and August 2009. The results for each jurisdiction participating in the survey[23] were presented in separate reports, and were also aggregated to the regional level (provided in Volume 2 to this report). These results form part of the section 32 evaluation. Key results from the survey found:[24]

- Two thirds or more of the residents polled want local or regional councils to have a role in regulating GMOs in their areas, either by setting local rules or by a change of legislation at the national level. Support averaged 68% in the Auckland region and 74% in Northland.

- Around two thirds of the respondents also favoured regulation of at least a strength that would make users of these GMOs legally responsible for any environmental or economic harm - either through local regulation or by way of changes to national legislation (Auckland 64%, Northland 67%).

- The survey indicated that around half the residents (Auckland 44% and Northland 53%) want councils to have the right to prohibit GM plants and animals, either by setting local rules or allowing communities, through their councils, the right to reject use of a particular GMO in its area when the national regulator, the EPA (formally ERMA), is processing applications.

- When questioned whether councils should set rules in addition to those set by the EPA, 40% of Auckland respondents supported this mechanism and 46% of Northland respondents were in support. Amongst those respondents who support their council setting rules, total prohibition is the most favoured level of regulation (ranging from 39 - 57% across all council areas), with strict liability provisions the next most favoured (ranging from 22 - 32%), and prohibiting only GMOs for food production the third favoured (a range of 18-27%).

- Within the Auckland Region there is considerable variation in support for local regulation between individual council areas. For the Waitakere, Auckland and Franklin communities, levels of support for local regulation were significantly higher than for not utilising local regulation while for Manukau, North Shore and Rodney, the levels of support for and against local regulation were more evenly matched.

- However, all communities strongly favour making users of GMOs legally responsible for any economic or environmental harm that may result. Support for regulation to make users of GMOs strictly liable for any harm caused ranged from 63% to 72% for individual councils.

- Support for local regulation is strongest amongst Māori, particularly in the Northland Region. It is also strongest amongst semi-rural and rural residents

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principle as a precautionary approach because there are significant uncertainties about GMOs, and issues that are yet to be understood and resolved", ARC, Media statement: *ARC adopts anti-GMO policy position*, 19 February 2007.

23 All Working Party members with the exclusion of Northland Regional Council commissioned the survey.

24 This summary is adapted from that presented in the media release prepared by the Working Party on GMO Risk Evaluation and Management Options. For a full interpretation and the detailed results, see www.wdc.govt.nz.

while urban views vary by region. Rural residents are more likely to favour prohibiting GMOs in both Northland and Auckland than are semi-rural or urban residents. Females are more likely to support local regulation than are males, and support is greater amongst 18 - 39 year olds than older age groups.

- The poll also found that there is clear support from the Auckland and Northland communities for only producing food that is GM free but strong support for leaving options open for GM plants and animals in the future.

- While the results showed an even stronger opinion against people being able to produce GM plants and animals simply if they choose to, views were divided over the economic impacts of GMOs. Across the Auckland region, residents believed GMOs would harm local food industries but that there would be economic benefits overall, while Northland respondents saw GMOs harming local food industries and not providing economic benefits for their districts.

2.4.2 Māori Perspectives

As outlined in Section 2.2.2, Māori make up a considerably greater share of the population of Northland than is represented nationally. Local iwi have been active participants in the development of GMO policies for the Northern Peninsula and their stances generally reflect the concerns voiced at the national level. For example, the Ngatiwai Trust Board supports adoption of a precautionary approach and locally determined controls on GMOs that take full account of Tikanga Māori based values:

> "Formulation of a policy on genetic engineering which commits supporting a precautionary approach towards GE." [25]

> "Genetic engineering is abhorrent to the values of Tangata Whenua and the risks associated with experimentation in the District are unacceptable. Choices are able to be made irrespective of the legislation [HSNO Act] as to how the WDC should regulate genetic engineering consequences within its jurisdiction. Tikanga Māori based values should play a significant part in determining planning responses."[26]

The relief sought by the Ngātiwai Trust Board was that GM activities be prohibited throughout the Whangarei District. Ngātiwai was also one of three iwi parties to an appeal which aimed to secure local controls on GMO activities through amendment to the Far North District Plan.

Similarly, in 2011 Ngāti Te Ata Waiohua sought that the Auckland Council declare the region GMO free and adopt policies which support this position.[27]

Ngāpuhi, the largest iwi in New Zealand with over 122,000 constituents, submitted on the Northland Draft Regional Statement in June 2012 with specific regard to GMOs. Ngāpuhi sought that a strong precautionary GMO policy be adopted and:[28]

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[25] Ngātiwai Trust Board submission to the Whangarei District Council's LTCCP 2004 -2014.
[26] Ngātiwai Trust Board submission to the Proposed Whangarei District Plan.
[27] Ngāti Te Ata Waiohua Issues and Values, 29 November 2011, p. 16.
[28] Te Runanga A Iwi O Ngapuhi submission to the Draft Regional Policy Statement, 25 June 2012.

> "That a provision classing all GE experiments and releases as a prohibited activity until outstanding issues such as liability, economic costs, benefits, environmental risks, cultural effects and significant consultation with iwi, Hapu and Whanau are resolved."

The Auckland Independent Māori Statutory Board requested that an excerpt from Wai 262 and Waitangi Tribunal *Factsheet 3: Taonga Species* be tabled at the Working Party meeting of 10 February 2012. The excerpt included a recommendation to amend the HSNO Act to:[29]

> "...require that all those exercising functions, powers and duties under the Act to recognise and provide for the relationship between kaitiaki and their taonga species."

The Factsheet notes that iwi and hapu are obliged to act as kaitiaki (cultural guardians) towards taonga species of flora and fauna within their tribal areas, and refers to the Tribunal recommendation that the HSNO Act be amended:[30]

> "so that greater weight is given to kaitiaki interests when decisions are made about genetically modified organisms."

Following a recent Hui to discuss GMOs, Tai Tokerau iwi were unanimous in their decision for wanting robust local control, and at the very least a precautionary approach be reflected through the Northland Regional Policy Statement to protect both local communities and local environments.[31]

Sections 66(2A)(a) and 74 (2A) of the RMA require that councils, when preparing or changing a regional or district plan, must take into account any relevant planning document recognised by an iwi authority. A number of current iwi and hapū planning documents in the Northern Peninsula make statements opposing the release of GMOs and advocate a precautionary approach to GM, including those of Ngāti Hine, Ngātiwai, Te Roroa, Ngāti Kuta, Ngāti Torehina, Ngāti Korokoro and Ngāti Whaarare, and Ngāti Rehia[32]. For example, Te Iwi o Ngātiwai Iwi Environmental Policy Document includes the following policies regarding GMOs for the Ngātiwai rohe[33]:

1. No genetically modified organisms, or products produced from such organisms, will be introduced.
2. The adoption of the precautionary approach by councils to genetically modified organisms, requiring that all risks be fully understood before these organisms are utilised.

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29 Page 96, Wai 262: Waitangi Tribunal Report. Te Taumata Tuatahi.

30 Taonga Species, Waitangi Tribunal *Ko Aotearoa Tēnei* – Factsheet 3 www.waitangitribunal.govt.nz

31 Media Release: Tai Tokerau Iwi Organise To Challenge GE/GMO Concerns In Northland, 20 November 2012.

32 Ngā Tikanga mo te Taiao o Ngāti Hine: Ngāti Hine Iwi Environmental Management Plan 2008, Te Iwi o Ngātiwai Environmental Policy Document 2007, Draft Ngā Ture mo Te Taiao o Te Roroa: Te Roroa Iwi Environmental Policy Document 2008, Ngāti Kuta ki Te Rawhiti Hapū Environmental Management Plan 2007, Ngāti Torehina Hapu Environmental Management Plan 2007, Te Kahukura a Ngāti Korokoro, Ngāti Whaarare me te Pouka; Ngā Hapū o Te Wahapū oTe Hokianga nui Kupe: Hapū Environmental Management Plan 2008, Ngāti Rehia Environmental Management Plan 2007.

33 Te Iwi o Ngātiwai Environmental Policy Document 2007: p71.

A number of other iwi planning documents identify GM as an issue, including documents by Ngāti Whātua Ngā Rima o Kaipara, Te Kawerau a Maki, Ngai Tai, and Hauraki Iwi.[34]

2.4.3 Summary

Community consultation with respect to the outdoor use of GMOs has been comprehensive and includes community feedback obtained through the robust LTCCP and LTP processes, a Colmar Brunton survey, and through iwi participation in Hui, submissions to various strategies and documents, and in iwi/hapu management plans. This comprehensive process has resulted in the inclusion of policy statements that provide for a precautionary approach in a number of LTCCPs and LTPS in the Northern Peninsula, and has identified the communities' desire for district/regional wide regulation.

2.5 Synopsis

The Northern Peninsula is an important agricultural production region and contains areas of ecological significance. A wide range of GMO products are being researched and developed, including ones that GMO developers/operators may consider introducing to the Northern Peninsula.

A range of benefits are projected to be available from the outdoor use of GMOs, though GMOs applicable to New Zealand's needs remain to be developed in most cases. As well as benefits, there are also potential risks, including economic risks, environmental risks and socio-cultural risks that are largely unknown, and could be substantial and irreversible. Potential risks could also extend beyond the boundary of the GMO operators activities and result in significant costs to the wider area.

Key gaps identified in the national regulatory regime for GMOs are the absence of adequate liability provisions and applicant financial fitness requirements, and a lack of surety of outcome for local government. The RMA allows precisely targeted rules to be set under a District / Unitary Plan so that specific concerns can be addressed without compromising other activities. Local level regulation under the RMA provides communities with the ability to set rules that embody community (including Māori) determined outcomes, including the level of risk it is willing to accept with respect to activities such as the management of GMOs.

Consultation with the community (including under the LTP processes) has been comprehensive and has determined that the community (including Māori) desire a precautionary approach to the outdoor use of GMOs across the district/region to address what has been identified as a significant resource management issue.

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[34] Te Wahapū o Kaipara Manaakitanga: South Kaipara Takiwa Environmental Protection and Management Plan Ngāti Whatua Ngā Rima o Kaipara, Kawerau a Maki Trust Resource Management Statement 1995, Ngai Tai Kaitiaki/Resource Management Principles and Operational Policies, and Whaia te Mahere Taiao Hauraki: Hauraki Iwi Environmental Plan 2004.

3. THE PLAN CHANGE

3.1 Introduction

The fundamental purpose of the Plan Change is to apply a precautionary approach to managing the outdoor use of GMOs to minimise the risk to the environment, economy and socio-cultural resources and values. The purpose is also to ensure a financial liability regime is in place requiring GMO operators to meet any costs arising from any unexpected adverse effects associated with their activities, including clean-up costs, economic compensation/remediation and on-going monitoring costs. This will, to some extent, address the gaps identified in the national regulatory regime to provide the level of protection sought by the community against risks associated with the outdoor use of GMOs.

The Plan Change comprises the introduction of a significant Resource Management Issue, Objectives, Policies and Methods, including rules which will define how the outdoor use of GMOs are to be managed, including in the CMA. The Plan Change does not involve the management of all GMOs, but rather is limited to the outdoor use of GMOs, in particular field trials and releases.

Field trials (tests) are defined by the HSNO Act as:[34]

> "in relation to an organism, the carrying on of trials on the effects of the organism under conditions similar to those of the environment into which the organism is likely to be released, but from which the organism, or any heritable material arising from it, could be retrieved or destroyed at the end of the trials."

Releases (food-related and non-food-related) are defined as:[35]

> "...to allow the organism to move within New Zealand free of any restrictions other than those imposed in accordance with the Biosecurity Act 1993 or the Conservation Act 1987."

GMOs that are not classified as field trials and releases are not addressed by the Plan Change. This includes research within contained laboratories involving GMOs, medical applications (using non-viable GM products) and food containing GM products that are not viable.

The new provisions are to be inserted into the District / Unitary Plan as a new chapter or section. A definition for GMOs, field trials and releases is to be inserted into the Definitions / Interpretation section/chapter of each respective plan.

3.2 Significant Resource Management Issue

The significant Resource Management Issue that the community has identified is addressed by the Plan Change as follows:

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[34] Section 2 (Interpretation), HSNO Act.
[35] Section 2 (Interpretation), HSNO Act.

Issue
The outdoor use of GMOs can adversely affect the environment, economy and social and cultural resources and values, and significant costs can result from the release of a GMO.

To respond to the significant Resource Management Issue identified, the Plan Change acknowledges that the Northern Councils have insufficient information about the outdoor use of GMOs and will therefore apply a precautionary approach. The precautionary approach inserts provisions that prohibit classes of GMO activity that in absence of additional information are identified as "too high risk", and establishes a financial liability regime for those engaging in a GMO activity.

3.3 Objectives and Policies

The Plan Change introduces the following Objectives and Policies to the District / Unitary Plan:

Objectives

1.4.1 *The environment, including people and communities and their social, economic and cultural well-being and health and safety, is protected from potential adverse effects associated with the outdoor use, storage, cultivation, harvesting, processing or transportation of GMOs through the adoption of a precautionary approach, including adaptive responses, to manage uncertainty and lack of information.*

1.4.2 *The sustainable management of the natural and physical resources of the district/region with respect to the outdoor use of GMOs, a significant resource management issue identified by the community.*

Policies

1.4.1.1 *To adopt a precautionary approach by prohibiting the general release of a GMO, and by making outdoor field trialling of a GMO a discretionary activity.*

1.4.1.2 *To ensure that a resource consent granted for the outdoor field trialling of a GMO is subject to conditions that ensures that the consent holder is financially accountable (to the extent possible) for any adverse effects associated with the activity, including clean-up costs and remediation, including via the use of bonds.*

1.4.1.3 *To ensure that a resource consent granted for the outdoor field trialling of a GMO is subject to conditions that serve to avoid, as far as can reasonably be achieved, risk to the environment from the use, storage, cultivation, harvesting, processing or transportation of a GMO.*

1.4.1.4 *To ensure that a resource consent granted for the outdoor field trialling of a GMO is subject to a condition requiring that monitoring costs are met by the consent holder.*

1.4.1.5 *To require consent holders for a GMO activity to be liable (to the extent possible) for any adverse effects caused beyond the site for which consent has been granted for the activity.*

1.4.1.6 *To adopt an adaptive approach to the management of the outdoor use, storage, cultivation, harvesting, processing or transportation of a GMO in the district or region through periodic reviews of these plan provisions, particularly if new information on the benefits and/or adverse effects of a GMO activity becomes available.*

Note; equivalent provisions in respect to activities in the CMA are introduced to the Unitary Plan (Objective 2.3.1 and Policies 2.3.1.1 to 2.3.1.6).

3.4 Related Provisions

3.4.1 Activity Rules

Permitted Activity Status

The Plan Change permits GMO activities that are not classified as field trials and releases, and are not specifically addressed by the Plan Change. This includes (but is not limited to) research within contained laboratories involving GMOs, medical applications (using GM products) and food containing GM products that are not viable.

All veterinary vaccines are listed as a Permitted Activity in the Plan Change and are exempt from the need to obtain a resource consent. This is because they do not tend to persist in the environment, appear to be low risk and are difficult to monitor.

Discretionary and Prohibited Activity Status

Not all categories of outdoor GMO use need to be regulated with the same degree of precaution. Different types of GMOs carry different risks, therefore the Plan Change groups similar GMOs together which can be expected to have similar types of effects that council may be required to avoid, remedy or mitigate.

The Plan Change classifies GMO outdoor uses into the following categories:

- Field Trials - **Discretionary Activity**.
- Food-related GMO Releases - **Prohibited Activity**.
- Non-food-related GMO Releases - **Prohibited Activity.**

Field trials are designed with the objective of ensuring that no altered genetic material leaves the test site and this greatly reduces the risks of harm arising. However breaches of trial conditions that could lead to GMOs escaping the trial site have occurred in New Zealand. Making all field trials a discretionary activity provides greater protection for the community by making the GMO operator financially accountable should adverse effects arise from a breach of conditions.

Given the high levels of potential harm and the uncertainties surrounding the extent of costs and benefits that could be expected from GMO releases, the Plan Change takes a precautionary approach and makes GMO releases a prohibited activity. Adopting an adaptive risk management approach, periodic reviews can be undertaken as to whether particular classes or individual GMOs should be made discretionary activities. Field trials could be considered a limited discretionary or restricted discretionary activity if a specific council determines this is appropriate in the context of their respective plan.

Discretion would be limited to the general development and performance standards provided in the Plan Change.

At the point a set of GMOs demonstrates the potential to provide net benefits, a change to the specific District / Unitary Plan can then make these subject to discretionary provisions. An application requirement is that the EPA has already approved such a release. Council's role is limited to determining whether there are additional conditions that would make release in the district or region permissible, or whether to decline the application.

3.4.2 General Development and Performance Standards

The Plan Change provides minimum general development and performance standards that apply to:

- Possession of relevant approvals from the EPA and compliance with conditions set by the EPA.
- Recovery of all costs associated with any monitoring required during and beyond the consent duration.
- Bond requirements to ensure funds are available for payment to address any adverse environmental effects and any adverse effects to third parties (including economic effects).

3.4.3 Definitions

A definition for GMOs, field trials and releases is to be inserted into the definitions/interpretation section/chapter of each respective plan.

4. SECTION 32 EVALUATION

4.1 Introduction

The Plan Change affects land that is within the jurisdiction of Far North, Whangarei, and Kaipara District Councils, and land and water within the jurisdiction of the Auckland Council. Section 66 (matters to be considered by a regional council) and section 74 (matters to be considered by a territorial authority) of the RMA state that any Plan Change to a District or Regional Plan must be made in accordance with the functions for regional and territorial authorities set out in sections 30 and/or 31, the provisions of Part 2, the duties under section 32 of the Act, and any regulations. Section 80 provides for combined plans.

Section 32 of the Act requires that before adopting any objective, policy, rule or other method, the Council shall have regard to the extent to which each objective is the most appropriate way to achieve the purpose of the Act, and whether the policies, rules or other methods are the most appropriate for achieving the objective. Section 32 also specifies what the evaluation must examine:

> (3) An evaluation must examine—
>
> a) the extent to which each objective is the most appropriate way to achieve the purpose of the Act; and
> b) whether, having regard to their efficiency and effectiveness, the policies, rules or other methods are the most appropriate for achieving the objectives.
>
> (4) For the purposes of the examinations referred to in subsections (3) and (3A), an evaluation must take into account—
>
> a) the benefits and costs of policies, rules, or other methods; and
> b) the risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the policies, rules, or other methods.

This section of the report provides a section 32 evaluation of the Plan Change provisions in the context of the RMA framework and should be read in conjunction with the preceding sections of this report. This section is set out as follows:

- Alternative planning strategies that have been considered to address the significant Resource Management Issue (Section 4.2);
- The risk of acting or not acting if there is uncertain or insufficient information (Section 4.3);
- The appropriateness of the Plan Change provisions (Section 4.4); and
- The benefits, costs and appropriateness of policies, rules and other methods (Section 4.5).

4.2 Alternative Means to Address the Issue

Section 32 of the RMA requires that alternatives to a Plan Change be considered. In respect to the consideration of alternatives, the Quality Planning Guidance "Section 32 – Methods of Implementation"[36] notes:

> Section 32 does not explicitly require the consideration of alternative means. However, it does require that the evaluation shows that, having regard to effectiveness and efficiency, the proposed policies, rules, or other methods are the 'most appropriate'. This implies that some consideration of the effectiveness and efficiency of alternative provisions is required.

In 2011 the High Court held that the "most appropriate" method does not need to be the superior method[37].

The following three alternative approaches have been identified to address the significant Resource Management Issue:

- Do nothing (i.e. "status quo").
- Central Government amendment to the HSNO Act.
- Local Authority regulation through the RMA.

An assessment of the alternative options considered is outlined below and summarised in Table 1.

4.2.1 Do Nothing

The "do nothing" option does not address the significant Resource Management Issue and is not the most appropriate way of achieving the Objectives. The Objectives adopt a precautionary approach to protect the environment from potential adverse effects associated with the outdoor use, storage, cultivation, harvesting, processing or transportation of GMOs. The intent of the Objectives is to reduce environmental, economic and cultural risks, and to establish rules setting financial accountability standards for GMO operators. The current lack of provisions in the District / Unitary Plan with respect to GMO activities does not protect the environmental, economic or socio-cultural resources of the Northern Peninsula, nor does the absence of provisions reflect the level of control desired by the communities (including Māori) to manage GMO activities. The "do nothing" option does not achieve the purpose of the Act as it does not provide for the sustainable management of the resources in the Northern Peninsula.[38]

Under national legislation, if a GMO operator has inadequate financial resources to cover environmental damage resulting from its activities, the burden tends to fall on local government and/or its constituents. This type of situation has been previously encountered by local government in respect to "Orphan Contaminated Sites" (abandoned sites contaminated with hazardous chemicals) where in most cases local

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[36] Last updated in 2008; www.qualityplanning.org.nz/plan-development/implementation.php

[37] *Rational Transport Soc Inc v New Zealand Transport Agency* HC Wellington CIV-2011-485-2259, 15 December 2011.

