

Regional Water and Soil Plan for Northland

ISBN 0-909006-18-0

Northland Regional Council

Private Bag 9021
Whangarei
Telephone 09-438 4639

www.nrc.govt.nz

Regional Offices: Dargaville
Opua
Kaitia

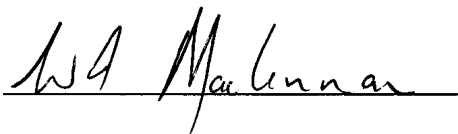
RESOURCE MANAGEMENT ACT 1991

ADOPTION OF THE
REGIONAL WATER AND SOIL PLAN

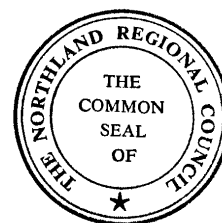
The Northland Regional Council hereby certified that it adopted the Regional Water and Soil Plan for Northland by Resolution, dated 18 August 2004, pursuant to the powers and authority vested in it by Clause 17 of the First Schedule of the Resource Management Act 1991.

The adoption of the Plan was publicly notified on the 21 August 2004 and became operative on the 28 August 2004.

The Common seal of the
Northland Regional Council was
hereto affixed in the presence of:



Chief Executive Officer



Resource Management Act 1991

APPROVAL OF PLAN CHANGE 1 TO THE REGIONAL WATER AND SOIL PLAN

The Northland Regional Council by resolution dated 20 June 2007, approved and made operative Plan Change 1 to the Regional Water and Soil Plan for Northland contained herein, pursuant to the powers and authorities vested in it by the First Schedule of the Resource Management Act 1991.

This approval will be publicly notified on 18 August 2007 and becomes operative on 30 August 2007.

The Common seal of the Northland Regional Council was hereto affixed in the presence of:





Chief Executive Officer

Resource Management Act 1991

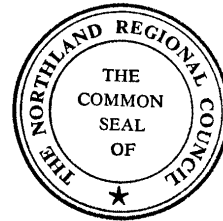
APPROVAL OF PLAN CHANGE 2 TO THE REGIONAL WATER AND SOIL PLAN

The Northland Regional Council by resolution dated 29 September 2010, approved and made operative Plan Change 2 to the Regional Water and Soil Plan for Northland contained herein, pursuant to the powers and authorities vested in it by the First Schedule of the Resource Management Act 1991.

This approval will be publicly notified on the 4 October 2010 and becomes operative on 18 October 2010.

The Common seal of the
Northland Regional Council was
hereto affixed in the presence of:

Ken Paterson



Chief Executive Officer

RESOURCE MANAGEMENT ACT 1991

APPROVAL OF INSERTION OF TRANSITIONAL POLICIES

The National Policy Statement for Freshwater Management 2011 came into effect on the 1 July 2011, and required two new transitional policies (A4 and B7) to be inserted into the Water and Soil Plan to guide resource consent decision-making in relation to freshwater resources.

These amendments to the Regional Water and Soil Plan were made under section 55 of the Resource Management Act 1991 as directed by the National Policy Statement for Freshwater Management 2011. Section 55 of the Resource Management Act 1991 states that the amendments are to be made without using the public submission process provided in Schedule 1 of the Resource Management Act 1991.

The amendments were publically notified on the 5 October 2011 and inserted into the plan at pages 58a, 80, 100a, and 112 in accordance with the council resolutions of 20 September 2011.



General Manager - Planning and Policy

RESOURCE MANAGEMENT ACT 1991

APPROVAL OF INSERTION OF TRANSITIONAL POLICIES

The National Policy Statement for Freshwater Management 2014 came into effect on the 1 August 2014, and required a new transitional policy (A4-2) to be inserted into the Water and Soil Plan to guide resource consent decision-making in relation to freshwater resources.

These amendments to the Regional Water and Soil Plan were made under section 55 of the Resource Management Act 1991 as directed by the National Policy Statement for Freshwater Management 2011. Section 55 of the Resource Management Act 1991 states that the amendments are to be made without using the public submission process provided in Schedule 1 of the Resource Management Act 1991.

The amendments were publically notified on the 26 July 2014 and inserted into the plan at pages 58a and 79 in accordance with the council resolutions of 15 July 2014.



General Manager - Planning and Policy

“WHATUNGARONGARO TE TANGATA TOITU TE WHENUA”

**Ko te wehi ki a Ihowa te timatatanga o ngaa whakaaro nui
He maungaarongo ki te mata o te whenua.
He whakaaro pai ki ngaa taangata katoa.
Kia noho ai te aroha a Ihowa
ki runga ia taatou katoa.
Tihewa Mauri Ora!**

**E ngaa iwi, e ngaa tini karangaranga taangata,
Teena anoo taatou katoa.**

**E mihi tonu ana ki te tini o a taatou maatua tuupuna
kua wehe atu ki te poo.
Nгаа mate no teena iwi, no teena iwi;
"He raarangi maunga tuu te ao tuu te poo;
He raarangi taangata ka ngaaro, ka ngaaro, na e ngaaro tonu nei."
Haere koutou, haere, haere, haere.**

**E ngaa huihuinga taangata
E noho mai raa i roto i te Tai Tokerau,
Teena koutou, teena koutou, teena anoo tatou katoa.**

**Ko eenei Ngaa Tikanga Mo Te Wai Me Te Whenua a
Te Kaunihera Whaanui o te Taitokerau.
Kahore anoo i whakatuuturu eenei kaupapa,
heoi anoo maa te iwi whaanui e whakatutuki.
Kia tiaki ai tatou i eenei taaonga tuku iho;
Nгаа taaonga o Te Tai Ao, o Te Ao Tuuroa**

**Ko te tumanako, kia tau mai ngaa manaakitanga o te
Runga Rawa ki teena ki teena o taatou.**

**Teena koutou, teena koutou
Kia ora mai anoo tatou katoa.**

**"MAN WILL PASS, BUT THE EARTH
REMAINS"**

Greetings to all people of the Northland Region.

**Firstly, we acknowledge those who have gone before us,
From whom we derive our heritage,
Farewell.**

**To us who remain,
Greetings.**

**We present here the Regional Water and Soil Plan for Northland
In setting it down we look to you, the people of Northland,
For the mandate to carry it out,
So that together we may achieve the wise management of the environment.**

**May we be blessed in doing so,
Greetings to you all.**

CHAIRMAN'S FOREWORD

***“Kia rongo taku korokoro i nga wai reka o Kokohuia”
May I taste the sweet waters of Kokohuia.***

A dying wish by Waikona, sister of Waimirangi, queen of Ngapuhi
circa 1700 A.D.

Completion of this Regional Water and Soil Plan for Northland marks another significant milestone for the Northland Regional Council.

Not only is the finalisation of this Plan a significant achievement in itself, it is also the third – and last - major Plan of its type to be made operative by the Council since March, 2003; the others being the Regional Air Quality Plan and Regional Coastal Plan.

All three Plans represent many years of detailed work by successive staff and Council members, with this Regional Water and Soil Plan alone requiring thousands of hours work over more than a decade.

However, this Plan is also a testament to the extensive involvement of the wider Northland public including iwi and District Council representatives, farming, forestry, business and environmental interests.

Such was the willingness of the public to work with the Regional Council on this Plan, that despite 36 appeals on more than 230 points, all of these issues were able to be successfully mediated with none needing an Environment Court hearing.

Northland's water and soil resources are an often underappreciated, yet incredibly valuable, resource in a region that shares both a significant rural economy and large areas of bush, forest and other environmental treasures.

As the region continues to grow, providing an effective framework for managing resource use, development and protection is critical. This Plan incorporates an integrated approach to making decisions on our water and soil resources and conveys a wide range of information on the region's environment.

The result is a comprehensive balance between acknowledging human activity and maintaining our environment for future generations. It also affords Northlanders some certainty as to how water and soil matters will be dealt with.

However, this Plan is also designed to be a living document and when the need is determined, changes will be made.

My sincerest thanks to everyone who has played a role in the development of this Plan.



Mark Farnsworth
Chairman

TABLE OF CONTENTS

PART I: RESOURCE DESCRIPTION

1.	NORTHLAND'S LAND AND WATER RESOURCES	3
1.1	NORTHLAND'S GEOLOGY AND RESULTING LANDFORMS	3
1.2	NORTHLAND'S SOILS	5
1.2.1	Yellow-Brown Earths	5
1.2.2	Brown Granular Clays (Semi-Volcanic Soils)	7
1.2.3	Red and Brown Loams (Volcanic Soils)	7
1.2.4	Gley Organic and Saline Soils	7
1.2.5	Limestone Soils (Rendzinas)	7
1.2.6	Sandy Soils	7
1.3	USERS OF THE LAND RESOURCES	8
1.4	NORTHLAND'S WATER RESOURCES	8
1.4.1	Rivers and Streams	8
1.4.2	Lakes and Wetlands	11
1.4.3	Groundwater	12
2.	INTRODUCTION	15
2.1	TRANSITIONAL PROVISIONS	15
2.2	PURPOSE OF THE PLAN	15
2.3	PLAN AREA COVERAGE	16
2.4	PLAN PREPARATION PROCESS	18
2.5	PLAN STRUCTURE	20
2.6	KEY TERMS	21
3.	POLICY FRAMEWORK	23
3.1	INTRODUCTION	23
3.2	PURPOSE AND PRINCIPLES OF THE RESOURCE MANAGEMENT ACT	23
3.3	NEW ZEALAND COASTAL POLICY STATEMENT	25
3.4	REGIONAL POLICY STATEMENT	26
3.5	OTHER REGIONAL PLANS	26
3.6	DISTRICT PLANS	26
3.7	CROSS BOUNDARY ISSUES	27
3.8	STATUTORY ACKNOWLEDGEMENTS	27
4.	IWI PERSPECTIVE	29
5.	MANAGEMENT APPROACH	33

5.1	INTRODUCTION.....	33
5.2	EDUCATION, PROVISION OF INFORMATION AND ADVICE	33
5.3	CODES OF PRACTICE AND GUIDELINES.....	34
5.4	RULES AND ENVIRONMENTAL STANDARDS	34
5.4.1	New Activities	35
5.4.2	Existing Activities.....	35
5.5	WATER QUALITY GUIDELINES.....	35
5.6	RIPARIAN MANAGEMENT	35
5.7	MINIMUM FLOWS	38
5.8	INTEGRATED CATCHMENT MANAGEMENT.....	39
5.9	BEST PRACTICABLE OPTION.....	39
5.10	MONITORING.....	40
6.	RECOGNITION OF AND PROVISION FOR MAORI AND THEIR CULTURE AND TRADITIONS	43
6.1	INTRODUCTION.....	43
6.2	ISSUES.....	43
6.3	OBJECTIVE	44
6.4	POLICIES	44
6.5	METHODS OF IMPLEMENTATION.....	45
6.6	PRINCIPAL REASONS FOR ADOPTING THE OBJECTIVE, POLICIES AND METHODS	46
7.	WATER QUALITY MANAGEMENT	47
7.1	INTRODUCTION.....	47
7.2	REGIONAL POLICY STATEMENT	48
7.3	ISSUES.....	48
7.4	OBJECTIVE	48
7.5	POLICIES	49
7.6	METHODS OF IMPLEMENTATION.....	51
7.7	PRINCIPAL REASONS FOR ADOPTING THE OBJECTIVE, POLICIES AND METHODS RELATING TO WATER QUALITY MANAGEMENT	57
7.7.1	Water Quality Guidelines	57
7.7.2	Water Quality Standards.....	57
7.7.3	Provision of Information.....	57
7.7.4	Information Requirements	57
7.7.5	Research.....	58
8.	DISCHARGES	59
8.1	INTRODUCTION.....	59
8.2	CONTROLS UNDER THE RESOURCE MANAGEMENT ACT 1991.....	59

8.3	SUMMARY OF DISCHARGES IN NORTHLAND	59
8.3.1	Sewage	59
8.3.2	Agricultural Discharges	60
8.3.3	Industrial Discharges	60
8.3.4	Solid Waste	60
8.3.5	Stormwater	61
8.3.6	Rural Roads	61
8.4	TYPES OF CONTAMINANTS	61
8.5	ISSUES	62
8.5.1	General Issues	62
8.5.2	Issues Relating to Sewage Discharges	62
8.5.3	Issues Relating to Agricultural Discharges	63
8.5.4	Issues Relating to Industrial Discharges	64
8.5.5	Issues Relating to Solid Waste Discharges	64
8.5.6	Issues Relating to Stormwater Discharges	64
8.6	OBJECTIVES	64
8.7	POLICIES	65
8.8	METHODS OF IMPLEMENTATION	67
8.9	SPECIFIC POLICIES FOR SEWAGE DISCHARGES	68
8.10	METHODS OF IMPLEMENTATION	68
8.11	SPECIFIC POLICIES FOR AGRICULTURAL DISCHARGES	69
8.12	METHODS OF IMPLEMENTATION	69
8.13	SPECIFIC POLICIES FOR SOLID WASTE DISCHARGES	70
8.14	METHODS OF IMPLEMENTATION	71
8.15	SPECIFIC POLICIES FOR INDUSTRIAL OR TRADE DISCHARGES	73
8.16	METHODS OF IMPLEMENTATION	73
8.17	SPECIFIC POLICIES FOR STORMWATER DIVERSIONS AND DISCHARGES	74
8.18	METHODS OF IMPLEMENTATION	76
8.19	PRINCIPAL REASONS FOR ADOPTING THE OBJECTIVES, POLICIES AND METHODS RELATING TO DISCHARGES	77
8.19.1	Rules and Environmental Standards	77
8.19.2	Education, Provision of Information and Advice	78
8.19.3	Monitoring	78
8.19.4	Co-ordination	78
9.	SURFACE WATER QUANTITY MANAGEMENT	82
9.1	INTRODUCTION	82
9.2	CONTROLS UNDER THE RESOURCE MANAGEMENT ACT 1991	83
9.3	ISSUES	85
9.4	OBJECTIVES	85
9.5	POLICIES	85
9.6	METHODS OF IMPLEMENTATION	95

9.7	PRINCIPAL REASONS FOR ADOPTING THE OBJECTIVES, POLICIES AND METHODS RELATING TO TAKING, USING, DAMMING AND DIVERTING SURFACE WATER	100
9.7.1	Rules and Environmental Standards	100
9.7.2	Education, Provision of Information and Advice	100
9.7.3	Investigation and Monitoring	101
9.7.4	Advocacy	101
10.	GROUNDWATER MANAGEMENT	101
10.1	INTRODUCTION	101
10.2	CONTROLS UNDER THE RESOURCE MANAGEMENT ACT 1991	101
10.3	ISSUES	101
10.4	OBJECTIVES	103
10.5	POLICIES	103
10.6	METHODS OF IMPLEMENTATION	107
10.7	PRINCIPAL REASONS FOR ADOPTING THE OBJECTIVES, POLICIES AND METHODS RELATING TO TAKING, USING, DAMMING AND DIVERTING GROUNDWATER	110
10.7.1	Rules and Environmental Standards	110
10.7.2	Education, Provision of Information and Advice	111
10.7.3	Investigation and Monitoring	111
10.7.4	Advocacy	111
11.	USE OF RIVER AND LAKE BEDS AND DEVELOPMENT ON FLOODPLAINS	113
11.1	INTRODUCTION	113
11.2	CONTROLS UNDER THE RESOURCE MANAGEMENT ACT 1991	114
11.3	ISSUES	115
11.4	OBJECTIVES	116
11.5	POLICIES	118
11.6	METHODS OF IMPLEMENTATION	123
11.7	PRINCIPAL REASONS FOR ADOPTING THE OBJECTIVES, POLICIES, AND METHODS RELATING TO RIVERS AND LAKE BEDS	124 C
11.7.1	Rules and Environmental Standards	124 c
11.7.2	Education, Provision of Information and Advice	124 c
11.7.3	Advocacy	124 d
12.	LAND MANAGEMENT	125
12.1	INTRODUCTION	125
12.2	CONTROLS UNDER THE RESOURCE MANAGEMENT ACT 1991	126
12.3	EROSION AND DISCHARGE OF SEDIMENT	126
12.4	ISSUES	127
12.5	OBJECTIVES	128

12.6	POLICIES	128
12.7	METHODS OF IMPLEMENTATION	131
12.8	PRINCIPAL REASONS FOR ADOPTING THE OBJECTIVES, POLICIES AND METHODS RELATING TO LAND DISTURBANCE ACTIVITIES	133
12.8.1	Rules and Environmental Standards	133
12.8.2	Education, Provision of Information and Advice	134
12.8.3	Incentives	134
12.8.4	Investigation and Monitoring	134
13.	INTEGRATED CATCHMENT MANAGEMENT	135
13.1	INTRODUCTION	135
13.2	ISSUES	136
13.3	OBJECTIVE	136
13.4	POLICIES	136
13.5	METHODS OF IMPLEMENTATION	138
13.6	PRINCIPAL REASONS FOR ADOPTING THE OBJECTIVE, POLICY AND METHODS RELATING TO INTEGRATED CATCHMENT MANAGEMENT	139
13.6.1	Preparation of Catchment Specific Regional Plans	139
13.6.2	Monitoring and Research	139
13.6.3	Education, Provision of Information and Advice	139
13.6.4	Common Expiry Dates	140
14.	RULES	143
14.1	INTRODUCTION	143
14.2	HOW TO USE THE RULES	144
14.2.1	Rules for Discharges to Land or Water	144
14.2.2	Rules for Take, Use, Damming or Diverting of Water	145
14.2.3	Rules for Land Disturbance Activities	147
15.	RULES FOR SEWAGE DISCHARGES	149
15.1	PERMITTED ACTIVITIES	149
15.2	CONTROLLED ACTIVITIES	154
15.3	DISCRETIONARY ACTIVITIES	156
15.4	NON-COMPLYING ACTIVITIES	157
15.5	PROHIBITED ACTIVITIES	157
16.	RULES FOR ANIMAL EFFLUENT DISCHARGES	159
16.1	PERMITTED ACTIVITIES	159
16.2	CONTROLLED ACTIVITIES	161
16.3	DISCRETIONARY ACTIVITIES	161
16.4	NON-COMPLYING ACTIVITIES	161

16.5	PROHIBITED ACTIVITIES	161
17.	RULES FOR OTHER AGRICULTURAL WASTE DISCHARGES	165
17.1	PERMITTED ACTIVITIES	165
17.2	CONTROLLED ACTIVITIES	166
17.3	DISCRETIONARY ACTIVITIES.....	166
17.4	NON-COMPLYING ACTIVITIES	166
17.5	PROHIBITED ACTIVITIES.....	167
18.	RULES FOR THE DISCHARGE OF AGRICHEMICALS	169
18.1	PERMITTED ACTIVITIES	169
18.2	CONTROLLED ACTIVITIES	171
18.3	DISCRETIONARY ACTIVITIES.....	171
18.4	NON-COMPLYING ACTIVITIES	172
18.5	PROHIBITED ACTIVITIES.....	172
19.	RULES FOR SOLID WASTE DISCHARGES	173
19.1	PERMITTED ACTIVITIES	173
19.2	CONTROLLED ACTIVITIES	176
19.3	DISCRETIONARY ACTIVITY.....	177
19.4	NON-COMPLYING ACTIVITIES	177
19.5	PROHIBITED ACTIVITIES.....	178
20.	RULES FOR INDUSTRIAL OR TRADE DISCHARGES	179
20.1	PERMITTED ACTIVITIES	179
20.2	CONTROLLED ACTIVITIES	181
20.3	DISCRETIONARY ACTIVITIES.....	182
20.4	NON-COMPLYING ACTIVITIES	183
20.5	PROHIBITED ACTIVITIES.....	183
21.	RULES FOR STORMWATER DISCHARGES	185
21.1	PERMITTED ACTIVITIES	185
21.2	CONTROLLED ACTIVITIES	188
21.3	DISCRETIONARY ACTIVITIES.....	189
21.4	NON-COMPLYING ACTIVITIES	189
21.5	PROHIBITED ACTIVITIES.....	189
22.	RULES FOR STORMWATER DISCHARGES AND DIVERSIONS FROM ROADS AND FROM LAND DISTURBANCE ACTIVITIES	191

22.1	PERMITTED ACTIVITIES	191
22.2	CONTROLLED ACTIVITIES	192
22.3	DISCRETIONARY ACTIVITIES.....	193
22.4	NON-COMPLYING ACTIVITIES	193
22.5	PROHIBITED ACTIVITIES.....	193
23.	RULES FOR DISCHARGES FROM OTHER ACTIVITIES	195
23.1	PERMITTED ACTIVITIES	195
23.2	CONTROLLED ACTIVITIES	199
23.3	DISCRETIONARY ACTIVITIES.....	200
23.4	NON-COMPLYING ACTIVITIES	200
23.5	PROHIBITED ACTIVITIES.....	200
24.	RULES FOR THE TAKING, USE, DAMMING AND DIVERTING OF SURFACE WATER	201
24.1	PERMITTED ACTIVITIES	202
24.2	CONTROLLED ACTIVITIES	207
24.3	DISCRETIONARY ACTIVITIES.....	207
24.4	NON-COMPLYING ACTIVITIES	208
24.5	PROHIBITED ACTIVITIES.....	208
25.	RULES FOR THE TAKING, USE AND DIVERTING OF GROUNDWATER (INCLUDING GEOTHERMAL WATER)	209
25.1	PERMITTED ACTIVITIES	210
25.2	CONTROLLED ACTIVITIES	213
25.3	DISCRETIONARY ACTIVITIES.....	213
25.4	NON-COMPLYING ACTIVITIES	214
25.5	PROHIBITED ACTIVITIES.....	214
26.	RULES FOR GROUNDWATER BORE CONSTRUCTION ACTIVITIES	215
26.1	PERMITTED ACTIVITIES	215
26.2	CONTROLLED ACTIVITIES	216
26.3	RESTRICTED DISCRETIONARY ACTIVITIES.....	216
26.4	DISCRETIONARY ACTIVITIES.....	217
26.5	NON-COMPLYING ACTIVITIES	217
26.6	PROHIBITED ACTIVITIES	217
27.	RULES FOR DRAINAGE AND RIVER CONTROL ACTIVITIES	219
27.1	PERMITTED ACTIVITIES	219

27.2	CONTROLLED ACTIVITIES	223
27.3	DISCRETIONARY ACTIVITIES.....	225
27.4	NON-COMPLYING ACTIVITIES	226
27.5	PROHIBITED ACTIVITIES.....	226
28.	RULES FOR DAM STRUCTURES (INCLUDING WEIRS) ON THE BEDS OF RIVERS AND LAKES	227
28.1	PERMITTED ACTIVITIES	227
28.2	CONTROLLED ACTIVITIES	230 A
28.3	DISCRETIONARY ACTIVITIES.....	230 B
28.4	NON-COMPLYING ACTIVITIES	230 C
28.5	PROHIBITED ACTIVITIES.....	230 C
29.	RULES FOR STRUCTURES (OTHER THAN DAM STRUCTURES OR WEIRS) IN, ON, UNDER OR OVER THE BED OF A RIVER OR LAKE	231
29.1	PERMITTED ACTIVITIES	231
29.2	CONTROLLED ACTIVITIES	238
29.3	RESTRICTED DISCRETIONARY ACTIVITIES	241
29.4	DISCRETIONARY ACTIVITIES.....	242
29.5	NON-COMPLYING ACTIVITIES	242
29.6	PROHIBITED ACTIVITIES.....	242 A
30.	RULES FOR INTRODUCTION OR PLANTING OF PLANTS IN, ON, OR UNDER THE BED OF A RIVER OR LAKE	243
30.1	PERMITTED ACTIVITIES	243
30.2	CONTROLLED ACTIVITIES	243
30.3	DISCRETIONARY ACTIVITIES.....	243
30.4	NON-COMPLYING ACTIVITIES	244
30.5	PROHIBITED ACTIVITIES.....	244
31.	RULES FOR OTHER USES OF RIVER OR LAKE BEDS	245
31.1	PERMITTED ACTIVITIES	245
31.2	CONTROLLED ACTIVITIES	246
31.3	DISCRETIONARY ACTIVITIES.....	246
31.4	NON-COMPLYING ACTIVITIES	247
31.5	PROHIBITED ACTIVITIES.....	247
32.	ENVIRONMENTAL STANDARDS FOR LAND DISTURBANCE ACTIVITIES	249

32.1	GENERAL ENVIRONMENTAL STANDARDS.....	249
32.2	ENVIRONMENTAL STANDARDS FOR EARTHWORKS.....	250
32.3	ENVIRONMENTAL STANDARDS FOR LAND PREPARATION.....	251
32.4	ENVIRONMENTAL STANDARDS FOR PLANTATION FORESTRY.....	251
33.	RULES FOR LAND DISTURBANCE ACTIVITIES	253
33.1	PERMITTED ACTIVITIES.....	253
33.2	CONTROLLED ACTIVITIES.....	254
33.3	DISCRETIONARY ACTIVITIES.....	255
33.4	NON-COMPLYING ACTIVITIES.....	255
33.5	PROHIBITED ACTIVITIES.....	255
34.	RULES FOR LAND DISTURBANCE ACTIVITIES WITHIN THE RIPARIAN MANAGEMENT ZONE	257
34.1	PERMITTED ACTIVITIES.....	257
34.2	CONTROLLED ACTIVITIES.....	258
34.3	DISCRETIONARY ACTIVITIES.....	258
34.4	NON-COMPLYING ACTIVITIES.....	259
34.5	PROHIBITED ACTIVITIES.....	259
35.	INFORMATION REQUIREMENTS	263
35.1	INFORMATION REQUIREMENTS FOR DISCHARGE PERMIT APPLICATIONS.....	263
35.2	INFORMATION REQUIREMENTS FOR WATER PERMITS.....	265
35.2.1	General Information Requirements.....	265
35.2.2	Specific Information Requirements for River Takes.....	266
35.2.3	Specific Information Requirements for Takes from Dams or Other Impoundment Structures.....	267
35.2.4	Specific Information Requirement for Water Takes from Lakes.....	267
35.2.5	Specific Information Requirements for Water Diversions.....	267
35.2.6	Specific Information Requirements for Groundwater Takes.....	268
35.3	INFORMATION REQUIREMENTS FOR STRUCTURES OR WORKS IN, ON, UNDER OR OVER THE BED OF A RIVER OR LAKE.....	268
35.3.1	General Information Requirements.....	268
35.3.2	Specific Information Requirements for Dams.....	269
35.3.3	Specific Information Requirements for River Crossings.....	270
35.3.4	Specific Information Requirements for Extraction of Riverbed Material.....	270
35.3.5	Specific Information Requirements for Planting.....	270
35.3.6	Specific Information Requirements for Reclamation and Drainage.....	270
35.4	SPECIFIC INFORMATION REQUIREMENTS FOR LAND USE CONSENT APPLICATIONS.....	271

36.	ASSESSMENT CRITERIA	273
36.1	ASSESSMENT CRITERIA FOR DISCHARGE PERMIT APPLICATIONS.....	273
36.2	ASSESSMENT CRITERIA FOR WATER PERMIT APPLICATIONS TO TAKE, USE, DAM AND DIVERT WATER	274
36.2.1	General Assessment Criteria	274
36.2.2	Assessment Criteria for River Takes and Diversion	274
36.2.3	Assessment Criteria for Takes from Dams.....	274
36.2.4	Assessment Criteria for Takes from Lakes	275
36.2.5	Assessment Criteria for Takes and Diversions which may affect Indigenous Wetlands	275
36.2.6	Assessment Criteria for Groundwater Takes	275
36.3	ASSESSMENT CRITERIA FOR LAND USE CONSENT APPLICATIONS FOR STRUCTURES AND WORKS IN, ON, UNDER OR OVER THE BED OF A RIVER OR LAKE.....	275
36.3.1	General Assessment Criteria	276
36.3.2	Assessment Criteria for Dam Structures.....	276
36.3.3	Assessment Criteria for Planting.....	277
36.3.4	Assessment Criteria for Extraction of River Bed Materials	277
36.3.5	Assessment Criteria for Drainage and Reclamations	277
36.3.6	Assessment Criteria for Stopbanks on Flood Plains	277
36.4	ASSESSMENT CRITERIA FOR APPLICATIONS FOR LAND DISTURBANCE ACTIVITIES	277
37.	RESOURCE CONSENT APPLICATION PROCEDURES	281
37.1	INTRODUCTION.....	281
37.2	NOTIFICATION AND NON-NOTIFICATION OF APPLICATIONS	281
37.2.1	Controlled Activities	281
37.2.2	Restricted Discretionary Activities.....	281
37.2.3	Discretionary and Non-Complying Activities	281
37.3	ASSESSMENT OF EFFECTS.....	283
37.4	JOINT HEARINGS	283
37.5	DURATION OF RESOURCE CONSENTS	283
37.6	REVIEW OF RESOURCE CONSENT CONDITIONS.....	284
37.7	OBJECTIONS AND APPEALS.....	284
37.7.1	Objections	284 a
37.7.2	Appeals	284 a
38.	OTHER MATTERS	285
38.1	REGIONAL COUNCIL CHARGES	285
38.2	BONDS AND FINANCIAL CONTRIBUTIONS	286
38.2.1	Introduction.....	286
38.2.2	Objectives	286
38.2.3	Policies.....	286
38.2.4	Methods of Implementation	288
38.2.5	Circumstances where Financial Contributions may be Required.....	289

38.2.6	Purposes for which Financial Contributions may be Required	289
38.2.7	Financial Contribution Assessment Criteria	289
38.3	TRANSFER OF POWERS	290
39.	ENVIRONMENTAL RESULTS ANTICIPATED	295
39.1	INTRODUCTION.....	295
39.2	SURFACE WATER	295
39.3	GROUNDWATER	295
39.4	USE OF RIVER AND LAKE BEDS.....	295
39.5	WATER QUALITY	296
39.6	LAND MANAGEMENT	296
39.7	CULTURAL NEEDS	296
40.	PLAN MONITORING, CHANGES AND REVIEW	297
40.1	INTRODUCTION.....	297
40.2	MONITORING OF PLAN EFFECTIVENESS.....	297
40.3	PLAN CHANGES	297
40.4	PLAN REVIEW.....	298
41.	DEFINITIONS	301

APPENDICIES

Appendix 1:	Derivation And Rationale For Water Quality Guidelines For Aquatic Ecosystems, Contact Recreation, Water Supply, Aesthetic Or Cultural Purposes.....	323
Appendix 2:	Derivation And Rationale For Water Quality Guidelines For Stock Water And Irrigation Water Supplies	327
Appendix 3:	Section 88 And The Fourth Schedule Of The Resource Management Act 1991	329
Appendix 4:	Landfill Management Plan	331
Appendix 4a:	Matters To Be Addressed In A Landfill Closure Plan	333
Appendix 5:	Stormwater Management Plans	335
Appendix 6:	Land Use Capability Classification	337
Appendix 7:	Pit Privy Specifications	341
Appendix 8:	Procedure For Percolation Testing.....	343
Appendix 9:	Controlled Pesticides	347
Appendix 10:	Revoked Sections Of The Transitional Regional Plan	349
Appendix 11:	Estimation Of Design Minimum Flows Using Flow Correlation Methods	351
Appendix 12:	Guidelines For Flow Sensitive Rivers And Sections Of Rivers.....	353
Appendix 13a:	Indigenous Wetlands.....	357
Appendix 13b:	Criteria For Areas Of Significant Indigenous Vegetation, And Significant Habitats Of Indigenous Fauna And Significant Indigenous Wetlands.....	359
Appendix 14:	Monitoring Bore Surface Completion Specifications	361
Appendix 15:	Principles Of Fish Pass Design	363
Appendix 16:	Contents Of A Regional Plan For Specific Catchment.....	367
Appendix 17:	Possible Contents Of Drainage District Management Plan	369
Appendix 18:	Outstanding Value Rivers And Lakes	371

SCHEDULES

Schedule A:	Aquifers With High Actual Or Potential Demand.....	375
Schedule B:	Aquifers At Risk (Short To Medium Term) Of Seawater Intrusion.....	377
Schedule C:	Geothermal Aquifers	379
Schedule D:	Existing Drainage Districts And Flood Schemes.....	381
Schedule E:	List Of Dune Lakes In Northland	383
Schedule F:	Aquifers Sensitive To Bore Construction	387

FIGURES

Figure 1:	Major Geology Types In Northland.....	4
Figure 2:	Major Soil Types In Northland	6
Figure 3:	Major Rivers, Catchment Areas And Lakes In Northland.....	10
Figure 4:	Northland Region	17
Figure 5:	Process For Preparation Of A Regional Water And Soil Plan	19
Figure 6:	Policy Statements And Plans	24
Figure 7:	Riparian And Foredune Management Zone.....	37
Figure 7a:	Riparian Mangement Zone	37
Figure 7b:	Relationship Between The Riparian Management Zone And The Coastal Marine Area	37
Figure 7c:	Riparian Management Zone In Relation To The Foredune	38
Figure A1:	Percolation Testing	345

TABLES

Table 1:	Long-Term River Flow Recorder Stations In Northland	9
----------	---	---

PART I: RESOURCE DESCRIPTION

This part provides a brief description of Northland's land and water resources.

