

# Monitoring Strategy

June 2001

## Preface

This Strategy was written by the Policy and Monitoring Division of Whangarei District Council (Council). The intent of the Strategy is to provide a framework for the development over time of a comprehensive, integrated environmental monitoring programme. It is envisaged that as new procedures are developed they will be incorporated into this document. Thus, the Strategy, in addition to providing the framework for the programme, will function as an operational guide for monitoring staff, so as to ensure a consistent approach to monitoring activities and a basis for consistent reporting on monitoring outcomes

## Executive Summary

As planning documents become operative, territorial authorities are increasingly turning to the task of monitoring their activities in regard to environmental regulation and resource management. Monitoring of planning procedures and planning documents (*once in place*) is the logical progression in the comprehensive management system initiated by the Resource Management Act 1991 (*henceforth, the RMA or the Act*). Planning procedures need to be monitored as part of the overall planning and resource management framework to ensure the on-going effectiveness of the process as a whole.

Council has developed a strategy to address their monitoring duties in regard to resource management and environmental planning. The intent is to combine the various types of monitoring into an integrated, useful, cost-effective and manageable system of environmental monitoring and reporting. The system, when implemented, will enable Council to determine whether the resource management objectives for the District are being met, and whether planning procedures need to be altered to better accomplish those objectives.

According to relevant legislation, local authorities are faced with specific statutory requirements in regard to monitoring duties. These requirements, under the resource management legislation, relate to four main aspects of monitoring. These are:

- 1 Resource consents monitoring
- 2 Complaints monitoring
- 3 Monitoring the suitability and effectiveness of planning documents
- 4 State of the environment monitoring.

Such monitoring is mandatory, as is the requirement to gather information and have it available for public scrutiny. Council does not have discretion in this regard. It is required by law to carry out these tasks.

The monitoring duties identified above as obligatory are linked to Council's duties under Section 32. Section 32 of the RMA imposes a duty on territorial authorities to assess the suitability of planning procedures adopted in planning documents and to consider alternatives. Information provided by monitoring should assist Section 32 duties, particularly when reviewing the District Plan or undertaking plan changes.

### Resource Consents Monitoring

The granting of resource consent (*land use or subdivision*) places specific responsibilities on both the authority and the consent holder. The territorial authority has the responsibility to ensure that:

- conditions to control adverse environmental effects and to manage resources sustainably are attached to the consent
- the consent holder complies fully with consent conditions
- appropriate action is taken if consent conditions are not complied with.

The RMA does not give authorities the power to waive compliance with resource content or plan and explicitly places an obligation on them to monitor the exercise of resource consents and take appropriate action if necessary to ensure compliance (*Section 35(2)*).

The monitoring of resource consents encompasses three aspects:

- 1 Compliance of the consent holder with the conditions attached to the consent
- 2 The suitability and functionality of consent conditions
- 3 Monitoring of the impact of activities (*consented and permitted*) on the environment.

Compliance monitoring checks that the consent holder is meeting the stipulated conditions and regulations in regard to the consent granted and, in so doing, ensures that adverse effects on the environment are avoided, mitigated or remedied. Secondly, monitoring the suitability and functionality of consent conditions assesses whether the conditions attached to consents are workable, i.e. whether they are precise, achievable, measurable and enforceable.

Impact monitoring relates to both consented activities and permitted activities. Monitoring the impact of consented activities assesses whether the effects on the environment are being adequately addressed by the conditions attached to the consent, i.e. whether the conditions are effective. Monitoring permitted activities ensures that those activities not requiring resource consent do in fact meet the standards in the plan for permitted activities, and that permitted activities are not having adverse impacts on the environment.

## Complaints Monitoring

Under section 35(5) of the RMA, a local authority is required to gather, and make available:

A summary of all written complaints received by it during the preceding 5 years concerning alleged breaches of the Act or a plan, and information on how it dealt with each such complaint;

Monitoring complaints is, therefore, an explicit requirement of the resource management legislation. A local authority is required to have processes in place to adequately receive complaints from the public, record these complaints, and respond to them effectively. Complaints from the public also provide information on the performance of local authorities in regard to resource management and environmental planning duties.

Thus, it is important to incorporate this function into the monitoring programme to ensure that information from this source is adequately gathered and stored, and timely action is taken to address the cause of the complaint. Complaints monitoring can also provide information useful for evaluating resource consents processing, District Plan provisions, and the state of the environment generally.

The Policy and Monitoring Division primarily deals with complaints relating to resource management and planning issues. These include:

- 1 Breaches of the resource management legislation
- 2 Compliance with the District Plan provisions
- 3 Resource consent processes, including consent conditions.

## Monitoring Planning Documents

Section 35(2) of the RMA requires local authorities to monitor the suitability and effectiveness of any policy statement or plan for its region or District.

Section 31 of the RMA requires territorial authorities to **review** the objectives, policies and methods contained in the District Plan, and Section 75 requires that the procedures to be used to monitor the effectiveness of the plan be set out in the plan itself.

Monitoring is intended to determine whether the District Plan is achieving the desired outcomes, objectives, and anticipated environmental results identified in the plan, and whether the policies and methods employed in the plan are the most appropriate to achieve these. In addition, monitoring is intended to determine whether the policies and methods outlined in the plan are actually being implemented effectively.

In a wider sense, Section 35 requires that territorial authorities monitor the effectiveness of the District Plan in achieving its purpose as stated in Section 72 of the RMA. Here it states that the purpose of the District Plan is to assist territorial authorities in carrying out their functions to achieve the purpose of the RMA. In effect, this means that monitoring should reveal whether the District Plan is achieving the purpose and principles of the RMA as set down in Part II of the Act (*Sections 5, 6, 7 and 8*).

Thus, the monitoring duties of territorial authorities in regard to the District Plan comprise three aspects:

- 1 Whether the planning procedures contained in the plan are actually being implemented effectively (*this ties in with resource consents monitoring*)
- 2 Whether the policies and methods in the plan are effective and the most suitable to address the issues, objectives and anticipated environmental outcomes in the plan
- 3 Whether the issues and objectives identified in the plan are achieving the purpose and principles of the RMA (*this ties in with state of the environment monitoring*).

If the results of the monitoring programme suggest that the anticipated environmental results are not being achieved, or that the plan is not promoting the purpose and principles of the Act, this would necessitate a closer evaluation of the effectiveness and suitability of the policies and methods contained in the District Plan, or the issues and objectives identified in the plan. This may in turn result in altering the Plan's provisions, or the way they are being implemented, to better achieve the objectives and desired environmental results, and to better promote the purpose of the Act.

## State of the Environment Monitoring

According to the RMA, a territorial authority is required to carry out monitoring of the state of the whole or any part of the environment of its District to the extent that is appropriate to enable the local authority to effectively carry out its functions under the Act.

Whilst there is clear direction to monitor the state of the environment, territorial authorities have some discretion as to how they will develop and apply an **appropriate** and **effective** state of the environment monitoring programme and to what extent they will do so. The Act does not advocate exhaustive monitoring of all aspects of the environment – only those for which the authority has functions under the Act.

Furthermore, while there is a clear directive to undertake appropriate monitoring, and to collect data and have it available for public scrutiny, there is no statutory requirement to produce an actual state of the environment report. Section 35 of the RMA requires that territorial authorities gather and keep reasonably available information which is relevant to the administration of plans, the monitoring of resource consents, and current issues relating to the environment of the area. A periodic state of the environment report would seem to be the most appropriate method to collate data from environmental monitoring and have it available in a form that is easily accessible to the public and for Council use.

Baseline information about the state of the environment is essential for assessing what changes are occurring in the environment and whether those changes are detrimental (*both to ecosystem functions and to human well being*). State of the environment monitoring attempts to reveal the causes of that change and whether it is naturally occurring or human induced. Resource management and environmental policy directions can be instituted and reviewed accordingly. Monitoring the state of the environment provides valuable information that can be used in the development of future resource strategies, and provides indications of the effectiveness of current strategies and policies by comparing results against baseline information.

Thus, state of the environment monitoring and reporting by territorial authorities should:

- 1 Provide baseline information on the state of the District's environment, particularly in regard to the significant issues identified in the District Plan
- 2 Provide information on changing environmental and resource conditions (*and development pressures*) over time, particularly concerning issues in the District Plan
- 3 Identify new issues, or trends, of significance in the District that require responses through the District Planning process.

## Implementation

The monitoring strategy for Council should be focused on the development of monitoring programmes that have the maximum utility to Council in fulfilling its statutory responsibilities and in promoting the sustainable management of natural and physical resources in the District. At the same time, recognition must be given to the fact that financial constraints will dictate that a careful balancing of the legislative requirements with the costs and benefits afforded to Council and the community from monitoring activities is necessary.

The monitoring strategy should concentrate initially on doing a little well rather than trying to cover the entire suite of monitoring functions. Implementation of the strategy should be on a step by step basis, along clearly defined lines. Initially, effort should be concentrated upon putting in place a manageable and effective resource consents and complaints monitoring regime before fully tackling plan evaluation and state of the environment monitoring. The implementation of plan evaluation and state of the environment monitoring should progress over time as the proposed District Plan becomes operative.

To this end, Section 6 and 7 of the strategy discusses issues and information needs, identifies monitoring indicators, and outlines specific procedures to be implemented in regard to resource consents and complaints monitoring. Many of these processes are already in place. Others will be implemented over the next financial year. The results will be collated and reported annually in resource contents and Complaints Monitoring Report.

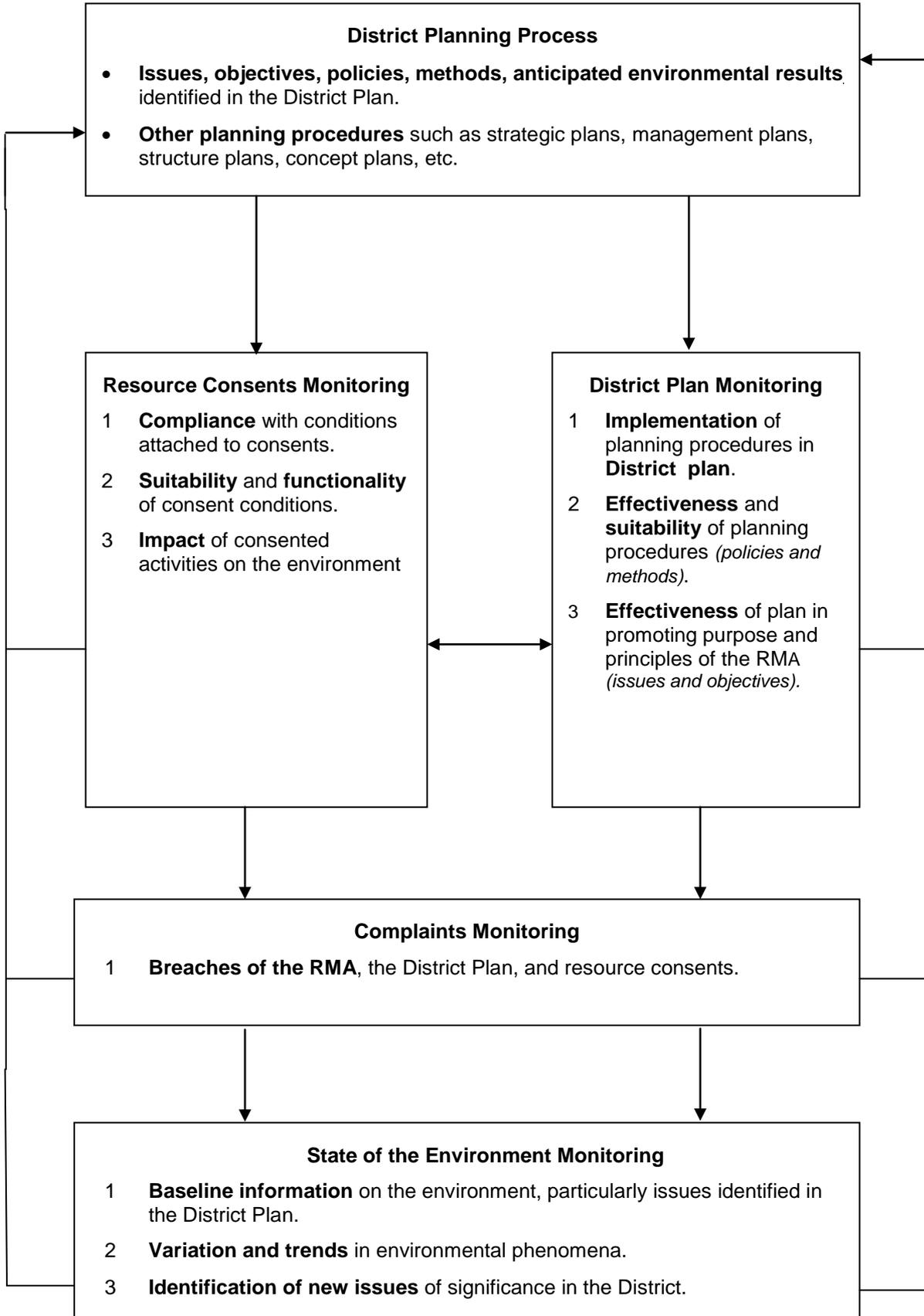
In addition, it is proposed, as outlined in the 2001/2002 Annual Plan, to identify issues, formulate indicators, and establish monitoring procedures for Section 8 and 9 of the strategy (*District Plan and state of the environment monitoring*) over the next financial year. It is proposed that a District Plan/State of the Environment Monitoring Report be produced at five yearly intervals. Much of the information from the annual Resource Consents and Complaints Monitoring Report will feed into the District Plan/State of the Environment Report.

The intent of the monitoring strategy is ultimately to link the various aspects of monitoring into an ordered structure, whereby each type of monitoring contributes to an evolving and on-going process of integrated environmental monitoring. This process should address the different types of monitoring required under the RMA, not separately, but as part of a conceptually and pragmatically related whole.

The following figure gives a diagrammatic representation of an integrated monitoring system. It sets out simply and directly the actual tasks that need to be implemented; the relationships between the tasks; and

the relationship to the District Planning process itself. In this way, the various aspects of monitoring can be clearly identified individually, and operationalised one at a time. As each part is put into operation, the structure as a whole takes shape and, over time, should build into a comprehensive, integrated and effective monitoring system.

## An Integrated Monitoring System



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## 1 Introduction

Territorial authorities are legally required to undertake various monitoring functions, and to gather and make available information obtained from monitoring. There is some discretion, however, as to the extent of monitoring that should be undertaken by councils, and the form and frequency of reporting the results from monitoring procedures.

The monitoring of planning procedures and planning documents (*once in place*) is the logical progression in the comprehensive management system initiated by the Resource Management Act 1991 (*henceforth, the RMA or the Act*). Planning procedures need to be monitored as part of the overall planning and resource management framework to ensure the on-going effectiveness of the process as a whole.

Council has developed this strategy to address their monitoring duties in regard to resource management and environmental regulation. The intent is to combine the various types of monitoring into an integrated, useful, cost-effective and manageable system of environmental monitoring and reporting. The system, when implemented, will enable the council to determine whether the resource management objectives for the District are being met, and whether planning procedures need to be altered to better accomplish those objectives.

The monitoring strategy for Council should be focused on the development of monitoring programmes that have the maximum utility to Council in fulfilling its statutory responsibilities and in promoting the sustainable management of natural and physical resources in the District. At the same time, recognition must be given to the fact that the population base of the District is not large and that financial constraints will dictate that a careful balancing of the legislative requirements with the costs and benefits afforded to Council and the community from monitoring activities is necessary.

The combination of the various types of monitoring into an integrated, useful, cost-effective and manageable system of environmental monitoring and reporting is the ultimate aim of the strategy. It should be acknowledged that the development and implementation of an integrated and effective system of environmental monitoring and reporting is a complex and challenging task. It will require considerable effort and resources (*both financial and human*).

However, as District Plans and regional policy statements and plans become operative, it is the next step in the resource management system initiated by the RMA. Policy statements and plans need to be monitored as part of the overall planning and resource management framework to ensure the ongoing effectiveness of the process as a whole. Increasingly, local authorities are turning to the task of monitoring their activities as their planning documents become operative. This too, is the logical progression for Council.

The monitoring strategy for Council should concentrate initially on doing a little well rather than trying to cover the entire suite of monitoring functions. Implementation of the strategy should be on a step by step basis, along clearly defined lines.

Initially, effort should be concentrated upon putting in place a comprehensive and effective resource consents and complaints monitoring regime before fully tackling plan evaluation and state of the environment monitoring. The implementation of plan evaluation and state of the environment monitoring should progress over time as the proposed District Plan becomes operative.

The existing strategy sets in place a framework around which the various monitoring duties of Council can be organized and developed over time. It is envisaged that the strategy will develop into a comprehensive programme of monitoring, and as monitoring functions are operationalised the procedures will be incorporated into the strategy. The strategy will, in this sense, evolve into a monitoring manual for the Council. The procedures for the various types of monitoring will be written into the document and will serve as a guide for on-going monitoring, an aid to developing further monitoring functions, and for educating new staff in respect to monitoring processes.

The intent of the monitoring strategy is ultimately to link the various aspects of monitoring into an ordered structure, whereby each type of monitoring contributes to an evolving and on-going process of integrated environmental monitoring and reporting. This process should address the different types of monitoring required under the RMA, not separately, but as part of a conceptually and pragmatically related whole. This monitoring strategy is designed to feed back into, and inform, the District Planning process. The ultimate aim remains, of course, the sustainable management of the natural and physical resources of the District.

## 2 Objectives of the Strategy

The objectives of the monitoring strategy are:

- 1 To determine the statutory requirements Council faces in regard to its monitoring duties under the resource management legislation. This will identify what is mandatory (*i.e. what Council has to do to meet its statutory obligations*).
- 2 To examine the conceptual and pragmatic arguments for undertaking monitoring as part of the overall planning process that Council is obliged to engage in. This will explain why Council should undertake monitoring as part of its functions and identify the benefits to Council, the community and the environment from so doing.
- 3 To describe the process of monitoring and the particular tasks involved in this process. These include: identifying information needs; developing performance indicators; data collection; data analysis; data management; reporting of results; and review of planning procedures and monitoring requirements.
- 4 To outline the various types of monitoring that Council is obliged to undertake. These include:
  - State of the environment monitoring
  - District Plan monitoring
  - Resource consents monitoring
  - Complaints monitoring
  - Monitoring of duties and functions delegated by Council.

Although these different types of monitoring can be viewed, and undertaken, separately they are, nevertheless, fundamentally related. They should be viewed conceptually as part of an integrated process.

- 5 To draft an integrated monitoring system for Council that combines the various types of monitoring into a useful, cost-effective and manageable system of environmental monitoring and reporting. This strategy will outline the type and level of monitoring to be carried out and will link consents and complaints monitoring with District Plan evaluation and incorporate these into state of the environment monitoring and reporting.

This system, when implemented, should enable Council to determine whether the resource management objectives for the District are being met, and whether planning procedures need to be altered to better accomplish these objectives. Over time, this should result in a proactive and integrated approach to the sustainable management of natural and physical resources in the District.

### 3 Statutory Requirements

The Resource Management Act 1991 explicitly requires a local authority to gather information and to undertake various forms of monitoring to enable it to carry out its functions under the Act.

For example, Section 31 includes as a function of territorial authorities:

- a *establishment, implementation, **and review** of objectives, policies, and methods to achieve integrated management of the effects of the use, development, or protection of land and associated natural and physical resources of the District :*

In addition, Section 75 requires that District Plans shall contain:

- i The procedures to be used **to review** the matters set out in [the plan], and **to monitor** the effectiveness of the plan as a means of achieving its objectives and policies;

These requirements are further elaborated in Section 35, under the heading 'Duty to gather information, monitor, and keep records', which states:

- 1 *Every local authority **shall gather such information**, and undertake or commission such research, as is necessary to carry out effectively its functions under this Act.*
- 2 *Every local authority **shall monitor**:*
  - a *The **state of the whole or any part of the environment** of its region or District to the extent that is appropriate to enable the local authority to effectively carry out its functions under this Act; and*
  - b *The **suitability and effectiveness of any policy statements or plan** for its region or District; and*
  - c *The **exercise of any functions, powers, or duties delegated or transferred** by it; and*
  - d *The **exercise of the resource consents** that have effect in its region or District , as the case may be,*

***and take appropriate action** (having regard to the methods available to it under this Act) where this is shown to be necessary.*

In addition, Section 35 goes on to state that:

- 3 Every local authority **shall keep** reasonably available at its principle office, **information** which is relevant to the administration of policy statements and plans, the monitoring of resource consents, and current issues relating to the environment of the area, to enable the public to:
  - a be better informed of their duties and of the functions, powers, and duties of the local authority; and
  - b participate effectively under this Act.

Section 35(5)(i) specifically requires a local authority to produce, and make available:

***A summary of all written complaints** received by it during the preceding 5 years concerning alleged breaches of the Act or a plan, and **information on how it dealt with each such complaint***

Section 79 requires territorial authorities to review their District Plans every ten years. For example, Section 79(2) states:

*Every territorial authority shall commence a **full review** of its District Plan not later than ten years after the plan became operative.*

The authority, after reviewing the plan, may choose to change or replace the plan or leave it unaltered. The obligations under this section are in addition, and complimentary, to the duties to monitor under Section 35.

The 1989 Amendment to the Local Government Act 1974 also requires local authorities to undertake monitoring as part of strategic and annual planning. Strategic and annual plans set out a territorial authority's intentions in regard to their resource management objectives and the annual report monitors the performance of the authority in relation to those objectives.

Thus, according to national legislation, local authorities are faced with certain requirements in regard to monitoring duties. Leaving aside the imperative to monitor functions and duties delegated by Council, these

requirements under the resource management legislation relate to four main aspects of monitoring. These are as follows:

- 1 Resource consents monitoring
- 2 Complaints monitoring
- 3 Monitoring the suitability and effectiveness of planning documents
- 4 State of the environment monitoring

Such monitoring is mandatory, as is the requirement to gather information and have it available for public scrutiny. The only discretion afforded to Council is in determining the extent of the monitoring needed to be undertaken to enable it to carry out its functions under the RMA. It is worth noting that the production of a monitoring report, such as a state of the environment report is not expressly required under the Act. However, the production of such a report would appear to be the most appropriate method to gather the necessary information and have it available for both public scrutiny and Council use.

The monitoring duties identified above as obligatory are linked to Council's duties under Section 32. Section 32 of the RMA imposes a duty on territorial authorities to assess the suitability of planning procedures adopted in planning documents and to consider alternatives. One method of assessing the suitability and effectiveness of planning procedures is through monitoring their performance. Thus, information provided by monitoring should assist Section 32 duties, particularly when reviewing the District Plan.

## 4 Rationale for Monitoring

Monitoring, unlike pure research, is an applied activity. It is related to a particular purpose. In relation to planning, its purpose is to improve planning processes and planning outcomes. It provides the feedback mechanism between policy formulation and policy evaluation.

Monitoring is thus an essential link in the planning process. Monitoring enables the on-going assessment of planning objectives, the policies and methodologies designed to achieve those objectives, and the actual planning outcomes and anticipated results. The continuous assessment and review of planning procedures through the monitoring of outcomes or anticipated results should lead to improvements to procedures over time, in turn resulting in improved outcomes.

Monitoring is, therefore, an on-going process. It is an integral part of the planning system. It represents the **quality control mechanism of the planning process**.

The overriding goal of any monitoring carried out under the RMA is to contribute to the promotion of sustainable management of natural and physical resources. Monitoring provides feedback on the effectiveness of local authorities' planning procedures to achieve the purpose of the Act. Monitoring should address the following questions. Are planning procedures:

- promoting the sustainable utilisation of natural and physical resources?
- safeguarding the life-supporting capacity of air, water, soils and ecosystems?
- avoiding, remedying or mitigating adverse effects on the environment? and
- adequately addressing the matters set out in Sections 6, 7, and 8 of the RMA?

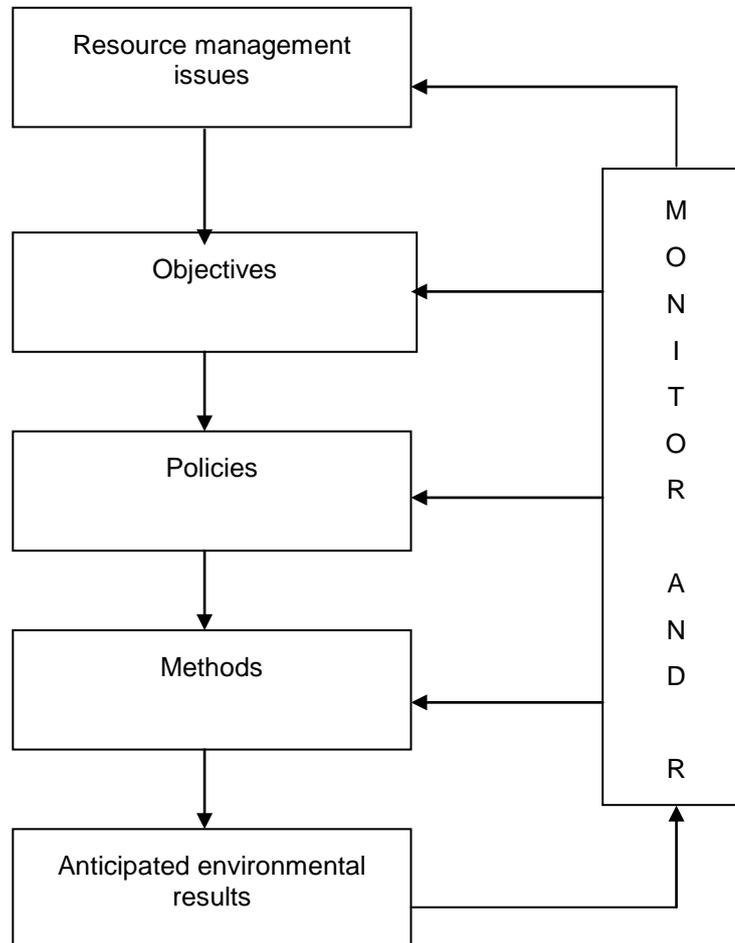
If monitoring reveals that the procedures in place are not achieving the anticipated outcomes (*the sustainable management of natural and physical resources*) then changes to objectives, policies or methodologies may become necessary.

Monitoring may also identify additional issues that need to be addressed by a territorial authority through the District Plan process or by some other mechanism (*such as a specific management strategy*). This will enable issues of significance to the District to be incorporated into Council planning procedures over time in response to changing circumstances.

Monitoring has other benefits to Council and the community in addition to its contribution to improving planning procedures. These include:

- improving our knowledge base about the sustainable management of natural and physical resources
- assisting in the detection and measurement of long term cumulative effects of activities on the environment
- enabling more effective public participation in planning procedures. A better informed public will result in more constructive community involvement in planning processes
- increasing community confidence in Council performance. If the public know that Council staff are rigorously monitoring their own procedures for effectiveness and suitability they are more likely to have confidence in Council processes.

## Monitoring and planning process



- 1 Identify significant resource management issues for the District
- 2 State the objectives relating to those issues
- 3 Formulate policies to address those objectives
- 4 Introduce methods to implement the policies
- 5 Identify environmental results anticipated i.e. expected outcomes
- 6 Monitor the results and review the procedures
- 7 Improve procedures over time (*issues, objectives, policies, methods*).

## 5 Monitoring Procedures

Monitoring simply means to maintain a regular surveillance. As a process, it can be described as the regular surveillance of particular parameters. However, the broader process of environmental monitoring involves more than simply measuring phenomena and collecting data. Monitoring is a systematic process involving a number of steps. These include:

- identification of issues
- selection of indicators
- data collection
- data analysis and interpretation
- data management
- reporting of results
- recommendations and review.

All stages are important in operationalising an effective and meaningful environmental monitoring programme. Each stage in the process is briefly reviewed below.

### 1 Issues

The identification and selection of issues for which information is required is the first task in the monitoring process. The information needs to relate specifically to the objectives of the monitoring strategy, i.e. consents monitoring, complaints monitoring, plan evaluation, or state of the environment monitoring. For example, the relevant issue may be related to resource content condition, or a particular environmental outcome identified in the District Plan, or perhaps an environmental 'condition' or phenomenon considered of importance to the state of the District's environment.

Public consultation and participation has a role to play here, particularly in the identification of issues that are considered significant by the community. If the local community participates in the selection of significant issues, it is much more likely to buy into (*and perhaps even participate in*) subsequent monitoring. They are also more likely to accept the results of, and recommendations from, that monitoring. Tangata whenua should participate in this initial process, identifying issues that are of significance to iwi and hapu. Developers have a role also, particularly in relation to the monitoring of consent conditions. When making applications for resource consents, developers should be encouraged to identify issues that they feel should be monitored and reported upon.

The District Plan formulation process will identify significant resource management issues in the District. These should serve as the basis for selecting issues to be monitored. Because of resource limitations, and because some may be considered more significant than others, these issues may have to be prioritised with a smaller number selected for initial monitoring and others put aside for future attention. Monitoring itself will also identify new issues that may need to be considered for future monitoring.

### 2 Indicators

For each issue identified, one or more monitoring indicators need to be selected. The selection of appropriate indicators is an important part of the monitoring process. It is not possible, nor desirable, to measure all aspects of the environment, and/or a particular environmental 'condition', as part of a monitoring programme. Thus, specific variables or parameters are selected as 'indicators' of particular phenomena. These indicators are monitored or measured regularly to detect sudden or gradual changes in a particular environmental 'condition'. Gradual changes are referred to as 'trends' and are just as important as sudden changes in regard to environment monitoring.

Environmental indicators come in many forms. An indicator may be a plant or an animal that is particularly sensitive to environmental change (*a bio-indicator*); it may be a chemical or a pollutant in water, air, or the soil; or it may simply be a measure of the amount of a particular resource. Indicators are intended to represent complex environmental processes by simplifying them to a measurable parameter.

Attention will need to be given to the identification of indicators appropriate to monitoring resource consents, complaints, plan effectiveness, and the state of the environment. There will be some overlap between these indicators. It may be possible to identify some indicators that serve more than one function. Indicators need to be policy relevant, i.e. directly linked to Council functions. They should be analytically valid, in that they are

measurable, representative of what is being assessed, and scientifically robust. They should also be cost-effective, reasonably easy to monitor and easily understood.

The Ministry for the Environment is currently developing a core set of environmental indicators that can be used by different organisations, including local authorities, to monitor various parts of the environment. Developing a set of national environmental indicators will result in more consistent monitoring that will generate better, more standardised information capable of being aggregated regionally and nationally. Territorial authorities also need to be mindful of relevant indicators developed by other agencies including regional councils, the Department of Conservation, Statistics New Zealand, New Zealand Fish and Game Council, National Institute for Water and Air Research, Ministry for Agriculture and Forestry, Ministry of Fisheries, and the New Zealand Historic Places Trust.

It is important to note that the process of identifying and developing indicators is an on-going one. It requires continuous review of existing indicators and monitoring procedures to take account of new information that comes to hand. This new information may necessitate modification to existing procedures and existing indicators.

### 3 Data Collection, Analysis and Management

Data collection, analysis and management processes need to be put in place to enable the monitoring programme to function effectively. Data collection involves the actual physical gathering of information about a particular issue over time. This data must relate to the indicators selected, and will need to be able (*upon analysis*) to provide information on temporal and spatial variations. Data needs to be collected in a consistent, rigorous and scientific fashion. Existing internal sources of data need to be identified and the form of data scrutinised to ensure its suitability for monitoring purposes. External sources of data also need to be identified. Lack of data on significant issues must be identified and new data collection programmes designed and implemented where necessary.

External sources of data include: Statistics New Zealand, a rich source of social and economic data; Ministry for Agriculture and Forestry, for data relating to land utilisation; National Institute for Water and Air Research, for data on water and air resources; Department of Conservation (Doc), for data on conservation issues; New Zealand Historic Places Trust, for data on cultural and historical heritage; and regional councils, for local and regional data on a range of issues.

Data collected then needs to be analysed and interpreted to provide useful information such as temporal trends or spatial variation. Geographic Information Systems and quantitative analysis techniques can be particularly useful in this regard. Various forms of qualitative data analysis may also be necessary. Data collected needs to be stored and managed in an efficient way so that information is readily accessible in a form useful for analysis and reporting purposes. In-house computing systems should be adequate, and new programmes may need to be developed to address new requirements. New data bases or the reconfiguring of existing data bases may be necessary.

### 4 Reporting

This involves presenting the results of monitoring to both Council and the community in a form that is easy to understand. Target audiences and reporting frequency may vary. For example, resource consents, complaints monitoring, plan evaluation, and state of the environment monitoring each have differences concerning reporting frequency. For consents and complaints monitoring the most appropriate time frame for reporting may be monthly or annually. For plan evaluation and state of the environment reporting the interval will be longer. Every two years, or every five years may be an appropriate interval.

The intended audiences also differ and influence the form of reporting that is appropriate. Resource consents monitoring, complaints monitoring, and plan evaluation are primarily aimed at an internal (*Council*) audience and can thus be reasonably complex and technical. State of the environment monitoring and reporting is aimed at both internal and external audiences, and therefore is required to be less complex and less technical. State of the environment reports are intended to inform the community, as well as the council, on the existing state of the environment and how it is changing over time. The reporting phase has potential value in terms of educating the community, council staff, councillors, interest and industry groups on the state of the environment, and council's approach to managing resources and environmental effects.

### 5 Review

This last phase involves reviewing and revising (*as necessary*) planning and monitoring procedures to improve planning outcomes. The results of the monitoring programme need to be linked back to the planning process to enable the review of planning procedures in place and to improve them over time. Monitoring may confirm

the appropriateness of the existing provisions or it may identify the need to make changes to planning procedures in order to improve their on-going effectiveness. This relates to both policy documents (*notably the District Plan*) and to the processing of consents (*particularly in setting conditions*). Monitoring may also identify new issues that need to be addressed by planning procedures and possibly included in planning documents. This is a crucial phase in the monitoring process. It provides the link back to the planning process. If this link is not firmly established monitoring risks becoming simply a public relations exercise.

Reviewing the monitoring programme itself is also an essential part of this phase. This should result, over time, in the improvement of the monitoring process as a whole.

Thus, monitoring can be viewed as a sequence of specific actions, or steps, each with its own particular requirements, whilst, at the same time, interrelated. Taken together, the sequence of actions comprises the monitoring process as a whole.

## 6 Resource Consents Monitoring

Resource consents issued by territorial authorities comprise both land use consents and subdivision consents. The granting of resource consent places certain responsibilities on both the authority and the consent holder. By granting consent, the territorial authority has given approval for a consent holder to carry out an activity that would otherwise contravene a plan formulated under the RMA. The territorial authority therefore has the responsibility to ensure that:

- conditions to control adverse environmental effects and to manage resources sustainably are attached to the consent
- the consent holder complies fully with consent conditions
- appropriate action is taken if consent conditions are not complied with.

The imposition of conditions upon resource consents under section 108 is designed to effectuate the purpose of the RMA which, according to Section 5, is the promotion of sustainable management of natural and physical resources. Sustainable management includes, but is not limited to, avoiding, remedying, or mitigating adverse effects of activities on the environment. Many consent conditions are thus aimed at managing environmental outcomes. Conditions may require a financial contribution be made, a bond be given, a covenant be entered into, or an esplanade reserve or strip be set aside.

Where a territorial authority imposes conditions, it assumes a public responsibility for ensuring that they are strictly adhered to, and the public is entitled to hold the authority responsible in that respect. Territorial authorities are required to observe and, to the extent of their authority, to enforce the observance of their plans (*Section 84*). This obligation extends to the observance of consent. The RMA does not give authorities the power to waive compliance with resource content or plan and explicitly places an obligation on them to **monitor the exercise of resource consents** and **take appropriate action** if necessary to ensure compliance (*Section 35(2)(d)*).

The RMA specifically empowers a consent authority to require the holder of consent to supply to the consent authority information relating to the exercise of the resource consent (*Section 108(3)*). The Act also enables the imposition of conditions requiring the holder to carry out monitoring and other investigations, to provide that information to the consent authority, and to require the holder to bear the costs of such requirements (*Section 108(4)*).

There are provisions in the RMA that enable consent conditions to be reviewed or consents cancelled. These are important for dealing with unforeseen effects or for addressing inaccuracies later found in the information supplied at the time of application. There are additional provisions for remedying effects not controlled by consent conditions. These include infringement notices, abatement notices and enforcement orders. In addition, provisions exist for plan changes or variations to correct deficiencies in consent conditions. Lastly, the ten year review of the District Plan provides another opportunity to rectify defective consent conditions. A review clause in consents is a further mechanism to enable authorities to seek a review of conditions if monitoring reveals deficiencies in the conditions.

The monitoring of resource consents encompasses three aspects:

- 1 Compliance of the consent holder with conditions attached to the consent
- 2 The suitability and functionality of consent conditions
- 3 Monitoring the impact of activities on the environment.

Compliance monitoring checks that the consent holder is meeting the stipulated conditions and regulations in regard to the consent granted and, in so doing, ensures that adverse effects on the environment are avoided, mitigated or remedied. Secondly, monitoring the suitability and functionality of consent conditions assesses whether the conditions attached to consents are workable, i.e. whether they are precise, achievable, measurable and enforceable.

Impact monitoring relates to both consented activities and permitted activities. Monitoring the impact of consented activities assesses whether the effects on the environment are being adequately addressed by the conditions attached to the consent, i.e. whether the conditions are effective. Monitoring permitted activities ensures that those activities not requiring resource content do in fact meet the standards in the plan for permitted activities and that permitted activities are not having adverse impacts on the environment.

It should be noted that monitoring the impact of consented activities on the environment to determine whether the exercise of the consent itself, or conditions attached to the consent, are achieving the objectives, policies and anticipated environmental outcomes of the District Plan is separate to the monitoring of compliance to consent conditions. These considerations cannot be used when determining issues of non-compliance to resource consent conditions and/or possible enforcement measures. These must be determined solely on whether the consent conditions, as set, are being complied with.

Monitoring of each different type of consent will require different approaches, skills and technical knowledge. The monitoring requirements for subdivision consents, for example, are different to land use consents issued by territorial authorities. Monitoring of subdivision consents is generally limited to the land development stage and relates to the completion of works. While land use consents may have this component, many are subject to conditions that require long term limitation on the exercise of consent in order to avoid or mitigate the adverse effects of an activity on the environment.

Monitoring of land use and subdivision consents will, in many cases, simply involve a one-off check to ensure conditions have been met, or a limited number of follow-up visits to ensure compliance are eventually achieved. Many of the checks will be by observation. Others may require technical analysis. Monitoring of the suitability and functionality of consent conditions and impact monitoring of consented activities may also require a single visit, and will likely take place at the same time as compliance monitoring. Some compliance monitoring and impact monitoring may, however, require repeated visits to ensure on-going compliance and impact assessment.