[38] Simon Terry Associates and Mitchell Partnerships, *Community Management of GMOs III Recommended Response Option,* 2010, pg. 6 – 8.

government and new land owners have been left with the responsibility and cost for the clean-up.

The "do-nothing" option will result in no costs to the Council in terms of time and resources required to implement a plan change and similarly, no costs for potential submitters who would otherwise become involved in the plan change process, and no costs for council to administer the new rules. However, a council is potentially financially and legally exposed, as discussed below in Section 4.3 and 4.5.

The do-nothing approach does not address concerns raised by the community regarding outdoor GMO risk (as evidenced by the 2009 Colmar Brunton survey and submissions on annual plans, LTCCPs, LTPs and district plans), or concerns raised by Māori.

4.2.2 Central Government Amendment to the HSNO Act

The preferred method of enabling councils to exercise local control on the use of GMOs would involve central government remedying the identified gaps in the national level regulation, and providing communities with the ability to veto or add local level conditions to any approval for a GMO activity that is granted by the EPA through the HSNO Act process.[39]

An amendment to the HSNO Act to remedy the deficiencies from a local government perspective would be an efficient response to address the significant Resource Management Issue. In particular, amendments to the HSNO Act could be made to provide councils with the ability to ensure that their policies in relation to GMO activities are binding on the scope of EPA decision-making and approvals issued. This would provide a simpler means for local government to achieve the same regulatory outcomes as are currently able to be put in place under the RMA. Reform to the HSNO Act could provide for:

- The ability for local authorities to issue policy statements on GMO activities so that the EPA would be required to accommodate these policy statements in its decisions;
- The option to examine individual applications in tandem with EPA assessments, and, if required, to set stricter controls to apply within a local authority's jurisdiction; and
- A strict liability regime, along with financial fitness requirements, that ensures the developers and users of GMOs are responsible for all environmental and economic harm that may result from outdoor uses of GMOs.

Such reforms would provide local authorities the opportunity to work in tandem with the EPA, and provide a more direct means of achieving desired community outcomes. The Working Party has sent letters to both the present Government and the previous Labour administration in 2006 and 2010 respectively, outlining local government and community concerns, and requesting changes to the HSNO Act to alleviate those concerns. However, the current Government (similar to the previous Labour administration) has indicated that it has no plans to amend the HSNO Act or establish alternative arrangements that would address the concerns of local government, nor do

[39] Simon Terry Associates, *Community Management of GMOs: Issues, Options and Partnership with Government*, 2004, p 33.

they propose to provide any mechanism for councils to influence the outcomes of EPA assessments beyond those available to any other submitter. The letters sent to both Governments from the Working Party and the responses form part of the section 32 evaluation and are provided in Volume 2 to this report.

4.2.3 Local Authority Regulation through the RMA

Councils have jurisdiction under the RMA to set rules for GMOs that act in addition to those that may be set under the HSNO Act or by the EPA[40], through inserting provisions into the District / Unitary Plan pursuant to sections 66 and 74 of the RMA. There is nothing in the HSNO Act to preclude a local authority imposing greater levels of control in its District / Unitary Plan for RMA purposes than those imposed by the EPA under the HSNO Act. The preparation of a section 32 report is therefore entirely appropriate to evaluate possible local/regional management of outdoor GMOs.

Given a council's general duty of care for its financial position and that of its constituents, there is a ready justification for councils to set mandatory conditions to provide for both financial accountability (through bonds and insurance requirements) and avoidance of economic damage. The RMA also provides communities with the ability to set rules that embody community determined outcomes, including the level of risk it is willing to accept with respect to activities such as the management of GMOs. Further, Council under section 35 of the RMA has a duty to undertake monitoring and may set conditions to provide for monitoring at the cost of the applicant.

Establishing controls on GMOs under the RMA requires a plan change or plan review[41]. The Environment Court is able to consider whether the objective, policies and methods in a plan change are valid pursuant to the relevant provisions of the RMA.

The functions of the EPA under the HSNO Act are different from those of local authorities under sections 30 and 31 of the RMA.

Overall, it is concluded that the relevant RMA provisions are not in conflict with those of the HSNO Act and the two statutes can operate side by side.

4.2.4 Assessment of Alternatives Considered

Table 1 provides an assessment of the advantages, and costs and risks associated with the three alternative options considered.

By way of summary, the "do nothing" approach does not address the significant Resource Management Issue and does not protect the natural, cultural and economic resources of the Northern Peninsula. Further, doing nothing does not address concerns raised by the community, including concerns raised by Māori. This option is not considered appropriate.

Central Government amendment to the HSNO Act to address gaps in the regulatory regime could address the concerns of local authorities and their communities in Northland/Auckland. However, the Government has consistently indicated since the formation of the Working Party in 2003 that it has no plans to do so. This option is therefore not considered the most appropriate.

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[40] For further discussion, see Simon Terry Associates, *Community Management of GMOs: Issues, Options and Partnership with Government*, 2004.

[41] Sections 65, 73, 79 and 80.

Of the existing statutes available to local government, the RMA offers the most durable, binding and well-targeted instrument for regulating the outdoor use of GMOs. Local authorities have jurisdiction under the RMA to set rules for GMOs that act in addition to those set under the HSNO Act or by the EPA. Given the statutory powers available to local government, the RMA is considered the most appropriate mechanism to resolve the significant Resource Management Issue.

Table 1: The advantages, costs and risks of the alternatives considered.

OPTION	ADVANTAGES	COSTS AND RISKS
Do nothing This option is **not recommended.**	No further work is required in processing a Plan Change. No costs for the Council in terms of time and resources to process the Plan Change and no cost for potential submitters who may become involved in the process. No constraint on GM operators who have EPA approval and are considering undertaking activities in the area. Potential economic benefit from GMO operations.	Retaining status quo does not protect environmental, economic or cultural resources or reflect the level of control desired by the community to manage GMO activities. Does not provide a Northern Peninsula-wide approach to addressing the issue and does not address future resource management issues in respect to the use of GMOs in the area. Does not address community concerns regarding outdoor GMO use. Does not address the concerns of tangata whenua regarding outdoor GMO use. Potential to lose "GM free" status and thus any marketing advantage this confers. Under the HNSO Act there are no requirements to provide liability against unanticipated events, therefore constituents are exposed to economic losses from GM contamination. Reliance on EPA conditions in respect to monitoring required for the activity. Costs of monitoring, and any costs required for clean-up, should a GMO activity cause an unexpected effect, could fall on the Council.
Central Government Amendment to the HSNO Act This option is **not recommended.**	Provides ability for local authorities to add local level conditions to any EPA approved activity in the district or region. Option to examine specific applications with the EPA, and set stricter controls if necessary or prohibit a specific GMO from the district or region. Opportunity to work in tandem with the EPA.	Requires Government to address the issue. There has been no indication from Government that this will happen. Uncertainty on when, and if this will eventuate, and whether the appropriate amendments will be made to address community and local government concerns.

OPTION	ADVANTAGES	COSTS AND RISKS
	Option to put in place a strict liability regime to compensate for potential environmental and economic harm.	
Local Authority Regulation through the RMA This is the **recommended option.**	Addresses key gaps in the HSNO Act in respect to liability provisions. Can address risks of adverse effects on the environment, economy, and socio-cultural values. Community determined outcomes can be set based upon a preferred level of risk determined by the community. Provides a prescriptive set of rules to ensure only the specified GMO activities can occur, and so specific concerns are addressed without compromising other activities. Council can enforce higher standards for control through consent conditions, including bond requirements, monitoring requirements and compliance with performance standards. Can operate in addition to the HSNO Act and can operate alongside. Well drafted provisions will provide certainty to the community and the Council in respect to GMO use and the management of potential effects. Integrity of District / Unitary Plan maintained. Allows for full public participation.	The Environment Court may determine that the significant Resource Management Issue defined in the Plan Change can be addressed by the EPA pursuant to the HSNO Act. Costs associated with implementing the Plan Change and resource consent applications for GMO activities. The Plan Change provides prescriptive provisions. Any changes would require a new plan change. Reduces certainty of being allowed to operate for GMO developers considering undertaking their activity in the area. Transaction costs (monetary) and opportunity costs (time delays) associated with a GM proposal having to go through both the HSNO Act and resource consent and / or Plan Change process. There are no National Policy Statements or Environmental Standards to give effect to in respect to GMOs under the RMA.

4.3 Risk of Acting or Not Acting

Section 32(4)(b) of the RMA requires the s32 evaluation to take into account the risk of acting or not acting, specifically "if there is uncertain or insufficient information about the subject matter of the policies, rules, or other methods".

As outlined in Section 2, the outdoor use of GMOs is characterised by risks (both known and unknown) and uncertainty as to the outcomes that will result from an EPA assessment of an activity. In response, a precautionary approach is proposed to manage the risks and costs associated with the outdoor use of GMOs and to meet relevant community specified outcomes.

4.3.1 Ability to Deliver a Precautionary Approach

While precaution is not a requirement under the HSNO Act, the appropriateness of its application has been recognised under International Treaty, for example the United Nations Convention on Biodiversity and its Cartagena Protocol ("**the Protocol**"), which New Zealand is a signatory to.[42] The Protocol focuses exclusively on living GMOs and reaffirms the precautionary approach set out in Principle 15 of the Rio Declaration, specifically in Article 10.6. [43] While the Protocol's focus is the conservation and sustainable use of biological diversity, the principle it sets is equally applicable to other risks arising from GMOs, and is equally valid at the national and regional / district level.

The RMA is the principal statutory instrument designed to regulate land and water use (and thus the outdoor use of GMOs) and when considering it, the courts have ruled that a precautionary approach is inherent in the Act. In particular, section 3(f) states that the term "effect" includes "Any potential effect of low probability which has a high potential impact."[44]

Traditional risk assessment relies on an ability to identify the nature of risk events and the probability they will occur in order to adequately regulate for them. With respect to the release of GMOs, while certain effects can be clearly anticipated, in many respects regulators are left with uncertainty as to what the effects will be (when the nature of the risk is clear but the probabilities are unknown), or simply uninformed (if neither the nature of the risk or the probability is known). In this situation, a precautionary approach is useful in guiding decision making.

In order for a council to have a meaningful opportunity to exercise precaution using RMA instruments, it needs to complete a Plan Change before the EPA has approved release of a GMO. The time required to complete a Plan Change is such that GMOs could be introduced to a council's area and expose constituents and the environment to many of the risks outlined in Section 2.2.2 before a Plan Change could be enacted. Thus with respect to the issue of acting or not acting if there is uncertain or insufficient information about the subject matter, there are clear benefits from acting in advance (as further detailed later in this subsection).

Field trials can be treated as discretionary activities under a precautionary approach as the national legislation already prescribes strict conditions, including prohibiting the flow of altered genes from the trial site and requiring removal of heritable material upon completion.

The appropriate precautionary approach to GMO releases however is to prohibit these under an adaptive management regime. The following lists important information considerations that bear on this judgement:

- No national policy statements or national environmental standards have been issued under the RMA to guide council responses to GMO proposals,

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[42] The Protocol covers the transboundary movements of living GMOs, or living modified organisms.

[43] Article 10.6 states *"Lack of scientific certainty due to insufficient relevant scientific information and knowledge regarding the extent of the potential adverse effects of a living modified organism on the conservation and sustainable use of biological diversity in the Party of import, taking also into account risks to human health, shall not prevent that Party from taking a decision, as appropriate, with regard to the import of the living modified organism in question as referred to in paragraph 3 above, in order to avoid or minimize such potential adverse effects."* The Cartagena Protocol on Biosafety to the Convention on Biological Diversity (Text and Annexes), Montreal 2000.

[44] Simon Terry Associates and Mitchell Partnerships, *Community Management of GMOs II: Risks and Response Options*, 2005, Section 4.4.

including consideration of potential risks to conventional and organic crops, bio-diversity, and the environment.

- The government has set no other national policy with respect to the assessment of potential GMO releases and has not provided directives to the EPA to guide its interpretation of the HSNO Act.[45]

- There is no international or national guidance on how to address outstanding liability issues.[46]

- The EPA has not yet had to respond to a proposed release of a food-related GMO, and so has yet to show how it would assess the complexities that arise with a food GMO in particular.[47]

Consequently, local authorities have no guidance to assist them to manage risks from GMO activities on a regional or district-wide basis in order to meet their duties and functions under sections 30 and 31 of the RMA. There would be significant inefficiency for a council to endeavour to collect and create the information required (if available or sufficient) to develop effective policy and planning instruments in this context.

At the point the EPA approved a particular GMO release, there would then be a sizable body of information to help a council assess local impacts of that GMO. However, even then, the EPA is tasked simply with assessing the costs and benefits of a particular release proposal: the EPA is not expected at any stage to propose or define a national strategy for GMOs. The issues confronting a council however involve the broader question of the expected impacts of GMOs in general, and clearly include questions of local strategy such as the costs and benefits of an area remaining free of any GMO release.

The information required to undertake this wider assessment cannot be required of an agent seeking to undertake a particular release and so would present an additional uncompensated expense to the council were release activities to be made discretionary and a proponent lodged an application to the council. By making GMO releases a prohibited activity, a council ensures that any such assessment is either made at a time a council judges sufficient information is available, or acquisition of the information is an expense more fully covered by a release proponent through a private plan change. If the latter, then the onus is placed on the proponent to show that there is not only a national benefit (as the EPA is required to determine before issuing a consent) but that there is also a benefit to the area under the council's jurisdiction.

A prohibited activity status for releases also ensures community determined outcomes can be delivered by a council. If they were a discretionary activity, the Minister for the Environment could call in an application under the RMA and the Minister would then decide the application - rather than the council. If an activity is prohibited, the Minister cannot intervene as no application can be made.

It is the ability to revise the activity status of particular GMOs or classes of GMOs as better information becomes available that ensures the proposed approach is adaptive. As the EPA and other authorities build up the basis for analysis, and as more field trials

[45] Such directives may be issued under HSNO s17.

[46] Policy development has in recent year been focused at the international level with respect to the Nagoya - Kuala Lumpur Supplementary Protocol on Liability and Redress to the Cartagena Protocol on Biosafety, Secretariat of the Convention on Biological Diversity, Montreal, United Nations, 2011.

[47] The EPA has approved the use of GMO flu vaccine for horses but it has not been deployed and the assessment did not raise many of the issues that arise in the case of food-related GMOs.

and market analyses are undertaken, the basis for decision-making at a later point will improve.

The legal authority for the proposed approach is the case between Coromandel Watchdog of Hauraki Inc and Chief Executive of Ministry of Economic Development.[48] In this case the Court of Appeal overturned the lower courts' decisions and held that prohibited activity status can be appropriate even when local authorities do not consider that an activity be forbidden outright and are not contemplating any change or exception. Instead, a local authority can use the prohibited activity status for activities for which, having undertaken the processes required by the RMA, it could rationally conclude that this was the most appropriate status.[49] However, the court agreed with the lower courts that, if a local authority has sufficient information to undertake the evaluation of an activity at the time the district plan is being formulated, it is not an appropriate use of the prohibited activity classification to defer the evaluation required by the Act.[50] That can be contrasted with the precautionary approach, where the local authority forms the view that it has insufficient information about an aspect of an activity, but further information may become available during the term of the plan.

With respect to the outdoor use of GMOs, the prohibited activity status is required because of the communities' desire to take a precautionary approach as a matter of policy due to lack of sufficient information currently available on the potential effects of GMOs on a district/regional wide basis.

In summary, a council cannot use the prohibited status to defer evaluation of an activity when formulating its plan if it has sufficient information to undertake that evaluation. However, with respect to the outdoor use of GMOs, it can defer evaluation as currently there is insufficient information about the activity, but further information may become available at a future time.

4.3.2 Proportionate Action and Difficulties Arising From Inaction

Having demonstrated that a precautionary approach is available under the RMA and that a Plan Change is required to provide this, the following sets out why such action is reasonable and proportionate relative to not acting.

As detailed in Table 1 in Section 4.3.5, there are costs associated with establishing the Plan Change provisions. While there will be some transaction and opportunity costs for a GMO proponent having to undertake two processes (EPA approval and Plan Change process), there is unlikely to be any significant opportunity cost, such as lost economic benefit from a GMO activity that would be prohibited. This is because of the ability to further amend the plan should a particular GMO or class of GMOs be shown to have clear net benefits for a jurisdiction. The transaction and opportunity costs to a GMO proponent would be small in relative terms and there need not be a delay in the

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[48] [2008] NZRMA 77 (CA).

[49] The judgment stated: "Where the council takes a precautionary approach. If the local authority has insufficient information about an activity to determine what provision should be made for that activity in the local authority's plan, the most appropriate status for that activity may be prohibited activity. This would allow proper consideration of the likely effects of the activity at a future time during the currency of the plan when a particular proposal makes it necessary to consider the matter, but that can be done in the light of the information then available". It also stated: "Where it is necessary to allow an expression of social or cultural outcomes or expectations. Prohibited activity status may be appropriate for an activity such as nuclear power generation which is unacceptable given current social, political and cultural attitudes, even if it were possible that those attitudes may change during the term of the plan". Brookers Resource Management, Vol.1, A77A.06.

[50] Brookers Resource Management, Vol.1, A77A.06.

benefits being available to a jurisdiction as such a change could proceed after field trial data had been obtained and while the EPA was hearing an application at the national level for a release to be made. Overall, in regard to the costs or the loss of potential benefits, the risk of acting is limited. Future options are not foreclosed.

In contrast, the risks and potential costs of not acting are substantially higher. As outlined in Table 1, the "do nothing" approach will not protect the environmental, economic or cultural resources of the Northern Peninsula, or reflect the level of control desired by the community (including Māori) to manage GMO activities. Risks of not acting include:

- Adverse environmental effects including weediness and invasiveness, and effects on non-target species.

- Councils exposed to clean-up costs associated with any GMO activities as the Ministry of Primary Industries is only obliged to clean up illegal releases. Clean-up costs are potentially substantial.

- Constituents exposed to economic losses from GM contamination. This includes opportunity costs associated with the foreclosure of options for branding an area as GM Free. Councils owe a duty of care to constituents.

- Adverse socio-cultural effects including effects on tangata whenua cultural values and economic well-being.

- Monitoring, both during and after consent duration, may be required by the Council, and this can be expensive.

Another way of considering this question is to examine the extent to which a council can in practice "do nothing", and yet remain unencumbered financially.

A first issue for a council whose community has become concerned about GMO activities is whether it will need to arrange monitoring. If monitoring has not been required by the EPA, or is not in the form constituents seek, then a council can face a call from constituents to undertake this as a part of its duties under sections 35(2)(d) and (e) of the RMA. Such a call would become mandatory if a constituent succeeds in obtaining an enforcement order through the Environment Court.

The EPA can require monitoring where it is relevant to assess environmental risk. However, it is economic risks that are often a particular source of concern, and information from monitoring could be needed to underpin claims for compensation due to GM contamination. Therefore, in the event of a GM activity being undertaken within a council's jurisdiction, the prospect that the council will be required to monitor (for economic effects in particular) is quite high.

Monitoring can be expensive but a council can require the GMO operator to meet the costs under either the RMA or the LGA. The LGA is the simpler option as it does not involve a plan change – otherwise required under the RMA route.

However, those concerned about harm caused by any GMO contamination will require more than just monitoring provisions are in place. They will be particularly concerned to have mechanisms in place to promote financial accountability and clarify liability, and

the LGA cannot deliver this effectively. While the HSNO Act[51] includes a range of assessment criteria that the EPA is to consider for field tests, (i.e., taking into account adverse effects on human health and safety and the environment) and controls required for all field tests, there is no requirement to address liability issues. Councils owe a duty of care to their constituents and they may launch a legal challenge against the council if such measures were not in place.

Thus, under a "do nothing" response, a council could still expect to face significant pressure to complete a plan change under the RMA that would at least make GMO activities subject to minimum provisions concerning monitoring and financial accountability. This would be directed at having a council incorporate conditions or performance standards that would seek to ensure altered genetic material did not migrate beyond the site at which it was being used. There would be very little difference in cost between a plan change directed at a minimum response and that targeting a fuller response.

Another scenario is that a private plan change could be introduced and Council would become the respondent if it decided not to adopt it and did not have statutory grounds to reject the plan change.

In summary, the information behind the policies and methods promoted in this Plan Change is based on international and national evidence and there is little risk associated with the Plan Change going ahead. It is consistent with a precautionary approach that prohibits activities in the face of uncertainty, particularly where the potential costs are high and may be irreversible. The risk of not acting (not pursing this Plan Change) is that the significant Resource Management Issue remains unresolved and the resources of the Northern Peninsula are not managed sustainably.