1. NORTHLAND'S LAND AND WATER RESOURCES

This section broadly describes Northland's geology, soils and types of water bodies.

1.1 NORTHLAND'S GEOLOGY AND RESULTING LANDFORMS

Northland consists of a long narrow peninsula, less than 100 km across at its widest point, bounded by the Tasman Sea to the west and the Pacific Ocean to the east. There are no significant mountain ranges and the highest point, Te Raupua in the Waima Range, is only 781 metres above sea level.

Northland's geology is a mixture of basement rock (greywacke), volcanic rock, sedimentary rocks, alluvial material and sands. A generalised map of the geology of Northland is shown in Figure 1.

Uplifted blocks of hard blue-grey sandstone or greywacke extend along the east coast from north of the Bay of Islands as far south as the Brynderwyn range, and inland from Whangarei. To the west of these surface outcrops, greywacke forms a basement deep beneath various sedimentary and volcanic rocks. Old volcanic rock outcrops are among the most dramatic features of the Northland landscape. These outcrops extend down the eastern side of Northland from North Cape to Mount Manaia and Whangarei Heads. On the west coast, similar outcrops are a feature of the landscape from Turiwiri to Tinopai.

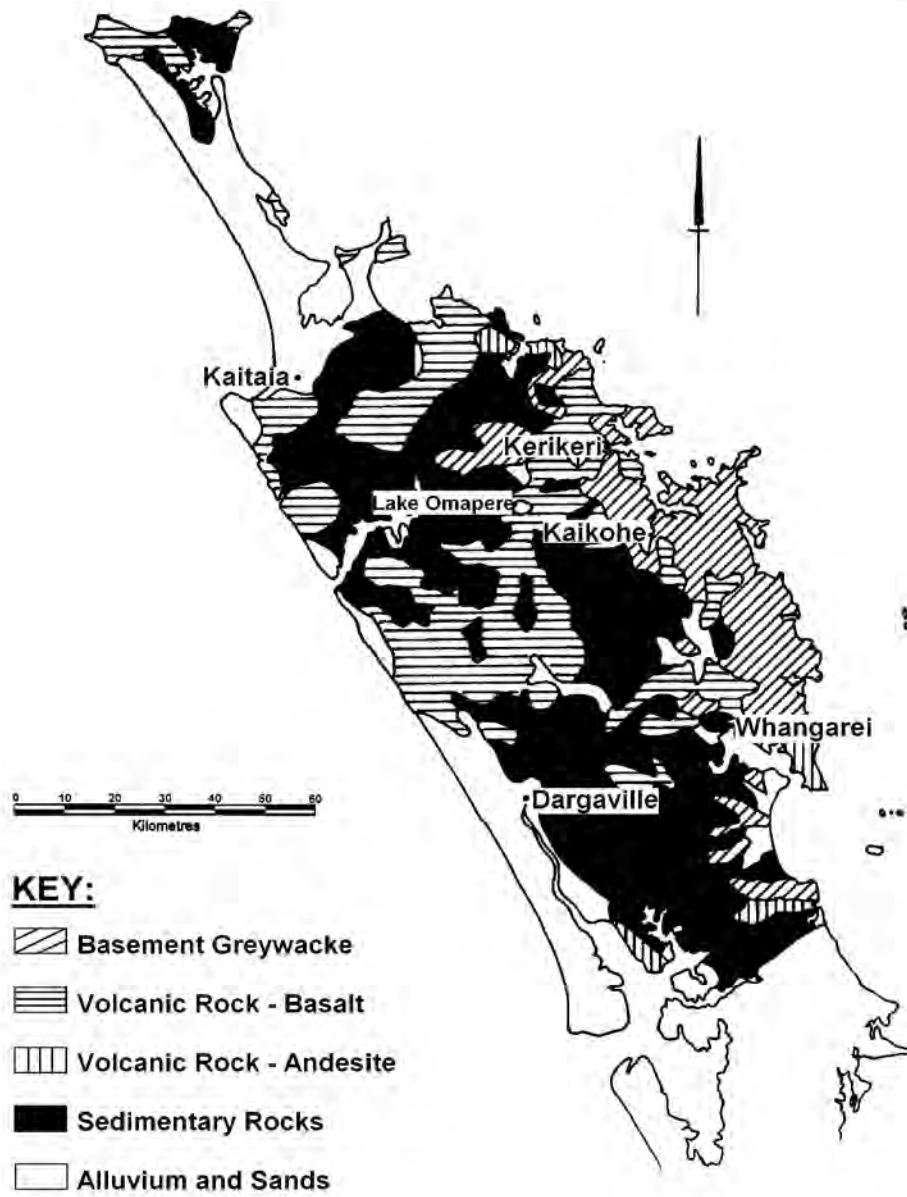
Basalt lava flows over soft sedimentary rocks form the plateau landforms of much of central Northland. The eroded cones of older volcanoes extend along fault lines south of the Brynderwyns, north of Whangarei Harbour, and from Kaikohe to Matauri Bay. Younger scoria cones are features of the landscape around Whangarei and Kaikohe.

The low hill country of the region consists of a complex mix of soft sedimentary sandstone, mudstone, argillite and limestone rocks. This mix also contains large blocks of volcanic rock which form Northland's most prominent ranges. Material eroded from surrounding hills forms the Hikurangi swamp, the Waipu-Ruakaka flats and the Awanui flats. Sediment from Northland's largest river, the Northern Wairoa, forms the most extensive area of flat land in the region, the Northern Wairoa and Ruawai Flats.

Rising sea levels have drowned river valleys to create several harbours which extend well into the interior of the region. As a result, rivers tend to be short, dropping quickly in bouldery streams from higher country, and then meandering sluggishly through mangrove lined channels into harbours and estuaries.

Sand, originally from the Waikato River, has been transported northwards along the west coast to form South Head, Pouto Peninsula and the Kaipara Harbour. In the Far North, sand deposited between the mainland and near-shore islands has created the Aupouri and Karikari peninsulas. Similar sand movement and deposits along the east coast have created numerous examples of sandspits enclosing estuaries and sheltered harbours.

FIGURE 1: MAJOR GEOLOGY TYPES IN NORTHLAND



Source: New Zealand Geological Survey

1.2 NORTHLAND'S SOILS

Northland lies outside New Zealand's belt of vigorous geologic activity and has, for millions of years, remained relatively calm. The low relief, the absence of any deposits from recent ash showers, the warm moist climate and the original vegetation have combined to cover much of Northland in strongly leached, mature, heavy clays. Generally, topsoils are thin and subsoils are of low fertility. The main exceptions are the fertile volcanic soils, young alluvial deposits and the young soils developing on unstable steep slopes.

The composition of the original indigenous forest shows an important relationship to the soil properties. Trees with acid litter, such as kauri, totara, rimu and kahikatea, have produced strongly leached soils, with the kauri producing the well-known gumland soils. By contrast, the broadleaf trees, including puriri, kohekohe, taraire and tawa, have returned nutrients to the soil through rapid decomposition of dead leaves, twigs and bark, giving mellow, fertile top soils.

The soils of Northland can be broken up into seven major groups and are shown in generalised form in Figure 2.

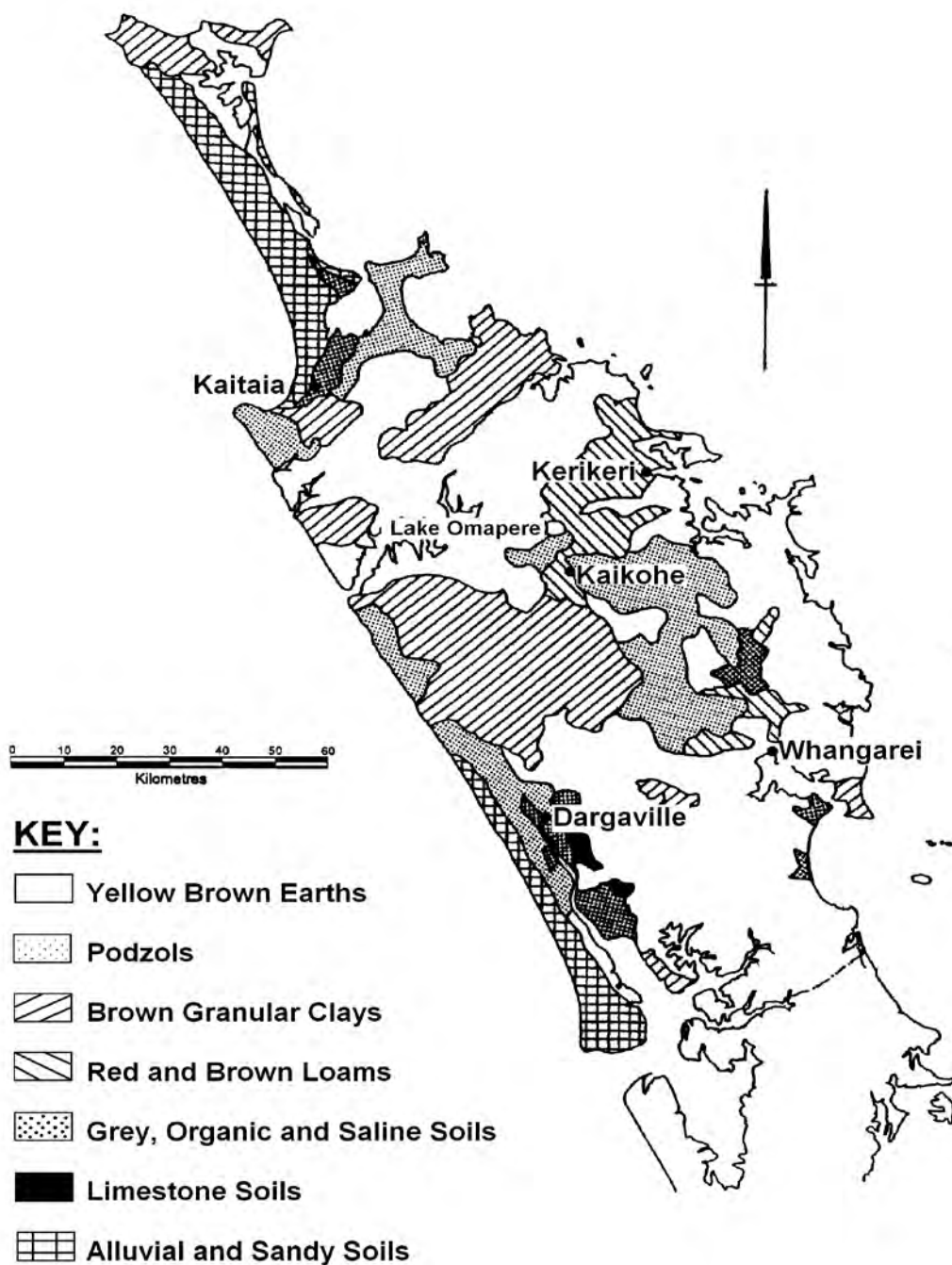
1.2.1 Yellow-Brown Earths

These are soils formed from sand, mudstone, claystone, sandstone, greywacke, dacite and from alluvial deposits from sedimentary rocks. They are by far the most common soil types found in Northland and approximately 90 separate and different yellow brown earth types have been mapped. They have greatly varying levels of fertility, ranging from the fertile Waiotira soils to the podzolised Wharekohe gumland soils of very low natural fertility. This group also includes such diverse soils as the friable Redhill sands and the heavy gleyed soils of the river flats. Yellow brown earths cover most of the low hill country of Northland and include all those referred to as "clay hill" soils. On steeper land, these soil types are prone to slipping, particularly during heavy rain, while on the easier, more deeply weathered soils, gully erosion can be a problem during land development. On some hill country, erosion can expose acid shales which not only contribute sediment to streams but are also very difficult to stabilise or revegetate.

The term 'gumland' refers to the strongly weathered, strongly leached, and usually podzolised yellow brown earths. Where strongly podzolised, a silica pan exists in the subsoil that causes them to become very boggy during wet conditions and very dry during droughts. In their natural state, these soils support only stunted scrub vegetation. However, if heavy topdressing, liming and replacement of trace elements is carried out, together with drainage, they are capable of high production.

Apart from the Northern Wairoa-Ruawai and Awanui Flats, the small areas of alluvial soils in Northland usually have a heavy texture and require extensive subsurface drainage to enable even pastoral production. The more mature soils may not be suited to subsurface drainage.

FIGURE 2: MAJOR SOIL TYPES IN NORTHLAND



Source: DSIR 1963

1.2.2 Brown Granular Clays (Semi-Volcanic Soils)

Brown granular clays are formed from andesitic rock material and are extensive on rolling to moderately steep land in Northland. They are friable with medium to high fertility in the younger soils. The older soils are more strongly leached with a high clay content. With inadequate fertiliser or overgrazing, these soils are prone to serious sheet erosion. Subsoils are high in aluminium and are very difficult to revegetate when exposed by erosion. When surface runoff carries soil particles into water, the colloidal nature of the particles can result in their remaining in suspension for long periods, and even in low concentrations can cause major discolouration.

1.2.3 Red and Brown Loams (Volcanic Soils)

Red loams are formed from scoriaceous basalt on the sides of volcanic cones. Brown loams are developed from basalt rock and are most extensive on rolling to flattish plateaux. Red and Brown loams have formed over a wide time period, and range from the young free draining Papakauri and Kiripaka soils to the mature Okaihau soils. The mature soils are characterised by the formation of iron nodules (the aggregation of materials including oxides of iron, aluminium and manganese). Under cultivation, all these soils are prone to sheet erosion and rilling, even on easy slopes. The layer of ironstone nodules can impede drainage and ripping is required before tree planting for forestry or horticulture.

1.2.4 Gley Organic and Saline Soils

These are low-lying soils derived from alluvium, peat or marine sediment and are found in small pockets throughout Northland. If drainage is practicable, they can be highly productive. The largest areas are at Awanui and the Ruawai and Northern Wairoa flats. Care must be taken not to overdrain peat soils as they are difficult to re-wet and are susceptible to wind erosion and burning.

1.2.5 Limestone Soils (Rendzinas)

Medium to high fertility soils derived from limestone are found in small patches throughout Northland, with larger areas in the Kaipara District. Although they are heavy, with poor subsoil drainage and are subject to drying out in the summer, they produce high quality pastures.

1.2.6 Sandy Soils

Soils on the dunes and sandy marine deposits along the west coast of Northland and, to a much lesser extent, the east coast, vary in age and soil development from recently stabilised dunes to the mature and podzolised gumland sands. These older soils exhibit the features of Yellow-Brown Earths and have been included in that group. The younger soils are prone to wind erosion and gullying particularly when the thin surface soils are disturbed by overgrazing, insect pests, rabbits, cultivation and tracking. The unconsolidated sand, once exposed, can quickly develop into sand drifts.

1.3 USERS OF THE LAND RESOURCES

Northland's economy is predominantly based on the productive capabilities of the land. Approximately 59% of the land is in pasture, while 10% is planted in production forests and 0.6% in orchards or crops. The remaining area not directly used for productive purposes is generally native forest on steep lands which has important water and soil protection values.

The region has around 125,000 ha of planted production forest. It is estimated that Northland economy currently earns \$71 million a year from forestry. This is predicted to increase to over \$380 million a year over the next twenty years.

The region has a well developed horticultural industry, centred mainly around the growing of avocados, citrus, kiwifruit, kumara, squash and flowers. Around 2,300 ha are currently planted in fruit crops and 3,500 ha in market gardens. Most fruit crops, particularly citrus and kiwifruit are grown in the Bay of Islands and Whangarei areas. Farming earns around \$1 billion a year in total for the region, of which the dairy processing industry contributes some \$630 million per annum. The land resource is also important for the continued survival of indigenous flora and habitats of indigenous fauna.

Mining is a significant contributor to the regional economy. High quality ceramic clay operations are based at Matauri Bay and silica sand is taken from the Parengarenga Harbour. Limestone is recovered for agricultural purposes and cement manufacturing. The Portland quarry and associated cement works south of Whangarei is the largest in the country.

1.4 NORTHLAND'S WATER RESOURCES

The fresh water resources in Northland can be found in three broad forms: rivers and streams, lakes and wetlands, and groundwater.

1.4.1 Rivers and Streams

Northland has a dense network of rivers and streams, many of which are relatively short, with small catchments. Most of the major rivers have their outlets into harbours; few discharge directly to the open coast. The Northern Wairoa River is Northland's largest river. It drains a catchment area of some 3650 square kilometres, or 29% of the land area in Northland. Figure 3 shows the major rivers and their catchments.

The flow regimes of Northland's rivers are mainly influenced by climate and geology.

Northland's rainfall distribution pattern results from its narrow shape and its topography. Annual rainfalls range from 900 millimetres in low-lying coastal areas to over 2,900 millimetres in higher altitude areas such as Tutamoe Plateau. Seasonal influences on rainfall are well defined due to the seasonal movement of high pressure belts. Rainfall is highest in winter and lowest in summer, with up to one third of the annual total often falling in the three winter months. Northland also experiences high intensity rainfalls which can result in flash floods.

The marked seasonal rainfall pattern is reflected in the broad seasonal pattern of higher flows during winter months and lower flows during summer months. Most rivers have only 10-20% of the yearly flow in summer flows.

Northland’s variable geology also has a major influence on flow regimes. Some types of rock allow water to pass through them much more easily than others. In Northland, the fractured basalt rocks readily absorb rainfall and slowly release it through springs. This slow release sustains the flow during dry periods. Catchments of less pervious geology absorb less rain and therefore have less water available in storage. Flows from these catchments tend to recede quickly during dry summer months, with little sustaining baseflow.

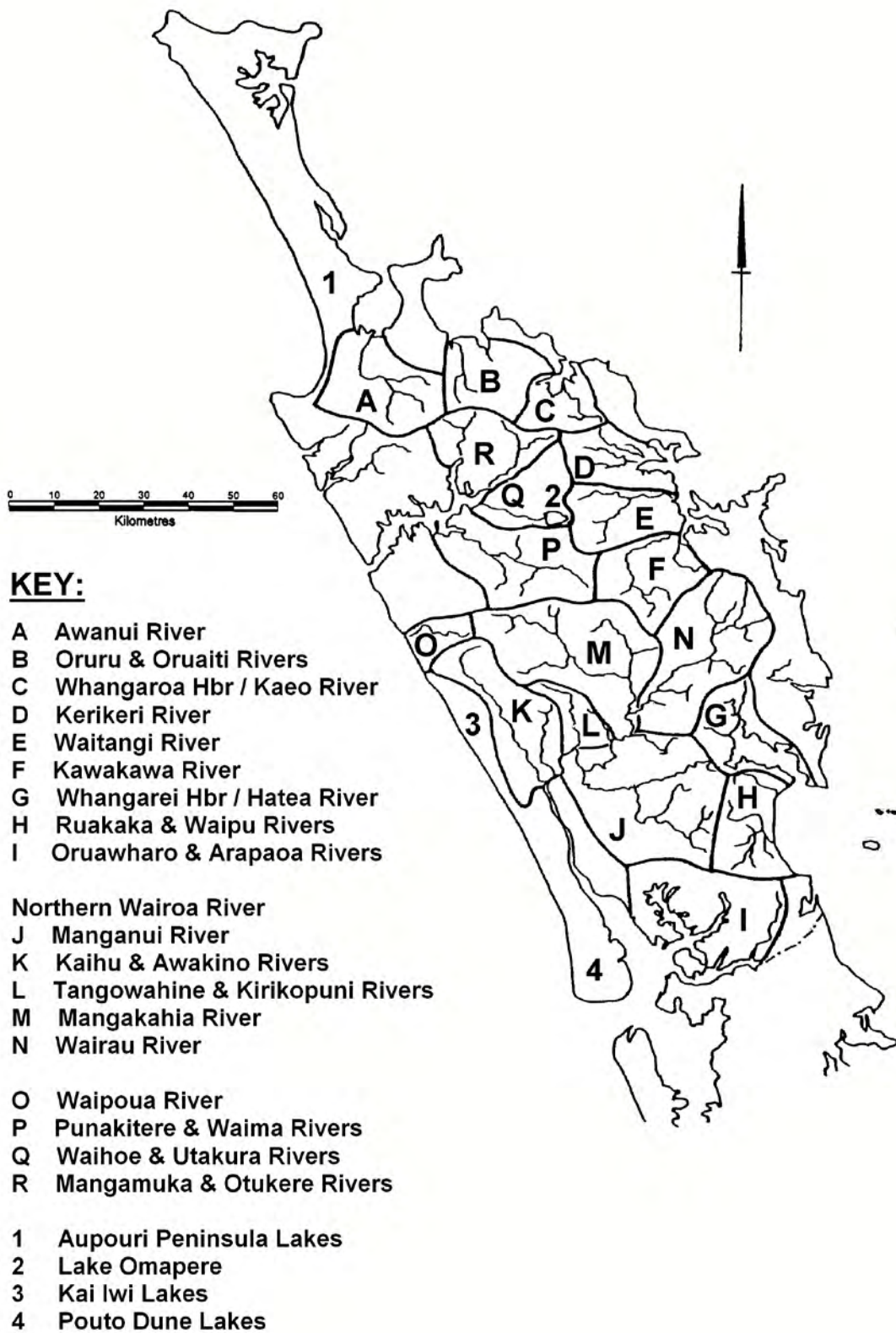
On rolling sand country, rainfall infiltrates quickly into the ground flowing as groundwater rather than streamflow. Many streams on the Aupouri Peninsula have little or no baseflow.

Mean annual low flows for Northland rivers with long periods of flow records are shown in Table 1, along with an estimation of the 1 in 5 year, 7 day low flow. The estimation is relevant only for that period of record shown.

TABLE 1: LONG-TERM RIVER FLOW RECORDER STATIONS IN NORTHLAND

Catchment Name	Recorder Site Name and Number	Catchment Area Above Recorder Site (km ²)	Predominant Geology	Period of Record	Mean Annual Low Flow Based on Daily Average (l/sec)	1 in 5 Year, 7 Day Low Flow (l/sec)
Awanui	School Cut 1316	222	Mixture of mudstones, sandstones and old volcanics	1958-2003	557	460
Mangakahia	Gorge 46618	246	Volcanics (60%), mudstone, sandstone (30%)	1960-2003	1451	1171
Maungaparerua	Tyrees Ford 3506	11.1	Basalt (volcanic)	1967-2003	33	23
Ngunguru	Dugmores 4901	12.5	Greywacke	1969-2004	79	61
Mangere	Kara Weir 46609	12.3	Greywacke	1975-1993	59	48
Manganui	Permanent Station 46651	411	Mudstone, sandstone	1960-2004	276	154
Waipapa	Forest Ranger 46804	122	Greywacke	1978-2003	709	559
Waitangi	Wakelins 3722	302	Basalt, shale	1979-2003	966	552
Waiotu	SH1 46627	125	Greywacke	1987-2000	233	197
Whakapara	Cableway 46632	162	Greywacke	1959-2000	851	653
Waipao	Draffins Road 46641	36.7	Basalt (Volcanics)	1979-2000	239	208
Wairua	Purua 46644	544	Greywacke, alluvium, some volcanics	1961-2000	1850	1450
Mangere	Knights Road 46646	79	Greywacke and sandstone	1983-2000	119	102
Wairua	Wairua Bridge	707	Mixture of greywacke, sandstone and basalt	1961-2000	2250	1780
Mangaharuru	County Weir 46647	20.5	Greywacke	1961-2000	105	78
Kaihu	Gorge 46611	116	Volcanic	1970-1995	718	609

FIGURE 3: MAJOR RIVERS, CATCHMENT AREAS AND LAKES IN NORTHLAND



The geology and associated soils also influence the chemistry of the water in streams. Natural water quality is therefore variable from catchment to catchment as geology changes. For example, if the underlying rock and soils have naturally high phosphate levels, then water which drains that land is also likely to have high phosphate levels. Geothermal activity, such as around Ngawha, also strongly influences the chemistry of the water in the catchment.

Rivers and streams provide habitats for a wide range of species of indigenous fauna and flora. Rivers and streams are important to native fish which must migrate between freshwater and the sea in order to complete their life cycle. Natural barriers, such as waterfalls, limit the number of potential habitats for these native fish. Man-made barriers can adversely affect migratory fish. These barriers may be physical (for example a dam in a stream), chemical (discharges which are low in dissolved oxygen or high in ammonia) or biological (a manmade change in the migration route may increase the fish's vulnerability to predators).

The type and quality of rivers and streams as aquatic habitats is determined by many factors. Natural factors such as gradient and the underlying geology have a major influence. Rivers and streams can be broadly described as hard bedded or soft bedded. Hard bedded systems are usually of moderate gradient and have a bed component of bedrock, boulders, cobbles and sands. Such environments generally offer better habitat to aquatic life than do soft bedded environments comprising fine sands and silts. Superimposed on these features are land uses. Native bush catchments enhance instream values. At the other end of the spectrum, open pastoral settings offer different habitats.

The potential for the degradation of water quality in rivers and streams increases as the catchment area increases. The headwaters of streams, or streams in short catchments are generally of a quality suitable for most uses because of the relatively small influence of runoff from adjacent land uses. Further down the catchment where the contributing area is large, the degradation may be such that the potential uses of the water may be limited to stock watering or industrial purposes.

1.4.2 Lakes and Wetlands

Northland has a large number of small and generally shallow lakes and associated wetlands, most of which have been formed between stabilised sand dunes along the west coast. These dune lakes are grouped on the Aupouri, Karikari and Pouto Peninsulas. They vary in size, with the majority being between 5 and 35 hectares in area and generally less than 15 metres deep. Lake Taharoa of the Kai Iwi Group is one of the largest and deepest dune lakes in the country, covering an area of 237 hectares and being 37 metres deep.

The dune lakes in the region generally have little or no continuous surface inflows or outflows, being primarily fed by rainfall directly onto their surfaces and surrounding wetlands. As a result, their levels fluctuate considerably with climatic patterns. As most of the lakes are relatively small and shallow, they have limited capacity to assimilate any contaminants. They are prone to nutrient enrichment from stock and fertiliser, particularly where lakeside vegetation has been grazed or removed, and where there is direct stock access to the lake.

The region also has several inland lakes which were formed through the damming of valleys by lava flows. Two such lakes are Lake Omapere and Lake Owhareiti near Kaikohe. These lakes have special spiritual and cultural significance to the tangata whenua.

Wetlands can make a significant contribution to water quality and natural hazard mitigation. There are many remnant wetlands in Northland, including some relatively large inland wetlands. These include Hikurangi Swamp, the Motatau Wetlands, and other wetlands in the mid catchments of larger rivers such as the Manganui/Tauraroa. Wetlands associated with dune and gumland areas and adjoining the coast are also important; a number of those on the Poutu Peninsula, Kaimaumu and in the Bay of Islands being considered habitats of international significance. The original area of wetlands has been greatly reduced due to drainage and conversion to agricultural uses. In just five years between 1978 and 1983 there was a 14.4% reduction in freshwater wetlands. The remaining wetlands tend to be small and scattered, and continue to be vulnerable to changes in hydrologic regimes and to the effects of stock grazing and further land development.

These lake and wetland ecosystems are important habitats for a wide variety of plant and animal species, some of which are regionally or nationally significant because of their rarity. These include birds such as the brown teal, banded rail, New Zealand dabchick, marsh crake, fern bird and bittern, the aquatic plants *Hydatella inconspicua*, *Myriophyllum robustum* and native freshwater fish including the giant kokopu, banded kokopu, short jawed kokopu and dwarf inanga.

1.4.3 Groundwater

There are three main types of geological formations associated with groundwater in Northland. These are sands and gravels, volcanic cones and related lava flows and sedimentary rocks such as greywacke and limestone. The main aquifers (rocks which store water) are the Aupouri sands, Kaikohe basalts and Whangarei basalts. There are a number of smaller sand and gravel coastal aquifers such as those at Russell, Matapouri and Taipa. A number of smaller less productive greywacke aquifers are situated throughout the region.

Northland’s rainfall distribution pattern also influences groundwater recharge. Groundwater recharge tends to occur in winter months due to the heavier and more consistent rainfall. A reduction in summer rainfall can occur with little impact on groundwater levels but drier than normal conditions during winter months can result in reduced recharge. The critical factor affecting late summer groundwater levels is the length of time since the last significant recharge (rainfall) event.

The water in some aquifers is high in iron which makes it unpalatable, even to stock. Treatment is required before it can be used as a water supply. In areas where the aquifer is unconfined (i.e. rainwater can infiltrate directly into the saturated zone), there is a risk of pollution of the groundwater through discharges of contaminants to land. In general, groundwater quality is high enough to allow the water to be consumed without treatment.