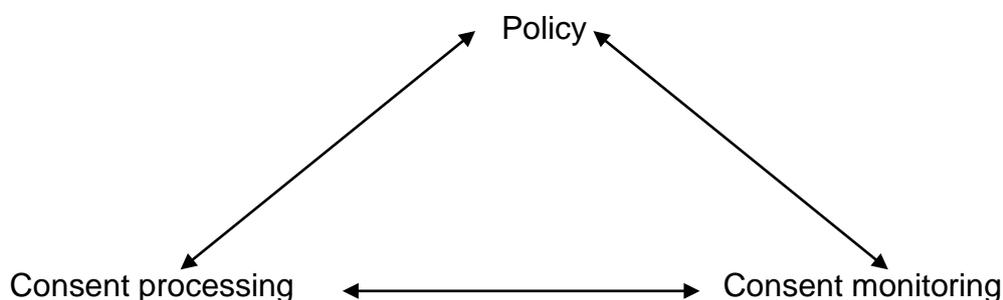
Assessing the suitability and functionality of consent conditions requires a cooperative approach by planning staff. There needs to be constant feedback between monitoring, consent processing and policy making staff to ensure the effective imposition and enforcement of consent conditions. If consent conditions are not clear, unambiguous, measurable, and enforceable, it is very difficult to determine whether they are being complied with or to enforce them. Conditions which are vague may be unenforceable and therefore invalid.

If consent conditions are unworkable, or ineffectual, or if new conditions need to be imposed or old conditions discarded, policy staff (*in consultation with consents processing and monitoring staff*) will be required to rewrite them, draft new conditions, or discard unnecessary ones. In addition, the policy group must be cognisant of, and review, the relationship between consent conditions and the objectives, policies and other methods contained within the District Plan. Consent processing and consent monitoring staff can actively assist in this respect.

Monitoring officers will have valuable knowledge on the effectiveness of resource consent conditions, whether conditions are covering all adverse effects, whether resource content appears necessary in light of actual effects on the environment, and the enforceability and reasonableness of conditions. They may also have ideas on other means of addressing the issues which give rise to regulation through the resource consent process and, in this way, provide feedback for plan review processes.

The interactive relationship between the three planning groups is illustrated below:

### Relationship between Monitoring, Processing and Policy



Using this interactive process, information gained from the monitoring of resource consents should be gathered and analysed to provide input to Council's duties to monitor both plan effectiveness and the state of the environment. In short, territorial authorities need to establish a consent monitoring strategy which incorporates procedures for the following:

- assessing compliance with conditions attached to consents
- assessing the suitability and functionality of consent conditions
- assessing the impact of consented and permitted activities on the environment

- transferring information between processing, monitoring and policy planners
- determining whether the District Plan's objectives, policies and methods need revising
- contributing to state of the environment monitoring and reporting
- reviewing and revising monitoring procedures.

## 6.1 Issues and Information Needs

This section identifies the issues concerning consents monitoring for which information is to be collected, stored and reported upon. Potential indicators are also identified. The section is divided into four subsections: Resource Consents; Land Use Consents; Subdivision Consents; and Building Consents.

### Resource Consents

There are a number of issues related to resource consents generally that it would be useful to have information on.

#### i Broad development trends for the District

This could be indicated by:

- **The total number of resource consents issued annually.** Over time, this information will provide a broad measure of development trends within the District, i.e. an increase/decrease in overall development
- **The spatial distribution of resource consents issued annually (*mapped*).** This information will provide a broad picture of where development is occurring in the District. Over time, changes in spatial development patterns should become apparent.

#### ii Public participation/compliance costs for development

This could be indicated by:

- **The number, and percentage, of resource consents notified annually.** This could be broken down into land use and subdivision consents. This will provide information on the extent of public participation taking place in development issues. Over time, a trend towards increased/decreased public participation should become apparent. This will also provide information on the compliance costs of development proposals, i.e. increased notification generally implies increased costs for the developer.

#### iii Consents processing efficiency

This could be indicated by:

- **The number, and percentage, of resource consents issued within the statutory timeframe.** This could be broken down into land use consents and subdivision consents. It could also be subdivided into notified applications and non-notified applications. This will provide a measurement of consent processing efficiency and enable a comparison to be made over time, and with other local authorities. Trends over time should indicate improvement or otherwise in consent processing efficiency. This, however, should not be the sole criterion for judging efficiency. Nor should it compromise the quality of decision making.

#### iv Decision making effectiveness.

This could be indicated by:

- **The number, and percentage, of resource consent applications declined annually.** This will provide information on the public understanding, and acceptance, of District Plan provisions
- **The number, and percentage, of council decisions appealed annually.** This will provide information on how applicants perceive the effectiveness of decision making on development proposals
- **The number, and percentage, of successful appeals.** This will provide information on how the courts judge the effectiveness of council decision making on development proposals

## Land use consents

There are a number of issues relating specifically to land use consents that it would be useful to have information on.

### i Broad development trends for the District

This could be indicated by:

- **The total number of land use consents issued annually.** Over time, this information will provide a broad measure of land use trends within the District
- **The different types of land use consents issued annually.** For example, information on residential, commercial, industrial, rural, or social activities will provide an indication of the different types of land uses occurring in the District
- **The spatial distribution of different land use consents issued annually (*mapped*).** This information will provide a broad picture of where land use development is occurring in the District and spatial trends over time.

### ii Compliance with land use consents

This could be indicated by:

- **The total number, and percentage, of land use consents monitored annually.** Over time, this information will provide a broad measure of the efficiency of the consent monitoring process.
- **The number, and percentage, of land use consents complied with (*not complied with*)**
- **The number of site visits required to achieve compliance.** These two measures will provide a broad indication of the effectiveness of consent procedures, including the frequency of non-compliance by developers
- **The number of consents requiring on-going monitoring.**

### iii Suitability and functionality of consent conditions

This could be indicated by:

- **The number, and percentage, of conditions found to be necessary (*and unnecessary*).** This information will provide a broad measure of the suitability of consent conditions
- **Comments and recommendations arising from site visits.** These observations will provide detailed information on the suitability of specific consent conditions
- **The number, and percentage, of conditions found to be clear, unambiguous, measurable and enforceable (*or, alternatively, unworkable*).** This information will provide a measure of the functionality of consent conditions, i.e. whether they are workable and effective.
- **Comments and recommendations arising from site visits.** This will provide detailed information concerning the functionality of specific consent conditions, and recommendations for improvement
- **The number of applications for changes to consent conditions annually.** Included here are both applications by the consent holder (*Section 127*) and reviews of consent conditions by Council (*Section 128*). This will provide further information on the suitability and functionality of consent conditions.

### iv Impact monitoring

This could be indicated by:

- **The number, and percentage, of times that impacts on the environment are adequately addressed (*not adequately addressed*) by the consent conditions.** This will provide a broad measure of whether the consent conditions are adequately addressing adverse effects on the environment.
- **Comments and recommendations arising from site visits.** These observations will provide detailed information on the effectiveness or otherwise of specific consent conditions in regard to environmental effects. They will also enable recommendations to be made for improving conditions

## Subdivision consents

There are a number of issues relating specifically to subdivision consents that it would be useful to have information on.

### i Broad development trends for the District

This could be indicated by:

- **The total number of subdivision consents issued annually.** Over time, this information will provide a broad measure of subdivision trends within the District
- **The total number of lots created annually.** This would give further information on the quantum of subdivision occurring in the District
- **The spatial distribution of subdivision consents issued annually (mapped).** This information will provide a broad picture of where subdivision is occurring in the District and spatial trends over time

### ii Compliance with the District Plan

This could be indicated by:

- **The average lot size, and the range of lot sizes, in the different Environments annually.** This information will provide a broad measure of how actual lot sizes being created comply with those prescribed in the District Plan.

### iii Conservation values

This could be indicated by:

- **The number, and percentage, of lots with a conservation covenant attached annually.** This information will provide a measure of conservation initiatives (*in this instance, conservation covenants*) undertaken by Council, and the trend over time
- **The spatial distribution of conservation covenants (mapped).** Over time, this will provide information on the location of covenants, and their relationship to other areas of conservation value. Conservation covenants associated with land use consents should also be included here. This should assist in planning future locations of conservation areas, including ecological corridors, etc.

### iv Protection of riparian areas/public access to water bodies

This could be indicated by:

- **The number, and percentage, of lots with esplanade reserves or strips attached annually.** This information will provide a measure of the protection of riparian areas, and a surrogate measure of public accessibility to water bodies
- **The spatial distribution of esplanade reserves and strips (mapped).** Over time, this will provide information on the location of esplanade reserves and strips, together with their relationship to other reserves and conservation areas. This will assist in planning for future esplanade areas and future reserve areas, including the planning of public walkways, etc

**Note** It is a requirement under Section 35(5)(ja) of the RMA for territorial authorities to record (*and make this information available*) the location and area of all esplanade reserves, esplanade strips, and access strips in the District.

## Building Consents

There are a number of issues relating specifically to building consents that it would be useful to have information on:

### i Broad development trends for the District

This could be indicated by:

- **The total number of building consents issued annually.** Over time, this will provide a broad measure of building activity within the District
- **The spatial distribution of building consents issued annually (mapped).** This information will provide a broad picture of where building activity is occurring in the District

- **The different types of building that occurred annually.** For example, information on residential, industrial, commercial, social, and ancillary building will provide a measure and comparison over time, of the different building activities in the District
  - **The total number of new dwelling units constructed annually.** This will provide information on domestic housing within the District
  - **The spatial distribution of new dwelling units constructed annually (*mapped*).** This information will provide a broad picture of where new housing is occurring within the District
  - **The total value of all building consents issued annually.** Over time, this will provide information on building trends in the District, and will enable comparisons over time, and with other Districts
- ii Consent processing efficiency. This could be indicated by:
- **The number, and percentage, of building consents issued within the statutory timeframe.** This could be broken down into residential building consents and commercial building consents. This will provide a measure of consent processing efficiency and enable a comparison to be made over time, and with other local authorities. Trends over time should indicate an improvement or otherwise in consent processing efficiency.

## 6.2 Monitoring Indicators

From the issues and information requirements examined in the previous section, a number of indicators have been identified. These are outlined in the following tables. The Division within Council responsible for collecting and storing the required data is also identified, along with reporting frequencies.

### Resource Consents

Monitoring indicators	Division	Frequency
Total number of resource consents issued	Resource Consents	Annually
Spatial distribution of resource consents issued	Information Services	Annually
Number ( <i>and %</i> ) of resource consents notified ( <i>non-notified</i> )	Resource Consents	Annually
Number ( <i>and %</i> ) of consents processed ( <i>not processed</i> ) within statutory timeframe	Resource Consents	Annually
a Publicly notified applications		
b Non-notified applications		
Number ( <i>and %</i> ) of resource consent applications declined	Resource Consents	Annually
Number ( <i>and %</i> ) of Council decisions appealed	Resource Consents	Annually
Number ( <i>and %</i> ) of appeals that are successful	Resource Consents	Annually

### Land Use Consents

Monitoring indicators	Division	Frequency
Total number of land use consents issued	Resource Consents	Annually
Different types land use consents issued	Resource Consents	Annually
Spatial distribution of different types of land use consents issued	Information Services	Annually
Total number ( <i>and %</i> ) of land use consents monitored ( <i>not monitored</i> )	Policy/Monitoring	Annually
Number ( <i>and %</i> ) of consents complied with ( <i>not complied with</i> )	Policy/Monitoring	Annually
Number of site visits required to achieve compliance	Policy/Monitoring	Annually
Number of consents requiring on-going monitoring	Policy/Monitoring	Annually
Number ( <i>and %</i> ) of conditions necessary ( <i>unnecessary</i> )	Policy/Monitoring	Annually

Monitoring indicators	Division	Frequency
Recommendations on suitability of consent conditions	Policy/Monitoring	Annually
Number (and %) of conditions workable ( <i>unworkable</i> )	Policy/Monitoring	Annually
Recommendations on functionality of consent conditions	Policy/Monitoring	Annually
Number (and %) of consents environmental impacts adequately addressed ( <i>not addressed</i> )	Policy/Monitoring	Annually
Recommendations on environmental impacts	Policy/Monitoring	Annually
Number of applications for change of consent conditions	Resource Consents	Annually

### Subdivision consents

Total number of subdivision consents issued	Resource Consents	Annually
Total number of lots created	Resource Consents	Annually
Spatial distribution of subdivision consents issued	Information Services	Annually
Average, and range of lot sizes created in the different Environments	Resource Consents	Annually
Number (and %) of lots with conservation covenants	Resource Consents	Annually
Spatial distribution of conservation covenants	Information Services	Annually
Number (and %) of lots with esplanade reserves or strips	Resource Consents	Annually
Spatial distribution of esplanade reserves and strips	Information Services	Annually

### Building Consents

Total number of building consents issued	Compliance	Annually
Spatial distribution of building consents issued	Information Services	Annually
Different types of building consents issued	Compliance	Annually
Total number of new dwellings constructed	Compliance	Annually
Spatial distribution of new dwellings	Information Services	Annually
Total value of all building consents issued	Compliance	Annually
Number (and %) of building consents processed ( <i>not processed</i> ) within statutory timeframe	Compliance	Annually

## 6.3 Data collection and management

### Land use consents

This section outlines the procedures used for monitoring land use consents. It is also concerned with the storage and retrieval of data obtained from monitoring. The procedures are outlined in a flow diagram setting out the various steps in the process from the receipt of a monthly list of approved consents to signing off monitored consents or initiating prosecution for non-compliance.

Accompanying the flow diagram is a text section (*see below*) providing further detail on some of the actions in the flow chart. This section should be read in conjunction with the Resource Management Enforcement Manual and the Council's Infringement Policy.

Example copies of the Land Use Monitoring Compliance Checklist and the Suitability, Functionality and Impact Assessment Sheets are included for reference purposes. Information from these forms is inputted

into resource contents processing computer module, and the forms themselves are stored in folders in the monitoring office. This information will be used to compile the annual Resource Consents and Complaints Monitoring Report and for District Plan and state of the environment monitoring.

### **Land use consents monitoring procedures (Refer to Flow Chart)**

#### **Action 1**

The monthly list of approved resource consents is provided by the consents support staff. The list is placed in the appropriate folder in the monitoring office. When the number of consents is small, the Monitoring Officer can simply collect the relevant files from records and carry out the monitoring procedures. Otherwise, particularly if some of the properties are in outlying areas, a number of files in a particular area should be allowed to accumulate before a site visit is undertaken.

When a developer informs the monitoring unit of when they intend to start and finish their development, the relevant file is retrieved from records, and the normal forms completed and information inputted to the computer system. The file is then diarised for the week the applicant has indicated the work will finish, and a site inspection carried out at that time.

#### **Action 2**

When a site inspection is carried out, the Monitoring Officer should produce his/her warrant on the first visit. If occupants/developers are not present the Monitoring Officer should leave a notice of inspection. The Compliance Checklist must be completed to determine whether the applicant has complied with all conditions attached to the consent. The Suitability, Functionality and Impact Assessment Sheet must also be completed. The Monitoring Officer should examine the file to identify the effects consent conditions are seeking to address. It is useful to make short notes during a site visit, so that an accurate and informative report can be made. Photographs may be required, and these should be dated, the Officer's name recorded, and a brief description provided. If work has not yet started the Monitoring Officer will have to re-diarise the file to inspect it again in the future.

When an inspection is required by the Environmental Engineering Officer or Building Inspector it is the Monitoring Officer's responsibility to keep track of the file, and ensure the required inspections are carried out. Using the computer system, the Monitoring Officer will be able to remind other staff of their roles, and make enquiries as to when the tasks will be completed.

#### **Action 3**

After the Engineering Officer and/or Building Inspector have signed off the completed conditions a timesheet recording the time they spent dealing with the file must be obtained, and their costs must be incorporated into the final invoice which is prepared by the Monitoring Officer. Once the invoice has been printed and entered into the computer system a letter is sent out with the invoice outlining what the costs were for. Unless the condition 'all fees are to be paid' is included in the notice of decision, the file does not need to be dealt with further. If payment of fees were part of the conditions attached to the consent the file will need to be diarised, and payment of fees must be checked on the Land Use Monitoring Payments Spreadsheet.

Once the letter and invoice are sent out, the Compliance Checklist must be signed off and a copy placed in the relevant folder. The consent then has to be signed off as completed on the computer system.

#### **Action 4**

If a developer has not complied with one or more of the conditions of their resource consent an initial letter should be sent that enquires as to when progress is to be made towards compliance. The developer may have a legitimate reason for why some conditions have not been met. The timeframe given for compliance will depend on the situation prevailing.

#### **Action 5**

When the due date comes up another site inspection is required. If the conditions are still not being complied with a firmer letter needs to be sent out. This should state specific dates for compliance, and raise the possibility of enforcement action in the event of non-compliance.

#### **Action 6**

At the specified date another inspection is required, and if compliance is still not achieved appropriate enforcement action needs to be decided upon. A final letter should be sent stating the specific type of enforcement action that will be undertaken, and a specified date for it to be initiated.

Taking enforcement action is a serious step to make and it is important that it is discussed thoroughly with the Senior Environmental Planner (*Monitoring*). Before any such action is taken other parties who had a part in imposing conditions, such as Transit New Zealand, need to be consulted. Obtaining their input on the situation may help to determine your decision on enforcement action.

Determining precisely what sort of enforcement action is to be carried out is another decision that needs to be made in consultation with the Senior Environmental Planner (*Monitoring*). The Enforcement Manual and the Infringement Policy can provide guidance in deciding what action is to be taken.

Enforcement action should be seen as a last resort after all other avenues have been explored. There are those cases however where people will not abide by the rules and enforcement action is the only effective method to get them to comply.

### **Action 7**

The enforcement action is initiated. An Abatement Notice is issued or an Enforcement Order applied for. Possibly, for some transgressions, an Infringement Notice is more appropriate (*refer to Enforcement Manual and Infringement Policy*).

When the Monitoring Officer is drawing up an Abatement Notice or Enforcement Order great care needs to be taken when describing the offence, the remedy that is sought by Council, and the timeframes required to be met. Once the Monitoring Officer has drawn up the Notice or Order it has to be sent to Council's legal advisers who check it for legal correctness. Once it has been approved by legal counsel the Abatement Notice or Enforcement Order can be served.

The Abatement Notice or Enforcement Order can be served by registered post or personally in the presence of two warranted officers. It is preferable to serve a Notice or Order in person whenever possible, either by Council staff or by a document delivery service. If there is any possibility of trouble when serving the Notice or Order it is advisable to have a community constable accompany the Monitoring Officer. Two warranted officers (*or one with a community constable*) should be present at all personal meetings with the offender once the enforcement action has been initiated.

Before deciding whether or not to issue an Infringement Notice the Monitoring Officer needs to consider the desired end result, as once an Infringement Notice is served an Abatement Notice or an Enforcement Order cannot be used. However, an Infringement Notice could be a useful method to ensure compliance with an Abatement Notice already issued. To get a better understanding of the options the Enforcement Manual and Infringement Policy should be consulted. Infringement Notices can be served by registered or unregistered post.

### **Action 8**

If an offender does not comply with an Abatement Notice or an Enforcement Order, or refuses to pay an Infringement Notice, a decision to prosecute must be made. Once an issue reaches the prosecution stage, the Manager of Environmental Services should be informed, and Council's legal advisors need to be involved in all subsequent actions.



## Land use monitoring compliance checklist

Applicant \_\_\_\_\_ LU Ref \_\_\_\_\_  
Location \_\_\_\_\_ PID \_\_\_\_\_  
LUM Officer \_\_\_\_\_ Date \_\_\_\_\_  
RC no \_\_\_\_\_

### Compliance status

Condition(s) explained in notice of decision dated \_\_\_\_\_

Condition(s)	Status
_____	<input type="checkbox"/>

\_\_\_\_\_ All monitoring completed on *(date)*

\_\_\_\_\_ Date

### Comments

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## Suitability and functionality assessment

Are the conditions necessary

Yes    No

       If not, why not

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Are the conditions clear, measureable and enforceable

Yes    No

       If not, why not

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## Impact assessment

Are environmental impacts being adequately addressed

Yes    No

       If not, why not

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Are new conditions required

Yes    No

       If not, why not

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## Subdivision Consents

This section describes the procedures used for monitoring subdivision consents. The procedures are outlined in two flow diagrams setting out the various steps in the process. The first diagram relates to Section 223 approval, while the second refers to Section 224 monitoring. Accompanying the flow diagrams is a text section (*see below*) providing further detail on some of the activities in the flow charts.

The monitoring of subdivision consents is undertaken by staff in the Consents Division. Most conditions are monitored prior to Section 224 Certificates being issued. Conditions that require implementation after the Section 224 Certificate is issued are either bonded or subject to a consent notice registered on the property's Certificate of Title.

For example, landscape conditions are bonded, and are monitored by the Parks Division upon completion. If the required work is not completed, Council can carry out the work using the bond money. The establishment and fencing of conservation covenants are monitored before release of the Section 224 Certificate. However, long term monitoring of conservation covenants may be necessary, and this task would fall to the Policy and Monitoring Division. Conditions relating to the maintenance of stone walls, or the colour schemes of buildings are registered as consent notices against the Certificate of Title. Observance of these conditions is required by law, and long term monitoring will rely upon complaints from the public. Complaints will be dealt with by the Policy and Monitoring Division.

### Subdivision Consents Monitoring Procedures (*Refer to Flow Charts*)

#### Action 1

The subdivision consent, once approved, is registered on the database. The survey plan is then submitted to the Subdivision Office for approval. The Subdivision Officer should check conditions for Section 223 compliance and pass the file to other relevant staff for their approval if necessary. If there are easements involved these need to be checked by the appropriate authority. In essence, monitoring at this stage is concerned with checking that the survey plan submitted to Council by the applicant complies with the conditions attached to the subdivision consent. The following actions are involved:

- Checking all allotment areas, boundary dimensions and configurations against the subdivision plan (*including accessway and right of way widths*)
- Checking all easements, which are conditions of the subdivision consent, are shown on the survey plan, and accurately detailed in the schedule of easements
- Ensuring all esplanade reserves/strips are indicated in accordance with the subdivision consent
- Ensuring all lots that 'are to vest' (*as either road, recreation, local purpose reserves, etc.*) are indicated and annotated as required
- Ensuring all amalgamation conditions are accurate
- Ensuring all bush covenant areas on the survey plan are in accordance with the approved subdivision plan, and any amendments to that plan written in the subdivision consent decision.

If the submitted survey plan is not sufficient in any of the above matters, the applicant, or applicant's agent, must be notified and the information provided. This is not a Section 92 request.

#### Action 2

Once all conditions are met and approvals gained, the Subdivision Officer must sign the green post approval sheet and gain the signature of the Peer Review Officer as a check. Once the green sheet is completed, the survey plan is hand delivered to the Council Secretary for sealing. The Council Secretary must sign and seal the survey plan and return it to the Subdivision Officer for copying and sending to the applicant or applicant's agent. The copied survey plan must be placed on file, and the details entered into the Division's record book and the database.

#### Action 3

When a request for a Section 224 Certificate is received, the Subdivision Officer should check that the conditions are complied with and approvals are obtained from relevant staff where necessary. Further information may be required and this should be obtained from the applicant or applicant's agent. The following checks are included:

- Confirmation of engineering works completion

- Acceptance of 'as-built plans'
- Acceptance of engineer's certificate or engineering report
- Site inspections to confirm completion of conditions such as fencing of covenants, etc.

#### Action 4

If consent notices, covenants, or bonds are required, Council's solicitor needs to prepare the appropriate documentation. A draft document will be prepared and returned to Council for checking. When the final document is completed it must be signed and sealed by the Council Secretary. Once the covenant has been sealed in duplicate both copies must be returned to Council's solicitor. He will later return one of the documents for filing on Council's database. This document should be photocopied and the copy placed on file. The original should then be sent to Records with the appropriate form attached. If it is a consent notice the document must be photocopied, the copy placed on file, and the original sent back to the solicitor. The condition of consent should now be signed off.

#### Action 5

If reserve contributions are required these need to be calculated using the appropriate formula and included in the final invoice.

#### Action 6

Subdivision consents require the completion of all conditions prior to the release of the Section 224 Certificate. As mentioned earlier, some works will take place after the Section 224 Certificate is issued. These works, however, are bonded or subject to a consent notice before the Section 224 Certificate is released.

It is also standard to have a condition relating to the payment of fees. When compiling the invoice, be sure to include all relevant staff time together with any consultant's costs. Once fees are paid, the Section 224 Certificate can be prepared. If conservation covenants, consent notices or bonds have been involved, the Section 224 Certificate should be released to Council's solicitor. Otherwise, it can be released to the surveyor/applicant.

#### Action 7

The database should be updated and copies of the Section 224 Certificate placed on file and in the separate Section 224 folder.

## 6.4 Reporting and Review Procedures

At present a monthly report is produced for the Policy and Monitoring Division Manager who forwards the information to the monthly meeting of the Environmental Services Committee. This report contains information on the number of land use consents monitored and signed off for that month, and the number of land use consents not yet signed off, i.e. still requiring monitoring. This monthly report should be placed in the appropriate folder in the monitoring office.

It is envisaged that a combined Resource Consents and Complaints Monitoring Report will be produced annually. This report will present the information collected over the previous twelve months in regard to consents and complaints monitoring in a concise and meaningful manner. Over time trends should become apparent that enable spatial and temporal comparisons to be made. The first annual report should be published in October 2002, reporting on the 2001/2002 financial year.

This information will be aimed primarily at an internal Council audience, and should facilitate the transfer of information between monitoring, consents processing, and policy staff. This, in turn, should enable ongoing improvements to be made to the resource consents process. The intent being, over time, to improve consent processing efficiency and effectiveness, and the environmental outcomes resulting from the consent process.

In addition, much of the information gathered and presented in the Resource Consents and Complaints Monitoring Report, particularly in regard to development trends within the District, will be collated over a longer time period and will be inputted to both District Plan and state of the environment monitoring and reporting. Such information will assist in the evaluation of planning provisions in the District Plan and will enable improvements to be made over time. State of the environment monitoring and reporting will likewise benefit from information obtained from resource consents and complaints monitoring.

To enable the transfer of information between monitoring, consents processing, and policy staff, a quarterly (*three monthly*) meeting should take place between the Senior Environmental Planner (*Monitoring*), the Senior Environmental Planner (*Policy*), and the two Senior Environmental Planners (*Consents*). On occasions, it may be necessary to have staff attend from other divisions in Council, such as Compliance, Parks and Reserves, or Information Services. These meetings should begin in the 2001/2002 financial year.

It is also envisaged that the monitoring procedures themselves will be subject to ongoing review, and revision where necessary. This will be a continuous process as new information comes to light and deficiencies in the programme are identified.

## 7 Complaints Monitoring

Under section 35(5)(i) of the RMA, a local authority is required to gather, and make available:

A summary of all written complaints received by it during the preceding 5 years concerning alleged breaches of the Act or a plan, and information on how it dealt with each such complaint;

Monitoring complaints is, therefore, an explicit requirement of the resource management legislation. A local authority is required to have processes in place to adequately receive complaints from the public, record these complaints, and respond to them effectively. Complaints from the public also provide information on the performance of local authorities in regard to resource management and environmental planning duties.

Thus, it is important to incorporate this function into the monitoring programme to ensure that information from this source is adequately gathered and stored, and timely action is taken to address the cause of the complaint. Complaints monitoring can also provide information useful for evaluating resource consents processing, District Plan provisions, and the state of the environment generally.

Complaints are dealt with by a number of divisions within Council depending upon the nature of the complaint. The two divisions that deal with the majority of complaints are Compliance and Policy and Monitoring. It is important to note here that enquiries (*not complaints*) about proposed activities should be answered by the Duty Planner from the Consents Division.

The Policy and Monitoring Division deals primarily with complaints relating to breaches of the RMA, i.e. complaints specifically concerned with resource management and planning issues. These could be related to breaches of the RMA, rules in the District Plan, or matters relating to resource consents (*e.g. compliance with consent conditions, etc*).

However, if the complaint relates to a breach of the light, noise or vibration rules it should initially go to the Compliance Manager to assess who would be the best party to deal with it. If noise, light or vibration readings are required to be taken it is desirable that the Environmental Health Officers do the measurements/testing, as they are qualified to do so whereas Monitoring Officers are not. A partnership should be established which would see the Monitoring Officer liaise between the parties and the Environmental Health Officer collecting the data.

If the complaint relates to signs, it should be directed to either the Policy and Monitoring Division or to Compliance depending upon the length of time the sign in question has been in place. If the sign is recent (*i.e. less than three years*) it will go to Compliance to be checked against the bylaws. If the sign has been in place longer than three years it will be directed to the Policy and Monitoring Division. If established before September 1998 the sign may have existing use rights.

Any other complaints relating to Council bylaws or to any other issues should be passed onto the Compliance Division.

Thus, the Policy and Monitoring Division should receive complaints specifically relating to District Planning issues, including complaints concerning rules in the District Plan and consent conditions. These would include:

- a Complaints about the legality of existing activities, i.e. whether the activities have, or should have, resource consents. This could involve residential, commercial, industrial, or rural activities
- b Complaints about the legality of aspects of the operation of existing activities. This would include hours of operation, traffic movements, parking provisions, landscaping matters, and so on
- c Complaints about general amenity values. This would include overgrown sections, derelict buildings, accumulated car bodies, and excessive rubbish on properties.

Complaints serve a two-fold purpose. Firstly, they alert staff to issues that require immediate attention. These may include breaches of the relevant legislation or Council bylaws, transgressions against planning provisions in the District Plan, and breaches of resource consent conditions. In this way, the public acts a watchdog, or in a monitoring role, in respect to breaches of legislation and/or Council regulations.

Secondly, over time, information from public complaints will assist Council in evaluating aspects of its performance, its planning documents, and consents processing procedures. Data from complaints should be collected and stored for later retrieval and analysis. Complaints data should be retained for at least five years. There are a number of quantitative and qualitative analytical techniques that can be applied to such data to provide useful information on a range of Council processes.

Complaints can often be resolved without the need for enforcement action. Indeed, the vast majority are dealt with in this way. However, for those that prove intractable there are enforcement procedures available for ensuring a satisfactory resolution to the problem. These include Abatement Notices, Enforcement Orders, and Infringement Notices, as well as prosecution, fines and possible imprisonment. Further information on enforcement action can be obtained from the Local Government Resource Management Enforcement Manual and Council's Infringement Policy.

It should be emphasised that Council is obliged to enforce the law, its own bylaws, provisions of its District Plan, and conditions attached to resource consents. It does not have discretion in this regard. If a complaint is received by Council alleging a breach of the legislation, bylaws, District Plan, or consent conditions council staff are obliged to investigate it. If it is found to be a valid complaint Council must initiate action to resolve it. There is a certain amount of discretion as to how Council resolves the issue, but Council is bound to enforce the law and its own regulations.

Not only is it mandatory for Council to enforce the law and its own regulations, it is also good practice. If Council is firm and consistent in enforcing legislation and regulations, it will send such a message to the community and, over time, act as a deterrent to potential transgressors. It will also give the community confidence that Council will uphold the law and its own regulations.

## 7.1 Issues and Information Needs

This section identifies the issues concerning complaints monitoring for which information is to be collected, stored and reported upon. Potential indicators are also identified.

### i Satisfaction with Council performance, plans, procedures

This could be indicated by:

- **Total number of all complaints received annually by Council.** This information will provide a broad measure of public satisfaction/dissatisfaction with Council performance, plans and procedures. Over time, trends will become apparent and comparisons with other territorial authorities will be possible.
- **Total number of complaints received annually by the Policy and Monitoring Division.** This information will provide a broad measure of public satisfaction/dissatisfaction in regard to resource management and planning issues, including satisfaction with the District Plan.
- **Different types of complaints received by Council.** These could include District Plan issues (*including amenity values, etc.*); resource consent conditions (*including landscaping, etc.*); building and engineering; noise; parking; dogs; stock; environmental health; hazardous substances; signs, etc. This will indicate to Council issues that are generating frequent complaints, and will enable Council to direct remedial efforts to those issues.

### ii Effectiveness of Council in dealing with complaints

This could be indicated by:

- **The number, and percentage, of total complaints to Council resolved (*unresolved*).** This could be divided into those resolved without enforcement action, and those resolved with enforcement action. This information will provide a broad measure of Council's effectiveness in dealing with complaints. Over time, trends should enable temporal comparisons, and comparisons with other local authorities.
- **The number, and percentage, of complaints to the Policy and Monitoring Division resolved (*unresolved*).** This could be divided into those resolved without enforcement action, and those resolved with enforcement action. This information will provide a broad measure of the Policy and Monitoring Division's effectiveness in dealing with complaints. Over time, trends should enable temporal comparisons.
- **The number of enforcement actions initiated annually by the Policy and Monitoring Division.** This could be broken down into Abatement Notices, Enforcement Orders, Infringement Notices, and other actions. This will indicate which enforcement actions are the most useful in resolving complaints, and will provide a broad measure of the frequency enforcement action is required to resolve complaints. Over time, trends should become apparent that enable temporal comparisons and comparisons with other local authorities.
- **The number of enforcement actions initiated annually by the Compliance Division.** These could include Animal Infringement Notices, Excessive Noise Directions, Notices to Rectify (*building transgressions*) and others. This will indicate which enforcement actions are the most useful in resolving complaints and will provide a broad measure of frequency of required enforcement actions. Trends over time will enable temporal comparisons and comparisons with other local authorities.

## 7.2 Monitoring indicators

From the issues and information requirements examined in the previous section, a number of indicators have been identified. These are outlined in the following tables. The division within Council responsible for collecting and storing the required data is also identified, along with reporting frequencies.

## Complaints monitoring

Monitoring indicators	Division	Frequency
Total number of all complaints received by Council	Compliance	Annually
Total number of complaints received by Policy and Monitoring Division	Policy/Monitoring	Annually
Different types of complaints received by Council a District Plan issues b Resource consent conditions c Building and engineering d Parking e Dogs f Stock g Health h Excessive noise i Hazardous substances j Signs	Compliance and Policy/Monitoring	Annually
Number (and %) of total complaints to Council resolved (unresolved)	Compliance	Annually
Number (and %) of complaints to Policy and Monitoring Division resolved (unresolved)	Policy/Monitoring	Annually
Number of enforcement actions initiated by Policy and Monitoring Division a Abatement Notices b Enforcement Orders c Infringement Notices d Prosecutions	Policy/Monitoring	Annually
Number of enforcement actions initiated by Compliance Division a Animal Infringement Notices b Excessive Noise Directions c Notices to Rectify d Others	Compliance	Annually

### 7.3 Data Collection and Management

This section outlines the procedures used for monitoring complaints. It is also concerned with the storage and retrieval of data obtained from complaints monitoring. The procedures are outlined in a flow diagram setting out the various steps in the process from receipt of a complaint to the resolution of the issue, with or without enforcement action.

Accompanying the flow diagram is a text section (*see below*) providing further detail on some of the actions in the flow chart. This section should be read in conjunction with the Resource Management Enforcement Manual and the Council's Infringement Policy.

An example copy of the Complaints Monitoring File Note Sheet is included for reference purposes. These forms should be attached to the appropriate property file, and information from them inputted to the Complaints Register, which contains details of all complaints received, and enforcement actions initiated, by the Policy and Monitoring Division.

This information will be used to compile the annual Resource Consents and Complaints Monitoring Report, and for District Plan and state of the environment monitoring.

#### Complaints Monitoring Procedures (*Refer to Flow Chart*)

It is important to remember, when dealing with complaints, to keep the details of the complainant confidential. Do not write their name, address, or phone number on any file notes. Either place a copy of the HEAT request on the file or put in a separate piece of paper containing the complainant's details. If the person subject to complaint wants to see the file you need to be able to take out confidential information easily.

Keeping accurate and up to date file notes is also important, particularly if the file is to be handed onto another party, such as legal counsel. Photographic evidence is also important. Photographs should be labeled and dated. A brief description and the photographer's name should be included. Keep in mind that the contents of the file may be required as evidence in a court of law in the future.

### **Action 1**

Complaints are received by the Policy and Monitoring Division in various ways. These include letters, phone calls, and through the HEAT system operated by the Call Centre. When a complaint comes in, it is important to get all of the facts. If there is some doubt about the information supplied it is always best to go back to the complainant and get as much information as possible. This also shows the complainant that Council is dealing with their problem. The complainant should be contacted within five days of the complaint being received to let them know that their complaint is being dealt with. Information obtained should be entered on the Complaints Register and a file note attached to the property file.

### **Action 2**

Check to see if the problem complies with the District Plan, and/or the bylaws if applicable. Existing use rights under Section 10 of the RMA may also need to be considered here. Visit the site if necessary. The important thing is to establish whether or not the complaint does have merit. If it is a bylaw problem, the complaint should be handed over to the Compliance Manager and the complainant should be informed of this. This action should also be entered into the Complaints Register and file notes.

### **Action 3**

If the problem complies with the District Plan and the bylaws the complainant should be advised of this. It is important that an explanation is given as to why no action can be taken. The complaint should then be signed off on the Complaints Register, and on the HEAT system if necessary.

### **Action 4**

If the issue subject to complaint does not comply with one or more of the rules in the District Plan an initial letter should be sent informing the party of their non-compliance, and requesting them to comply within a specified period. The complaint should be diarised on the computer system. A meeting on site, with the relevant parties present, may be advantageous at this stage. This could clarify issues, and may lead to a voluntary agreement between the parties to find a solution.

### **Action 5**

At the end of the specified period, a site inspection will need to be carried out to see whether or not the party has complied. If they have not complied, another firmer letter needs to be sent out stating that they have twenty working days to comply or else enforcement action may have to be initiated. If the party gets in contact and has a legitimate reason for not meeting the deadline, an extension to the timeframe may be given.

### **Action**

At the end of the twenty working days, another site inspection is required to determine compliance. If compliance has not been achieved, a final letter is sent informing the offender that a specific enforcement action will be initiated on a specified date.

Taking enforcement action is a serious step to make, and it is important that this action is discussed thoroughly with the Senior Environmental Planner (*Monitoring*). Determining precisely what sort of enforcement action is to be carried out is another decision that needs to be made in consultation with the Senior Environmental Planner (*Monitoring*). The Enforcement Manual and the Infringement Policy can provide guidance in deciding what action is to be taken.

Enforcement action should be seen as a last resort after all other avenues have been explored. There are instances, however, when people will not abide by the rules and enforcement action is the only effective method to get them to comply.

### **Action 7**

At the specified time, the enforcement action is initiated. An Abatement Notice is issued or an Enforcement Order applied for. Possibly for some transgressions an Infringement Notice is more appropriate (*refer to Enforcement Manual and Infringement Policy*).

When the Monitoring Officer is drawing up an Abatement Notice or Enforcement Order care needs to be taken when describing the offence, the remedy that is sought by Council, and the timeframes required to be met. Once the Monitoring Officer has drawn up the Notice or Order it must be sent to Council's legal advisors who check it for legal correctness. Once it has been approved by legal counsel the Abatement Notice can be served or Enforcement Order applied for.