4.4 Appropriateness of the Objectives in Achieving the Purpose of the Act

Section 32(3)(a) of the RMA requires the evaluation to examine the extent to which each objective is the most appropriate way to achieve the purpose of the Act. This section of the report considers the role of the Objectives in achieving the purpose of the Act and in achieving the sustainable management of the natural and physical resources in the Northern Peninsula.

The Plan Change Objectives are:

1.4.1 *The environment, including people and communities and their social, economic and cultural wellbeing and health and safety, is protected from potential adverse effects associated with the outdoor use, storage, cultivation, harvesting, processing or transportation of GMOs through the adoption of a precautionary approach, including adaptive responses, to manage uncertainty and lack of information.*

1.4.2 *The sustainable management of the natural and physical resources of the district/region with respect to the outdoor use of GMOs, a significant resource management issue identified by the community.*

[51] Sections 44A and 45A.

These Objectives are the desired end point from the resolution of the significant Resource Management Issue set out in Section 3.1.
Section 5 of the Act sets out its purpose as follows:

> (1) The purpose of this Act is to promote the sustainable management of natural and physical resources.
> (2) In this Act, sustainable management means managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural wellbeing and for their health and safety while –
> a) Sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and
> b) Safeguarding the life-supporting capacity of air, water, soil and ecosystems; and
> c) Avoiding, remedying, or mitigating any adverse effects of activities on the environment.

Achieving the purpose of the Act also requires addressing the matters set out in sections 6 (matters of national importance), 7 (other matters) and 8 (Treaty of Waitangi) of the Act.

As set out in Section 4.2, inserting provisions into the District / Unitary Plan to manage the outdoor use of, and potential effects of, GMO activities is considered to be the most appropriate way of achieving the purpose of the Act for this type of activity. The Objectives clearly state the desired outcome of providing for outdoor use of GMOs while ensuring potential adverse environmental effects are avoided, or mitigated through a precautionary approach. The Objectives also ensure unacceptable risks to the community from the outdoor release of GMOs are avoided. The Objectives recognises the value of natural and cultural resources in the Northern Peninsula, and the need to protect these values from the outdoor use of GMOs.

The Objectives will sustain the physical resources of the Northern Peninsula, now and for future generations, in particular the life supporting capacity of air, water and soil ecosystems, and through the adoption of effective policies, rules and methods, any potential adverse effects on the environment can be avoided.

The Objectives will enable people and communities to provide for their social, economic and cultural well being and for their health and safety by protecting existing primary producers from possible economic harm through GM contamination and loss of markets, protecting marketing and branding advantages and price premiums for primary producers, marketing and branding advantages for the tourism sector, and respecting socio-cultural differences, particularly the cultural values of Māori.

The Objectives will ensure the relationship of Māori and their culture and traditions with their ancestral lands, water, sites, wāhi tapu and other taonga are recognised and provided for.

The Objectives adopt a precautionary approach to the management of GMOs. The essence of the precautionary principle involves assessing and responding to potential risks or effects before they eventuate. There are uncertainties about the scope and scale of risks arising from the use of GMOs. Where the risks are high or difficult to assess or quantify by conventional risk analysis, or the potential effects are significant or uncertain, caution should be exercised before permitting and/or undertaking the activity in question, until more is known about the risks and potential effects. The adoption of a precautionary approach, as set out in Objective 1.4.1, to manage the

outdoor use of GMOs to minimise the risk to the environment, economy and socio-cultural resources and values, is inherent in the Act. The Objectives also reflect community preferences for a precautionary approach to address the issue of outdoor uses of GMOs.

It is concluded that the above Objectives are the most appropriate way of achieving the purpose of the Act.

With Regard to other Objectives in the District / Unitary Plan

Sections 59, 63 and 72 of the RMA state that the purpose of the preparation, implementation, and administration of regional policy statements, regional plans and district plans is to assist regional and district councils to carry out their functions in order to achieve the purpose of the Act. In assessing whether the Objectives are the most appropriate way to achieve the purpose of the Act, it is therefore appropriate to undertake an assessment to ensure that the Objectives are generally consistent with the other objectives in the District / Unitary Plan as these are an existing expression of how the council carries out its functions.

As the Plan Change provides generic plan provisions that will potentially be adopted by up to four territorial/unitary authorities and into a number of District / Unitary Plans, this assessment will be undertaken by each council when incorporating (and if necessary refining) the Plan Change provisions into their respective planning documents.

4.5 Appropriateness, Costs and Benefits of Policies, Rules and Other Methods

The assessment of the proposed policies, rules and other methods under section 32(3)(b) and 32(4)(a) is provided in Table 2. The following subsections draw issues together that benefit from a fuller description.

4.5.1 Appropriateness

The Plan Change is an appropriate response to community aspirations for a process whereby councils can determine acceptable levels of risk and cost exposure with respect to outdoor GMO activities within a council's jurisdiction.

Councils have repeatedly sought amendments to the HSNO Act to provide such a process within the national regulatory regime, but central government has ruled this out on a number of occasions. Additional controls at the local level are an alternative means of allowing councils to perform duties imposed on them under the LGA and the RMA.

As outlined in Section 4.2, the RMA is an effective option, and the most appropriate of those available. Further, there is not just an absence of conflict with the HSNO Act, supplementary regulation under the RMA is fully consistent with the intended interaction between the two statutes. At the time the HSNO Act was developed by central government, the intention was that additional controls could be set "under other legislation where these controls are more stringent or specific... and are required to

meet other outcomes or responsibilities".[52] Accordingly, section 142 (3) of the HSNO Act provides that local government can set higher standards for hazardous substances through RMA conditions, and while a similar provision is not specified for new organisms, a parallel use of the Act would be similarly consistent.

A key purpose of the Plan Change is to "meet other outcomes or responsibilities", especially those under the LGA and RMA, and the outcome sought is controls that overall will be "more stringent".[53] Thus rather than duplication, supplementation is the mechanism being used to achieve increased protection for the community.

The controls are supplementary as they are precisely targeted to:

- **Fill gaps in the national regulatory regime** such as the lack of robust liability provisions for activities that do not breach EPA consents; and

- **Set standards to ensure community determined outcomes are achieved.** Relative to an uncertain and / or indeterminate standard for exercising precaution in particular, the plan change sets specific performance standards that are high in themselves and can reasonably be judged as providing higher standards than indeterminacy.

To the extent that field trials will be subject to discretionary controls and this involves additional analysis, as the controls require an EPA approval before an application can be made, further analysis (such as impacts on the local economy) will again be supplementary, as will information requirements on applicants.

As the RMA controls are supplementary and not duplicative, they are the most efficient option for a council to address the significant Resource Management Issue.

The Plan Change is also consistent with the recently revised purpose statement of the LGA.[54]

> "to meet the current and future needs of communities for good-quality local infrastructure, local public services, and performance of regulatory functions in a way that is most cost-effective for households and businesses".

In order for a regulatory function to be "good quality", it must be efficient, effective, and appropriate to present and anticipated future circumstances.[55] As the foregoing has set out, the Plan Change is effective and appropriate, and it is also the most efficient option available to a council.

4.5.2 Costs

The greatest potential cost is the value of any opportunities lost as a result of the inability to release GMOs. The EPA specifies that the counterfactual for determining the benefit of a proposed GMO activity is the gains to New Zealand it would provide over and above that which could have been expected to result in any case.[56] This

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[52] Simon Terry Associates, *Community Management of GMOs: Issues, Options and Partnership with Government*, 2004, p 4.

[53] The outcomes will in all cases be stricter in respect of financial accountability measures, and will tend to be more stringent or at least as stringent in other respects.

[54] Local Government Act 2002 Amendment Bill, 2012.

[55] Section 10, as revised in 2012.

[56] EPA, *Assessment of Economic Risks, Costs and Benefits: Consideration of impacts on the market economy*, November 2011, pp 6 and 7.

means that for foregone benefits to count there must be benefits in addition to that which could have been expected if the GMO activity had not gone ahead.

The key area of interest is agricultural GMO applications, given the predominant land uses in the Northern Peninsula. Traditional breeding has delivered consistent incremental gains in agricultural productivity, so that the baseline is far from static. Discoveries in gene science in recent decades have led to new productivity enhancement techniques, and GM is one of a number of such applied technologies. In consequence, there are a number of routes to enhanced agricultural productivity, even when limiting consideration to the genetic makeup of the inputs.

A recent comparison of corn yields in the US (where GM maize dominates over non-GM varieties) and European countries growing essentially no GM maize demonstrated Europe's equal or in many cases superior yields over a quarter of a century. This clearly illustrates that gains can be quite independent of access to any particular biotechnology, including GM products. Maize is the second most widely planted GM crop in the world and the comparison shows that since the introduction of GM crop varieties in the mid 1990s, gains in European corn yields have at least kept pace with those in the US on a per hectare basis.[57]

For some time, GM developers have been anticipating step change gains that would separate food GMOs from such patterns but these have yet to be demonstrated in production. What has become clearer in recent years is that at least one other technique is equally capable of achieving step change gains. Marker Assisted Selection ("**MAS**"), also known as precision breeding, makes use of gene science to better understand the traits that are sought to be transferred from one plant to another, but the process of creating the new organism is based on traditional non-GM techniques - such that the result is not a GMO. MAS is generally capable of delivering the same scope of new varieties as GM.[58]

Therefore, as GM is almost never a unique route to a particular productivity enhancement, and non-GM techniques can generally achieve similar outcomes, in principle there need not be any foregone benefits arising from prohibiting the release of GMOs. Actual costs will be scenario dependent, and in particular could depend on whether a New Zealand-based company has devoted its research effort to use of a GM route (versus a non-GM route) and whether competing non-GM options have been pursued locally or not.

Forecasting outcomes is further complicated at this point due to the potential for circularity in the analysis. If councils do not have controls to manage GMO activities in place, then developers are less likely to avoid GM routes to productivity enhancement, whereas if a number of councils have adopted such rules, local developers will tend to choose non-GM routes. In the long run, because of the availability of non-GM routes, the cost of prohibiting GMO release activities will tend to zero.

The overall analysis is however simplified by the ability to alter a plan so as to make a particular GMO or class of GMOs a discretionary activity as new information becomes available. As described in Section 4.3, where a GMO is considered to provide net benefits to the jurisdiction, a plan can be changed in a manner that minimizes the

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[57] Professor Jack Heinemann, Presentation to Hastings District Council, 24 October 2012.

[58] GM does not enjoy a timing advantage either. Dr Robert Reiter, a molecular biologist and VP Biotechnology at Monsanto recently stated that: "Conventional crop breeding requires a 7 – 8 year cycle, compared to 10 – 15 years from inception to development for genetically modified crops..." http://www.sciencemediacentre.co.nz/2012/09/04/gm-biotech-players-outline-their-science-roadmaps/

potential for delay in securing those benefits. The existence of this option to reverse the constraint effectively caps the potential value of any lost opportunities arising from a GMO release at the cost of making a further plan change.

With respect to field trials, many of the controls set by the Plan Change are common to those required under the HSNO Act for a field trial – for example the prohibition on altered genetic material moving beyond the boundary of the test site. The financial accountability provisions are additional costs to the developer but as they are intended to internalise any costs otherwise externalised, there is no net cost to the community. A further overall feature of field trials is that these can generally be conducted in another part of New Zealand without affecting the prospects for later use of the GMO in question within a council's jurisdiction. There would nonetheless be additional transaction costs to the GMO proponent involved in making a separate application to a council as well as the EPA if a field trial were sought to be conducted in the council's area, but these costs will be minor. It is not unusual for consent applications to be made under different statutory codes in respect of a particular land use.

The residual cost that is not contingent (other than on this Plan Change proceeding) is the administrative cost of making the Plan Change. As described in Section 4.3, costs on a par with a plan change, if not actually a plan change of some form, may prove difficult to avoid if a community is strongly minded to seek a precautionary response.

4.5.3 Benefits

The principal benefit of the Plan Change is the ability to set community determined levels of risk and cost exposure with respect to GMO activities within a council's jurisdiction. Establishing appropriate standards of protection will have benefits that are financial and non-financial.

Financial benefits arise from avoiding the risk of lost income due to GM contamination of non-GM crops, avoiding the need to curb or eradicate a GMO in the environment that proves to be unwanted, and potentially from price premiums delivered by branding that is in part reliant on a GM Free status for an area.

Pastoral farming, horticulture and forestry constitute the predominant land uses in the Northland Region and are also important land uses in the Auckland Region, though these are considerably less significant to its overall economy. GM varieties relevant to each of these sectors are either commercially available today or under active development. Both regions are also home to ecologically sensitive areas.

The main relevant land-based industries in Northland and Auckland are:

- Pastoral agriculture accounts for over half of land use in Northland,[59] and carries 6% of the nation's dairy stock and 10% of its beef stock, while Auckland carries 2% of the nation's dairy stock and 3% of its beef stock.[60] Potential uses of live GMOs in pastoral farming include GM feed and pasture grasses and GM livestock.

[59] http://www.nrc.govt.nz/special/soe.2002/regional.profile/2-3-index.shtml

[60] Statistics New Zealand, 2011 data from table builder for agriculture at: http://www.statistics.govt.nz/tools_and_services/tools/TableBuilder/agriculture-statistics.aspx

- Auckland accounts for 12% of national horticultural production and Northland 5%.[61] Many of the principal fruit and vegetable crops grown in these regions are the subject of GM research and development.

- Northland accounts for 9% of the nation's planted production forest area, and Auckland 2%.[62] Scion (a Crown Research Institute) is currently conducting field trials of GM pine and other species in Rotorua.

As set out in Section 2.2.2, there are a number of different risk pathways capable of triggering market or environmental damage that could result in significant financial consequences. The value of avoiding any one of these is scenario dependent. Experience with GM contamination events indicates that losses from a single event can amount to millions or tens of millions of dollars.[63] Similarly, experience with unwanted new organisms has shown that the costs of eradicating one of these can amount to tens of millions of dollars, and attempts to even limit the rate of spread can require millions of dollars.[64] The level of cost that could be expected within a particular jurisdiction depends on the type of GMO and the nature of the problem, but exposures to constituents in the millions of dollars per incident are reasonable to assume.

While the government is obliged to remove any GMO that is illegally present, it has complete discretion over whether it assists financially with the removal of a GMO that was approved for release by the EPA but later is seen as an unwanted new organism. Losses arising from GM contamination will tend to be faced by those in the community (whichever way claims between GM and non-GM growers are settled) and attenuated only to the extent that insurance can be obtained.

A further important benefit is avoiding the foreclosure of opportunities to enhance the value of a jurisdiction's production through branding and marketing. The Northern Peninsula (north of the Auckland Isthmus) is geographically distinct and this provides a demonstrable physical separation from other areas. If the area were to be marketed as having distinct food production characteristics, including being GM Free, such a geographic separation could be pointed to in order to underscore the distinction.

Even within Europe, where GMO cultivation is very rare and constitutes 0.01% of global acreage, a number of regions have branded themselves GM Free. This includes 21 regions in France and 16 in Italy – many that evoke premium food attributes such as Tuscany, Salzburg, Burgundy and Provence.

In Australia, the South Australian Government legislated for the Eyre Peninsula to be provided with separate and stronger powers to exclude GM cultivation from an area in which quite strong restrictions already apply.[65] Tasmania has gone further and adopted a policy of state-wide exclusion of GMOs and a branding strategy emphasising the region's pristine character.[66]

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61 Statistics New Zealand, 2011 data from table builder for agriculture.

62 MAF, 2007 data, "Agricultural Areas in Hectares by Usage and Region", http://www.stats.govt.nz/browse_for_stats/industry_sectors/agriculture-horticulture-forestry/2007-agricultural-census-tables/land-use-farm-counts.aspx

63 Simon Terry Associates and Mitchell Partnerships, *Community Management of GMOs II: Risks and Response Options*, 2005, Section 2.3. In well-defined markets, the cost of a particular risk can be revealed by insurance contracts but the issue at hand is not suitable for this.

64 Simon Terry Associates and Mitchell Partnerships, *Community Management of GMOs II: Risks and Response Options*, 2005, Section 6.2.2.

65 Parliament of South Australia, House of Assembly Select Committee on Genetically Modified Organisms (2003) *Final Report*.

66 See: www.brandtasmania.com

New Zealand currently enjoys *de facto* recognition as a GM free growing area and this has allowed maize producers as a group to secure higher returns than would otherwise be the case. As the spread of GM contamination makes it harder for producers in a number of countries to be GM free, and at the same time many high value consumer markets remain resistant to GM content in food, premiums for GM free production can be expected to remain if not expand.

A plan change that excludes GMO releases would provide the underpinning for individual companies and potentially for regional bodies to further develop and promote a brand capable of adding value to existing production as part of a wider promotion of local attributes.[67]

Other non-financial benefits of the Plan Change include:

- Avoidance of adverse effects on Māori cultural values;
- Reduced risk to biodiversity; and
- Reduced scope for tension between neighbours arising from any GM plantings.

Overall, the largest potential benefit is the avoidance of the risk of incurring costs that are measured in the millions to tens of millions of dollars per serious incident, whereas the cost of this Plan Change and any contingent costs (including subsequent plan amendment) together would be considerably less than the cost of even one of the minor GM contamination events that have occurred in New Zealand to date.[68] The administrative costs involved in establishing the Plan Change are in effect the cost of avoiding these risks. While the prospect of any particular event occurring would be difficult to attach a probability to, the differential between the risks and the remedy is so large that the cost can be viewed as an insurance policy premium.

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[67] Northland's current branding initiative, led by Enterprise Northland, is called "Northland Naturally", "rich in natural beauty and resource".

[68] At least three GM contamination events have occurred in New Zealand that have involved financial consequences, with each resulting in losses of $0.5 to $1 million. One of these is detailed in: Simon Terry Associates and Mitchell Partnerships, *Community Management of GMOs II: Risks and Response Options*, 2005, p13.

Table 2: Assessment of the proposed policies, rules and other methods under sections 32(3)(b) and 32(4)(a) of the Act.

Proposed Objective 1.4.1
The environment, including people and communities and their social, economic and cultural well being and health and safety, is protected from potential adverse effects associated with the outdoor use, storage, cultivation, harvesting, processing or transportation of GMOs through the adoption of a precautionary approach, including adaptive responses, to manage uncertainty and lack of information.

Proposed Objective 1.4.2
The sustainable management of the natural and physical resources of the district/region with respect to the outdoor use of GMOs, a significant resource management issue identified by the community.

Policy / Rule / Method	Assessment under section 32(4)(a) of the Act		Assessment under section 32(3)(b) of the Act
	Benefits	Costs	Having regard to their efficiency and effectiveness, the appropriateness in achieving the objective
Proposed Policy 1.4.1.1 and 2.3.1.1 To adopt a precautionary approach by prohibiting the general release of a GMO, and by making outdoor field trialling of a GMO a discretionary activity.	This policy specifies what outdoor GMO activities can be undertaken in the Northern Peninsula, and prohibits those activities that are considered inconsistent with the Objectives. The outdoor use of GMOs has the potential to cause adverse effects on the environment, economy, and social and cultural well-being. As the level of risk inherent in the release of a GMO is not tolerable to the community for economic, environmental and cultural reasons, this policy adopts a precautionary approach by prohibiting the outdoor release of GMOs (other than vaccines). This will provide certainty to the community as to the nature of GMO activities that cannot be undertaken, and avoid the risk to the environment, economy and socio-cultural values from such activities. The policy requires outdoor field trials to gain consent as a discretionary activity enabling Council the ability to decline an activity where the potential risks are deemed to be too great, and to attach conditions to a consent approval to address liability and monitoring requirements. Community consultation has determined that a precautionary approach in the management of GMOs is warranted. The policy achieves this. If the community were to depend on the EPA approval process as currently is the case, there is no requirement for the EPA to be precautionary, and community preferences may not be achieved.	The prescriptive nature of the policy results in prescriptive rules, thus foreclosure of potential opportunities associated with certain GMO developments that could benefit the district or region. This cost is remedied through the ability to reverse a prohibited activity in a plan. A council or a GMO developer can initiate a plan change, if it were to become evident during the field trial stage, and in light of new information, that a particular GMO activity would be of net benefit to the Northern Peninsula. The lead time involved in gaining an EPA consent would be similar to that required to achieve a plan change. Processing a plan change would however result in costs to the Council and/or the applicant, and would be specific to a particular class or GMO variety. Administration costs to the Council to receive and process an application for a field trial as a discretionary activity and associated compliance monitoring costs. This cost is partially remedied as the application costs and costs of monitoring are fully recoverable from the applicant. General compliance costs are also generated by all other activities under a plan.	This policy will achieve the Objectives as it incorporates a prescriptive rule regime that prohibits outdoor releases of GMOs in order to protect against potential adverse effects, and provides for field trials as a discretionary activity. This recognises that the outdoor use of GMOs is a significant resource management issue to the Northern Peninsula community, including tangata whenua, and ensures potential adverse effects will be addressed at the outset, and are appropriately avoided, remedied or mitigated. There are significant benefits to be gained by this policy, and the relatively minor opportunity costs incurred by prohibiting GMO releases can be largely remedied through the ability to initiate a plan change. The prescriptive rule regime provides certainty to the community, including Māori, and achieves both efficiency and effectiveness that is not achieved with the status quo. This policy is effective in clearly stating that general releases of GMOs are prohibited, apart from veterinarian vaccines, while resource consent is required for any GMO field trial, enabling the Council to manage any potential effects through conditions. This policy is efficient and effective and will assist in achieving the Objectives. It has been determined that this policy is appropriate.
Proposed Policy 1.4.1.2 and 2.3.1.2 To ensure that a resource consent granted for the outdoor field trialling of a GMO is subject to conditions that ensures the consent holder is financially accountable (to the extent possible) for any adverse effects associated with the activity, including clean-up costs and remediation, including via the use of bonds.	Due to the weak liability and financial assurance arrangements under the HSNO Act, councils are exposed to meeting the costs of clean-up if the polluter does not pay. The Ministry of Primary Industries is only obliged to clean up illegal releases, not those approved by the EPA that have unexpected effects. Further GMO contamination could have a potentially significant impact on returns to non-GM growers in the district or region and could affect other parts of the country as well. This policy requires the consent holder to be financially accountable for adverse effects to the extent possible, reducing risk to the community and environment, and	Some costs for the Council in respect to administering the bond, clean-up activities and any remediation required.	The policy will achieve the Objectives as it requires GMO field trials that are granted resource consent to be subject to conditions that deems the consent holder financially liable for ensuring that the potential adverse effects of the activity are appropriately avoided, remedied or mitigated. While civil action may be taken using tort law, this is an inappropriate, onerous and generally ineffective way to seek compensation. The proposed policy is a more efficient way of ensuring those responsible for any adverse effects cover the costs they cause to innocent parties.