PART II:

BACKGROUND

This part explains the purpose of the Regional Water and Soil Plan. It also sets out the statutory and administrative resource management frameworks within which this Plan is required to operate. It also includes a description of the iwi perspective of resource management.

2. INTRODUCTION

2.1 TRANSITIONAL PROVISIONS

Until the notification of this Plan, Northland's water and land resources have been managed under the provisions of the Transitional Regional Plan and the controls in the *Resource Management Act 1991* relating to the use of water, discharges of contaminants into the environment, certain uses of river and lake beds and restrictions on the use of land.

The Transitional Regional Plan comprises various instruments that were in force before the commencement of the *Resource Management Act 1991*. These instruments include:

1. The Final Classification of the Bay of Islands, under the *Water and Soil Conservation Act 1967*,
2. General Authorisations for the Use of Natural Water, under the *Water and Soil Conservation Act 1967*,
3. A Bylaw for the Protection of Watercourses and Defences against Water, under the *Soil Conservation and Rivers Control Act 1941*, and
4. A Notice relating to Clearance of Vegetation and Disturbance of Land Surfaces, under Section 34(2) of the *Soil Conservation and Rivers Control Amendment Act 1959*. The notice relating to clearance of vegetation and disturbance of land made under Section 34(2) of the *Soil Conservation and Rivers Control Amendment Act 1959* lapsed in January 1995.

These instruments were converted into rules for permitted and discretionary activities under the *Resource Management Act 1991*.

The Transitional Regional Plan has ceased to have any legal status as this Plan is now fully operative.

2.2 PURPOSE OF THE PLAN

The *Resource Management Act 1991* came into force on 1 October 1991. The Act aims to promote the sustainable management of New Zealand's natural and physical resources through, among other things, a framework of Policy Statements and Plans. This includes the preparation of Regional Plans where the following circumstances or considerations arise or are likely to arise (Section 65):

- (a) *Any significant conflict between the use, development, or protection of natural and physical resources or the avoidance or mitigation of such conflict:*
- (b) *Any significant need or demand for the protection of natural and physical resources or of any site, feature, place, or area of regional significance:*
- (c) *Any threat from natural hazards or any actual or potential adverse effects of the storage, use, disposal, or transportation of hazardous substances which may be avoided or mitigated:*

- (d) *Any foreseeable demand for or on natural and physical resources:*
- (e) *Any significant concerns of tangata whenua for their cultural heritage in relation to natural and physical resources:*
- (f) *The restoration or enhancement of any natural and physical resources in a deteriorated state or the avoidance or mitigation of any such deterioration:*
- (g) *The implementation of a national policy statement or New Zealand coastal policy statement:*
- (h) *Any use of land or water that has actual or potential adverse effects on soil conservation or air quality or water quality:*
- (i) *Any other significant issue relating to any function of the regional council under this Act.*

The purpose of this Regional Water and Soil Plan is to assist the Northland Regional Council (the Council) to promote the sustainable management of the water and soil resources in Northland.

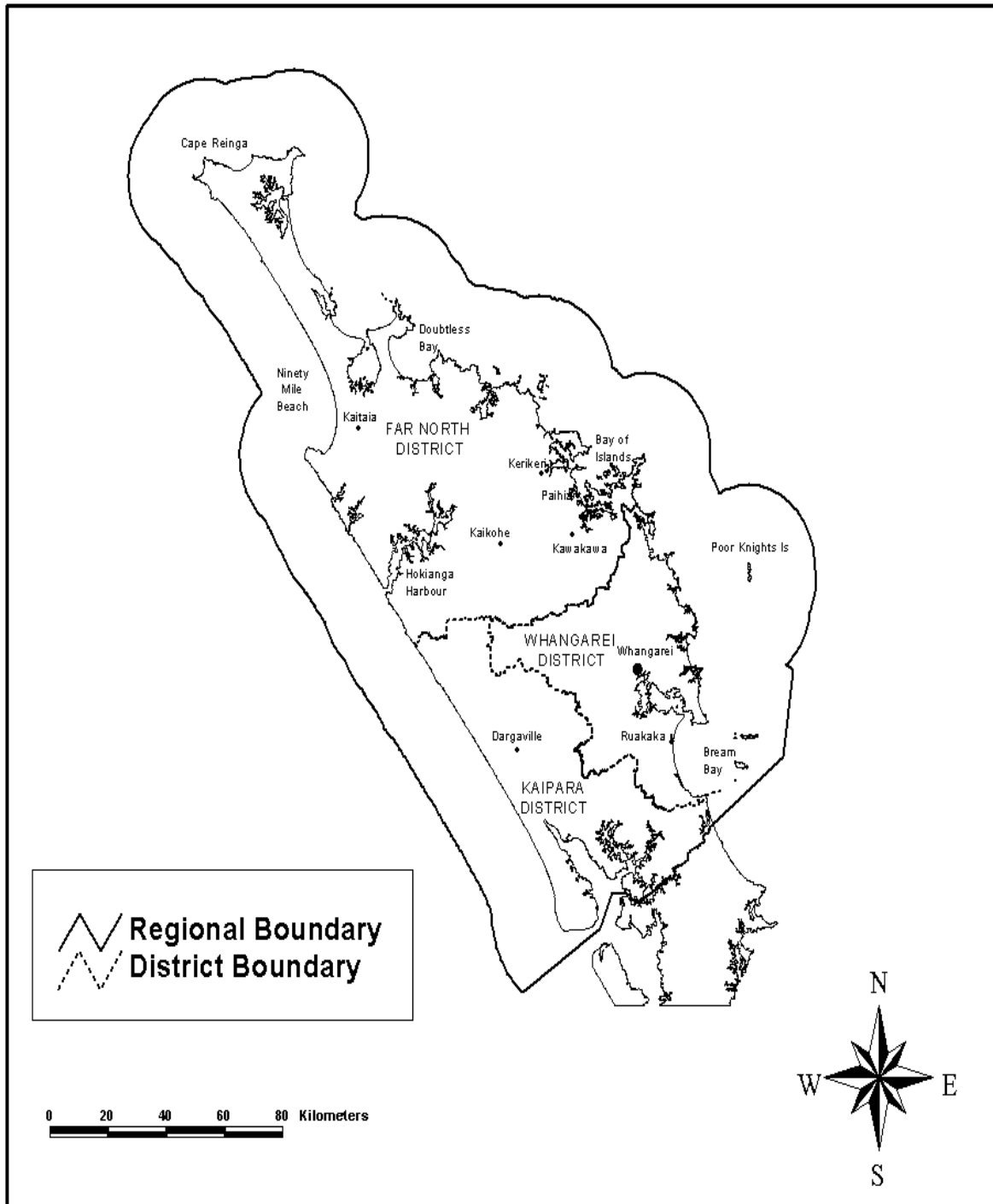
2.3 PLAN AREA COVERAGE

This Plan covers the land and water resources of the Northland region. This extends northwards of a line between the Oruawhoro arm of the Kaipara Harbour and a point just south of the Mangawhai Harbour on the East Coast, and extends inland from Mean High Water Springs (MHWS) and the agreed cross-river boundaries that are outlined in the Regional Coastal Plan.

By contrast, the area around Northland's coast from Mean High Water Springs (MHWS) to the 12 nautical mile (19.2 kilometre) limit of New Zealand's territorial sea is the "Coastal Marine Area" and is covered by the Regional Coastal Plan. The Northland "region" is generally depicted in Figure 4. Whilst the Regional Water and Soil Plan controls discharges and land disturbance activities, it is the Regional Coastal Plan that controls discharges and land disturbance activities within the coastal marine area.

Within the region, there are three District Councils: the Far North District Council, the Kaipara District Council and Whangarei District Council.

FIGURE 4: NORTHLAND REGION



2.4 PLAN PREPARATION PROCESS

This Plan was prepared following a process of public consultation in accordance with the requirements of the First Schedule to the Act. A discussion paper entitled, '*Towards Regional Plans for Water, Soil and Air Management*' was prepared and released in December 1992. It was widely circulated to interested parties and the general public. The discussion paper set out the legislative framework for preparing this Plan, provided an overview of the water, soil and air issues within the region, and asked for submissions on the direction of future water, soil and air management in Northland.

A total of 95 submissions were received on the discussion paper. These were considered and, where appropriate, used in the preparation of a working draft of Section I of the Regional Water and Soil Plan, which dealt with discharges and land management. The working draft of Section I was circulated in September 1994 to those who had previously made submissions on the discussion paper and comments were again sought. Thirty responses were received and were used to refine the working draft to produce Section I of the Proposed Regional Water and Soil Plan.

Following notification of Section I, preparation began on Section II. Section II principally addressed water quantity management, the management of the beds of rivers and lakes, and integrated catchment management. A consultation draft of Section II was circulated to statutory organisations and other relevant organisations prior to its notification as a proposed variation in June 1997. This consultation included meetings with District Councils to ensure the Regional Plan and District Plans are integrated effectively.

Both Section I and Section II have been regularly reviewed during the preparation process by a subcommittee of the Regional Council, comprising Councillors, iwi representatives, farming and environmental interests.

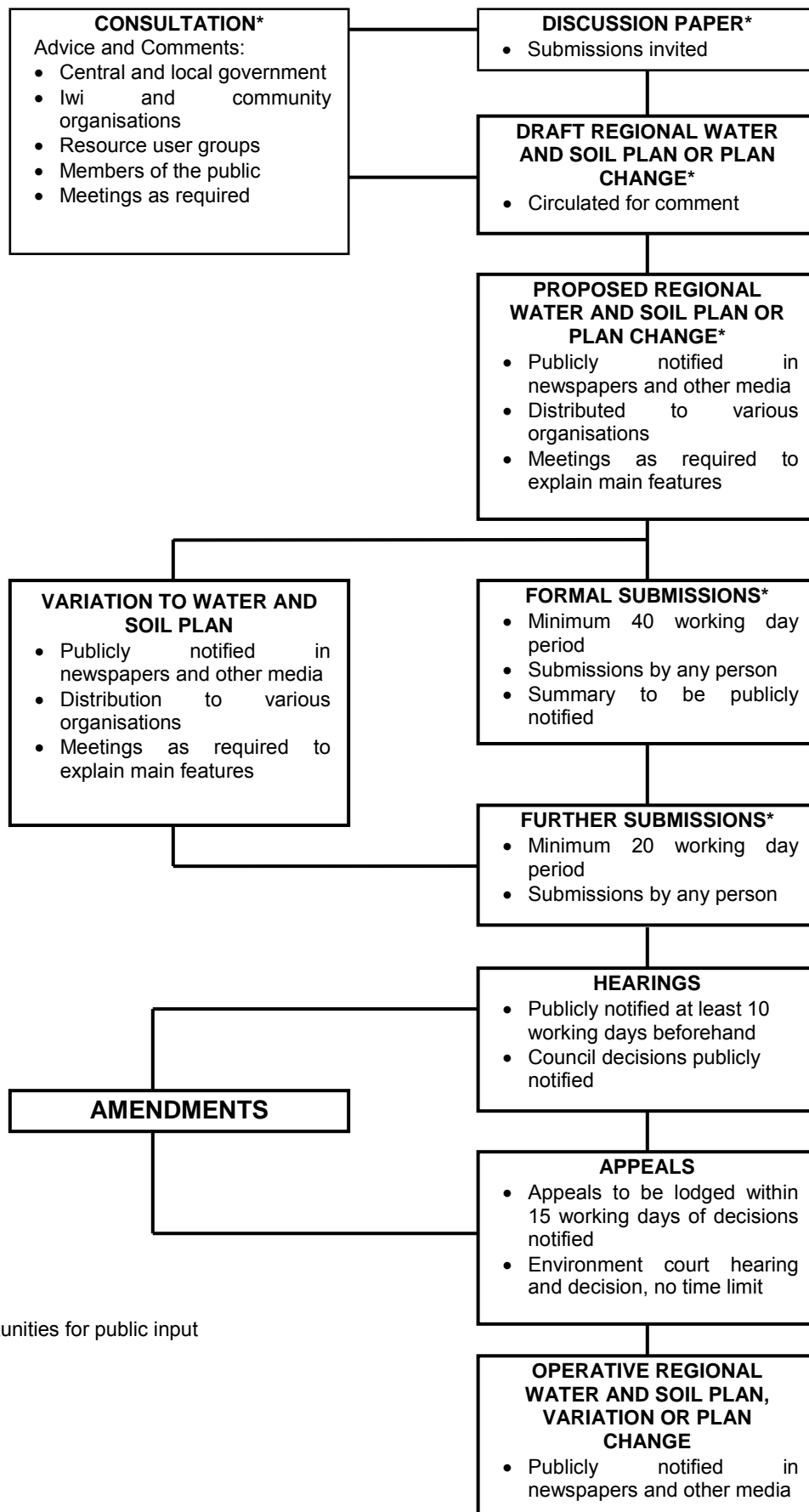
The proposed variation amalgamated Section II with Section I. It also involved some amendments to the Section I to produce a well integrated document.

Formal public hearings have been held on Section I and on the Variation to include Section II of the Plan. Decisions were made on the submissions in light of evidence presented at these hearing and the information provided in the submissions. These decisions were released in November 1998. Any submitter had the right to make appeals to the Environment Court within 15 working days of receiving the decisions.

The preparation process up until the release of decisions on submissions on the Proposed Regional Water and Soil Plan is depicted in Figure 5, together with the other statutory steps required to be undertaken before this Plan was made operative.

Subsequent to the Regional Water and Soil Plan being made fully operative on 28 August 2004 the Council will undertake plan changes and variations as required. These will follow the same process as established in Figure 5.

FIGURE 5: PROCESS FOR PREPARATION OF A REGIONAL WATER AND SOIL PLAN



* Opportunities for public input

2.5 PLAN STRUCTURE

The structure of the remainder of this Plan is as follows:

Section 3 explains the purpose and principles of the *Resource Management Act* 1991, and various Policy Statements and Plans that the Act requires to be produced.

Section 4 outlines the iwi perspective on resource management.

PART III – MANAGEMENT APPROACH

Section 5 sets out the general approach being taken to implement the policies and achieve the objectives specified in this Plan.

PART IV – RESOURCE POLICY

Section 6 sets out the objectives, policies and methods of implementation to be used to recognise and provide for Maori, their Culture and Traditions.

Section 7 sets out the objectives, policies and methods of implementation for the underlying Water Quality Management of Northland's water resources.

Section 8 sets out the objectives, policies and methods of implementation for the Management of Contaminant Discharges to Land or Water.

Section 9 sets out the objectives, policies and methods of implementation for the Surface Water Quantity Management of Northland's surface water resources.

Section 10 sets out the objectives, policies and methods of implementation for the Groundwater Management of Northland's groundwater resources.

Section 11 sets out the objectives, policies and methods of implementation for the Use of River and Lake Beds, and Development on Floodplains.

Section 12 sets out the objectives, policies and methods of implementation for the Management of Land Disturbance Activities.

Section 13 sets out the objectives, policies and methods of implementation for Integrated Catchment Management in Northland.

PART V – RULES

Section 14 sets out how to use the rules.

Sections 15 to 23 set out rules for Contaminant Discharges to Land and Water.

Section 24 sets out rules for taking, use, damming and diversion of Surface Water.

Section 25 sets out rules for taking, use and diversion of Groundwater.

Section 26 sets out rules for Bore Construction.

Section 27 sets out rules for Drainage and River Control Activities.

Section 28 sets out rules for Dams.

Section **29** sets out rules for Structures in, on, under or over the Beds of Rivers or Lakes.

Section **30** sets out rules for the Introduction of Plants into the Bed of Rivers or Lakes.

Section **31** sets out rules for Other Activities which Disturb the Bed of Rivers or Lakes.

Sections **32** to **34** set out rules for Land Disturbance Activities.

Sections **35** and **36** set out the Information Requirements and Assessment Criteria to be used in respect of applications for resource consents. These Requirements and Criteria support the rules and are designed to assist users of this Plan by describing the information that should be submitted with an application and the matters which the Council is likely to take into account in assessing an application. The Requirements and Assessment Criteria are more specific than, but are in accordance with, Section 88 and the Fourth Schedule to the Act.

PART VI – ADMINISTRATIVE ISSUES

Section **37** provides details of the Procedures which relate to the Processing of Resource Consent Applications.

Section **38** provides details of key administrative issues including Council charges and Transfer of Powers and sets out objectives, policies and methods of implementation for the use of bonds and financial contributions.

PART VII – PLAN EFFECTIVENESS

Section **39** details the Environmental Results expected as a direct result of the implementation of this Plan.

Section **40** sets out the Processes for Monitoring, Changing or Reviewing this Plan to help ensure that the environmental results expected are achieved.

Part VIII – DEFINITIONS

Section **41** contains the Definitions.

2.6 KEY TERMS

Throughout this Plan, the terms "issue", "objective", "policy", "method of implementation" and "rule" are used.

For the purposes of this Plan, the following definitions are used:

Issue:	A matter of concern over existing or potential effects of the protection, use or development of natural and physical resources within the Northland region.
Objective:	A measurable aim or an end result to which efforts are directed.
Policy:	A specific statement that guides or directs decision making. A policy indicates a commitment to a general course of action in working towards an objective.

Method of Implementation:
Rule: A practical action by which a policy is put into effect.
A specific requirement to which a person or persons using or developing the region's resources must conform.

A rule may be applied generally or in relation to a specific type of use or development. The provision of rules is important because Sections 13, 14 and 15 of the *Resource Management Act* 1991 generally prohibits activities relating to water, river and lake beds and discharges of contaminants unless expressly allowed by a rule in a regional plan or by a resource consent. In Section 9 of the Act, however, land use activities are allowed unless the activity contravenes a rule in a regional plan. Sections 68, 69 and 70 of the Act set out what may or may not be included in a rule for regional plans.

Rules contained within this Plan include permitted, controlled, restricted discretionary, discretionary, non-complying and prohibited activities. These terms are defined in Section 14.01.

3. POLICY FRAMEWORK

3.1 INTRODUCTION

The policy framework for managing natural and physical resources under the Act consists of a system of Policy Statements and Plans which involve all levels of government - national, regional, and district. The key elements in this system are:

1. The Purpose and Principles of the *Resource Management Act* 1991.
2. The New Zealand Coastal Policy Statement.
3. A Regional Policy Statement for each region (compulsory).
4. A Regional Coastal Plan for each region (compulsory).
5. Regional Plans (voluntary).
6. District Plans for each district (compulsory).

The voluntary Regional Plans may cover specific management issues. The relationship of each of these statutory documents to the Regional Water and Soil Plan is illustrated in Figure 6.

3.2 PURPOSE AND PRINCIPLES OF THE RESOURCE MANAGEMENT ACT

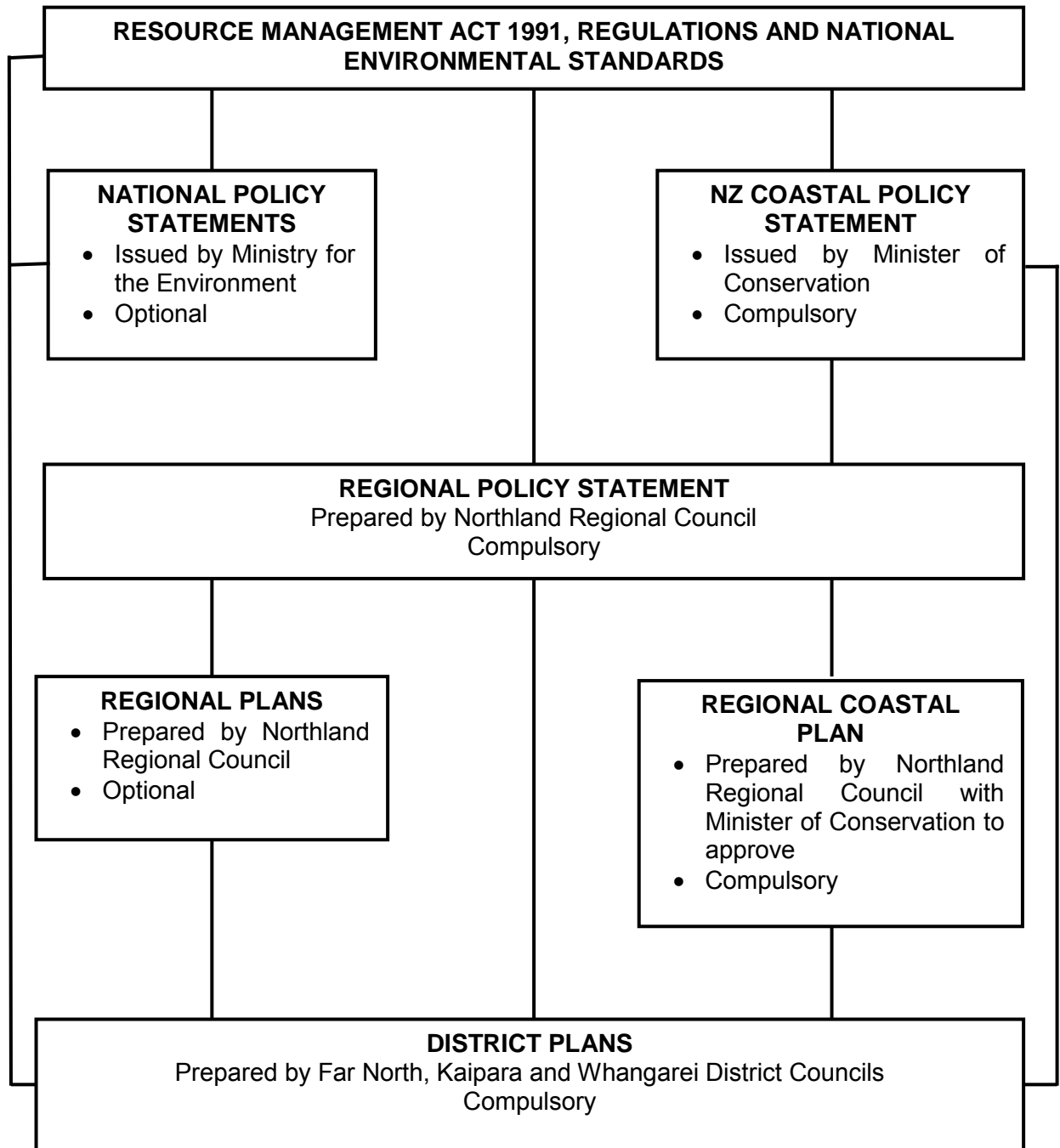
The purpose of the Act is to promote the sustainable management of the natural and physical resources of the region. Sustainable management of natural and physical resources is defined in the Act as meaning:

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

- (a) *Sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and*
- (b) *Safeguarding the life-supporting capacity of air, water, soil, and ecosystems; and*
- (c) *Avoiding, remedying, or mitigating any adverse effects of activities on the environment.*

Section 6, 7 and 8 of the Act specify a set of principles which are binding on all persons who exercise functions and powers under the Act and which, therefore, must be reflected in any Policy Statement or Plan prepared under the Act, and considered when making decisions on resource consent applications.

FIGURE 6: POLICY STATEMENTS AND PLANS



Section 6 of the Act requires that this Plan gives recognition to, and provision for, the following matters which are considered to be of national importance:

- (a) *The preservation of the natural character of [...] wetlands, and lakes and rivers and their margins, and the protection of them from inappropriate subdivision, use, and development:*
- (b) *The protection of outstanding natural features and landscapes from inappropriate subdivision, use, and development:*
- (c) *The protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna:*
- (d) *The maintenance and enhancement of public access to and along lakes and rivers:*
- (e) *The relationship of Maori and their culture and traditions with their ancestral lands, water, sites, waahi tapu, and other taonga:*
- (f) *The protection of historic heritage from inappropriate subdivision, use and development.*

Section 7 of the Act requires that this Plan is developed, and is implemented and administered, with particular regard to:

- (a) *Kaitiakitanga:*
- (aa) *The ethic of stewardship;*
- (b) *The efficient use and development of natural and physical resources:*
- (ba) *The efficiency of the end use of energy:*
- (c) *The maintenance and enhancement of amenity values:*
- (d) *Intrinsic values of ecosystems: [...]*
- (f) *Maintenance and enhancement of the quality of the environment:*
- (g) *Any finite characteristics of natural and physical resources:*
- (h) *The protection of the habitat of trout and salmon: [...]*

Finally, Section 8 of the Act requires that all persons exercising functions and powers under this Act, in relation to managing the use, development and protection of natural and physical resources, shall take into account the principles of the Treaty of Waitangi (Te Tiriti o Waitangi).

3.3 NEW ZEALAND COASTAL POLICY STATEMENT

Under the Resource Management Act, the Minister of Conservation is required to prepare a New Zealand Coastal Policy Statement (NZCPS). The purpose of a NZCPS is:

To state policies in order to achieve the purpose of this Act in relation to the coastal environment of New Zealand.

The NZCPS sets the national framework for managing the natural and physical resources in the coastal environment (which includes some of the area covered by this Plan). The Act requires that there must at all times be at least one recommended New Zealand Coastal Policy Statement, and that the Regional

Coastal Plan and any other Regional Plans, District Plans and Policy Statements must not be inconsistent with it.

Following the preparation process set out in the *Resource Management Act 1991*, which included public submissions and detailed consideration by a Board of Inquiry, the first New Zealand Coastal Policy Statement was issued by notice in the Gazette on 5 May 1994. Regard has been given where appropriate to the policies contained in the NZCPS in the preparation of this Plan.

3.4 REGIONAL POLICY STATEMENT

As required under the Act, the Council has prepared a Regional Policy Statement (RPS). The RPS provides an overview of resource management issues within Northland. It sets out the general objectives, policies and methods to be used in the Northland region to achieve integrated resource management.

The Act requires that when preparing or changing regional plans, a Regional Council must have regard to any proposed or operative Regional Policy Statement for the region. This Plan must not be inconsistent with the operative Regional Policy Statement.

The Regional Policy Statement for Northland was publicly notified in October 1993 and was made fully operative on 15 July 2002. The policies in the RPS, as amended by decisions and consent orders were used in the preparation of the Regional Water and Soil Plan.

3.5 OTHER REGIONAL PLANS

The Regional Water and Soil Plan must not be inconsistent with any other regional plan.

As well as this Regional Plan, the Council also has a Regional Air Quality Plan and a Regional Coastal Plan. These Plans cover the management of air discharges and coastal resources respectively. The policies and rules within these Plans must not be inconsistent with those in this Plan. They also play an important role in dealing with cross-boundary issues such as the management of land developments which affect coastal water or air quality.

3.6 DISTRICT PLANS

District councils are also required to prepare plans under the *Resource Management Act 1991*. The purpose of district plans is to assist district councils to carry out their functions in order to achieve the purpose of the Act. Of particular relevance to this Plan is the district councils' function to control the use of land, including subdivision.

A district plan cannot be inconsistent with either the New Zealand Coastal Policy Statement, the Regional Policy Statement or any regional plan.

3.7 CROSS BOUNDARY ISSUES

Integrated management of air, land, and water resources is one of the aims of the *Resource Management Act 1991*. To achieve this requires recognition that in order to address fresh water and land-based issues, consideration of the inter-relationships between land, water, the coastal environment and air (cross media boundary issues) may be required.

To effectively address these 'cross-boundary' issues, there needs to be a close linkage between the policy statements and plans produced under the Act, namely the New Zealand Coastal Policy Statement, the Regional Policy Statement, the Regional Coastal Plan, other regional plans, relevant regional plans and Policy Statements prepared by Auckland Regional Council, and District Plans.

The southern boundary of the Northland Region borders with the Auckland Region. The boundary runs along the Oruawharo arm of the Kaipara Harbour before following a catchment boundary to the east coast to the south of Mangawhai. In the process of preparing this Plan, the Council has consulted with the Auckland Regional Council on potentially conflicting management approaches to resource matters, with a view to establishing, as far as practicable, a consistent approach to addressing these matters.

With regard to the integration of resource management above and below the Mean High Water Mark, there are a number of options for dealing with such issues within the planning framework of the Act:

1. Specific reference to the relevant policies of the New Zealand Coastal Policy Statement;
2. Specific reference to the relevant policies of the Regional Policy Statement;
3. Identification of necessary linkages between this Plan, the Regional Coastal Plan and the Regional Air Quality Plan; and
4. Where appropriate, identification of the responsibilities of District Councils under the Act.

In regard to the latter method, it is considered vital to this approach that a good working relationship is established and maintained between the Council and the three District Councils within the region. It is these Councils who are generally responsible for the management of the use, development or protection of land and the actual and potential effects, including effects on amenity, heritage or intrinsic values.

3.8 STATUTORY ACKNOWLEDGEMENTS

A “statutory acknowledgement” is a formal acknowledgement by the Crown of the mana of tangata whenua over a specific area. It recognises the particular cultural, spiritual, historical or traditional association of an iwi or hapū with the site, which is known as a Statutory Area. Statutory Areas only relate to Crown-owned land and include areas of land, geographic features, lakes, rivers, wetlands and coastal marine areas.

It is a legal requirement set out in the relevant settlement legislation to attach statutory acknowledgements to regional plans. Rather than attaching statutory acknowledgements to every regional plan and the Regional Policy Statement, the approach taken by the regional council is to have a single companion document recording all statutory acknowledgement areas -*Te Ture Whakamana ngā Iwi o Taitokerau: Statutory acknowledgements in Northland*.

It is anticipated that further statutory acknowledgements will be agreed between the Crown and tangata whenua during the lifetime of this plan. These statutory acknowledgements will be recognised in *Te Ture Whakamana ngā Iwi o Taitokerau: Statutory acknowledgements in Northland* as they are enacted.

Statutory acknowledgements are for public information only, and are neither part of the plan nor subject to the provisions of the First Schedule to the Resource Management Act 1991.

4. IWI PERSPECTIVE

Tangata whenua take a holistic approach to the management of the environment and its resources. Tangata whenua consider therefore that water, soil and air are all integral elements of the environment and must be managed as one, rather than separate entities.

They therefore consider that any discharge of contaminants into water, no matter how well treated, reduces the water's ability to sustain life, thereby reducing its mauri or life force.

Land, Papatuanuku, is recognised by the tangata whenua as the mother, who provides life for all living things from the waters within her. From her, life is derived. To her, the waste of life and the body devoid of life is to be returned. Tangata whenua therefore consider land disposal to be the only acceptable method of waste disposal.

Water (Wai) is mostly valued for its sacred life giving properties "*Ko te wai te ora o nga mea katoa*". Tangata whenua consider that all water is a taonga. The mauri is contained in this taonga. They believe that water must remain pure and uncontaminated in order to continue to protect, preserve and sustain life for future generations.