The Abatement Notice can be served by registered post or personally in the presence of two warranted officers. It is preferable to serve a Notice in person whenever possible, either by Council staff or by a document delivery service. If there is any possibility of trouble when serving the Notice it is advisable to have a community constable accompany the Monitoring Officer. Two warranted officers (*or one with a community constable*) should be present at all personal meetings with the offender once the enforcement action has been initiated.

Before deciding whether or not to issue an Infringement Notice the Monitoring Officer needs to consider the desired end result as once an Infringement Notice is served an Abatement Notice or an Enforcement Order cannot be used. However, an Infringement Notice can be a useful method to ensure compliance with an Abatement Notice already issued. To get a better understanding of the options the Enforcement Manual and Infringement Policy should be consulted. Infringement Notices can be served by registered or unregistered post.

### **Action 8**

If an offender does not comply with an Abatement Notice or an Enforcement Order, or refuses to pay an Infringement Notice, a decision to prosecute must be made. Once an issue reaches the prosecution stage, the Manager of Environmental Services should be informed, and Council's legal advisers need to be involved in all subsequent actions.



## 7.4 Reporting and Review Procedures

At present a monthly report is produced for the Policy and Monitoring Division Manager who forwards the information to the monthly meeting of the Environmental Services Committee. This report contains information on the number of complaints received the previous month by the Policy and Monitoring Division, the number resolved, and the number outstanding. It also includes the number of ongoing complaints from the previous month. Enforcement action is also reported. The number of Abatement Notices, Enforcement Orders, and Infringement Notices initiated that month, together with those already in place are included. The monthly report should be placed in the appropriate folder in the monitoring office.

It is envisaged that a combined Resource Consents and Complaints Monitoring Report will be produced annually. This report will present the information collected over the previous twelve months in regard to consents and complaints monitoring in a concise and meaningful manner. Over time, trends should become apparent that enable spatial and temporal comparisons to be made. The first annual report should be produced in October 2002, reporting on the 2001/2002 financial year.

This information will be aimed primarily at an internal Council audience. It should indicate to Council how the public perceives Council's performance in regard to a range of issues. It should also indicate issues that may require further attention by Council staff. Improvements to District Plan provisions or to Council bylaws may be involved. Trends over time should provide a broad measure of Council performance in a number of areas.

In addition, some of the information gathered and presented in the Resource Consents and Complaints Monitoring Report will be collated over a longer time period and will be inputted to both District Plan and state of the environment monitoring and reporting. Such information will assist in the evaluation of planning provisions in the District Plan and will enable improvements to be made over time. State of the environment monitoring and reporting will likewise benefit from information obtained from resource consents and complaints monitoring.

Information obtained from complaints monitoring should be discussed at the quarterly meeting of monitoring, policy, and consents processing staff. Staff from the Compliance Division may also need to be involved when discussing complaints monitoring. These meetings should begin in the 2001/2002 financial year.

It is also envisaged that the complaints monitoring procedures themselves will be subject to ongoing review and revision where necessary. This will be a continuous process as new information comes to hand and deficiencies in the programme are identified.

## 8 District Plan Monitoring

The third area of monitoring territorial authorities is obliged to undertake concerns the evaluation of planning documents. We can include here the strategic plan, the annual plan and the District Plan. Strategic planning and the annual plan/report process are required under the Local Government Act. Monitoring is part of these requirements. In regard to the resource management legislation it is the District Plan that we are specifically concerned with. Section 35 of the RMA requires local authorities to monitor:

The **suitability** and **effectiveness** of any policy statement or plan for its region or District.

Section 31 of the RMA requires territorial authorities to **review** objectives, policies and methods contained in the District Plan, and Section 75 requires that the procedures to be used to monitor the effectiveness of the plan be set out in the plan itself.

The Resource Management Amendment Bill 1999, as reported back to Parliament in 2001, introduces a requirement for local authorities to prepare a monitoring report every five years that evaluates the efficiency and effectiveness of the provisions in planning documents.

In accord with the requirements of Section 31 of the RMA a District Plan must identify:

- **significant resource management issues** in the District
- **objectives and policies** for the integrated management of these issues
- **methods** (*i.e. rules and standards, economic incentives, education and advocacy*) to implement the policies so as to achieve the objectives
- expected outcomes or **anticipated environmental results** from implementing the objectives and policies using the chosen methods.

Monitoring is intended to determine whether the District Plan is achieving the desired outcomes and anticipated environmental results identified in the plan, and whether the methods employed in the plan are the most appropriate to achieve these. In addition, monitoring is intended to determine whether the policies and methods are actually being implemented effectively. If the results of the monitoring programme suggest that the anticipated environmental results are not being achieved, this would necessitate a closer evaluation of the effectiveness and suitability of the policies and methods contained in the District Plan. This may in turn result in altering the plan's policies or methods, or the way they are being implemented, to better achieve the objectives and desired environmental results.

As required under Section 75 of the RMA, most District Plans contain a chapter or a statement on how the Council will address its plan monitoring responsibilities. For example, the Proposed Whangarei District Plan includes in its introductory chapter a section outlining how District Plan monitoring will take place. At the conclusion of each chapter in Volume 1 of the plan (*dealing with significant resource management issues in the District*) a number of anticipated environmental results are outlined. These set out the outcomes sought from implementing the objectives, policies and methods contained in the plan, and therefore provide a useful basis for monitoring their effectiveness and suitability. For example, the following anticipated environmental results (AER) are included in the District Plan in regard to heritage buildings, sites and objects:

- i The recognition and identification of heritage buildings, sites and objects of significance to the District
- ii The protection of heritage buildings, sites and objects to a level appropriate to their significance to the District
- iii Nearby land use and development that is cognisant of, and sympathetic to, recognised heritage buildings, sites and objects
- iv The recognition, identification and protection of archaeological sites and heritage sites of significance to Maori.

The means of monitoring whether the plan achieves the expected outcomes as outlined above, and whether the objectives, policies and methods in the District Plan are the most suitable and effective in doing so, are set out in the following sections of the Strategy dealing with issues and information needs, monitoring indicators, data collection and management, and reporting and review procedures. This may involve identifying 'key' AERs and/or 'key' monitoring indicators. The approach adopted in this Strategy is to include a comprehensive range of indicators associated with all AERs. Initially 'key' indicators will be reported upon, depending on resources and data availability. Over time, the range of indicators may be altered and/or widened to provide a better assessment of the AERs.

In this way, each issue of significance identified in the plan can be monitored by using indicators related to the AERs identified and set out in the District Plan. The information gained can thus be used to evaluate the policies and methods in the plan and to amend them if necessary.

In a wider sense, Section 35 requires that territorial authorities monitor the effectiveness of the District Plan in achieving its purpose as stated in Section 72 of the RMA. Here it states that the purpose of the District Plan is to assist territorial authorities in carrying out their functions to achieve the purpose of the RMA. In effect, this means that monitoring should reveal whether the District Plan is achieving the purpose and principles of the RMA as set down in Part II of the Act (*Sections 5, 6, 7, and 8*). Monitoring should reveal whether the District Plan is promoting the sustainable management of natural and physical resources as defined in Section 5. It should also reveal whether it is recognising and providing for the matters of national importance outlined in section 6; whether it is having particular regard to the matters set down in Section 7; and whether it is taking into account the principles of the Treaty of Waitangi as required by Section 8.

In relation to assessing whether the issues and objectives identified in the District Plan are, in fact, achieving the purpose and principles of the RMA, a much broader approach to monitoring is required, one that ties in with state of the environment monitoring and reporting. State of the environment monitoring should, over time, provide information on environmental change and development pressures that enables the identification of new issues of significance that need to be addressed through the District Plan. It may also reveal that issues already identified in the plan require re-evaluation, either to strengthen planning provisions relating to them or to relax provisions. This is an on-going process that will continue in response to changing environmental conditions and development pressures. In this way, the planning procedures contained in the District Plan should alter over time to better enable the planning process to address the purpose and principles of the RMA.

The linkage between state of the environment monitoring and District Plan evaluation is an important one, and a difficult one to establish. Many territorial authorities are presently grappling with this problem and ongoing experience should improve this process in the future.

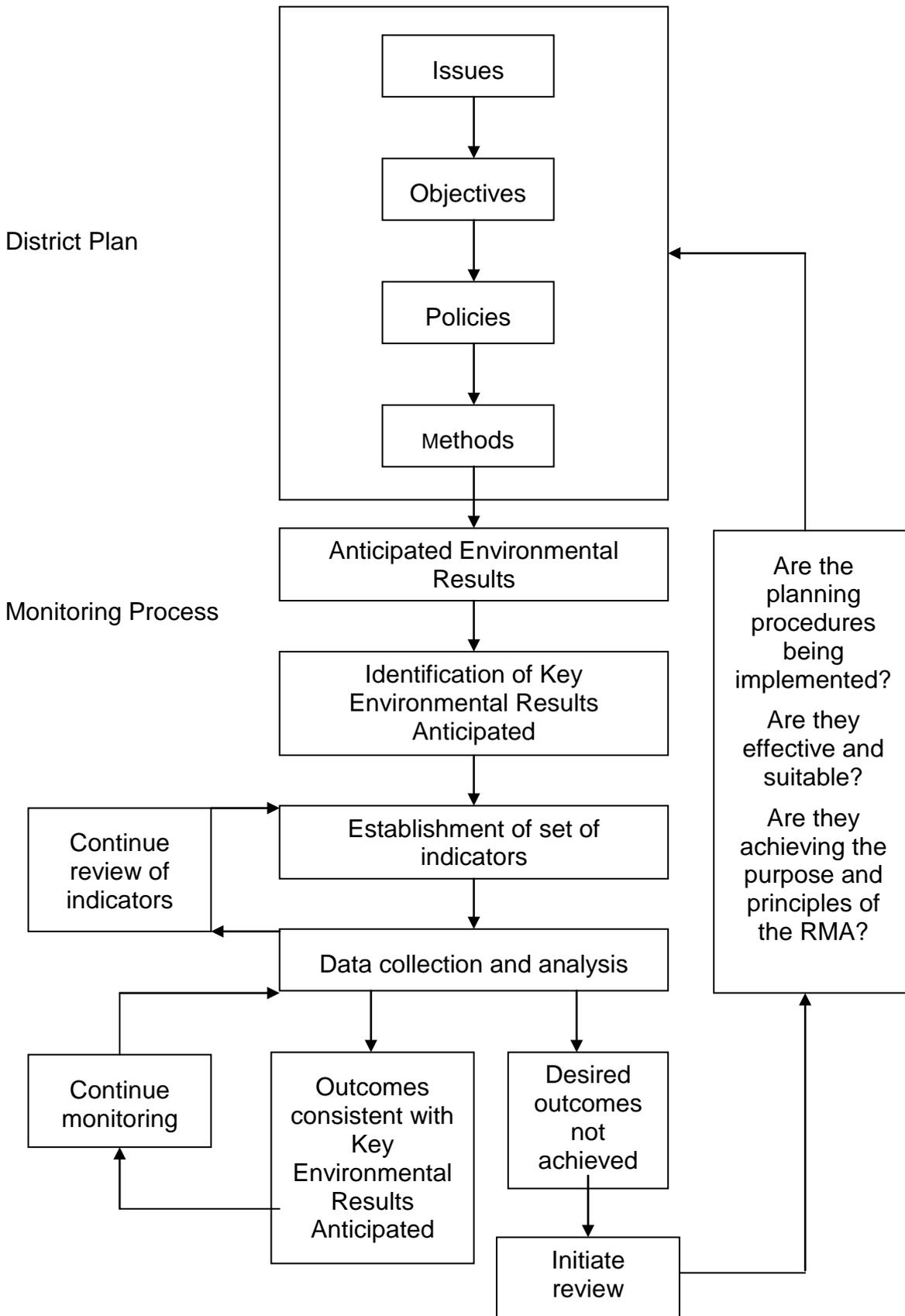
Finally, evaluating whether the planning procedures contained in the plan are being implemented effectively will require monitoring of a different nature. This could be in the form of observation by planning staff, including consents monitoring staff, and/or information provided by public complaints data. Policies and methods in District Plans are often non-regulatory. That is, they rely upon information dissemination, advocacy and education to achieve their objectives. Monitoring to determine whether these provisions are actually being implemented is not straight forward. However, some form of monitoring, both internal (*Council*) and external (*public*) is required to ensure such procedures are being put in place. Policies and methods that are not being implemented, or are being implemented partially or inadequately, cannot be expected to achieve their objectives or anticipated environmental results. Nor can they be expected to contribute to public confidence in Council performance if there is a perception in the community that the policies and methods in the plan are not being implemented.

Thus, the monitoring duties of territorial authorities in regard to the District Plan comprise three aspects:

- 1 Evaluating whether the planning procedures contained in the plan are actually being implemented effectively (*this ties in with resource consent monitoring*)
- 2 Evaluating whether the policies and methods in the plan are effective and the most suitable to address the issues, objectives and anticipated environmental outcomes contained in the plan
- 3 Evaluating whether the issues and objectives identified in the plan are in fact achieving the purpose and principles of the RMA (*this ties in with state of the environment monitoring*)

The following figure provides a diagrammatic representation of the District Plan monitoring process. One can see from the diagram that the monitoring procedures follow on from the District Planning process by linking into the anticipated environmental results contained in the plan. This may require the identification of key environmental results related to a set of core indicators. These core indicators can be used to evaluate the planning provisions in the plan and will initiate a review and possible amendments to the procedures if necessary.

## Monitoring and the District Plan process



## 8.1 Issues and Information Needs

This section identifies the issues concerning District Plan monitoring for which information is to be collected, stored and reported upon. Potential indicators are also identified. The issues are taken from the District Plan and are listed below:

- Subdivision and Development
- Financial Contributions
- Road Transport
- Network Utility Services
- Whangarei Airport
- Marsden Point Port
- Amenity Values
- Heritage Buildings, Sites and Objects
- Heritage Trees
- The Coast
- Riparian and Coastal Margins
- Water Bodies
- Open Space
- Landscape
- Indigenous Vegetation and Habitat
- Minerals
- Natural Hazards
- Contaminated Sites
- Hazardous Substances
- Tangata Whenua
- Local Authority Cross Boundary Issues.

For each issue outlined above, a number of Anticipated Environmental Results (AER) has been formulated based upon the objectives, policies and methods in the District Plan. Using these AERs a range of information needs along with potential indicators are identified.

## 8.2 Monitoring Indicators

Based on the information needs and potential indicators identified, a number of monitoring indicators have been selected. These are outlined in tables relating to each issue examined.

### Subdivision and Development

#### Anticipated Environmental Results as Outlined in the District Plan

- i A pattern of land use and development complementary to the character of the locality, whilst at the same time avoiding conflicts between incompatible land use activities
- ii A pattern of consolidated land use and development that allows for the efficient use and development of natural and physical resources, avoids sporadic subdivision and ribbon development, particularly along the coast, and ensures a density of development appropriate to the location
- iii The provision and maintenance of capacity, efficiency and safety of services and infrastructure including the roading hierarchy
- iv The avoidance of subdivision and development in areas of high risk from natural hazards
- v The protection of the District's versatile soils, water quality, natural features, landscapes, open spaces, significant ecological areas, biodiversity, public access to coast, lakes and rivers, heritage, cultural and amenity values from inappropriate subdivision and development.

### Information Required for Monitoring each AER

- i A pattern of land use and development complementary to the character of the locality, whilst avoiding conflicts between incompatible land use activities. This could be monitored by:
- **Existing land use and development pattern.** The existing land use and development pattern could be mapped and analysed with respect to the character of the locality and the spatial arrangement of incompatible land uses
  - **Broad development trends for the District.** The broad development trends for the District could be indicated by the number of land use, subdivision and building consents issued over time, together with the spatial distribution of each type of consent issued
  - **Consents and consent conditions.** Monitoring of consents and consent conditions could provide information on development in relation to character of locality together with compatibility of land use activities
  - **Number, cause and frequency of complaints.** Information on conflicts between incompatible land uses could be obtained from the complaints register. The number of complaints relating to incompatible land uses could be compared over time to distinguish trends
  - **Qualitative assessment.** Information on the character of the locality, and changes to the character over time, could be obtained using field surveys to provide qualitative assessments
  - **Public perceptions.** Further information on the above issues could be obtained through the use of public opinion polls, customer feedback and consultation.
- ii A pattern of consolidated land use and development that allows for the efficient use and development of natural and physical resources, avoids sporadic subdivision and ribbon development, particularly along the coast, and ensures a density of development appropriate to the location. *This could be monitored by:*
- **Density, consolidation, sporadic subdivision and ribbon development.** Information on development density, consolidation, sporadic subdivision and ribbon development could be obtained by analysis of the existing land use and development pattern together with the broad development trends as indicated in (i) and (ii) above. Trends relating to density, consolidation, sporadic subdivision and ribbon development could be established over time
  - **Efficient use and development.** The efficient use and development of natural and physical resources could be indicated by the proximity of residential areas to shopping, to work places and places of recreation; the efficient use of versatile soils; and the density and location of residential, commercial and industrial development
  - **Consents and consent conditions.** Monitoring of consents and consent conditions could provide information on development density, consolidation, sporadic subdivision and ribbon development
  - **Number, cause and frequency of complaints.** Complaints data could provide information on development density, consolidation, sporadic subdivision and ribbon development
  - **Qualitative and quantitative assessment.** Information relating to the above issues could be obtained by using field surveys and Council inspections
  - **Public perceptions.** Further information relating to these issues could be obtained through public opinion polls, customer feedback and consultation
- iii The provision and maintenance of the capacity, efficiency and safety of the services and infrastructure including the roading hierarchy. This could be monitored by:
- **Infrastructure.** Information on the capacity, efficiency and safety of services and infrastructure could be obtained by comparing the existing land use and development pattern together with the broad development trends as indicated in (i) and (ii) above with the existing, and future, provision of services and infrastructure as indicated in the various asset management plans and/or strategies. Areas of over and under capacity could be identified. Information could also be obtained through analysis of financial contributions associated with subdivision and development
  - **Consents and consent conditions.** Monitoring of consents and consent conditions could provide information on the provision and maintenance of services and infrastructure

- **Number, cause and frequency of complaints.** Complaints data could provide information on the provision and maintenance of infrastructure and services
  - **Quantitative assessments.** Quantitative analysis, field surveys and council inspections could provide information on the provision and maintenance of infrastructure and services
  - **Public perceptions.** Further information on the provision and maintenance of infrastructure and services could be obtained through public opinion polls, customer feedback and consultation.
- iv Avoidance of subdivision and development in areas of high risk from natural hazards. This could be monitored by:
- **Location of natural hazards.** Information about the location of subdivision and development in relation to natural hazards could be obtained by comparing the existing land use and development pattern, together with the broad development trends as indicated in (i) and (ii) above with the location of known natural hazards. These would include areas of erosion, slippage, subsidence, flooding, together with coastal erosion and sea level rise. Trends over time could be established
  - **Frequency of natural hazards.** Information on the frequency and seriousness of natural hazards adversely affecting development could be gathered and stored, and used to indicate the extent of existing problems and trends regarding frequency and seriousness of occurrence
  - **Consents and consent conditions.** Monitoring of consents and consent conditions could provide information on subdivision and development in areas of high risk from natural hazards
  - **Number, cause and frequency of complaints.** Complaints data could provide information on subdivision and development in areas of high risk from natural hazards
  - **Quantitative assessment.** Quantitative analysis, field surveys and Council inspections could provide information on subdivision and development in areas of high risk from natural hazards
  - **Public perceptions.** Further information on subdivision and development in areas of high risk could be obtained through customer feedback and consultation.
- v Protection of the District's versatile soils, water quality, natural features, landscapes, open spaces, significant ecological areas, biodiversity, public access to coast, lakes and rivers, heritage, cultural and amenity values from inappropriate subdivision and development. This could be monitored by:
- **Protection of versatile soils.** Information on the protection of versatile soils could be obtained by comparing the existing land use and development pattern, together with the broad development trends as indicated in (i) and (ii) above with the spatial distribution of known versatile soils. Trends over time could be established
  - **Water quality.** Information on water quality could be obtained from the Northland Regional Council. Water quality could be compared to the pattern and trends relating to subdivision and development
  - **Consents and consent conditions.** Monitoring of consents and consent conditions could provide information on the protection of versatile soils and water quality from inappropriate subdivision and development
  - **Number, cause and frequency of complaints.** Complaints data could provide information on the protection of versatile soils and water quality from inappropriate subdivision and development
  - **Quantitative and qualitative assessment.** Field surveys could provide information on the protection of versatile soils and water quality from inappropriate subdivision and development
  - **Consultation with tangata whenua.** Consultation with tangata whenua could provide information on protection of historic and cultural heritage
  - **Other issues.** The effects of subdivision and development on natural features, landscapes, open spaces, ecological areas, biodiversity, public access to coasts, lakes and rivers, heritage, cultural and amenity values are dealt with as specific issues in their own right (*see sections of the Strategy dealing with these issues*).

<b>Monitoring indicators</b>
Spatial land use and development pattern ( <i>mapped</i> )
Development trends for District ( <i>numbers and spatial distribution of resource and building consents issued</i> )
Incompatible land use activities ( <i>frequency of complaints and spatial distribution</i> )
Density, consolidation, sporadic subdivision and ribbon development ( <i>spatial arrangement and trends</i> )
Efficiency of use and development of natural and physical resources ( <i>relationship of residential areas to commercial, industrial and recreational areas; encroachment of subdivision and development onto known versatile soils</i> )
Existing and future provision of infrastructure; spatial arrangements, cost implications
Location of subdivision and development in relation to known natural hazards ( <i>number of incidences, spatial arrangement, trends</i> )
Character of localities in relation to subdivision and development as revealed by field surveys
Number, cause and frequency of complaints relating to subdivision and development
Qualitative and quantitative assessment of issues relating to subdivision and development
Public opinion, customer feedback and consultation on issues relating to subdivision and development in the District

## Financial Contributions

### Anticipated Environmental Results as Outlined in the District Plan

- i The efficient and timely provision and/or upgrading of infrastructure and services so as to enable the orderly and sustainable development of the District. This includes the provision of roading, footpaths, street lighting, water supply, wastewater and stormwater disposal, solid waste disposal, reserves and community facilities.
- ii The costs of providing and/or upgrading infrastructure and services to enable development are contributed to by those initiating such development.
- iii The costs of ameliorating adverse environmental effects resulting from development are borne by those initiating such development.

### Information Required for Monitoring each AER

- i The efficient and timely provision and/or upgrading of infrastructure and services so as to enable the orderly and sustainable development of the District. This includes the provision of roading, footpaths, street lighting, water supply, wastewater and stormwater disposal, solid waste disposal, reserves and community facilities. This could be monitored by:
  - **The strategic plan, annual plan/report and asset management plans.** The strategic plan, the annual plan/report process, together with the various asset management plans and strategies could provide information on the efficient and timely provision and/or upgrading of infrastructure and services
  - **The number and distribution of resource and building consents.** The number and distribution of resource and building consents in relation to existing infrastructure and services could provide information on the efficient and timely provision and/or upgrading of infrastructure and services to enable development
  - **Consents and consent conditions.** Monitoring of consents and consent conditions could provide information on the efficient and timely provision and/or upgrading of infrastructure and services to enable development
  - **Number, cause and frequency of complaints.** Complaints data could provide information on the provision of infrastructure and services

- **Qualitative and quantitative assessment.** Field surveys and Council inspections could provide information on the provision of infrastructure and services
  - **Public perceptions.** Further information concerning the provision of infrastructure and services could be obtained through the use of public opinion polls, customer feedback and consultation
- ii The costs of providing and/or upgrading infrastructure and services to enable development are contributed to by those initiating such development. This could be monitored by:
- **The level of financial contributions.** The level of financial contributions levied on developers, including contributions for reserves and community facilities, roading, water supply, wastewater disposal, stormwater disposal and solid waste disposal, could provide information on the contribution developers are paying towards the cost of infrastructure and services
  - **The true cost of infrastructure and services.** The level of financial contributions levied on developers in comparison to the actual cost of infrastructure and services could provide information on the contribution developers are paying towards the cost of infrastructure and services
  - **Consents and consent conditions.** Monitoring of consents and consent conditions could provide information on the contributions developers are paying towards the cost of infrastructure and services
  - **Number, cause and frequency of complaints.** Complaints data could provide information on the contributions developers are paying towards the cost of infrastructure and services
  - **Qualitative and quantitative assessment.** Surveys and Council inspections could provide information on the contributions developers are paying towards the cost of infrastructure and services
  - **Public perceptions.** Further information regarding the contributions developers are paying towards the cost of infrastructure and services could be obtained through the use of public opinion polls, customer feedback and consultation.
- iii The costs of ameliorating adverse environmental effects resulting from development are borne by those initiating such development. This could be monitored by:
- **The level of financial contributions.** The level of financial contributions levied on developers for ameliorating adverse environmental effects could provide information on the contribution developers are paying towards avoiding, remedying or mitigating environmental effects
  - **The true cost of environmental effects.** The level of financial contributions levied on developers in comparison to the actual cost of ameliorating adverse environmental effects could provide information on the contribution developers are paying towards avoiding, remedying or mitigating environmental effects
  - **Consents and consent conditions.** Monitoring of consents and consent conditions could provide information on the contributions developers are paying towards the cost of ameliorating adverse environmental effects
  - **Number, cause and frequency of complaints.** Complaints data could provide information on the contributions developers are paying towards the cost of ameliorating adverse environmental effects
  - **Qualitative and quantitative assessment.** Surveys and Council inspections could provide information on the contributions developers are paying towards the cost of ameliorating adverse environmental effects
  - **Public perceptions.** Further information regarding the contributions developers are paying towards the cost of ameliorating adverse environmental effects could be obtained through the use of public opinion polls, customer feedback and consultation.

<b>Monitoring indicators</b>
Existing and future provision of infrastructure <i>(from strategic plan, annual plan/report and asset management plans)</i>
Number and distribution of resource and building consents in relation to infrastructure and services

Monitoring indicators
Level of financial contributions from developers to provide for and/or upgrade infrastructure and services, including: <ul style="list-style-type: none"> <li>a reserves and community facilities</li> <li>b roading</li> <li>c water supply</li> <li>d wastewater disposal</li> <li>e stormwater disposal</li> <li>f solid waste disposal</li> </ul>
True cost of infrastructure and services
Level of financial contributions from developers to ameliorate adverse environmental effects
True cost of ameliorating adverse environmental effects
Number, cause and frequency of complaints relating to financial contributions
Qualitative and quantitative assessment of issues relating to financial contributions
Public opinion, customer feedback and consultation on issues relating to financial contributions

## Road Transport

### Anticipated Environmental Results as Outlined in the District Plan

- i Efficient and orderly provision and maintenance of a safe roading network to serve the District's communities, both urban and rural
- ii Protection of natural, cultural and historic heritage from adverse effects of road transport
- iii Amenity values in the different Environments are not adversely affected by the roading network
- iv The roading network is protected from adverse effects of adjacent land use and development
- v The roading network makes provisions for pedestrian and cyclist safety, car parking and street lighting.

### Information Required for Monitoring each AER

- i The efficient and orderly provision and maintenance of a safe roading network to serve the District's communities, both urban and rural. This could be monitored by:
  - **Existing roading network.** The existing roading network, based upon an accepted roading hierarchy, could be mapped and compared to development patterns and trends
  - **Proposed extensions.** Proposed extensions to the existing roading network could be mapped and compared to development patterns and trends
  - **Sealed/unsealed roads.** Comparison of sealed to unsealed roads could provide information on the provision of efficient and safe roading network.
  - **Maintenance of roading network.** The length of road sealed annually, the resurfacing of sealed roads, the improvements to unsealed roads, along with bridge and culvert construction and reconstruction could provide information on the maintenance of the existing road network
  - **The number, cause and frequency of road accidents.** Data on road accidents could provide information on the safety of the roading network
  - **The number, cause and frequency of complaints.** Complaints data could provide information on the adequacy of the roading network in regard to provision, maintenance and safety issues
  - **Quantitative assessment.** Field surveys and Council inspections could provide information to assess the adequacy of the road network, along with traffic and safety issues. Of relevance here could be assessment through the RAMMs, BRIMMS and Road Roughness Surveys and the results of traffic flows and traffic safety investigations

- **Public perceptions.** Further information regarding the adequacy of the roading network could be obtained through the use of public opinion polls, customer feedback and consultation.
- ii The protection of natural, cultural and historic heritage from adverse effects of road transport. This could be monitored by:
- **Location of roading network.** The location of the roading network in relation to sensitive natural areas, including areas of outstanding and notable landscape, outstanding natural features, significant ecological areas, natural coastal areas, ridgelines and skylines, together with significant cultural and historic areas, including heritage buildings, sites and objects, heritage trees and sites of significance to Maori
  - **Consents and consent conditions.** Monitoring of consents and consent conditions could provide information on the effects of road construction and maintenance on land stability, runoff, water quality, indigenous vegetation and habitat, landscape values, etc., together with effects on cultural and historic values
  - **Number, cause and frequency of complaints.** Complaints data could provide information on effects of road transport on the natural environment and on cultural and historic values
  - **Quantitative and qualitative assessment.** Field surveys and Council inspections could provide information on the effects of the road network on the natural environment and on cultural and historic values
  - **Consultation with tangata whenua.** Consultation with tangata whenua could provide information on the effects of the road network on historic and cultural heritage
  - **Public perceptions.** Further information on the effects of the road network on the natural environment and on cultural and historic values could be obtained through the use of public opinion polls, customer feedback and consultation.
- iii Amenity values in the different Environments are not adversely affected by the roading network. This could be monitored by:
- **Location of roading network.** The location of the roading network in relation to sensitive amenity areas, including open space, residential areas, rural residential development, schools and hospitals, coastlines, etc. could provide information on the effects of the roading network on amenity values
  - **Consents and consent conditions.** Monitoring of resource consents and consent conditions could provide information on the effects of the roading network on amenity values, including visual, dust, noise, smell, light spill, glare, traffic, privacy, etc
  - **Number, cause and frequency of complaints.** Complaints data could provide information on effects of roading network on amenity values
  - **Qualitative and quantitative assessments.** Field surveys and Council inspections could provide information on the effects of the roading network on amenity values
  - **Public perceptions.** Further information on the effects of the roading network on amenity values could be obtained through the use of public opinion polls, customer feedback and consultation.
- iv The roading network is protected from adverse effects of adjacent land use and development. This could be monitored by:
- **Feedback from roading suppliers.** Feedback from Transit New Zealand and Council's Roothing Division and contractors regarding effects of adjacent land uses and development on the roading network. This feedback may be qualitative or may be able to be quantified
  - **Consents and consent conditions.** Monitoring of consents and consent conditions could provide information on the effects of adjacent land uses and development on the roading network
  - **Number, cause and frequency of complaints.** Complaints data could provide information on the effects of adjacent land uses and development on the roading network
  - **Qualitative and quantitative assessments.** Field surveys and Council inspections could provide information on the effects of adjacent land uses and development on the roading network

- **Public perceptions.** Further information on the effects of adjacent land uses and development on the roading network could be obtained from customer feedback and consultation.
- v The roading network makes provisions for pedestrian and cyclist safety, car parking and street lighting. This could be monitored by:
- **Provision and maintenance of footpaths.** The total length of footpaths provided and the annual increment, together with the number of footbridges and annual increment could provide information on the provisions for pedestrian and cyclist safety
  - **Provision and maintenance of cycleways.** The total length of cycleways provided together with the annual increment could provide information on the provisions for cyclist safety
  - **Provision and maintenance of car parking.** The total number of car parks provided together with the annual increment could provide information on the provisions for car parking
  - **Provision of street lighting.** The total number of street lights provided together with the annual increment could provide information on the provisions for street lighting
  - **Number, cause and frequency of complaints.** Complaints data could provide information regarding the adequacy of pedestrian and cyclist safety, car parking and street lighting
  - **Qualitative and quantitative assessment.** Field surveys and Council inspections could provide information on pedestrian and cyclist safety, car parking and street lighting
  - **Public perceptions.** Further information regarding pedestrian and cyclist safety, car parking and street lighting could be provided through the use of public opinion surveys, customer feedback and consultation.

Monitoring indicators
Existing roading network showing roading hierarchy and sealed/unsealed roads
Proposed extensions to roading network including proposed sealing of existing roads
Location of roading network in relation to sensitive natural areas, sensitive amenity areas, and areas of cultural and historic heritage
Provision of footpaths, cycleways, car parks, and street lighting
Number, cause and frequency of road accidents relating to the roading network
Number, cause and frequency of complaints relating to the roading network
Qualitative and quantitative assessments, including traffic flow studies
Public opinion, customer feedback and consultation on issues relating to the roading network

## Network Utility Services

### Anticipated Environmental Results as Outlined in the District Plan

- i The efficient and orderly provision, and maintenance, of network utility services to serve the District's communities
- ii The protection of natural, cultural and historic heritage from adverse effects of network utility services
- iii Amenity values in the different Environments are not adversely affected by network utility services
- iv People and communities do not suffer adverse effects on their health and safety from network utility services
- v Network utility services are not adversely affected by encroachment from neighbouring activities.

### Information Required for Monitoring each AER

- i The efficient and orderly provision, and maintenance, of network utility services to serve the District's communities. This could be monitored by:

- **Existing network utility services.** The location of existing network utility services, including airports, railways, roads, electricity supply, radio, telecommunications and meteorological services, water, wastewater disposal, stormwater, gas and oil/petroleum pipelines could be mapped
  - **Reticulated services.** Communities (*including the number of households and businesses*) connected (*not connected*) to reticulated water, wastewater and stormwater services could be identified. Trends could be established over time
  - **Communication facilities.** Communities served (*not served*) by cell phone coverage and other communication services. Trends could be established over time
  - **The number, cause and frequency of complaints.** Complaints data could provide information on the adequacy of the network utility services
  - **Quantitative assessment.** Field surveys could provide information on the adequacy of network utility services
  - **Public perceptions.** Further information regarding network utility services could be obtained through the use of public opinion polls, customer feedback and consultation.
- ii Protection of natural, cultural and historic heritage from adverse effects of network utility services. This could be monitored by:
- **Location of network utility services.** The location of network utility services in relation to sensitive natural areas, including areas of notable and outstanding landscape, outstanding natural features, significant ecological areas, natural coastal areas, ridgelines and skylines, together with significant cultural and historic areas, including heritage buildings, sites and objects, heritage trees and sites of significance to Maori
  - **Consents and designations.** Monitoring of consents and designations could provide information on the effects of network utility services on natural, cultural and historic heritage
  - **Number, cause and frequency of complaints.** Complaints data could provide information on the effects of network utility services on natural, cultural and historic heritage
  - **Qualitative and quantitative assessment.** Field surveys could provide information on the effects of network utility services on natural, cultural and historic heritage
  - **Consultation with tangata whenua.** Consultation with tangata whenua could provide information on the protection of cultural and historic heritage from adverse effects of network utility services
  - **Public perceptions.** Further information on the effects of network utility services on natural, cultural and historic heritage could be obtained through public opinion polls, customer feedback and consultation
- iii Amenity values in the different Environments are not adversely affected by network utility services. This could be monitored by:
- **Location of network utility services.** The location of network utility services in relation to sensitive amenity areas, including open space, residential areas, rural residential areas, commercial centres, schools and hospitals, and coastal areas could be mapped
  - **Undergrounding of services.** The extent of undergrounding of services in the Living Environments, commercial centres and Open Space Environment could provide information on effects on amenity from network utility services
  - **Consents and designations.** Monitoring of consents and designations could provide information on the effects of network utility services on amenity values
  - **Number, cause and frequency of complaints.** Complaints data could provide information on the effects of network utility services on amenity values
  - **Qualitative and quantitative assessment.** Field surveys could provide information on the effects of network utility services on amenity values
  - **Public perceptions.** Further information on the effects of network utility services on amenity values could be obtained through public opinion polls, customer feedback and consultation.

- iv People and communities do not suffer adverse effects on their health and safety from network utility services. This could be monitored by:
  - Number and frequency of recorded incidents of ill health and unsafe practices attributed to network utility services. Data from OSH, public health agencies, media reports, etc. could provide information on health and safety issues relating to network utility services.
  - Consents and designations. Monitoring of consents and designations could provide information on the effects of network utility services on health and safety.
  - Number, cause and frequency of complaints. Complaints data could provide information on the effects of network utility services on health and safety.
  - Qualitative and quantitative assessment. Field surveys and Council inspections could provide information on the effects of network utility services on health and safety.
  - Public perceptions. Further information on the effects of network utility services on health and safety could be obtained through public opinion polls, customer feedback and consultation.
- v Network utility services are not adversely affected by encroachment from neighbouring activities. This could be monitored by:

**Feedback from network utility operators.** Feedback from network utility operators could provide information regarding the effects of adjacent land uses and development on network utility services. This information could be qualitative or may be able to be quantified.

**Number, types and distribution of resource and building consents.** The number, types and distribution of resource and building consents granted adjacent to network utility services could provide information on encroachment of activities on network utility services.

**Consents and designations.** Monitoring of consents and designations could provide information on the effects of neighbouring activities on network utility services.

**Number, cause and frequency of complaints.** Complaints data could provide information on the effects of neighbouring activities on network utility services.

**Qualitative and quantitative assessment.** Field surveys could provide information on the effects of neighbouring activities on network utility services.

Monitoring indicators
Existing network utility services (mapped)
Communities connected (not connected) to reticulated services
Communities served by communications facilities (i.e. cell phone coverage, etc.)
Location of network utility services in relation to sensitive natural areas, sensitive amenity areas, and areas of significant cultural and historic heritage
Extent of undergrounding of network utility services
Number and frequency of recorded health and safety incidents relating to network utility services
Number, type and distribution of resource and building consents proximate to network utility services
Number, cause and frequency of complaints relating to network utility services
Qualitative and quantitative assessments of issues relating to network utility services
Public opinion, customer feedback and consultation on issues relating to network utility services

## Whangarei Airport

### Anticipated Environmental Results as Outlined in the District Plan

- i The continued efficient and safe operation of the Whangarei Airport, with provisions for controlled growth in the future.

- ii Adverse effects of the Airport on natural, cultural and historic heritage are avoided, remedied or mitigated.
- iii Effects of the Airport (including noise) on surrounding amenity values are controlled to a level deemed acceptable in the District Plan.
- iv The continued operation of the Airport is not hindered by future land use and development surrounding the Airport site.