Policy / Rule / Method	Assessment under section 32(4)(a) of the Act		Assessment under section 32(3)(b) of the Act
	Benefits	Costs	Having regard to their efficiency and effectiveness, the appropriateness in achieving the objective
	provisions for potential clean-up costs to be met. The community has indicated a desire that a liability regime be implemented that requires those engaging in a GM release to pay compensation for any harm caused by an approved release, as this is not provided for under the HSNO Act. This policy is designed to avoid the costs for clean-up being met by the Council or its constituents, and greatly reduces the burden of proof required by Council to obtain compensation, as well as the time and costs involved in doing so.		The benefits of ensuring the consent holder is financially accountable for any adverse effects associated with a GMO activity, far exceed the cost. The Objectives and rules have been designed to ensure the environment is protected from adverse effects associated with outdoor GMO use. This policy is efficient and effective in achieving the Objectives.
Proposed Policy 1.4.1.3 and 2.3.1.3 To ensure that a resource consent granted for the outdoor field trialling of a GMO is subject to conditions that serve to avoid, as far as can reasonably be achieved, risk to the environment from the use, storage, cultivation, harvesting, processing or transportation of a GMO.	It is recognised that while GM techniques are expected to offer benefits in many sectors, there are risks associated with their use. These risks could be substantial and certain consequences irreversible. This policy enables Council to apply more stringent measures than those required under the provisions of the HSNO Act, to manage potential risks.	There is a cost to Council to monitor compliance with conditions. There is an opportunity cost in forgoing the potential release of GMOs, however traditional non-GM techniques as well as new techniques (for example MAS) are currently capable of producing the same deliverables as GM varieties.	The cost to Council to monitor compliance with consent conditions is no greater than for other activities that require resource consent as a discretionary activity. The benefits of ensuring adverse effects on the environment are avoided, remedied or mitigated for the community far outweigh these costs. This policy is efficient and effective in addressing the Objectives to protect the environment from potential adverse effects, and ensures targeted outcomes are achieved.
Proposed Policy 1.4.1.4 and 2.3.1.4 To ensure that a resource consent granted for the outdoor field trialling of a GMO is subject to a condition requiring that monitoring costs are met by the consent holder.	The EPA is not obligated to set monitoring requirements (including beyond the consent duration) as a part of its approval process, and can only require monitoring where it is relevant to assessing environmental risk. Under section 35 of the RMA a council has a duty to monitor, which can be expensive. Requiring the consent holder to meet the costs of monitoring ensures the costs aren't borne by the Council or its constituents. This policy provides a clear statement of financial requirements on the consent holder, resulting in increased certainty for all parties. The policy is designed to reduce the likelihood that activities will impact on the environment or the economy, or financial costs will be borne by the Council or its constituents.	There are few costs associated with this policy, as monitoring costs will be borne by the consent holder. Council's obligations are limited to ensuring compliance and auditing the results of monitoring.	This policy is efficient and ensures that Council obtains the monitoring it requires to adequately protect against risk, and it is not burdened with significant expense to achieve this. This policy is effective and will ensure the consent holder is financially accountable for any monitoring required.
Proposed Policy 1.4.1.5 and 2.3.1.5 To require consent holders for a GMO activity to be liable (to the extent possible) for any adverse effects caused beyond the site for which consent has been granted for the activity.	Accidental or unintentional migration of GMOs that result in GM contamination and require subsequent clean-up and remediation can be expensive. Further, GM contamination of non-GM food can trigger product rejection or other forms of economic loss. Requiring the consent holder to be liable for any adverse effects beyond the site the extent possible addresses the significant Resource Management Issue.	No costs identified with this policy.	This policy is efficient and effective in achieving the Objectives by limiting the area in which GM materials may be used such that dispersal beyond the area is a breach of consent and costs of damages are recoverable.

Policy / Rule / Method	Assessment under section 32(4)(a) of the Act		Assessment under section 32(3)(b) of the Act
	Benefits	Costs	Having regard to their efficiency and effectiveness, the appropriateness in achieving the objective
Proposed Policy 1.4.1.6 and 2.3.1.6 To adopt an adaptive approach to the management of the outdoor use, storage, cultivation, harvesting, processing or transportation of a GMO in the district or region through periodic reviews of these plan provisions, particularly if new information on the benefits and/or adverse effects of a GMO activity becomes available.	Avoids foreclosure of potential opportunities associated with a GMO development that could benefit the Northern Peninsula. Can be initiated by either Council or GMO operator. Must go through plan review process and timeframes to process are similar to those to obtain GMO approval from the EPA.	Costs will be incurred by Council to implement a plan change, unless a private plan change is initiated. Transaction costs and opportunity costs to the GM proponent of having to go through two processes (EPA approval and plan change under the RMA).	This policy ensures that if a particular GMO or group of GMOs demonstrates potential to provide net benefits then a plan change could make them subject to discretionary activity status. This policy is efficient and effective in ensuring any potential future benefits of GMOs are provided for.
Permitted Activity Rule 1.7.2 and Rule 2.6.2 *GMOs that are not specifically provided for in Rules 1.7.3 (2.6.3) and 1.7.4 (2.6.4) are a permitted activity. These include (but are not limited to):* *(a) Research within contained laboratories involving GMOs.* *(b) Medical applications involving the manufacture and use of non-viable GM products.* *Such activities may require consents and / or permits under other legislation / plans.*	The permitted activity rule provides clear guidance to plan users and Council alike on what GMO activities can be undertaken without need for resource consent.	There are no costs identified with this rule.	This rule is considered to be efficient as the absence of a permitted activity rule would mean all GMO activities would require a consent. This rule is efficient and effective as it permits medical applications involving the manufacture and use of non-viable GM products, and vaccines that tend not to persist in the environment, appear to be low risk and are difficult to monitor. This rule is efficient and effective in achieving the Objectives.
Discretionary Activity Rule 1.7.3 and Rule 2.6.3 *The following are discretionary activities throughout the district or region:* *(a) GMO field trials.*	Providing for field trials as a discretionary activity allows Council to decide on what GMO activities are suitable for the district or region, presents a low level of risk to the community, and provides Council the opportunity to decline high risk or information poor applications. As an application requirement is that the EPA has already approved the activity, Council's role is limited to determining whether there are additional conditions required to make the activity acceptable, or whether to decline the application. Assessment criteria under the HSNO Act does not include liability provisions, therefore the discretionary activity status enables councils to address liability through general development and performance standards. Activities can be undertaken subject to conditions designed to avoid more than minor effects on the environment.	No certainty for GMO operators who may wish to undertake an activity in the area, even though they have EPA approval. This may result in an unwillingness to seek a consent and foreclosure of potential opportunities that could benefit the district or region. Resources and costs required by Council to implement and administer the rules.	The discretionary rule is effective as conditions can be tailored to uniquely fit each activity. It is also efficient as it is supported by a range of compliance and enforcement powers under the RMA.
General Development and Performance Standards Rule 1.7.4 and Rule 2.6.4 Discretionary activities are to comply with the following general development and performance standards in order to establish in the district or region. The general development and performance standards are in addition to any controls/conditions imposed by the EPA.	Council can set higher standards for control than the EPA has or could be expected to. Provides clear guidance to applicants and Council alike on the standards GMO field trials must achieve.	Resources and costs to Council to implement and administer the standards.	Listing the general development and performance standards that the consent holder must achieve is efficient in that it provides clear guidance to applicants of the required standards that must be met in undertaking the activity. It is effective to set performance standards under the RMA, such that certain outcomes are assured. Performance standards are effective in mitigating risks.

Policy / Rule / Method	Assessment under section 32(4)(a) of the Act		Assessment under section 32(3)(b) of the Act
	Benefits	**Costs**	**Having regard to their efficiency and effectiveness, the appropriateness in achieving the objective**
1.7.4.1 Approvals *All GMO discretionary activities shall:* *(a) Have the relevant approval from the EPA.* *(b) Be undertaken in accordance with EPA approval conditions for the activity.* *1.7.4.2 Bond Requirements* *Council requires the applicant for the resource consent to provide a performance bond (akin to a bank guarantee) in respect of the performance of any one or more conditions of the consent, including conditions relating to monitoring required of the GMO activity (prior to, during and after the activity), and that this be available for payment to redress any adverse environmental effects and any other adverse effects to third parties (including economic effects) that become apparent during or after the expiry of the consent.* *The exact time and manner of implementing and discharging the bond shall be decided by, and be executed to the satisfaction of Council.*			The requirement to post a performance bond rather than commit cash resources means the applicant's available capital is not reduced by the requirement.
Prohibited Activity Rule 1.7.5 and Rule 2.6.5 *The following is a prohibited activity in the district or region for which no resource consent shall be granted:* *(a) Outdoor GMO releases (food-related and non-food-related) not otherwise provided for by Rules 1.7.2 and 1.7.3*	Costs to Council associated with administering this rule are limited as the activity is prohibited. No costs can arise from legal challenges to individual decisions that could be made under a discretionary regime. The potential adverse effects of GMO releases on the environment, economy and socio-cultural values have been identified by the community as key concerns. The prohibited activity status is consistent with a precautionary approach and provides certainty to the community that no GMO releases can be undertaken without specific further consideration and subsequent plan change. Prohibited activity status avoids entirely the high levels of potential harm and uncertainties about costs associated with an unforeseen event. The matter of provision of compensation and its adequacy, particularly in terms of opportunity costs is avoided. Prohibited activity status would not be subject to the option, as under a discretionary approach, that the EPA could call in an application or it could be referred directly to the Environment Court. Therefore the Council and the community it represents would retain the capacity to determine its own policy in terms of outdoor release of GMOs. Application of the prohibited rule throughout the Northern Peninsula will provide for consistency in the	By prohibiting certain activities from establishing, new developments/technologies face uncertainty and delay in seeking approval by way of a plan change. This could result in foreclosure of potential opportunities associated with a GMO development that could benefit the Northern Peninsula. This cost is remedied through the ability to reverse a prohibited activity in a plan. A council or a GMO developer can initiate a plan change to make it subject to discretionary provisions, if it were to become evident during the field trial stage and in light of new information that a particular GMO activity would be of net benefit to the Northern Peninsula. The lead time involved in gaining an EPA approval would not be dissimilar from that required to achieve a plan change. The change would however be specific to a particular class or GMO variety. The District/Unitary Plan will need to be amended if a prohibited activity demonstrates it would be of benefit. Time and monetary costs associated with the plan change process for the Council, GMO developer and community.	The rule will achieve the Objectives, as it will ensure that potential adverse effects from general releases of GMOs will be avoided. The rule also provides clarity to the Council and the community about what GMO activities can and cannot be undertaken. The policy is effective in addressing cross-boundary effects and associated risks, such as perception, opportunity costs and transportation risk, through a consistent application of the rule throughout the Northern Peninsula. Periodic review can consider whether clear benefits of GMO technology can be identified and risks managed, and whether specific classes of GMO releases could be made a discretionary activity. The prohibited activity status places the onus on the GMO proponent to provide sufficient information on the level of risk in resource management terms when proposing a plan change. The rule is specific to GMO releases, which makes it efficient in achieving the Objectives and addressing the significant Resource Management Issue. It recognises the potential risk associated with GMO releases and the lack of provisions for strict liability in the District/Unitary Plan. This rule is particularly effective in achieving the Objectives.

Policy / Rule / Method	Assessment under section 32(4)(a) of the Act		Assessment under section 32(3)(b) of the Act
	Benefits	**Costs**	**Having regard to their efficiency and effectiveness, the appropriateness in achieving the objective**
	approach to GMO releases and will largely eliminate cross-boundary controls (apart from the southern boundary).		
Introduction of Definitions	Including definitions will result in greater certainty and efficiencies in plan administration, and for potential applicants. GMO activities (field trials and releases) are not currently provided for in the District/Unitary Plan. The introduction of these definitions provides certainty around what GMO activities are provided for in the Plan Change.	If the definitions do not accurately define the GMO activities they are intended to provide for, there could be confusion in determining what activities are specified in the provisions. To mitigate against these risks, the definitions are intended to be consistent with the national level regulation.	The definitions are necessary to enable the new policies and rules to be workable, and to provide certainty to consenting authorities. It is an appropriate way to ensure that specific GMO activities are provided for. The efficiency and effectiveness of the new definitions will make progress towards achieving the Objectives.

5. NEXT STEPS

Schedule 1 of the RMA outlines the requirements for consultation in the plan development process. In respect to a section 32 evaluation, consultation is important as it assists to identify and assess issues, gather information from, and understand the needs of, resource users and others in the community, including tangata whenua.

The initial evaluation of community responses has indicated that the Northern Peninsula community, including tangata whenua, seek a relatively strong degree of precaution in respect to the management of GMOs, but also remain open to opportunities that new GMOs may provide. This community preference has informed the development of the Plan Change.

Schedule 1 requires targeted consultation and allows for public consultation during the preparation of a plan or change to a plan. It is proposed that the Plan Change and Section 32 Report are now subject to consultation as required under Schedule 1 of the Act to assess community views on the Plan Change.

The consultation process should acknowledge the Waitangi Tribunal Wai 262 findings and should include engagement with Mana Whenua iwi authorities and with Mataawaka.

A good opportunity to undertake consultation in the context of the Auckland Council jurisdiction is in the form of the proposed March 2013 Unitary Plan Discussion Draft. The inclusion of the Plan Change provisions associated with this section 32 evaluation is a matter for the determination of the Auckland Council.

6. CONCLUSION

This report, along with the supporting documentation in Volume 2, provides a section 32 analysis with respect to a Plan Change that proposes new provisions for the Northern Peninsula's respective District / Unitary Plans to manage the outdoor use of GMOs. While there may be a range of benefits associated with the outdoor use of GMOs, there are also environmental, economic and socio-cultural risks that could be substantial, and irreversible. A wide range of GMO products are being researched and developed, including ones that GMO developers/operators may consider introducing to the Northern Peninsula. The current lack of provisions to manage GMOs in the District / Unitary Plans with respect to GMO activities does not protect the environmental, economic or socio-cultural resources of the Northern Peninsula, nor does the absence of provisions reflect the level of control desired by the communities (including Māori) to manage GMO activities.

There are key gaps in the national regulation of GMOs, namely the absence of adequate liability provisions and applicant financial fitness requirements, the absence of a mandatory precautionary approach, and a lack of surety of outcome for local government and communities. Changes to the national level regulatory regime to address these gaps have not been forthcoming, despite substantial on-going local government pressure for such change. Where a local authority has determined that a precautionary approach to GMO risks is warranted, and that higher standards than those set by the EPA are warranted, or that the EPA can not be relied on to undertake the level of monitoring or financial accountability sought, it has jurisdiction under the LGA and RMA to manage land and water uses involving GMOs. This interpretation is based on legal advice provided to the Working Party, and is consistent with Crown Law and Ministry for the Environment advice.

The purpose of the Plan Change is to apply a precautionary approach to manage the outdoor use of GMOs to minimise the risk to the environment, economy and socio-cultural resources and values. The Plan Change is established such that Northern Councils are employing supplementary, not duplicative, regulation. Local government is determining to impose stricter provisions to ensure community determined outcomes can be achieved and that it can fulfil its duty of care to its constituents.

The Plan Change inserts a new significant Resource Management Issue, Objectives, Policies and Methods (including new definitions) into the District / Unitary Plan. The purpose of this is to ensure that the outdoor use of GMOs, including in the CMA, is managed in accordance with the purpose of the RMA. The Plan Change provisions have been drafted generically, to enable individual councils to tailor the provisions to their specific District / Unitary Plan.

Initial consultation has found strong support for local authorities to have a role in regulating GMOs in their areas. Local or regional level regulation of the outdoor use of GMOs is supported by the Northern Peninsula communities, including Māori. Issues raised during consultation have been addressed through the commissioning of technical assessments, the refinement of the Plan Change provisions, and this section 32 evaluation.

An assessment of the proposed provisions under section 32 of the Act has determined that the Objectives are appropriate to achieve the purpose of the Act, and that the proposed policies, rules and other methods are the most appropriate way to achieve the Objectives. The provisions are an appropriate response to community aspirations to manage risks associated with GMO activities, and are consistent with the

precautionary approach provided for under the RMA, where activities may be prohibited if there is uncertain or insufficient information. The assessment has also determined that the risk (and cost) arising from acting is low, but that the risks and potential costs arising from not acting are high.

Targeted consultation and discussion with key interest groups and the community is required to assist the Northern Councils to further refine the significant Resource Management Issue and determine the appropriateness, costs and benefits of the Plan Change.

The various provisions detailed within this report are considered to be the most appropriate way to address the significant Resource Management Issue. Based on the assessment provided in this report, it is appropriate for the Northern Councils to proceed with the Plan Change.

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2.49 Genetically modified organisms - section 32 evaluation for the Proposed ~~Auckland Unitary~~ Northland Regional Plan

1 Overview and Purpose

This evaluation should be read in conjunction with Part 1 in order to understand the context and approach for the evaluation and consultation undertaken in the development of the Northland Regional Plan (NRP).

The Statutory purpose is, pursuant to s.65(6) of the Resource Management Act,1991, to give effect to the Operative Northland Regional Policy Statement and to have regard to those GE provisions of the RPS not yet made operative pursuant to s.66(2).

1.1 Northland Regional Policy Statement.

The NRPS is now operative except for the following sections that refer directly to Genetic Engineering:

- Issue 2.6(g);
- Policy 6.1.2 and its explanation; and
- Method 6.1.5 and its explanation.

These provisions remain subject to an appeal by Federated Farmers.

For convenience, those GE provisions are quoted below:

2.6 Issues of significance to tangata whenua – natural and physical resources

The following issues have been identified by iwi authorities as regionally significant as they relate to the state of, and pressures on, natural and physical resources:

g. The use of genetic engineering and the release of genetically modified organisms to the environment.

6.1.2 Policy - Precautionary approach

Adopt a precautionary approach towards the effects of climate change and introducing genetically modified plant organisms to the environment where they are scientifically uncertain, unknown, or little understood, but potentially significantly adverse.

Explanation:

Climate change and the introduction of genetically modified plant organisms to the environment have a greater potential for significant but scientifically uncertain adverse effects than other natural processes and activities.

Taking a precautionary approach means that where there are threats of significant or irreversible adverse effects, and there is scientific uncertainty as to the extent of those effects, decision-makers shall assume the threat of significant or irreversible effects is a reality. The response should be in proportion to the degree of significance and irreversibility of the threat and the degree of scientific uncertainty.

When adopting a precautionary approach decision-makers may apply the following criteria: Regional Policy Statement for Northland Page 113 of 178

Consideration of the degree of significance or irreversibility:

• the scale of the threat;

• the value of the threatened environment;

• whether the possible adverse effects are able to be managed or contained;

• the level of public concern; and

• whether there is a rational or scientific basis for the concern.

Consideration of the degree of scientific uncertainty:

• what would constitute sufficient evidence; • the level of scientific uncertainty; and

• the potential to reduce scientific uncertainty.