Tangata whenua use water for different purposes. "Waiora" is water in its purest form, usually rainwater which is caught before it touches the earth. It is usually used for ritual purposes. "Wai Maori" is fresh water or drinking water from springs. Because of its contact with humans, it is used for everyday purposes. "Waimate" or "Waikura" are stagnant or polluted waters no longer capable of sustaining life.

As a partner to the Treaty of Waitangi, Maori are given special recognition in ss.6(e), ss.7(a) and s.8 of the Act. All persons exercising powers and functions under the Act, including the Council, are required to have regard to these matters (see Section 6 of this Plan).

For the purposes of this Plan, complying with these requirements of the Act is considered to include the Council:

1. Being fully informed as to the requirements of the *Resource Management Act* 1991 in regard to Maori values;
2. Being fully informed as to the meaning and application of the Treaty principles as developed by the Waitangi Tribunal, the Court of Appeal and the Environment Court;
3. In decision-making, requiring information on the application of the Treaty principles to individual proposals for resource protection, use, and development, and weighing this information against other matters under consideration; and, subject to the constraints of current legislation;
4. The allowance for the right of each iwi to indicate its own customary, traditional, and cultural preferences for water management within its rohe (tribal territories);

5. Ensuring that the spiritual, social, and economic connections between tangata whenua as kaitiaki and water and land resources are protected.

PART III: MANAGEMENT APPROACH

This Part sets out key elements of the approach taken in this Plan towards the sustainable management of Northland's land and water resources.

5. MANAGEMENT APPROACH

5.1 INTRODUCTION

This section outlines the general approach taken in the Regional Water and Soil Plan to assist the Council:

1. To control point source discharges to land and water and to manage their effects on the environment;
2. To control land uses, and resulting non-point source discharges, for the purpose of soil conservation and the maintenance and enhancement of water quality and hazard mitigation;
3. To control the taking, use, damming, and diversion of water; and
4. To control the use and development of river and lake beds.

The methods include education, provision of information and advice, the use of industry based codes of practice or guidelines, rules and environmental standards, riparian management, the development and implementation of a comprehensive monitoring strategy and the preparation of regional plans for specific catchments.

5.2 EDUCATION, PROVISION OF INFORMATION AND ADVICE

Education is a key method. Without knowledge of the effects that their actions have on the environment, or the reasons why certain practices are being promoted, people may see no reason to change, especially if that change causes an inconvenience or has some financial costs associated with it. Provision of information complements education. Having recognised that their actions have an adverse effect, people need access to information or advice in order to make informed decisions on the best option to avoid, remedy or mitigate that effect.

This method requires considerable commitment from the Council and from the wider community. The Council recognises that education of resource users and provision of information will need to be carried out over the term of this Plan.

On an annual basis through the Council's annual plan process, education programmes will be prepared, based on priorities that arise from State of the Environment Monitoring reports, and on priorities put forward by the community. The Regional Council's Environmental Education Strategy will indicate long-term education directions.

Education will include school visits, seminars and field days and industry discussion group meetings, the production and circulation of pamphlets on specific topics, and the preparation of more comprehensive guidelines on matters such as efficient water use, waste treatment and disposal systems and best land management practices.

5.3 CODES OF PRACTICE AND GUIDELINES

Many industries have developed Codes of Practice for the range of activities that they undertake and are also reviewing them in light of the *Resource Management Act 1991*.

In this Plan, codes of practice and guidelines which are considered to be consistent with the Act have, where appropriate, been referred to as a means of achieving compliance with certain environmental standards. However, they have no legal status upon which to base enforcement action, unless they are included in this Plan as a rule. Compliance with the Code of Practice does not necessarily guarantee that the environmental standard will be met. Where standards are not met, the person or organisation undertaking the activity will still be required to take any further action that may be necessary.

5.4 RULES AND ENVIRONMENTAL STANDARDS

In the *Resource Management Act 1991*, there is a general presumption that:

- The use of the bed of the river or lake;
- The taking, use, damming or diverting of any water;
- The discharge of contaminants to land or water; or
- The discharge of water to water,

is not allowed unless it is permitted by a rule in a regional plan or is authorised by a resource consent.

Rules in this Plan therefore have three main functions:

1. To permit activities that the Regional Council believes can be carried out without a resource consent, provided the appropriate environmental standards set out in this Plan are complied with. The Council can then be satisfied that any adverse environmental effects will be minor.
2. To restrict activities where site specific environmental conditions are required to ensure the actual and potential adverse effects of the activity are avoided, remedied or mitigated.
3. To prevent activities occurring which would result in unacceptable adverse effects.

The actual and potential effects of many of these activities are dependent on numerous site specific factors, and consequently, broad environmental standards cannot be given.

For example, for discharges, matters such as the quantity of flow of the receiving water, the existing water quality, the location of the actual discharge point, the type of contaminants contained in the effluent, and the level of treatment of the effluent all have an impact on the effect of the discharge on the receiving water. On the other hand, there are numerous discharges, commonly to land, which can be adequately controlled by ensuring adequate separation distances from surface water or groundwater. Wherever possible, these discharges are permitted.

Similarly, the effects of large water takes or large dams are dependent on size of the resource, the aquatic habitats it supports, and the significance of those habitats, other existing authorised users and the existing quality of the water resources.

In contrast, land use activities under Section 9 of the Act are allowed without regulation in the Act, unless the activity contravenes a rule in a Regional or District Plan. However, diffuse runoff from agricultural land and sediment discharges from land disturbance activities can have adverse effects on water quality. Land disturbance activities may also contribute to the loss and degradation of soil resources and contribute to natural hazards. This Plan therefore contains rules to avoid or minimise the actual and potential effects of land use activities under the control of the Regional Council.

It should be noted that, even if a discharge permit has been obtained from the Regional Council, a resource consent may be required from the District Council for land use.

5.4.1 New Activities

Where a rule in this Plan allows an activity which was otherwise not allowed unless a resource consent was obtained, the activity may be undertaken in accordance with the rule if there are no submissions or appeals relating to that rule, or any appeals have been dismissed or withdrawn. Any new activity must comply with the rules in the Plan.

5.4.2 Existing Activities

Should the scale of the activity change, or should the activity be discontinued for more than six months, or should the activity no longer comply with the previous authorisation (such as a transitional regional rule), the activity would be required to comply with the rules in this Plan from the date the Plan was notified¹.

5.5 WATER QUALITY GUIDELINES

The use of Water Quality Guidelines within the Water Quality Management framework is one method of clearly stating the water quality that is expected to be achieved if water bodies are to be managed for the purposes set out in the Water Quality Management Objective in Section 7. They also provide a basis against which to measure the effectiveness of all other methods used in this Plan, as well as compliance with resource consents. The Water Quality Guidelines and their implementation are fully explained in Section 7.

5.6 RIPARIAN MANAGEMENT

The Riparian Management Zone is a zone of varying width adjacent to a water body, which needs to be managed carefully to protect the water body from the adverse effects of the associated land use.

The width depends on a number of site specific factors. They include:

- Soil type (geology);

¹ Date of Notification of Plan 27 April 1995

- Slope;
- Length of slope;
- The wetness or drainage characteristics of the adjoining land;
- Width of the stream;
- Existing erosion features;
- The reason for riparian management (shading, prevention of nutrients or sediment entering the water, stream bank or channel stability).

Ideally the width should be determined on-site but for the purposes of this Plan, the width is to be determined using the criteria as shown in Figure 7. The maximum setback distance for any Riparian Management Zone is 20 metres.

Riparian management requires integrated management of the physical and biological processes that occur both on land and in the water. The following points provide a broad summary of the riparian management concepts:

1. A small appropriately managed riparian area can have a large impact on improving water quality.
2. Riparian management along small streams is generally more cost-effective than alongside large rivers. Extensive lowland swamp margins of water bodies are an exception to this rule. Management of smaller streams is essential to the management of larger lowland streams.
3. Vegetation is the most versatile riparian feature as it can modify, at the same time, light, temperature, nutrient and sediment regimes, and channel and bank stability.
4. Contaminant inputs are more effectively managed by targeting riparian management measures at major sources of contaminants within the catchment.
5. Wetlands associated with river systems provide buffer storage, remove nutrients and sediments and increase biodiversity.
6. The benefits of riparian management on the water quality and biodiversity of aquatic habitats are often not immediate and may take several years to become evident.

The main management methods are to plant and maintain trees and shrubs, to maintain a grass sward, to control stock or to protect wetlands. The most appropriate method depends on the desired outcome.

Riparian management is not the sole answer to improving and enhancing water quality. Wise land management practices which reduce the potential for surface runoff to pick up and carry sediment, nutrients and bacteria into water are also very important to improve water quality and should complement riparian management. The Riparian Management Zone is not the same as an esplanade reserve as it does not affect land ownership but defines an area where special management is required to safeguard water quality.

The Land Management Section of this Plan focuses the attention of land users on the Riparian Management Zone, and places extra controls on land disturbance activities within that area to avoid or minimise adverse effects.

FIGURE 7: RIPARIAN AND FOREDUNE MANAGEMENT ZONE

- Note:** (i) Figures (7A) and (7B) define land adjacent to water bodies and the Coastal Marine Area except where that land comprises sand dunes.
- (ii) Figure (7C) defines the Riparian Management Zone in relation to the foredune.
- (iii) These figures are not to scale.
- (iv) Contact the Council should you require any assistance with the practical application of these diagrams.

FIGURE 7A: RIPARIAN MANAGEMENT ZONE

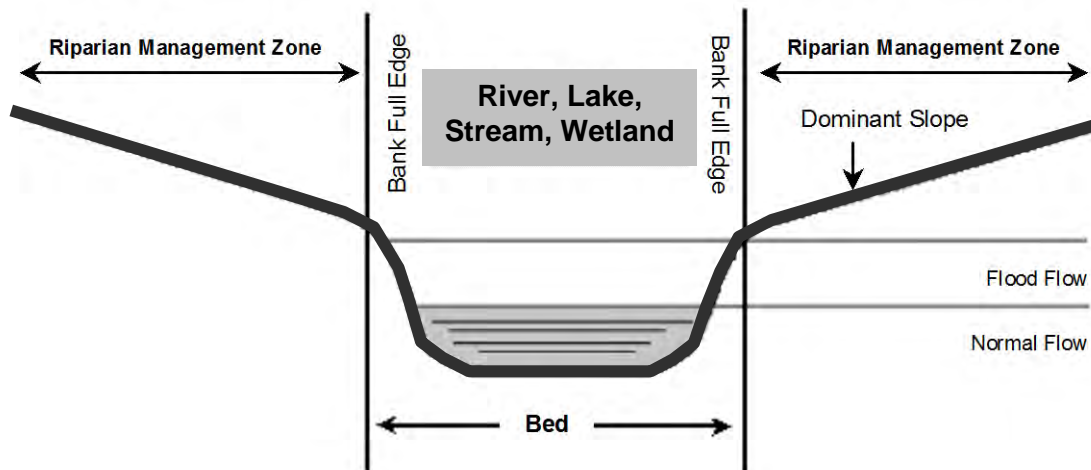
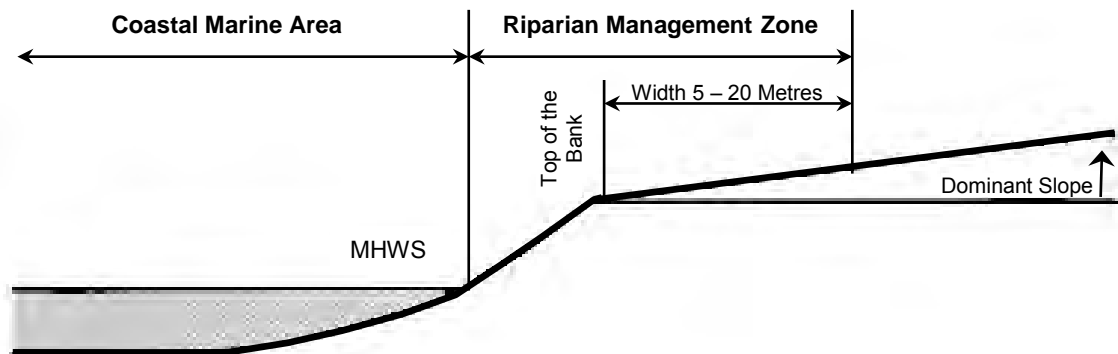
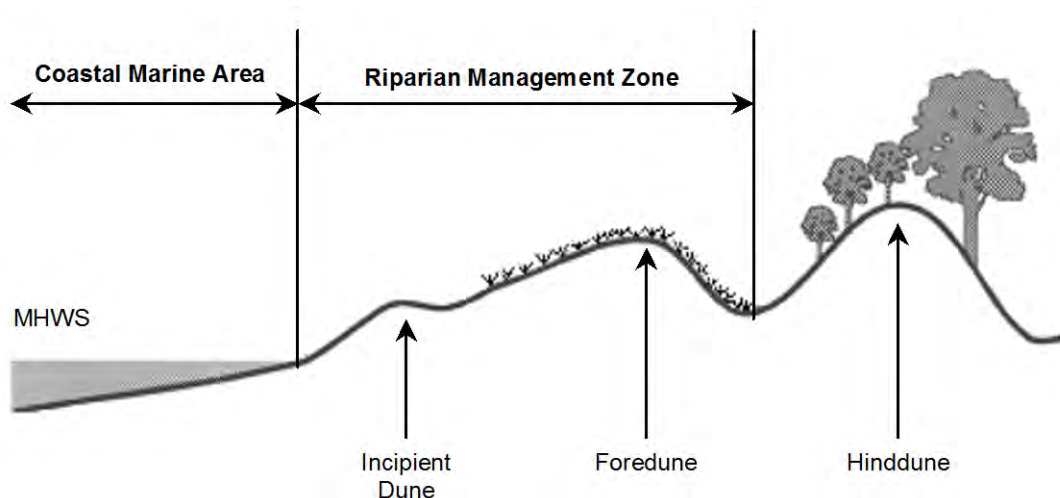


FIGURE 7B: RELATIONSHIP BETWEEN THE RIPARIAN MANAGEMENT ZONE AND THE COASTAL MARINE AREA



Note: If the top of the bank cannot be identified it should be taken from the beginning of the vegetated area.

FIGURE 7C: RIPARIAN MANAGEMENT ZONE IN RELATION TO THE FOREDUNE



The Riparian Management Zone is the land between the bed of the river, lake, or indigenous wetland or the Coastal Marine Area and a distance measured inland from the bank full edge of the water body or from the top of the bank adjacent to the Coastal Marine Area of:

- 5 metres where the dominant slope is less than 8 degrees.
- 10 metres where the dominant slope is between 8 – 15 degrees.
- 20 metres where the dominant slope is greater than 15 degrees.

Where the dominant slope is 0 degrees or less there shall be no Riparian Management Zone.

Notwithstanding the above where the land adjacent to the Coastal Marine Area is unvegetated or vegetated sand dunes, the Riparian Management Zone in this instance is the land between the Coastal Marine Area and the bottom of the leeward side of the foredune.

5.7 MINIMUM FLOWS

The maintenance of flows in a river is required to maintain the life supporting capacity of the water and related ecosystems. The setting of design minimum flows in Northland rivers is one of the key methods used in this Plan for avoiding adverse effects of the use and development of the surface water resources. Minimum flows will be based on research carried out in Northland by the Council and other organisations. Where justified, deviations from prescribed minimum flows should be allowed. The design minimum flows are considered to be conservative, given the current level of information regarding the effects of flow reduction on the habitats of aquatic fauna and water quality.

The philosophy of minimum flows is carried through into the management of the outstanding value rivers and flow sensitive river. The retention of greater than minimum flows in these rivers will be the key method of protecting the conservation, natural and cultural values associated with them.

5.8 INTEGRATED CATCHMENT MANAGEMENT

The objectives and policies in this Plan seek to achieve integrated management of Northland's natural and physical resources. However, the effects of the use and development of resources may be more complex in certain catchments. Where complex inter-related effects exist, or there is significant conflict over the use, development and protection of a resource, a regional plan for that catchment to address those specific issues would more effectively achieve integrated management.

This Plan identifies criteria for preparing catchment specific regional plans.

5.9 BEST PRACTICABLE OPTION

The Best Practicable Option (BPO) means the best method for preventing or minimising the adverse effects on the environment. The full definition is given in the Section 41. The use of the BPO either in a rule in a Regional Plan, or as a condition on a resource consent, first requires the consideration of alternative methods, and whether particular minimum standards could be set. This requirement is set out in ss.70(2), ss.108(2)(e) and ss.108(8) of the Act.

The adoption of the BPO as an approach to the management of discharges to water is appropriate in the following circumstances:

1. Where the discharge control technology is still evolving; or
2. Where the development of water quality standards to protect the receiving environment is not easily established or justified; or
3. Where the maintenance or enhancement of the existing water quality is desirable.

The BPO approach is principally used as an alternative to water quality standards given the time and research required to develop and apply scientifically credible and defensible standards for the protection of ecosystems, aesthetic and cultural values as well as human health. The use of the BPO approach is also integrally linked to the lack of water quality monitoring data available in Northland. As research into water quality standards which protect the environment progresses and water quality monitoring becomes more comprehensive, the BPO approach may be able to be replaced by more effects-based conditions.

In many cases, particularly where BPO is a condition on a permitted activity rule, the best practicable option may only require simple common sense precautions to be undertaken to achieve significant environmental protection. In other situations, the BPO requirement may mean additional control technology and management regimes. This will be determined on a case-by-case basis during the consent process, and in consultation with the applicant and affected parties.

5.10 MONITORING

Monitoring of the state of water bodies and of the extent and effects of land disturbance activities is important if understanding of natural processes and of the effects of activities on water quantity and quality and on natural hazards and soil conservation is to be enhanced, and if decisions are to be made on a sound basis.

Monitoring will be undertaken in this Plan for four reasons:

- To provide information on the changing state of the environment;
- To establish and confirm the actual effects of activities on the environment where there is a lack of knowledge about the likely effects of an activity;
- To ensure conditions of consent are complied with; and
- To detect activities being carried out without authorisation.

Baseline monitoring of the state of Northland's environment is important in order to establish trends and to link cause and effect.

The Council may undertake a range of different types of monitoring, including physiochemical and biological monitoring of water quality, measurement of changes in flows in streams and of water levels in lakes and wetlands, and the monitoring of the extent and types of land disturbance activities. Monitoring and review of conditions may be included in discharge and water permits and for land use consents.

Comprehensive state of the environment monitoring requires biological and physiochemical monitoring. The Council monitoring will be integrated with the monitoring of aspects of the environment undertaken by other agencies such as District Councils and the Department of Conservation.

PART IV:

RESOURCE POLICY

This Part sets out the objectives, policies and methods of implementation for eight key issues:

- (a) Recognition of and provision for Maori and their culture and traditions;*
- (b) Water quality management;*
- (c) Discharges;*
- (d) Surface water quantity management;*
- (e) Groundwater management;*
- (f) Use of river and lake beds and development on floodplains;*
- (g) Land management; and*
- (h) Integrated catchment management.*

The objectives and policies provide part of the framework for resource management decision making.

6. RECOGNITION OF AND PROVISION FOR MAORI AND THEIR CULTURE AND TRADITIONS

6.1 INTRODUCTION

To assist with the preparation of this Plan, Te Kotahitanga O Te Taitokerau was commissioned as a consultant to provide input on iwi viewpoints of water and land management.

From these discussions, it is clear that the traditional Maori values and tribal structures still exist today. There is also a continued desire to exercise tribal kaitiakitanga. The provisions of the Act are therefore seen by Maori as both recognition of their unique status in New Zealand society and a potential opportunity to exercise their traditional role as kaitiaki of land and water resources.

The aims of iwi in Northland expressed during consultation on the Regional Policy Statement for Northland and on this Plan have included:

- (a) The recognition of customary tribal authority over land and inland waters which iwi and hapu have traditionally occupied and used; and
- (b) The need for greater Maori involvement in land and water management, including joint management of areas of Maori spiritual and cultural significance; and
- (c) The recognition of Maori spiritual and cultural values when processing applications for resource consents.

The policies and rules within this Plan deal with those particular concerns of Maori about the use, development and protection of natural and physical resources within the Northland region. The most commonly expressed concerns have been the pollution and over-allocation of the water resources and the desecration of waahi tapu, urupa and other sites of significance through land development.

The protection of waahi tapu, urupa and other sites of cultural and spiritual significance is provided for in this Plan insofar as regional council functions allow. That is, they can be protected in regard to soil conservation matters, as well as the maintenance and enhancement of water quality and water quantity. The protection of these sites in their own right is a district council function.

6.2 ISSUES

1. The need to recognise and give appropriate weighting to cultural values and tikanga maori in all aspects of resource management and decision making.
2. The need for tangata whenua to have involvement in the management and monitoring of resource consents, in recognition of their kaitiaki role.
3. The lack of formal recognition of iwi as the traditional kaitiaki (guardians) of the land and water resources within their rohe (traditional territory).
4. The loss of mauri of water bodies and the loss of traditional Maori fisheries from the adverse effects of activities such as sewage discharges and water abstractions.

5. The loss or degradation of waahi tapu and other sites of significance to Maori from the adverse effects of human activities.
6. The need to avoid all discharges of waste to the water whether treated or otherwise. Land based disposal systems are the most acceptable systems for tangata whenua.
7. The lack of resources for iwi authorities to prepare iwi management plans.
8. The effect of poisons on taonga.

Note: Taonga is defined in the definitions section of this Plan.
Poisons means toxic materials, for example 1080.

6.3 OBJECTIVE

1. **The management of the natural and physical resources within the Northland region in a manner that recognises and provides for the traditional and cultural relationships of tangata whenua with the land and water.**

6.4 POLICIES

1. To recognise and, as far as practicable provide for the relationship of Maori and their culture and traditions with respect to the use, development and protection of natural and physical resources in the Northland region.

Explanation: Section 6(e) of the Act requires provision for the relationship of Maori to their ancestral lands, water, sites, waahi tapu and other taonga.

2. To gain an understanding, and as far as practicable, provide for the concerns and cultural perspectives of tangata whenua in regard to the disposal of waste into water.

Explanation: The disposal of waste to water is abhorrent to tangata whenua. To give effect to Section 6(e) of the Act, the relationship of Maori and their culture and traditions with water and other taonga needs to be provided for.

3. To have particular regard for kaitiakitanga and consider options for the involvement of tangata whenua in monitoring the use, development and protection of resources within the Northland region.

Explanation: Tangata whenua involvement in monitoring the use, development and protection of water and land resources is one means by which kaitiakitanga may be provided for. However, the Act requires specific tests to be met before Council functions, powers and duties under the Act can be transferred. Careful consideration of options is therefore required.

4. To provide appropriate technical advice and information to assist iwi authorities in the development of hapu/iwi management plans for natural and physical resources within the area of their rohe.

Explanation: *The Act requires special provision to be made for Maori involvement in resource management. Iwi management plans are one means by which Maori can express their concerns and aspirations about the use, development and protection of land and water resources. This should lead, among other things, to an enhanced understanding by non-Maori of the relationship of iwi to those resources.*

6.5 METHODS OF IMPLEMENTATION

For Policy 1

1. To encourage applicants for resource consents for activities that may have an adverse effect on the taonga of tangata whenua to consult with the tangata whenua prior to their application being processed.

Cross-reference: Appendix 3.3

2. To provide for Maori tikanga and language at pre-hearing meetings and formal hearings and to hold those meetings on marae where appropriate.

For Policy 2

3. Include relevant policies and methods within this Plan for phasing out, where possible, wastewater discharges to water, particularly those containing human sewage. Consideration as to the benefits and costs of alternative wastewater disposal methods will be made before deciding on the most appropriate system for disposal.

For Policy 3

4. In consultation with tangata whenua:
 - (a) Assess the most efficient and effective means of monitoring any adverse effects of resource use and developments, with particular reference to involving tangata whenua.
 - (b) Subject to Section 33 of the Act, consider transfer of powers where iwi represents the appropriate community of interest.

For Policy 4

5. Where requested by an iwi authority, provide appropriate land and water resource information held by the Council.
6. Tangata whenua may be asked to provide information on the cultural effects of certain activities by applicants for resource consents. Guidelines on this process will be developed by the Council for the information of both applicants and tangata whenua.

6.6 PRINCIPAL REASONS FOR ADOPTING THE OBJECTIVE, POLICIES AND METHODS

The objective is a matter of national importance under the Act. The principal reason for each policy is incorporated in the explanation. The principal reasons for the methods of implementation are as follows:

Method 6.05.01 allows tangata whenua to advise whether proposed uses and development will affect their relationship to special sites and taonga within the region. Where consultation is considered to be inadequate, the Council will require applicants to undertake further consultation or will seek additional information directly from the tangata whenua. (Refer also Method 7.06.04)

Method 6.05.02 allows for Maori tikanga and language at meetings associated with the resource consent application process.

Method 6.05.03 recognises and provides for the Maori view of discharges of waste to water.

Method 6.05.04 allows for the involvement of Maori by way of consultation on monitoring the uses of land and water resources.

Method 6.05.05 provides for the Council to assist Maori in developing their own Resource Management Plans.

Method 6.05.06 allows tangata whenua to advise whether proposed uses and development will affect their relationship to special sites and taonga within the region.

7. WATER QUALITY MANAGEMENT

7.1 INTRODUCTION

The purpose of this section is to establish the underlying framework for the maintenance and enhancement of Northland's fresh water quality such that it meets the standard required for the desired purposes.

Significant causes of existing or potential fresh water quality degradation in Northland include:

- Runoff from agricultural land,
- Discharges from processing activities,
- Discharges of sewage and animal effluents,
- Stormwater runoff from urban areas and cleared land,
- Discharges of landfill leachates, and
- Major water takes from river resources.

These activities are dealt with separately in Section 8 to Section 10.

The principal water quality management tools which may be used to maintain or enhance water quality are catchment management plans, water quality classification and resource consent decisions and conditions.

Management plans are generally formulated for discrete water bodies such as a lake or river catchment. These specify action to be taken to protect water quality and, where necessary, rectify water quality degradation. They are usually based on the results of detailed water quality investigations. Three of the water management plans that were prepared in Northland prior to the enactment of the *Resource Management Act* 1991 contained water quality standards. These management plans have no statutory basis under the Act.

Water quality classification is essentially a system of zoning waters in accordance with their desired use and applying minimum water quality standards which must be maintained to protect that use. The Third Schedule of the Act contains a number of classes which may be used for this purpose. The Act also allows regional councils to develop other classes in addition to, or instead of, those in the Third Schedule. It is envisaged that the water classification will be established through the development of catchment management plans as provided for in Policy 13.04.01: Integrated Catchment Management.

Resource consents are required for discharges of contaminants into a water body or onto or into land where the contaminant may enter a water body, unless allowed for by a rule in this Plan. Resource consents are also required for taking large quantities of water from a water body. Consents generally specify conditions which must be met in order to maintain water quality or otherwise minimise adverse environmental effects of discharges of contaminants, or large water abstractions. Conditions on resource consents will be worded so as to make explicit the Council's expectations of the consent holder.

7.2 REGIONAL POLICY STATEMENT

The overall objective of the Council in water quality management of Northland's water resources is contained in the Regional Policy Statement and is the objective used in this section.

7.3 ISSUES

1. The importance of water quality to aquatic ecosystems, water supply, contact recreation, and other significant uses of Northland's fresh water bodies and the consequent need to provide an effective management framework for maintaining and enhancing water quality for the benefit of present and future generations.
2. The current degradation of water quality in some water bodies as a result of direct discharges or the runoff of contaminants from the land and the need to allow time to improve water quality to an appropriate standard.
3. Conflicting uses of water and conflicting expectations from different sectors of the community regarding what is appropriate in terms of water quality standards and the need to take these factors in account when setting water quality standards.
4. The lack of comprehensive baseline information on existing water quality, existing uses and potential uses that is needed to identify the purposes for which specific water bodies, or parts thereof, will be managed.
5. The effects of freshwater quality (rivers, stormwater runoff) on coastal water quality, particularly estuaries and inner harbour areas.

7.4 OBJECTIVE

1. **The maintenance or enhancement of the water quality of natural water bodies in the Northland region to be suitable, in the long-term, and after reasonable mixing of any contaminant with the receiving water and disregarding the effect of any natural events, for such of the purposes listed below as may be appropriate:**

TYPE OF WATER BODY

PURPOSES

Lakes, rivers, streams –

aquatic ecosystems, contact recreation, water supplies, aesthetic and cultural purposes

Freshwater wetlands –

aquatic ecosystems, cultural purposes

Groundwater, potentially usable –

water supply, protection of uses of receiving water body

Other groundwater –

protection of uses of receiving water body

7.5 POLICIES (NB ADDITIONAL TRANSITIONAL POLICY ON PAGE 58A)

1. Where the existing water quality of lakes, rivers and streams is the same or higher than the water quality which is suitable for aquatic ecosystems, contact recreation, water supply, aesthetic or cultural purposes, to ensure that the water quality shall not be allowed to be reduced, unless it is consistent with the purpose of the Act to do so.

Explanation: *This policy signals the Council's general intent to exercise its land use, water abstraction and discharge control functions in a manner which at least ensures that existing water quality is not degraded. However, it is acknowledged that there may be circumstances in which it is appropriate that some adverse effects be accepted, for example, where beneficial social, cultural or economic effects outweigh adverse effects on water quality. This is consistent with s.69(3) of the Act and will be given effect through the development of catchment management plans.*

2. Having regard to Policy 7.05.01, the Council will identify specific natural water bodies or parts of natural water bodies within the Northland region to be managed for some of the following purposes as may be appropriate: aquatic ecosystems, contact recreation, water supplies, aesthetic and cultural values.

Explanation: *The policy is aimed at achieving Objective 7.04.01. It amounts to a statement of intent by the Council to prepare a comprehensive classification of Northland's freshwater bodies, once adequate investigations have been undertaken. This will be given effect through the development of catchment management plans. Methods 7.06.03 to 7.06.06 specify how the Council will implement the policy.*

3. Until such time as the classification system referred to in Policy 7.05.02 is introduced, when processing applications for discharge permits, the Council will have regard to:
 - (a) Existing water quality and uses of the subject water body;
 - (b) Community aspirations for future use of the water body (as expressed in submissions on consent applications);
 - (c) Opportunities for enhancement of water quality;
 - (d) Relevant water quality guidelines (refer also Methods 7.06.07 to 7.06.10)

Explanation: *The policy sets out the Council's interim position with respect to the processing of discharge permit applications pending the preparation of a classification for Northland's freshwater bodies. It recognises that notwithstanding the (interim) classifications established by Policies 7.05.02 and 7.05.03, some water bodies will need to be managed for purposes such as contact recreation and water supply, on an ongoing basis.*

4. The Council will not grant a discharge permit which, either on its own or in combination with other lawful discharges, will result in any of the following effects in the receiving water, after reasonable mixing:
 - (a) The production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials;

- (b) Any conspicuous change in the colour or visual clarity;
- (c) Any emission of objectionable odour;
- (d) The rendering of freshwater unsuitable for consumption by farm animals.