#### Information Required for Monitoring each AER

- i The continued efficient and safe operation of the Whangarei Airport with provisions for controlled growth in the future. This could be monitored by:
  - **Existing site.** The extent of the Airport site showing existing boundaries could provide information on the efficient, safe and future operation of the Airport. Trends concerning growth could be established over time
  - **Aircraft movements.** The number of aircraft movements could provide information on the present scale of operations together with growth trends
  - **Number, cause and frequency of accidents.** Data on accidents could provide information on the safety of Airport operations
  - **Number, cause and frequency of complaints.** Complaints data could provide information on the efficient, safe and future operation of the Airport
  - **Qualitative and quantitative assessments.** Field surveys and Council inspections could provide information on the efficient, safe and future operation of the Airport
  - **Public perceptions.** Further information regarding the efficient, safe and future operation of the Airport could be obtained through the use of public opinion polls, customer feedback and consultation.
- ii Adverse effects of the Airport on natural, cultural and historic heritage are avoided, remedied or mitigated. This could be monitored by:
  - **Number, cause and frequency of reported incidents.** The number, cause and frequency of reported incidents involving adverse effects of the Airport and its operation on natural, cultural and historic heritage
  - **Consents and designations.** Monitoring of consents and designations could provide information on the effects of the Airport on natural, cultural and historic heritage
  - **Number, cause and frequency of complaints.** Complaints data could provide information on the effects of the Airport on natural, cultural and historic heritage
  - **Qualitative and quantitative assessments.** Field surveys and Council inspections could provide information on the effects of the Airport on natural, cultural and historic heritage.
  - **Consultation with tangata whenua.** Consultation with tangata whenua could provide information on the effects of the airport on historic and cultural heritage
  - **Public perceptions.** Further information on the effects of the Airport on natural, cultural and historic heritage could be obtained through customer feedback and consultation.
- iii Effects of the Airport (*including noise*) on surrounding amenity values are controlled to a level deemed acceptable in the District Plan. This could be monitored by:
  - **Monitoring of noise levels.** Monitoring of noise levels in relation to the Air noise Boundary and Outer Control Boundary to ensure standards in the District Plan are adhered to
  - **Consents and designations.** Monitoring of consents and designations could provide information on the effects of the Airport on amenity values
  - **Number, cause and frequency of complaints.** Complaints data could provide information on the effects of the Airport on amenity values
  - **Qualitative and quantitative assessments.** Field surveys and Council inspections could provide information on the effects of the Airport on amenity values

- **Public perceptions.** Further information relating to the effects of the Airport on amenity values could be obtained through the use of public opinion polls, customer feedback and consultation.
- iv The continued operation of the Airport is not hindered by future land use and development surrounding the Airport site. This could be monitored by:
- **Feedback from Airport Authorities.** Feedback from Airport Authorities could provide information regarding the effects of surrounding land use and development on the operation of the Airport
  - **Number, types and distribution of consents.** The number, types and distribution of resource and building consents granted in the vicinity of the Airport, particularly within the Air noise Boundary and Outer Control Boundary, could provide information on the type and intensity of land use and development surrounding the Airport
  - **Consents and consent conditions.** Monitoring of consents and consent conditions could provide information on the effects of neighbouring activities on the Airport
  - **Number, cause and frequency of complaints.** Complaints data could provide information on the effects of neighbouring activities on the Airport
  - **Qualitative and quantitative assessments.** Field surveys and Council inspections could provide information on the effects of neighbouring activities on the Airport.

Monitoring indicators
Existing Airport site together with locations of Air noise Boundary and Outer Control Boundary
Number of aircraft movements
Number, cause and frequency of accidents
Number, type and frequency of incidents involving adverse effects on natural, cultural and historic heritage
Recorded noise levels in relation to the Air noise Boundary and the Outer Control Boundary
Number, type and distribution of resource and building consents proximate to the Airport
Number, cause and frequency of complaints relating to the Airport
Qualitative and quantitative assessments including those relating to noise
Public opinion, customer feedback and consultation on Airport issues

## Marsden Point Port

### Anticipated Environmental Results as Outlined in the District Plan

- i The continued efficient and safe operation of the Marsden Point Port, with provision for controlled growth in the future
- ii Adverse effects of the Port on natural, cultural and historic heritage are avoided, remedied or mitigated.
- iii Effects of the Port (*including noise*) on surrounding amenity values are controlled to a level deemed acceptable in the District Plan.
- iv The continued operation of the Port is not hindered by future land use and development proximate to the Port.

### Information required for Monitoring each AER

- i The continued efficient and safe operation of the Marsden Point Port, with provision for controlled growth in the future. This could be monitored by:
  - **Existing site.** The extent of the Port site showing existing boundaries could provide information on the efficient, safe and future operation of the Port. Trends concerning growth could be established over time

- **Ship movements.** The number of shipping movements, and total tonnage of materials moved, could provide information on the present scale of operations together with growth trends
  - **Number, cause and frequency of accidents.** Data on accidents could provide information on the safety of Port operations
  - **Number, cause and frequency of complaints.** Complaints data could provide information on the efficient, safe and future operation of the Port
  - **Qualitative and quantitative assessments.** Field surveys and Council inspections could provide information on the efficient, safe and future operation of the Port
  - **Public perceptions.** Further information regarding the efficient, safe and future operation of the Port could be obtained through the use of public opinion polls, customer feedback and consultation.
- ii Adverse effects of the Port on natural, cultural and historic heritage are avoided, remedied or mitigated. This could be monitored by:
- **Number, cause and frequency of reported incidents.** The number, cause and frequency of reported incidents involving adverse effects of the Port and its operation on natural, cultural and historic heritage
  - **Consents and designations.** Monitoring of consents and designations could provide information on the effects of the Port on natural, cultural and historic heritage
  - **Number, cause and frequency of complaints.** Complaints data could provide information on the effects of the Port on natural, cultural and historic heritage
  - **Qualitative and quantitative assessments.** Field surveys and Council inspections could provide information on the effects of the Port on natural, cultural and historic heritage
  - **Consultation with tangata whenua.** Consultation with tangata whenua could provide information on the effects of the Port on historic and cultural heritage
  - **Public perceptions.** Further information on the effects of the Port on natural, cultural and historic heritage could be obtained through customer feedback and consultation.
- iii Effects of the Port (*including noise*) on surrounding amenity values are controlled to a level deemed acceptable in the District Plan. This could be monitored by:
- **Monitoring of noise levels.** Monitoring of noise levels in relation to the standards set out in the District Plan could provide information on the effects of the Port on amenity values.
  - **Consents and designations.** Monitoring of consents and designations could provide information on the effects of the Port on amenity values.
  - **Number, cause and frequency of complaints.** Complaints data could provide information on the effects of the Port on amenity values.
  - **Qualitative and quantitative assessments.** Field surveys and Council inspections could provide information on the effects of the Port on amenity values.
  - **Public perceptions.** Further information relating to the effects of the Port on amenity values could be obtained through the use of public opinion polls, customer feedback and consultation.
- iv The continued operation of the Port is not hindered by future land use and development proximate to the Port. This could be monitored by:
- **Feedback from Port Authorities.** Feedback from Port Authorities could provide information regarding the effects of surrounding land use and development on the operation of the Port.
  - **Number, types and distribution of consents.** The number, types and distribution of resource and building consents granted in the vicinity of the Port could provide information on the type and intensity of land use and development surrounding the Port.
  - **Consents and consent conditions.** Monitoring of consents and consent conditions could provide information on the effects of neighbouring activities on the Port.
  - **Number, cause and frequency of complaints.** Complaints data could provide information on the effects of neighbouring activities on the Port.

- **Qualitative and quantitative assessments.** Field surveys and Council inspections could provide information on the effects of neighbouring activities on the Port.

<b>Monitoring indicators</b>
Existing Port site and boundaries
Number of shipping movements and total tonnage of materials moved
Number, cause and frequency of accidents
Number, type and frequency of incidents involving adverse effects on natural, cultural and historic heritage
Recorded noise levels in relation to the standards set out in the District Plan
Number, type and distribution of resource and building consents proximate to the Port
Number, cause and frequency of complaints relating to the Port
Qualitative and quantitative assessments including those relating to noise
Public opinion, customer feedback and consultation on Port issues

## Amenity Values

### Anticipated Environmental Results as Outlined in the District Plan

- i Land use and development is consistent with the preservation and/or enhancement of amenity values appropriate to each particular Environment: Living, Business, Airport, Port, Countryside, Coastal Countryside, and Open Space
- ii Conflict between incompatible activities in regard to amenity values (particularly on Environment boundaries) is avoided, remedied or mitigated
- iii The amenity values of the Living Environments are maintained and/or enhanced including community coherence and neighbourhood aesthetics
- iv Rural amenity values in the Countryside and Coastal Countryside Environments are maintained and/or enhanced, and the conflicts between rural residential and primary production are minimized
- v The amenity values of the Open Space Environment are maintained and/or enhanced to enable public appreciation and enjoyment of these places, both active and passive
- vi The amenity values of the Town Centre/Town Basin, along with other suburban and rural retail centres, are maintained and/or enhanced so as to ensure an attractive shopping and leisure environment
- vii The following effects of land use and development are appropriate to the relevant Environment, and do not create a nuisance to other land users: noise, odour, dust, smoke, light spill, glare, shading, traffic, privacy, visual, spray drift, radio frequency fields and electromagnetic radiation.

### Information Required for Monitoring each AER

- i Land use and development is consistent with the preservation and/or enhancement of amenity values appropriate to each particular Environment: Living, Business, Airport, Port, Countryside, Coastal Countryside, and Open Space. This could be monitored by:
  - **Spatial distribution of activities.** The number and spatial distribution of resource and building consents issued could reveal whether activities having similar effects on amenity are locating in the appropriate Environment
  - **Consents and consent conditions.** Monitoring of consents, and conditions attached to consents to address amenity values, could reveal the effects of activities on amenity values together with possible methods of mitigation
  - **Number, cause and frequency of complaints.** Complaints data could provide information on the effects of activities on amenity values in the different Environments

- **Qualitative and quantitative assessment.** Field surveys of amenity in the various Environments could be carried out to reveal changes and trends in the character of each locality
- **Public perceptions.** Further information relating to amenity values in the various Environments could be obtained through the use of public opinion polls, customer feedback and consultation
- ii Conflict between incompatible activities in regard to amenity values (*particularly on Environment boundaries*) is avoided, remedied or mitigated. This could be monitored by:
  - **Incompatible activities.** Conflicts over amenity values between incompatible land uses could be indicated by the number and frequency of complaints (*as revealed by the complaints register*) relating to amenity values. Trends could be established over time
  - **Consents and consent conditions.** Monitoring of consents, and conditions attached to consents to address amenity values, could reveal the effects of activities on amenity values together with possible methods of mitigation
  - **Qualitative and quantitative assessment.** Field surveys could provide information on conflicting activities in regard to amenity values
  - **Public perceptions.** Further information regarding the above issues could be obtained through the use of public opinion polls, customer feedback and consultation.
- iii The amenity values of the Living Environments are maintained and/or enhanced including community coherence and neighbourhood aesthetics. This could be monitored by:
  - **Mix of activities.** The spatial distribution of land uses in the Living Environments as revealed by the number and distribution of resource consents issued could indicate the continuity of residential housing, together with the mix of other activities such as commercial, industrial and/or recreational. Trends over time could be established.
  - **Consents and consent conditions.** Monitoring of consents, and conditions attached to consents to address amenity values, could reveal the effects of activities on amenity values in the Living Environments, together with possible methods of mitigation.
  - **Number, cause and frequency of complaints.** Complaints data could reveal information on the number and frequency of complaints over amenity in the Living Environments. Trends could be established over time. Complaints data could also reveal which particular amenity values were most frequently the cause of complaint.
  - **Qualitative assessments.** Field surveys of the Living Environments could provide qualitative assessments of amenity values, together with trends over time.
  - **Public perceptions.** Further information relating to amenity values in Living Environments could be obtained through the use of public opinion polls, customer feedback and consultation.
- iv Rural amenity values in the Countryside and Coastal Countryside Environments are maintained and/or enhanced, and the conflicts between rural residential and primary production are minimised. This could be monitored by:
  - **Location of land uses.** The number and spatial distribution of resource and building consents issued will reveal the location of residential activities in relation to other rural land uses. Trends over time could be established.
  - **Consents and consent conditions.** Monitoring of consents, and conditions attached to consents to address amenity values, could reveal the effects of activities on rural amenity values, together with possible methods of mitigation.
  - **Number, cause and frequency of complaints.** Complaints data could reveal information on the number and frequency of complaints regarding conflicts between rural residential development and primary production. Trends over time could be established.
  - **Qualitative assessments.** Field surveys of the Countryside and Coastal Countryside Environments could provide qualitative assessments of amenity values, together with trends over time.
  - **Public perceptions.** Further information relating to amenity values in Countryside and coastal Countryside Environments could be obtained through the use of public opinion polls, customer feedback and consultation.

- v The amenity values of the Open Space Environment are maintained and/or enhanced to enable public appreciation and enjoyment of these places, both active and passive. This could be monitored by:
  - **Access to Open Space.** Access to Open Space, both active and passive, as revealed by the distribution of Open Space in urban and rural environments, and the quantum available per number of residents
  - **Encroachment on Open Space.** The number and spatial distribution of resource and building consents could reveal whether development is encroaching on to, or near to, Open Space
  - **Number, cause and frequency of complaints.** Complaints data could reveal information on the number and frequency of complaints relating to Open Space amenity values
  - **Qualitative assessments.** Field surveys of Open Space could provide qualitative assessments of amenity values, together with trends over time
  - **Public perceptions.** Further information relating to amenity values of Open Space could be obtained through the use of public opinion polls, customer feedback and consultation.
  
- vi The amenity values of the Town Centre/Town Basin, along with other suburban and rural retail centres, are maintained and/or enhanced so as to ensure an attractive shopping and leisure environment. This could be monitored by:
  - **Mix of activities.** The spatial distribution of land uses in the Town Centre/ Town Basin, together with the suburban and rural retail centres, as revealed by the number and distribution of resource and building consents issued could indicate the continuity of retail activities and the mix of other land uses such as residential, industrial and recreational. Trends over time could be established
  - **Resource consents and consent conditions.** Monitoring of consents, and conditions attached to consents to address amenity values, could reveal the effects of activities in the town/suburban/rural centers and Town Basin, together with possible methods of mitigation
  - **Number, cause and frequency of complaints.** Complaints data could reveal information on the number and frequency of complaints concerning amenity in the retail centers and Town Basin. Trends could be established over time
  - **Qualitative assessments.** Field surveys of the retail centers and Town Basin could provide qualitative assessments of amenity values, together with trends over time.
  - **Public perceptions.** Further information relating to amenity values in the retail centres and Town Basin could be obtained through the use of public opinion polls, customer feedback and consultation.
  
- vii The following effects of land use and development are appropriate to the relevant Environment, and do not create a nuisance to other land users: noise, odour, dust, smoke, light spill, glare, shading, traffic, privacy, visual, spray drift, radio frequency fields and electromagnetic radiation. This could be monitored by:
  - **Consents and consent conditions.** Monitoring of consents and conditions attached to consents to address amenity values could reveal information on the above effects, together with possible methods of mitigation
  - **Number, cause and frequency of complaints.** Complaints data could reveal information on the number and frequency of complaints in relation to each of the above effects. Trends could be established over time
  - **Qualitative and quantitative assessment.** Field surveys and Council inspections could provide information on the above effects and their nuisance to other land users
  - **Public perceptions.** Further information relating to the above effects could be obtained through the use of public opinion polls, customer feedback and consultation.

Monitoring indicators
Spatial distribution of activities in the different Environments as revealed by the number and distribution of resource and building consents
Incompatible activities as revealed by the number and frequency of complaints concerning amenity values

<b>Monitoring indicators</b>
Mix of activities in Living Environments as revealed by number and distribution of resource and building consents
Location of different land uses in Countryside and Coastal Countryside Environments as revealed by number and distribution of resource and building consents
Encroachment on Open Space as revealed by number and distribution of resource and building consents
Mix of activities in Town Centre/Town Basin and suburban and rural shopping centers as revealed by the number and distribution of resource and building consents
Incidence of nuisance as revealed by the number and frequency of complaints relating to animals, noise, odour, dust, smoke, light spill, glare, shading, traffic, privacy, spray drift, radio frequency fields and electromagnetic radiation
Quality of amenity in the different Environments as revealed by field surveys
Public opinion, customer feedback and consultation on amenity values

## Heritage Buildings, Sites and Objects

### Anticipated Environmental Results as Outlined in the District Plan

- i The recognition and identification of heritage buildings, sites and objects of significance to the District
- ii The protection of heritage buildings, sites and objects to a level appropriate to their significance to the District
- iii Nearby land use and development that is cognisant of, and sympathetic to, recognised heritage buildings, sites and objects
- iv The recognition, identification and protection of archaeological sites and heritage sites of significance to Maori.

### Information Required for Monitoring each AER

- i The recognition and identification of heritage buildings, sites and objects of significance to the District. This could be monitored by:
  - **The number and distribution of heritage buildings, sites and objects.** The number of heritage buildings, sites and objects identified, assessed and listed in the District Plan Schedules and on the New Zealand Historic Places Trust Register and shown on the Planning Maps could provide information on the recognition and identification of heritage items. Trends could be established over time
  - **The classification of listed heritage buildings, sites and objects.** The classification of listed heritage buildings, sites and objects into Group I and Group II categories in the District Plan will provide information on the appropriate recognition of heritage values of listed items
  - **Number, cause and frequency of complaints.** Complaints data could provide information on the adequacy of the recognition and identification of heritage buildings, sites and objects
  - **Qualitative assessments.** Field surveys to identify and assess potential heritage items could provide information relevant to the recognition and identification of heritage buildings, sites and objects
  - **Public perceptions.** Further information relating to heritage buildings, sites and objects could be obtained through the use of public opinion polls, customer feedback and consultation.
- ii The protection of heritage buildings, sites and objects to a level appropriate to their significance to the District. This could be monitored by:
  - **The number and classification of heritage buildings, sites and objects.** The number and classification of heritage buildings, sites and objects listed in the District Plan Schedules, together with rules in the District Plan relating to protection, could provide information on the adequacy of protection afforded to heritage items. Trends could be established over time

- **The number and distribution of heritage covenants.** The number and distribution of heritage covenants could provide information on the level of protection afforded to heritage buildings, sites and objects. Trends could be established over time
  - **The number and distribution of heritage orders.** The number and distribution of heritage orders could provide information on the level of protection afforded to heritage buildings, sites and objects. Trends could be established over time
  - **Number, cause and frequency of complaints.** Complaints data could provide information on the adequacy of protection afforded to heritage buildings, sites and objects.
  - **Qualitative and quantitative assessments.** Field surveys to assess heritage items could provide information on the adequacy of protection afforded to heritage buildings, sites and objects.
  - **Public perceptions.** Further information relating to heritage buildings, sites and objects could be obtained through the use of public opinion polls, customer feedback and consultation.
- iii Nearby land use and development that is cognisant of, and sympathetic to, recognised heritage buildings, sites and objects. This could be monitored by:
- **The number and distribution of resource and building consents.** The number and distribution of resource and building consents could provide information on the location and type of development surrounding heritage buildings, sites and objects
  - **Consents and consent conditions.** Monitoring of consents and conditions attached to consents to address heritage values could provide information on the effects of activities on heritage buildings, sites and objects
  - **Number, cause and frequency of complaints.** Complaints data could reveal information on the appropriateness of development surrounding heritage buildings, sites and objects
  - **Qualitative and quantitative assessment.** Field surveys and Council inspections to assess development around heritage buildings, sites and objects could provide information on the appropriateness of nearby land use and development
  - **Public perceptions.** Further information relating to nearby land use and development and its effects on heritage buildings, sites and objects could be obtained through the use of public opinion polls, customer feedback and consultation.
- iv The recognition, identification and protection of archaeological sites and heritage sites of significance to Maori. This could be monitored by:
- **The number of archaeological sites and heritage sites of significance to Maori.** The number of archaeological sites and heritage sites of significance to Maori identified, assessed and listed in the District Plan Schedules could provide information on the adequacy of recognition, identification and protection of these items. Trends could be established over time
  - **The number of archaeological and heritage sites of significance to Maori.** The number of archaeological and heritage sites of significance to Maori listed on the New Zealand Historic Places Trust Register and the New Zealand Archaeological Association Index could provide information on the adequacy of identification and protection afforded to these items. Trends could be established over time
  - **The number and distribution of heritage covenants.** The number and distribution of heritage covenants could provide information on the level of protection afforded to archaeological sites and heritage sites of significance to Maori. Trends could be established over time
  - **The number and distribution of heritage orders.** The number and distribution of heritage orders could provide information on the level of protection afforded to archaeological sites and heritage sites of significance to Maori. Trends could be established over time
  - **Identification of heritage sites of significance to Maori.** The identification of heritage sites of significance to Maori in iwi and hapu management plans could provide information on the adequacy of the recognition, identification and protection of these items
  - **Number, cause and frequency of complaints.** Complaints relating to archaeological sites and heritage sites of significance to Maori could provide information on the adequacy of protection afforded to these items

- **Qualitative and quantitative assessments.** Field surveys to assess archaeological sites and heritage sites of significance to Maori could provide information on the adequacy of protection afforded to these items
- **Consultation with tangata whenua.** Consultation with tangata whenua could provide information relating to archaeological sites and heritage sites of significance to Maori.

<b>Monitoring indicators</b>
Number, distribution and classification of heritage buildings, sites and objects; a In the District Plan b On the NZHPT Register
Number and distribution of archeological sites: a In the District Plan b On the NZHPT Register c On the NZAA Index
Number and distribution of heritage sites of significance to Maori: a In the District Plan b On the NZHPT Register c In iwi and hapu management plans
Number and distribution of heritage covenants
Number and distribution of heritage orders
Number, distribution and type of resource and building consents relating to activities proximate to heritage buildings, sites and objects
Effects of activities on heritage buildings, sites and objects as revealed by monitoring of resource consents and consent conditions
Number, cause and frequency of complaints relating to heritage buildings, sites and objects
Quantitative and qualitative assessment of heritage values by field survey
Public opinion, customer feedback and consultation on heritage values

## Heritage Trees

### Anticipated Environmental Results as Outlined in the District Plan

- Recognition and identification of heritage trees of significance to the District .
- Protection of heritage trees to a level appropriate to their significance to the District.
- Nearby land use and development that is cognisant of, and sympathetic to, recognised heritage trees.
- The recognition, identification and protection of heritage trees of significance to Maori.

### Information Required for Monitoring each AER

- The recognition and identification of heritage trees of significance to the District . This could be monitored by:
  - **The number and distribution of heritage trees.** The number of heritage trees identified, assessed and listed in the District Plan Schedules will provide information on the recognition and identification of heritage trees. Trends could be established over time
  - **The classification of listed heritage trees.** The classification of listed heritage trees into Group I and Group II categories in the District Plan will provide information on the appropriate recognition of heritage values of listed items
  - **Number, cause and frequency of complaints.** Complaints data could provide information on the adequacy of recognition and identification of heritage trees

- **Qualitative assessments.** Field surveys to identify and assess potential heritage trees could provide information relevant to the recognition and identification of heritage trees
  - **Public perceptions.** Further information relating to heritage trees could be obtained through the use of public opinion polls, customer feedback and consultation.
- ii The protection of heritage trees to a level appropriate to their significance to the District. This could be monitored by:
- **The number and classification of heritage trees.** The number and classification of heritage trees listed in the District Plan Schedules, together with rules in the District Plan relating to protection, could provide information on the adequacy of protection afforded to heritage trees. Trends could be established over time
  - **The number and distribution of heritage covenants.** The number and distribution of heritage covenants could provide information on the level of protection afforded to heritage trees. Trends could be established over time
  - **Consents and consent conditions.** Monitoring of consents and consent conditions could provide information on the adequacy of protection afforded to heritage trees
  - **Number, cause and frequency of complaints.** Complaints data could provide information on the adequacy of protection afforded to heritage trees
  - **Qualitative assessments.** Field surveys to assess heritage trees could provide information on the adequacy of protection afforded to heritage trees
  - **Public perceptions.** Further information relating to heritage trees could be obtained through the use of public opinion polls, customer feedback and consultation..
- iii Nearby land use and development that is cognisant of, and sympathetic to, recognised heritage trees. This could be monitored by:
- **The number and distribution of resource and building consents.** The number and distribution of resource and building consents could provide information on the location and type of development surrounding heritage trees
  - **Consents and consent conditions.** Monitoring of consents and conditions attached to consents to address heritage values could provide information on the effects of activities on heritage trees
  - **Number, cause and frequency of complaints.** Complaints data could reveal information on the appropriateness of development surrounding heritage trees
  - **Qualitative assessments.** Field surveys to assess development around heritage trees could provide information on the appropriateness of nearby land use and development.
  - **Public perceptions.** Further information relating to nearby land use and development and its effects on heritage trees could be obtained through the use of public opinion polls, customer feedback and consultation.
- iv The recognition, identification and protection of heritage trees of significance to Maori. This could be monitored by:
- The number of heritage trees of significance to Maori. The number of heritage trees of significance to Maori identified, assessed and listed in the District Plan Schedules could provide information on the adequacy of recognition, identification and protection of these items. Trends could be established over time.
  - The number and distribution of heritage covenants. The number and distribution of heritage covenants could provide information on the level of protection afforded to heritage trees of significance to Maori. Trends could be established over time
  - Identification of heritage trees of significance to Maori. The identification of heritage trees of significance to Maori in iwi and hapu management plans could provide information on the adequacy of the recognition, identification and protection of these items
  - Number, cause and frequency of complaints. Complaints relating to heritage trees of significance to Maori could provide information on the adequacy of protection afforded to these items

- Qualitative assessments. Field surveys to assess heritage trees of significance to Maori could provide information on the adequacy of protection afforded to these items
- Consultation with tangata whenua. Information relating to heritage trees of significance to Maori could be obtained through consultation with tangata whenua.

<b>Monitoring indicators</b>
Number, distribution and classification of heritage trees in the District Plan Schedules
Number and distribution of heritage trees of significance to Maori
Number and distribution of covenants for heritage trees
Number, distribution and type of resource and building consents relating to activities proximate to heritage trees
Effects of activities on heritage trees as revealed by monitoring of resource consents and consent conditions
Number, cause and frequency of complaints relating to heritage trees
Quantitative assessment of heritage trees by field survey
Public opinion, customer feedback and consultation on heritage trees

## The Coast

### Anticipated Environmental Results as Outlined in the District Plan

- i The preservation and/or enhancement of the natural character of the coastal environment, and its protection from inappropriate subdivision, use and development. Included here are landscapes, seascapes and landforms; significant indigenous vegetation and significant habitats of indigenous fauna; air, water and soil quality; the intrinsic values of ecosystems including biodiversity along with other ecological values
- ii The maintenance and/or enhancement of the historic and cultural heritage of the coastal environment, and the protection of it from inappropriate subdivision, use and development. Included here are cultural, historic and spiritual values; amenity values; places and areas of historic or cultural significance; and sites of significance to Maori
- iii A settlement and development pattern in the coastal environment that does not adversely affect natural and cultural/historic heritage values, is able to be serviced efficiently, and does not result in sporadic, sprawling or ribbon development. Future intensive development is largely confined to existing settlements where the above values are already compromised
- iv The maintenance and/or enhancement of public access to and along the coastal marine area except where it is desirable to restrict public access to protect areas of significant indigenous vegetation and significant habitats of indigenous fauna, Maori cultural values, public health and safety; to ensure a level of security consistent with the purpose of resource content; or in other exceptional circumstances.

### Information Required to Monitor each AER

- i The preservation and/or enhancement of the natural character of the coastal environment, and its protection from inappropriate subdivision, use and development. Included here are landscapes, seascapes and landforms; significant indigenous vegetation and significant habitats of indigenous fauna; air, water and soil quality; the intrinsic values of ecosystems including biodiversity along with other ecological values. This could be monitored by:
  - **The coastal environment.** The identification, assessment and delineation of the coastal environment based upon (*amongst other things*) natural character of the coast. This environment will be shown on the planning maps in the District Plan
  - **Landscapes and landforms.** The identification, assessment and delineation of significant landscapes, seascapes and landforms in the coastal environment. Significant landscapes and landforms will be shown on the planning maps in the District Plan. Subdivision use and development should be avoided in these areas and/or the adverse effects of such should be

mitigated or remedied (*for specific monitoring requirements see the section in the Strategy dealing with Landscapes*)

- **Indigenous vegetation and habitats.** The identification, assessment and delineation of areas of significant indigenous vegetation and significant habitats of indigenous fauna in the coastal environment. These will be shown on the planning maps in the District Plan. Subdivision, use and development should be avoided in these areas and/or the adverse effects of such should be mitigated or remedied (*for specific monitoring requirements see the section in the Strategy dealing with Indigenous Vegetation and Habitat*)
  - **Air, water and soil quality** Information on the protection and enhancement of air, water and soil quality could be obtained from the NRC
  - **Consent and consent conditions.** Monitoring of consent and consent conditions could provide information on the effects of subdivision, use and development on the natural character of the coastal environment
  - **Number, cause and frequency of complaints.** Complaints data could provide information on the effects of subdivision, use and development on the natural character of the coastal environment
  - **Qualitative and quantitative assessments.** Field surveys could provide information on the protection and enhancement of the natural character of the coastal environment
  - **Public perceptions.** Further information on the protection and enhancement of the natural character of the coastal environment could be obtained through public opinion polls, customer feedback and consultation.
- ii The maintenance and/or enhancement of historic and cultural heritage in the coastal environment, and the protection of it from inappropriate subdivision, use and development. Included here are cultural, historic and spiritual values; amenity values; places and areas of historic or cultural significance; and sites of significance to Maori. This could be monitored by:
- **Historic and cultural heritage.** The identification, assessment and distribution of historic and cultural heritage, including heritage buildings, sites and objects, heritage trees and sites of significance to Maori, in the coastal environment. This will be shown on the planning maps in the District Plan. Subdivision, use and development should be avoided in these areas or the adverse effects of such should be mitigated or remedied (*for specific monitoring requirements see the sections in the Strategy dealing with Heritage Buildings, Sites and Objects, Heritage Trees, and Tangata Whenua*)
  - **Consent and consent conditions.** Monitoring of consents and consent conditions could provide information on the effects of subdivision, use and development on historic and cultural heritage in the coastal environment
  - **Number, cause and frequency of complaints.** Complaints data could provide information on the effects of subdivision, use and development on historic and cultural heritage in the coastal environment
  - **Qualitative and quantitative assessment.** Field surveys could provide information on the maintenance and enhancement of historic and cultural heritage in the coastal environment
  - **Consultation with tangata whenua.** Consultation with tangata whenua could provide information on historic and cultural heritage in the coastal environment
  - **Public perceptions.** Further information relating to the maintenance and enhancement of historic and cultural heritage in the coastal environment could be obtained by public opinion polls, customer feedback and consultation.
- iii A settlement and development pattern in the coastal environment that does not adversely affect natural and cultural/historic heritage values, is able to be serviced efficiently, and does not result in sporadic, sprawling or ribbon development. Future intensive development is largely confined to existing settlements where the above values are already compromised. This could be monitored by:
- **Existing land use and development pattern.** The existing land use and development pattern in the coastal environment could be mapped and analysed with respect to natural and cultural/historic heritage, existing services, and settlement nodes

- **Development trends.** Development trends for the coastal environment could be indicated by the number and distribution of land use, subdivision and building consents granted. Trends could be established over time.
  - **Consolidation, sporadic and sprawling subdivision and ribbon development.** Information on development consolidation, sporadic and sprawling subdivision and ribbon development could be obtained by analysis of the existing land use and development pattern together with the development trends as indicated above. Trends relating to consolidation, sporadic and sprawling subdivision and ribbon development could be established over time.
  - **Infrastructure.** Information on the capacity, efficiency and safety of services and infrastructure could be obtained by comparing the existing settlement and development pattern together with development trends as indicated above, with the existing, and future, provision of services and infrastructure as indicated in the various asset management plans and/or strategies. Areas of over and under capacity could be identified. Trends could be established over time.
  - **Number, cause and frequency of complaints.** Complaints data could provide information on the settlement and development pattern in the coastal environment, particularly as it relates to the provision of services and infrastructure.
  - **Qualitative and quantitative assessment.** Field surveys could provide information on the settlement and development pattern in the coastal environment, including the consolidation of development, sporadic and sprawling subdivision and ribbon development.
  - **Public perceptions.** Further information on the settlement and development pattern in the coastal environment could be obtained through public opinion polls, customer feedback and consultation.
- iv The maintenance and/or enhancement of public access to and along the coastal marine area except where it is desirable to restrict public access to protect areas of significant indigenous vegetation and significant habitats of indigenous fauna, Maori cultural values, public health and safety; to ensure a level of security consistent with the purpose of resource content; or in other exceptional circumstances. This could be monitored by:
- The extent and distribution of esplanade priority areas, esplanade reserves and strips, access strips, Council and DoC reserves, boat ramps, picnic and recreational areas could provide information on public access to and along the coast (*for specific monitoring requirements see the section dealing with Riparian and Coastal Margins*).
  - Monitoring of consents and consent conditions, complaints, field surveys, public opinion polls, customer feedback and consultation with user groups, community groups, NRC, DoC and tangata whenua could provide information on public access to and along the coastal marine area (*for specific monitoring requirements see the section in the Strategy dealing with Riparian and Coastal Margins*).

<b>Monitoring indicators</b>
The coastal environment ( <i>mapped</i> )
Significant landscapes and landforms in the coastal environment ( <i>see section on Landscapes</i> )
Significant indigenous vegetation and significant habitats of indigenous fauna ( <i>see section on Indigenous Vegetation and Habitats</i> )
Air, water and soil quality in coastal environment ( <i>see NRC for data</i> )
Historic and cultural heritage in the coastal environment ( <i>see sections on Heritage Buildings, Sites and Objects, Heritage Trees and Tangata Whenua</i> )
Spatial land use and development pattern in the coastal environment
Development trends for coastal environment ( <i>numbers and distribution of resource and building consents</i> )
Density, consolidation, sporadic and sprawling subdivision and ribbon development in the coastal environment ( <i>spatial arrangement and trends</i> )
Existing and future provision of infrastructure in the coastal environment; spatial arrangements, cost implications ( <i>asset management plans and strategies</i> )

<b>Monitoring indicators</b>
Extent and distribution of esplanade priority areas, esplanade reserves and strips, access strips, Council and DoC reserves, boat ramps, picnic and recreational areas ( <i>see section on Riparian and Coastal Margins</i> )
Number, cause and frequency of complaints relating to the coastal environment
Qualitative and quantitative assessment on issues relating to the coastal environment
Public opinion, customer feedback and consultation concerning the coastal environment

## Riparian and Coastal Margins

### Anticipated Environmental Results as Outlined in the District Plan

- i The protection and/or enhancement of natural values and cultural/historic heritage along riparian and coastal margins.
- ii Improved access to and along riparian and coastal margins and enhanced opportunities for recreational use where appropriate.
- iii The mitigation of natural hazards (*particularly erosion and flooding*) along riparian and coastal margins.

### Information Required for Monitoring each AER

- i The protection and/or enhancement of natural values and cultural/historic heritage along riparian and coastal margins. This could be monitored by:
  - **Esplanade priority areas.** The identification, assessment and delineation of esplanade priority areas in the appendices and planning maps of the District Plan could provide information on the extent and adequacy of protection and enhancement of natural and cultural/historic heritage along riparian and coastal margins.
  - **Esplanade reserves and strips.** The establishment of esplanade reserves and strips as a condition of resource consent could be mapped and the extent and distribution of reserves and strips could provide information on the protection and enhancement of natural and cultural/historic heritage along riparian and coastal margins. Trends could be established over time.
  - **Natural values.** The extent and distribution of esplanade reserves and strips in relation to identified natural values such as outstanding and notable landscapes and features, significant ecological areas, surrounding land uses and associated water quality, etc. could provide information on the protection and enhancement of natural values along riparian and coastal margins.
  - **Cultural/historic values.** The extent and distribution of esplanade reserves and strips in relation to identified cultural/historic heritage such as historic buildings sites and objects, heritage trees, sites of significance to Maori, and to other cultural, historic and spiritual values and amenity values, including urban amenity values, could provide information on the protection and enhancement of cultural/historic heritage along riparian and coastal margins.
  - **Consents and consent conditions.** Monitoring of consents and consent conditions could provide information on the effects of subdivision, use and development on natural and cultural/historic heritage along riparian and coastal margins.
  - **Number, cause and frequency of complaints.** Complaints data could provide information on the protection and enhancement of natural and cultural/historic heritage along riparian and coastal margins.
  - **Qualitative and quantitative assessment.** Field surveys could provide information on the protection and enhancement of natural and cultural/historic heritage along riparian and coastal margins.
  - **Consultation with tangata whenua.** Consultation with tangata whenua could provide information on the protection and enhancement of historic and cultural heritage along riparian and coastal margins.

- **Public perceptions.** Further information relating to the protection and enhancement of natural and cultural/historic heritage along riparian and coastal margins could be obtained through public opinion polls, customer feedback and consultation.
- ii Improved access to and along riparian and coastal margins and enhanced opportunities for recreational use where appropriate. This could be monitored by:
- **Esplanade reserves, strips and access strips.** The extent and distribution of esplanade reserves, strips and access strips could provide information on the adequacy of access to and along riparian and coastal margins. Trends could be established over time.
  - **Council and DoC reserves.** The extent and distribution of Council and DoC reserves along riparian and coastal margins could provide information on access and recreational opportunities along riparian and coastal margins.
  - **Boat ramps.** The number and distribution of public boat ramps could provide information on access and recreational opportunities along riparian and coastal margins.
  - **Picnic and recreational areas.** The number and distribution of public picnic and recreational areas could provide information on access and recreational opportunities along riparian and coastal margins.
  - **Consent and consent conditions.** Monitoring of consents and consent conditions could provide information on the effects of subdivision, use and development on access and recreational opportunities along riparian and coastal margins.
  - **Number, cause and frequency of complaints.** Complaints data could provide information on access and recreational opportunities along riparian and coastal margins.
  - **Qualitative and quantitative assessment.** Field surveys could provide information on the adequacy of access and recreational opportunities along riparian and coastal margins.
  - **Public perceptions.** Further information on access and recreational opportunities along riparian and coastal margins could be obtained through public opinion polls, customer feedback and consultation.
- iii The mitigation of natural hazards (*particularly erosion and flooding*) along riparian and coastal margins. This could be monitored by:
- **Erosion and flooding.** The extent and distribution of esplanade reserves and strips along riparian and coastal margins in relation to the location of identified natural hazards, in particular coastal hazard areas and flood susceptible areas, could provide information on the adequacy of natural hazard mitigation along riparian and coastal margins.
  - **Sea level rise.** The extent and distribution of esplanade reserves and strips along riparian and coastal margins in relation to predicted sea level rise due to global warming could provide information on the future adequacy of natural hazard mitigation along riparian and coastal margins.
  - **Number and distribution of resource and building consents.** The number and distribution of resource and building consents granted in relation to esplanade reserves and strips and natural hazard areas, including areas likely to be affected by sea level rise, could provide information on the present and future adequacy of natural hazard mitigation along riparian and coastal margins.
  - **Consents and consent conditions.** Monitoring of consents and consent conditions could provide information on the effects of subdivision, use and development on the mitigation of natural hazards along riparian and coastal margins.
  - **Number, cause and frequency of complaints.** Complaints data could provide information on the adequacy of mitigation of natural hazards along riparian and coastal margins.
  - **Qualitative and quantitative assessments.** Field surveys could provide information on the adequacy of mitigation of natural hazards along riparian and coastal margins.
  - **Public perceptions.** Further information regarding the mitigation of natural hazards along riparian and coastal margins could be obtained through customer feedback and consultation.