6.1.5 Method – Statutory plans and strategies

The regional and district councils should apply Policy 6.1.2, when reviewing their Regional Policy Statement for Northland Page 115 of 178 plans or considering options for plan changes and assessing resource consent applications, but should not include plan provisions or resource consent conditions that attempt to address liability for harm.

Explanation:

Method 6.1.5 implements Policy 6.1.2. The method discourages councils from attempting to change the liability regime for potential harm from genetically modified plant organisms because there is no strong basis for regional or local liability controls.

1.1 Subject Matter of this Section

This section outlines the mechanisms proposed by the ~~Auckland~~ Northland Regional Council to manage risks associated with the outdoor use of genetically modified organisms (GMOs) in the Coastal Marine Area. Genetic modification ("**GM**") refers to a set of techniques that alter genetic makeup by adding, deleting or moving genes (within or between species) to produce new and different organisms. GMOs are products of genetic modification. Another term often used to refer to the same technique is genetic engineering ("**GE**"). Potential GMO activities of relevance include GM food crops, trees, grasses, animals and pharma crops, but exclude research within contained laboratories involving GMOs, medical applications involving the manufacture and use of GM products, and food containing GM products that are not viable. Field trials and outdoor releases to the environment are the focus of the Plan Change.

Note that this section is in significant part drawn from the more detailed s32 Analysis for the equivalent provisions as prepared by the Inter-council Working Party on GMO Risk Evaluation and Management Options (the Working Party) in 2003[1] (Appendix 3.49.1). If there is doubt about the interpretation of this section on GMOs, the more detailed ICWP Draft s32 (January 2013) or its successor documentation should drawn on for interpretation.

1.2 Resource Management Issue to be Addressed

The significant Resource Management Issue to be addressed is as follows:

The outdoor use of GMOs can adversely affect the environment, economy and social and cultural resources and values, and significant costs can result from the release of a GMO.

This issue applies to the ~~Auckland~~ Northland Region. A wider unified Northern Peninsula (southern boundary of the Auckland Council to the northern tip of NZ) perspective is acknowledged as being associated with this issue in recognition that the outdoor use of GMOs is not constrained by jurisdictional boundaries.

1.3 Significance of this Subject

The absolute and relative benefits associated with the development and use of GMOs is continually being redefined as this and other forms of applied biotechnology advance. However there remains scientific uncertainty with respect to potential adverse effects of GMOs on natural resources and ecosystems. The risks could be substantial and certain consequences irreversible. Once released into the environment, most GMOs would be very difficult to eradicate even if the funding were available for this, irrespective of the consequences. If the GMO is related to a food product, the "GE Free" food producer status

of a district or region would likely be permanently lost, along with any marketing advantages that status confers.

Local regulation can address key gaps that have been identified in the national regulatory regime for the management of GMOs, in particular the absence of liability provisions and the

[1] The Working Party initially comprised the Far North District Council, Kaipara District Council, Rodney District Council, Whangarei District Council, Waitakere City Council, Northland Regional Council and Auckland Regional Council. Auckland City Council and North Shore City Council were observers on the Working Party. Following the amalgamation of Auckland Regional Council and the seven previous city/district councils in 2010, the new Auckland Council became a representative on the Working Party.

lack of a mandatory precautionary approach. Benefits of local level regulation, in addition to the controls set by the EPA, include:

- Ensuring GM operators are financially accountable in the long-term through bonding and financial fitness provisions for the full costs associated with the GMO activity. This includes accidental or unintentional contamination, clean-up, monitoring and remediation.

- Adoption of a precautionary approach to manage potential risks (economic, environmental, social and cultural) associated with the outdoor use of GMOs.

- Protection of local/regional marketing advantages through reducing risks associated with market rejection and loss of income from GM contamination of non-GM crops, and negative effects on marketing, branding and tourism opportunities.

- Addressing cultural concerns of Maori, particularly given that Maori make up a considerably greater proportion of the population in Northland than is represented nationally.

Given a council's general duties of care for its financial position and that of its constituents, there is a ready justification for the Council to enforce mandatory conditions to provide for both financial accountability and avoidance of economic damage. These controls would act in addition to those that may be set by the EPA under the HSNO Act, and are the focus of this section.

Management of the outdoor use of GMOs within the Auckland Northland Region has significance outside of the ~~Auckland~~ Northland Region. The ~~Auckland~~ Northland Regional Council is part of the Inter-Council Working Party on GMO Risk Evaluation and Management Options (ICWP) which was formed in 2003.

~~**1.4 Auckland Plan**~~

~~The Auckland Plan has general provisions only which are relevant in the consideration of risks associated with the management of the outdoor use of GMOs. Economic examples are supporting Auckland's economic performance and productivity, its interdependence with the rest of NZ, major domestic market status and contribution to exports. Environmental priorities include valuing natural heritage and sustainably managing natural resources.~~

~~Directive 7.1 is: *Acknowledge and account of ecosystem services when making decisions for Auckland.* Rural Auckland Strategic Direction 9 is *Keep rural Auckland productive, protected and environmentally sound.* Priorities are to *Create a sustainable balance between environmental protection, rural production and activities connected to the rural environment,* and; *Support rural settlements, living and communities.* Directive 9.1 is *Ensure the resources and production systems that underpin working rural land are protected, maintained and improved.*~~

1.5 Current Objectives, Policies, Rules and Methods

The following is a very brief summary of GMO provisions in the various statutory district and regional planning documents in the Northland Region.

a) Far North District Plan. The Operative DP is silent on GMO matters. Plan Change 18 introduced new Chapter 19 to specifically set out comprehensive provisions for GMOs and amend Chapter 3 to introduce new definitions. Decisions on submissions have been made and there is one unheard appeal by Federated Farmers Inc. The proposed GMO provisions closely follow those recommended by the Joint Working Party and those in the AUP (also subject to Appeal by Federated Farmers).

b) Whangarei District Plan. A comprehensive set of GMO provisions were introduced by Plan Change 131. Decisions on submissions have been made and there is an unheard appeal by Federated Farmers. The proposed GMO provisions closely follow

those recommended by the Joint Working Party and those in the AUP (also subject to Appeal by Federated Farmers).

c) Kaipara District Plan. The operative district plan refers to GMOs as an issue with uncertainty to be addressed in the future. Membership of the GMO Joint Working Party is acknowledged, however a plan change to address GMO issues has not yet been introduced.

~~The only legacy plan provision is a provided for in the Operative Auckland City District Plan - Hauraki Gulf Islands Section 1996 prohibited new organisms (including GMO field trials and GMOs in containment) (Appendix 3.49.2).~~

~~- Under the Proposed Auckland City District Plan - Hauraki Gulf Islands Section 2006, the introduction, propagation, distribution or farming of GMOs) is a prohibited activity. This particular rule in the proposed plan is under appeal.~~

1.6 Information and Analysis

Local authorities in the Northern Peninsula responded to community concerns about GMO use by forming an Inter-council Working Party on GMO Risk Evaluation and Management Options (ICWP) in 2003[2]. The focus of the Working Party is to evaluate risks to local bodies and their communities in the Northern Peninsula from the outdoor use of GMOs, together with response options to those risks, including regulation of GMO land and water uses under the RMA.

As part of its investigations, the Working Party commissioned a series of reports to investigate the nature and extent of risks local authorities could expect to face from outdoor activities involving GMOs, and the response options available to address those risks. The reports and results of the Colmar Brunton survey commissioned form part of, and should be read in conjunction with this section 32 report. They are provided in Appendix 3.49.3 to this document and include:

- *Community Management of GMOs: Issues, Options and Partnership with Government.* Simon Terry Associates, March 2004
- *Community Management of GMOs II: Risks and Response Options.* Simon Terry Associates and Mitchell Partnerships, May 2005.
- *Community Management of GMOs III:* Recommended Response Options. Simon Terry Associates and Mitchell Partnerships, September 2010.
- *Colmar Brunton Genetically Modified Organisms Survey*, aggregated results prepared for the Northland Area and Auckland Regional Council.

The first report (Simon Terry Associates, 2004) investigated options for local authority management of GMOs. The second report commissioned (Simon Terry Associates and Mitchell Partnerships, 2005) examined in detail risks to local authorities and communities from outdoor use of GMOs and response options to manage those risks. It also recommended a joint community consultation programme as the next stage in the GMO evaluation process, to ascertain the level of risk the community was prepared to accept in respect to GMO use and whether regulations in respect to the management of GMOs should be set (and in what form) at the local level in addition to national level regulation.

The third report (Simon Terry Associates and Mitchell Partnerships, 2010) extended the earlier research by examining options available to councils under the RMA for managing the outdoor use of GMOs and identified a preferred response option (via a plan change).

The reports commissioned by the Working Party, and the results from the community survey undertaken informed the development of the Working Party Plan Change (Appendix

3.49.4), the provisions of the ~~Unitary Plan~~ Northland regional Plan and this section 32 evaluation.

1.7 Consultation Undertaken

The provisions have been progressively developed over the last 10 years. During this time community concerns over the potential use of GMOs in the Northern Peninsula have been demonstrated through numerous submissions on annual plans, Long Term Council Community Plans ("**LTCCP**"), Long Term Plans ("**LTPs**"), and district plans.

In addition, tangata whenua have expressed on-going concerns over genetic engineering in iwi/hapu management plans and other forums. A comprehensive Colmar Brunton survey of community attitudes to GMOs commissioned by Northland and Auckland councils in 2009 (Appendix 3.49.3) revealed significant community concern over GMOs in the environment

and support for local/regional management of GMOs in Auckland and the wider Northern Peninsula.

As a consequence of on-going community concerns, all councils in Northland and three in the Auckland Region (prior to November 2010 amalgamation) included policy statements in their LTCCPs/LTPs[3] that provided for a precautionary approach to the use of GMOs in the environment.

Since the amalgamation, the Auckland Council continued membership of the Working Party and participated jointly in the preparation of the documentation referred to in section 1.8 below.

The Council included an issue reference and an objective in its 15 March Draft Auckland Unitary Plan for the purposes of consultation. The issue reference was *The outdoor use of genetically modified organisms could adversely affect our environment, economy and social and cultural resources and values.* Objective 2.6.4.2 was *Genetically modified organisms do not adversely affect the social, cultural, economic and environmental well-being of Aucklanders.*

The GMO topic received a significant amount of feedback, the majority of which came through during the informal feedback period on the March Draft of the Unitary Plan. Other feedback outside of this process has also been received and has been taken into consideration by Auckland Council. This includes feedback from Iwi groups and the Ministry for the Environment.

The majority of feedback opposes the use of GMOs in Auckland and requests Auckland Council to include provisions in the Unitary Plan to prohibit their use. A small amount of feedback supported the management of GMOs in the Unitary Plan provided any adverse effects are avoided.

With regard to engagement and feedback from Mana Whenua, while views varied, they were in general favor of the approach proposed by the ICWP or total prohibition.

[2] The Working Party initially comprised the Far North District Council, Kaipara District Council, Rodney District Council, Whangarei District Council, Waitakere City Council, Northland Regional Council and Auckland Regional Council. Auckland City Council and North Shore City Council were observers on the Working Party. Following the amalgamation of Auckland Regional Council and the seven previous city/district councils in 2010, the new Auckland Council became a representative on the Working Party.

1.8 Decision-Making

~~The Auckland Council and the specified Auckland legacy Councils were full parties to the process leading to the preparation of *Draft Proposed Plan Change to the District/Unitary Plan (January 2013, the Draft Proposed Plan Change to the District / Unitary Plan Section 32 Report (January 2013)* (Appendix 3.49.6) and supporting documentation (Appendices 3.49.1 and 3.49.3), and the *Legal Opinions Managing Risks Associated with Outdoor Use of Genetically Modified Organisms Dr Royden Somerville QC, January 2013.* (Appendix 3.49.5)~~

~~On 8 February 2013 the Working Party received the documentation and referred it to the respective member Councils including the Auckland Council for its consideration with a view to the inclusion in the Auckland Unitary Plan (Appendix 3.49.6).~~

~~On 12 February 2013 the Auckland Plan Committee agreed to include an issue reference and an objective in its 15 March Draft Auckland Unitary Plan for the purposes of consultation (Appendix 3.49.7).~~

~~On 5 September 2013 and subsequent to receiving feedback on the draft Auckland Unitary Plan the Auckland Plan Committee of Council resolved to include provisions in general accordance with the those prepared through the ICWP.~~

~~[3] The Far North District Council, Whangarei District Council, Kaipara District Council, Northland Regional Council, Rodney District Council, Waitakere City Council ("GE free in field and food") and Auckland Regional Council.~~

1.9 Proposed Provisions

In response to the Issue identified in section 1.5 – *Sustainably managing our natural resources,* the following explanation is lifted from the Working Party Proposed Provisions Document (January 2013).

The potential adverse effects on people, the environment and the economy from the outdoor use or release of a GMO is identified as a resource management issue given that this is a risk associated with permitting the use, storage, cultivation, harvesting, processing or transportation of outdoor GMOs.

This issue must be addressed in assessing and permitting what outdoor GMO activities will be able to be undertaken within the district or region. To avoid or mitigate adverse effects, the outdoor use of GMOs needs to be managed correctly, designed and located appropriately and have processes, including a liability regime, in place for dealing with any adverse effects, such as unintentional GM contamination.

Council has adopted a precautionary approach to managing risks associated with the outdoor use of GMOs to address this resource management issue.

The provisions provide for Discretionary and Prohibited Activity status as follows:

Not all categories of outdoor GMO use need to be regulated with the same degree of precaution. Different types of GMOs carry different risks, therefore the ~~Unitary~~ Regional Plan groups similar GMOs together which can be expected to have similar types of effects that council may be required to avoid, remedy or mitigate.

The ~~Unitary~~ Regional Plan classifies GMO outdoor uses into the following categories:

- Field Trials - **Discretionary Activity**.
- Food-related GMO Releases - **Prohibited Activity**.
- Non-food-related GMO Releases - **Prohibited Activity.**

Field trials are designed with the objective of ensuring that no altered genetic material leaves the test site and this greatly reduces the risks of harm arising. However breaches of trial conditions that could lead to GMOs escaping the trial site have occurred in New Zealand. Making all field trials a discretionary activity provides greater protection for the community by making the GMO operator financially accountable should adverse effects arise from a breach of conditions.

Given the high levels of potential harm and the uncertainties surrounding the extent of costs and benefits that could be expected from GMO releases, the Plan ~~Change~~ takes a precautionary approach and makes GMO releases a prohibited activity. Adopting an adaptive risk management approach, periodic reviews can be undertaken as to whether particular classes or individual GMOs should be made discretionary activities. Field trials could be considered a limited discretionary or restricted discretionary activity if a specific council determines this is appropriate in the context of their respective plan. Discretion would be limited to the general development and performance standards provided in the Plan ~~Change~~.

At the point a set of GMOs demonstrates the potential to provide net benefits, a change to the ~~Unitary~~ Regional Plan can then make these subject to discretionary provisions. A requirement is that the EPA has already approved such a release. Council's role is limited to determining whether there are additional conditions that would make release in the district or region permissible, or whether to decline the application.

While the Proposed ~~Auckland Unitary~~ Regional Plan does not include Environmental Results Anticipated, the Working Party Draft Provisions (January 2013) notes as follows:

It is anticipated that the objectives, policies and methods of [the provisions] will achieve the following results:

1. *Manage risk and avoid adverse effects on people, communities, tangata whenua, the economy and the environment associated with the outdoor use of GMOs.*

2. *Provide the framework for a unified approach to the management of the outdoor use of GMOs in the Northern Peninsula to address cross-boundary effects.*

3. *Ensure accountability by GMO operators for the full costs related to the monitoring of GMO activities, and any migration of GMOs beyond specified areas, including unintentional GM contamination.*

4. *Ensure accountability by GMO operators for compensation via performance bonds in the event that the activity under their operation results in adverse effects to third parties or the environment.*

1.10 Reference to other Evaluations

This section 32 report should be read in conjunction with the following evaluations:

2.11 Biodiversity
2.18 Maori and natural resources

2 Objectives, Policies and Rules

The provisions of the Proposed ~~Auckland Unitary~~ Regional Plan are consistent with the Objectives, Policies and Rules as recommended by the Working Party. The Working Party draft s32 report and all supporting information and analysis therefore apply directly and are part of this section 32 evaluation.

To respond to the significant Resource Management Issue identified, the Plan provisions acknowledge that the ~~Auckland~~ Regional Council has insufficient information about the outdoor use of GMOs and will therefore apply a precautionary approach. The precautionary approach inserts provisions that prohibit classes of GMO activity that in absence of additional information are identified as "too high risk", and establishes a financial liability regime for those engaging in a GMO activity.

2.1 Objective

The following objectives are proposed:-

~~Regional Policy Statement~~

~~1. *The sustainable management of the natural and physical resources of Auckland with respect to the outdoor use of GMOs.*~~

~~Auckland Wide~~ Regional Coastal Marine Area

1. *The environment, including people and communities and their social, economic and cultural well being and health and safety, is protected from potential adverse effects associated with the outdoor use, storage, cultivation, harvesting, processing or transportation of GMOs.*

The following text is copied and paraphrased from the Working Party Draft s32 Report (page 32):

These Objectives are the desired end point from the resolution of the significant Resource Management Issue set out in Section 3.1. Section 5 of the Act sets out its purpose as follows:

> *(1) The purpose of this Act is to promote the sustainable management of natural and physical resources.*
> *(2) In this Act, sustainable management means managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural wellbeing and for their health and safety while –*
> *a) Sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and*
> *b) Safeguarding the life-supporting capacity of air, water, soil and ecosystems; and*
> *c) Avoiding, remedying, or mitigating any adverse effects of activities on the environment.*

Achieving the purpose of the Act also requires addressing the matters set out in s.6 (matters of national importance), s.7 (other matters) and s.8 (Treaty of Waitangi) of the Act.

Inserting provisions into the ~~Unitary~~ Regional Plan to manage the outdoor use of, and potential effects of, GMO activities is considered to be the most appropriate way of achieving the purpose of the Act for this type of activity. The Objectives clearly state the desired outcome of providing for outdoor use of GMOs while ensuring potential adverse environmental effects are avoided, or mitigated. ~~Both the Regional Policy Statement~~ The

proposed NRPS policy ~~and Auckland Wide Policy 1,~~ states that this will be achieved through adopting a precautionary approach.

The Objectives also ensure unacceptable risks to the community from the outdoor release of GMOs are avoided. The Objectives recognises the value of natural and cultural resources in the ~~Auckland Region~~ Northland Coastal Marine Area, and the need to protect these values from the outdoor use of GMOs.

The Objectives will sustain the physical resources of the ~~Auckland Region~~ Northland Coastal Marine Area, now and for future generations, in particular the life supporting capacity of air, water and soil ecosystems, and through the adoption of effective policies, rules and methods, any potential adverse effects on the environment can be avoided.

The Objectives will enable people and communities to provide for their social, economic and cultural wellbeing and for their health and safety by protecting existing primary producers from possible economic harm through GM contamination and loss of markets, protecting marketing and branding advantages and price premiums for primary producers, marketing and branding advantages for the tourism sector, and respecting socio-cultural differences, particularly the cultural values of Māori.

The Objectives will ensure the relationship of Māori and their culture and traditions with their ancestral lands, water, sites, wāhi tapu and other taonga are recognised and provided for.

It is concluded that the above Objectives are the most appropriate way of achieving the purpose of the Act.

Paraphrased excerpt from Working Party Draft s32 Report (page 24):
Councils have jurisdiction under the RMA to set rules for GMOs that act in addition to those that may be set under the HSNO Act or by the EPA[4], through inserting provisions into the District / Unitary Plan pursuant to sections 66 and 74 of the RMA. There is nothing in the HSNO Act to preclude a local authority imposing greater levels of control in its District / Unitary Plan for RMA purposes than those imposed by the EPA under the HSNO Act. The preparation of a section 32 report is therefore entirely appropriate to evaluate possible local/regional management of outdoor GMOs.

Given a council's general duty of care for its financial position and that of its constituents, there is a ready justification for the Council to set mandatory conditions to provide for both financial accountability (through bonds and insurance requirements) and avoidance of economic damage. The RMA also provides communities with the ability to set rules that embody community determined outcomes, including the level of risk it is willing to accept with respect to activities such as the management of GMOs. Further, Council under section 35 of the RMA has a duty to undertake monitoring and may set conditions to provide for monitoring at the cost of the applicant.

Establishing controls on GMOs under the RMA requires a plan change or plan review[5]. The Environment Court is able to consider whether the objective, policies and methods in a plan change are valid pursuant to the relevant provisions of the RMA.

The functions of the EPA under the HSNO Act are different from those of local authorities under sections 30 and 31 of the RMA.