Except where:

- (i) exceptional circumstances justify the granting of a permit; or
- (ii) the discharge is of a temporary nature; or
- (iii) the discharge is associated with necessary maintenance work

Where a discharge is granted in reliance on the exceptions above, the Council may impose conditions requiring the holder of the discharge permit to undertake works in such stages throughout the duration of the permit that will ensure that upon expiry of the permit (or such earlier date as is specified in the conditions) the holder can meet the requirements of Policies 7.05.02 or 7.05.03, whichever is applicable.

Explanation: *The policy allows for control of the cumulative effects of more than one discharge in an area. It refers to the minimum water quality standards contained in ss.107(1) of the Act. The exceptions refer to the exceptions contained in ss.107 (2) of the Act.*

5. When determining what constitutes a reasonable mixing zone, the Council will take into account:
- (a) The characteristics of the discharge and the sensitivity of the receiving water;
 - (b) The assimilative capacity of the receiving water body;
 - (c) The proximity and effects of other discharges;
 - (d) The proximity of, and likely effects on, downstream uses;
 - (e) The desirability of keeping the mixing zone as small as practicable;
 - (f) The availability and cost-effectiveness of current treatment technology.

Explanation: *The policy sets out the criteria which will be used to determine the size and shape of the mixing zone, outside of which receiving water quality standards are expected to be met.*

The expression “assimilative capacity” in (b) includes reference to existing receiving water quality, and the depth, width and flow characteristics of the receiving water, including the nature and extent of dilution and dispersal that occurs.

6. To ensure that water quality is managed appropriately in situations where water bodies possess high ecological values which are dependent on water quality.

Explanation: *In some situations, the standards that relate to aquatic ecosystem maintenance may not be sufficient to adequately safeguard*

particularly high ecological values. The Act provides, in the Third Schedule, for the identification of water to be managed in its natural state. The Council will work with the Department of Conservation, local communities, Kaitiaki and landowners to determine which water bodies or parts of water bodies warrant special protection and the standards which should apply (refer also Methods 7.06.15 and 7.06.16). It is recognised that, in some instances, the effects of activities associated with the adjoining land and the water body itself may need to be managed, taking the values of the ecosystem into account

7. To manage water bodies which are recognised by an iwi authority, or any judicial authority to be a taonga of special significance, having particular regard to those cultural values and traditional uses.

Explanation: *The Act provides, in the Third Schedule, for waters to be managed for cultural purposes.*

A water body will be considered to be a significant taonga where its status is established by an iwi authority or any judicial authority including the Environment Court, Waitangi Tribunal and Maori Land Court.

Identification of these water bodies and if appropriate the creation of rules for their management will need to be undertaken by iwi authorities in consultation with the Regional Council, landowners and district councils.

7.6 METHODS OF IMPLEMENTATION

For Policy 1

1. When preparing catchment management plans, and when considering applications for the discharge of contaminants to water, land or air, the Council will ensure that all practical steps are taken to avoid the degradation of water quality and, where possible, to improve it.
2. To provide information on the water quality and hydrology of the Region's water resources to consent applicants.

For Policy 2

3. The Council will, as part of the process of preparing catchment management plans:
 - (a) Review the existing water quality database for the region; and
 - (b) Undertake appropriate water quality investigations; and
 - (c) Develop and implement a programme of consultation with District Councils, iwi and the community.

With the aim of introducing a comprehensive water classification system (i.e. specific water bodies to be managed for specific purposes, for example, contact recreation and cultural purposes), by way of a variation or change to this Plan. Priorities for investigations into water quality will be determined through the annual planning process.

4. The Council will take into account the knowledge and views of local people when developing and applying water quality standards for specific water bodies.
5. The Council will take into account existing water quality, natural events, existing uses and community aspirations for future use, and opportunities for enhancement of water quality, when developing and applying a water classification system.
6. The Council will use the water classification guidelines set out in the Third Schedule to the Act as a basis to develop standards applying to waters to be managed for specified purposes.

For Policy 3

7. Until such time as a water body is classified and associated water quality standards set in place, the Council will use the following guidelines for the management of waters for aquatic ecosystem purposes:

After reasonable mixing the contaminant either by itself or in combination with other contaminants, is not likely to;

- (a) Cause the natural pH of the water to fall outside the range of 6.5-9.0.
- (b) Cause a change in the natural temperature of the water of greater than 3 degrees Celsius.
- (c) Cause the concentration of dissolved oxygen (daily minimum) to be reduced below 6 g/m³.
- (d) Cause levels of toxic metals to exceed the following, except where caused by natural events:

Total arsenic	50 mg/m ³
Total cadmium	0.2 – 2* mg/m ³
Total chromium	2 mg/m ³
Total copper	2 – 5 mg/m ³
Total lead	1 – 5 mg/m ³
Total zinc	5 – 50* mg/m ³
Total mercury	0.1 mg/m ³

*depending on hardness, see ANZECC guidelines.

- (e) Cause the four-day average concentration of ammonium to exceed the following:

pH	Ammonium, NH ₄ -N g/m ³				
	10°C	15°C	20°C	25°C	30°C
6.50	1.81	1.81	1.22	0.86	0.60
6.75	1.81	1.81	1.22	0.86	0.60
7.00	1.81	1.81	1.22	0.86	0.61
7.25	1.81	1.81	1.23	0.86	0.61
7.50	1.81	1.81	1.23	0.86	0.61
7.75	1.73	1.64	1.15	0.81	0.58
8.00	1.13	1.09	0.76	0.54	0.39
8.25	0.64	0.62	0.44	0.32	0.23
8.50	0.37	0.36	0.26	0.19	0.14

Note: pH and temperature, where practicable, should be measured in the midday-early afternoon period (noon to 2 p.m. NZ Standard Time).

- (f) Cause the level of nutrients to fall outside the range of:

Dissolved Reactive Phosphorus	50 – 30 mg/m ³
Dissolved Inorganic Nitrogen (NO ₃ -N+NH ₄ -N)	40 – 100 mg/m ³

- (g) Cause the visual clarity of the water, as measured by black disc, to be reduced by more than 20% in waters where visual clarity is an important characteristic of the water body and 40% in other waters, depending on site conditions.

Note: If traditional turbidity measures (NTU) are used, Figure 3A of Davies-Colley and Close (1990) *Water Colour and Clarity of NZ Rivers*, NZ J Mar. FW Res, vol 24, no. 3, should be used to establish a correlation with black disc measures].

Note: For other contaminants, the Council will have regard to the Australia and New Zealand Environment and Conservation Council (ANZECC): November 1992: *Australian Water Quality Guidelines for Fresh and Marine Waters*. The derivation and rationale for these guidelines is contained in Appendix 1.

8. Until such time as a water body is classified and associated water quality standards set in place, the Council will use the following guidelines for management of waters for contact recreation purposes:

After reasonable mixing, the contaminant either by itself or in combination with other contaminants, is not likely to:

- (a) Cause the visual clarity of the water to fall below 1.6 metres as measured by the black disc technique;

Note: If traditional turbidity measures are used, Figure 3A of Davies-Colley and Close (1990) *Water Colour and Clarity of NZ Rivers*, NZ J Mar FW Res, Vol 24 no.3, should be used to establish a correlation with black disc measures.

- (b) Produce conspicuous oil or grease films, scums or foams, floatable or suspended materials, or emissions of objectionable odour;
- (c) Render the water unsuitable for bathing by the presence of contaminants.
- (d) Cause the median of samples taken over a bathing season to exceed 126 E coli per 100 millilitres, and no sample to exceed the following upper limit:

Upper Limit per 100 ml	Designated Bathing Area	Moderate Use	Light Use	Infrequent Use
E coli	235	293	410	576

Note: All sampling and analysis to be carried out in accordance with the *Provisional Microbiological Water Quality Guidelines for Recreational and Shellfish-Gathering Waters in New Zealand*, Department of Health, 1992.

Note: For other contaminants, the Council will have regard to the Australia and New Zealand Environment and Conservation Council (ANZECC), November 1992 *Australian Water Quality Guidelines for Fresh and Marine Waters*.

The derivation and rationale for these guidelines is contained in Appendix 1.

9. Until such time as a water body is classified and associated water quality standards set in place, the Council will use the following guidelines for management of waters for fishery purposes:

After reasonable mixing, the contaminant, either by itself or in combination with other contaminants, is not likely to:

- (a) Cause those effects stated in Policy 7.05.04(i)-(iii)
- (b) Cause a change in the natural temperature of the water of greater than 3 degrees Celsius.
- (c) Increase the temperature above 25 degrees Celsius.
- (d) Cause the concentration of dissolved oxygen (daily minimum) to be reduced below 6 g/m³.
- (e) Cause the level of nutrients to fall outside the range of:

Dissolved Reactive Phosphorus 50 – 30 mg/m³

Dissolved Inorganic Nitrogen (NO₃-N+NH₄-N) 0 –100 mg/m³

Note: For other contaminants, the Council will have regard to the Australia and New Zealand Environment and Conservation Council (ANZECC), November 1992 *Australian Water Quality Guidelines for Fresh and Marine Waters*. The derivation and rationale for these guidelines is contained in Appendix 1.

10. Until such time as a water body is classified and associated water quality standards set in place, the Council will use the following guidelines for management of waters for water supply purposes:

After reasonable mixing, the contaminant, either by itself or in combination with other contaminants, is not likely to:

- (a) Cause those effects stated in Policy 7.05.04;
- (b) Cause the natural pH of surface water to fall outside the range of 6.0-9.0;
- (c) Cause the concentration of dissolved oxygen in surface waters to fall below 5 mg/l;
- (d) Taint or contaminate the water so as to make it unpalatable or unsuitable for consumption by humans after treatment (equivalent to coagulation, filtration, and disinfection), or unsuitable for irrigation.

Note: For other contaminants, the Council will have regard to the Australia and New Zealand Environment and Conservation Council (ANZECC), November 1992; *Australian Water Quality Guidelines for Fresh and Marine Waters*. The derivation and rationale for these guidelines is contained in Appendix 1.

11. Until such time as a water body is classified and associated water quality standards set in place, the Council will use the following guidelines for management of waters for stock water and irrigation purposes:

After reasonable mixing, the contaminant, either by itself or in combination with other contaminants, is not likely to:

- (a) Cause levels of toxic metals to exceed the following, except where caused by natural events:

Total arsenic	100 mg/m ³
Total cadmium	10 mg/m ³
Total chromium	1,000 mg/m ³
Total copper	200 mg/m ³
Total lead	100 mg/m ³
Total zinc	2,000 mg/m ³

- (b) Based on no fewer than 5 samples over any 30 day period, cause the following faecal coliform counts to be exceeded:

- Median less than 600/100 millilitres
- 80 percentile less than 2,400/100 millilitres

as measured by the membrane filter technique.

- (c) Cause the level of nutrients to fall outside the range of:

Nitrate (NO ₃ -N)	500 mg/m ³
------------------------------	-----------------------

- (d) Taint or contaminate the water so as to make it unsuitable for the irrigation of crops growing or likely to be grown in the area to be irrigated.

Note: For other contaminants, the Council will have regard to the Australia and New Zealand Environment and Conservation Council (ANZECC), November 1992. *Australian Water Quality Guidelines for Fresh and Marine Waters*. The derivation and rationale for these guidelines is contained in Appendix 1.

12. When assessing a resource consent application for the discharge of a contaminant or water into a river, lake or wetland, the Council will have regard to:

- (a) Water Quality Guidelines No. 1, June 1992. *Guidelines for the Control of Undesirable Biological Growths in Water*, published by the Ministry for the Environment;
- (b) Water Quality Guidelines No. 2, June 1994. *Guidelines for the Management of Water Colour and Clarity* published by the Ministry for the Environment.

In addition, the Council will have regard to:

- (c) *Provisional Microbiological Water Quality Guidelines for Recreation and Shellfish Gathering in New Zealand* (January 1992) prepared by the Department of Health;

when assessing a resource consent application for the discharge of a contaminant or water into a river, lake or wetland which is used for contact recreation purposes.

For Policy 4

13. Policy 4 will be implemented via the process of deciding on discharge permit applications under s.105 of the Act.

For Policy 5

14. Require specific information to be submitted with resource consent applications for the discharge of contaminants to water to enable assessment of the mixing zone. The information requirements are listed in Section 35.

For Policy 6

15. The Council will consult with the Department of Conservation, District Councils, local communities, tangata whenua and landowners with a view to identifying and recording which water bodies, or parts of water bodies, are of special ecological significance and the water quality standards which should apply to these waters.
16. The policy will be implemented by way of the proposed water classification system (also refer Policy 7.05.02 and Method 7.06.03), provisions of this Plan governing land use activities and discharges, and decisions on resource consent applications.

For Policy 7

17. The Council will consult with iwi authorities with a view to identifying and recording water bodies of cultural or spiritual value to Iwi.
18. The Policy will be implemented by way of the proposed water classification system (also refer Policy 7.05.02 and Method 7.06.03), the provisions of this Plan governing land use activities and discharges, and decisions on resource consent applications.
19. Encourage applicants for discharge permits to include information to be supplied with consent applications regarding the effects of any proposed discharge or land use activity on cultural values (as these relate to water quality). Where necessary, the Council will commission a report from the appropriate tangata whenua (as defined in Section 41), on the effects of the activity on their cultural values. The commissioning of such reports shall be subject to prior discussion with the applicant and shall be deemed to be a report within the scope of s.92 of the Act.

Refer also to Methods 6.05.01, 6.05.02 and 6.05.04

7.7 PRINCIPAL REASONS FOR ADOPTING THE OBJECTIVE, POLICIES AND METHODS RELATING TO WATER QUALITY MANAGEMENT

The principal reasons for adopting the objectives are set out in the introduction and issues section. The principal reasons for adopting each policy is incorporated in the explanation. The principal reasons for adopting the methods of implementation are as follows:

7.7.1 Water Quality Guidelines

Guidelines for key parameters have been given to indicate the water quality that is expected to be suitable for aquatic ecosystems, contact recreation, fishery, water supply and stock and irrigation purposes. These guidelines provide clarity for applicants for resource consents when assessing the state of the water quality of the water body that may be affected by their proposal.

The following methods relate to water quality guidelines:

7.06.07 7.06.08 7.06.09 7.06.10 7.06.11

7.7.2 Water Quality Standards

To ensure the existing water quality is maintained or enhanced, conditions may be placed on resource consents which require certain receiving water quality standards to be met. The standards will be determined having regard to the existing water quality in relation to the desired water quality, and the sensitivity of the water body with respect to ecological and cultural values.

The following methods relate to setting water quality standards as conditions of resource consents:

7.06.12 7.06.13 7.06.14

7.7.3 Provision of Information

Numerous reports on Northland's water resources have been prepared over the last 10 to 15 years which contain information on the water quality of the resource. State of the environment monitoring and consent monitoring also provides information on water quality. This information is important to the Council and applicants when assessing the effects of a proposal. Such information gathered by the Council is available.

The following methods relates to provision of information:

7.06.02

7.7.4 Information Requirements

Where adequate existing water quality information is not available to assess environmental effects or avoidance, remedial or mitigation measures, this information will need to be collected and submitted with the application. Adequate and accurate information is essential to enable a comprehensive assessment of the effects of the activity. Information provided should be consistent with the Fourth Schedule of the Act and appropriate to the scale of the activity.

The following methods relate to information required to be submitted with applications:

7.06.14 7.06.19

7.7.5 Research

The preparation of a schedule of water bodies of high ecological values would provide clarity and certainty for possible users of those resources in terms of how the Regional Council may assess any application which may affect the resource. Similarly, a schedule of water bodies of significant cultural values, whether it is available directly to the public, or available only to the Regional Council so it may then advise applicants upon request, would also provide clarity and certainty.

The following methods relate to the process for the development of such schedules:

7.06.15 7.06.17

7.8 TRANSITIONAL POLICY

1. When considering any application for a discharge the consent authority must have regard to the following matters:
 - (a) the extent to which the discharge would avoid contamination that will have an adverse effect on the life-supporting capacity of fresh water including on any ecosystem associated with fresh water and
 - (b) the extent to which it is feasible and dependable that any more than minor adverse effect on fresh water, and on any ecosystem associated with fresh water, resulting from the discharge would be avoided.

2. When considering any application for a discharge the consent authority must have regard to the following matters:
 - (a) the extent to which the discharge would avoid contamination that will have an adverse effect on the health of people and communities as affected by their secondary contact with fresh water; and
 - (b) the extent to which it is feasible and dependable that any more than minor adverse effect on the health of people and communities as affected by their secondary contact with fresh water resulting from the discharge would be avoided.

3. This policy applies to the following discharges (including a diffuse discharge by any person or animal):
 - (a) a new discharge or
 - (b) a change or increase in any discharge –

of any contaminant into fresh water, or onto land in circumstances that may result in that contaminant (or, as a result if any natural process from the discharge of that contaminant, any other contaminant) entering fresh water.

4. Paragraph 1 of this policy does not apply to any application for consent first lodged before the National Policy Statement for Freshwater Management 2011 took effect on 1 July 2011.

5. Paragraph 2 of this policy does not apply to any application for consent first lodged before the National Policy Statement for Freshwater Management 2014 took effect on 1 August 2014.

Explanation: This policy has been inserted into the Water and Soil Plan to give effect to the National Policy Statement for Freshwater Management 2014. It specifies the matters the regional council must consider when assessing and determining an application for a discharge permit

This policy is transitional in nature and is intended to maintain ecosystem health and human health (secondary contact) values of freshwater until freshwater quality objectives and limits are established in the Water and Soil Plan by way of a plan change (as required by Policy A1 and Policy A2 of the National Policy Statement for Freshwater Management 2014).

Explanation continued...

The policy applies in addition to other assessment matters in the Water and Soil Plan and in considering all decisions on resource consents for new discharges and/or changes/increases in existing discharges. The policy does not affect activity status but does provide a basis for applying consent conditions.

The policy does not apply to new consents or replacement consents for an existing discharge where there is no change or increase in the discharge. Nor does it does apply to discharges authorised by a permitted activity rule.

8. DISCHARGES

8.1 INTRODUCTION

The underlying framework for the maintenance and enhancement of Northland's fresh water quality is established in the previous section. Discharges of contaminants to land and water are the main causes of existing or potential water quality degradation in Northland. This section addresses point source discharges, while non-point source discharges (or diffuse source discharges) will be addressed in the Land Management Section (Section 12). Both types of discharges are managed by the use of Riparian Management methods and Water Quality Guidelines as detailed in Sections 5.06 and Section 7 respectively.

8.2 CONTROLS UNDER THE RESOURCE MANAGEMENT ACT 1991

The rules relating to this section either:

- Allow discharges to occur subject to meeting specified conditions (permitted activities), or
- Require consents subject to meeting specified performance standards, (controlled activities), or
- Require consents with full discretion reserved to the Council, (discretionary activities), or
- Expressly prohibit the activity (prohibited activities).

Under s.70 of the Act, a discharge can only be permitted without a resource consent if the Regional Council is satisfied that none of the following effects are likely to occur after reasonable mixing in the receiving waters:

1. The production of conspicuous oil or grease films, scums or foams, or floatable or suspended materials;
2. Any conspicuous change in the colour or visual clarity;
3. Any emission of objectionable odour;
4. The rendering of freshwater unsuitable for consumption by farm animals;
5. Any significant adverse effects on aquatic life.

These five effects also restrict the granting of discharge permits.

8.3 SUMMARY OF DISCHARGES IN NORTHLAND

8.3.1 Sewage

Approximately 146,600 people live in Northland. Approximately 55% of Northland is served by community-based sewage collection and treatment systems. Most of these systems have oxidation ponds or mechanical treatment plants, and many discharge to wetlands for additional treatment prior to discharging to rivers. The

remaining 45% of Northland residents dispose of their sewage on-site, mainly using septic tanks and soakage trenches or holes.

Approximately 800,000 visitors, who stay the equivalent of 4,000,000 visitor nights each year, add to the peak loading on community and individual sewage treatment systems.

8.3.2 Agricultural Discharges

There are approximately 1,150 dairy farms in Northland, carrying in the order of 250,000 milking cows. Most cow herds are milked twice daily from July through to February, March or April. Waste generated during milking and cleaning from vats is washed out of the cowshed and is generally treated in either oxidation ponds, or barrier ditches, or discharged directly into unmodified ditches before being disposed of into water or onto land, or is disposed of directly onto land via spray irrigation or sacrifice areas.

A report, (*Toward Sustainable Agriculture: Freshwater Quality in New Zealand and the Influence of Agriculture*, 1993) commissioned by the Ministry for the Environment and the Ministry of Agriculture and Fisheries in 1993, using information from various Regional Councils found that water quality of many New Zealand streams in agriculturally developed catchments are in poor condition. Farm dairy discharges make a significant contribution to the total point source loading on rivers due to the number of sheds and widespread distribution along fertile lowland areas (Hickey and Rutherford, 1986).

Other point source discharges of agricultural waste include discharges from piggeries, stock and sale yards, wintering barns, silage pits, offal holes and dead stock burial sites, and sub-surface drains. Non point sources include pasture and stock races, fertiliser and agricultural chemicals.

8.3.3 Industrial Discharges

Most industries, and particularly industries in urban areas, discharge their effluents into community sewage systems which are authorised under separate discharge permits. There are few discharges from industrial plants which discharge to freshwater or land in Northland. These include dairy product manufacturers, abattoirs, and timber treatment plants and in most instances, the effluents are treated prior to discharge either to wetlands, water bodies or land.

The industrial sites which are located on the coast generally discharge their effluent into estuaries and harbours (coastal marine area). The detailed policies, rules and standards for controlling these discharges are contained in the Regional Coastal Plan.

8.3.4 Solid Waste

There are 4 landfills operated by territorial authorities in Northland which receive most of the region's residual solid waste. There are also many dumps which are currently uncontrolled, for example, dumps on private property, closed landfills and former landfills still being discovered, particularly in remote rural areas.

All landfills produce leachate which may contain elevated concentrations of metals and other substances which could potentially contaminate groundwater or surface

waters in the vicinity. Adverse effects on water quality and aquatic life can be avoided by the proper management of the landfill operation and control of leachates.

8.3.5 Stormwater

During dry weather, contaminants such as dirt, oil, grease, and heavy metals tend to accumulate on the streets, footpaths, carparks, roofs and similar hard surfaces within urban areas. When it rains, the stormwater carries the accumulated contaminants with it into stormwater drainage systems which in turn flow directly into nearby streams, rivers or estuaries. Such urban stormwater runoff receives little or no treatment before being discharged into natural water bodies.

Heavy metals have been found in the Upper Whangarei Harbour sediments to exceed the standards recommended for aquatic life. These contaminants will remain in the receiving environment, and will accumulate over time as stormwater discharges continue.

Stormwater discharges are generally authorised by discharge permits based on a stormwater management plan. Stormwater management plans are widely used in terms of the design of the stormwater system. However, these have focused on the capacity of the stormwater system to accept runoff, with little or no attention given to stormwater quality. The plans, however, provide a useful basis upon which to institute quality controls which are available and used both in New Zealand and overseas.

8.3.6 Rural Roads

The regional roading network is a diffuse source of sediment, nutrients, heavy metals, oil and grease which can enter Northland's water bodies. Effluent on roads from stock trucks is another source of contamination. Because of this, many stock trucks have holding tanks.

8.4 TYPES OF CONTAMINANTS

Many of the discharges described in Section 8.03 contain the same type of contaminants and therefore have the same or similar effects on the environment. The range of contaminants includes organic material, nutrients, bacteria, viruses, other pathogens, toxic chemicals, sediments and metals.

Organic matter is the contaminant which is discharged in the largest volume, being present in sewage, animal effluents, leachate from the decomposition of animal and vegetable matter and in dairy and meat processing effluents. The biochemical oxygen demand, which is a measure of the organic content, is considerably higher in leachate from silage pits and fruit and vegetable dumps than it is in sewage or farm dairy effluents. However the volumes from these sources are much smaller.

Nutrients, particularly nitrogen and phosphorus are also present in high concentrations in the above effluent discharges, particularly in sewage, animal effluent and leachates from decomposing vegetation.

Sewage and animal effluents also contain bacteria and viruses (some of which can cause disease) and potentially harmful (toxic) chemicals from some cleaning fluids.

Other contaminants include hydrocarbons, solvents, and metals (trade wastes, contaminated stormwater, landfill leachate); sediment (farm dairy effluent, contaminated urban stormwater and rural runoff), runoff from earthworks and heavy metals (contaminated urban stormwater, timber treatment plants and discharges from closed or operational landfills).

If the effluent containing these contaminants is inadequately treated before being discharged into water, the effects on the receiving environment are likely to be an increase in aquatic plant growth and algae, a depletion in dissolved oxygen levels, the death of fish and other aquatic life, and water unsafe for drinking and swimming. Sediments in water may cause discoloration, smother plants and animals on stream bottoms and clog the gills of fish. Many lowland river reaches and streams are potentially unsafe to swim in because they contain high levels of faecal bacteria. Most surface water bodies would be unsafe to drink from without prior treatment and many may, at times, be unsuitable for stock water. Ammonia in effluent is toxic to fish and invertebrates in low to moderate concentrations. Heavy metals may accumulate in stream sediments and adversely affect freshwater fauna.

8.5 ISSUES

8.5.1 General Issues

1. The large number and volumes of point source discharges to water which contain organic matter.
2. Point source and non-point source discharges to land and water can cause contamination of soils and a deterioration of water quality if they are not properly controlled.
3. Degradation of the mauri (life force) and wairua (spirit) of water bodies, and the degradation of habitats for kaimoana (food of the lake or sea) and kaiawa (food of the river) from the discharge of contaminants to water.
4. Saturation of Northland soils for three to four months of the year due to Northland's high rainfall and large areas having poor drainage, and the consequent potential limitations for land disposal of effluent.
5. Reduction in the effectiveness of the treatment system when the collection, treatment and disposal system also receives surface runoff from surrounding land or impermeable surfaces.
6. Accidental or emergency discharges from effluent treatment and disposal systems which may result from equipment breakdown and lack of maintenance.

8.5.2 Issues Relating to Sewage Discharges

1. The direct discharges of relatively low quality effluent to water from older sewage treatment pond systems which service many small towns in Northland. Some of these discharges are meeting receiving water quality standards only because the discharge is into a large river.
2. The seasonal overloading of community sewage treatment and disposal systems, which reduces the quality of effluent being discharged.

3. The adverse effects of on-site sewage system discharges resulting from inappropriate design, incorrect installation or inadequate maintenance.
4. The cumulative effects of septic tank sewage discharges from unsewered settlements on surface water and groundwater, creating potential health risks.
5. The inappropriate design of some sewage treatment and disposal systems in areas subject to environmental constraints such as high water tables, tight clays or free draining soils.
6. The limited additional treatment provided by the method of discharging untreated or primary treated effluent into deep soakage systems (including deep bores and soak holes).

8.5.3 Issues Relating to Agricultural Discharges

1. The inability of a large number of animal effluent treatment and disposal systems to provide effective treatment, due to oxidation ponds being too small in comparison to stock numbers.
2. The lack of maintenance of many treatment systems, resulting in reduced effluent treatment, overflow of solids from ponds to streams, and direct discharges to water from equipment failure (particularly with spray irrigation systems), or pond wall breakdown or collapse.
3. The adverse impact of even well treated effluent on small streams, due to their limited dilution capacity.
4. The leachate generated from the breakdown of plant material in silage pits and waste fruit and vegetable dumps, containing high levels of organic matter, and nutrients such as nitrogen and phosphorus; and the potential to cause significant adverse effects on water quality when located near a water body.
5. The dumping of dead stock and offal into and close to water courses and the associated human and animal health risk, offensive odours and degradation of water quality.
6. The application of fertiliser using methods or in conditions which increase the risk of fertilisers entering water bodies, particularly lakes, and the potential for nuisance weed growth and eutrophication.
7. The use of herbicides to control aquatic weeds and the potential contamination of downstream water supplies if inappropriate chemicals and application rates are used.
8. The potential residual contamination of soils from the use of agrichemicals, including herbicides, pesticides, sewage sludge and animal remedies.

8.5.4 Issues Relating to Industrial Discharges

1. The reliance, by many existing industrial discharges to water, on the significant dilution and assimilative capacity of receiving water to meet acceptable water quality standards, compared with the increased public expectation for better water quality.

8.5.5 Issues Relating to Solid Waste Discharges

1. The adverse environmental effects of landfills including the impacts on the socio-economic well-being of the community, the amenity values of the selected area and the need for comprehensive environmental assessments of all alternatives.
2. The actual and potential long-term effects of many closed and operating landfills that are inappropriately located near the coast, estuarine areas and other water bodies, and the lack of information as to what has been placed in some of these landfills.
3. The need to eliminate or reduce solid waste at its source in order to minimise the number and size of landfills required in Northland.
4. The lack of monitoring and leachate control in past landfill management practices.
5. The potential adverse effects on groundwater and surface water quality resulting from the discharge of landfill leachate.
6. The need to ensure that hazardous wastes can continue to be disposed of at an approved and convenient site.

8.5.6 Issues Relating to Stormwater Discharges

1. The levels of heavy metals, sediments and other contaminants, which are potentially harmful to aquatic life, in stormwater runoff.
2. The past lack of attention to quality controls in stormwater system design.
3. The contribution of runoff from industrial sites to contaminant loadings in urban stormwater, including those from accidental spills.
4. The deliberate or careless disposal of oil and other household and commercial wastes to stormwater systems.

8.6 OBJECTIVES

- | |
|--|
| <ol style="list-style-type: none">1. The effective treatment and/or disposal of contaminants from new and existing discharges in ways which avoid, remedy or minimise adverse effects on the environment and on cultural values.2. The reduction and minimisation of the quantities of contaminants entering water bodies, particularly those that are potentially toxic, persistent or bio-accumulative. |
|--|

8.7 POLICIES (NB ADDITIONAL TRANSITIONAL POLICY ON PAGE 80)

1. To require all new discharges of sewage or discharges with a high organic content to be:
 - (a) By land disposal; or
 - (b) To water, if after reasonable mixing:
 - (i) it does not cause a discernible adverse change in the physico-chemical and/or microbiological water quality of the receiving water at the time of discharge; and
 - (ii) it is the best practicable option (as defined by Section 2 of the Act).

Cross-references: 6.04.01, 6.04.02

Explanation: *Discharges of effluent containing high organic matter can be defined as those effluents which, if discharged to water, are likely to change the dissolved oxygen regime of the receiving water. Such changes may lead to the death of aquatic life and/or the production of undesirable growths such as sewage fungus and slimes.*

In Northland, discharges with high organic content include those from human and animal effluents, decomposing vegetable matter, animal and food processing, and leachates from solid wastes.