<b>Monitoring indicators</b>
Esplanade priority areas ( <i>listed and mapped</i> )
Esplanade reserves, strips, and access strips ( <i>mapped</i> )
Other Council and DoC reserves along riparian and coastal margins
Identified natural values in relation to esplanade priority areas, esplanade reserves, strips, access strips and other Council and DoC reserves
Identified cultural/historic heritage in relation to esplanade priority areas, esplanade reserves, strips, access strips and other Council and DoC reserves
Public boat ramps
Public picnic and recreational areas
Identified natural hazards, particularly coastal hazard areas and flood susceptible areas, in relation to esplanade priority areas, esplanade reserves, strips, access strips and other Council and DoC reserves
Projected sea level rise in relation to esplanade priority areas, esplanade reserves, strips, access strips and other Council and DoC reserves
Number and distribution of resource and building consents in relation to esplanade priority areas, esplanade reserves, strips, access strips and other Council and DoC reserves
Number, cause and frequency of complaints relating to riparian and coastal margins
Qualitative and quantitative assessments of issues relating to riparian and coastal margins
Public opinion, customer feedback and consultation on issues relating to riparian and coastal margins

## Water Bodies

### Anticipated Environmental Results as Outlined in the District Plan

- i The preservation and/or enhancement of the natural character (*including water quality*) of lakes, rivers, wetlands and groundwater and their margins, and the protection of them from inappropriate subdivision, use and development.
- ii Adverse effects of activities on the surface of water bodies are avoided, mitigated or remedied. These include effects on natural character (*including water quality*), ecological values, cultural and historic heritage, recreational and amenity values.
- iii The functions of water bodies in transporting and dispersing flood waters is maintained and/or enhanced.
- iv The cultural and spiritual values tangata whenua attach to water bodies is recognised and provided for.

### Information Required for Monitoring each AER

- i The preservation and/or enhancement of the natural character (*including water quality*) of lakes, rivers, wetlands and groundwater and their margins, and the protection of them from inappropriate subdivision, use and development. This could be monitored by:
  - **The extent and distribution of water bodies.** The extent and distribution of lakes, rivers and wetlands could provide information on the preservation and enhancement of water bodies. Trends over time could be established, particularly in regard to wetlands.
  - **The number and distribution of resource and building consents.** The number and distribution of resource and building consents on or in close proximity to water bodies could provide information on the natural character of water bodies and their protection from inappropriate subdivision, use and development.
  - **Resource consents and consent conditions.** Monitoring of resource consents and consent conditions could provide information on the effects of subdivision, use and development on the natural character of water bodies.

- **Number, cause and frequency of complaints.** Complaints data could provide information on the natural character of water bodies.
  - **Qualitative and quantitative assessments.** Field surveys, including those measuring water quality, could provide information on the natural character of water bodies.
  - **Public perceptions.** Further information relating to the natural character of water bodies could be obtained through customer feedback and consultation.
- ii Adverse effects of activities on the surface of water bodies are avoided, mitigated or remedied. These include effects on natural character (*including water quality*), ecological values, cultural and historic heritage, recreational and amenity values. This could be monitored by:
- Intensive use by surface activities. The extent and distribution of water bodies subject to intensive use by surface activities, both recreational and commercial could provide information on the pressures and potential pressures on the natural character, cultural/historic heritage, recreational and amenity values of water bodies.
  - The number and distribution of resource consents. The number and distribution of resource consents relating to activities taking place on the surface of water bodies could provide information on the natural character, cultural/historic heritage, recreational and amenity values of water bodies.
  - Resource consents and consent conditions. Monitoring of resource consents and consent conditions could provide information on the effects of activities on the natural character, cultural/historic heritage, recreational and amenity values of water bodies.
  - Number, cause and frequency of complaints. Complaints data could provide information on the natural character, cultural/historic heritage, recreational and amenity values of water bodies.
  - Qualitative and quantitative assessments. Field surveys could provide information on the natural character, cultural/historic heritage, recreational and amenity values of water bodies.
  - Public perceptions. Further information on the natural character, cultural/historic heritage, recreational and amenity values of water bodies could be obtained through the use of public opinion polls, customer feedback and consultation.
- iii The functions of water bodies in transporting and dispersing flood waters are maintained and/or enhanced. This could be monitored by:
- **Flood susceptible areas.** The extent and distribution of flood susceptible areas identified and shown on the planning maps in the District Plan could provide information about those water bodies important for flood control purposes.
  - **Recorded incidents of flood events.** Recorded incidents of flood events could provide information on the frequency, scale, effects, etc. of flood events and the ability of water bodies to transport and disperse flood waters.
  - **The number and distribution of resource and building consents.** The number and distribution of resource and building consents in relation to flood susceptible areas could provide information on the effects of subdivision, use and development on the ability of water bodies to transport and disperse flood waters.
  - **Resource consents and consent conditions.** Monitoring of resource consents and consent conditions could provide information on the ability of water bodies to transport and disperse flood waters.
  - **The number, cause and frequency of complaints.** Complaints data could provide information on the ability of water bodies to transport and disperse flood water.
  - **Qualitative and quantitative assessment.** Field surveys could provide information on the ability of water bodies to transport and disperse flood waters.
  - **Public perceptions.** Further information relating to the functions of water bodies to transport and disperse flood waters could be obtained through customer feedback and consultation.
- iv The cultural and spiritual values tangata whenua attach to water bodies are recognised and provided for. This could be monitored by:

- **Sites of significance to Maori.** The distribution of sites of significance to Maori identified and shown on the planning maps in the District Plan in relation to lakes, rivers and wetlands could provide information assisting in the recognition of and provision for tangata whenua values regarding water bodies.
- **Iwi and hapu management plans.** Iwi and hapu management plans could provide information assisting in the recognition of and provision for tangata whenua values regarding water bodies.
- **Consultation with tangata whenua.** Consultation with iwi and hapu could provide information on tangata whenua values regarding water bodies.
- **Resource consents and consent conditions.** Monitoring of resource consents and consent conditions could provide information on the effects of subdivision, use and development on tangata whenua values regarding water bodies.
- **Number, cause and frequency of complaints.** Complaints data could provide information on tangata whenua values regarding water bodies.
- **Qualitative assessment.** Field surveys could provide information on tangata whenua values regarding water bodies, and the effects of subdivision, use and development on these values.
- **Public perceptions.** Further information on tangata whenua values regarding water bodies could be provided through customer feedback and consultation.

Monitoring indicators
Extent and distribution of water bodies, including lakes, rivers and wetlands
Number and distribution of resource and building consents in relation to water bodies
Extent and distribution of water bodies subject to intensive use by surface activities
Flood susceptible areas on planning maps in District Plan
Number and distribution of resource and building consents in relation to flood susceptible areas
Frequency, scale, effects, etc. of flood events
Number and distribution of sites of significance to Maori in District Plan in relation to water bodies
Sites of significance to Maori in iwi and hapu management plans in relation to water bodies
Number, cause and frequency of complaints relating to water bodies
Qualitative and quantitative assessments of issues relating to water bodies
Public opinion, customer feedback and consultation relating to water bodies

## Open Space

### Anticipated Environmental Results as Outlined in the District Plan

- The adequate provision of open space (*both active and passive*) that meets community, recreational and conservation needs, particularly in the coastal environment and outstanding landscape areas.
- The natural, cultural, historic, recreational and amenity values of open space are maintained and/or enhanced.
- The creation, where appropriate, of open space linkages that enhance community, recreational and conservation functions of open space.
- The adverse effects of activities on or proximate to, open space are avoided, remedied or mitigated. This includes effects on natural character, cultural/historic heritage, and recreational and amenity values.

### Information Required for Monitoring each AER

- i The adequate provision of open space (*both active and passive*) that meets community, recreational and conservation needs, particularly in the coastal environment and outstanding landscape areas. This could be monitored by:
- **The number, type and distribution of Open Space and reserves.** The number, type and distribution of reserves in the District could provide information on the adequacy of open space to meet community, recreational and conservation needs. Trends could be established over time.
  - **Covenanted areas and areas subject to heritage orders.** The number, type and distribution of covenanted areas and areas subject to heritage orders in the District could provide information on the adequacy of open space to meet community, recreational and conservation needs. Trends could be established over time.
  - **Active recreational areas.** The extent and distribution of active recreational areas in the District in relation to the spatial distribution of population, residential areas, etc. could provide information on the adequacy of open space to meet community and recreational needs. Trends could be established over time.
  - **Number, cause and frequency of complaints.** Complaints data could provide information on the adequacy of open space to meet community, recreational and conservation needs.
  - **Qualitative and quantitative assessment.** Field surveys could provide information on the adequacy of open space to meet community, recreational and conservation needs.
  - **Public perceptions.** Further information on the adequacy of open space to meet community, recreational and conservation needs could be obtained through the use of public opinion polls, customer feedback and consultation.
- ii The natural, cultural, historic, recreational and amenity values of open space are maintained and/or enhanced. This could be monitored by:
- **Identified natural values.** The extent and distribution of open space in relation to identified natural values, including significant ecological areas and outstanding and notable landscapes and features, could provide information on the maintenance and enhancement of the natural values of open space.
  - **Identified cultural/historic heritage.** The extent and distribution of open space in relation to identified cultural/historic heritage, including heritage buildings, sites and objects, heritage trees, and sites of significance to Maori, could provide information on the maintenance and enhancement of the cultural/historic values of open space.
  - **Identified recreational and amenity values.** The extent and distribution of open space in relation to identified recreational and amenity values and recreational uses of open space could provide information on the maintenance and enhancement of recreational and amenity values of open space.
  - **Resource consents and consent conditions.** Monitoring of resource consents and consent conditions could provide information on the maintenance and enhancement of natural, cultural, historic, recreational and amenity values of open space.
  - **Number, cause and frequency of complaints.** Complaints data could provide information on the maintenance and enhancement of natural, cultural, historic, recreational and amenity values of open space.
  - **Qualitative and quantitative assessment.** Field surveys could provide information on the maintenance and enhancement of natural, cultural, historic, recreational and amenity values of open space.
  - **Consultation with tangata whenua.** Consultation with tangata whenua could provide information on the maintenance and enhancement of historic and cultural values of open space.
  - **Public perceptions.** Further information on the maintenance and enhancement of natural, cultural, historic, recreational and amenity values of open space could be obtained through the use of public opinion polls, customer feedback and consultation.

- iii The creation, where appropriate, of open space linkages that enhance community, recreational and conservation functions of open space. This could be monitored by:

**Esplanade reserves, reserves, covenants, heritage orders.** The extent and distribution of esplanade priority areas, esplanade reserves and strips, access strips, Council and DoC reserves, covenanted areas and areas subject to heritage orders could provide information on open space linkages that enhance community, recreational and conservation functions of open space. Trends could be established over time.

**The extent and distribution of walkways.** The extent and distribution of walkways (*e.g. coastal walkways, urban walkways, etc.*) established in the District could provide information on open space linkages that enhance community, recreational and conservation functions of open space. Trends could be established over time.

**Qualitative and quantitative assessment.** Field surveys could provide information on open space linkages that enhance community, recreational and conservation functions of open space.

**Public perceptions.** Further information on open space linkages that enhance community, recreational and conservation functions of open space could be obtained through customer feedback and consultation.

- iv The adverse effects of activities on or proximate to, open space are avoided, remedied or mitigated. This includes effects on natural character, cultural/historic heritage, and recreational and amenity values. This could be monitored by:

- **The number and distribution of resource and building consents.** The number and distribution of resource and building consents granted on or proximate to, open space could provide information on the effects of activities on open space and on areas surrounding open space.
- **Consent and consent conditions.** Monitoring of consents and consent conditions could provide information on the effects of activities on open space and areas surrounding open space.
- **Qualitative and quantitative assessment.** Field surveys and Council inspections could provide information on the effects of activities on open space and areas surrounding open space.
- **Consultation with tangata whenua.** Consultation with tangata whenua could provide information on the effects of activities on open space and areas surrounding open space.
- **Public perceptions.** Further information on the effects of activities on open space and areas surrounding open space could be obtained through public opinion polls, customer feedback and consultation.

Monitoring indicators
Number, type and distribution of reserves: a Council b DoC
Number, type and distribution of covenanted areas and areas subject to heritage orders
Extent and distribution of active recreational areas ( <i>sportsgrounds, etc.</i> )
Extent and distribution of esplanade priority areas, esplanade reserves and strips, access strips, Council and DoC reserves, covenanted areas and areas subject to heritage orders to discern linkages
Extent and distribution of walkways ( <i>coastal, urban, etc.</i> )
Number and distribution of resource and building consents on, or proximate to, open space
Number, cause and frequency of complaints relating to open space
Qualitative and quantitative assessment of issues relating to open space
Public opinion, customer feedback and consultation on issues relating to open space

## Landscape

### Anticipated Environmental Results as Outlined in the District Plan

- i The identification and protection of outstanding natural features and landscapes from inappropriate subdivision, use and development.
- ii The maintenance and/or enhancement of coastal landscapes, particularly headlands, promontories, ridgelines, estuaries and areas of indigenous vegetation and habitat.
- iii The identification and protection and/or enhancement of historic and cultural landscapes, including landscapes valued by tangata whenua.

### Information Required for Monitoring each AER

- i The identification and protection of outstanding natural features and landscapes from inappropriate subdivision, use and development. This could be monitored by:
  - **Outstanding and notable landscapes and natural features.** The identification, assessment, classification and mapping of areas of outstanding and notable landscapes and natural features could provide information on the protection of outstanding landscapes and features.
  - **The number and distribution of resource and building consents.** The number and distribution of resource and building consents in relation to outstanding and notable landscapes and features could provide information on the effects of subdivision, use and development on outstanding landscapes and features.
  - **Resource consents and consent conditions.** Monitoring resource consents and consent conditions could provide information on the effects of subdivision, use and development on outstanding landscapes and features.
  - **Number, cause and frequency of complaints.** Complaints data could provide information on the identification and protection of outstanding landscapes and features.
  - **Qualitative and quantitative assessment.** Field surveys could provide information on the identification and protection of outstanding landscapes and features.
  - **Public perceptions.** Further information relating to the identification and protection of outstanding landscapes and features could be obtained through customer feedback and consultation.
- ii The maintenance and/or enhancement of coastal landscapes, particularly headlands, promontories, ridgelines, estuaries and areas of indigenous vegetation and habitat. This could be monitored by:
  - **Outstanding and notable landscapes and natural features.** The identification, assessment, classification and mapping of areas of outstanding and notable landscapes and natural features in the coastal environment could provide information on the protection of outstanding landscapes and features.
  - **The number and distribution of resource and building consents.** The number and distribution of resource and building consents in relation to outstanding and notable landscapes and features in the coastal environment (*particularly in regard to headlands, promontories, ridgelines, estuaries and areas of indigenous vegetation and habitat*) could provide information on the effects of subdivision, use and development on outstanding landscapes and features.
  - **Consents and consent conditions.** Monitoring of consents and consent conditions could provide information on the maintenance and enhancement of coastal landscapes, particularly in regard to headlands, promontories, ridgelines, estuaries and areas of indigenous vegetation and habitat.
  - **Number, cause and frequency of complaints.** Complaints data could provide information on the maintenance and enhancement of coastal landscapes, particularly in regard to headlands, promontories, ridgelines, estuaries and areas of indigenous vegetation and habitat.
  - **Qualitative and quantitative assessment.** Field surveys could provide information on the maintenance and enhancement of coastal landscapes, particularly in regard to headlands, promontories, ridgelines, estuaries and areas of indigenous vegetation and habitat.

- **Public perceptions.** Further information relating to the protection of outstanding landscapes and features in the coastal environment could be obtained through customer feedback and consultation.
- iii The identification and protection and/or enhancement of historic and cultural landscapes, including landscapes valued by tangata whenua. This could be monitored by:
- **Heritage buildings, sites and objects, heritage trees, and sites of significance to Maori.** The identification, assessment, classification and mapping of heritage buildings, sites and objects, heritage trees, and sites of significance to Maori could provide information enabling the identification and protection and enhancement of historic and heritage landscapes.
  - **Iwi and hapu plans.** Iwi and hapu management plans could provide information enabling the identification and protection and enhancement of historic and cultural landscapes.
  - **Consultation with tangata whenua.** Consultation with iwi and hapu groups could provide information on the identification and protection of historic and cultural landscapes.
  - **Resource consents and consent conditions.** Monitoring of resource consents and consent conditions could provide information on the effects of development on historic and cultural landscapes.
  - **Number, cause and frequency of complaints.** Complaints data could provide information on the identification and protection of historic and cultural landscapes.
  - **Qualitative and quantitative assessment.** Field surveys could provide information on the identification and protection of historic and cultural landscapes.
  - **Public perceptions.** Further information on the identification and protection of historic and cultural landscapes could be provided by customer feedback and consultation.

Monitoring indicators
Outstanding and notable landscapes and natural features a over whole District b in coastal environment
Number and distribution of resource and building consents in relation to outstanding and notable landscapes and natural features
Heritage buildings, sites and objects, heritage trees and sites of significance to Maori
Historic and cultural landscapes identified in iwi and hapu management plans
Number, cause and frequency of complaints relating to outstanding landscapes and natural features
Qualitative and quantitative assessment of issues relating to outstanding landscapes and natural features
Public opinion, customer feedback and consultation on issues relating to outstanding landscapes and natural features

## Indigenous Vegetation and Habitat

### Anticipated Environmental Results as Outlined in the District Plan

- i Significant ecological areas are identified, assessed, classified and shown on the planning maps in the District Plan.
- ii Areas of significant indigenous vegetation and significant habitats of indigenous fauna are protected and/or enhanced.
- iii Adverse effects from subdivision, use and development on areas of significant indigenous vegetation and significant habitats of indigenous fauna are avoided, remedied or mitigated.
- iv The establishment of ecological corridors connecting areas of significant indigenous vegetation and significant habitats of indigenous fauna.
- v Areas of indigenous vegetation and habitats of indigenous fauna of significance to Maori are protected and/or enhanced.

### Information Required for Monitoring each AER

- i Significant ecological areas are identified, assessed, classified and shown on the planning maps in the District Plan. This may be monitored by:
- **The extent and distribution of significant ecological areas.** The extent and distribution of significant ecological areas identified, assessed, classified and shown on the planning maps could provide information on the protection of significant indigenous vegetation and significant habitats of indigenous fauna. Trends could be established over time.
  - **Number, cause and frequency of complaints.** Complaints data could provide information on the identification and protection of significant ecological areas.
  - **Qualitative and quantitative assessments.** Field surveys could assist in the identification, assessment and classification of significant ecological areas.
  - **Public perceptions.** Further information on the identification, assessment and classification of significant ecological areas could be obtained through customer feedback and consultation.
- ii Areas of significant indigenous vegetation and significant habitats of indigenous fauna are protected and/or enhanced.
- **Covenanted areas.** The number, distribution and aerial extent of areas of significant indigenous vegetation and significant habitats of indigenous fauna covenanted by the Council and QE II National Trust. Trends could be established over time.
  - **Council and DoC reserves.** The number, distribution and aerial extent of areas of significant indigenous vegetation and significant habitats of indigenous fauna protected as Council or DoC reserve. Trends could be established over time.
  - **Re-vegetation and enhancement programmes.** Re-vegetation and enhancement programmes could provide information on the protection and enhancement of significant indigenous vegetation and significant habitats of indigenous fauna.
  - **Consents and consent conditions.** Monitoring of consents and consent conditions could provide information on the protection and enhancement of significant indigenous vegetation and significant habitats of indigenous fauna.
  - **Number, cause and frequency of complaints.** Complaints data could provide information on the protection and enhancement of significant indigenous vegetation and significant habitats of indigenous fauna.
  - **Quantitative and qualitative assessment.** Field surveys could provide information on the protection and enhancement of significant indigenous vegetation and significant habitats of indigenous fauna.
  - **Public perceptions.** Further information on the protection and enhancement of significant indigenous vegetation and significant habitats of indigenous fauna could be obtained through customer feedback and consultation.
- iii Adverse effects from subdivision, use and development on areas of significant indigenous vegetation and significant habitats of indigenous fauna are avoided, remedied or mitigated. This could be monitored by:
- **The number and location of resource and building consents.** The number and location of resource and building consents that are granted in areas of significant indigenous vegetation and significant habitats of indigenous fauna could provide information on the effects of subdivision use and development in, or close to, these areas.
  - **Consents and consent conditions.** Monitoring of consents and consent conditions could provide information on whether adverse effects from development on significant indigenous vegetation and significant habitats of indigenous fauna are being adequately controlled.
  - **Number, cause and frequency of complaints.** Complaints data could provide information on the adverse effects of development on significant indigenous vegetation and significant habitats of indigenous fauna.
  - **Qualitative and quantitative assessment.** Field surveys and Council inspections could provide information on the adverse effects of development on significant indigenous vegetation and significant habitats of indigenous fauna.

- **Public perceptions.** Further information on the adverse effects of development on significant indigenous vegetation and significant habitats of indigenous fauna could be obtained through customer feedback and consultation.
- iv The establishment of ecological corridors connecting areas of significant indigenous vegetation and significant habitats of indigenous fauna. This could be monitored by:
- The extent and location of ecological corridors. The extent and location of ecological corridors could provide information on the connectivity of areas of areas of significant indigenous vegetation and significant habitats of indigenous fauna. Trends could be established over time.
  - Consents and consent conditions. Monitoring of consents and consent conditions could provide information on the connectivity of areas of significant indigenous vegetation and significant habitats of indigenous fauna.
  - Qualitative and quantitative assessment. Field surveys could provide information on the existence and establishment of ecological corridors.
  - Public perceptions. Further information on the establishment of ecological corridors could be obtained through customer feedback and consultation.
- v Areas of indigenous vegetation and habitats of indigenous fauna of significance to Maori are protected and/or enhanced. This could be monitored by:
- **Iwi/hapu management plans.** Iwi and hapu management plans could provide information on the extent and location of indigenous vegetation and habitats of indigenous fauna of significance to Maori.
  - **Consultation with tangata whenua.** Consultation with tangata whenua could provide information on indigenous vegetation and habitats of indigenous fauna of significance to Maori.
  - **Consents and consent conditions.** Monitoring of consents and consent conditions could provide information on indigenous vegetation and habitats if indigenous fauna significant to Maori.
  - **Number, cause and frequency of complaints.** Complaints data could provide information on indigenous vegetation and habitats of indigenous fauna significant to Maori.
  - **Qualitative assessment.** Field surveys could provide information on indigenous vegetation and habitats of indigenous fauna of significance to Maori.
  - **Public perceptions.** Further information on indigenous vegetation and habitats of indigenous fauna of significance to Maori could be obtained through customer feedback and consultation.

Monitoring indicators
Identified significant ecological areas on planning maps
Covenanted areas (mapped, area, numbers) a Council b QE II National Trust
Council and DoC reserves
Re-vegetation and enhancement programmes ( <i>mapped, area, numbers</i> )
Number and location of resource and building consents in relation to significant indigenous vegetation and significant habitats of indigenous fauna
Extent and location of ecological corridors ( <i>mapped</i> )
Identified indigenous vegetation and habitats of indigenous fauna of significance to Maori
Number, cause and frequency of complaints relating to significant indigenous vegetation and significant habitats of indigenous fauna
Qualitative and quantitative assessments of indigenous vegetation and habitats of indigenous fauna

<b>Monitoring indicators</b>
Public opinion, customer feedback and consultation on issues relating to indigenous vegetation and habitat

## Minerals

### Anticipated Environmental Results as Outlined in the District Plan

- i The efficient and safe extraction and processing of mineral resources for the economic benefit of the District.
- ii Adverse effects of mineral extraction and processing on natural, cultural and historic heritage are avoided, remedied or mitigated.
- iii Effects of mineral extraction and processing on surrounding amenity values are controlled to a level deemed acceptable in the District Plan.
- iv The extraction and processing of mineral resources is not hindered by future land use and development, particularly in Mineral Extraction Areas.

### Information required for Monitoring each AER

- i The efficient and safe extraction and processing of mineral resources for the economic benefit of the District. This could be monitored by:
  - **Existing mineral extraction and processing sites.** The location of existing mineral extraction and processing sites (*mines and quarries*), together with existing Mineral Extraction Areas, could be mapped. Trends could be established over time.
  - **Extraction rates.** Total extraction rates for various minerals could be collected and analysed. Trends could be established over time.
  - **The number, cause and frequency accidents.** Data on accidents could provide information on the safety of mineral extraction and processing.
  - **Consents and consent conditions.** Monitoring of consents and consent conditions could provide information on the safety of mineral extraction and processing.
  - **The number, cause and frequency of complaints.** Complaints data could provide information on the efficiency and safety of mineral extraction and processing.
  - **Quantitative assessment.** Field surveys and Council inspections could provide information on the efficiency and safety of mineral extraction and processing.
  - **Public perceptions.** Further information on the efficiency and safety of mineral extraction and processing could be obtained through customer feedback and consultation.
- ii Adverse effects of mineral extraction and processing on natural, cultural and historic heritage are avoided, remedied or mitigated. This could be monitored by:
  - **Location of mines and quarries.** The location of mines and quarries, together with Mineral Extraction Areas, in relation to sensitive natural areas, including areas of notable and outstanding landscape and natural features, significant ecological areas, natural coastal areas, ridgelines and skylines, together with significant cultural and historic areas, including heritage buildings, sites and objects and sites of significance to Maori.
  - **Number, cause and frequency of reported incidents.** The number, cause and frequency of reported incidents involving adverse effects of mineral extraction and processing on natural, cultural and historic heritage.
  - **Derelict mines and quarries.** The number and distribution of derelict (not rehabilitated) mines and quarries in the District.
  - **Consents and consent conditions.** Monitoring of consents and consent conditions could provide information on the effects of mineral extraction and processing on natural, cultural and historic heritage.
  - **Number, cause and frequency of complaints.** Complaints data could provide information on the effects of mineral extraction and processing on natural, cultural and historic heritage.

- **Qualitative and quantitative assessment.** Field surveys and Council inspections could provide information on the effects of mineral extraction and processing on natural, cultural and historic heritage.
  - **Consultation with tangata whenua.** Consultation with tangata whenua could provide information on the effects of mineral extraction on historic and cultural values.
  - **Public perceptions.** Further information on the effects of mineral extraction and processing on natural, cultural and historic heritage could be obtained through customer feedback and consultation.
- iii Effects of mineral extraction and processing on surrounding amenity values are controlled to a level deemed acceptable in the District Plan. This could be monitored by:
- **Location of mines and quarries.** The location of mines and quarries in relation to sensitive amenity areas, including open space, residential areas, rural residential areas, commercial centres, and coastal areas could be mapped.
  - **Monitoring of amenity effects.** Monitoring of noise levels, vibration, blasting, traffic movements, etc. in relation to the standards set out in the District Plan could provide information on the effects of mineral extraction and processing on amenity values.
  - **Consents and consent conditions.** Monitoring of consents and consent conditions could provide information on the effects of mineral extraction and processing on amenity values.
  - **Number, cause and frequency of complaints.** Complaints data could provide information on the effects of mineral extraction and processing on amenity values.
  - **Qualitative and quantitative assessment.** Field surveys and Council inspections could provide information on the effects of mineral extraction and processing on amenity values.
  - **Public perceptions.** Further information on the effects of mineral extraction and processing on amenity values could be obtained through customer feedback and consultation.
- iv The extraction and processing of mineral resources is not hindered by future land use and development, particularly in Mineral Extraction Areas. This could be monitored by:
- **Feedback from mine and quarry owners.** Feedback from mine and quarry owners could provide information regarding the effects of adjacent land uses and development on mineral extraction and processing.
  - **Number and types of resource consents.** The number and types of resource consents granted adjacent to mines and quarries, and in the Mineral Extraction Areas, could provide information on encroachment of activities on mineral extraction and processing.
  - **Consents and consent conditions.** Monitoring of consents and consent conditions could provide information on the effects of neighbouring activities on mineral extraction and processing.
  - **Number, cause and frequency of complaints.** Complaints data could provide information on the effects of neighbouring activities on mineral extraction and processing.
  - **Qualitative and quantitative assessment.** Field surveys and Council inspections could provide information on the effects of neighbouring activities on mineral extraction and processing.

Monitoring indicators
Existing mines and quarries, and existing Mineral Extraction Areas (mapped)
Mineral extraction rates
Number, cause and frequency of accidents
Number, cause and frequency of incidents involving adverse effects on natural, cultural and historic heritage
Number and distribution of derelict mines and quarries in the District
Number, type and distribution of resource and building consents in Mineral Extraction Areas
Number, cause and frequency of complaints relating to mineral extraction and processing

<b>Monitoring indicators</b>
Qualitative and quantitative assessments relating to mineral extraction and processing
Public opinion, customer feedback and consultation regarding mineral extraction and processing

## Natural Hazards

### Anticipated Environmental Results as Outlined in the District Plan

- i Natural hazard areas are identified, assessed, classified and shown on the planning maps in the District Plan.
- ii Subdivision, use and development is avoided in identified natural hazard areas and/or the adverse effects from natural hazards are adequately avoided, remedied or mitigated.
- iii The adverse effects from natural hazards on people's health and safety and property are avoided, remedied or mitigated.
- iv Natural buffers relating to natural hazards are protected, maintained or enhanced.

### Information required for monitoring each AER

- i Natural hazard areas are identified, assessed, classified and shown on the planning maps in the District Plan. This could be monitored by:
  - **The extent and distribution of identified natural hazard areas.** The extent and distribution of identified natural hazard areas shown on the planning maps could provide information on the location and scale of natural hazards in the District. These areas could include flood susceptible areas, mining hazard areas and coastal hazard areas.
  - **The classification of identified natural hazards.** The classification of natural hazards (*e.g. coastal hazard area 1 and coastal hazard area 2*) could provide information on the relative risks associated with these hazards and provide information for effective control of the hazards.
  - **Number, cause and frequency of complaints.** Complaints data could provide information useful for identifying, assessing and classifying natural hazards.
  - **Quantitative assessment.** Field surveys could help identify, assess and classify natural hazards.
  - **Public perceptions.** Further information on the identification, assessment and classification of natural hazards could be obtained through customer feedback and consultation.
- ii Subdivision, use and development is avoided in identified natural hazard areas and/or the adverse effects from natural hazards are adequately avoided, remedied or mitigated. This could be monitored by:
  - **The number and location of resource and building consents.** The number and location of resource and building consents that are granted in identified natural hazard areas could provide information on development in these areas.
  - **Consents and consent conditions.** Monitoring of consents and consent conditions could provide information on whether adverse effects from natural hazards are being adequately controlled.
  - **Number, cause and frequency of complaints.** Complaints data could provide information on development in natural hazard areas and on adverse effects from natural hazards.
  - **Quantitative and qualitative assessment.** Field surveys could help assess development in natural hazard areas along with adverse effects.
  - **Public perceptions.** Further information on development in natural hazard areas could be obtained through customer feedback and consultation.
- iii The adverse effects from natural hazards on people's health and safety and property are avoided, remedied or mitigated. This could be monitored by:
  - **The number, cause and frequency of recorded incidents.** Data from OSH, public health authorities, insurance companies, media reports, etc. could provide information on the effects

from natural hazards on people’s health and safety and property. It may be beneficial to develop a natural hazards register to record such incidents.

- **Consents and consent conditions.** Monitoring of consents and consent conditions could provide information on the effects of natural hazards on people’s health and safety and property.
- **Number, cause and frequency of complaints.** Complaints data could provide information on the effects of natural hazards on people’s health and safety and property.
- **Quantitative assessments.** Field surveys could provide information on the effects of natural hazards on people’s health and safety and property.
- **Public perceptions.** Further information on the effects of natural hazards on people’s health and safety and property could be obtained through customer feedback and consultation.

iv Natural buffers relating to natural hazards are protected, maintained or enhanced. This could be monitored by:

- **Topographical maps and aerial photography.** Topographical maps and aerial photographs could provide information on the protection, maintenance and enhancement of natural buffers, e.g. coastal dune areas, vegetation, wetlands, etc.
- **Consents and consent conditions.** Monitoring of consents and consent conditions could provide information on the protection, maintenance and enhancement of natural buffers.
- **Number, cause and frequency of complaints.** Complaints data could provide information on the protection, maintenance and enhancement of natural buffers.
- **Qualitative and quantitative assessment.** Field surveys could provide information on the protection, maintenance and enhancement of natural buffers.
- **Public perceptions.** Further information on the protection, maintenance and enhancement of natural buffers could be obtained through customer feedback and consultation.

Monitoring indicators
Identified and classified natural hazard areas, including: a flood susceptible areas b mining hazard areas c coastal hazard areas
Number, type and distribution of resource and building consents in relation to natural hazard areas
Number, type and frequency of recorded incidents involving natural hazards ( <i>natural hazards register</i> )
Location, extent of, and changes to, natural buffers ( <i>topographic maps and aerial photography</i> )
Number, cause and frequency of complaints relating to natural hazards
Qualitative and quantitative assessments of natural hazards
Public opinion, customer feedback and consultation on natural hazards

## Contaminated Sites

### Anticipated Environmental Results as Outlined in the District Plan

- i Contaminated sites within the District are identified, assessed, classified, entered into a database.
- ii Known contaminated sites are remedied to a standard appropriate to their future use, whilst ensuring they do not have adverse effects on the environment.
- iii Any subdivision, use or development of contaminated sites will ensure that the health and safety of people and communities are protected.

### Information Required for Monitoring each AER

- i Contaminated sites within the District are identified, assessed, classified, entered into a database. This could be monitored by:

- **The number and distribution of known contaminated sites.** The number of contaminated sites identified, assessed, listed on the database and shown on a map could provide information on the extent of the problem existing in the District. Trends could be established over time.
  - **The classification of known contaminated sites.** The classification of listed contaminated sites could provide information on the relative significance of these sites, and provide information for prioritising remediation.
  - **Number, cause and frequency of complaints.** Complaints relating to contaminated sites could provide information useful for identifying and assessing potential contaminated sites.
  - **Quantitative assessment.** Field surveys could help identify, assess and classify contaminated sites.
  - **Public perceptions.** Further information on the identification, assessment and classification of contaminated sites could be obtained through customer feedback and consultation.
- ii Known contaminated sites are remedied to a standard appropriate to their future use, whilst ensuring they do not have adverse effects on the environment. This could be monitored by:
- **Number and distribution of rehabilitated contaminated sites.** The number and distribution of rehabilitated sites could provide a measure of how well Council is remediating contaminated sites. Trends could be established over time.
  - **Consents and consent conditions.** Monitoring of consents and consent conditions could provide information on the environmental effects of contaminated sites in relation to activities locating there.
  - **Number, cause and frequency of complaints.** Complaints relating to contaminated sites could provide information on environmental effects and adequacy of remediation.
  - **Quantitative assessment.** Field surveys to assess the level of contamination, pre and post remediation could provide information on the adequacy of remedial measures and associated environmental effects, on and off site.
  - **Public perceptions.** Further information on the environmental effects of contaminated sites could be obtained through customer feedback and consultation.
- iii Any subdivision, use or development of contaminated sites will ensure that the health and safety of people and communities are protected. This could be monitored by:
- **The number and distribution of resource and building consents.** The number and distribution of resource and building consents issued could provide information on the location and type of development on, or near to, contaminated sites.
  - **Consents and consent conditions.** Monitoring of consents and consent conditions could provide information on the effects of contaminated sites on the health and safety of people and communities.
  - **Number and frequency of reported health and/or safety incidents relating to contaminated sites.** Data from OSH statistics, public health data bases, media reports, etc. on health and safety issues relating to contaminated sites could provide information on the effects of contaminated sites on health and safety of people and communities.
  - **Number, cause and frequency of complaints.** Complaints relating to contaminated sites could provide information on the effects of contaminated sites on the health and safety of people and communities.
  - **Quantitative assessment.** Field surveys to assess the level of contamination on and off site could provide information on the appropriateness of development and associated effects on health and safety.
  - **Public perceptions.** Further information on the effects of contaminated sites on the health and safety of people and communities could be obtained through customer feedback and consultation.

<b>Monitoring indicators</b>
Number, distribution and classification of known contaminated sites

Monitoring indicators
Number and distribution of rehabilitated sites
Number and distribution of resource and building consents in relation to known contaminated sites
Number and frequency of reported health and safety incidents relating to contaminated sites
Number, cause and frequency of complaints relating to contaminated sites
Quantitative assessment of contaminated sites
Public opinion, customer feedback and consultation on contaminated sites

## Hazardous Substances

### Anticipated Environmental Results as Outlined in the District Plan

- i The use, storage, manufacture, transport and disposal of hazardous substances will have no adverse effects on the environment.
- ii The use, storage, manufacture, transport and disposal of hazardous substances will have no adverse effects on the health and safety of people and communities.

### Information Required for Monitoring each AER

- i The use, storage, manufacture, transport and disposal of hazardous substances will have no adverse effects on the environment. This could be monitored by:
  - **The number and frequency of recorded environmental incidents concerning hazardous substances.** Data from the NRC, DoC, Ministry for the Environment, media reports, etc. on environmental incidents involving hazardous substances could provide information on the adequacy of controls on the use, storage, manufacture, transport and disposal of hazardous substances. Trends could be established over time.
  - **Consents and consent conditions.** Monitoring of consents and consent conditions could provide information on the environmental effects of the use, storage, manufacture, transport and disposal of hazardous substances.
  - **The number, cause and frequency of complaints.** Complaints relating to hazardous substances could provide information on environmental effects resulting from the use, storage, manufacture, transport and disposal of hazardous substances.
  - **Quantitative assessment.** Field surveys and Council inspections of the use, storage, manufacture, transport and disposal of hazardous substances could provide information concerning environmental effects.
  - **Public perceptions.** Further information on the environmental effects of hazardous substances could be obtained through customer feedback and consultation.
- ii The use, storage, manufacture, transport and disposal of hazardous substances will have no adverse effects on the health and safety of people and communities. This could be monitored by:
  - **The number and frequency of recorded health and/or safety incidents concerning hazardous substances.** Data from OSH, public health authorities, the media, etc. on health and safety issues relating to hazardous substances could provide information on the adequacy of controls on the use, storage, manufacture, transport and disposal of hazardous substances. Trends could be established over time.
  - **Consents and consent conditions.** Monitoring of consents and consent conditions could provide information on the effects of the use, storage, manufacture, transport and disposal of hazardous substances on the health and safety of people and communities.
  - **The number, cause and frequency of complaints.** Complaints relating to hazardous substances could provide information regarding health and safety effects of the use, storage, manufacture, transport and disposal of hazardous substances.
  - **Quantitative assessment.** Field surveys and Council inspections of the use, storage, manufacture, transport and disposal of hazardous substances could provide information regarding effects on the health and safety of people and communities.