Overall, it is concluded that the relevant RMA provisions are not in conflict with those of the HSNO Act and the two statutes can operate side by side.

2.1.1 Policies

1. Adopt a precautionary approach by prohibiting the general release of a GMO, and by making outdoor field trialling of a GMO a discretionary activity
2. Adopt an adaptive approach to the management of the outdoor use, storage, cultivation, harvesting, processing or transportation of a GMO through periodic reviews of these plan provisions, particularly if new information on the benefits and/or adverse effects of a GMO activity becomes available.
3. Require the holder of a resource consent granted for the outdoor field trialling of a GMO is financially accountable for any adverse effects associated with the activity, including clean-up costs and remediation, including via the use of bonds.
4. Ensure the outdoor use of GMOs does not result in migration of GMOs beyond the area designated by:
    a. Adequate site design, construction and management techniques
    b. Preventing the escape of GMOs from transporting vehicles or vessels
    c. Ensuring all heritable material is removed upon the conclusion of the activity.
    d. Ensuring any financial liability is the responsibility of the operator carrying out the activity.
5. Enable the use of GMOs within laboratories for medical and veterinary applications including non-viable GMO products.
6. Require where appropriate, more stringent measures than those required under the provisions of the HSNO Act to manage potential risks.

7. Require outdoor field trialling of GMOs to avoid, as far as can reasonably be achieved, risk to the environment from the use, storage, cultivation, harvesting, processing or transportation of a GMO.
8. Require all monitoring costs to be met by the consent holder.

Paraphrased excerpt from Working Party Draft s32 Report (page 24):
The policies and rules and methods are an appropriate response to community aspirations for a process whereby councils can determine acceptable levels of risk and cost exposure with respect to outdoor GMO activities within a council's jurisdiction.

The Northern Councils have repeatedly sought amendments to the HSNO Act to provide such a process within the national regulatory regime, but central government has ruled this out on a number of occasions. Additional controls at the local level are an alternative means of allowing councils to perform duties imposed on them under the LGA and the RMA.

The RMA is an effective option, and the most appropriate of those available. Further, there is not just an absence of conflict with the HSNO Act, supplementary regulation under the RMA is fully consistent with the intended interaction between the two statutes. At the time the HSNO Act was developed by central government, the intention was that additional controls could be set "under other legislation where these controls are more stringent or specific... and are required to meet other outcomes or responsibilities".[6] Accordingly, section 142 (3) of the HSNO Act provides that local government can set higher standards for hazardous substances through RMA conditions, and while a similar provision is not specified for new organisms, a parallel use of the Act would be similarly consistent.

[4] For further discussion, see Simon Terry Associates, *Community Management of GMOs: Issues, Options and Partnership with Government,* 2004.

[5] Sections 65, 73, 79 and 80.

A key purpose of the provisions is to "meet other outcomes or responsibilities", especially those under the LGA and RMA, and the outcome sought is controls that overall will be "more stringent".[7] Thus rather than duplication, supplementation is the mechanism being used to achieve increased protection for the community.

The controls are supplementary as they are precisely targeted to:

- **Fill gaps in the national regulatory regime** such as the lack of robust liability provisions for activities that do not breach EPA consents; and

- **Set standards to ensure community determined outcomes are achieved.** Relative to an uncertain and / or indeterminate standard for exercising precaution in particular, the plan change sets specific performance standards that are high in themselves and can reasonably be judged as providing higher standards than indeterminacy.

To the extent that field trials will be subject to discretionary controls and this involves additional analysis, as the controls require an EPA approval before an application can be made, further analysis (such as impacts on the local economy) will again be supplementary, as will information requirements on applicants.

As the RMA controls are supplementary and not duplicative, they are the most efficient option for a council to address the significant Resource Management Issue.

The provisions are also consistent with the recently revised purpose statement of the LGA.[8]

> *"to meet the current and future needs of communities for good-quality local infrastructure, local public services, and performance of regulatory functions in a way that is most cost-effective for households and businesses".*

In order for a regulatory function to be "good quality", it must be efficient, effective, and appropriate to present and anticipated future circumstances.[9] As the foregoing has set out, the Plan Change is effective and appropriate, and it is also the most efficient option available to a council.

With specific reference to adopting a precautionary approach as provided for by the NRPS policy and ~~Auckland-wide~~ PNRP GMO policy 1. the essence of the precautionary principle involves assessing and responding to potential risks or effects before they eventuate. There are uncertainties about the scope and scale of risks arising from the use of GMOs. Where the risks are high or difficult to assess or quantify by conventional risk analysis, or the potential effects are significant or uncertain, caution should be exercised before permitting and/or undertaking the activity in question, until more is known about the risks and potential effects. The adoption of a precautionary approach, as set out in the both the NRPS and ~~Auckland- wide~~ P N R P GMO policies, to manage the outdoor use of GMOs to minimise the risk to the environment, economy and socio-cultural resources and values, is inherent in the Act. The policy also reflects community preferences for a precautionary approach to address the issue of outdoor uses of GMOs.

6 Simon Terry Associates, *Community Management of GMOs: Issues, Options and Partnership with Government*, 2004, p 4.

7 The outcomes will in all cases be stricter in respect of financial accountability measures, and will tend to be more stringent or at least as stringent in other respects.

2.1.2 Rules and other methods

The proposed provisions are summarised in 1.9 above.

Rules supporting the Objectives and Policies are achievable as outlined in the Working Party draft section 32 Report (January 2013) (Appendix 3.49.1), and as indicated by the supporting text to the policies in 2.1.1 above.

A detailed table referring to each Policy, Rule and Method is provided in the Working Party draft section 32 Report (January 2013) (Appendix 3.49.1). *Table 2: Assessment of the proposed policies, rules and other methods under sections 32(3)(b) and 32(4)(a) of the Act.* The table should be viewed in full.

As selected excerpts from that table the activity rules are referred to here as follows:

Permitted Activity Rule for GMO activities no specifically provided for or prohibited.

Benefits

The permitted activity rule would apply, but not be limited to research within contained laboratories involving GMOs and medical applications involving the manufacture and use of non-viable GM products. There are no costs identified with this rule.

Efficiency and Effectiveness

This rule is considered to be efficient as the absence of a permitted activity rule would mean all GMO activities would require a consent. This rule is efficient and effective as it permits medical applications involving the manufacture and use of non-viable GM products, and vaccines that tend not to persist in the environment, appear to be low risk and are difficult to monitor. This rule is efficient and effective in achieving the Objectives.

[8] Local Government Act 2002 Amendment Bill, 2012.

[9] Section 10, as revised in 2012.

Discretionary Activity Rule GMO field trials

Benefits

Providing for field trials as a discretionary activity allows Council to decide on what GMO activities are suitable for the district or region, presents a low level of risk to the community, and provides Council the opportunity to decline high risk or information poor applications. As an application requirement is that the EPA has already approved the activity, Council's role is limited to determining whether there are additional conditions required to make the activity acceptable, or whether to decline the application.

Assessment criteria under the HSNO Act does not include liability provisions, therefore the discretionary activity status enables councils to address liability through requirement for a bond.

Activities can be undertaken subject to conditions designed to avoid more than minor effects on the environment.

Costs

No certainty for GMO operators who may wish to undertake an activity in the area, even though they have EPA approval. This may result in an unwillingness to seek a consent and foreclosure of potential opportunities that could benefit the district or region.

Resources and costs required by Council to implement and administer the rules.

Efficiency and effectiveness

The discretionary rule is effective as conditions can be tailored to uniquely fit each activity. It is also efficient as it is supported by a range of compliance and enforcement powers under the RMA.

Prohibited Activity Rule for outdoor GMO release

Benefits

Costs to Council associated with administering this rule are limited as the activity is prohibited. No costs can arise from legal challenges to individual decisions that could be made under a discretionary regime.

The potential adverse effects of GMO releases on the environment, economy and socio-cultural values have been identified by the community as key concerns. The prohibited activity status is consistent with a precautionary approach and provides certainty to the community that no GMO releases can be undertaken without specific further consideration and subsequent plan change. Prohibited activity status avoids entirely the high levels of potential harm and uncertainties about costs associated with an unforeseen event. The matter of provision of compensation and its adequacy, particularly in terms of opportunity costs is avoided.

Prohibited activity status would not be subject to the option, as under a discretionary approach, that the EPA could call in an application or it could be referred directly to the Environment Court. Therefore the Council and the community it represents would retain the capacity to determine its own policy in terms of outdoor release of GMOs.

Application of the prohibited rule throughout the Northern Peninsula will provide for consistency in the approach to GMO releases and will largely eliminate cross-boundary controls (apart from the southern boundary).

Costs

By prohibiting certain activities from establishing, new developments/technologies face uncertainty and delay in seeking approval by way of a plan change. This could result in foreclosure of potential opportunities associated with a GMO development that could benefit the Northern Peninsula. This cost is remedied through the ability to reverse a prohibited activity in a plan. A council or a GMO developer can initiate a plan change to make it subject to discretionary provisions, if it were to become evident during the field trial stage and in light of new information that a particular GMO activity would be of net benefit to the Northern Peninsula. The lead time involved in gaining an EPA approval would not be dissimilar from that required to achieve a plan change. The change would however be specific to a particular class or GMO variety.

The District/Unitary Plan will need to be amended if a prohibited activity demonstrates it would be of benefit.

Time and monetary costs associated with the plan change process for the Council, GMO developer and community.

Efficiency and effectiveness

The rule will achieve the Objectives, as it will ensure that potential adverse effects from general releases of GMOs will be avoided.

The rule also provides clarity to the Council and the community about what GMO activities can and cannot be undertaken.

The policy is effective in addressing cross-boundary effects and associated risks, such as perception, opportunity costs and transportation risk, through a consistent application of the rule throughout the Northern Peninsula.

Periodic review can consider whether clear benefits of GMO technology can be identified and risks managed, and whether specific classes of GMO releases could be made a discretionary activity. The prohibited activity status places the onus on the GMO proponent to provide sufficient information on the level of risk in resource management terms when proposing a plan change.

The rule is specific to GMO releases, which makes it efficient in achieving the Objectives and addressing the significant Resource Management Issue. It recognises the potential risk associated with GMO releases and the lack of provisions for strict liability in the District/Unitary Plan. This rule is particularly effective in achieving the Objectives.

2.1.3 Costs and Benefits of Proposed Policies and Rules

The following text is copied and paraphrased from the Working Party Draft s32 Report (pages 34-35) (Appendix 3.49.1):

Costs

The greatest potential cost is the value of any opportunities lost as a result of the inability to release GMOs. The EPA specifies that the counterfactual for determining the benefit of a proposed GMO activity is the gains to New Zealand it would provide over and above that which could have been expected to result in any case.[10] This means that for foregone benefits to count there must be benefits in addition to that which could have been expected if the GMO activity had not gone ahead.

[10] EPA, *Assessment of Economic Risks, Costs and Benefits: Consideration of impacts on the market economy*, November 2011, pp 6 and 7.

The key area of interest is ~~agricultural~~ GMO applications~~, given the predominant land uses~~ in the Coastal Marine Area in the Northern Peninsula. This parallels the focus on agricultural GMO applications in the land areas of the Northern Peninsula. Traditional breeding has delivered consistent incremental gains in agricultural productivity, so that the baseline is far from static. Discoveries in gene science in recent decades have led to new productivity enhancement techniques, and GM is one of a number of such applied technologies. In consequence, there are a number of routes to enhanced ~~agricultural~~ productivity, even when limiting consideration to the genetic makeup of the inputs.

A recent comparison of corn yields in the US (where GM maize dominates over non-GM varieties) and European countries growing essentially no GM maize demonstrated Europe's equal or in many cases superior yields over a quarter of a century. This clearly illustrates that gains can be quite independent of access to any particular biotechnology, including GM products. Maize is the second most widely planted GM crop in the world and the comparison shows that since the introduction of GM crop varieties in the mid 1990s, gains in European corn yields have at least kept pace with those in the US on a per hectare basis.[11]

For some time, GM developers have been anticipating step change gains that would separate food GMOs from such patterns but these have yet to be demonstrated in production. What has become clearer in recent years is that at least one other technique is equally capable of achieving step change gains. Marker Assisted Selection ("**MAS**"), also known as precision breeding, makes use of gene science to better understand the traits that are sought to be transferred from one plant to another, but the process of creating the new organism is based on traditional non-GM techniques - such that the result is not a GMO. MAS is generally capable of delivering the same scope of new varieties as GM.[12]

Therefore, as GM is almost never a unique route to a particular productivity enhancement, and non-GM techniques can generally achieve similar outcomes, in principle there need not be any foregone benefits arising from prohibiting the release of GMOs. Actual costs will be scenario dependent, and in particular could depend on whether a New Zealand-based company has devoted its research effort to use of a GM route (versus a non-GM route) and whether competing non-GM options have been pursued locally or not.

Forecasting outcomes is further complicated at this point due to the potential for circularity in the analysis. If councils do not have controls to manage GMO activities in place, then developers are less likely to avoid GM routes to productivity enhancement, whereas if a number of councils have adopted such rules, local developers will tend to choose non-GM routes. In the long run, because of the availability of non-GM routes, the cost of prohibiting GMO release activities will tend to zero.

The overall analysis is however simplified by the ability to alter a plan so as to make a particular GMO or class of GMOs a discretionary activity as new information becomes available. As described in Section 4.3, where a GMO is considered to provide net benefits to the jurisdiction, a plan can be changed in a manner that minimizes the potential for delay in securing those benefits. The existence of this option to reverse the constraint effectively caps the potential value of any lost opportunities arising from a GMO release at the cost of making a further plan change.

[11] Professor Jack Heinemann, Presentation to Hastings District Council, 24 October 2012.

[12] GM does not enjoy a timing advantage either. Dr Robert Reiter, a molecular biologist and VP Biotechnology at Monsanto recently stated that: "Conventional crop breeding requires a 7 – 8 year cycle, compared to 10 – 15 years from inception to development for genetically modified crops..." http://www.sciencemediacentre.co.nz/2012/09/04/gm-biotech-players-outline-their-science-roadmaps/

With respect to field trials, many of the controls set by the provisions are common to those required under the HSNO Act for a field trial – for example the prohibition on altered genetic material moving beyond the boundary of the test site. The financial accountability provisions are additional costs to the developer but as they are intended to internalise any costs otherwise externalised, there is no net cost to the community. A further overall feature of field trials is that these can generally be conducted in another part of New Zealand without affecting the prospects for later use of the GMO in question within a council's jurisdiction.

There would nonetheless be additional transaction costs to the GMO proponent involved in making a separate application to a council as well as the EPA if a field trial were sought to be conducted in the council's area, but these costs will be minor. It is not unusual for consent applications to be made under different statutory codes in respect of a particular land use.

Benefits

The principal benefit of the provisions is the ability to set community determined levels of risk and cost exposure with respect to GMO activities within a council's jurisdiction. Establishing appropriate standards of protection will have benefits that are financial and non-financial.

Financial benefits arise from avoiding the risk of lost income due to GM contamination of non-GM crops, avoiding the need to curb or eradicate a GMO in the environment that proves to be unwanted, and potentially from price premiums delivered by branding that is in part reliant on a GM Free status for an area.

Pastoral farming, horticulture and forestry constitute the predominant land uses in the Northland Region. Within the CMA xxx ~~and are also important land uses in the Auckland Region, though these are considerably less significant to its overall economy.~~ GM varieties relevant to each of these sectors are either commercially available today or under active development. ~~Both~~ The regions ~~are~~ is also home to ecologically sensitive areas.

The main relevant land-based industries in Northland and Auckland are:

- Pastoral agriculture accounts for over half of land use in Northland,[13] and carries 6% of the nation's dairy stock and 10% of its beef stock, while Auckland carries 2% of the nation's dairy stock and 3% of its beef stock.[14] Potential uses of live GMOs in pastoral farming include GM feed and pasture grasses and GM livestock.

- Auckland accounts for 12% of national horticultural production and Northland 5%.[15] Many of the principal fruit and vegetable crops grown in these regions are the subject of GM research and development.

[13] http://www.nrc.govt.nz/special/soe.2002/regional.profile/2-3-index.shtml

[14] Statistics New Zealand, 2011 data from table builder for agriculture at: http://www.statistics.govt.nz/tools_and_services/tools/TableBuilder/agriculture-statistics.aspx

[15] Statistics New Zealand, 2011 data from table builder for agriculture.

[16] MAF, 2007 data, "Agricultural Areas in Hectares by Usage and Region", http://www.stats.govt.nz/browse_for_stats/industry_sectors/agriculture-horticulture-forestry/2007-agricultural-census-tables/land-use-farm-counts.aspx

- Northland accounts for 9% of the nation's planted production forest area, and Auckland 2%.[16] Scion (a Crown Research Institute) is currently conducting field trials of GM pine and other species in Rotorua.

There are a number of different risk pathways capable of triggering market or environmental damage that could result in significant financial consequences. The value of avoiding any one of these is scenario dependent. Experience with GM contamination events indicates that losses from a single event can amount to millions or tens of millions of dollars.[17] Similarly, experience with unwanted new organisms has shown that the costs of eradicating one of these can amount to tens of millions of dollars, and attempts to even limit the rate of spread can require millions of dollars.[18] The level of cost that could be expected within a particular jurisdiction depends on the type of GMO and the nature of the problem, but exposures to constituents in the millions of dollars per incident are reasonable to assume.

While the government is obliged to remove any GMO that is illegally present, it has complete discretion over whether it assists financially with the removal of a GMO that was approved for release by the EPA but later is seen as an unwanted new organism. Losses arising from GM contamination will tend to be faced by those in the community (whichever way claims between GM and non-GM growers are settled) and attenuated only to the extent that insurance can be obtained.

A further important benefit is avoiding the foreclosure of opportunities to enhance the value of a jurisdiction's production through branding and marketing. The Northern Peninsula (north of the Auckland Isthmus) is geographically distinct and this provides a demonstrable physical separation from other areas. If the area were to be marketed as having distinct food production characteristics, including being GM Free, such a geographic separation could be pointed to in order to underscore the distinction.

Even within Europe, where GMO cultivation is very rare and constitutes 0.01% of global acreage, a number of regions have branded themselves GM Free. This includes 21 regions in France and 16 in Italy – many that evoke premium food attributes such as Tuscany, Salzburg, Burgundy and Provence.

In Australia, the South Australian Government legislated for the Eyre Peninsula to be provided with separate and stronger powers to exclude GM cultivation from an area in which quite strong restrictions already apply.[19] Tasmania has gone further and adopted a policy of state-wide exclusion of GMOs and a branding strategy emphasising the region's pristine character.[20]

New Zealand currently enjoys *de facto* recognition as a GM free growing area and this has allowed maize producers as a group to secure higher returns than would otherwise be the case. As the spread of GM contamination makes it harder for producers in a number of countries to be GM free, and at the same time many high value consumer markets remain resistant to GM content in food, premiums for GM free production can be expected to remain if not expand. These factors apply also to current and future production in the Coastal Marine area

[17] Simon Terry Associates and Mitchell Partnerships, *Community Management of GMOs II: Risks and Response Options*, 2005, Section 2.3. In well-defined markets, the cost of a particular risk can be revealed by insurance contracts but the issue at hand is not suitable for this.

[18] Simon Terry Associates and Mitchell Partnerships, *Community Management of GMOs II: Risks and Response Options*, 2005, Section 6.2.2.

[19] Parliament of South Australia, House of Assembly Select Committee on Genetically Modified Organisms (2003) *Final Report*.

[20] See: www.brandtasmania.com

A Plan ~~change~~ provisions that excludes GMO releases would provide the underpinning for individual companies and potentially for regional bodies to further develop and promote a brand capable of adding value to existing production as part of a wider promotion of local attributes.[21]

Other non-financial benefits of the provisions include:

- Avoidance of adverse effects on Māori cultural values;
- Reduced risk to biodiversity; and
- Reduced scope for tension between neighbours arising from any GM plantings.

Overall, the largest potential benefit is the avoidance of the risk of incurring costs that are measured in the millions to tens of millions of dollars per serious incident, whereas the cost of these provisions and any contingent costs (including subsequent plan amendment) together would be considerably less than the cost of even one of the minor GM contamination events that have occurred in New Zealand to date.[22] The administrative costs involved in establishing the provisions are in effect the cost of avoiding these risks. While the prospect of any particular event occurring would be difficult to attach a probability to, the differential between the risks and the remedy is so large that the cost can be viewed as an insurance policy premium.

2.1.4 Adequacy of Information and Risk of Not Acting

It is considered that there sufficient information on which to base the proposed objectives, policies, rules and methods.

Referring to the risk of not acting, the following text is copied and paraphrased from the Working Party Draft s32 Report (pages 29-31) (Appendix 3.49.1):

Having demonstrated that a precautionary approach is available under the RMA and that a Plan Change is required to provide this, the following sets out why such action is reasonable and proportionate relative to not acting.