Direct discharges of contaminants into water, particularly sewage and animal effluent, are offensive to the Northland community. This was made clear during public consultation for the preparation of the Regional Policy Statement. Discharges to water also degrade the traditional, cultural and spiritual values that tangata whenua hold for water and water bodies. It is therefore intended that wherever it is practicable, all discharges will eventually be to land. This is also consistent with policies in the New Zealand Coastal Policy Statement regarding the maintenance and enhancement of water quality in the Coastal Marine Area. Before a new discharge of sewage or discharge with a high organic content to water is allowed, the Council will need to be satisfied that all other options, particularly land disposal have been considered.

The best practicable option approach takes account of the financial implications, and the effects on the environment, of that option when compared with other options, as well as the current state of technical knowledge and the likelihood that the option can be successfully applied.

For the purposes of this policy, a discernible adverse change in physico-chemical and/or microbiological water quality is defined as a change in all or any of the following:

- (a) *The physical properties or characteristics;*
- (b) *The chemical composition; and*
- (c) *The microbiological content of the receiving waters.*

Note: *That applicants for new consents should consult with Regional Council staff regarding appropriate levels of accuracy in testing and measurement methodologies in order to determine whether a discernible adverse change is likely to occur. Note also the requirements of Objectives 7.04 and 9.04 and their associated policies, to maintain and enhance water quality.*

For the purposes of this policy, a new discharge is defined as a discharge:

- (a) *From a treatment and disposal system which did not exist at the time this Plan was proposed (April 1995);*
 - (b) *From a treatment system which replaces or enhances an existing treatment system;*
 - (c) *From the same treatment system to a different receiving water body.*
2. To require by the year 2004 or according to an upgrading programme established as part of the conditions on a discharge permit all existing discharges of sewage or discharges with a high organic content to be:
- (a) By land disposal; or
 - (b) To water, if after reasonable mixing:
 - (i) it does not cause a discernible adverse change in the physico-chemical and/or microbiological water quality of the receiving water at the time of discharge; and
 - (ii) it is the best practicable option (as defined by Section 2 of the Act)

Cross-references: 6.04.01, 6.04.02

Explanation: *The move to land based treatment and disposal will markedly improve the water quality of Northland's water resources.*

Discharges existing before the notification of this document will be required to be upgraded over a period of time as decided by the Council through its Annual Plan process. Criteria for upgrade priorities are given in the methods based on the actual and potential effects of the discharge on the environment.

3. To ensure there are adequate separation distances between water bodies and discharges to land to avoid or mitigate adverse effects on water quality.

Explanation: *There are many other discharges of small volumes containing high concentrations of organic matter and discharges of larger volumes containing low levels of contaminants. The adverse effect of those discharges can be avoided by requiring adequate separation between the discharge point or disposal area and the surface water body or groundwater.*

4. To promote effective effluent treatment and disposal systems which are:
- (a) Low maintenance and low risk;
 - (b) Land based, where the soil types, available disposal areas, back-up facilities and pumping systems are adequate;

Disposal of solid waste, including hazardous wastes is an issue for both regional and District Councils. Liaison and co-ordination of efforts between the Councils is required to achieve the objectives.

The following methods relate to co-ordination and liaison:

8.10.01 8.14.04 8.14.07 8.14.08

8.8 METHODS OF IMPLEMENTATION

For Policies 1, 2 and 3

1. To include rules which permit discharges to land and to water subject to conditions relating to environmental standards.

Cross-references: 15.01.01 – 15.01.05

2. Where a permitted activity rule cannot be met, to include rules which require consents for the discharge of contaminants to land and to water, particularly those discharges with a high organic content.

Cross-reference: 15.03.02

3. Implement a programme for upgrading those existing discharges to water which must be improved in accordance with Policy 8.07.02. These are to be prioritised according to the sensitivity of the receiving waters, the aspirations of the local community, the existing level of treatment provided and the actual or potential effects in the receiving water after reasonable mixing.

Priority 1: Any discharge of effluent containing sewage or having a high organic content, treated or otherwise, which is a prohibited activity in accordance with rules in this Plan,

Priority 2: Any discharge that results in any of the receiving water guidelines being exceeded.

4. The timing of the upgrade programme and any subsequent requirement to apply for a resource consent will be decided annually during the Regional Council's Annual Plan process following discussions with territorial authorities and other consent holders.

For Policy 4

5. Provide information and advice on effective, low maintenance, low risk effluent treatment and disposal systems, particularly in regard to suitable alternatives to conventional on-site sewage and farm dairy effluent systems. Proposals for relevant investigations will be publicised through the Annual Plan process.
6. Require a maintenance and contingency plan to be submitted as part of a resource consent application for a new discharge or an existing discharge.

For Policy 5

7. Support the New Zealand Agrichemical Education Trust's Growsafe courses and require Council staff to have appropriate training and qualifications.
8. Include rules for the discharge of agrichemicals to land and water.

Cross-reference: Section 18

8.9 SPECIFIC POLICIES FOR SEWAGE DISCHARGES

1. To avoid the cumulative adverse effects of sewage discharges, particularly in areas subject to concentrated development, a high water table, poorly draining soils, very free draining soils, or in areas which are ecologically and/or culturally sensitive.

Explanation: *The cumulative effect of high density on-site sewage disposal systems is a particular problem in coastal settlements which have large increases in population during the holiday season.*

2. To promote the installation of reticulated community sewerage schemes in urban and rural residential areas where on-site disposal systems contribute or are likely to contribute to the contamination of water, including coastal water and groundwater.

Explanation: *There are some rural-residential areas where on-site disposal of sewage is occurring over high groundwater tables. In such situations, conventional land based on-site disposal systems which rely on soakage fields or soakage pits are likely to result in groundwater and/or surface water contamination, particularly where a number of residential properties are clustered together. Increasing the level of treatment or upgrading the design of the existing on-site treatment system in these areas is likely to be expensive and resource consents may still be required for many individual systems. In such cases, a reticulated community sewerage scheme would avoid widespread contamination by providing a suitable level of treatment and an appropriate means of treated effluent disposal, and would allow development to be unhindered by problems with sewage disposal.*

3. To promote alternative methods to reticulated sewage systems and septic tanks for sewage disposal.

Explanation: *New technologies are being developed which are more appropriate than conventional methods*

8.10 METHODS OF IMPLEMENTATION

For Policies 1 and 2

1. To make submissions on:
 - District Council Annual Plans regarding reticulated sewage treatment and disposal; and

- District Plan changes and reviews relating to on-site and community sewage effluent discharges.
2. Work with District Councils and health authorities to identify locally appropriate solutions where effects on the environment from on-site domestic sewage discharges are found to be unsustainable.
 3. To include rules for the discharge of sewage to land.

8.11 SPECIFIC POLICIES FOR AGRICULTURAL DISCHARGES

1. To require the best practicable option for point source and non-point source discharges from agriculture that maintain and enhance surface water and groundwater quality.

***Explanation:** Adverse effects on water quality can be reduced by adopting the best practicable option for agricultural practices. Rule 16.01.01 outlines the best practicable option for the discharge of animal effluent and farm wastewater.*

2. The Council or contractors delegated responsibility by the Council will annually inspect compliance of animal treatment and disposal systems.

***Explanation:** The avoidance of adverse effects on water quality is reliant on good design, construction/installation and ongoing management of the effluent treatment and disposal systems. A system to ensure compliance with the conditions of permitted activities is required.*

8.12 METHODS OF IMPLEMENTATION

For Policy 1

The Council will work with landowners, farm operators, government agencies, industry and environmental groups, and iwi to:

- (a) Prepare guidelines for the design, operation and maintenance requirements of farm dairy effluent and treatment systems.
- (b) Collate existing education/information packages which are available, and prepare new packages where appropriate to target groups such as school children, farmers, farm advisors, contractors and the general public on the best practicable option for point source and non-point source discharges from agricultural practices.
- (c) Encourage and attend on-farm discussion groups as a means of demonstrating, advising and informing pastoral farmers and other industry groups of new technologies and the best practicable management practices which would benefit them and the environment.

For Policy 2

2. Include rules for the discharge of animal effluent and farm wastewater that contain a standard requiring that the person(s) undertaking the activity must, following a request by the Council, keep certain information (monitoring records) and provide a copy of it to the Council.

Cross-reference: 16.01.01(j)

3. Support industry initiatives to develop and implement codes of practice.

8.13 SPECIFIC POLICIES FOR SOLID WASTE DISCHARGES

1. To promote waste minimisation to industries and the community.

Explanation: *Waste minimisation extends the life of landfills and minimises the land resources required for landfilling. Priority is given to the reduction of waste at source because this is often the most efficient means of reducing waste. Reuse is the second priority which is likely to have energy efficiency benefits over recycling because the resource remains essentially unchanged. Recycling is supported where it is the most practical option for reducing waste. However, careful consideration needs to be given to the energy costs of recycling, and the availability of markets for recycled goods.*

2. To educate users of landfills, about the types of wastes that should be disposed of in Northland landfills, and to encourage the safe disposal of hazardous wastes at approved hazardous waste disposal facilities.

Explanation: *Many of Northland's public landfills are unattended for much of the time and many users are unaware that certain types of wastes should not be disposed of in landfills.*

3. To maintain access to existing hazardous waste disposal facilities in Auckland and to promote establishment of suitable long-term disposal facilities available to the region.

Explanation: *It is important that access to hazardous waste disposal facilities is maintained so that existing industries have a reasonably convenient site for disposal and future industrial development in Northland is not compromised by inaccessible or costly disposal facilities.*

4. To require, where appropriate, the pre-treatment of hazardous substances prior to disposal at an approved disposal facility.

Explanation: *Some hazardous substances may not be suitable for direct disposal at an approved disposal facility without an appropriate level of pre-treatment. When considering conditions for resource consents for the disposal of hazardous substances, the Council may require the pre-treatment of hazardous substances to minimise the hazardous character of discharges.*

5. To ensure that all new landfill sites are located having regard to full environmental considerations. Before deciding on the site for a new landfill, a

full assessment of environmental effects must be undertaken. Such an assessment must address the factors included in Method 8.14.09.

Explanation: *Before deciding on the site for a new landfill, applicants should assess the need for a new landfill, and the environmental and cultural impacts of a landfill at a number of alternative sites. Environmental considerations encompass social and cultural well-being as defined in the Act.*

6. To require the effects of discharges both into and from landfills to be managed in accordance with site specific landfill management plans so that adverse effects are avoided, minimised or mitigated.

Explanation: *Landfill management plans submitted with resource consent applications will allow the Council and affected parties to determine how the effects of the proposed landfill can be avoided, minimised or mitigated and how the effects will be monitored. Appendix 4 contains the matters to be addressed in a Landfill Management Plan.*

7. To require discharges both into and from closed landfills to be managed in accordance with site specific landfill closure plans so that adverse effects are avoided, remedied or mitigated.

Explanation: *Landfill closure plans submitted with resource consent applications for closed landfills will allow the Council and affected parties to determine how the effects of the closed landfill can be avoided, remedied or mitigated and how the effects will be monitored. Appendix 4A contains the matters that must be addressed in a landfill closure plan.*

8.14 METHODS OF IMPLEMENTATION

For Policy 1

1. Promote waste minimisation by:
 - (a) Producing and circulating available information to educate industries and communities in the region about the advantages and methods of waste minimisation.
 - (b) Maintaining liaison with the Cleaner Production Foundation (a group recently established by the Government to promote Cleaner Production) and other groups engaged in Cleaner Production activities.
 - (c) Providing advice on Cleaner Production Demonstration Projects through workshops and audits.
 - (d) Providing advice to organisations and individuals involved in generating or managing waste on ways to implement waste minimisation in relation to their own operations.
The Council's education programmes for Waste Minimisation will be publicised through the Annual Plan Process.
 - (e) Encourage the use of waste audit procedures to identify and implement waste minimisation opportunities.

2. Investigate the possibility of a rural collection of hazardous waste containers, plastic, and silage wrapping on a regular basis.

For Policy 2

3. Ensure pamphlets on various types of hazardous wastes and appropriate methods of disposal are distributed to the Northland community via Regional Council offices, field days, school visits and directly to resource users.
4. Maintain liaison with District Councils and other landfill operators which have resource consents for landfills which do not specifically exclude the disposal of hazardous wastes, in order to encourage proper disposal of any hazardous wastes that may be brought to the landfill.
5. Require landfill operators to erect adequate and consistent signage for disposal of wastes, particularly in respect of hazardous wastes.
6. Provide an advice service for direction on the disposal of wastes.

For Policies 3 and 4

7. Initiate an investigation, in conjunction with the District Councils, into options for disposal of Northland's hazardous waste beyond the current means of disposal, particularly purpose-built co-disposal sites.
8. Consider jointly with other Regional Councils in the Upper North Island, possible alternatives to disposing of the region's hazardous wastes at Greenmount and possible options for the treatment of hazardous wastes.

For Policy 5

9. Require a full assessment of environmental effects of operational and new landfills to be included as part of resource consent applications, and in addition, for new landfills, to include an assessment of any alternative locations and methods having regard to:
 - (a) Groundwater usage in the immediate or surrounding area; and
 - (b) Cultural sites of interest; and
 - (c) Waterways and protection of water resources; and
 - (d) Minimising visual effects of landfills; and
 - (e) Avoidance of landfills in coastal areas; and
 - (f) Requirements to line the site; and
 - (g) Leachate collection and treatment; and
 - (h) Separation distance from residential dwellings.

Cross-references: 35.01, Appendix 4

For Policy 6

10. Require a Landfill Management Plan to be included as part of a resource consent application.

Cross-references: 35.01, Appendix 4

For Policy 7

11. Include rules for the discharge of contaminants from closed landfills.
12. Require a Landfill Closure Plan to be included as part of a resource consent application.

8.15 SPECIFIC POLICIES FOR INDUSTRIAL OR TRADE DISCHARGES

1. To enable industries to monitor the effects of their discharges while maintaining an audit role.

***Explanation:** Many industries have suitable in-house expertise and facilities that will allow the industry to monitor the effects of its discharges. While the Council will maintain an audit role, industry self monitoring can make more efficient use of Council resources. Self monitoring can also result in an increased awareness by the industry of its effects.*

2. To promote industrial waste minimisation programmes and the use of environmental management systems which effectively avoid, minimise or reduce adverse environmental effects of industrial contaminants generated by industry.

***Explanation:** Industries can reduce the quantities of the contaminants they discharge into water and other receiving environments by implementing waste management or minimisation programmes.*

The Council continues to support the preparation and implementation of environmental management systems as a means of environmental quality control. Many industries have already taken the initial steps towards the preparation of environmental management systems.

8.16 METHODS OF IMPLEMENTATION**For Policy 1**

1. Establish suitable industry based monitoring programmes, where the Regional Council is satisfied that the industry has the resources to undertake self monitoring. These will comprise the industry carrying out regular sampling, combined with a number of duplicate sampling runs to be undertaken from time to time by the Regional Council. The monitoring programme will be established as part of the resource consent process and will be reviewed as required upon assessment of the results.

For Policy 2

1. Consult with industries and any relevant liaison groups on environmental issues such as pollution control and environmental monitoring, and seek input to environmental management systems developed by industries.

Refer also Method 8.14.01

8.17 SPECIFIC POLICIES FOR STORMWATER DIVERSIONS AND DISCHARGES

1. To manage the diversion and discharge of stormwater in a way that provides safeguards against flooding and maintains or enhances water quality.

Explanation: *Stormwater management systems need to address the stormwater capacity of the total catchment in terms of its potential development and to provide appropriate treatment of the stormwater to avoid or minimise contamination. Stormwater management plans are a suitable mechanism to provide for these requirements.*

2. To require the inclusion of water quality controls as far as practicable in existing stormwater management systems that are known to be causing concentrations of contaminants within the receiving environment that are in excess of applicable water quality and/or sediment quality guidelines.

Explanation: *Many existing stormwater reticulation systems were constructed purely for stormwater collection, with little regard for treatment of the discharge. Appropriate water quality controls such as sedimentation ponds and marshes, other types of sediment traps, oil separators, vegetative filter strips and the use of grass swales instead of kerbing and channelling may be required to be incorporated into new stormwater reticulation systems. Incorporating water quality controls into existing reticulation systems may be difficult and is likely to take time. Stormwater management plans will need to be prepared for those areas which have the potential to contribute significant quantities of pollutants, particularly where the discharge is to the Coastal Marine Area.*

3. To manage the diversion and discharge of stormwater in urban areas through long duration resource consents that are supported by comprehensive stormwater management plans.

Explanation: *The intention is that comprehensive stormwater management plans will be developed for urban areas. These plans will identify issues such as the design standards, discharge standards, requirements for inclusion within the stormwater management plan coverage area and any maintenance requirements.*

The Council will consider granting a long duration consent where the stormwater management plan appropriately addresses stormwater issues and potential effects likely to arise in the long-term. Where a comprehensive stormwater management plan is still to be, or is being developed, a shorter duration consent will be considered. These resource consents will provide for all diversion and discharge of stormwater within the area covered by the stormwater management plan that is either existing or anticipated in the long-term.

4. To promote best practice for stormwater management design, including low impact options.

Explanation: *Best practice will ensure adverse effects are minimised and will assist plan users in addressing this Plan's performance standards.*

5. To promote stormwater management practices that avoid or minimise the discharge of contaminants from industrial and trade premises into stormwater drainage systems.

Explanation: *There are a number of measures which can be implemented on industrial or trade premises to avoid or minimise contaminants, stored or spilled on site, from entering the stormwater systems. These measures may include oil separators, grease traps, settling ponds or bunding around the area where chemicals are used or mixed. When developing land, or changing its land use, these measures should be considered.*

6. To encourage activities to operate in accordance with industry standards and/or environmental guidelines where these are intended to avoid, remedy or mitigate the adverse effects of stormwater contamination.

Explanation: *The Council will use industry standards and environmental guidelines or codes of practice prepared for the purpose of avoiding, remedying or mitigating any potential adverse effects relating to the storage of hazardous substances or the management of industrial or trade premises when interpreting the provisions of the permitted and controlled activity rules to determine whether appropriate interceptor or bunding facilities have been installed. These standards and guidelines may have been produced by the industries themselves, and consideration will be given to whether they represent industry best practice. The Council will encourage owners and operators of hazardous substance storage areas and industrial and trade premises to comply with industry best practice standards.*

7. To permit the discharge of stormwater from hazardous substance storage areas and industrial or trade premises if sufficient safeguards are adopted to avoid, remedy or mitigate the potential adverse effects associated with stormwater contamination.

Explanation: This policy stormwater that the use of appropriately designed measures such as containment areas, bunding and interceptor systems for hazardous substance storage sites or industrial or trade premises can minimise the risk of contamination.

8. To promote public awareness of the adverse effects of stormwater discharges on natural waters, including awareness of the adverse effects of household waste introduced into stormwater systems.

Explanation: Many householders are not aware of where the stormwater ends up or may mistakenly think that disposing of unwanted household cleaners or washing paintbrushes into the stormwater grate has few adverse environmental effects. Increased public awareness is needed to avoid wastes being discharged into the stormwater systems.

8.18 METHODS OF IMPLEMENTATION

For Policies 1 and 2

1. Include rules for the discharge of stormwater to land and water.
2. Review the stormwater rules with regard to reasonable mixing within two years of this Plan becoming operative.

For Policies 3 and 4

3. Make submissions on:
 - District council annual plans regarding the need to prepare stormwater management plans for existing urban catchments.
 - District plan changes and reviews regarding the need to prepare stormwater management plans for future urban development.
 - Applications for subdivision consents where there is no stormwater management plan.
 - Stormwater management plans and district council road maintenance programmes to ensure that they provide for upgrading of sediment discharges.
4. Require stormwater management plans to be prepared by the relevant district council for urban catchment areas, where necessary, as part of the resource consent process. (Matters that should be addressed in a stormwater management plan are given in Appendix 5.)

For Policy 5

5. Provide information and advice on best practice stormwater management design, including low impact options.

Refer also Method 8.14.01

For Policies 6 and 7

6. Require, as information to be submitted with an application for a resource consent for an existing stormwater discharge (i.e. a new application upon expiry), a stormwater management plan which incorporates stormwater quality controls, and a programme for installing them, where the stormwater management system is known to be causing pollution.

Cross-references: 35.01

7. Provide information and advice to industries, District Councils and roading contractors on ways to avoid, remedy or mitigate the adverse effects of stormwater discharges.

Refer also Method 8.14.01

8. Require a maintenance and contingency plan to be submitted as part of a resource consent application for a new or existing discharge.

Cross-references: 35.01

For Policy 8

9. Prepare and distribute appropriate educational material to schools and community organisations and with rating notices.

8.19 PRINCIPAL REASONS FOR ADOPTING THE OBJECTIVES, POLICIES AND METHODS RELATING TO DISCHARGES

The principal reasons for adopting the objectives are set out in the introductory sections and issues section. The principal reasons for adopting each policy are incorporated in the explanation. The principal reasons for adopting the methods of implementation are as follows:

8.19.1 Rules and Environmental Standards

Rules and environmental standards are used to provide an efficient and effective means of managing Northland's discharges and water quality. Permitted activities allow activities to be undertaken without a resource consent. Controlled activities give certainty to the applicant as to the aspects of the activity that the Council will be controlling through conditions on the consent. Discretionary activities allow for site specific assessment of the discharge and its effect on the receiving environment. Listed information requirements and assessment criteria provide clarity for the applicants by specifying how the application will be assessed and therefore why the information is required. These also ensure a consistent approach to decision making. Prohibited activities are those activities which this Plan expressly prohibits and describes as an activity for which no resource consents shall be granted.

To have no rules would mean that all discharges of water to water, and discharges of contaminants to land or water, would be non-complying activities and would require resource consents. This is considered to be an inefficient and costly method of achieving the objectives and policies.

The following methods relate to rules, environmental standards, information requirements and assessment criteria:

8.08.01	8.08.02	8.08.03	8.08.04	8.08.05
8.08.06	8.08.07	8.08.10	8.14.05	8.14.09
8.14.10	8.14.11	8.14.12	8.18.01	8.18.02
8.18.03	8.18.05			

8.19.2 Education, Provision of Information and Advice

The majority of the discharges to land or water that occur in Northland are sewage and farm dairy effluent discharges from individual properties, and are generally managed by individuals.

With good management, the effects of discharges to land can be minor and for this reason, many are permitted subject to environmental standards. However to ensure good management, the dischargers and the community need to be supported with knowledge via education, up-to-date information and general advice.

The volume of the discharge may be able to be reduced at its source and thus waste minimisation advice is also important.

The following methods relate to education, provision of information and advice:

8.08.05	8.08.07	8.12.01	8.14.01	8.14.03
8.14.06	8.18.06	8.18.07	8.18.08	

8.19.3 Monitoring

Monitoring of the individual and cumulative effects of discharges within catchments is required to be able to assess whether the objectives are being achieved. The permitted activities will be monitored through the State of the Environment monitoring programme. Where the management of the permitted discharges is particularly important, such as with land disposal of farm dairy effluent, continued compliance will be monitored through the provision of a report prepared by a suitably qualified person. Specific monitoring programmes for resource consents will be prepared.

To make efficient use of Council resources and to reduce some of the costs for consent holders, industries which have relevant expertise and resources will be able to carry out regular monitoring with the Council auditing the monitoring through duplicate samples.

Monitoring of rules and resource consents is required by Section 35 of the Act, and therefore, in general, it has not been stated as a method. However, the following methods relate to specific aspects of monitoring:

8.12.02	8.16.01	8.16.02
---------	---------	---------

8.19.4 Co-ordination

The cumulative effects of discharges, particularly on-site sewage discharges, can be caused by, and solved by land use controls. The effects of the use, development and protection of land is principally controlled by the District Councils.

Disposal of solid waste, including hazardous wastes is an issue for both regional and District Councils. Liaison and co-ordination of efforts between the Councils is required to achieve the objectives.

The following methods relate to co-ordination and liaison:

8.10.01 8.14.04 8.14.07 8.14.08

8.20 TRANSITIONAL POLICY

1. When considering any application for a discharge the consent authority must have regard to the following matters:
 - (a) the extent to which the discharge would avoid contamination that will have an adverse effect on the life-supporting capacity of fresh water including on any ecosystem associated with fresh water and
 - (b) the extent to which it is feasible and dependable that any more than minor adverse effect on fresh water, and on any ecosystem associated with fresh water, resulting from the discharge would be avoided.

2. When considering any application for a discharge the consent authority must have regard to the following matters:
 - (a) the extent to which the discharge would avoid contamination that will have an adverse effect on the health of people and communities as affected by their secondary contact with fresh water; and
 - (b) the extent to which it is feasible and dependable that any more than minor adverse effect on the health of people and communities as affected by their secondary contact with fresh water resulting from the discharge would be avoided.

3. This policy applies to the following discharges (including a diffuse discharge by any person or animal):
 - (a) a new discharge or
 - (b) a change or increase in any discharge –

of any contaminant into fresh water, or onto land in circumstances that may result in that contaminant (or, as a result if any natural process from the discharge of that contaminant, any other contaminant) entering fresh water.

4. Paragraph 1 of this policy does not apply to any application for consent first lodged before the National Policy Statement for Freshwater Management 2011 took effect on 1 July 2011.

5. Paragraph 2 of this policy does not apply to any application for consent first lodged before the National Policy Statement for Freshwater Management 2014 took effect on 1 August 2014.

Explanation: This policy has been inserted into the Water and Soil Plan to give effect to the National Policy Statement for Freshwater Management 2014. It specifies the matters the regional council must consider when assessing and determining an application for a discharge permit. This policy is transitional in nature and is intended to maintain ecosystem health and human health (secondary contact) values of freshwater until freshwater quality objectives and limits are established in the Water and Soil Plan by way of a plan change (as required by Policy A1 and Policy A2 of the National Policy Statement for Freshwater Management 2014).

The policy applies in addition to other assessment matters in the Water and Soil Plan and in considering all decisions on resource consents for new discharges and/or changes/increases in existing discharges. The policy does not affect activity status but does provide a basis for applying consent conditions.

The policy does not apply to new consents or replacement consents for an existing discharge where there is no change or increase in the discharge. Nor does it does apply to discharges authorised by a permitted activity rule.

9. SURFACE WATER QUANTITY MANAGEMENT

9.1 INTRODUCTION

Northland's river resource is small. By comparison with many other parts of New Zealand, the water available from surface water resources is limited, particularly during "dry" periods. Roofwater collection and the storage of rainfall runoff in ponds is an important source of water in Northland, particularly for domestic, stock and farm water supplies. Other major uses of water include horticultural and pastoral irrigation, public and industrial water supplies. There is heavy demand for water in some areas, and some rivers have little or no potential for further water draw-offs.

Research on Northland rivers and elsewhere in New Zealand has provided an increased understanding of flow related water quality and habitat effects and an appreciation of the potential importance of these effects on aquatic ecosystems. This research continues and it provides insight into the environmental bottom lines that need to be protected in order to maintain the life supporting capacity of the ecosystem and to achieve the sustainable use of the resource. This research has emphasised the need to maintain minimum flows that protect the functioning and non-extractive uses of rivers. These functions include the life supporting capacity and waste assimilation potential of the water bodies and also meeting the needs of recreational, amenity and cultural uses. Importantly this research has shown that in some situations, minimum flows that protect water quality need to be higher than the flows required to protect the physical habitat. Therefore there is an ongoing need to also indicate on a river by river basis and often also on a seasonal basis, the current and likely future competing demands for the surface water resource. Decisions over the allocation of surface water need to integrate this information. Providing for both the extractive and non-extractive uses is essential to the social and economic well-being of the region.

Research has also highlighted the fact that in some rivers, water takes may need to be reduced from their present levels in order to restore flows that will maintain water quality sufficient to avoid adverse effects on aquatic life. For example, one investigation of the relationship of dissolved oxygen, temperature and flow in a Northland stream has shown that at critical times a minimum flow of almost 200% of the 1 in 5 year return period 7 day low was required to maintain adequate levels of oxygenation.

Where river water is inadequate to meet demand, alternative water sources such as dams and reservoirs may have to be developed. More effective ways of utilising existing water sources will need to be considered, including strategies to harvest water at high river flows for use during periods of high demand and low availability. Avoiding wastage will also be an important consideration.

The community must have confidence that domestic and stock drinking water needs, whether provided via an individual or community water supply system, will be a priority use that must neither adversely affect the water body nor be adversely affected by other users of water.

There will be catchment specific situations where a broader, integrated management approach is required in order to take into account the inter-relationships between different activities, for example water takes, discharges and land use. In such cases, regional plans for individual catchments may be required in order to integrate management objectives and achieve an efficient and sustainable use of the resource

that best reflects the expectations of individuals and communities. Timeframes, priorities and the criteria for the preparation of regional plans are covered in Section 13 of this Plan.

The maintenance of water levels in Northland's lakes and wetlands is also an important focus of water management. Its significance is emphasised by the small size and shallow depth of most of the region's lakes and the importance of avoiding adverse effects on the much diminished resource of valuable natural wetlands.

For the purpose of this Plan, surface water includes all water, flowing or not, that is above the ground but does not include water while in pipes, tanks or cisterns, nor water located within the coastal marine area. It therefore includes water in permanently or intermittently flowing rivers, streams, artificial watercourses, lakes and wetlands, and water impounded by structures such as dams or weirs.

9.2 CONTROLS UNDER THE RESOURCE MANAGEMENT ACT 1991

Section 14 of the Act contains restrictions relating to the use of water. Under s.14, all activities relating to water (other than taking water for an individual's reasonable domestic or stock drinking water needs) are prohibited unless it is either; permitted through a regional plan, or a resource consent is obtained or it is an existing use in terms of s.20A of the Act.

Under Section 14 of the Act a person is not prohibited from taking or using fresh water for an individual's reasonable domestic needs or for the reasonable needs of an individual's animals for drinking water provided that the taking or use does not, or is not likely to have an adverse effect on the environment. An advice note is included in Section 24 of this Plan to this effect.