- **Public perceptions.** Further information on the effects of hazardous substances on the health and safety of people and communities could be obtained through customer feedback and consultation.

Monitoring indicators
Number and frequency of recorded environmental incidences concerning hazardous substances
Number and frequency of recorded health and/or safety incidences concerning hazardous substances
Number and frequency of complaints relating to hazardous substances
Quantitative assessments of use, storage, manufacture, transport and disposal of hazardous substances
Public opinion, customer feedback and consultation on issues relating to hazardous substances

## Tangata Whenua

### Anticipated Environmental Results as Outlined in the District Plan

- Council, in the exercise of its functions and powers, takes into account the principles of the Treaty of Waitangi.
- Council recognises and provides for the relationship of Maori and their culture and traditions with their ancestral lands, waters, sites, wahi tapu and other taonga, and has particular regard to kaitiakitanga.
- Council undertakes effective consultation with tangata whenua and ensures effective participation of tangata whenua in resource management processes.
- Sites of significance to Maori are identified, assessed and shown on the planning maps in the District Plan.
- The adverse effects of subdivision, use and development on sites of significance to Maori are avoided, remedied or mitigated in accordance with tangata whenua protocol.

### Information Required for Monitoring each AER

- Council, in the exercise of its functions and powers, takes into account the principles of the Treaty of Waitangi. This could be monitored by:
  - **Institutional arrangements.** Institutional arrangements for facilitating effective liaison between Council and tangata whenua including Maori liaison personnel, protocols or memoranda of agreement or understanding, a Maori standing committee, working parties or advisory groups. Such arrangements could be indicative of Council's commitment to Treaty of Waitangi principles.
  - **Use of Marae and Hui.** Use of Marae and hui when appropriate for facilitating liaison between Council and tangata whenua. This could also indicate Council's commitment to Treaty of Waitangi principles.
  - **Te Reo Maori.** Recognition of Te Reo Maori and use in Council proceedings where appropriate. This could indicate Council's commitment to Treaty of Waitangi principles.
  - **Rangatiratanga.** Recognition of the exercise of rangatiratanga (*chiefly authority over resources*) by local iwi and hapu. The extent to which rangatiratanga is recognized by Council could provide information on Council's commitment to the principles of the Treaty of Waitangi.
  - **Consultation with tangata whenua.** Consultation with tangata whenua could provide information on Council's approach to Treaty of Waitangi principles.
  - **Number, cause and frequency of complaints.** Complaints data could provide information on the adequacy of Council's approach to Treaty of Waitangi principles.
- Council recognises and provides for the relationship of Maori and their culture and traditions with their ancestral lands, waters, sites, wahi tapu and other taonga, and has particular regard to kaitiakitanga. This could be monitored by:
 

**Transfer of functions, powers or duties.** Transferring functions, powers or duties to iwi authorities under section 33 of the RMA could provide information on Council's recognition and provision for the

relationship of Maori with their ancestral lands, waters, sites, wahi tapu and other taonga. Trends could be established over time.

**Customary authority and rights.** Use of customary authority and rights guaranteed by the Treaty of Waitangi, including the exercise of kaitiakitangi, could indicate Council's recognition and provision for the relationship of Maori with their ancestral lands, waters, sites, wahi tapu and other taonga.

**Cultural and spiritual values.** Taking account of Maori cultural and spiritual values in resource management processes and Council decision making could provide information on Council's recognition and provision for the relationship of Maori with their ancestral lands, waters, sites, wahi tapu and other taonga.

**Traditional practices.** Recognition of, and provision for, traditional practices of tangata whenua such as tapu, rahui, etc. in resource management processes where appropriate could provide information on Council's recognition and provision for the relationship of Maori with their ancestral lands, water, sites, wahi tapu and other taonga.

**Iwi and hapu management plans.** The development of iwi and hapu management plans that relate to the District could provide information on Council's recognition and provision for the relationship of Maori to their ancestral lands, water, sites, wahi tapu and other taonga.

**Consultation with tangata whenua.** Information on the adequacy of Council's recognition and provision for the relationship of Maori to their ancestral lands, water, sites, wahi tapu and other taonga could be obtained through consultation with tangata whenua.

**Number, cause and frequency of complaints.** Complaints data could provide information on the adequacy of Council's recognition and provision for the relationship of Maori to their ancestral lands, water, sites, wahi tapu and other taonga.

iii Council undertakes effective consultation with tangata whenua and ensures effective participation of tangata whenua in resource management processes. This could be monitored by:

- **Agreements and protocols.** Agreements and protocols set up to facilitate consultation and participation could provide information on the effectiveness of consultation with, and participation of, tangata whenua in resource management processes.
- **Provision of resources.** The amount and type of resourcing from Council to enable consultation and participation could provide information on the effectiveness of consultation with, and participation of, tangata whenua in resource management processes. Trends could be established over time.
- **Consultation on individual development projects.** The number and percentage of consent applications that involve consultation with tangata whenua could provide information on the effectiveness of consultation with, and participation of, tangata whenua in resource management processes. Trends could be established over time.
- **Consultation on policy and planning initiatives and documents.** The frequency of consultation on policy and planning initiatives could provide information on the effectiveness of consultation with, and participation of, tangata whenua in resource management processes. Trends could be established over time.
- **Consultation with tangata whenua.** Information on the adequacy of consultation with, and participation of, tangata whenua in resource management processes could be obtained through consultation between Council and iwi and hapu groups.
- **Number, cause and frequency of complaints.** Complaints data could provide information on the effectiveness of consultation with, and participation of, tangata whenua in resource management processes.

iv Sites of significance to Maori are identified, assessed and shown on the planning maps in the District Plan. This could be monitored by:

- **The number and distribution of sites of significance to Maori.** The number and distribution of sites of significance to Maori identified, assessed and shown on the planning maps in the District Plan could provide information on the adequacy of identification and assessment of Maori cultural heritage. Trends could be established over time.

- **Iwi and hapu management plans.** The number and distribution of sites of significance to Maori in iwi and hapu management plans could provide information on the adequacy of the identification and assessment of these items in the District Plan.
  - **Consultation with tangata whenua.** Consultation with tangata whenua could provide information enabling the identification and assessment of new site of significance to Maori.
  - **Number, cause and frequency of complaints.** Complaints data could provide information on the adequacy of identification and assessment of sites of significance to Maori.
  - **Qualitative and quantitative assessment.** Field surveys could provide information to assist in the identification and assessment of sites of significance to Maori.
- v The adverse effects of subdivision, use and development on sites of significance to Maori are avoided, remedied or mitigated in accordance with tangata whenua protocol. This could be monitored by:
- **The number and distribution of resource and building consents.** The number and distribution of resource and building consents granted in close proximity to sites of significance to Maori could provide information on adverse effects resulting from subdivision, use and development.
  - **Consent and consent conditions.** Monitoring of consents and consent conditions could provide information on the adequacy of controls on subdivision, use and development in relation to adverse effects on sites of significance to Maori.
  - **Consultation with tangata whenua.** Information relating to adverse effects from subdivision, use and development on sites of significance to Maori could be obtained through consultation with tangata whenua.
  - **Number, cause and frequency of complaints.** Complaints data could provide information on the adverse effects of subdivision, use and development on sites of significance to Maori.
  - **Qualitative and quantitative assessment.** Field surveys could provide information on the adverse effects of subdivision, use and development on sites of significance to

<b>Monitoring indicators</b>
Institutional arrangements for liaison between Council and tangata whenua, including: <ul style="list-style-type: none"> <li>a Maori liaison personnel</li> <li>b Protocols or memoranda of agreement</li> <li>c Maori standing committee</li> <li>d Maori working parties or advisory groups</li> </ul>
Frequency of use of marae and hui and use of Te Reo Maori
Transfer of functions, powers and duties to iwi authorities
Recognition of customary authority and rights, cultural and spiritual values and traditional practices
Iwi and hapu management plans developed
Agreements and protocols set up to facilitate consultation
Council provision of resources ( <i>amount and type</i> )
Number and percentage of consent applications involving consultation with tangata whenua
Frequency of consultation on policy and planning initiatives
Number and distribution of sites of significance to Maori on the planning maps
Number and distribution of resource and building consents in relation to sites of significance to Maori
Number, cause and frequency of complaints relating to tangata whenua issues
Qualitative and quantitative assessments relating to tangata whenua issues
Consultation with tangata whenua

## Local Authority Cross Boundary Issues

### Anticipated Environmental Results as Outlined in the District Plan

- i The integrated management of natural and physical resources across local authority boundaries, particularly in regard to:
  - Infrastructure that crosses a local authority boundary;
  - Significant natural features and natural resources that cross a local authority boundary;
  - Activities which may have adverse effects that cross a local authority boundary;
  - Iwi and hapu interests that cross a local authority boundary; and
  - The coast.

### Information Required for Monitoring each AER

- i The integrated management of natural and physical resources across local authority boundaries, particularly in regard to:
  - infrastructure that crosses a local authority boundary
  - significant natural features and natural resources that cross a local authority boundary
  - activities which may have adverse effects that cross a local authority boundary
  - iwi and hapu interests that cross a local authority boundary; and
  - the coast. This could be monitored by:
    - **Processes, protocols and agreements.** Processes, protocols and agreements put in place to address cross boundary issues (*both with adjacent territorial authorities and the Northland Regional Council*) could provide information on the integrated management of resources across local authority boundaries.
    - **Iwi and hapu agreements.** Processes, protocols and agreements instigated with iwi and hapu to address iwi and hapu interests that cross local authority boundaries could provide information on the integrated management of resources across local authority boundaries.
    - **Joint hearings.** Number, nature and frequency of joint hearings with the NRC to address issues that cross local authority boundaries.
    - **Resource consents and consent conditions.** Monitoring of consents and consent conditions could provide information on the integrated management of resources across local authority boundaries.
    - **The number, cause and frequency of complaints.** Complaints data could provide information on the integrated management of resources across local authority boundaries.
    - **Quantitative and qualitative assessment.** Field surveys could provide information on the integrated management of resources across local authority boundaries.
    - **Public perceptions.** Further information on the integrated management of resources across local authority boundaries could be obtained through customer feedback and consultation.

Monitoring indicators
Processes, protocols and agreements between adjacent territorial authorities and NRC
Iwi and hapu processes, protocols and agreements
Number, nature and frequency of joint hearings between Council and NRC
Number, cause and frequency of complaints relating to cross boundary issues
Qualitative and quantitative assessments of cross boundary issues
Public opinion, customer feedback and consultation on cross boundary issues

### 8.3 Data Collection and Management

Data required for District Plan monitoring will be collated and analysed by staff in the Policy and Monitoring Division. Much of the data will be collected by other divisions within Council and stored in databases accessible to monitoring staff. Some data will come from external sources, e.g. Statistics New Zealand, NRC, etc. If important information is not available new data collection and/or storage processes may need to be established.

Initially, only existing sources of data will be analysed and reported upon. Should the need arise, new data will be collected at a later stage, i.e. after the production of the first District Plan Monitoring Report. The first District Plan Monitoring Report will focus on a number of 'key' monitoring indicators chosen from those outlined in the previous section. These will be selected on the basis of data availability and usefulness of information provided. Over time, it is envisaged that the number of indicators reported upon will increase and the overall analysis will become more comprehensive.

Much information useful for District Plan monitoring will come from the annual Resource Consents and Complaints Monitoring Report. Similarly, information from the District Plan Monitoring Report will feed into state of the environment monitoring and reporting.

### 8.4 Reporting and Review Procedures

Monitoring of the District Plan is intended to determine whether the District Plan is achieving the desired outcomes and anticipated environmental results identified in the plan, and whether the methods employed in the plan are the most appropriate to achieve these. In addition, monitoring is intended to determine whether the policies and methods are actually being implemented effectively. Lastly, monitoring should reveal whether the District Plan is achieving the purpose and principles of the RMA as set down in Part II of the Act (*Sections 5, 6, 7 and 8*).

It is intended to produce a District Plan Monitoring Report every five years to report on the above issues. The report will be based on the monitoring indicators identified in Section 8.3 of the Monitoring Strategy, initially focusing on selected 'key' indicators.

If the results presented in the District Plan Monitoring Report suggest that the District Plan is not achieving its expected outcomes, a re-examination and re-evaluation of the suitability and effectiveness of provisions contained in the plan (*including objectives, policies and methods*) will be required. Over time, through such re-evaluations resulting from District Plan monitoring, it is expected that improvements will be made to the District Plan to better enable the sustainable management of the District's natural and physical resources.

The information contained in the District Plan Monitoring Report will be aimed primarily at an internal Council audience, particularly policy and consents processing staff. Some of the information will also be used in state of the environment reports which are also to be produced five yearly. These, however, are intended for a wider audience – both internal and external – and will be of a less technical nature.

It is envisaged that the District Plan monitoring procedures (*including monitoring indicators*) will be subject to ongoing review and revision where necessary. This will be a continuous process as new information comes to light and deficiencies in the programme are exposed.

## 9 State of the Environment Monitoring

The final type of monitoring territorial authorities are required to undertake is that relating to the state of the environment. According to Section 35 of the RMA, a territorial authority is required to carry out monitoring of the:

- **state of the whole or any part of the environment** of its District to the extent that is appropriate to enable the local authority to effectively carry out its functions under [the] Act.

Thus, whilst there is clear direction to monitor the state of the environment, territorial authorities have some discretion as to how they will develop and apply an **appropriate** and **effective** state of the environment monitoring programme and to what extent they will do so. The Act requires monitoring of the state of the environment to the extent that is appropriate for the territorial authority to effectively carry out its functions. It does not advocate exhaustive monitoring of all aspects of the environment – only those for which the authority has functions under the Act.

Furthermore, while there is a clear directive to undertake appropriate monitoring, and to collect data and have it available for public scrutiny, there is no statutory requirement to produce an actual state of the environment report. Section 35 of the RMA requires that territorial authorities:

- **gather [and] keep reasonably available information** which is relevant to the administration of plans, the monitoring of resource consents, and current issues relating to the environment of the area.

This is to enable the authority to fulfill its functions under the RMA and to enable public education and public participation in resource management procedures. A periodic state of the environment report would seem to be the most appropriate method to collate data from environmental monitoring and have it available in a form that is easily accessible to the public and for Council use.

The Ministry for the Environment describes ‘state of the environment’ monitoring and reporting as encompassing systematic monitoring, gathering, and analysis of environmental data, and the dissemination of reliable, scientifically based, and easily understood information about the condition (state) of the environment, the pressures on it, and the effectiveness of measures taken to correct any problems. The Ministry outlines the basic steps as follows:

- regular standardised monitoring of the environment to detect environmental conditions and trends
- regular reporting of information to the public and other interested parties
- regular publication of a ‘state of the environment’ report
- compilation of a directory of sources of environmental information; and
- potential establishment of national (and possibly regional and local) resource accounts.

State of the environment monitoring and reporting is already underway in many countries, including the United States, the European Union, Australia and Canada.

The 1996 OECD review of New Zealand’s environmental policy framework noted that, despite our innovative environmental legislation, New Zealand’s lack of high quality environmental data created a considerable barrier to effective environmental planning and resource management. The review recommended that high priority be given to improving baseline environmental data in New Zealand; initiating state of the environment monitoring and reporting; and developing a set of national environmental indicators to track environmental change over time.

Baseline information about the state of the environment is essential for assessing what changes are occurring in the environment and whether those changes are detrimental (*both to ecosystem functions and to human well being*). State of the environment monitoring attempts to reveal the causes of that change and whether it is naturally occurring or human induced. Resource management and environmental policy directions can be instituted and reviewed accordingly. Monitoring the state of the environment provides valuable information that can be used in the development of future resource strategies, and provides indications of the effectiveness of current strategies and policies by comparing results against baseline information.

One method of monitoring the state of the environment is through the use of standardised environmental indicators. These indicators are intended to establish baseline environmental information and to show changes in environmental phenomena over time. A ‘National Environmental Indicators and Monitoring Programme’ (*EPI*) is currently being developed by the Ministry for the Environment. The intent of the programme is to standardise the key indicators being monitored throughout the country so that information

can be shared between different agencies, useful comparisons can be made between localities, and national, regional and local trends can be identified.

Environmental indicators come in many forms. An indicator may be a plant or an animal which is particularly sensitive to environmental change (*a bio-indicator*); it may be a chemical or a pollutant in water, air, or the soil; or it may simply be a measure of the amount of a particular resource. The programme has focused initially on indicators for land, water, and air. It will then turn to waste; contaminated sites; indigenous habitat and biodiversity; pests, weeds and diseases; fisheries resources; energy; climate change and ozone; and transport. Some of these indicators will be relevant to the monitoring functions of territorial authorities.

The EPI Programme uses a modified ‘Pressure-State-Response’ (PSR) model to develop indicators. This model is useful in organising the way indicator development is approached. Conceptually, it asks the following three questions:

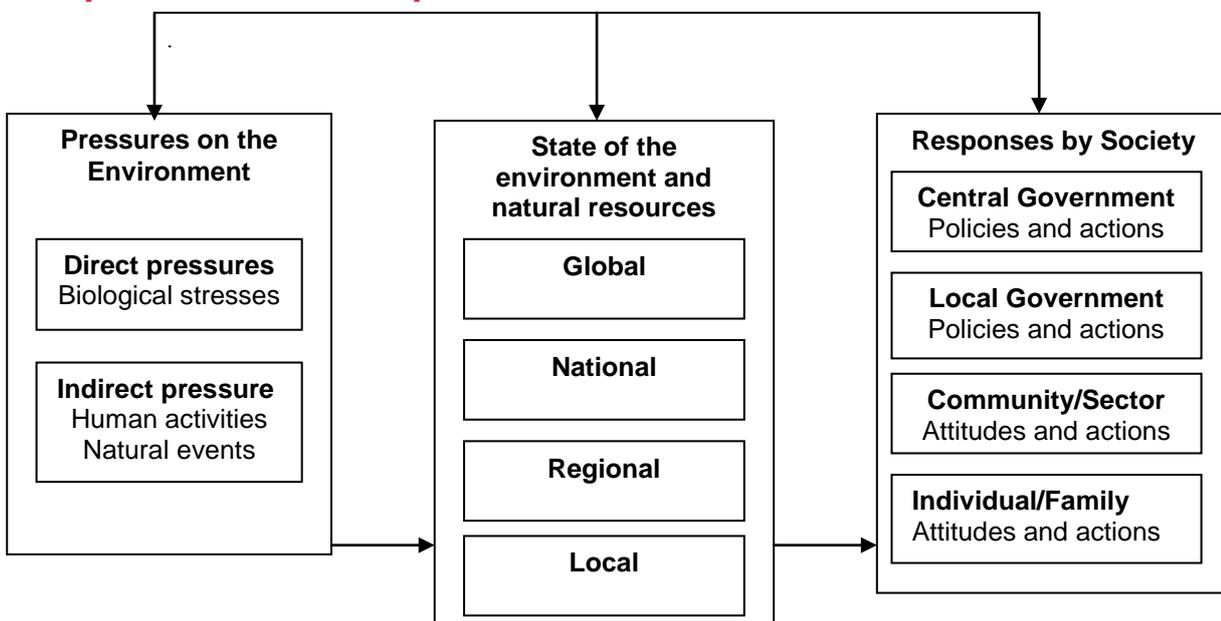
- what are the pressures on the environmental issue
- what is the state of the environmental phenomenon in question
- what policy responses are being implemented or need to be implemented.

The framework is based upon the concept of causality. Human activities exert **pressures** on the environment, changing both its quality and the quantity of natural resources. These changes alter the **state**, or condition, of the environment. The human **responses** to these changes include any organised behaviour that aims to reduce, prevent or mitigate undesirable changes.

State of the environment indicators are similar to but, in some ways, different to District Plan effectiveness indicators. State of the environment indicators may simply generate a ‘picture’ of how the state of the environment changes over time, while District Plan effectiveness indicators will seek to measure the effectiveness of the plan’s policies and methods to achieve the objectives and anticipated environmental outcomes contained within the plan. State of the environment indicators will provide information about the overall effectiveness and suitability of the District Plan and may identify areas that need to be more effectively targeted by the plan. District Plan effectiveness indicators can likewise provide information on the state of the environment. By basing the state of the environment indicators on issues identified in the District Plan it should be possible to get a general state of the environment report that assists in the evaluation of the plan as well.

As already pointed out, the linkage between state of the environment monitoring and reporting and District Plan evaluation is important yet difficult to establish. Many of the state of the environment reports being produced by local authorities have minimal linkages (*if any*) back to plan and policy statement evaluation. Some authorities are treating the two functions separately. State of the environment monitoring and reporting, however, must inform District Plan procedures if it is to be effective from a planning perspective. It is the District Plan that is the main mechanism enabling territorial authorities to respond to development pressure and environmental change. As state of the environment monitoring reveals resource management and environmental issues of District significance these issues need to be linked into, and be addressed by, the planning procedures contained in the District Plan.

## The pressure-state-response model



The state of the environment monitoring undertaken by territorial authorities will need to be cognisant of, and integrated with, state of the environment monitoring undertaken by other agencies, particularly regional authorities. The state of the environment monitoring responsibilities of territorial authorities are more limited than those of regional authorities, who should be seen as the major functionaries in respect to comprehensive environmental monitoring. In particular, state of the environment monitoring at District level has a more limited land based scope, with its primary focus being on land use activities and the effects of those activities on particular aspects of the environment. Discharges to air and water are the responsibility of regional authorities and the monitoring of air and water resources will fall mainly to regional councils. Monitoring duties for territorial authorities have the added complexity, however, of considering amenity values and the quality of the urban environment.

Effective state of the environment monitoring for territorial authorities should be directed at those aspects of resource management and environmental regulation where outcomes can most clearly be linked to the responsibilities of territorial authorities. In this way, overlap between regional councils and territorial authorities can be reduced. It is important to establish dialogue between regional and territorial authorities to ensure duplication of monitoring functions is avoided. In addition, liaison between neighbouring territorial authorities is beneficial in ensuring an integrated monitoring approach for dealing with cross boundary issues.

In addition, territorial authorities developing state of the environment monitoring programmes at the local level should be aware of the need to integrate their information with regional and national information bases. This will require a certain level of standardised data collection and data management techniques. Liaison with national and regional organisations involved in environmental data collection, analysis and management will be necessary to ensure effective integration of information at the various levels of activity.

Thus, state of the environment monitoring and reporting by territorial authorities should, at the very least:

- 1 Provide baseline information on the state of the District's environment, particularly in regard to the significant issues identified in the District Plan.
- 2 Provide information on changing environmental and resource conditions (*and development pressures*) over time, particularly in regard to the significant issues identified in the District Plan.
- 3 Identify new issues, or trends, of significance in the District that require responses through the District Planning process.

State of the environment monitoring should be viewed as an on-going process that will develop over time in response to development pressures and changing environmental conditions. It may, in the future, lead to a form of resource and environmental accounting on national (*and perhaps, regional and local scales*) that will feed into an integrated socio-economic-environmental accounting and monitoring system that attempts to develop comprehensive indicators for monitoring sustainable development.

## 9.1 Issues and Information Needs

This section identifies issues concerning state of the environment monitoring for which information is to be collected, stored and reported upon. Potential indicators are also identified.

Whilst District Plan monitoring is confined to those resource management issues outlined in the District Plan, state of the environment monitoring takes a wider, more holistic view of the environment. This includes not only the biophysical, or natural environment, but also the socio-economic and cultural environment. This approach is supported by the definition of environment in the RMA, which states:

*'Environment' includes:*

- a *Ecosystems and their constituent parts, including people and communities; and*
- b *All natural and physical resources; and*
- c *Amenity values; and*
- d *The social, economic, aesthetic, and cultural conditions which affect the matters stated in paragraphs (a) to (c) of this definition or which are affected by those matters.*

It is widely recognised, particularly since the emergence of the concept of sustainable development, that ecological, social and economic issues should not be dealt with in isolation. Indeed, the distinguishing characteristic of the concept of sustainable development is that it incorporates all three elements into any explanation or examination of human development and human/nature relationships.

Such an approach to state of the environment monitoring and reporting will provide Council and the community with a better understanding of the context within which resource management issues arise and must be managed. It is not intended, however, that Council collects its own data on demographic and socio-economic issues. Rather, Council intends to acquire this information from other sources such as Statistics NZ, etc.

In regard to information on other issues, including those related to the biophysical environment, Council will, where possible, obtain this information from District Plan monitoring. This will be supplemented by information from other sources such as the NRC.

The following table provides an outline for a state of the environment monitoring report, identifying issues to be reported upon in the left column. In the right column relevant chapters of the District Plan are identified for which information will be sourced via District Plan monitoring, along with other possible sources of information.

Each section of the table, encompassing a number of issues to be reported upon, will be examined and information needs and sources identified along with potential indicators.

### Outline for state of the environment monitoring report and relationship to district plan monitoring process

State of the Environment Report	District Plan Provisions and other Sources of Information
Introduction <ul style="list-style-type: none"> <li>• Local governance</li> <li>• Community consultation</li> <li>• Legislative requirements</li> <li>• Purpose of monitoring</li> </ul>	
<b>Part I – The Human and Built Environment</b>	
1 People and Communities <ul style="list-style-type: none"> <li>• History</li> <li>• Demographics</li> <li>• Crime</li> <li>• Health</li> <li>• Education</li> <li>• Community well being</li> </ul>	<i>Statistics NZ</i> <i>Ministry of Health</i> <i>Ministry of Education</i> <i>WDC Survey of satisfaction</i>
2 Tangata Whenua	Chapter 6 – Tangata Whenua  <i>NRC monitoring</i> <i>Tangata whenua</i>
3 Socio-Economic Background <ul style="list-style-type: none"> <li>• Economic activity</li> <li>• Business sectors</li> <li>• Occupation types</li> <li>• Income levels</li> <li>• Employment/unemployment</li> <li>• Housing</li> </ul>	<i>NRC monitoring</i> <i>Statistics NZ</i> <i>Work and Income NZ</i> <i>NZ Tourism Board</i>
4 Land Use Activities <ul style="list-style-type: none"> <li>• Rural               <ul style="list-style-type: none"> <li>• Agriculture</li> <li>• Horticulture</li> <li>• Forestry</li> <li>• Mining</li> <li>• Rural/residential</li> </ul> </li> <li>• Urban               <ul style="list-style-type: none"> <li>• Residential</li> <li>• Commercial</li> <li>• Industrial</li> </ul> </li> </ul>	Chapter 7 – Subdivision and Development Chapter 17 - Minerals  <i>NRC monitoring</i> <i>Statistics NZ</i> <i>WDC Urban Growth Strategy</i>

<b>State of the Environment Report</b>	<b>District Plan Provisions and other Sources of Information</b>
5 Services and Infrastructure <ul style="list-style-type: none"> <li>• Parks and reserves</li> <li>• Civic amenities</li> <li>• Water supply</li> <li>• Stormwater</li> <li>• Wastewater</li> <li>• Solid waste</li> <li>• Roothing</li> <li>• Network utilities</li> </ul>	Chapter 8 – Financial Contributions Chapter 14 – Open Space Chapter 21 – Road Transport Chapter 22 – Network Utility Services  <i>WDC Proposed District Plan – Subdivision and Development Overview Report</i> <i>WDC Open Space Strategy</i> <i>WDC Strategic Infrastructure and Asset Management Plans</i> <i>WDC Waste Management Plan</i> <i>NRC monitoring</i>
6 Port and Airport	Chapter 23 – Whangarei Airport Chapter 24 – Marsden Point Port  <i>NRC monitoring</i>
7 Contaminated Sites and Hazardous Substances	Chapter 19 – Contaminated Sites Chapter 20 - Hazardous Sites  <i>NRC monitoring</i> <i>WDC Waste Management Plan</i>
8 Cultural and Historic Heritage <ul style="list-style-type: none"> <li>• Heritage buildings, sites and objects</li> <li>• Heritage trees</li> <li>• Archaeological sites</li> <li>• Sites of significance to Maori</li> </ul>	Chapter 12 – Heritage Buildings, Sites and Objects Chapter 13 – Heritage Trees Chapter 6 – Tangata Whenua  <i>NRC monitoring</i> <i>NZ Historic Places Trust</i> <i>NZAA, DoC</i>
9 Amenity Values <ul style="list-style-type: none"> <li>• Urban amenity</li> <li>• Rural amenity</li> <li>• Open space</li> <li>• Specific issues               <ul style="list-style-type: none"> <li>○ Noise/vibration control</li> <li>○ Animal control</li> <li>○ Building control</li> <li>○ Traffic control</li> <li>○ Visual amenity</li> <li>○ Health and licensing</li> </ul> </li> </ul>	Chapter 5 – Amenity Values  <i>NRC monitoring</i> <i>Transit NZ</i> <i>Public Health Authorities</i> <i>DoC</i>
10 Integrated Management	Chapter 25 – Local Authority and Cross Boundary Issues <i>NRC monitoring</i>
<b>Part II – The Natural Environment</b>	
1 The Land Resource <ul style="list-style-type: none"> <li>• Landform</li> <li>• Geology</li> <li>• Soils</li> <li>• Vegetation (land cover)</li> <li>• Land use capability</li> <li>• Erosion potential</li> </ul>	<i>NRC monitoring</i> <i>MAF Land Cover Database</i> <i>NZ Land Resource Inventory</i>
2 Climate and Air Quality	<i>NRC monitoring</i> <i>NIWA</i>
3 Freshwater Resources	Chapter 11 – Water Bodies  <i>NRC monitoring</i> <i>NIWA</i>

<b>State of the Environment Report</b>	<b>District Plan Provisions and other Sources of Information</b>
4 Coastal Environment	Chapter 9 – The Coast  <i>WDC Coastal Management Strategy</i> <i>NRC monitoring, DoC</i>
5 Riparian and Coastal Margins	Chapter 10 – Riparian and Coastal Margins  <i>NRC monitoring</i> <i>DoC</i>
6 Natural Heritage <ul style="list-style-type: none"> <li>• Landscapes</li> <li>• Indigenous vegetation and habitats</li> <li>• Biodiversity</li> </ul>	Chapter 15 – Landscape Chapter 16 - Indigenous Vegetation and Habitat  <i>NRC monitoring</i> <i>DoC</i>
7 Open Space	Chapter 14 – Open Space  <i>WDC Open Space Strategy</i> <i>NRC monitoring</i> <i>DoC</i>
8 Natural Hazards <ul style="list-style-type: none"> <li>• Coastal erosion</li> <li>• Flooding</li> <li>• Land subsidence</li> </ul>	Chapter 18 – Natural hazards  <i>NRC monitoring</i>
9 Conclusions	

## Information Required for Monitoring State of the Environment Issues

### Part I – The Human Environment

- i People and Communities. This could be monitored by:
- **Population and population growth for the District as a whole.** Information on the present population along with past and future trends could be useful for planning for development in the District, resource use, environmental pressures, provision of services and infrastructure, etc.
  - **Population and population growth in different parts of the District.** Information on the present population along with past and future trends in different parts of the District could be useful for planning for spatial variations in development, resource use, environmental pressures, provision of services and infrastructure, etc.
  - **Age and gender composition.** Information on the age and gender composition of the population could be useful for planning the provision of services, civil amenities, recreational facilities, reserves, etc.
  - **Ethnic profile.** Information on the ethnic composition of the population could be useful for planning the provision of services, civic amenities, cultural facilities, recreational facilities, etc.
  - **Crime.** Information on crime (*recorded, resolved, violent, etc*) can indicate the safety of our communities and has implications for city centre planning, lighting provision, liquor licensing, parks and reserves management, etc.
  - **Health.** Information on health (*life expectancy, infant mortality, causes of death, infectious diseases, etc.*) can indicate the health of our people and communities and has implications for provision of services, health facilities, family planning, housing, etc.
  - **Education.** Information on education, including early childcare facilities, primary, secondary and tertiary facilities, percentage of population with qualifications/no qualifications, etc. can indicate the educational level of our people and communities and has implications for employment, future development, provision of services, etc.
  - **Community wellbeing.** Information on community wellbeing could be supplied by a survey of satisfaction with the District as a place to live. This could give a general indication as to how people feel about the District.
- ii Tangata Whenua. This could be monitored by:
- **Iwi and hapu rohe.** The identification of iwi and hapu rohe could provide information on the identity and location of tangata whenua groups Council should be interacting with.
  - **Institutional arrangements.** Institutional arrangements for facilitating effective liaison between Council and tangata whenua including Maori liaison personnel, protocols or memoranda of agreement or understanding, a Maori standing committee, working parties or advisory groups. Such arrangements could be indicative of Council's commitment to Treaty of Waitangi principles.
  - **Transfer of functions, powers or duties.** Transferring functions, powers or duties to iwi authorities under section 33 of the RMA could provide information on Council's recognition and provision for the relationship of Maori with their ancestral lands, waters, sites, wahi tapu and other taonga. Trends could be established over time.
  - **Iwi and hapu management plans.** The development of iwi and hapu management plans that relate to the District could provide information on Council's recognition and provision for the relationship of Maori to their ancestral lands, water, sites, wahi tapu and other taonga.
  - **Agreements and protocols.** Agreements and protocols set up to facilitate consultation and participation could provide information on the effectiveness of consultation with, and participation of, tangata whenua in resource management processes.
  - **Cultural and spiritual values.** Taking account of Maori cultural and spiritual values in resource management processes and Council decision making could provide information on Council's recognition and provision for the relationship of Maori with their ancestral lands, waters, sites, wahi tapu and other taonga.

- **Traditional practices.** Recognition of, and provision for, traditional practices of tangata whenua such as tapu, rahui, etc. in resource management processes where appropriate could provide information on Council's recognition and provision for the relationship of Maori with their ancestral lands, water, sites, wahi tapu and other taonga.
- **The number and distribution of sites of significance to Maori.** The number and distribution of sites of significance to Maori identified, assessed and shown on the planning maps in the District Plan could provide information on the adequacy of identification and assessment of Maori cultural heritage. Trends could be established over time.

iii Socio-Economic Background. This could be monitored by:

- **Gross District product.** Information on the gross product for the District, including trends and comparisons with other areas, could provide information on the state of the District's economy and could be useful for planning for future development, provision of infrastructure, etc.
- **Contributions by different sectors.** The contributions by different sectors, including:
  - Retail
  - Manufacturing
  - Farming
  - Mining
  - Construction
  - Tourism
  - Services
  - Real estate

could provide information on the state of the District's economy and be useful for planning for future development, provision of infrastructure, services, etc.

- **Occupation types.** The number of people employed in different occupation types could provide information on employment in the different sectors of the economy and could be useful for planning for future development, provision of services, etc.
- **Personal income levels.** Personal income levels, including trends and comparisons with other areas, could provide information on the state of the District's economy, likely demand for goods and services, together with information on social characteristics of the District.
- **Household income.** Household income levels, including trends and comparisons with other areas, could provide information on the state of the District's economy, likely demands for goods and services, together with information on social characteristics of the District.
- **Employment/unemployment figures.** Figures on employment/unemployment could provide information on the state of the District's economy, labour market, and the ability of the local economy to create and retain jobs, together with information on social and health issues relating to unemployment.
- **Housing – privately owned/rented.** Information on housing, including the proportion privately owned and rented, could provide information on the economic and social characteristics of the District.
- **People per household.** The number of people per household could provide information on social and economic characteristics of the District, together with health issues relating to overcrowding.
- **Proportion of single-parent households.** The numbers and proportion of single-parent households in the community could provide information on the economic and social characteristics of the District, together with health, education, social services, etc.

iv Land Use Activities. These could be monitored by:

- **Existing land use and development pattern.** The existing land use and development pattern could be mapped and analysed with respect to the location of the various Environments, and the land use activities taking place within each Environment. For example, the spatial arrangement of the following Environments and land uses could be delineated and quantified:
  - Living (*residential*)

- Business (*commercial, industrial*)
  - Countryside and Coastal Countryside (*rural residential, agriculture, horticulture, forestry, mineral extraction, etc*)
  - Open Space (*parks and reserves*)
  - Airport
  - Port
- **Broad development trends for the District.** The broad development trends for the District could be indicated by the number of land use, subdivision and building consents issued over time, together with the spatial distribution of each type of consent issued. In other words, the spatial arrangement of development – where development is occurring at present, and where it is expected to occur in the future, could be mapped and quantified. The amount of land in each Environment available for various land uses could also be quantified.
  - **Density, consolidation, sporadic subdivision and ribbon development.** Information on development density, consolidation, sporadic subdivision and ribbon development could be obtained by analysis of the existing land use and development pattern together with the broad development trends as indicated above. Trends relating to density, consolidation, sporadic subdivision and ribbon development could be established over time.
  - **Efficient use and development.** The efficient use and development of natural and physical resources could be indicated by the compactness of development, proximity of residential areas to shopping, to work places and places of recreation; the efficient use of versatile soils; and the density and location of residential, commercial and industrial development in relation to provision of infrastructure and services.
  - **Incompatible land use activities.** Conflicts between land use activities, including reverse sensitivity issues, as indicated by complaints and submissions/conditions on resource consent applications could be useful for planning the spatial arrangement of incompatible land use activities, i.e. through zoning, subdivision control, separation distances, performance standards, etc.
  - **Mineral extraction and processing sites.** The location of existing mineral extraction and processing sites (*mines and quarries*), together with existing Mineral Extraction Areas, could be mapped. Trends could be established over time. In future, a Minerals Information Database could be compiled, containing information on the type, location and scale of mineral resources within the District, their current usage and the feasibility of future use.
- v Services and Infrastructure. This could be monitored by:
- **Parks and reserves (*Open Space*).** The number, type and distribution of open space in the District (*urban area and whole District*), including parks and reserves (*active, passive recreation, amenity, etc.*), walkways (*coastal, urban, etc.*), esplanade reserves, covenanted areas, heritage areas, etc. (*mapped and quantified*).
  - **Civil amenities.** The number, and distribution of civil amenities, including libraries, art galleries, museums, swimming pools, community halls, retirement homes, marinas, Harbour Basin facilities, Visitor's Centre, public toilets, Forum North, etc.
  - **Water supply.** The location and extent of reticulated water supply. Identification of areas that do not have reticulated water supply and areas identified for future reticulation. Quality and quantity of water reticulated.
  - **Stormwater disposal.** The location and extent of reticulated stormwater disposal. Identification of areas that do not have reticulated stormwater disposal and areas identified for future reticulation. Quality of stormwater and effects on receiving environment.
  - **Wastewater disposal.** The location and extent of reticulated wastewater disposal system. Identification of areas that do not have reticulated wastewater disposal and areas identified for future reticulation. Other systems of disposal in use. The quality of effluent and effects on receiving environment.
  - **Solid waste disposal.** Number and location of landfills, transfer stations, etc. Projected life of landfills and proposed alternatives. Areas that do not have regular solid waste collection. Figures on waste produced per capita, Composition and source of waste, waste reduction, amount and type of waste recycling, etc. (**MfE Indicator**).