There are costs associated with establishing the Plan Change provisions. While there will be some transaction and opportunity costs for a GMO proponent having to undertake two processes (EPA approval and Plan Change process), there is unlikely to be any significant opportunity cost, such as lost economic benefit from a GMO activity that would be prohibited. This is because of the ability to further amend the plan should a particular GMO or class of GMOs be shown to have clear net benefits for a jurisdiction. The transaction and opportunity costs to a GMO proponent would be small in relative terms and there need not be a delay in the benefits being available to a jurisdiction as such a change could proceed after field trial data had been obtained and while the EPA was hearing an application at the national level for a release to be made. Overall, in regard to the costs or the loss of potential benefits, the risk of acting is limited. Future options are not foreclosed.

[21] Northland's current branding initiative, led by Enterprise Northland, is called "Northland Naturally", "rich in natural beauty and resource".

[22] At least three GM contamination events have occurred in New Zealand that have involved financial consequences, with each resulting in losses of $0.5 to $1 million. One of these is detailed in: Simon Terry Associates and Mitchell Partnerships, *Community Management of GMOs II: Risks and Response Options*, 2005, p13.

In contrast, the risks and potential costs of not acting are substantially higher. As outlined in Table 1, the "do nothing" approach will not protect the environmental, economic or cultural resources of the Northern Peninsula, or reflect the level of control desired by the community (including Māori) to manage GMO activities. Risks of not acting include:

- Adverse environmental effects including weediness and invasiveness, and effects on non-target species.
- Councils exposed to clean-up costs associated with any GMO activities as the Ministry of Primary Industries is only obliged to clean up illegal releases. Clean-up costs are potentially substantial.
- Constituents exposed to economic losses from GM contamination. This includes opportunity costs associated with the foreclosure of options for branding an area as GM Free. Councils owe a duty of care to constituents.
- Adverse socio-cultural effects including effects on tangata whenua cultural values and economic well-being.
- Monitoring, both during and after consent duration, may be required by the Council, and this can be expensive.

Another way of considering this question is to examine the extent to which a council can in practice "do nothing", and yet remain unencumbered financially.

A first issue for a council whose community has become concerned about GMO activities is whether it will need to arrange monitoring. If monitoring has not been required by the EPA, or is not in the form constituents seek, then a council can face a call from constituents to undertake this as a part of its duties under sections 35(2)(d) and (e) of the RMA. Such a call would become mandatory if a constituent succeeds in obtaining an enforcement order through the Environment Court.

The EPA can require monitoring where it is relevant to assess environmental risk. However, it is economic risks that are often a particular source of concern, and information from monitoring could be needed to underpin claims for compensation due to GM contamination. Therefore, in the event of a GM activity being undertaken within a council's jurisdiction, the prospect that the council will be required to monitor (for economic effects in particular) is quite high.

Monitoring can be expensive but a council can require the GMO operator to meet the costs under either the RMA or the LGA. The LGA is the simpler option as it does not involve a plan change – otherwise required under the RMA route.

However, those concerned about harm caused by any GMO contamination will require more than just monitoring provisions are in place. They will be particularly concerned to have mechanisms in place to promote financial accountability and clarify liability, and the LGA cannot deliver this effectively. While the HSNO Act[23] includes a range of assessment criteria that the EPA is to consider for field tests, (i.e., taking into account adverse effects on human health and safety and the environment) and controls required for all field tests, there is no requirement to address liability issues. Councils owe a duty of care to their constituents and they may launch a legal challenge against the council if such measures were not in place.

[23] Sections 44A and 45A.

Thus, under a "do nothing" response, a council could still expect to face significant pressure to complete a plan change under the RMA that would at least make GMO activities subject to minimum provisions concerning monitoring and financial accountability. This would be directed by having a council incorporate conditions or performance standards that would seek to ensure altered genetic material did not migrate beyond the site at which it was being used. There would be very little difference in cost between a plan change directed at a minimum response and that targeting a fuller response.

Another scenario is that a private plan change could be introduced and Council would become the respondent if it decided not to adopt it and did not have statutory grounds to reject the plan change.

In summary, the information behind the policies and methods promoted in these provisions is based on international and national evidence and there is little risk associated with the provisions going ahead. They are consistent with a precautionary approach that prohibits activities in the face of uncertainty, particularly where the potential costs are high and may be irreversible. The risk of not acting (not pursing this Plan Change) is that the significant Resource Management Issue remains unresolved and the resources of the Northern Peninsula are not managed sustainably.

3 Alternatives

The proposed preferred alternative is discussed in 2.0 above. The status quo alternative is outlined in 1.5 above.

Alternatives are:

1. Status quo (do nothing)
2. Central Government Amendment to the HSNO Act
3. Auckland Council Regulation through the RMA (recommended)

A more detailed assessment of these alternatives is provided in section 4.2 pages 22-26 of the Working Party Draft s32 Report (January 2013) (Appendix 3.49.1). Excerpts from this text and Table 1 page 25 of that report are reformatted and paraphrased into the table below:

	Status Quo (do nothing) Alternative	Alternative 1: Central Government Amendment to the HSNO Act	Alternative 2: ~~Auckland~~ Northland Regional Council Regulation through the RMA (recommended)
Appropriateness	The "do nothing" approach does not address the significant Resource Management Issue and does not protect the natural, cultural and economic resources of the Auckland Region. Further, doing nothing does not address concerns raised by the community, including concerns raised by Māori. This option is not considered appropriate.	Central Government amendment to the HSNO Act to address gaps in the regulatory regime could address the concerns of local authorities and their communities in Northland/Auckland. However, the Government has consistently indicated since the formation of the Working Party in 2003 that it has no plans to do so. This option is therefore not considered the most appropriate.	Of the existing statutes available to local government, the RMA offers the most durable, binding and well-targeted instrument for regulating the outdoor use of GMOs. Local authorities have jurisdiction under the RMA to set rules for GMOs that act in addition to those set under the HSNO Act or by the EPA. Given the statutory powers available to local government, the RMA is considered the most appropriate mechanism to resolve the significant Resource Management Issue.
Effectiveness	Doing nothing is not the most appropriate way of achieving the Objectives. The Objectives adopt a precautionary approach to protect the environment from potential adverse effects associated with the outdoor use, storage, cultivation, harvesting, processing or transportation of GMOs. The intent of the Objectives is to reduce environmental, economic and cultural risks, and to establish rules setting financial accountability standards for GMO operators. The current lack of provisions in the District / Unitary Plan with respect to GMO activities does not protect the environmental, economic or socio-cultural resources of the Northern Peninsula, nor does the absence of provisions reflect the level of control desired by the communities (including Māori) to manage GMO activities. The "do nothing" option does not achieve the purpose of the Act as it does not provide for the sustainable management of the resources in the Northern Peninsula.[24]	The preferred method of enabling councils to exercise local control on the use of GMOs would involve central government remedying the identified gaps in the national level regulation, and providing communities with the ability to veto or add local level conditions to any approval for a GMO activity that is granted by the EPA through the HSNO Act process.[25] Provides ability for local authorities to add local level conditions to any EPA approved activity in the district or region. Option to examine specific applications with the EPA, and set stricter controls if necessary or prohibit a specific GMO from the district or region.	Councils have jurisdiction under the RMA to set rules for GMOs that act in addition to those that may be set under the HSNO Act or by the EPA[26], through inserting provisions into the District / Unitary Plan pursuant to sections 66 and 74 of the RMA. There is nothing in the HSNO Act to preclude a local authority imposing greater levels of control in its District / Unitary Plan for RMA purposes than those imposed by the EPA under the HSNO Act. Given a council's general duty of care for its financial position and that of its constituents, there is a ready justification for councils to set mandatory conditions to provide for both financial accountability (through bonds and insurance requirements) and avoidance of economic damage. The RMA also provides communities with the ability to set rules that embody community determined outcomes, including the level of risk it is willing to accept with respect to activities such as the management of GMOs. Further, Council under section 35 of the RMA has a duty to undertake monitoring and may set conditions to provide for monitoring at the cost of the applicant. Well drafted provisions will provide certainty to the community and the Council in respect to GMO use and the management of potential effects.
Efficiency	The "do-nothing" option will result in no costs to the Council in terms of time and resources required to implement a provisions and similarly, no costs for potential submitters who would otherwise become involved in the provision development process, and no costs for council to administer the new rules. No constraint on GM operators who have EPA approval and are considering undertaking activities in the area. However, Council is potentially financially and legally exposed.	An amendment to the HSNO Act to remedy the deficiencies from a local government perspective would be an efficient response to address the significant Resource Management Issue. In particular, amendments to the HSNO Act could be made to provide councils with the ability to ensure that their policies in relation to GMO activities are binding on the scope of EPA decision-making and approvals issued. This would provide a simpler means for local government to achieve the same regulatory outcomes as are currently able to be put in place under the RMA. Opportunity to work in tandem with the EPA.	The functions of the EPA under the HSNO Act are different from those of local authorities under sections 30 and 31 of the RMA. Overall, it is concluded that the relevant RMA provisions are not in conflict with those of the HSNO Act and the two statutes can operate side by side.
Costs	• Retaining status quo does not protect environmental, economic or cultural resources or reflect the level of control desired by the community to manage GMO activities.	Requires Government to address the issue. There has been no indication from Government that this will happen. Uncertainty on when, and if this will eventuate, and whether the	Costs associated with implementing the provisions and resource consent applications for GMO activities. Transaction costs (monetary) and opportunity costs (time delays)

[24] Simon Terry Associates and Mitchell Partnerships, *Community Management of GMOs III Recommended Response Option*, 2010, pg. 6 – 8.

[25] Simon Terry Associates, *Community Management of GMOs: Issues, Options and Partnership with Government*, 2004, p 33.

[26] For further discussion, see Simon Terry Associates, *Community Management of GMOs: Issues, Options and Partnership with Government*, 2004.

	• Does not provide a Northern Peninsula-wide approach to addressing the issue and does not address future resource management issues in respect to the use of GMOs in the area. • Does not address community concerns regarding outdoor GMO use. • Does not address the concerns of tangata whenua regarding outdoor GMO use. • Potential to lose "GM free" status and thus any marketing advantage this confers. • Under the HNSO Act there are no requirements to provide liability against unanticipated events, therefore constituents are exposed to economic losses from GM contamination. • Reliance on EPA conditions in respect to monitoring required for the activity. Costs of monitoring, and any costs required for clean-up, should a GMO activity cause an unexpected effect, could fall on the Council.	appropriate amendments will be made to address community and local government concerns.	associated with a GM proposal having to go through both the HSNO Act and resource consent and / or Plan Change process. There are no National Policy Statements or Environmental Standards to give effect to in respect to GMOs under the RMA.
Benefits	• No further work is required in processing a Plan Change. No costs for the Council in terms of time and resources to process the Plan Change and no cost for potential submitters who may become involved in the process. • No constraint on GM operators who have EPA approval and are considering undertaking activities in the area. • Potential economic benefit from GMO operations.	Reform to the HSNO Act could provide for: • The ability for local authorities to issue policy statements on GMO activities so that the EPA would be required to accommodate these policy statements in its decisions; • The option to examine individual applications in tandem with EPA assessments, and, if required, to set stricter controls to apply within a local authority's jurisdiction; and • A strict liability regime, along with financial fitness requirements, that ensures the developers and users of GMOs are responsible for all environmental and economic harm that may result from outdoor uses of GMOs.	• Addresses key gaps in the HSNO Act in respect to liability provisions. • Can address risks of adverse effects on the environment, economy, and socio-cultural values. • Community determined outcomes can be set based upon a preferred level of risk determined by the community. • Provides a prescriptive set of rules to ensure only the specified GMO activities can occur, and so specific concerns are addressed without compromising other activities. • Council can enforce higher standards for control through consent conditions, including bond requirements, monitoring requirements and compliance with performance standards. • Integrity of Unitary Plan maintained. • Allows for full public participation.

Risks	The "do nothing" approach will not protect the environmental, economic or cultural resources of the ~~Auckland~~ Northland Region, or reflect the level of control desired by the community (including Māori) to manage GMO activities. Risks of not acting include: • Adverse environmental effects including weediness and invasiveness, and effects on non-target species. • Councils exposed to clean-up costs associated with any GMO activities as the Ministry of Primary Industries is only obliged to clean up illegal releases. Clean-up costs are potentially substantial. • Constituents exposed to economic losses from GM contamination. This includes opportunity costs	Requires Government to address the issue. There has been no indication from Government that this will happen. Uncertainty on when, and if this will eventuate, and whether the appropriate amendments will be made to address community and local government concerns.	The Environment Court may determine that the significant Resource Management Issue defined in the Plan Change can be addressed by the EPA pursuant to the HSNO Act. The provisions are prescriptive. Any changes would require a new plan change. Reduces certainty of being allowed to operate for GMO developers considering undertaking their activity in the area.

21

22

4 Conclusion

While there may be a range of benefits associated with the outdoor use of GMOs, there are also environmental, economic and socio-cultural risks that could be substantial, and irreversible. A wide range of GMO products are being researched and developed, including ones that GMO developers/operators may consider introducing to the Northern Peninsula. The current lack of provisions to manage GMOs in ~~Auckland~~, in the Northland Coastal Marine Area ~~with the exception of the Hauraki Gulf Islands,~~ does not protect the environmental, economic or socio-cultural resources of the ~~Auckland or~~ the wider Northern Peninsula, nor does the absence of provisions reflect the level of control desired by the communities (including Māori) to manage GMO activities.

There are key gaps in the national regulation of GMOs, namely the absence of adequate liability provisions and applicant financial fitness requirements, the absence of a mandatory precautionary approach, and a lack of surety of outcome for local government and communities. Changes to the national level regulatory regime to address these gaps have not been forthcoming, despite substantial on-going local government pressure for such change. Where a local authority has determined that a precautionary approach to GMO risks is warranted, and that higher standards than those set by the EPA are warranted, or that the EPA cannot be relied on to undertake the level of monitoring or financial accountability sought, it has jurisdiction under the LGA and RMA to manage land and water uses involving GMOs. This interpretation is based on legal advice provided to the Working Party, and is consistent with Crown Law and Ministry for the Environment advice.

The Proposed ~~Auckland Unitary~~ Northland Regional Plan applies a precautionary approach to manage the outdoor use of GMOs to minimise the risk to the environment, economy and socio-cultural resources and values. The provisions of the ~~Unitary Plan~~ PNRP are established such that, in alignment with other Northern Councils, supplementary, not duplicative, regulation is employed. Local government is determining to impose stricter provisions to ensure community determined outcomes can be achieved and that it can fulfil its duty of care to its constituents.

The ~~Proposed Auckland Unitary Plan~~ PNRP includes a significant Resource Management Issue, Objectives, Policies and Methods (including definitions). The purpose of this is to ensure that the outdoor use of GMOs ~~including~~ in the CMA, is managed in accordance with the purpose of the RMA. Local or regional level regulation of the outdoor use of GMOs is supported by the Northern Peninsula communities, including Māori. Issues raised during consultation have been addressed through the commissioning of technical assessments, the refinement of the Plan provisions, and this section 32 evaluation. The issues raised were also reflected in feedback on the draft Auckland Unitary Plan.

An assessment of the proposed provisions under section 32 of the Act has determined that the Objectives are appropriate to achieve the purpose of the Act, and that the proposed policies, rules and other methods are the most appropriate way to achieve the Objectives. The provisions are an appropriate response to community aspirations to manage risks associated with GMO activities, and are consistent with the precautionary approach provided for under the RMA, where activities may be prohibited if there is uncertain or insufficient information. The assessment has also determined that the risk (and cost) arising from acting is low, but that the risks and potential costs arising from not acting are high.

Targeted consultation and discussion with key interest groups and the community is required to assist the Northern Councils to further refine the significant Resource Management Issue and determine the appropriateness, costs and benefits of the ~~Plan Change~~ PNRP

The various provisions detailed within this report are considered to be the most appropriate way to address the significant Resource Management Issue. Based on the assessment provided in this report, it is appropriate for the ~~Northern Councils~~ Regional Council to proceed with the inclusion of GMO provisions for the CMA in the PNRP ~~Proposed Plan Change~~.

5 Record of Development of Provisions

5.1 Information and Analysis

- ~~*Extracts from Auckland District Plan Hauraki Gulf Islands Sections (Appendix 3.49.2)*~~
- ~~*Unitary Plan Political Working Party – minutes – 8 February 2013 (Appendix 3.49.6)*~~
- ~~*Auckland Plan Committee – Open Minutes – 12 February 2013 (Appendix 3.49.7)*~~
- *Auckland Council, Far North District Council, Kaipara District Council and Whangarei District Council Draft Proposed Plan Change to the District / Unitary Plan Managing Risks Associated with Outdoor Use of Genetically Modified Organisms Supporting Documentation to the Section 32 Report Volume 2, January 2013 (Appendix 3.49.3).Includes:*
  - *Community Management of GMOs: Issues, Options and Partnership with Government. Simon Terry Associates, March 2004*
  - *Community Management of GMOs II: Risks and Response Options. Simon Terry Associates and Mitchell Partnerships, May 2005*
  - *Community Management of GMOs III: Recommended Response Option. Simon Terry Associates and Mitchell Partnerships, September 2010*
  - *Colmar Brunton Genetically Modified Organisms Survey. Results for Aggregated Northland Region, November 2009*
  - *Colmar Brunton Genetically Modified Organisms Survey. Results prepared for Auckland Regional Council, November 2009*
  - *Letter from Working Party to Minister for the Environment, December 2006*
  - *Response from Minister for the Environment to the Working Party, March 2007*
  - *Letter from Working Party to Minister for the Environment, June 2010*
  - *Response from Minister for the Environment to the Working Party, August 2010*
- *Managing Risks Associated with the Outdoor Use of Genetically Modified Organisms. Proposed Plan Change, Section 32 Report, and Legal Opinion. Cover Note by Dr Kerry Grundy Convener of the Inter-council Working Party on GMO Risk Evaluation and Management Options, January 2013 (Appendix 3.49.8).*
- *Auckland Council, Far North District Council, Kaipara District Council and Whangarei District Council Draft Proposed Plan Change to the District/Unitary Plan Managing Risks Associated with the Outdoor Use of Genetically Modified Organisms, January 2013 (Appendix 3.49.4).*
- *Auckland Council, Far North District Council, Kaipara District Council and Whangarei District Council Draft Proposed Plan Change to the District / Unitary Plan Managing Risks Associated with Outdoor Use of Genetically Modified Organisms Draft Section 32 Report Volume 1, January 2013 (Appendix 3.49.1).*
- *Legal Opinions Managing Risks Associated with Outdoor Use of Genetically Modified Organisms Dr Royden Somerville QC, January 2013 (Appendix 3.49.5):*
  1. Interim Opinion on Land Use Controls and GMOs 2004
  2. Opinion on Land Use Controls and GMOs 2005

3. Outdoor Use of Genetically Modified Organisms (GMOs) 2013

- *Environment and Sustainability Forum – open minutes – 19 Feb 2013 (Appendix 3.49.9)*
- *Environment and Sustainability Forum – open minutes – 22 July 2013 (Appendix 3.49.10)*
- ~~*Auckland Plan Committee Workshop – 11 July 2013 (Appendix 3.49.11)*~~
- ~~*Auckland Plan Committee – Open Minutes - 25 July 2013 (Appendix 3.49.12)*~~
- ~~*Auckland Plan Committee – Open Minutes - 13 Aug 2013 (Appendix 3.49.13)*~~

Added material for background information for stakeholders (iwi and local boards) and decision makers (governing body) was extracted from

- *Review of the Forty-Nine Recommendations of the Royal Commission on Genetic Modification*, 2008 (McGuinness et al,) (Appendix 3.49.14) and
- *The History of Genetic Modification in New Zealand 1973 – 2013* (McGuinness Institute) (Appendix 3.49.15).

The governing body were also provided with
Report 16 – Project 2058 – An Overview of Genetic Modification in New Zealand 1973 – 2013 – The first forty years – (McGuinness Institute) (Appendix 3.49.16).

5.2 Consultation Undertaken

Kaitiaki Hui – March 2013
Feedback from the Unitary Plan Regional Kaitiaki Forum expressed concern about whakapapa, noting eel migration may not occur, flax properties could be weakened and medicinal uses of plants could be damaged by contamination with GMOs. One representative stated it is abhorrent to whakapapa and that there should be a blanket policy of no release or development within the Council boundary. The status of the Wai 262 claim was raised. Some expressed concern over the loss to future generations.

Mana Whenua North Workshop – April 2013,
Representatives at the Unitary Plan Mana Whenua workshop at Orewa expressed concern at the unapproved new organisms that were becoming evident. They believe it gives clear evidence that any satisfactory control and clean up was too onerous for government or council to cope with. Strong objections were made to the number of breaches and the lack of any involvement by council in dealing with monitoring and preventing breaches.