Section 14 states:

Restrictions relating to water –

- (1) *No person may take, use, dam, or divert any-*
 - (a) *Water (other than open coastal water); or*
 - (b) *Heat or energy from water (other than open coastal water); or*
 - (c) *Heat or energy from the material surrounding any geothermal water – unless the taking, use, damming, or diversion is allowed by subsection (3).*
- (2) *No person may –*
 - (a) *Take, use, dam, or divert any open coastal water; or*
 - (b) *Take or use any heat or energy from any open coastal water, - in a manner that contravenes a rule in a Regional Plan or a Proposed Regional Plan unless expressly allowed by a resource consent or allowed by Section 20A (certain existing lawful activities allowed).*
- (3) *A person is not prohibited by subsection (1) from taking, using, damming, or diverting any water, heat, or energy if –*

- (a) *The taking, use, damming, or diversion is expressly allowed by a rule in a Regional Plan [and in any relevant Proposed Regional Plan] or a resource consent; or*
- (b) *In the case of fresh water, the water, heat, or energy is required to be taken or used for-*
 - (i) *an individual's reasonable domestic needs; or*
 - (ii) *the reasonable needs of an individual's animals for drinking water-*
and the taking or use does not, or is not likely to, have an adverse effect on the environment; or
- (c) *In the case of geothermal water, the water, heat, or energy is taken or used in accordance with tikanga Maori for the communal benefit of the tangata whenua of the area and does not have an adverse effect on the environment; or*
- (d) *In the case of coastal water (other than open coastal water), the water, heat, or energy is required for an individual's reasonable domestic or recreational needs and the taking, use, or diversion does not, or is not likely to, have an adverse effect on the environment; or*
- (e) *The water is required to be taken or used for fire-fighting purposes.*

Under the definition section of the Act “fresh water” means all water (surface water and groundwater), except coastal water and geothermal water.

Provisions in this Plan relating to surface water management cannot be inconsistent with the objectives and policies in the Regional Policy Statement.

Section 30(1) of the Act states the following as Regional Council functions in respect of water quantity:

- (c) *The control of the use of land for the purpose of - ...*
 - (iii) *the maintenance of the quantity of water in water bodies and coastal water:*
 - (iii a) *the maintenance and enhancement of ecosystems in water bodies and coastal water:*

...
- (e) *The control of the taking, use, damming and diversion of water and the control of the quantity, level and flow of water in any water body including-*
 - (i) *the setting of maximum or minimum levels or flows of water;*
 - (ii) *the control of the range or rate of change of levels or flows of water.*

...
- (g) *In relation to any bed of a water body, the control of the introduction or planting of any plant in, on, or under that land, for the purpose of-*

...

 - (iii) *the maintenance of the quantity of water in that water body:*

9.3 ISSUES

1. The taking, damming or diversion of surface water can adversely affect the life supporting capacity, the natural character and intrinsic and amenity values of rivers, lakes and wetlands.
2. The cumulative effects of taking, damming or diversion of surface water on the availability of water for domestic needs, stock and water demanding land uses.
3. The lack of surface water adversely affects the social, cultural and economic well being of the community.
4. The wastage and inefficient use of surface water.
5. The potential for loss or degradation of the mauri and wairua of water bodies from taking, using, damming and diverting of water.
6. The demand on river water resources may exceed the availability of water during low flow periods in some areas.
7. The need to be able to determine river and stream flows to a required level of accuracy.
8. The need to improve knowledge and understanding of the effect of water level and flow and land use change on the biology, ecology and chemistry of rivers, lakes and wetlands.

9.4 OBJECTIVES

1. **The maintenance of water flows and levels in rivers, lakes and indigenous wetlands that are sufficient to provide for the preservation of their natural character, safeguard life-supporting capacity, and has particular regard to protecting their intrinsic ecosystem, amenity and cultural values.**
2. **The sustainable management of Northland’s surface water resource whilst avoiding, remedying or mitigating adverse environmental effects.**
3. **The efficient use of surface water.**

9.5 POLICIES (NB ADDITIONAL TRANSITIONAL POLICY ON PAGE 100A)

Rivers, or Sections of Rivers, and Lakes deemed to have Outstanding Values

1. To recognise that the following rivers, or sections of rivers, and lakes have outstanding features and values for which it is appropriate to regulate the taking, use, damming and diverting of water for:
 - Waipoua;
 - Whirinaki;
 - Waipapa;

- Mangamuka;
- Punaruku;
- Lake Ora;
- Waikohatu;
- Wairau.

Maps of these rivers, or sections of rivers, and lakes deemed to have outstanding values are shown in Appendix 18.

2. To include by way of a plan change further rivers, or sections of rivers, and lakes as having outstanding value where they meet any of the following criteria:
 - (a) Have catchments which are dominated by indigenous vegetation and which are largely unmodified natural ecosystems or ecological sequences from headwaters to lowlands; or
 - (b) Are recognised by any judicial authority or which subject to agreement by the Council in consultation with an iwi authority are recognised to be a taonga requiring flow preservation in a natural or near natural state; or
 - (c) Are an essential part of an outstanding natural feature or landscape, and where changing the water level or flows would adversely affect those values.

Explanation: Policies 1 and 2 seek to preserve and protect the flows or water levels in rivers or sections of rivers, and lakes that are deemed to be of outstanding value. The intent is to recognise an exclusive group of rivers, section of rivers and lakes. Policy 9.05.01 identifies those rivers or sections of rivers, and lakes which the Council considers to have outstanding values. Appendix 18 shows maps of these. Policy 9.05.01 recognises that the list of rivers or sections of rivers, and lakes meeting the criteria is not comprehensive and other rivers, or sections of rivers, and lakes meeting the criteria may be added to the list via a variation or plan change process.

An additional important benefit of these policies is to provide a selection of rivers, or sections of rivers, and lakes that can be used as a benchmark in our understanding of the impacts that have been sustained by other rivers and lakes and that will help define the targets to be achieved in the management of the rivers and lakes.

Where some water allocation is allowed from this category of river, or section of river, natural flows must not be significantly affected and the resulting flows will be well above the minimum flows set in Policies 9.05.05, 9.05.06 and 9.05.07.

Criteria for Flow Sensitive Rivers of High Ecological Value

3. To recognise that smaller rivers, being those with a Mean Annual Low Flow (MALF) of less than 300 l/s, are more sensitive to the potentially adverse effects of flow reduction on their life supporting capacity than are larger rivers.

Explanation: The potential for effects from flow reduction on the life supporting capacity of the aquatic ecosystem is to a large extent related to the size of the river. For example, research indicates that larger rivers are better

buffered from potentially adverse flow related habitat and water quality effects than are smaller rivers. The water depth and velocity is less likely to fall outside a range preferred by aquatic life in larger rivers. The implication of this is that proportionately less water can be taken out of small rivers than larger rivers.

The Mean Annual Low Flow (MALF) has been specified as the Design Minimum Flow (DMF) for this category of river. For the purposes of these policies, the MALF is obtained by averaging the lowest daily flow (or the best estimate thereof) for each year of record. This average estimates a natural minimum which generally occurs in the summer.

While 300 litres per second MALF is not a small river by Northland standards, the use of this threshold is a derivation based on the limited ecological and habitat information which is relevant to this region. For example the National Institute of Water and Atmospheric Research (NIWA) have advised that 300 l/s is a conservative cut off for identifying small stream fish communities. Some research from other parts of New Zealand which is relevant to Northland, suggests that the MALF needs to be maintained to avoid flow effects on habitat essential to the production of aquatic food upon which river animals feed, (that is, food producing habitat). The MALF represents a conservative environmental bottom line. At this stage it is a best indicator of a range in flows which should flag a particular concern as to the potential for adverse effects on one or more components of the life supporting capacity of the aquatic ecosystem in the environments characterised in Policy 9.05.04. Guidelines for flow sensitive rivers and sections of rivers are provided in Appendix 11.

4. To recognise that rivers or sections of rivers with the following characteristics are likely to have high ecosystem values which may be sensitive to the potential adverse effects of flow reduction:
 - (a) Significant areas of gravel substrates; and
 - (b) Riparian vegetation, which provides shade and acts as a nutrient filter, within the Riparian Management Zone; and
 - (c) A high diversity of aquatic life; or
 - (d) Threatened aquatic life.

Explanation: *Few rivers have catchments which are unmodified and which remain to this day in indigenous vegetation. However many rivers contain sections and subcatchments in which there is a predominance of native vegetation. Where this vegetation includes riparian vegetation, the aquatic habitats tend to be ecologically rich. Some research also suggests that these habitats are potentially the most sensitive to adverse effect arising from flow reduction.*

Minimum Flow Requirements for Flow Sensitive Rivers of High Ecological Value

5. Unless provided for by other policies in this section, to ensure that as a result of the taking, use, damming or diverting of surface water, flows are not reduced below the Mean Annual Low Flow (MALF) in rivers, or sections of rivers, which contain the characteristics described in Policy 9.05.04 and which have a MALF of less than 300 l/s.

Explanation: *Relatively higher minimum flows may be required to protect the life supporting capacity of the aquatic ecosystems in these environments than in other situations such as more modified environments, larger rivers and deep, slow flowing lowland rivers.*

Rivers or sections of rivers identified as meeting all of the criteria, either as a result of a resource consent application or catchment investigation, will be recorded on the Council's Geographical Information System (GIS).

Minimum Flow Requirements When MALF Does Not Apply

6. To recognise that rivers, or sections of rivers, which do not have the characteristics described in Policy 9.05.04 are less sensitive to the potentially adverse effects of flow reduction arising from the taking, damming and diverting of surface water and therefore relatively lower minimum flows are acceptable to avoid adverse effects on the life supporting capacity of the aquatic ecosystem.

Explanation: *Such rivers can be broadly divided into three groups;*

- (a) *Small rivers in which invertebrates or indigenous or other fish are shown to have a low diversity and in which the aquatic ecosystem has been modified or adversely affected. The 7 day, 1 in 5 year low flow generally represents between 70 - 84% of the MALF depending on the size of the river.*
- (b) *Larger rivers; that is those with a MALF of more than 300 litres per second.*
- (c) *Lowland type rivers which are characterised by predominantly low gradient, low velocity, fine substrate and deep water. Although these rivers can be important as habitat, spawning grounds and migration routes for fish and invertebrates, and often have a greater diversity of aquatic life than less degraded upland rivers, their cross sectional characteristics render depth, velocity and habitat characteristics less affected by flow reduction.*
7. Unless provided for by other policies in this section, to ensure that as a result of the taking, damming and diversion of surface water in rivers or sections of rivers which do not fall within the scope of Policy 9.05.04, are not reduced below the 7 day, 1 in 5 year return period low flow.

Explanation: *The continuous "7 day" 1 in 5 year return period low flow is used as the Design Minimum Flow (DMF) for rivers in this category. The "7 day" value is used, as opposed to past Council practice of using the "1 day" value, as it is considered to be a more reliable and meaningful statistical measure of flow.*

One hundred percent of the 7 day DMF is used because greater allocations would potentially allow the regular imposition of flows amounting to extreme events which would occur only rarely under natural conditions. In the absence of more definitive scientific studies on the effects of flow regulation in these Northland rivers, a precautionary approach is justified.

Research carried out in Northland by the Council suggests that maintaining 100% of the seven day DMF will generally maintain the life supporting capacity of the aquatic ecosystem although there are documented exceptions where flows both below and above this level of minimum flow are justified.

Exceptional Circumstances

8. To consider alternative lesser minimum flows where it can be demonstrated that lesser flows do not result in adverse effects and cumulative adverse environmental effects on aquatic ecosystems.

Consideration of a lesser minimum flow may be justified by (but not limited to) the following circumstances:

- (a) Where the natural values below the point of the take are limited, including the absence of threatened flora and fauna, and any adverse environmental effects would be not more than minor.
- (b) Where little or no flow has been required to be maintained below an existing water supply dam for a period greater than 10 years, and the benefits of maintaining a greater continuation flow or developing alternative water sources cannot be justified in terms of the costs to the community or to others, and the potential adverse effects of taking, damming or diverting water from any other source to supplement that water supply.
- (c) Other circumstances as demonstrated by applicants for water permits and as assessed by the Council on a case-by-case basis.

9. To consider greater minimum flows where it can be demonstrated that greater flows may be required to avoid, remedy or mitigate adverse environmental effects.

Consideration of a greater flow may be justified by (but not limited to) the following circumstances:

- (a) Where there are significant levels of oxygen demanding organic material, ammonia and nutrient inputs into the river which may have higher dilution requirements, or
- (b) Where significant growths of aquatic weeds are present, or are likely to occur, above or below the point of take, which may have an adverse effect on the diurnal dissolved oxygen range due to plant respiration, and there is a need to maintain oxygen levels within an acceptable range, or
- (c) Where the diversity, numbers or biomass of threatened fauna or flora is likely to be adversely affected by flows being reduced to Design Minimum Flow levels.

- (d) Where the water body is recognised by any judicial authority or which subject to an agreement by the Council in consultation with an iwi authority, is recognised to be a taonga requiring a greater flow.
- (e) Other circumstances as demonstrated by applicants for water permits and as assessed by the Council on a case-by-case basis.

Explanation to Policies 8 and 9: *These policies allow for greater or lesser flows to be maintained in a river. The list of circumstances presented in Policies 9.05.08 and 9.05.09 under which alternative minimum flows may be considered is not comprehensive. Circumstances which may allow justification under 9.05.08(a) include: where there are waterfalls or other obstacles to fish passage below the point of take; the length of the river affected by the take is short; the take is close to tidal water or to a low gradient river section; and the take will not cause adverse physical, habitat or water quality effects downstream. The Council can consider other relevant circumstances and will judge each application on a case-by-case basis. Existing and potential users will have to justify departures for greater levels of allocation. The conservative measures applied will prevail unless there is information made available which justifies an alternative approach. There will need to be a high level of certainty as to the absence of adverse effects, and this in most cases will require a detailed scientific approach. In this regard there is ongoing work on the habitat requirements of native stream fauna and on water quality aspects in relation to flow and catchment management. This research will improve the information upon which flows are managed in years to come.*

Research undertaken by MAF Policy has indicated that many lowland rivers have poor water quality due to the direct and indirect influences of land use, waste and nutrient inputs. There is evidence that these influences can be exacerbated by reduced flows in some situations. One Northland investigation in what appears to be a typical Northland lowland river has indicated that about 200% of the design minimum low flow is required to maintain a water quality of an acceptable standard for aquatic life at critical times of the day during the summer. Where consideration has been given to greater flows a priority is placed on water use for the dilution of waste, either from authorised discharges, or contaminated runoff. However, over time, this priority will reduce as discharges of organic waste into surface waters are reduced or are adequately treated in accordance with other provisions in this Plan.

Policy 9.05.08(b) provides for large water supply dams that have been in existence for more than ten years, for example water supply reservoirs. This policy recognises that these large dams generally affect downstream hydrology by reducing flows below what would otherwise be the natural design flow. In effect, the section below such dams is often dewatered for part of the year and this changes the ecological condition of the stream or river. A relevant consideration in the assessment of the positive and adverse effect of allowing little or no flow from these dams to continue is the ecological benefit that could arise if flow were restored to the stream or river below the dam.

Adverse Effects

10. Notwithstanding Policy 9.05.08 to ensure that, as a result of taking, use, damming and diverting of water:
- (a) The natural character of the river or lake and its margins is preserved, as far as practicable;
 - (b) Adverse effects on significant indigenous wetlands are avoided and adverse effects on other indigenous wetlands are avoided, remedied or mitigated;
 - (c) Particular regard is had to the maintenance of amenity, landscape, heritage, cultural and recreational values are;
 - (d) Bed and bank stability is maintained;
 - (e) Adverse effects on the ecology of rivers and lakes are avoided where practicable, or remedied or mitigated;
 - (f) Adverse effects on significant indigenous vegetation and significant habitats of indigenous fauna are avoided, remedied or mitigated to the extent practicable.
 - (g) Adverse effects on the water quality of rivers, lakes and wetlands are avoided, remedied or mitigated.
 - (h) Adverse effects on the migration and spawning of native fish are avoided, remedied or mitigated.

Explanation: *While the policies on the maintenance of minimum flows focus on environmental bottom lines in respect of aquatic habitats and water quality in rivers, this policy identifies many of the other factors that are relevant and may need to be considered in relation to surface water depending on the particular circumstances when assessing the effects of taking, damming or diverting water in rivers and lakes.*

Existing Users

11. To allow a lead-in time for existing authorised water users to comply with any increased minimum flow requirements. The lead-in time shall be based on the need and practicability of obtaining alternative sources and will be assessed on a case-by-case basis.

Explanation: *Existing users whose run of stream allocations fall outside the scope of the policy may have to find or develop alternative sources of water such as storage or groundwater, or justify departures from the minimum flow policy based on a comprehensive assessment of the effects of their water take. Where alternative sources need to be obtained, a lead-in time is provided for.*

Some water permits do not provide for the maintenance of Design Minimum Flows. These will be assessed by staff when other water permit applications in the catchment are being processed, and if appropriate, the conditions will be reviewed in accordance with ss.128(1)(b) of the Act.

Effects of Land Use on Catchment Hydrology

12. When estimating Design Minimum Flows for rivers, and minimum water levels for lakes, to consider the effects of existing and likely future land uses on water yield.

Explanation: *Research has well established that vegetation patterns, type and trends within a catchment can significantly influence its hydrology. It is important for the Council to monitor such influences so they can be taken into account in water planning and management. It must also be appreciated that localised catchment trends can be masked and offset by longer term climatic trends such as the generally wetter summers during La Nina climatic conditions. These should be taken into account when assessing the Design Minimum Flows for a river. This consideration may include determining an expiry date for a resource consent to coincide with any likely future change in catchment yields.*

Cultural Values

13. To recognise, and as far as practicable, provide for the cultural and spiritual values held by the tangata whenua for the resource when considering applications for the taking, using, damming or diverting of water from surface water resources.

Explanation: *This policy requires the consideration of any cultural and spiritual values held by the tangata whenua when assessing applications for surface water takes. This is expressed in Section 6(e) of the Act.*

Refer also Policies in Section 6.04.

Statutory Takes

14. To give priority to existing domestic and stock drinking water needs and public water supply provided that those needs are reasonable.

Explanation: *Domestic and stock water needs are provided for as a right under s.14 of the Act provided they do not have adverse environmental effects. For the purpose of this policy domestic needs include water for consumption and household activities on an individual property. The importance of maintaining existing public water supply needs requires that this use is given precedence when allocating surface water.*

Water Use Strategies

15. To encourage water users to:
- (a) Undertake rainwater collection and storage, including rainfall runoff.
 - (b) Efficiently use and minimise the wastage of surface water taken and used for any purpose.
 - (c) Investigate alternative water sources and water use strategies for use during low flow periods.

Explanation: *Storage of water is desirable wherever it can be achieved. While most dwellings in rural areas collect rainwater for their household supply, a significant amount overflows to the ground due to inadequate storage. Additional rainwater tanks and runoff collection ponds could lessen the demand on other limited sources during prolonged dry periods.*

Surface water in Northland is a relatively small and finite resource. It is important that it is used efficiently and that wastage is minimised. Wastage can be a result of inadequate systems to take, distribute and store surface water (for example, leaky reticulation networks) or it can result from inaccurate assessment of industry needs. The use of water meters, particularly on public water supplies, is one method of helping to minimise waste.

Some territorial authorities have in place a programme for maintaining and upgrading reticulation systems in an effort to reduce wastage.

Alternative water sources may include other rivers or ground water sources or the building of dams. Alternative water use strategies will include the abstraction and storage of water during higher flows for use during periods of low water availability. It may also include the conjunctive use of different sources, both direct takes and storage reservoirs, and the re-use of wastewater rather than freshwater, to meet the needs of the user. The transfer of water units may also be a useful mechanism for water users to meet demand.

Serious Temporary Water Shortages

16. Where surface water flows and/or levels in rivers, lakes and indigenous wetlands are insufficient to meet the requirements of existing lawful users taking into account instream values, to apportion, restrict or suspend water use, including discharges to water, through a Water Shortage Direction.
17. When implementing the Water Shortage Direction, to give priority to the following uses (in order of priority from highest to lowest):
 - (a) Water for the maintenance of public health.
 - (b) Water necessary for the maintenance of animal health.
 - (c) Prevention of long-term or irreversible damage to the water resource and related ecosystems.
 - (d) Horticultural irrigation, industrial and other farming and commercial uses for which continued water use is essential for the continued operation of their primary business.
 - (e) Pasture, lawn and domestic garden irrigation.
 - (f) Swimming pools, vehicle washing and uses not essential for continued commercial operation.
18. Where a public water supply authority is unable to comply with the river flow conditions on its consent, to allow non-compliance to occur, but only when the supply authority has already implemented significant water conservation measures and the continuation of the supply is needed for the maintenance of public health.

Explanation to Policies 16, 17 and 18: *These three policies outline the steps the Council will take, and the steps the Council expects users to take, when faced with a serious temporary water shortage in Northland. They apply to water taken from natural water bodies but do not apply to rainwater stored in tanks or man made reservoirs or to wastewater. Given the current pattern of water use, water resources and water management regime in Northland, the application of a Water Shortage Direction, in accordance with s.329 of the Act, to large areas of the region at any one time is unlikely. It is most likely that the need would be confined to a few sub-catchments at any one time.*

Compliance with resource consents, efficient use of water and voluntary reductions are important prerequisites to the implementation of a Water Shortage Direction. Only when these are insufficient to prevent a severe shortage of water is a Water Shortage Direction necessary.

The maintenance of people's health is given the highest priority of water use. Animal health is the next priority, recognising that stock generally cannot be easily moved to where there is water and feed, although this may be possible and desirable in some instances.

It is recognised that public water supplies cannot differentiate between types of users, nor can it control how much non-priority users are taking. Public education programmes and peer pressure may achieve voluntary rationing of those non-priority users.

Research Requirements

19. To improve understanding of:
- (a) The minimum flows required to maintain instream processes and protect instream values.
 - (b) The effect of water level changes on the biology, ecology and chemistry of lakes and wetlands.
 - (c) Land use effects on river, lake and wetland hydrology.

Explanation: *Carrying out and supporting such research into the functioning of rivers, lakes and wetlands is important to clarify the type and scale of activities that will potentially produce adverse environmental effects and which therefore should be managed. Improved understanding based on new information can come from the Council implementing its duty under s.35 of the Act and through the resource consent process and monitoring under s.88 and s.104 of the Act.*

20. To provide for the sustainable use of the energy of water through the creation of hydro-electrical schemes, in a manner that does not result in the adverse effects detailed in Policy 9.05.10.

Explanation: *The use of hydro-electrical schemes to generate electricity for a single household or a small community can provide a sustainable alternative energy source where other energy sources are impractical or unavailable. However, the effects that may arise from the location and extent of the works and the damming, diversion and discharge of the water require control.*

Cross reference 7.04.01 and 9.04.01 – 03

9.6 METHODS OF IMPLEMENTATION

For Policies 1 and 2

1. Review every 5 years the list of rivers, or sections of river, and lakes which have features/values outlined in Policy 9.05.02 and consult with affected parties prior to public notification.
2. Include rules to restrict the taking, use, damming or diverting of water in such rivers, or sections of rivers, or lakes.
3. To consult with iwi authorities regarding the basis upon which rivers, or sections of rivers, and lakes are considered to be taonga requiring preservation in a natural or near natural state.

For Policies 3 and 4

4. Make available to proposed users, any information the Council holds in respect to the proposed catchment.
Note: Any information made available will be in accordance with the Council's charging policy which is reviewed annually in the Council's Annual Plan).
5. Require applications for water permits to include an evaluation in regard to the characteristics listed in Policy 9.05.04. Guidance is given in Appendix 12.

Cross-references: 35.02.01, 35.02.02

For Policies 5, 6, 7, 8 and 9

6. Include rules for the taking, use, damming or diverting of surface water.

Cross-reference: Section 24

7. Impose conditions on water permits to set the Mean Annual Low Flow as the Design Minimum Flow downstream of takes, uses, dams and diversions from rivers which meet all the criteria listed in Policy 9.05, unless evidence is provided which indicates that lower flows are unlikely to have significant adverse environmental effects.
8. Impose conditions on water permits to set 100% of the 7 day 1 in 5 year return period low flow as the Design Minimum Flow downstream of takes, uses, dams and diversions from rivers which do not meet all the criteria listed in Policy 9.05.04, unless evidence is provided which indicates that lower flows are unlikely to have significant adverse environmental effects.
9. Require applicants for water permits which will result in lower than the Design Minimum Flow, to demonstrate, based on a detailed assessment, that adverse effects on the life supporting capacity of the aquatic ecosystem, and cumulative adverse effects, including those on other authorised users will be avoided.

Cross-reference: 36.02.02(1)

10. Where circumstances, such as regular environmental monitoring, by the Council or consent holders indicate the need to review Design Minimum Flows in any particular case, commission or undertake investigations to establish whether a change to the Design Minimum Flow is justified.

For Policy 10

11. Require applications for water permits to take, use, dam or divert water to include an assessment as required by Section 88 and the Fourth Schedule of the Act which demonstrates inter alia the effect of the proposal on the matters listed in Policy 9.05.10. The scope and detail of such assessments need to be appropriate to the circumstances and to the scale of the potential effects in relation to the proposed use.

Cross-reference: 36.02.03

12. Where necessary to avoid, remedy or mitigate adverse effects, impose conditions on water permits, to require portions of flows, over and above the Design Minimum Flow to be released downstream of the dam provided that the flow released is not greater than that which is occurring naturally immediately before the dam.
13. Within two years of the Plan becoming operative prepare a report reviewing Rules 24.01.05, 24.04.02, 25.04, 28.01.01 and 28.04.01, Information Requirements 36.02.01(e) and 36.02.01(f) and Assessment Criteria 37.02.05 in order to identify how these provisions may be amended so as to give effect to s.6(c) of the Act. Prepare a plan change to give effect to this review on its completion.

For Policy 11

14. When existing water permits expire, impose conditions on any new water permit which sets a date by which the Design Minimum Flow, or any alternative flow which is required to avoid, remedy or mitigate adverse effects, is to be maintained.

For Policy 12

15. Recognise the following Design Minimum Flows as being of acceptable accuracy for flow correlation purposes and continue to monitor flows and review the estimates on a five yearly basis:

Flow Recorder Site	Grid Reference NZMS260 Series	MALF (litres per second)	1 in 5 year, 7 day low flow (litres per second)
Awanui River at School Cut	O04:352-761	557	460
Mangakahia River at Gorge	P06:878-189	1451	1171
Maungaparerua at Tyrees Ford	P05:913-625	33	23
Ngunguru River at Dugmores	Q07:378-164	79	61
Mangere River at Kara Weir	Q07:226-093	61	49
Manganui River at Permanent Station	Q07:111-816	276	154
Wairua River at Purua	Q06:149-159	1986	1535
Waipapa River at Forest Ranger	P05:730-583	709	559
Waitangi River at Wakelins	P05:061-577	966	552

Kaihu River at Gorge	P07:727-042	718	609
----------------------	-------------	-----	-----

Note: Refer also to Table 1 of this Plan in Section 1 for details on the catchment areas above each flow recorder site.

16. Where flow data other than that listed in Method 14 is used for flow correlation purposes, require applicants to justify the use of that flow data in terms of the accuracy of the Design Minimum Flow estimate.
17. Require the flow correlation methodology in Appendix 11 or other appropriate correlation methods to be followed when estimating Design Minimum Flows for catchments with no records.
18. Establish long-term data collection and monitoring systems on land use trends and hydrology, in key catchments representative of the range of catchment and climatic conditions in Northland.
19. Carry out investigations as appropriate to determine Design Minimum Flows which take into account flow data and upstream abstractions.
20. Liaise with District Councils over the reciprocal provision of relevant information on land use and water yield.

For Policy 13

21. Advise tangata whenua (as defined in Section 41) of all applications for water permits, and encourage applicants for water permits to include information regarding the effects of any surface water take on cultural values in the application. Where necessary, commission a report from the appropriate tangata whenua (as defined in Section 41) on the effects of the activity on their cultural values. The commissioning of such reports shall be subject to prior discussion with the applicant and shall be deemed to be a report coming within the scope of s.92 of the Act.

Refer also to Methods 6.05.01, 6.05.02 and 6.05.04

For Policy 14

22. Under Section 14 of the Act a person is not prohibited from taking or using fresh water for an individual's reasonable domestic needs or for the reasonable needs of an individual's animals for drinking water provided that the taking or use does not, or is not likely to have an adverse effect on the environment. Include an advice note in Section 24 to this effect.

Cross-reference: 24.01.01

23. Include rules which permit the taking of small quantities of surface water where the adverse effects are likely to be minor. This method will have particular application to the catchments listed below:
 - Mangatete River catchment
 - Aurere River catchment
 - Parapara River catchment

- Taipa River catchment
- Oruaiti River catchment
- Kaeo River catchment
- Hakaru River catchment
- Otamatea River Catchment but excluding Wairua River Catchment
- Arapaoa River Catchment but excluding Paparoa Creek catchment
- Rivers draining west from The Bluff, Tinopai to Te Kowhai Floodgate Rd
- Northern Wairoa River from below the Mangakahia River – Wairua River confluence, but not including the Manganui, Omana, and Waitotama River catchments.
- Whangape Harbour and river catchments
- Herekino Harbour and river catchments
- Hokianga Harbour and river catchments but excluding Taheke River Catchment
- West Coast draining rivers and streams from Maunganui Bluff to, but not including Shipwreck Bay (excludes harbour catchments).

Cross-reference: 24.01.03

24. Include rules which control the taking of surface water in catchments not listed in Method 9.06.23, and the taking of surface water over and above the quantity allowed as a permitted activity in accordance with Methods 9.06.22 and 9.06.23.

Cross-reference: 24.03.03

25. Identify and investigate catchments where permitted surface water takes are having or are likely to have an adverse cumulative effect, and if necessary, include rules via a Plan change.
26. Liaise with District Councils, and make submissions, where appropriate on:
- District Plan changes and reviews relating to subdivisions and the potential impacts on water resources.
 - Applications for land use and subdivision consents where the proposed source of water is small or supplies a number of existing users, and where there is potential for increased water demand.

For Policy 15

27. Include a rule which permits the collection of rainfall runoff into off-stream reservoirs.

Cross-reference: 24.01.05

28. Educate water users about methods to collect and store water through public education programmes.

29. Make submissions on district plan changes and reviews encouraging provisions to allow the construction of extra storage tanks on residential properties.
30. In addition to the information that may be required in response to s.88, s.104 and the Fourth Schedule of the Act, require applications for water permits to include specific information on alternative water use strategies and how the proposed methods of taking, reticulation and use of water will encourage the efficient use and the minimisation of wastage.

Cross-reference: 35.02.01

31. Include conditions on water permits where appropriate which encourage the efficient use and minimisation of wastage of water.

For Policies 16, 17 and 18

32. Monitor river flows and rainfall for early warning of possible water shortages in catchments at most risk, and increase resource consent monitoring in those catchments where necessary.
33. Use media release to inform the public of the possibility of water shortages and on methods to minimise water use and wastage.
34. Implement water shortage directions where necessary, in accordance with the requirements of Section 329 of the Act.
35. Encourage all users, regardless of the type of use, to implement appropriate water conservation measures and avoid wastage.

For Policy 19

36. To carry out and support research, and as appropriate, require investigations into the biological, chemical and ecological functioning of Northland rivers, lakes and wetlands and the effects of different flows, levels and land uses on those functions. The Council will identify research priorities to be implemented through its Annual Plan. It will also liaise with other agencies such as the Department of Conservation in order to focus research effort within Northland, as far as possible.
37. Review the applicability of the MALF and the seven day one in five year return period flow as Design Minimum Flows having regard to new information and ongoing research.