- **Roading.** The location and extent of existing roading network based upon an accepted roading hierarchy, together with proposed extensions to roading network. Other indicators could also be used, such as:
  - Comparison of sealed to unsealed roads
  - Length of road sealed annually, resurfacing of sealed roads, improvements to unsealed roads, etc
  - Bridge and culvert construction and maintenance
  - Traffic volumes, including heavy traffic movements
  - Road capacity and performance
  - Road safety, road accidents, etc
  - Provision and maintenance of footpaths and cycleways
  - Provision of car parking and street lighting.
- **Network utilities.** The location and extent of existing network utility services, including electricity supply, radio, telecommunications, gas, oil and petroleum pipelines. Communities served (*not served*) by different network utilities (*e.g. mobile phones*) could also be identified. The undergrounding of network utilities could also be delineated and quantified. Location in relation to significant natural areas, including notable and outstanding landscape, together with significant cultural and historic heritage and sensitive amenity areas, could also be depicted and analysed.

vi Port and Airport. This could be monitored by:

#### Marsden Point Port

- **Existing site and surrounding land uses.** The extent of the Port site showing existing boundaries and surrounding land uses could provide information on the efficient, safe and future operation of the Port, together with actual and potential conflicts with surrounding land uses. Trends concerning growth could be established over time.
- **Ship movements.** The number of shipping movements, and total tonnage of materials moved, could provide information on the present scale of operations together with growth trends. The types of cargo handled could provide information on present and future Port operations.
- **Economic returns.** The economic returns from Port operations could provide information on the viability and value of the Port to both the local and regional economy.
- **Noise levels.** Monitoring of noise levels in relation to the standards set out in the District Plan, and consent conditions, could provide information on the effects of the Port on surrounding amenity values.
- **Consents and designations.** Monitoring of consents and designations could provide information on the effects of the Port on natural, cultural and amenity values.
- **Number, cause and frequency of complaints.** Complaints data could provide information on the operation of the Port in regard to effects on natural, cultural and amenity values.

#### Whangarei Airport

- **Existing site and surrounding land uses.** The extent of the Airport site showing existing boundaries and surrounding land uses could provide information on the efficient, safe and future operation of the Airport, together with actual and potential conflicts with surrounding land uses. Trends concerning growth could be established over time.
- **Aircraft movements.** The number of aircraft movements, and total tonnage of materials moved, could provide information on the present scale of operations together with growth trends. The types of cargo handled could provide information on present and future Airport operations.
- **Economic returns.** The economic returns from Airport operations could provide information on the viability and value of the Airport to both the local and the regional economy.
- **Noise levels.** Monitoring of noise levels in relation to the standards set out in the District Plan, and consent conditions, could provide information on the effects of the Airport on surrounding amenity values.
- **Consents and designations.** Monitoring of consents and designations could provide information on the effects of the Airport on natural, cultural and amenity values.

- **Number, cause and frequency of complaints.** Complaints data could provide information on the operation of the Airport in regard to effects on natural, cultural and amenity values.
- vii Contaminated Sites and Hazardous Substances. This could be monitored by:

#### Contaminated Sites

- **The number and distribution of confirmed contaminated sites.** The number of contaminated sites identified, assessed, listed on a database and mapped could provide information on the extent of the problem existing in the District (*see 1994 survey undertaken by Tonkin and Taylor Ltd for NRC*). Trends could be established over time (*MfE Indicator*).
- **The classification of confirmed contaminated sites.** The classification of listed contaminated sites could provide information on the relative significance of these sites, and provide information for prioritising remediation (*MfE Indicator*).
- **Number and distribution of rehabilitated sites.** The number and distribution of rehabilitated sites could provide a measure of how well Council is remediating contaminated sites. Trends could be established over time (*MfE Indicator*).
- **Location and type of development on, or near to, contaminated sites.** Resource and building consents data could provide information on the type of development taking place near to contaminated sites together with information on the environmental effects of contaminated sites in relation to activities locating there.
- **Number and frequency of reported health and/or safety incidents relating to contaminated sites.** Data from OSH statistics, public health databases, media reports, etc. on health and safety issues relating to contaminated sites could provide information on the effects of contaminated sites on health and safety of people and communities.
- **Number, cause and frequency of complaints.** Complaints relating to contaminated sites could provide information on the effects of contaminated sites on the environment and on the health and safety of people and communities.

#### Hazardous Substances

- **The types and amounts of hazardous substances.** The types and amounts of hazardous substances that are in use in the District could be identified and classified as to their potential effects on the environment and on people and communities. Hazardous Substances Records contain information on premises licensed to store hazardous substances. Trends could be established over time.
- **The number and frequency of recorded environmental incidents concerning hazardous substances.** Data from NRC, DoC, Ministry for the Environment, media reports, etc. on environmental incidents involving hazardous substances could provide information on the adequacy of controls on the use, storage, manufacture, transport and disposal of hazardous substances. Trends could be established over time.
- **The number and frequency of recorded health and/or safety incidents concerning hazardous substances.** Data from OSH, public health authorities, the media, etc. on health and safety issues relating to hazardous substances could provide information on the adequacy of controls on the use, storage, manufacture, transport and disposal of hazardous substances. Trends could be established over time.
- **Collection and disposal facilities to deal with hazardous wastes.** The number and location of collection and disposal facilities could provide information on the adequacy of disposal of hazardous substances (*see Hazardous Wastes Technical Advisory Group*) (*MfE Indicator*).
- **Quantities of hazardous wastes collected and disposed of.** The quantities of hazardous wastes collected and disposed of could provide information on the extent of the problem of hazardous wastes. Trends could be established over time (*MfE Indicator*).
- **Consents and consent conditions.** Monitoring of consents and consent conditions could provide information on the effects of the use, storage, manufacture, transport and disposal of hazardous substances on the environment, and on the health and safety of people and communities.

- **The number, cause and frequency of complaints.** Complaints relating to hazardous substances could provide information regarding environmental and health and safety effects of the use, storage, manufacture, transport and disposal of hazardous substances.

viii Cultural and Historic Heritage: This could be monitored by:

### Heritage Buildings, Sites and Objects

- **The number and distribution of heritage buildings, sites and objects.** The number of heritage buildings, sites and objects identified, assessed and listed in the District Plan Schedules and on the New Zealand Historic Places Trust Register and shown on the planning maps could provide information on the recognition and identification of heritage items. Trends could be established over time.
- **The classification of listed heritage buildings, sites and objects.** The classification of listed heritage buildings, sites and objects into Group I and Group II categories in the District Plan could provide information on the appropriate recognition of heritage values of listed items.
- **The number and distribution of heritage covenants.** The number and distribution of heritage covenants could provide information on the level of protection afforded to heritage buildings, sites and objects. Trends could be established over time.
- **The number and distribution of heritage orders.** The number and distribution of heritage orders could provide information on the level of protection afforded to heritage buildings, sites and objects. Trends could be established over time.

### Heritage Trees

- **The number and distribution of heritage trees.** The number and distribution of heritage trees identified, assessed and listed in the District Plan Schedules and shown on the planning maps could provide information on the recognition and identification of heritage trees. Trends could be established over time.
- **The classification of listed heritage trees.** The classification of listed heritage trees into Group I and Group II categories in the District Plan could provide information on the appropriate recognition of heritage values of listed items.
- **The number and distribution of heritage covenants.** The number and distribution of heritage covenants could provide information on the level of protection afforded to heritage trees. Trends could be established over time.
- **The number and distribution of heritage trees of significance to Maori.** The number of heritage trees of significance to Maori identified in iwi and hapu management plans could provide information on the adequacy of recognition, identification and protection of these items. Trends could be established over time.

### Archaeological Sites

- **The number and distribution of archaeological sites.** The number and distribution of archaeological sites identified, assessed and listed in the Historic Places Trust Register and the NZAA Index and mapped for the District could provide information on the adequacy of recognition, identification and protection of these items. Trends could be established over time.
- **The number and distribution of heritage covenants.** The number and distribution of heritage covenants could provide information on the level of protection afforded to archaeological sites. Trends could be established over time.
- **The number and distribution of heritage orders.** The number and distribution of heritage orders could provide information on the level of protection afforded to archaeological sites. Trends could be established over time.

### Sites of Significance to Maori

- **The number and distribution of sites of significance to Maori.** The number and distribution of sites of significance to Maori identified, assessed and listed in the District Plan Schedules and shown on the planning maps could provide information on the adequacy of identification and protection afforded to these items. Trends could be established over time.

- **Identification of heritage sites and landscapes of significance to Maori.** The identification of heritage sites and landscapes of significance to Maori in iwi and hapu management plans could provide information on the adequacy of the recognition, identification and protection of these items.
- **The number and distribution of heritage covenants.** The number and distribution of heritage covenants could provide information on the level of protection afforded to sites of significance to Maori. Trends could be established over time.
- **The number and distribution of heritage orders.** The number and distribution of heritage orders could provide information on the level of protection afforded to sites of significance to Maori. Trends could be established over time.

ix Amenity Values. This could be monitored by:

### Urban Amenity

- **Mix of activities.** The spatial distribution of land uses in the urban Environments as revealed by the number and distribution of resource consents issued could indicate the continuity of residential housing, together with the mix of other activities such as commercial, industrial and/or recreational. Trends over time could be established.
- **Incompatible activities.** Conflicts over amenity values between incompatible land uses could be indicated by the number and frequency of complaints (as revealed by the complaints register) relating to amenity values. Trends could be established over time.
- **Number, cause and frequency of complaints.** Complaints data could reveal information on the number and frequency of complaints over amenity in the urban Environments. Trends could be established over time. Complaints data could also reveal which particular amenity values were most frequently the cause of complaint.
- **Qualitative and quantitative assessment.** Field surveys of amenity in the urban Environments could reveal changes and trends in the character and amenity of each locality.
- **Public perceptions.** Further information relating to amenity values in the urban Environments could be obtained through the use of public opinion polls, customer feedback and consultation.

### Town Basin/Retail Centres

- **Mix of activities.** The spatial distribution of land uses in the Whangarei Town Centre/Town Basin, together with the suburban and rural retail centres, as revealed by the number and distribution of resource and building consents issued could indicate the continuity of retail activities and the mix of other land uses such as residential, industrial and recreational. Trends over time could be established.
- **Number, cause and frequency of complaints.** Complaints data could reveal information on the number and frequency of complaints concerning amenity in the retail centers and Town Basin. Trends could be established over time.
- **Qualitative and quantitative assessment.** Field surveys of the retail centres and Town Basin could provide information on amenity values and trends over time.
- **Public perceptions.** Further information relating to amenity values in the retail centres and Town Basin could be obtained through the use of public opinion polls, customer feedback and consultation.

### Rural Amenity

- **Location of land uses.** The number and spatial distribution of resource and building consents issued could reveal the location of residential activities in relation to other rural land uses. Trends over time could be established.
- **Incompatible activities/reverse sensitivity.** Conflicts over amenity values between incompatible land uses (*including reverse sensitivity issues*) could be indicated by the number and frequency of complaints (*as revealed by the complaints register*) relating to amenity values. Trends could be established over time.
- **Number, cause and frequency of complaints.** Complaints data could reveal information on the number and frequency of complaints regarding conflicts between rural residential development and primary production. Trends over time could be established.
- **Qualitative and quantitative assessments.** Field surveys of the Countryside and Coastal Countryside Environments could provide information on amenity values and trends over time.

- **Public perceptions.** Further information relating to amenity values in Countryside and Coastal Countryside Environments could be obtained through the use of public opinion polls, customer feedback and consultation.

### Open Space

- **Access to Open Space.** Access to open space, both active and passive, as revealed by the distribution of open space in urban and rural Environments, and the quantum available per number of residents.
- **Encroachment on Open Space.** The number and spatial distribution of resource and building consents could reveal whether development is encroaching on to, or near to, Open Space.
- **Number, cause and frequency of complaints.** Complaints data could reveal information on the number and frequency of complaints relating to Open Space amenity values.
- **Qualitative and quantitative assessment.** Field surveys of the Open Space Environment could provide information on amenity values and trends over time.
- **Public perceptions.** Further information relating to amenity values of Open Space could be obtained through the use of public opinion polls, customer feedback and consultation.

### Specific Issues

- Noise/vibration control
- Animal control
- Building control
- Traffic control
- Visual amenity
- Health and safety.

These issues could be monitored by:

- **Number, cause and frequency of complaints.** Complaints data could reveal information on the number and frequency of complaints in relation to each of the above effects (*pie graph*). Trends could be established over time.
- **Ambient noise/vibration levels.** Ambient noise/vibration levels in the different Environments and noise levels associated with specific activities e.g. traffic, airport, port, etc. could provide information on noise amenity. Trends could be established over time.
- **Excessive noise complaints.** Figures on excessive noise complaints, infringement notices issued, equipment seized, etc. could provide information on noise amenity. Trends could be established over time.
- **Animal control.** Figures concerning dog numbers, dog attacks, stray dogs, wandering stock, infringement notices issued, etc. could provide information on animal control.
- **Building control.** Figures on building density (*dwelling per hectare, average lot sizes*) together with building encroachments on outdoor living courts, landscaping, building setbacks, building heights, site coverage, day light angles, etc. could provide information on living amenity, such as access to daylight, sunlight, private open space, privacy, etc.
- **Traffic control.** Figures on traffic movements, heavy vehicle movements, provision of footpaths, parking, street lighting, cycleways, parking infringement notices, etc. could provide information on traffic amenity issues.
- **Visual amenity.** Visual amenity factors in urban, rural and open space Environments, such as landscape encroachments, obtrusive signage, abandoned vehicles, outdoor storage of materials, untidy sections, unkempt buildings, encroachment on streetscapes, etc. could provide information on visual amenity.
- **Health and safety.** Figures on licensed premises, health inspections, rating of food premises, odour, vermin, water quality, hazardous substances, liquor licensing, etc. could provide information on health and safety issues.
- **Public perceptions.** Further information relating to the above effects could be obtained through the use of public opinion polls, customer feedback and consultation.

- x Integrated Management. This could be monitored by:
  - **Local authority cross boundary issues.** The integrated management of natural and physical resources across local authority boundaries, particularly in regard to:
    - Infrastructure that crosses a local authority boundary;
    - Significant natural features and natural resources that cross a local authority boundary;
    - Activities which may have adverse effects that cross a local authority boundary;
    - Iwi and hapu interests that cross a local authority boundary; and
    - The coast.
  - **Processes, protocols and agreements.** Processes, protocols and agreements put in place to address cross boundary issues (*both with adjacent territorial authorities and the Northland Regional Council*) could provide information on the integrated management of resources across local authority boundaries.
  - **Iwi and hapu agreements.** Processes, protocols and agreements instigated with iwi and hapu to address iwi and hapu interests that cross local authority boundaries could provide information on the integrated management of resources across local authority boundaries.
  - **Joint hearings.** Number, nature and frequency of joint hearings with the NRC to address issues that cross local authority boundaries.

## Part II – The Natural Environment

- i The Land Resource. This could be monitored by:

### Landforms

- **Landforms and topography.** The landforms and topography of the District could be described and mapped to provide a geographic context for monitoring the natural environment.

### Geology

- **Geology of the District.** The geology of the District could be described and mapped to provide a geological context for monitoring the natural environment.

### Soils

- **Soils of the District.** The soils of the District could be described and mapped to provide information for monitoring land use activities and the natural environment. Impacts of land use on soils could be scrutinized and reported upon. Trends over time could be established (*MfE Indicator*).

### Vegetation

- **Vegetation.** The vegetation pattern for the District could be described and mapped to provide a botanical context for monitoring land use activities and the natural environment. The Landcover Database (1996) produced by MAF contains information on vegetation cover.

### Land Use Capability

- **Land use capability.** Land use capability for the District could be described and mapped to provide information for monitoring land use activities and the natural environment. The NZ Land Resources Inventory (*NZLRI*) assesses capability based on eight land use capability classes.

### Erosion Potential

- ii Climate and Air Quality. This could be monitored by:

#### Climate

- **Existing climate.** The climate of the District could be described and mapped (*e.g. rainfall, temperatures, wind, sunshine hours, etc.*) to provide background information for monitoring the natural environment generally, and air quality in particular.
- **Climate change.** Climate change that has the potential to affect the District could be described and monitored. This could include monitoring of ozone depleting substances and emissions of green house gases (*see NRC Emissions Inventory*).

## Air Quality

- **Incidents relating to air quality.** The NRC's Environmental Incidents Hotline can monitor the number of incidents relating to air, land, coast, water and other. This can be used to determine the percentage of recorded incidents relating to air quality. Trends over time could be established.
  - **Relative frequency of different types of air quality incidents.** Air quality incidents can be further divided into five main categories: burning/smoke nuisance, agrochemical spraydrift, odour, industrial emissions, and dust nuisance. The relative frequency of different types of air quality incidents can thus be determined. Trends over time could be established.
  - **Point emissions.** The NRC monitors a number of industrial activities that have permits to discharge to air, including in the District the NZ Refinery, the Golden Bay Cement Works and the Kiwi Dairy Factory at Kauri. Air emissions from these industries could be scrutinized and reported upon.
  - **Erosion potential for the District** could be described and mapped to provide information for monitoring land use activities and the natural environment. The impacts of land use on erosion could be scrutinized and reported upon. Trends could be established over time (*MfE Indicator*).
- ii Climate and Air Quality. This could be monitored by:

## Climate

- **Existing climate.** The climate of the District could be described and mapped (*e.g. rainfall, temperatures, wind, sunshine hours, etc.*) to provide background information for monitoring the natural environment generally, and air quality in particular.
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## Air Quality

- **Incidents relating to air quality.** The NRC's Environmental Incidents Hotline can monitor the number of incidents relating to air, land, coast, water and other. This can be used to determine the percentage of recorded incidents relating to air quality. Trends over time could be established.
- **Relative frequency of different types of air quality incidents.** Air quality incidents can be further divided into five main categories: burning/smoke nuisance, agrochemical spraydrift, odour, industrial emissions, and dust nuisance. The relative frequency of different types of air quality incidents can thus be determined. Trends over time could be established.
- **Point emissions.** The NRC monitors a number of industrial activities that have permits to discharge to air, including in the District the NZ Refinery, the Golden Bay Cement Works and the Kiwi Dairy Factory at Kauri. Air emissions from these industries could be scrutinized and reported upon.
- **Non-point discharges.** The NRC monitors a number of non-point discharges, including:
  - Suspended particulate matter (PM10) in central Whangarei
  - Deposited particles in central Whangarei
  - Carbon monoxide in central Whangarei
  - Sulphur dioxide at Marsden Point and central Whangarei (*forthcoming*).

These discharges could be scrutinized and reported upon. Trends over time could be established (*MfE Indicator*).

- **Ambient air quality guidelines.** The Regional Air Quality Plan specifies ambient air quality guidelines for the District. These could be used for background information on issues relating to air quality. See also MfEs 2002 update on Ambient Air Quality Guidelines.
- **Air Emissions Inventory.** NRC is preparing an Air Emissions Inventory to quantify existing air discharges in the Northland region, including emissions of green house gases such as carbon dioxide and methane together with ozone depleting substances. This inventory could be used to obtain information on both climate and air quality in the District.

iii Freshwater Resources. This could be monitored by:

- **The extent and distribution of water bodies.** The extent and distribution of lakes, rivers and wetlands could provide information on the preservation and enhancement of water bodies. Trends over time could be established, particularly in regard to wetlands (*MfE Indicator*).

- **The amenity values of freshwater resources.** The amenity values of freshwater bodies could be assessed, including aspects related to visual, natural, cultural and recreational amenity. Trends could be established over time.
  - **Surface water quality and ecosystem health.** The NRC monitors surface water quality for bacteria levels, dissolved oxygen, pH, temperature, nutrients, ammonia, turbidity, faecal contamination, and nitrates. It also monitors the state of freshwater ecosystems, including macroinvertebrates, native and exotic fishes. Results for the District could be scrutinized and reported upon. Trends over time could be established (*MfE Indicator*).
  - **Point discharges.** The NRC monitors point discharges to freshwater bodies, including dairy farm discharges, industrial discharges, sewerage waste discharges and discharges from septic tanks. Results for the District could be scrutinized and reported upon. Trends over time could be established.
  - **Non-point discharges.** The NRC monitors non-point discharges, including stormwater runoff, sediment from earthworks and vegetation clearance, stock effluent, residue from fertilizer and agrichemicals, and leachate from contaminated sites. Results for the District could be scrutinized and reported upon. Trends over time could be established.
  - **Groundwater.** The NRC monitors availability, quality, and abstraction of groundwater resources. Results for the District could be scrutinized and reported upon. Trends over time could be established (*MfE Indicator*).
  - **Sites of significance to Maori.** The distribution of sites of significance to Maori identified and shown on the planning maps in the District Plan in relation to lakes, rivers and wetlands could provide information assisting in the recognition of and provision for tangata whenua values regarding water bodies.
  - **Iwi and hapu management plans.** Iwi and hapu management plans could provide information assisting in the recognition of and provision for tangata whenua values regarding water bodies.
  - **Water pollution incidents.** NRC's Environmental Incidents Hotline monitors the number of incidents relating to discharges to freshwater, and records the type of pollution involved. Incidents relating to the District could be scrutinized and reported upon. Trends over time could be established.
  - **Water quality guidelines.** The Proposed Regional Water and Soil Plan for Northland includes specific water quality guidelines for different purposes, including: aquatic ecosystems, contact recreation, fisheries, water supply, stock water and irrigation. These could be used for background information on issues relating to water quality.
  - **Regional Water Quality Network (RWQN).** The NRC has implemented a RWQN to provide information about river water quality in the Northland region so that baseline levels and water quality trends can be monitored. Results for the District could be scrutinized and reported upon.
  - **Freshwater Contact Recreation Survey.** The NRC has initiated a survey to assess the baseline water quality at several of Northland's popular freshwater swimming sites. This will provide information on the quality of freshwater resources and trends over time. Results for the District could be scrutinized and reported upon.
- iv Coastal Environment. This could be monitored by:
- **The coastal environment.** The identification, assessment and delineation of the coastal environment. This environment will be shown on the planning maps in the District Plan.
  - **The natural character of the coast.** The preservation of the natural character of the coast is identified as a matter of national importance in the RMA 1991, and is a specific requirement of the NZ Coastal Policy Statement. Natural character could be monitored using the information sources outlined below.
  - **Landscapes and landforms.** The identification, assessment and delineation of significant landscapes, seascapes and landforms in the coastal environment. Significant landscapes and landforms will be shown on the planning maps in the District Plan.
  - **Indigenous vegetation and habitats.** The identification, assessment and delineation of areas of significant indigenous vegetation and significant habitats of indigenous fauna in the coastal environment. These will be shown on the planning maps in the District Plan.
  - **Air, water and soil quality** Information on the protection and enhancement of air, water and soil quality could be obtained from NRC.

- **Historic and cultural heritage.** The identification, assessment and distribution of historic and cultural heritage, including heritage buildings, sites and objects, heritage trees and sites of significance to Maori, in the coastal environment. This will be shown on the planning maps in the District Plan.
  - **Existing land use and development pattern.** The existing land use and development pattern in the coastal environment could be mapped and analysed with respect to natural and cultural/historic heritage, existing services, and settlement nodes.
  - **Development trends.** Development trends for the coastal environment could be indicated by the number and distribution of land use, subdivision and building consents granted. Trends could be established over time.
  - **Consolidation, sporadic and sprawling subdivision and ribbon development.** Information on development consolidation, sporadic and sprawling subdivision and ribbon development could be obtained by analysis of the existing land use and development pattern together with the development trends as indicated above. Trends relating to consolidation, sporadic and sprawling subdivision and ribbon development could be established over time.
  - **Infrastructure.** Information on the capacity, efficiency and safety of services and infrastructure could be obtained by comparing the existing settlement and development pattern together with development trends as indicated above, with the existing, and future, provision of services and infrastructure as indicated in the various asset management plans and/or strategies. Areas of over and under capacity could be identified. Trends could be established over time.
  - **Public access to the coast.** The extent and distribution of esplanade priority areas, esplanade reserves and strips, access strips, Council and DoC reserves, boat ramps, picnic and recreational areas could provide information on public access to and along the coastal marine area.
  - **Qualitative and quantitative assessments.** Field surveys could provide information on the protection and enhancement of natural and historic/cultural heritage of the coastal environment; the settlement and development pattern in the coastal environment, including the consolidation of development, sporadic and sprawling subdivision and ribbon development; together with public access to the coast.
  - **Public perceptions.** Further information on the protection and enhancement of the natural and historic/cultural heritage of the coastal environment, the settlement and development pattern in the coastal environment, and public access to the coast could be obtained through public opinion polls, customer feedback and consultation.
- v Riparian and Coastal Margins. This could be monitored by:
- **Esplanade priority areas.** The identification, assessment and delineation of esplanade priority areas in the appendices and planning maps of the District Plan could provide information on the extent and adequacy of protection and enhancement of natural and cultural/historic heritage and provision of public access and recreational opportunities along riparian and coastal margins. Trends could be established over time.
  - **Esplanade reserves, strips and access strips.** The extent and distribution of esplanade reserves, strips and access strips could be mapped and could provide information on the protection and enhancement of natural and cultural/historic heritage, and provision of public access and recreational opportunities along riparian and coastal margins. Trends could be established over time.
  - **Natural values.** The extent and distribution of esplanade reserves and strips in relation to identified natural values such as outstanding and notable landscapes and features, significant ecological areas, surrounding land uses and associated water quality, etc. could provide information on the protection and enhancement of natural values along riparian and coastal margins.
  - **Cultural/historic values.** The extent and distribution of esplanade reserves and strips in relation to identified cultural/historic heritage such as historic buildings sites and objects, heritage trees, sites of significance to Maori, and to other cultural, historic and spiritual values and amenity values, including urban amenity values, could provide information on the protection and enhancement of cultural/historic heritage along riparian and coastal margins.
  - **Council and DoC reserves.** The extent and distribution of Council and DoC reserves along riparian and coastal margins could provide information on the protection of natural and historic/cultural heritage access and recreational opportunities along riparian and coastal margins.
  - **Boat ramps.** The number and distribution of public boat ramps could provide information on access and recreational opportunities along riparian and coastal margins.

- **Picnic and recreational areas.** The number and distribution of public picnic and recreational areas could provide information on access and recreational opportunities along riparian and coastal margins.
  - **Qualitative and quantitative assessment.** Field surveys could provide information on the protection and enhancement of natural and cultural/historic heritage and public access and recreational opportunities along riparian and coastal margins.
  - **Public perceptions.** Further information relating to the protection and enhancement of natural and cultural/historic heritage and public access and recreational opportunities along riparian and coastal margins could be obtained through public opinion polls, customer feedback and consultation.
- vi Natural Heritage. This could be monitored by:

### Landscape

- **Outstanding and notable landscapes and natural features.** The identification, assessment, classification and mapping of areas of outstanding and notable landscapes and natural features could provide information on the protection of outstanding landscapes and features. Trends could be established over time.
- **The number and distribution of resource and building consents.** The number and distribution of resource and building consents in relation to outstanding and notable landscapes and features (*particularly in regard to headlands, promontories, ridgelines, estuaries and areas of indigenous vegetation and habitat*) could provide information on the effects of subdivision, use and development on outstanding landscapes and features.
- **Qualitative and quantitative assessment.** Field surveys could provide information on the identification and protection of outstanding landscapes and features, particularly in regard to headlands, promontories, ridgelines, estuaries and areas of indigenous vegetation and habitat.
- **Public perceptions.** Further information relating to the identification and protection of outstanding landscapes and features could be obtained through customer feedback and consultation.

### Indigenous Vegetation and Habitat

- **Extent and distribution of indigenous vegetation and habitat.** The extent and distribution of indigenous vegetation and habitat (*land cover class*) could provide information on indigenous and habitat. Trends over time could be established (*MfE Indicator*).
- **The extent and distribution of significant ecological areas.** The extent and distribution of significant ecological areas identified, assessed, classified and shown on the planning maps could provide information on the protection of significant indigenous vegetation and significant habitats of indigenous fauna. Trends could be established over time (*MfE Indicator*).
- **Covenanted areas.** The number, distribution and aerial extent of areas of significant indigenous vegetation and significant habitats of indigenous fauna covenanted by the Council and QE II National Trust. Trends could be established over time (*MfE Indicator*).
- **Council and DoC reserves.** The number, distribution and aerial extent of areas of significant indigenous vegetation and significant habitats of indigenous fauna protected as Council or DoC reserve. Trends could be established over time (*MfE Indicator*).
- **The extent and location of ecological corridors.** The extent and location of ecological corridors could provide information on the connectivity of areas of significant indigenous vegetation and significant habitats of indigenous fauna. Trends could be established over time.
- **Re-vegetation and enhancement programmes.** Re-vegetation and enhancement programmes could provide information on the protection and enhancement of significant indigenous vegetation and significant habitats of indigenous fauna.
- **Significance to Maori.** Iwi and hapu management plans could provide information on the extent and location of indigenous vegetation and habitats of indigenous fauna of significance to Maori.
- **The number and location of resource and building consents.** The number and location of resource and building consents that are granted in areas of significant indigenous vegetation and significant habitats of indigenous fauna could provide information on the effects of subdivision use and development in, or close to, these areas.

- **Qualitative and quantitative assessments.** Field surveys could assist in the identification, assessment and classification of significant ecological areas, covenanted areas and Council/DoC reserves.

## Biodiversity

- **Modification or loss of habitat.** The loss or modification of natural habitat could provide information on biodiversity. Trends could be established over time. Such habitats could include:
    - Forest and shrublands
    - Wetlands
    - Dunelands
    - Mangroves
    - Freshwater (*MfE Indicator*)
  - **Loss of species.** The loss of species could provide information on biodiversity. Trends could be established over time. These species could include:
    - Plants
    - Fish
    - Reptiles
    - Mammals
    - Birds (*MfE Indicator*)
  - **Pests and weeds.** Invasion by pests and weeds could provide information on biodiversity. Trends could be established over time.
  - **Community landcare groups.** The number and functions of community landcare groups could provide information on biodiversity protection.
  - **New Zealand Biodiversity Strategy.** The NZBS could provide background information on the protection of biodiversity.
  - **Northland Biodiversity Enhancement Group.** The N-BEG involving DoC, NRC, QE II Trust and NZ Landcare Trust could provide information on the protection of biodiversity.
  - **Northland Regional Pest Management Strategy.** The NRPMS produced by NRC could provide information on the protection of biodiversity.
  - **Qualitative and quantitative assessments.** Field surveys could provide information on biodiversity.
- vii Open Space. This could be monitored by:
- **The number, type and distribution of reserves.** The number, type and distribution of reserves in the District could provide information on the adequacy of open space to meet community, recreational and conservation needs. Trends could be established over time.
  - **Covenanted areas and areas subject to heritage orders.** The number, type and distribution of covenanted areas and areas subject to heritage orders in the District could provide information on the adequacy of open space to meet community, recreational and conservation needs. Trends could be established over time.
  - **Active recreational areas.** The extent and distribution of active recreational areas in the District in relation to the spatial distribution of population, residential areas, etc. could provide information on the adequacy of open space to meet community and recreational needs. Trends could be established over time.
  - **Identified natural values.** The extent and distribution of open space in relation to identified natural values, including significant ecological areas and outstanding and notable landscapes and features, could provide information on the maintenance and enhancement of the natural values of open space.
  - **Identified cultural/historic heritage.** The extent and distribution of open space in relation to identified cultural/historic heritage, including heritage buildings, sites and objects, heritage trees, and sites of significance to Maori, could provide information on the maintenance and enhancement of the cultural/historic values of open space.

- **Identified recreational and amenity values.** The extent and distribution of open space in relation to identified recreational and amenity values and recreational uses of open space could provide information on the maintenance and enhancement of recreational and amenity values of open space.
- **Open space linkages.** The extent and distribution of esplanade priority areas, esplanade reserves and strips, access strips, Council and DoC reserves, covenanted areas and areas subject to heritage orders could provide information on open space linkages that enhance community, recreational and conservation functions of open space. Trends could be established over time.
- **The extent and distribution of walkways.** The extent and distribution of walkways (*e.g. coastal walkways, urban walkways, etc.*) established in the District could provide information on open space linkages that enhance community, recreational and conservation functions of open space. Trends could be established over time.
- **Qualitative and quantitative assessment.** Field surveys and Council inspections could provide information on the effects of activities on open space and areas surrounding open space.
- **Public perceptions.** Further information on the effects of activities on open space and areas surrounding open space could be obtained through public opinion polls, customer feedback and consultation.

viii Natural Hazards. This could be monitored by:

- **The extent and distribution of identified natural hazard areas.** The extent and distribution of identified natural hazard areas shown on the planning maps could provide information on the location and scale of natural hazards in the District. These areas could include flood susceptible areas, mining hazard areas and coastal hazard areas, and areas susceptible to land slips.
- **The classification of identified natural hazards.** The classification of natural hazards (*e.g. coastal hazard area 1 and coastal hazard area 2*) could provide information on the relative risks associated with these hazards and provide information for effective control of the hazards.
- **The number and location of resource and building consents.** The number and location of resource and building consents that are granted in identified natural hazard areas could provide information on development in these areas.
- **The number, cause and frequency of recorded incidents.** Data from NRC, OSH, public health authorities, insurance companies, media reports, etc. could provide information on the effects from natural hazards on people's health and safety and property and on the natural environment. It may be beneficial to develop a natural hazards register to record such incidents.
- **Location, extent, and changes to natural buffers.** Topographical maps and aerial photographs could provide information on the protection, maintenance and enhancement of natural buffers, e.g. coastal dune areas, vegetation, wetlands, etc.
- **Northland River Management Policy (NRMP).** This policy provides for an integrated approach to flood hazard assessment and to flood hazard control. Council is responsible for managing rivers and drainage within urban areas and existing drainage District s while the NRC manages the remaining rural areas and small communities.
- **Quantitative assessment.** Field surveys could help identify, assess and classify natural hazards, provide information on the protection, maintenance and enhancement of natural buffers, and assess development in natural hazard areas along with adverse effects.
- **Public perceptions.** Further information on the identification, assessment and classification of natural hazards could be obtained through customer feedback and consultation.

## 9.2 Monitoring Indicators

Based on the issues identified in the previous section, the information needs outlined and the potential indicators listed, a number of monitoring indicators have been selected based upon the following criteria:

### Criteria for selecting indicators for state of the environment monitoring

- **Policy relevant.** Indicators must be able to monitor key outcomes of resource management and environmental policy initiatives, and measure progress toward those goals; for example, anticipated environmental results (*AERs*) in the District Plan.
- **Analytically valid.** Indicators must be:

- Measurable
- Representative of the system being assessed
- Replicable or reproducible over time
- Developed within a consistent analytical framework
- Scientifically credible and robust
- Helpful in relating causes, effects and responses
- Responsive to environmental change
- Able to distinguish between human-induced change and natural variations
- Predictive
- Consistent in standards for data collection, analysis and management
- Statistical integrity.
- **Cost effective.** Indicators should be cost effective in the sense that:
  - Limited numbers of indicators need be selected
  - Existing data and information should be used wherever possible
  - Indicators should be simple to monitor.
- **Simple and easily understood.** Indicators should be simple and easily understood so that they:
  - Are easy to interpret
  - Clearly display the extent of the issue.

Sources of information are also indicated. Secondary sources are primarily Statistics NZ, Northland Regional Council and the DoC. Primary sources are from consents and complaints monitoring and District Plan monitoring. New monitoring programmes may need to be instigated where there is a lack of useful information.

Indicators selected using the above criteria were compared to national environmental performance indicators (EPIs) developed by the Ministry for the Environment. National indicators were incorporated wherever possible and these are identified in the Strategy. The indicators were also related to the Northland Regional Council's State of the Environment Report to ensure consistency with regional monitoring and reporting.

Lastly, the indicators were identified as pressure – state – response indicators in accordance with the national EPI programme. It is also intended to format future state of the environment reports following the pressure-state-response model, along the lines that the Matamata-Piako State of the Environment Report is structured.