Mana Whenua South Workshop - April 2013
Representatives at the Unitary Plan Mana Whenua workshop at Manukau were equally concerned at the mismanagement and breaches of research and trials in the past and commented on historic issues with accidental introductions of new organisms. The representatives agreed there are ethical and sociocultural concerns around the introduction of GMOs along with issues regarding what goes into the body and any adverse effects.
There are fears that modification will affect the essence of their tupuna (ancestors). The representatives insisted they are not in favour of GMO use, want an option with real teeth and, while supporting the ICWP recommendations, prefer stronger options. There was a call for urgency, requesting there be work on seeking stronger options while the Unitary Plan is being tested.

Local Boards
All Boards received background material and the ICWP reports. Twelve Boards have stated support for Council managing GMOs, requiring statements of precautionary approach and/or have declared their area "GE Free".

25

Community Feedback

In total (as 4th September 2013) 349 pieces of feedback had been received on the topic of GMOs. There were 201 pieces of feedback received during the informal feedback period on the March Draft of the Unitary Plan.

The majority of feedback opposes the use of GMOs in Auckland and requests Auckland Council to include provisions in the Unitary Plan to prohibit their use. A small amount of feedback supported the management of GMOs in the Unitary Plan provided any adverse effects are avoided.

The following outlines some statistics on the feedback received from the local and international community and stakeholders:

- 146 (41%) were from overseas , made up of expats and "GMO free" food seekers – 66% USA, 11% Canada, the rest from Australia, Japan, UK, France, Europe, and Abu Dhabi
- 283 (81%) seek an outright ban on GMOs (primarily overseas submissions)
- 92 (26%) requested adoption of the ICWP provisions – the majority of this was NZ feedback
- 254 (72%) warned of the economic impact of market loss in losing GMO Free reputation
- Multiple iwi groups also provided feedback on this topic with the majority supporting the inclusion of a policy approach for GMOs (based on the ICWP recommendations) whether it prohibition or management
- Federated Farmers and the Minister for the Environment were the only feedback providers to oppose Auckland Council having any involvement in the management of GMOs. The reason for this is because New Zealand's Environmental Protection Agency, as directed by Central Government, has direct responsibility for GMOs and is therefore not a resource management issue for local authorities to manage.

The Council presented on this issue to Mana Whenua iwi authorities within an introductory presentation to the Regional Kaitiaki Forum on 26 Mach 2013. View expressed included:

- GMOs are an important issue to Mana Whenua;
- GM was referred to as an abhorrence to whakapapa;
- The need for prohibition as well as contingency plans in the event of GMO release affecting Auckland.

GMOs were identified for further discussion at technical workshops with Mana Whenua iwi authorities on 16 and 18 April 2013. Mana Whenua feedback within these workshops is summaried below;

Support ICWP recommendations.

- Concern that we are giving a serious issue a 'five-minute makeover'. It needs to be looked at carefully but with a level of urgency.
- There are politics behind this issue that are wider than Auckland. Concern that this issue may be catering to particular interests.
- Concerns around the mis-management or 'accidents' in the past whereby GMOs have accidentally been introduced into our environment.
- There ethical concerns and socio-cultural issues.
- The example of insulin is problematic in terms of mauri - what goes into our body and the adverse effects. This fits under the broad umbrella of kaitiakitanga.
- No two organisms should ever be mixed up. An organism has the essence of our tupuna and mana.
- Particular reference was made to the protection of our manu in this context.

- There is a preference for an option that has teeth and a preference was expressed for the ICWP option.

Feedback on the March draft was received by 19 iwi authorities. Some iwi authorities chose to provide feedback on GMOs. Feedback included the following points;

- Engagement with Mana Whenua be required when considering the release of GMOs;
- Seek to be involved in further development of GMO provisions;
- Genetic modification to indigenous plants and animals is unacceptable as it effects their whakapapa and natural spiritual state;
- Oppose GM on a risk-averse basis and expect the Unitary Plan to reflect this;
- Support for ICWP recommendations;

Reinforcing feedback provided in technical workshops.

5.3 Decision-Making

On 12 February 2013 the Auckland Plan Committee made a resolution (APC/2013/5) to insert an Objective relating to outdoor use of GMOs into the Draft Unitary Plan (Appendix 3.49.4). The Objective stated that "*Genetically modified organisms do not adversely affect the social, cultural, economic and environmental well-being of people in the Auckland region.*" The objective was inserted in Part 2.6.4, with an accompanying Issue in Part 2.1.5 that stated that "*The outdoor use of genetically modified organisms could adversely affect our environment, economy and social and cultural resources and values.*"

On 19 February 2013 the Environment and Sustainability Forum made a number of recommendations (Resolution number ES/2013/4) as a result of the work commissioned by the ICWP, which included a Proposed Draft Plan Change to the District/Unitary Plan on potential management of GMOs under the RMA (Appendix 3.49.18). The Environment and Sustainability Forum requested that "*officers, in collaboration with the ICWP, provide a report back to the Forum on the management of the outdoor use of genetically modified organisms and Auckland Council's possible roles, including the following matters: (i) the findings and recommendations of the report of the ICWP on GMO risk Evaluation and Management; (ii) Auckland Council's role in the context of the national regime for management of genetically modified organisms; (iii) a review of the existing legal opinions on the management of genetically modified organisms; (iv) risk and liability issues, including the implications of doing nothing and having a formal policy.*"

The report for the ESF was written for the May meeting but then withdrawn from the agenda. It was then prepared for the June meeting but presented in modified form (APC content removed) 22 July 2013 (Appendix 3.49.19).
The 22 July report to the ESF included positions of other local authorities on the GMO issue, and the activities of the ICWP since the report had been released in January. This was specifically around the ICWP response to the announcement of further changes to the RMA to prevent Local Authorities managing GMOs.
The report was received with no further action to be taken

On 11 July a presentation was made to a APC workshop (Appendix 3.49.20) which detailed engagement with iwi, local boards and the community and summaries of the outcomes of that engagement, positions of other local authorities on the GMO issue, a summary of the feedback from the draft Unitary Plan and what options to consider.

On 25 July 2013 the Auckland Plan Committee (Appendix 349.21) received a report for information purposes titled Unitary Plan Update and Workshop Issues at a closed internal

workshop which included details of a presentation at the UP workshop dated 11 July 2013 "The following issues have been identified in the feedback to date:

- Feedback received – 338 total
  - 337 support stronger management of GMO use
  - 103 supported the issue and objective in the draft Auckland Unitary Plan although commented on dissatisfaction with wording
  - 90 requested the Inter-council Working Party provisions be adopted
  - 93 called for a precautionary statement
  - 149 international support no genetically modified organism use – main feedback, prohibit GMO use
  - 188 local/NZ support stronger management – main feedback, prohibit GMO use
  - 1 opposes local authority management – Minister for the Environment

- Officers presented the following options in response to the feedback on GMOs:
  - Auckland Unitary Plan silent on GMOs
  - Draft Auckland Unitary Plan status quo and include a reference to the Environmental Protection Agency process
  - Non-RMA policy
  - Auckland Unitary Plan using the Inter Council Working Party's suggested approach.

- A consensus was not reached at the workshop on the approach that should be taken to GMOs in the Auckland Unitary Plan."

On 13 August 2013 the Auckland Plan Committee (Appendix 3.49.22) received a report for information purposes titled Unitary Plan Update which included details of a further discussion at the UP workshop dated 25 July 2013

1. "At the previous committee meeting on 25 July, more detailed information was requested on GMOs that reflected the information and discussion at the workshop earlier in July. Attachment 2 to this report provides this further detail to assist the committee at the decision making meetings at the end of August.
2. The key matters for consideration are summarised below:
   - Local authorities have jurisdiction under the Resource Management Act to control GMOs.
   - Under the Hazardous Substances and New Organisms Act 1996 (HSNO), the Environmental Protection Agency (EPA) has been set up to assess and regulate the management of new organisms throughout the country, including GMOs. The Minister for the Environment considers that councils should not have a role in managing GMOs under the Resource Management Act 1991 (RMA).
   - The Inter Council Working Party (ICWP) has prepared a plan change and Section 32 report to control field trials (discretionary activity) and general release (prohibited activity) of GMOs under the RMA. Auckland Council is a member of the ICWP.
   - The overwhelming feedback on the draft AUP was supportive of provisions to manage GMOs in the AUP.
   - There is legal uncertainty that AUP provisions would be upheld by the Environment Court because it would be difficult to argue that controls under the RMA would be an effective and or efficient method, since an application would have already been assessed by the EPA under HSNO.
   - Legal advice is that there is no risk that local authorities will be left liable for claim of negligence or nuisance as a result of not including provisions in their RMA plans.

- ~~Legal advice is that there is little risk that local authorities will be left liable for claim of negligence or nuisance as a result of including provisions in their RMA plans.~~

29

3. In addition, the following four options were presented for discussion at the Auckland Plan Committee Unitary Plan workshop:
   - the draft AUP would be silent on GMOs;
   - retain the issue and objective in the Regional Policy Statement of the draft AUP;
   - adopt a non-RMA related policy position on the management of GMO within the region; or
   - insert the ICWP suggested approach into the AUP.
4. Members of the committee will need to consider Attachment 2 to this report in order to inform their decisions at the end of August 2013".

On 5 September 2013 the Auckland Plan Committee resolved to include provisions in the Auckland Unitary Plan in general accordance with the provisions prepared by the ICWP.

37. Genetically modified organisms

E37.1. Background

The outdoor use of genetically modified organisms has the potential to cause adverse effects on the environment, the economy and social and cultural wellbeing. The objectives and policies seek to protect the community and receiving environment from risks associated with genetically modified organisms. The application of a precautionary approach to the outdoor use, storage, cultivation, harvesting, processing or transportation of genetically modified organisms in Auckland means that:

- the outdoor release of a genetically modified organism is prohibited (this is to avoid the risk that significant adverse environmental effects will arise, including adverse effects on the economy, community and/or Mana Whenua resources and cultural heritage values); and
- outdoor field trialling of a genetically modified organism (with prior approval of the Environmental Protection Authority (EPA)) is a discretionary activity.

Pastoral farming, dairying, horticulture and forestry are important land uses in Auckland and are significant contributors to the local and regional economy. Aquaculture is also a growing primary industry in New Zealand. Therefore there is a range of outdoor genetically modified organisms that genetically modified organism developers could consider using in Auckland, including genetically modified food crops, trees, animals, aquaculture products and pharmaceutical crops. The potential for adverse effects, including accidental contamination, resulting from the outdoor use of genetically modified organisms poses a risk to the community and environment. By specifying classes of genetically modified organisms and applying standards to the outdoor use of genetically modified organisms, the risks associated with their use, storage, cultivation, harvesting, processing or transportation can be reduced.

Within Auckland, this will involve managing and limiting the outdoor use of genetically modified organisms. Further, rules and controls will be used to mitigate any adverse effects associated with contamination by genetically modified organisms beyond the subject site, thereby reducing the risks to the community, environment and economy. Accidental or unintentional migration of genetically modified organisms that result in genetically modified organism contamination and subsequent clean up and remediation can be expensive. The Council therefore requires a genetically modified organism consent holder to meet all potential costs associated with the activity and will secure long term financial accountability through appropriate standards and bonding requirements.

The Environmental Protection Authority is not obliged to set monitoring requirements as part of its approval process, and can only require monitoring where it is relevant to assessing environmental risk. Under section 35 of the Resource Management Act 1991, the Council has a duty to monitor, which can be expensive. Requiring a genetically modified organism consent holder to meet the costs of monitoring, via consent conditions, ensures the costs are met by the consent holder, rather than the community.

The resource consent status indicates the levels of risk considered acceptable by the community for that particular genetically modified organism activity and class.

Genetically modified medical applications involving the use of viable and/or non-viable genetically modified organisms (including EPA approved releases, vaccines and medical research) are permitted under this Plan. Genetically modified medical applications are also

regulated by other legislations, including the Hazardous Substances and New Organisms Act 1996 (HSNO), the Medicines Act 1981 and by the Ministry of Health.

The use of genetically modified veterinary vaccines is a permitted activity where the vaccines are non-viable, or if viable, their administration is a specific delivery dose supervised by a veterinarian. Any other use of viable genetically modified veterinary vaccines is a discretionary activity. Non-viable genetically modified veterinary vaccines tend not to persist in the environment, appear to be low risk and are difficult to monitor, making control by the Plan less appropriate. Viable genetically modified veterinary vaccines can have higher risks if their administration is not supervised or controlled by a veterinarian. An example is a viable genetically modified veterinary vaccine distributed by way of edible food or edible plants, which cannot be supervised by a veterinarian, and which may present higher risks to the environment and to the health and safety of people. In this circumstance the Council will have the discretion to require controls or to decline an application. The Council will also be able to respond quickly if there are compelling reasons for its use to benefit human or animal health and welfare. It is generally expected that if a discretionary activity consent is granted, it would apply as a consent for the use of the viable genetically modified veterinary vaccine on any land in the region, noting that specific conditions such as exclusions of specified areas may apply.

Approval from the Environmental Protection Authority is required as a precondition for all applications for resource consent. The duration of any consent granted will be aligned with the Environmental Protection Authority approval terms.

E37.2. Objective [rcp/dp]

(1) The environment, including people and communities and their social, economic and cultural well-being and health and safety, is protected from potential adverse effects associated with the outdoor use, storage, cultivation, harvesting, processing or transportation of genetically modified organisms.

E37.3. Policies [rcp/dp]

(1) Adopt a precautionary approach by prohibiting the outdoor release of a genetically modified organism, and by making outdoor field trialling of a genetically modified organism and the use of viable genetically modified veterinary vaccines not of a specific dose and supervised by a veterinarian a discretionary activity.

(2) Provide for the use of Environmental Protection Authority approved non-viable and/or viable genetically modified medical applications (including genetically modified vaccines) as a permitted activity.

(3) Require that the holder of a resource consent granted for the outdoor field trialling of a genetically modified organism is financially accountable (to the extent possible) for any adverse effects associated with the activity, including clean-up costs and remediation, including through the use of bonds.

(4) Require outdoor field trialling of genetically modified organisms to avoid, as far as can reasonably be achieved, risks to the environment or to the mauri of flora and fauna or to the relationship of Mana Whenua with flora and fauna from the use, storage, cultivation, harvesting, processing or transportation of a genetically modified organism.

(5) Require all monitoring costs to be met by the consent holder.

(6) Require that the outdoor use of genetically modified organisms does not result in migration of genetically modified organisms beyond the area designated by:

(a) ensuring adequate site design, construction and management techniques;

(b) preventing the escape of genetically modified organisms from transporting vehicles or vessels; and

(c) ensuring all heritable material is removed upon the conclusion of the activity.

(7) Adopt an adaptive approach to the management of the outdoor use, storage, cultivation, harvesting, processing or transportation of a genetically modified organism through periodic reviews of these plan provisions, particularly if new information on the benefits and/or adverse effects of a genetically modified organism activity becomes available.

(8) Require, where appropriate, more stringent measures than those required under the provisions of the Hazardous Substances and New Organisms Act 1996 to manage potential risks.

E37.4. Activity table

Table E37.4.1 Activity table specifies the activity status of the use of genetically modified organisms on land pursuant to section 9(3) of the Resource Management Act 1991 and the activity status of works, occupation and activity in the coastal marine area pursuant to sections 12(1), 12(2) and 12(3) of the Resource Management Act 1991.

Table E37.4.1 Activity table [rcp/dp]

Activity		**Activity status**
(A1)	Research and trials within contained laboratories involving the use of genetically modified organisms, medical applications involving the use of viable and/or non-viable genetically modified organisms, (including genetically modified vaccines), veterinary applications involving the use of non-viable genetically modified organisms and any other genetically modified organism release or use not specifically provided for or prohibited,	P
(A2)	Genetically modified organism field trials on land and within the coastal marine area and any structure intended to house, or otherwise contain, plants and animals which are associated with the conducting of genetically modified organism field trials	D
(A3)	The use of any viable genetically modified veterinary vaccine of a specific dose supervised by a veterinarian	P
(A4)	The use of any viable genetically modified veterinary vaccine not otherwise provided for	D
(A5)	Genetically modified organism releases – food-related on land and within the coastal marine area and any structure intended to house or otherwise contain plants and animals which are associated with outdoor genetically modified organisms releases, except as specifically provided for	Pr

(A6)	Genetically modified organism releases – non food-related on land and within the coastal marine area and any structure intended to house or otherwise contain plants and animals which are associated with outdoor genetically modified organism releases, except as specifically provided for	Pr

E37.5. Notification

(1) Any application for resource consent for the following activities must be publicly notified:

(a) genetically modified organism field trials on land and within the coastal marine area and any structure intended to house or otherwise contain plants and animals which are associated with the conducting of genetically modified organism field trials; or

(b) the use of any viable genetically modified veterinary vaccine not otherwise provided for.

(2) Any application for resource consent for an activity listed in Table E37.4.1 Activity table and which is not listed in E37.5(1) above will be subject to the normal tests for notification under the relevant sections of the Resource Management Act 1991.

(3) When deciding who is an affected person in relation to any activity for the purposes of section 95E of the Resource Management Act 1991 the Council will give specific consideration to those persons listed in Rule C1.13(4).

E37.6. Standards

All activities listed as a discretionary activity in Table E37.4.1 Activity table must comply with the following discretionary activity standards. These standards are in addition to any controls/conditions imposed by the Environmental Protection Authority.

E37.6.1. Approvals

(1) All genetically modified organism discretionary activities must:

(a) have the relevant approval from the Environmental Protection Authority; and

(b) be undertaken in accordance with Environmental Protection Authority approval conditions for the activity.

E37.6.2. Bond requirements

(1) The Council requires the holder of a resource consent for an activity involving the use of a genetically modified organism to provide a bond in respect of the performance of any one or more conditions of the consent, including conditions relating to monitoring required of the genetically modified organism activity (prior to, during and after the activity), and that this bond be available to pay or reimburse any costs incurred by, or on behalf of, the Council to avoid, remedy or mitigate any adverse environmental effects and any other adverse effects to, or on, third parties (including economic effects), that become apparent during the exercise or after the expiry of the consent.

(2) The exact time and manner of implementing and discharging the bond will be decided by, and be executed to the satisfaction of, the Council.

(3) All of the following matters will be considered when determining the amount and type of the bond:

(a) what adverse effects could occur and the potential significance, scale and nature of those effects, notwithstanding any measures taken to avoid those effects;

(b) the degree to which the consent holder for the activity has sought to avoid those adverse effects, and the certainty associated with whether the measures taken will avoid those effects:

(c) the level of risk associated with any unexpected adverse effects from the activity;

(d) the likely scale of costs associated with remediating any adverse effects that may occur;

(e) the timescale over which effects are likely to occur or arise; and

(f) the extent of monitoring that may be required in order to establish whether an adverse effect has occurred or whether any adverse effect has been appropriately remedied.

E37.6.3. Monitoring

(1) A discretionary activity for a genetically modified organism may require monitoring during, and beyond, the duration of consent. Monitoring is to be carried out by either the Council, or the consent holder, with appropriate reporting procedures to the relevant regulatory authority.

(2) A monitoring strategy for a discretionary activity for a genetically modified organism can include all of the following matters:

(a) inspection schedules for the site, storage areas and equipment (daily, weekly, monthly, events based);

(b) testing of procedures (e.g. accidental release response);

(c) training programmes for new staff, and updates for existing staff;

(d) audits of sites and site management systems; and

(e) sample testing of plants, soils and water in neighbouring properties or localities for the presence of migrated genetically modified organisms.

E37.6.4. Reporting

(1) Reporting requirements by the consent holder must be stipulated in the consent conditions.

E37.7. Assessment – controlled activities

There are no controlled activities in this section.

E37.8. Assessment – restricted discretionary activities

There are no restricted discretionary activities in this section.

E37.9. Special information requirements

(1) An application for:

(a) the use of any viable genetically modified veterinary vaccine not otherwise provided for; or

(b) for genetically modified organism field trials on land and within the coastal marine area and any structure intended to house or otherwise contain plants and animals which are associated with the conducting of genetically modified organism field trials must be accompanied by all of the following:

(i) evidence of approval from the Environmental Protection Authority for the specific genetically modified organism for which consent is sought;

(ii) details of the proposed containment measures for the commencement, duration and completion of the proposed activity;

(iii) details of the species, its characteristics and lifecycle, to which the genetically modified organism activities will relate;

(iv) research on adverse effects to the environment and economy associated with the activity should genetically modified organisms escape from the activity area, and measures that will be taken to avoid, remedy or mitigate such effects;

(v) evidence of research undertaken that characterises and tests the genetically modified organisms, and the certainty associated with the accuracy of that information;

(vi) a management plan outlining on-going research and how monitoring will be undertaken during, and potentially beyond, the duration of consent;

(vii) details of areas in which the activity is to be confined; and

(viii) a description of contingency and risk management plans and measures.