### People and Communities

Monitoring indicators	P-S-R	Data sources
Population and population trends for District as a whole	P/S	Statistics NZ
Population and population trends for different parts of the District	P/S	Statistics NZ
Age and gender composition	S	Statistics NZ
Ethnic profile	S	Statistics NZ
Crime statistics	S	Statistics NZ
Health statistics	S	Ministry of Health
Education statistics	S	Ministry of Education
Community wellbeing	S	Survey

### Tangata Whenua

Monitoring indicators	P-S-R	Data sources
Identification and location of iwi and hapu rohe	S	Tangata whenua

Monitoring indicators	P-S-R	Data sources
Institutional arrangements for liaison between Council and tangata whenua, including: a Maori liaison personnel b Protocols or memoranda of agreement c Maori standing committee d Maori working parties or advisory groups	R	District Plan monitoring
Transfer of functions, powers and duties to iwi authorities	R	District Plan monitoring
Iwi and hapu management plans developed	R	Tangata whenua
Agreements and protocols set up to facilitate consultation	R	District Plan monitoring
Recognition of customary authority and rights, cultural and spiritual values and traditional practices	R	Tangata whenua
Number and distribution of sites of significance to Maori on the planning maps	S/R	District Plan monitoring

### Socio-Economic Background

Monitoring indicators	P-S-R	Data sources
Gross District product Year on year economic growth trends	P/S	Statistics NZ
Contribution by different sectors <ul style="list-style-type: none"> <li>• Retailing</li> <li>• Manufacturing</li> <li>• Farming</li> <li>• Mining</li> <li>• Construction</li> <li>• Tourism</li> <li>• Services</li> <li>• Real estate</li> </ul>	P/S	Statistics NZ
Occupation types and number of people employed in each	S	Statistics NZ
Personal income levels	S	Statistics NZ
Household income levels	S	Statistics NZ
Employment/unemployment figures	S	Statistics NZ
Housing <ul style="list-style-type: none"> <li>• Total stock</li> <li>• Privately owned</li> <li>• Rented</li> </ul>	S	Statistics NZ
People per household	S	Statistics NZ
Number and proportion of single-parent families	S	Statistics NZ

### Land Use Activities

Monitoring indicators	P-S-R	Data sources
Spatial land use and development pattern ( <i>mapped and quantified</i> ): <ul style="list-style-type: none"> <li>• Living (<i>residential</i>)</li> <li>• Business (<i>commercial, industrial</i>)</li> <li>• Countryside and Coastal Countryside (<i>rural residential, agriculture, horticulture, forestry, mineral extraction, etc</i>)</li> <li>• Open Space (<i>parks and reserves</i>)</li> <li>• Airport and Port</li> </ul>	S	District Plan monitoring Statistics NZ

Development trends for District ( <i>numbers and spatial distribution of resource and building consents issued</i> )	P	District Plan monitoring
Density, consolidation, sporadic subdivision and ribbon development ( <i>spatial arrangement and trends</i> )	P/S	District Plan monitoring
Efficiency of use and development of natural and physical resources ( <i>relationship of residential areas to commercial, industrial and recreational areas; encroachment of subdivision and development onto known versatile soils; location of development in relation to infrastructure and services</i> )	P	District Plan monitoring
Incompatible land use activities ( <i>frequency of complaints, submissions and consent conditions relating to conflicts between neighbouring land uses, including reverse sensitivity, and spatial distribution of these issues</i> )	P	District Plan and consents and complaints monitoring
Impacts of land use on soil quality in general and high class soils in particular	P	District Plan monitoring
Existing mines and quarries and existing Mineral Extraction Areas ( <i>mapped and quantified</i> )	S	District Plan monitoring
Mineral Information Database ( <i>future</i> )	S	Survey

### Services and Infrastructure

Monitoring indicators	P-S-R	Data sources
Number and distribution of parks and reserves/open space	R	District Plan monitoring
Number, type and distribution of civil amenities	R	WDC records
Existing reticulated water supply system. Quantity and quality of water supplied	S	WDC records
Existing reticulated stormwater disposal system. Quality of stormwater and effects on receiving environment	S	WDC records
Existing reticulated wastewater disposal system. Quality of effluent and effects on receiving environment	S	WDC records
Existing solid waste disposal system - landfills, transfer stations. Waste per capita generated, composition and source of waste, waste reduction, waste recycling	P/S/R	WDC records WDC Waste Management Plan
Existing roading network showing roading hierarchy, sealed and unsealed roads and proposed extensions	S/R	District Plan monitoring
Provision of footpaths, cycleways, car parks and street lighting	S/R	District Plan monitoring
Traffic volumes, road capacity and performance, road safety, road accidents	P/S	District Plan monitoring
Existing network utility services ( <i>mapped</i> )	S	District Plan monitoring
Location of network utility services in relation to sensitive natural areas, sensitive amenity areas, and areas of significant cultural and historic heritage	P	District Plan monitoring
Extent of undergrounding of network utility services	R	District Plan monitoring

### Ministry for the Environment Indicators (Solid Waste)

Stage	Indicator	P-S-R	Unit and Frequency	Agency
1	SW1 Quantity of waste to landfill and clean fill by region.	Pressure	Tonnes/per annum/per consented landfill	TLAs and operators ( <i>some RCs</i> )
1	SW2 Quantity of waste recycled: <ul style="list-style-type: none"> <li>• Paper</li> <li>• Plastic</li> <li>• Glass</li> <li>• Metal (<i>including steel and aluminium</i>)</li> <li>• Organic</li> </ul>	Response	Tonnes/per annum	Packaging industry, advisory Council, and Plastics Institute

Stage	Indicator	P-S-R	Unit and Frequency	Agency
1	SW3 Access to solid waste resource recovery/ recycling facilities	Response	Number of: <ul style="list-style-type: none"> <li>• Households/per scheme</li> <li>• Centres/per capita</li> <li>• Centres/per capita/ annum</li> </ul>	TLAs and commercial operators
2	SW4 Composition and source of waste to landfill in the following categories: <ul style="list-style-type: none"> <li>• Paper</li> <li>• Plastic</li> <li>• Glass</li> <li>• Metal</li> <li>• Organic</li> <li>• Rubble, concrete, etc</li> <li>• Timber</li> <li>• Rubber and textiles</li> <li>• Potentially hazardous</li> <li>• Other</li> </ul> Source categories: residential or business	Pressure	Percent material/total waste disposed (based on WAP methodology) every five years. Source data annually where available.	TLAs and commercial operators

### Marsden Point Port

Monitoring indicators	P-S-R	Data sources
Existing Port site and surrounding land uses	S	District Plan monitoring
Number of shipping movements and total tonnage of materials moved	P/S	District Plan monitoring
Economic returns on Port operations	S	NRC
Recorded noise levels in relation to standards set out in the District Plan and consent conditions	S	District Plan monitoring
Effects of Port on natural, cultural and amenity values	P	District Plan monitoring NRC
Number, cause and frequency of complaints relating to the Port	R	District Plan monitoring

### Whangarei Airport

Monitoring indicators	P-S-R	Data sources
Existing Airport site and surrounding land uses	S	District Plan monitoring
Number of aircraft movements and total tonnage of materials moved	P/S	District Plan monitoring
Economic returns on Airport operations	S	District Plan monitoring
Recorded noise levels in relation to standards set out in the District Plan and consent conditions	S	District Plan monitoring
Effects of Airport on natural, cultural and amenity values	P	District Plan monitoring NRC
Number, cause and frequency of complaints relating to the Airport	R	District Plan monitoring

### Contaminated Sites

Monitoring indicators	P-S-R	Data sources
Number, distribution and classification of known contaminated sites	P/S	District Plan monitoring NRC
Number and distribution of rehabilitated sites	R	District Plan monitoring NRC
Location and type of development on or near to contaminated sites	P/S	District Plan monitoring
Number and frequency of reported health and safety incidents relating to contaminated sites	S	District Plan monitoring OSH, public health authorities, media, NRC
Number, cause and frequency of complaints relating to contaminated sites	S/R	District Plan monitoring NRC

### Ministry for the Environment Indicators (Contaminated Sites)

Stage	Indicator	P-S-R	Unit and Frequency	Agency
1	CS1 The total number of sites that fall into the following categories: <ul style="list-style-type: none"> <li>• Confirmed contaminated sites</li> <li>• Remediated sites</li> </ul>	Pressure and response	Numerical value per annum	Regional councils

Stage	Indicator	P-S-R	Unit and Frequency	Agency
2	CS2 The total number of sites that fall into the following categories: <ul style="list-style-type: none"> <li>Under investigation <i>moderate to low risk</i> sites</li> <li>Under investigation <i>high risk</i> sites</li> <li>Confirmed contaminated <i>moderate to low risk</i> sites (pre and post RMA)</li> <li>Confirmed contaminated <i>high risk</i> sites (pre and post RMA)</li> <li>Remediated sites</li> </ul>	Pressure and response	Numerical value per annum	Regional councils

### Hazardous Substances

Monitoring indicators	P-S-R	Data sources
Types and amounts of hazardous substances in use in the District	P/S	District Plan monitoring NRC
Number and frequency of recorded environmental incidences concerning hazardous substances	S	District Plan monitoring NRC, DoC, MfE, media
Number and frequency of recorded health and/or safety incidences concerning hazardous substances	S	District Plan monitoring OSH, public health authorities, media, NRC
Number and frequency of complaints relating to hazardous substances	S/R	District Plan monitoring NRC
Number and location of collection and disposal facilities for hazardous wastes	R	District Plan monitoring NRC
Quantities of hazardous wastes collected and disposed of	R	District Plan monitoring NRC

### Ministry for the Environment Indicators (Hazardous Substances)

Stage	Indicator	P-S-R	Unit/Frequency	Agency
1	HW1 Quantity of hazardous waste: <ul style="list-style-type: none"> <li>Accepted at landfills (<i>direct from larger landfills</i>)</li> <li>Exported (<i>Ministry of Economic Development, Basel Convention</i>)</li> <li>Accepted at hazardous waste treatment facilities – including incinerators (<i>direct from facilities on a voluntary basis</i>)</li> <li>Accepted at wastewater treatment facilities (<i>calculated estimate of quantities</i>)</li> </ul>	Pressure	Percent that accept HW kg/annum by list  Kg or litres/annum by list  Kg/contamination/annum	TLAs, commercial operators and Ministry of Economic Development possibly hospitals

Stage	Indicator	P-S-R	Unit/Frequency	Agency
2	<p>HW1 Quantity of hazardous waste discharged to land, air and water. Includes hazardous waste accepted at:</p> <ul style="list-style-type: none"> <li>• Landfills</li> <li>• Exported</li> <li>• Hazardous waste treatment facilities – including incinerators</li> <li>• Wastewater treatment facilities (<i>municipal</i>)</li> </ul> <p>Collected under national hazardous waste definition and national hazardous waste monitoring and information systems.</p>	Pressure	<p>Kg/annum</p> <p>Kg or litres/annum</p> <p>Mass loading kg/contamination/annum</p>	As above but possibly with regional councils under the hazardous waste regulations
1	<p>HW2 Quantity of priority hazardous waste generated and stored:</p> <ul style="list-style-type: none"> <li>• Imported</li> <li>• Physically hauled away from site (<i>i.e. trucked away</i>) – solid or contained (<i>either from transporters or direct from industries</i>)</li> <li>• Discharged to sewer – liquid (<i>direct from industries or upper limit on resource consents</i>)</li> <li>• Discharged to: <ul style="list-style-type: none"> <li>• Land</li> <li>• Air</li> <li>• Water</li> </ul> </li> </ul> <p>On site as defined from the list.</p>	Pressure	<p>Kg or litres/annum</p> <p>Litres/annum</p>	TLAs, commercial operators and regional council resource consents. Basel Convention reports for imported waste.
2	<p>HW2 Quantity of priority hazardous waste generated and stored:</p> <ul style="list-style-type: none"> <li>• Required by regulation via National Environmental Standard</li> <li>• Storage (possibly minimum threshold or type of facility)</li> <li>• Diffuse sources or WAP methodology</li> </ul> <p>Collected under national hazardous waste definition and national hazardous waste monitoring and information systems.</p>	Pressure	<p>Kg or litres/annum of types of priority hazardous wastes generated and treated per sector</p>	As above, but possibly with regional councils under the hazardous waste regulations.

### Cultural and Historic Heritage

Monitoring indicators	P-S-R	Data sources
<p>Number, distribution and classification of heritage buildings, sites and objects:</p> <p>a In the District Plan</p> <p>b On the NZHPT Register</p>	S/R	District Plan monitoring NZHPT Register
<p>Number, distribution and classification of heritage trees:</p> <p>a In the District Plan</p> <p>b In iwi and hapu management plans</p>	S/R	District Plan monitoring Iwi/hapu management plans

Monitoring indicators	P-S-R	Data sources
Number and distribution of archeological sites: a In the District Plan b On the NZHPT Register c On the NZAA Index	S/R	District Plan monitoring NZHPT Register NZAA Index
Number and distribution of heritage sites of significance to Maori: a In the District Plan b On the NZHPT Register c In iwi and hapu management plans	S/R	District Plan monitoring NZHPT Register Iwi/hapu management plans
Number and distribution of heritage covenants	S/R	District Plan monitoring
Number and distribution of heritage orders	S/R	District Plan monitoring

### Amenity Values

Monitoring indicators	P-S-R	Data sources
Spatial distribution of activities in the different Environments as revealed by the number and distribution of resource and building consents	P	District Plan monitoring
Incompatible activities and reverse sensitivity as revealed by the number and frequency of complaints concerning amenity values and consent conditions to address these issues.	P	District Plan monitoring
Mix of activities in Whangarei Town Centre/Town Basin and suburban and rural shopping centres as revealed by the number and distribution of resource and building consents	P/S	District Plan monitoring
Access to open space, both active and passive, as revealed by the distribution of open space in urban and rural Environments, and the quantum available per number of residents	R	District Plan monitoring
Incidence of nuisance as revealed by the number and frequency of complaints relating to noise, odour, dust, smoke, light spill, glare, shading, traffic, privacy, spray drift, visual amenity, animal control, health and safety, radio frequency fields and electromagnetic radiation	P	District Plan monitoring NRC
Ambient noise/vibration levels in different Environments and noise/vibration levels associated with traffic, airport, port, etc.	S	District Plan monitoring
Excessive noise complaints, infringement notices issued, etc	S/R	District Plan monitoring
Animal control figures	S/R	District Plan monitoring
Building control figures	S/R	District Plan monitoring
Traffic control figures	S/R	District Plan monitoring Transit NZ
Visual amenity figures	S/R	District Plan monitoring NRC
Health and safety figures	S/R	District Plan monitoring Public health authorities
Quality of amenity in the different Environments as revealed by field surveys, public opinion, customer feedback and consultation.	S	Surveys/feedback

## Integrated Management

Monitoring indicators	P-S-R	Data sources
Local authority cross boundary issues in regard to: <ul style="list-style-type: none"> <li>• Infrastructure</li> <li>• Natural resources and natural features</li> <li>• Activities</li> <li>• Iwi and hapu interests</li> <li>• The coast</li> </ul>	P/S	District Plan monitoring NRC
Processes, protocols and agreements between adjacent territorial authorities and the NRC	R	District Plan monitoring NRC
Iwi and hapu processes, protocols and agreements	R	District Plan monitoring Tangata whenua
Number, nature and frequency of joint hearings between Council and NRC	R	District Plan monitoring NRC

## The Land Resource

Monitoring indicators	P-S-R	Data sources
Landform and topography ( <i>described and mapped</i> )	S	NRC
Geology ( <i>described and mapped</i> )	S	NRC
Soils and impacts of land use upon sites ( <i>described and mapped</i> )	P/S	NRC, MAF
Vegetation ( <i>described and mapped</i> )	S	NRC, document, MAF
Land use capability ( <i>described and mapped</i> )	S/R	NRC., NZLRI
Erosion potential and impacts of land use on erosion ( <i>described and mapped</i> )	P/S	NRC

## Ministry for the Environment Indicators (*Land*)

Stage	Indicator	P-S-R	Unit/Frequency	Agency
1	Changes in areas susceptible to hill country erosion	State		Regional councils
1	Percentage change in area of slip at selected sites	State		Regional councils
2	Change in area susceptible to high country degradation	State		Regional councils
2	Acidity or alkalinity of soil	State/Pressure		Regional councils
2	Organic matter	State		Regional councils
2	Change in area susceptible to agricultural impacts	State		Regional councils
2	Change in area susceptible to reductions in soil health	State		Regional councils
2	Bulk density of soil	State		Regional councils
2	PH soil test	State/pressure		Regional councils
2	Organic matter	State		Regional councils

## Climate and Air Quality

<b>Monitoring indicators</b>	<b>P-S-R</b>	<b>Data sources</b>
Existing climate <i>(described and mapped)</i>	S	NRC, NIWA
Climate change <ul style="list-style-type: none"> <li>• Ozone depleting substances</li> <li>• Emission of green house gases</li> </ul>	P/S	NRC, NIWA
Incidents relating to air quality	S	NRC
Types of air quality incidents, including: <ul style="list-style-type: none"> <li>• Burning/smoke nuisance</li> <li>• Agrichemical spraydrift</li> <li>• Odour</li> <li>• Industrial emissions</li> <li>• Dust nuisance</li> </ul>	P/S	NRC
Point emissions, including: <ul style="list-style-type: none"> <li>• NZ Refinery</li> <li>• Golden Bay Cement Works</li> <li>• Kiwi Dairy Factory</li> </ul>	P/S	NRC
Non-point emissions, including: <ul style="list-style-type: none"> <li>• Suspended particulate matter</li> <li>• Deposited particles</li> <li>• Carbon monoxide</li> <li>• Sulphur dioxide</li> </ul>	P/S	NRC
Ambient air quality guidelines	R	NRC, MfE
Air emissions inventory	R	NRC

### Ministry for the Environment Indicators (Air)

Stage	Indicator	P-S-R	Unit/Frequency	Agency
1	Particulate matter ( <i>PM10</i> )	State		Regional councils, TLAs
1	Carbon monoxide ( <i>CO</i> )	State		Regional councils, TLAs
1	Nitrogen dioxide ( <i>NO2</i> )	State		Regional councils, TLAs
1	Sulphur dioxide ( <i>SO2</i> )	State		Regional councils, TLAs
1	Ground level ozone ( <i>O3</i> )	State		Regional councils, TLAs
2	Benzene	State		Regional councils, TLAs
2	Particulate matter ( <i>PM25</i> )	State		Regional councils, TLAs
2	Lichen diversity/coverage	State		Regional councils, TLAs
2	Visibility	State		Regional councils, TLAs

### Freshwater Resources

Monitoring indicators	P-S-R	Data sources
Extent and distribution of water bodies, including lakes, rivers and wetlands	S	District Plan monitoring, NRC
Amenity values of freshwater resources	S	District Plan monitoring
Surface water quality and ecosystem health for freshwater resources, including: <ul style="list-style-type: none"> <li>Bacterial levels</li> <li>Dissolved oxygen</li> <li>PH and temperature</li> <li>Nutrients</li> <li>Ammonia</li> <li>Turbidity</li> <li>Faecal contamination</li> <li>Nitrates</li> <li>Macroinvertebrates</li> <li>Native and exotic fish</li> </ul>	P/S	NRC
Point discharges to freshwater bodies, including: <ul style="list-style-type: none"> <li>Dairy farm discharges</li> <li>Industrial discharges</li> <li>Sewerage waste discharges</li> <li>Septic tank discharges</li> </ul>	P/S	NRC
Non-point discharges to freshwater bodies, including: <ul style="list-style-type: none"> <li>Stormwater runoff</li> <li>Sediment from earthworks and vegetation clearance</li> <li>Stock effluent</li> <li>Fertilizers and agrichemicals</li> </ul>	P/S	NRC
Groundwater availability, quality and abstraction	P/S	NRC
Water pollution incidences	S	NRC

Monitoring indicators	P-S-R	Data sources
Number and distribution of sites if significance to Maori in District Plan in relation to water bodies	S	District Plan monitoring
Tangata whenua values in relation to freshwater bodies	S	Iwi/hapu plans
Qualitative and quantitative assessments of issues relating to water bodies, including results from the RWQN and Freshwater Contact Recreation Survey	S/R	District Plan monitoring, NRC, NIWA

### Ministry for the Environment Indicators (*Freshwater*)

Stage	Indicator	P-S-R	Unit/Frequency	Agency
1	Physical/chemical water quality: <ul style="list-style-type: none"> <li>Dissolved oxygen</li> <li>Ammonia</li> <li>Temperature</li> <li>Clarity</li> </ul>	State		Regional councils, TLAs
1	Tropic State Index ( <i>TSI</i> )	State		Regional councils
1	Percentage of population with good water supply	State		Ministry of Health, TLAs
1	Periphyton ( <i>effects of slime on bathing</i> )	State		Regional councils, TLAs
2	Occurrence of native fish <ul style="list-style-type: none"> <li>Giant kokopo</li> <li>Red finned bully</li> </ul>	State		Regional councils
2	Macroinvertebrates ( <i>insects</i> )	State		Regional councils, TLAs
2	Periphyton ( <i>effects of slime in rivers</i> )	State		Regional councils
2	Riparian condition	State		Regional councils, TLAs
2	Wetland condition and extent	State		Regional councils, TLAs
2	Groundwater <ul style="list-style-type: none"> <li>Nitrates</li> <li>Abstraction quality</li> <li>Abstraction</li> </ul>	Pressure		Regional councils, TLAs

### Coastal Environment

Monitoring indicators	P-S-R	Data sources
The coastal environment ( <i>mapped</i> )	S	District Plan monitoring
Significant landscapes and landforms in the coastal environment	S	District Plan monitoring
Significant indigenous vegetation and significant habitats of indigenous fauna	S	District Plan monitoring, NRC, DoC
Air, water and soil quality in coastal environment ( <i>see NRC for data</i> )	S	NRC, NIWA
Historic and cultural heritage in the coastal environment	S	District Plan monitoring Iwi/hapu management plans
Spatial land use and development pattern in the coastal environment	P/S	District Plan monitoring

Monitoring indicators	P-S-R	Data sources
Development trends for coastal environment ( <i>numbers and distribution of resource and building consents</i> )	P	District Plan monitoring
Density, consolidation, sporadic and sprawling subdivision and ribbon development in the coastal environment ( <i>spatial arrangement and trends</i> )	P/S	District Plan monitoring WDC Coastal Management Strategy
Existing and future provision of infrastructure in the coastal environment; spatial arrangements, cost implications ( <i>asset management plans and strategies</i> )	S/R	District Plan monitoring WDC Asset Management Plans
Extent and distribution of esplanade priority areas, esplanade reserves and strips, access strips, Council and DoC reserves, boat ramps, picnic and recreational areas providing public access to the coast	S/R	District Plan Monitoring WDC Open Space Strategy
Qualitative and quantitative assessment on issues relating to the coastal environment	S	District Plan monitoring
Public opinion, customer feedback and consultation concerning the coastal environment	P/S	District Plan monitoring

### Riparian and Coastal Margins

Monitoring indicators	P-S-R	Data sources
Esplanade priority areas ( <i>listed and mapped</i> )	R	District Plan monitoring
Esplanade reserves, strips, and access strips ( <i>mapped</i> )	S/R	District Plan monitoring
Other Council and DoC reserves along riparian and coastal margins	S/R	District Plan monitoring DoC
Identified natural values in relation to esplanade priority areas, esplanade reserves, strips, access strips and other Council and DoC reserves	S/R	District Plan monitoring
Identified cultural/historic heritage in relation to esplanade priority areas, esplanade reserves, strips, access strips and other Council and DoC reserves	S/R	District Plan monitoring Iwi/hapu management plans
Public boat ramps	R	District Plan monitoring
Public picnic and recreational areas	R	District Plan monitoring
Qualitative and quantitative assessments of issues relating to riparian and coastal margins	S/R	District Plan monitoring DoC, NRC
Public opinion, customer feedback and consultation on issues relating to riparian and coastal margins	P	District Plan monitoring

### Landscape

Monitoring indicators	P-S-R	Data sources
Outstanding and notable landscapes and natural features a over whole District b in coastal environment	S	District Plan monitoring
Number and distribution of resource and building consents in relation to outstanding and notable landscapes and natural features	P	District Plan monitoring
Qualitative and quantitative assessment of issues relating to outstanding landscapes and natural features	S/R	District Plan monitoring DoC, NRC
Public opinion, customer feedback and consultation on issues relating to outstanding landscapes and natural features	R	District Plan monitoring

## Indigenous Vegetation and Habitat

Monitoring indicators	P-S-R	Data sources
Indigenous vegetation and habitat ( <i>mapped and quantified</i> )	S	District Plan monitoring NRC, DoC
Identified significant ecological areas on planning maps	S	District Plan monitoring
Covenanted areas ( <i>mapped, area, numbers</i> ) a Whangarei District Council b QE II National Trust	S/R	District Plan monitoring
Council and DoC reserves	S/R	District Plan monitoring DoC
Extent and location of ecological corridors ( <i>mapped</i> )	S/R	District Plan monitoring NRC
Re-vegetation and enhancement programmes ( <i>mapped, area, numbers</i> )	R	District Plan monitoring DoC, NRC
Number and location of resource and building consents in relation to significant indigenous vegetation and significant habitats of indigenous fauna	P	District Plan monitoring
Identified indigenous vegetation and habitats of indigenous fauna of significance to Maori	S	Iwi/hapu management plans
Qualitative and quantitative assessments of indigenous vegetation and habitats of indigenous fauna	S/R	District Plan monitoring DoC, NRC

## Biodiversity

Monitoring indicators	P-S-R	Data sources
Modification or loss of habitat, including <ul style="list-style-type: none"> <li>• Forest and shrublands</li> <li>• Wetlands</li> <li>• Dunelands</li> <li>• Mangroves</li> <li>• Freshwater</li> </ul>	S	NRC, DoC
Loss of species, including: <ul style="list-style-type: none"> <li>• Plants</li> <li>• Fish</li> <li>• Reptiles</li> <li>• Mammals</li> <li>• Birds</li> </ul>	S	NRC, DoC
Pest and weed invasion	P	NRC
Number and functions of landcare groups	R	NRC
Qualitative and quantitative assessments of biodiversity	S	NRC, DoC
New Zealand Biodiversity Strategy, Northland Biodiversity Enhancement Group, Northland Pest Management Strategy	R	NRC, DoC, MfE

## Ministry for the Environment Indicators (Indigenous Biodiversity)

Stage	Indicator	P-S-R	Unit/Frequency	Agency
1	Change in the extent of each land cover class	State		Regional councils, TLAs, DoC, MAF, MfE
1	Percentage of each of NZs different environments, ecosystems and habitats under protection	Response		Regional councils, TLAs, DoC, QE II National Trust
1	The number and percentage of extinct species in selected taxonomic groups	State		DoC, CRIs
2	Change in the extent of each land use pressure on biodiversity	Pressure		Regional councils, TLAs, DoC, MAF, MfE

Stage	Indicator	P-S-R	Unit/Frequency	Agency
2	Change in gross habitat fragmentation of indigenous vegetation cover	State		Regional councils, TLAs, CRIs
2	The biodiversity condition of selected ecosystems and habitats compared with historic and current baselines	State		Regional councils, TLAs, DoC
2	Change in abundance and distribution of selected animal pests	Pressure		Regional councils, TLAs, DoC
2	Change in abundance and distribution of selected weeds	Pressure		Regional councils, TLAs, DoC
2	The number of taxa in IUCN and NZ threat categories	State		DoC
2	The evolutionary diversity remaining in selected taxonomic groups compared to historic and current baselines	State		DoC
2	The extent of selected freshwater ecosystems (wetlands, lakes, rivers, karst, and geothermal) compared with historic and current baselines	State		Regional councils, DoC
	<b>Introduced biodiversity</b>			
2	The genetic diversity of valued introduced species	State		Regional councils, TLAs, DoC, MAF

### Open Space

Monitoring indicators	P-S-R	Data sources
Number, type and distribution of reserves: a Council b DoC	S/R	District Plan monitoring DoC
Number, type and distribution of covenanted areas and areas subject to heritage orders	S/R	District Plan monitoring
Extent and distribution of active recreational areas ( <i>sportsgrounds, etc.</i> )	S/R	District Plan monitoring
Extent and distribution of esplanade priority areas, esplanade reserves and strips, access strips, Council and DoC reserves, covenanted areas and areas subject to heritage orders to discern linkages	S/R	District Plan monitoring DoC
Extent and distribution of walkways ( <i>coastal, urban, etc.</i> )	R	District Plan monitoring
Qualitative and quantitative assessment of issues relating to open space	S	District Plan monitoring
Public opinion, customer feedback and consultation on issues relating to open space	S/R	District Plan monitoring

### Natural Hazards

Monitoring indicators	P-S-R	Data sources
Identified and classified natural hazard areas, including: <ul style="list-style-type: none"> <li>flood susceptible areas</li> <li>mining hazard areas</li> <li>coastal hazard areas</li> </ul>	S/R	District Plan monitoring NRC
Number, type and distribution of resource and building consents in relation to natural hazard areas	P	District Plan monitoring

Number, type and frequency of recorded incidents involving natural hazards ( <i>natural hazards register</i> )	S/R	District Plan monitoring NRC
Location, extent of, and changes to, natural buffers ( <i>topographic maps and aerial photography</i> )	S	District Plan monitoring NRC
Qualitative and quantitative assessments of natural hazards	S/R	District Plan monitoring NRC
Public opinion, customer feedback and consultation on natural hazards	S/R	District Plan monitoring

### 9.3 Data Collection and Management

Data required for state of the environment monitoring and reporting will be collated and analysed by staff in the Policy and Monitoring Division. Much of the data will be collected by other divisions within Council and stored in databases accessible to monitoring staff. Some data will come from external sources, e.g. Statistics New Zealand, NRC, and the DoC. If important information is not available new data collection and/or storage processes may need to be established.

Initially, only existing sources of data will be analysed and reported upon. Should the need arise, new data will be collected at a later stage, i.e. after the production of the first State of the Environment Report. The first State of the Environment Report will focus on a number of 'key' monitoring indicators chosen from those outlined in the previous section. These will be selected on the basis of data availability and usefulness of information provided. Over time, it is envisaged that the number of indicators reported upon will increase and the overall analysis will become more comprehensive.

Much information useful for state of the environment monitoring and reporting will come from the annual Resource Consents and Complaints Monitoring Report and the District Plan Monitoring Report. Both of these reports will feed into state of the environment monitoring and reporting.

### 9.4 Reporting and Review Procedures

State of the environment monitoring can be seen primarily as a procedure, or set of procedures, designed to provide information about the environment so as to enable the implementation, evaluation and improvement of resource management and environmental planning provisions over time. It also provides a number of other benefits based upon an improved knowledge of environmental and ecological processes. For example, the reporting phase has potential value in terms of educating the community, Council staff, councillors, interest and industry groups on the state of the environment together with Council's approaches to managing resources and environmental effects.

A state of the environment monitoring programme must, as a consequence, provide for gathered data to be translated into useful and readily accessible information. In turn, this information must be produced in such a way that facilitates public scrutiny and feedback and also provides useful information that can be used to evaluate and revise Council's resource management and environmental regulatory procedures.

Whilst there is no statutory requirement to produce a state of the environment report, such a report (*produced periodically*) would appear to be the most appropriate and effective method of fulfilling these requirements. The initial state of the environment report would serve as a baseline or benchmark against which future environmental changes could be evaluated. Subsequent reports would serve to indicate trends in environmental change. This information could then be used to facilitate a review of planning procedures to better address deleterious trends exposed by state of the environment monitoring.

This raises the question of the frequency that state of the environment reports should be produced. Although some councils are producing annual state of the environment reports, an increasing number are choosing five year intervals. There are good reasons for choosing a five year interval. Firstly, trends can be discerned at this time scale that would perhaps not be apparent at shorter intervals. In addition, five year intervals can be used to coincide with the release of new census data. Finally, each second five year interval coincides with the ten year review of the District Plan required under the RMA. And, of course, producing full state of the environment reports on an annual basis would require considerable resources. Auckland City Council produces its state of the environment report in folder form to enable additions and alterations to be made without necessitating the reproduction of the entire report. This seems a pragmatic and cost effective approach and one that Council should consider.

As to form, the target audiences should be considered when producing the report. While resource consent monitoring, complaints monitoring, and District Plan evaluation are primarily aimed at an internal (council) audience, and thus can be reasonably complex and technical, state of the environment monitoring and reporting is aimed at both internal and external audiences and is therefore required to be less complex and less technical.

Lastly, it is envisaged that state of the environment monitoring procedures (including monitoring indicators) will be subject to ongoing review and revision where necessary. This will be a continuous process as new information comes to light and deficiencies in the programme are exposed.

## 10 Integrated Environmental Monitoring

It is clear from the preceding analysis of the resource management legislation that Council is legally required to undertake various monitoring functions, and to gather and make available information obtained from such monitoring. However, as pointed out, there is some discretion as to the extent of monitoring that should be undertaken by Council, and the form and frequency of reporting the results from monitoring procedures.

The monitoring strategy for Council should be focused on the development of monitoring programmes which have the maximum utility to the Council in fulfilling its statutory responsibilities and in promoting the sustainable management of natural and physical resources in the District. At the same time, recognition must be given to the fact that the population base of the District is not large and that financial constraints will dictate that a careful balancing of the legislative requirements with the costs and benefits afforded to Council and the community from monitoring activities is necessary.

The combination of the various types of monitoring into an integrated, useful, cost-effective and manageable system of environmental monitoring and reporting is the ultimate aim of the strategy. It should be acknowledged that the development and implementation of an integrated and effective system of environmental monitoring and reporting is a complex and challenging task. It will require considerable effort and resources (*both financial and human*). However, as District Plans and regional policy statements and plans become operative, it is the next logical step in the resource management system initiated by the RMA. Policy statements and plans need to be monitored as part of the overall planning and resource management framework to ensure the on-going effectiveness of the process as a whole.

The monitoring strategy for Council should concentrate initially on doing a little well rather than trying to cover the entire suite of monitoring functions. Implementation of the strategy should be on a step by step basis, along clearly defined lines. Initially, effort should be concentrated upon putting in place a manageable and effective resource consents and complaints monitoring regime before fully tackling plan evaluation and state of the environment monitoring. The implementation of plan evaluation and state of the environment monitoring should progress over time as the proposed District Plan becomes operative.

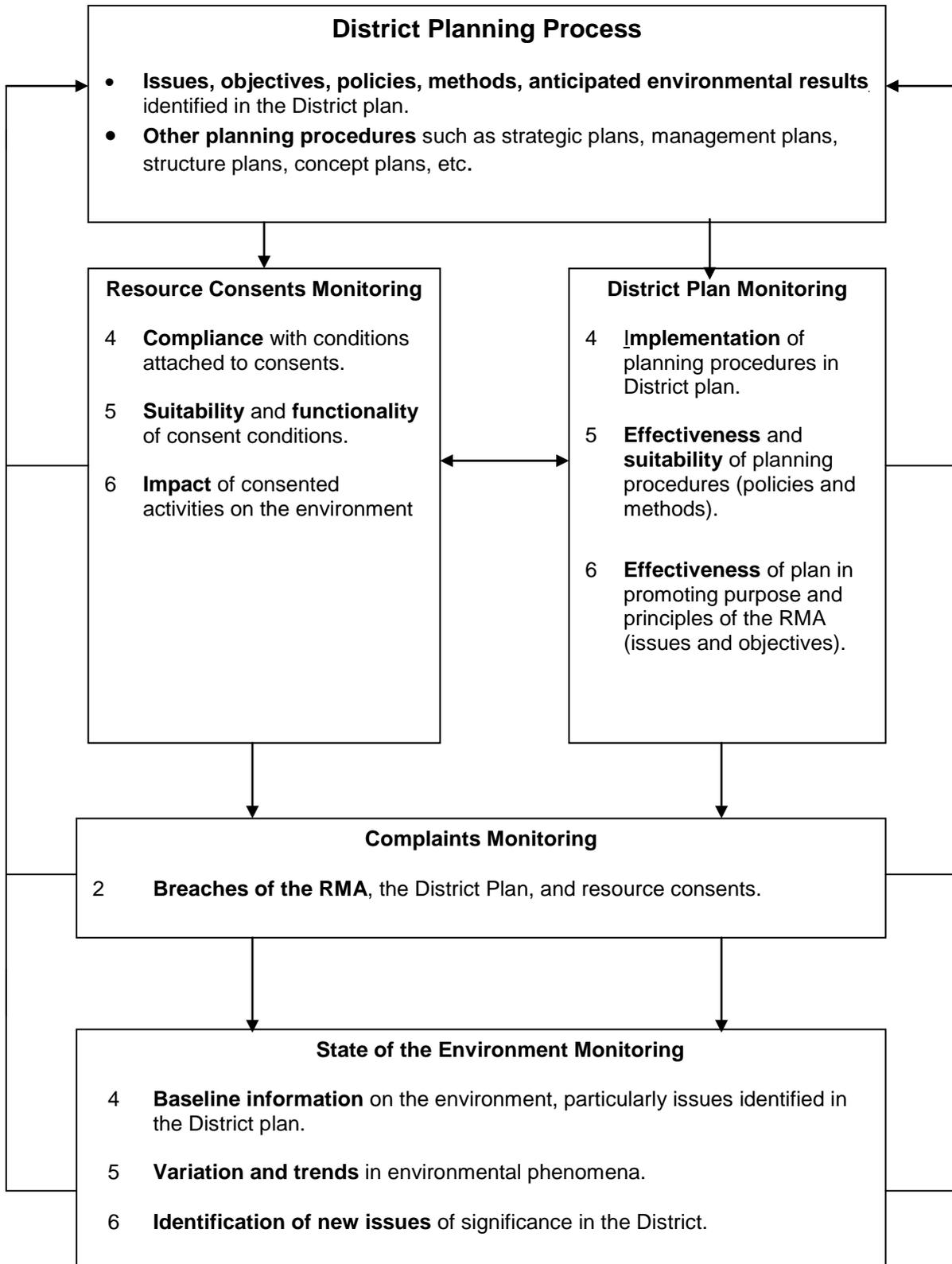
It should be borne in mind, however, that the resource consents and complaints monitoring programme will need to be subsequently integrated into plan evaluation and state of the environment monitoring. The monitoring of resource consents and complaints, the evaluation of the District Plan, and state of the environment monitoring and reporting are intimately related. The monitoring of resource consents and complaints will feed into plan evaluation, and plan evaluation will contribute to state of the environment monitoring and reporting.

The intent of the monitoring strategy is ultimately to link the various aspects of monitoring into an ordered structure, whereby each type of monitoring contributes to an evolving and on-going process of integrated environmental monitoring. This process should address the different types of monitoring required under the RMA, not separately, but as part of a conceptually and pragmatically related whole. This monitoring strategy is designed to feed back into, and inform, the District Planning process. The District Planning process comprises the District Plan, including the issues, objectives, policies, methods and anticipated environmental results identified in plan, together with other planning procedures such as strategic planning documents, specific management plans, structure plans, concept plans, and so on.

Over time, the monitoring duties undertaken by territorial authorities will become an integral component of the resource management framework put in place to sustainably manage the natural and physical resources of the District. Monitoring will be looked upon as the essential link between policy formulation and policy evaluation. The on-going evaluation of planning procedures through monitoring the results of planning documents and processes will, over time, become the accepted quality control mechanism for integrated resource management and environmental regulation.

The following figure gives a diagrammatic representation of an integrated monitoring system. This diagram is particularly useful in that it sets out simply and directly the actual tasks that need to be implemented; the relationships between the tasks; and the relationship to the District Planning process itself. In this way, the various aspects of monitoring can be clearly identified individually, and operationalised one at a time. As each part is put into operation, the structure as a whole takes shape and, over time, should build into a comprehensive, integrated and effective monitoring, reporting and enforcement system.

## An Integrated Monitoring System



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Various documents produced by a number of local authorities were consulted in the preparation of this report. Although not referenced individually, their contribution is duly acknowledged.

## 12 Appendices

### 12.1 Monitoring of Electromagnetic Radiation

This section of the Strategy outlines the monitoring procedures in regard to electromagnetic radiation.

All operators of communication facilities emitting electromagnetic radiation will provide Council's Policy and Monitoring Division with a report on existing facilities outlining present levels of electromagnetic radiation emissions. Such reports will be prepared by a suitably qualified radio engineer/technician or physical scientist.

Upon request from the Policy and Monitoring Division, operators of communication facilities emitting electromagnetic radiation will provide a report prepared by a suitably qualified radio engineer/technician or physical scientist showing that existing facilities comply with NZS 2772.1:1999 in areas reasonably accessible to the public, and/or containing a professional assessment of whether proposed facilities will comply with NZS 2772.1:1999 in areas reasonably accessible to the public. Such requests will be limited to no more than two times per year, per operator.

Should any of the above reports indicate that emissions of electromagnetic radiation exceed the exposure limit set for the general public in NZS 2772.1:1999 in areas reasonably accessible to the public, the facility will cease operation until such time that a report prepared by the National Radiation Laboratory certifying compliance with NZS 2772.1:1999, based upon measurements at the site, is received by the Policy and Monitoring Division of Council.

Should the facility concerned fail to cease operations as required above, the Policy and Monitoring Division will immediately apply to the Environment Court, under Section 314 or 320 of the Resource Management Act 1991, for an enforcement order or an interim enforcement order to close the facility.