For Policy 20

38. Include rules that control the take, use, damming, diversion and discharge from hydro-electrical schemes in rivers and lakes.

Cross reference Rule 29.02.12

9.7 PRINCIPAL REASONS FOR ADOPTING THE OBJECTIVES, POLICIES AND METHODS RELATING TO TAKING, USING, DAMMING AND DIVERTING SURFACE WATER

The principal reasons for adopting the objectives are set out in the introduction and issues section. The principal reasons for adopting each policy are incorporated in the explanation for each policy. The principal reasons for adopting the methods of implementation are as follows:

9.7.1 Rules and Environmental Standards

Rules and environmental standards are used to provide an efficient and effective means of managing Northland’s surface water takes, uses, dams or diversions. Permitted activities allow activities to be undertaken without a resource consent, where it is unlikely that there will be any adverse effects including adverse cumulative effects. Discretionary activities allow for site specific assessments of the activity on the water resource. Non-complying activities target those water resources which are particularly sensitive to changes in water quantity or flows, and those activities which are likely to have a significant adverse effect on the resource.

Information requirements and assessment criteria listed in this Plan, provide clarity for the applicants by specifying how the application will be assessed and therefore why the information is required. It will also ensure a consistent approach to decision making.

To have no rules would mean that all surface water takes, uses, dams and diversions (apart from taking and using water for an individual’s reasonable domestic and stock drinking water needs) would be non-complying activities and would require resource consents. This is considered to be an inefficient and costly method of achieving the objectives and policies.

The following methods relate to rules, environmental standards, information requirements and assessment criteria:

9.06.02	9.06.05 – 9.06.12	9.06.15	9.06.20 – 9.06.23
9.06.26	9.06.29 – 9.06.30		

9.7.2 Education, Provision of Information and Advice

A large number of water users take water for stock and domestic needs. Education and provision of information is an appropriate method to target these users with respect to promoting storage, minimising wastage and implementing water conservation measures.

Information requirements for water permit applications are likely to increase with the implementation of this Plan. With respect to identifying rivers, or sections of rivers, which are high value flow sensitive rivers, the Council will provide any relevant information available to it. This will avoid duplication of investigations. This information sharing is considered to be an effective way of developing an information database on such rivers.

The following methods relate to education and provision of information:

9.06.04	9.06.27	9.06.32	9.06.34
---------	---------	---------	---------

9.7.3 Investigation and Monitoring

Knowledge of the flows in Northland’s rivers is the most important factor associated with the implementation of the policies and investigations and monitoring is the only appropriate method for gaining this knowledge. The lack of information in the past has led to some inaccurate flow estimations so that until such time as adequate flow records are collected, a consistent methodology for low flow estimation is required.

There is a nation-wide need for more research on the ecological functioning of rivers and how flow reductions, discharge and land uses might adversely affect those functions. The Council can obtain more information on these aspects via research and investigations both within Northland and from relevant studies in other parts of New Zealand. This information can come from a number of sources including national research funded by contestable government funds, regional state of the environment studies, tertiary institutions and resource consent monitoring. Co-ordination with District Councils is important to maximise the amount of useful resource information available for the region.

The following methods relate to investigations and monitoring:

9.06.14	9.06.16	9.06.17	9.06.18	9.06.24
9.06.31	9.06.33	9.06.35	9.06.36	

9.7.4 Advocacy

Where District Council functions overlap with Regional Council functions in terms of effects, liaising with them and making submissions on District Plans and applications for subdivision and land use consents are effective means for achieving integration.

The following methods relate to advocacy:

9.06.19	9.06.25	9.06.28
---------	---------	---------

9.8 TRANSITIONAL POLICY

1. When considering any application the consent authority must have regard to the following matters:
 - (a) the extent to which the change would adversely affect safeguarding the life-supporting capacity of fresh water and of any associated ecosystem and
 - (b) the extent to which it is feasible and dependable that any adverse effect on the life-supporting capacity of fresh water and of any associated ecosystem resulting from the change would be avoided.

This policy applies to:

- (a) any new activity and
- (b) any change in the character, intensity or scale of any established activity –

that involves any taking, using, damming or diverting of fresh water or draining of any wetland which is likely to result in any more than minor adverse change in the natural variability of flows or level of any fresh water, compared to that which immediately preceded the commencement of the new activity or the change in the established activity (or in the case of a change in an intermittent or seasonal activity, compared to that on the last occasion on which the activity was carried out).

This policy does not apply to any application for consent first lodged before the National Policy Statement for Freshwater Management takes effect on 1 July 2011.

Explanation: *This policy has been inserted into the Water and Soil Plan to give effect to the National Policy Statement for Freshwater Management 2011. This policy is transitional in nature and is intended to maintain the life-supporting capacity of freshwater until provisions are established in the Water and Soil Plan by way of a plan change to give effect to Policy B1 (allocation limits), Policy B2 (allocation), and Policy B6 (over-allocation) of the National Policy Statement for Freshwater Management 2011.*

The policy specifies the matters the regional council must consider when assessing and determining an application for a resource consent involving the take, use, damming or diversion of freshwater or the drainage of wetlands that is likely to have more than minor adverse effects on natural flows and levels of freshwater. This policy applies to all such activities which require consent under the Water and Soil Plan. The policy does not affect activity status but does provide a basis for applying consent conditions.

The policy does not apply to new or replacement consents for an existing activity where there is no change in the character, intensity or scale. Nor does it apply to permitted activities or where the activity involves only minor adverse effects on freshwater flows or levels.

THIS PAGE HAS INTENTIONALLY BEEN LEFT BLANK

10. GROUNDWATER MANAGEMENT

10.1 INTRODUCTION

Groundwater is defined in this Plan as being the water which occurs beneath the groundwater table in soils and geological formations which are fully saturated. Groundwater can be fresh water or geothermal water.

There are three main types of material in Northland in which fresh water is stored as groundwater. These are sand and gravel formations, volcanic cones and lava flows, and sedimentary rocks such as greywacke and limestone. All are relatively small aquifers. The sand/gravel aquifers and the volcanic aquifers are the main source of groundwater supply in Northland, being used for a wide range of purposes including domestic and farm requirements, horticultural irrigation, industrial needs, and numerous public water supplies. The greywacke aquifers can generally only provide adequate water for farm and domestic needs. There are many small sand and gravel aquifers along the coast which, in conjunction with rainwater collection from roofs, are the predominant water supply source for many coastal settlements.

Freshwater aquifers are recharged by rainfall and because rainfall varies over time, groundwater levels – and therefore the amount available for use – also vary across seasons and from year to year.

Geothermal water is defined in the Act as:

Water heated within the earth by natural phenomena to a temperature of 30 degrees Celsius or more; and includes all steam, water and water vapour, and every mixture of all or any of them that has been heated by natural phenomena.

Northland has one geothermal field centred on Ngawha Springs to the east of Kaikohe. The extent of the field is shown in Schedule C. Current uses of this resource are limited to the associated surface resources such as hot water springs for bathing purposes. The underground resource has the potential for commercial energy production and resource consents for a pilot power station have been granted. At the time of writing the Proposed Plan, these consents had yet to be exercised. At the release of the revised Proposed Plan, these consents were being exercised and trial energy generation is underway.

10.2 CONTROLS UNDER THE RESOURCE MANAGEMENT ACT 1991

The controls for groundwater use are the same as for surface water use. These are outlined in Section 9.02.

10.3 ISSUES

1. Groundwater “mining” can occur when groundwater is taken at a greater rate than it is recharged, with the consequent lowering of groundwater levels, and in the long-term, loss of the aquifer as a viable source of water.
2. The taking of water from one bore can lower the water level in neighbouring bores, resulting in a conflict between resource users.

3. The reduction of water levels and flows in springs, streams, lakes and wetlands as a result of taking fresh water from an aquifer, and the potential adverse effects on another user's water supply, the habitat of aquatic flora and fauna, cultural and spiritual values and any other values which may be associated with the resource.
4. The potential for ground settlement to occur when taking groundwater from soft clays or peats or other settlement prone materials, with consequent flooding or drainage problems.
5. The potential reduction in aquifer recharge as a result of changing land uses, and the subsequent effect on groundwater levels and associated spring flows and seepage areas.
6. The potential demand for groundwater takes from basalt aquifers as a result of intensive horticultural development of the fertile volcanic soils which overlie them, and the conflict with existing authorised users of associated springs and streams. For example, the volcanic soils south of Kaikohe which are suitable for intensive horticulture, the groundwater resource represents the only significant on-site source of irrigation water. Any significant groundwater takes, however, particularly around the edge of this aquifer system, are likely to reduce spring flows.
7. The potential contamination of groundwater from:
 - (a) Discharges of contaminants onto or into land;
 - (b) Contaminated sites;
 - (c) Poor bore construction allowing movement of poor quality groundwater between aquifers;
 - (d) Inappropriate bore location on flood plains, near sewage disposal sites or chemical storage sites;
 - (e) Excessive pumping of coastal aquifers allowing the freshwater/saltwater interface to move inland.

Note: The land use component of (a) is addressed in the discharges section.

8. The potential conflict between the use and development of the groundwater resource (fresh water and geothermal water) and traditional and spiritual values of the resource as held by the tangata whenua. The "mauri o te wai" is degraded if the resource is used inappropriately.
9. The lack of understanding by the community of how groundwater is stored in the soil and rock formations and how it changes in response to climatic conditions and groundwater takes.
10. The complexity of the hydrological cycle of groundwater aquifers and the practical difficulties in monitoring and investigating the resource. Investigations have been undertaken on groundwater aquifers which are a significant water supply source in Northland, but more investigations are required to better understand the resource.

11. The long-term cooling of the water in geothermal aquifers if the water is extracted at such a rate that the time for heating the recharged water is reduced. The cooling of the water may result in mineral deposits within the fractures of the rock, reducing or stopping spring flows. This, in turn, may also cause water to discharge at other locations which may not be currently affected by geothermal waters.

10.4 OBJECTIVES

1. **The sustainable use and development of Northland’s groundwater resources while avoiding, remedying or mitigating actual and potential adverse effects on groundwater quantity and quality.**
 2. **The sustainable management of groundwater resources in conjunction with the sustainable management of surface water resources.**
 3. **The management of groundwater resources so that the potential adverse effects of land subsidence are avoided.**
- Explanation:** The objectives seek to allow the use and development of Northland’s groundwater resources while ensuring that effects on other groundwater users, surface water users and values, and on land, are avoided, remedied or mitigated.*

10.5 POLICIES (NB ADDITIONAL TRANSITIONAL POLICY ON PAGE 112)

Sustainable Use and Development

1. To ensure the sustainable use of groundwater resources, by avoiding groundwater takes that exceed recharge which result in any of the following:
 - (a) Saltwater intrusion or reduced groundwater quality;
 - (b) A lowering of the groundwater table below existing efficient bore takes;
 - (c) A lowering of the temperature of geothermal waters in geothermal aquifers and springs;
 - (d) Adverse effects on surface water resources in terms of Policy 10.05.07.

***Explanation:** This policy requires that groundwater allocation and use, including that of geothermal water, is managed in a way that does not result in the loss of the resource or limit its use.*

This policy also promotes “efficient bore takes”. An example of an efficient bore take is when a bore fully penetrates the water bearing layer and takes water from the base of the aquifer. The water level in a bore, which is only partially penetrating an aquifer or is drawing water from the top of the aquifer, may be drawn below the bottom of that bore as a result of water being taken (at a sustainable rate) from another deeper bore. The user of the shallow

bore has not lost his or her use of the groundwater resource. Rather, the method of extraction is no longer effective.

It would be wasteful management of the groundwater resource, should shallow water supply bores restrict the use of an available resource.

Similarly, when a take reduces the pressure of an aquifer it may cause a flowing artesian bore to stop flowing. In this case, the use of the resource is not limited, nor is the user denied the resource. Another method is simply required to make the water available, that is, the installation of a pump.

This policy promotes efficient management of the available groundwater resource. It recognises that some groundwater reduction must occur if the resource is to be used, but it does not necessarily mean that use of the resource is lost. Any reduction should be a short-term effect, which is remedied through recharge of the aquifer.

The policy also promotes the avoidance of adverse effects on surface water, which may result from taking groundwater.

Refer also to Method 10.05.07.

Aquifers ‘At Risk’

2. To recognise that aquifers ‘at risk’ to adverse effects may be in locations where:
 - (a) The overlying soils are suitable for water intensive land uses; or
 - (b) There are limited surface water resource; or
 - (c) There are numerous springs; or
 - (d) One of the aquifer’s boundaries is sea water; or
 - (e) On-site effluent disposal occurs over unconfined aquifers; or
 - (f) There is geothermal activity; or
 - (g) The aquifer’s recharge area is compromised by inappropriate subdivision, use or development.

Explanation: *Use of aquifers with the particular characteristics listed is likely to result in adverse effects such as reduced groundwater quantity and quality. Where there are numerous springs fed by the aquifer, these springs could be adversely affected by lowering of the water levels in the aquifer.*

Knowledge of Aquifers

3. To improve understanding of groundwater aquifer systems.

Explanation: *Groundwater aquifer systems are extremely complex and difficult to understand as most of the system is hidden under the ground. Important information can be gained by studying the aquifer profile from bore logs, interpreting the hydraulics of the aquifer from pump tests, and monitoring groundwater levels.*

Where there is a reasonably homogeneous formation, such as sand, these types of investigations may be sufficient. However, given the extremely variable nature of Northland’s basalt aquifers, more detailed investigations are likely to be required.

Effects of Land Use on Aquifer Recharge

4. When allocating groundwater resources, to take into account any reduction in recharge that may occur in time, as a result of land uses over groundwater recharge areas.

Explanation: This policy recognises that changes in land use can affect the recharge of an aquifer and that the effect can change with time. For example, the development of a paved urban environment over part of an aquifer recharge area which diverts and discharges the stormwater to a surface water body, prevents any recharge to that area of the aquifer. The development of plantation forests over an aquifer recharge area may not have a significant effect on recharge in the first few years but when the canopy is closed, a significant proportion of the rainfall is intercepted and this potentially also affects recharge rates. Further Northland research needs to be carried out on this aspect.

When determining the safe yield of an aquifer based on recharge rates, changes to current land uses must be taken into account.

5. Encourage the return of collected or diverted stormwater to aquifer recharge in aquifers ‘at risk’.

Explanation: At risk’ aquifers are susceptible to adverse effects from groundwater water use. The return of water to these aquifers will be beneficial to maintaining sustainable water levels in these aquifers.

Small Groundwater Takes

6. To avoid cumulative adverse effects arising from small takes, that limit the use or quality of groundwater aquifers.

Explanation: Taking water from a bore lowers the groundwater level around the bore. In most aquifers, the amount of drawdown reduces with distance until there is no drawdown. The size of this cone of drawdown is dependent on the rate of taking, and how fast the water can move through the aquifer. Pump tests in a number of different aquifers indicate that taking small volumes of water will have a negligible effect on other users provided there is adequate separation.

Effect on Surface Water Resources

7. To ensure the springflows to associated surface water bodies, and water levels in lakes and wetlands, which may be affected by groundwater takes, are sufficient to:
 - (a) Maintain the life supporting capacity of the surface water resource;
 - (b) Protect the natural character of the surface water body and the habitats of aquatic flora and fauna;

- (c) Maintain any associated or dependent values, such as amenity or recreational values; and
- (d) Protect the water supply of any existing authorised user of the surface water resource.

Explanation: *This policy recognises the hydraulic link between groundwater resources and surface water resources and the effects that groundwater takes can have on surface water resources. The policy effectively gives priority to the surface water flow and water level requirements of authorised users, including the maintenance of aquatic habitats and amenity and recreational values.*

Refer also to Policy 10.05.01

Cultural Values

- 8. When allocating groundwater, to recognise, and as far as practical, provide for the cultural and spiritual values held by the tangata whenua for the groundwater resources and associated surface water resources.

Explanation: *This policy requires consideration of any cultural or spiritual values held by the tangata whenua when assessing applications and allocating groundwater resources. This is expressed in ss.6(e) of the Act.*

Refer also Policies in Section 6.

Ground Subsidence

- 9. To avoid, remedy or mitigate any ground subsidence as a result of groundwater takes, use or diversion, where this is likely to cause adverse flooding, drainage problems, or building damage.

Explanation: *Materials such as soft clays and peats can be prone to settlement with excessive or long-term groundwater take or diversion. The main effects of ground settlement are likely to be flooding and drainage problems or building damage. For example, the Ruawai and Awanui Flats may be prone to ground subsidence if significant long-term groundwater takes were to occur.*

Bore Construction

- 10. To ensure bore construction, maintenance, alteration and closure is undertaken in a manner which prevents:
 - (a) The contamination of groundwater in one aquifer from another aquifer, or from contaminated or potentially contaminated sites;
 - (b) The loss of pressure in confined aquifers;
 - (c) Water wastage in flowing artesian conditions;
 - (d) Uncontrolled release of geothermal pressure and fluids;
 - (e) As far as practicable, other adverse effects on groundwater quality and quantity.

Explanation: *This policy seeks to avoid groundwater contamination from other aquifers, direct contamination from contaminants entering the bore itself, and from contaminants leaking around the outside of the bore casing.*

This policy is also directed at ensuring bores which tap confined aquifers are adequately sealed so that there is minimum loss of pressure, or wastage of water where the bore is under flowing artesian conditions.

10.6 METHODS OF IMPLEMENTATION

Except in situations where a consent holder is required by conditions of a consent to monitor the effects of an activity, or where the Council has entered into an arrangement for another party to carry out site specific monitoring, the monitoring and investigative functions detailed in this section will be undertaken by or under the direction of the Council.

For Policy 1

1. To review groundwater recharge estimates on a 5 yearly basis having regard to new information collected including groundwater level trends, rainfall records, actual water use and changing land use.
2. Continue to monitor the groundwater levels, spring flows (where relevant) and associated rainfall data for the following aquifer systems:
 - (a) Aupouri Peninsula sand and shell bed aquifers;
 - (b) Taipa sand aquifer;
 - (c) Kaikohe basalt aquifers;
 - (d) Russell gravel and weathered greywacke aquifers;
 - (e) Whangarei basalt aquifers – Maunu-Maungatapere-Whatitiri, Glenberrie, Three Mile Bush (Kamo), Matarau;
 - (f) Maungakaramea basalt aquifer;
 - (g) Tara basalt aquifer;
 - (h) Mangawhai sand aquifer;
 - (i) Mangonui/Coopers Beach/Cable Bay fractured rock aquifer;
 - (j) Ruawai silt sand aquifer.
3. Under Section 14 of the Act a person is not prohibited from taking or using fresh water for an individual's reasonable domestic needs or for the reasonable needs of an individual's animals for drinking water provided that the taking or use does not, or is not likely to have an adverse effect on the environment. Include an advice note in Section 25 to this effect.
4. Include rules which control the taking of groundwater to ensure the sustainable management of the resource:

Cross-references: 25.01.01, 25.03.01

5. Include a rule which requires the measurement of the volume of groundwater taken where takes are likely to adversely affect surface water resources, where the average annual recharge of the aquifer is more than 50% allocated, or where the volume to be taken exceeds 200 cubic metres per day.

Cross-references: 25.03.01

6. Include a rule which requires any disused bore tapping an artesian aquifer to be capped and sealed to contain pressure or artesian flows.

Cross-references: 26.01.01

7. To monitor the salinity of groundwater in the shallow gravel aquifer at Russell and the shallow sand aquifer at Taipa on a regular basis and to monitor the quality of other, at risk coastal aquifers, (listed in Schedule B) as frequently as required to identify any trends.
8. Identify other coastal aquifers where the demand for groundwater supply is increasing by assessing the number of bores being constructed and to provide information to the district councils regarding the potential risk of saltwater intrusion and faecal contamination.

For Policy 2

9. Identify those aquifers which are considered to be 'at risk' to adverse effects from groundwater use and development as those listed in Schedules A, B, C and G and shown on the maps.
10. Periodically review and revise the extent and location of 'at risk' aquifers as new information becomes available.
11. Include rules which control the take of groundwater from aquifers at risk.

For Policy 3

12. Provide information on Northland's groundwater resources to the public by way of media releases, pamphlets and field day displays.
13. Where aquifers are under pressure from development, carry out investigations to better understand the resource. Proposals for relevant investigations will be publicised through the Annual Plan process.
14. Establish a GIS integrated database on which to keep records of the bore logs.
15. Collect information on the location of recharge areas, the volume of recharge, the volume of discharge from the system, and the direction of groundwater movement.
16. Carry out investigations to better understand the role of groundwater in the hydrology of dune lakes in order to better understand the potential effects of bore takes on dune lakes.

For Policies 4 and 5

17. Liaise with district councils in the development of land use and subdivision provisions over aquifer recharge zones and make submissions on District Plans where necessary.
18. Continue to monitor the effects of land use changes on the groundwater resource in the Aupouri Peninsula.

For Policy 6

19. Include rules which permit the taking of minor volumes of groundwater subject to adequate separation distances from other bores or surface water bodies.

Cross-references: 26.01.01, 25.01.03

20. Where monitoring shows the resource is declining in quantity and quality, the Council will undertake a management plan for the resource.

For Policy 7

21. Include rules which control the taking of groundwater where that activity is likely to adversely affect the springflows to an associated surface water body, or water levels in any lake or wetland.

Cross-reference: 25.03.01

22. Require resource consent applicants to provide an assessment of the environmental effects of taking groundwater on springflows and water levels and the effects on the surface water bodies life-supporting capacity, natural character, intrinsic values and any associated or dependent values.

Cross-references: 35.02.01, 35.02.06

For Policy 8

23. Encourage applicants for water permits to include information regarding the effects of the groundwater take on cultural values. Where necessary, the Council will commission report from the appropriate tangata whenua (as defined in Section 41) on the effects of the activity on their cultural values. The commissioning of such reports shall be subject to prior discussion with the applicant and shall be deemed to be a report coming within the scope of Section 92 of the Act.

Refer also Methods 6.05.01, 6.05.02 and 6.05.04.

For Policy 9

24. Include rules which control the taking, use and diversion of groundwater where the activity is likely to result in significant ground settlement.

For Policy 10

25. Include rules which permit the construction of temporary bores, except where these are for the purpose of groundwater exploration, and rules which permit the maintenance, and closure of all bores subject to environmental conditions.

Cross-reference: 26.01.01

26. Include rules that require a resource consent for the construction of a new bore and the alteration of an existing bore.
27. Continue to supply borelog books to drillers, so that records of borelogs can be returned in compliance with the rules in this Plan, and recorded on a database.
28. Establish a GIS integrated database on which to keep records of the bore logs.

10.7 PRINCIPAL REASONS FOR ADOPTING THE OBJECTIVES, POLICIES AND METHODS RELATING TO TAKING, USING, DAMMING AND DIVERTING GROUNDWATER

The principal reasons for adopting the objectives are set out in the introduction and issues sections. The principal reasons for adopting each policy are incorporated in the explanation. The principal reasons for the methods of implementation are as follows:

10.7.1 Rules and Environmental Standards

There is a presumption in the Act that taking water for purposes other than a person's reasonable domestic needs or the reasonable drinking needs of an individual's animals is prohibited unless allowed by a rule or a resource consent. In this respect the rules relating to the taking of groundwater are generally permissive. Without the rules in this Plan, a resource consent would be required.

The rules, therefore, permit "small" quantities of groundwater to be taken in circumstances that will result in negligible effect or will have only a temporary adverse effect. Cumulative effects on other users are taken into account by means of separation distances. Any adverse cumulative effect on the groundwater resource itself is limited by the volume restriction and that the permitted activity rules excludes specific types of aquifers which are sensitive to groundwater takes. There is a low likelihood of an adverse cumulative effect due to a large number of small takes from the permitted aquifers.

Regulation has also been used to control the standard of construction of groundwater bores. While most bore construction is permitted subject to conditions, the controlled and discretionary activity rules target specific aquifers which are at risk from saltwater intrusion, groundwater pollution, or increasing demand.

The following methods relate to rules and environmental standards:

10.06.03	10.06.04	10.06.05	10.06.08	10.06.10
10.06.18	10.06.20	10.06.21	10.06.22	10.06.23
10.06.24	10.06.25			

10.7.2 Education, Provision of Information and Advice

Groundwater is, to a large extent, poorly understood by the public. Many still refer to groundwater as being underground streams. There is also a lack of understanding as to how groundwater behaves. Education will minimise the concerns that many people have with respect to groundwater takes and their potential adverse effects.

Results of groundwater monitoring and information on the number of bores being drilled in particular areas, should also be passed on to relevant District Councils for water supply and sewage disposal strategies.

The following methods relate to education, provision of information and advice:

10.06.07 10.06.09 10.06.11 10.06.26

10.7.3 Investigation and Monitoring

The methods are based on the assumption that the Council's existing groundwater monitoring will continue, including groundwater levels and groundwater quality. Monitoring the state of the environment and the effectiveness of regional plans is a specific function of the Council but it is considered to be a significant method of achieving the objectives and policies in its own right.

Increasing the Council's knowledge of Northland's groundwater resources relies also on the geological and pump test information provided by drillers. This information is also important to indicate the intensity of water use in a particular area of an aquifer.

Groundwater management of aquifers with a high demand requires detailed knowledge of how the aquifer system works. While this information is available for some aquifers, such as Aupouri Peninsula, further investigations are required in others, such as the Kaikohe basalts, to gain a better understanding of the hydrologic cycle of the aquifer.

The following methods relate to investigations and monitoring:

10.06.01 10.06.02 10.06.06 10.06.09 10.06.12
 10.06.13 10.06.14 10.06.15 10.06.17 10.06.19
 10.06.27

10.7.4 Advocacy

Land uses can affect the recharge of aquifers. The Council will liaise with the District Councils to promote the protection of aquifer recharge zones.

The following method relates to advocacy:

10.06.16

10.8 TRANSITIONAL POLICY

1. When considering any application the consent authority must have regard to the following matters:
 - (a) the extent to which the change would adversely affect safeguarding the life-supporting capacity of fresh water and of any associated ecosystem and
 - (b) the extent to which it is feasible and dependable that any adverse effect on the life-supporting capacity of fresh water and of any associated ecosystem resulting from the change would be avoided.

This policy applies to:

- (a) any new activity and
- (b) any change in the character, intensity or scale of any established activity –

that involves any taking, using, damming or diverting of fresh water or draining of any wetland which is likely to result in any more than minor adverse change in the natural variability of flows or level of any fresh water, compared to that which immediately preceded the commencement of the new activity or the change in the established activity (or in the case of a change in an intermittent or seasonal activity, compared to that on the last occasion on which the activity was carried out).

This policy does not apply to any application for consent first lodged before the National Policy Statement for Freshwater Management takes effect on 1 July 2011.

Explanation: *This policy has been inserted into the Water and Soil Plan to give effect to the National Policy Statement for Freshwater Management 2011. This policy is transitional in nature and is intended to maintain the life-supporting capacity of freshwater until provisions are established in the Water and Soil Plan by way of a plan change to give effect to Policy B1 (allocation limits), Policy B2 (allocation), and Policy B6 (over-allocation) of the National Policy Statement for Freshwater Management 2011.*

The policy specifies the matters the regional council must consider when assessing and determining an application for a resource consent involving the take, use, damming or diversion of freshwater or the drainage of wetlands that is likely to have more than minor adverse effects on natural flows and levels of freshwater. This policy applies to all such activities which require consent under the Water and Soil Plan. The policy does not affect activity status but does provide a basis for applying consent conditions.

The policy does not apply to new or replacement consents for an existing activity where there is no change in the character, intensity or scale. Nor does it apply to permitted activities or where the activity involves only minor adverse effects on freshwater flows or levels.

11. USE OF RIVER AND LAKE BEDS AND DEVELOPMENT ON FLOODPLAINS

11.1 INTRODUCTION

Northland's natural land drainage pattern comprises a dense network of small to medium sized streams and rivers, with relatively steep grades in the headwaters to very low grades in the floodplains. Many of the rivers are relatively short, with small catchment areas. The largest river is the Northern Wairoa River, which drains one third of the land area in Northland.

Changes to the river flow dynamics, for example, through the placement of a structure on the bed, removal of bed material, or channel realignment, will result in a change to some aspect of the river's hydraulic processes. Changes may cause the flow to be deflected resulting in bank erosion, or may increase the flow velocity, causing the bed to degrade in one place with a corresponding build up of material in another place where the material is deposited.

Northland also has a number of dune lakes, and some inland lakes which were formed through the damming of valleys by lava flows. The steady state of these systems are more influenced by rainfall, evaporation and discharges to groundwater or rivers rather than by any activities associated with the use of the lake beds.

Rivers and lakes often have associated wetlands. The natural balance of the water in wetlands is very sensitive to activities affecting the bed of the wetland, river, or lake, particularly where it changes the water level. Most of Northland's natural wetlands have been drained and now form part of artificial drainage systems. This drainage has occurred at a small scale (individual farm drainage) and at a large scale such as that at Awanui, Ruawai and Hikurangi.

Development of the land has involved, and continues to involve, the use of river and lake beds. For example:

- Construction of culverts and bridges for public and private access;
- Pump intake structures, weirs and dams for water supplies;
- Drainage of wetlands and peatlands for land development where, in some cases, drainage is an on-going activity;
- Stream realignment, floodgates and stopbanks for flood protection;
- Access over, under, or on the river bed for network utilities such as power, gas and telecommunications; and
- Scour protection

Some rivers are also used as a source of gravel.

Natural drainage systems, which support continuous flows, are important to the life cycle of many fish species which require an unobstructed passage between the sea and the headwaters of the catchment.

The legal basis for controlling activities affecting the beds of lakes and rivers is primarily the *Resource Management Act* 1991. However, drainage and flood control powers are also provided to local authorities under the *Land Drainage Act* 1908, *Soil*

Conservation and Rivers Control Act 1941, and the *Local Government Act 1974*, all of which are subject to the *Resource Management Act 1991*. It is the landowner or occupier's responsibility to maintain watercourses on their property to provide a free flow of water. The Regional Council can, under the *Land Drainage Act* and the *Soil Conservation and Rivers Control Act*, require any landowner to do so.

There are a number of gazetted drainage districts within the region which are managed in accordance with these Acts. The Far North District Council administers five drainage districts, and the Whangarei District Council administers the Hikurangi Swamp Drainage District and the Hikurangi Swamp Major Scheme. The Kaipara District Council administers some 39 Drainage Districts, the major ones including Raupo, Kaihu Valley and Kaihu River Control/Drainage District, Awakino Land Drainage District, and the Horehore Drainage District.

11.2 CONTROLS UNDER THE RESOURCE MANAGEMENT ACT 1991

Section 13 of the Act restricts certain uses of the beds of lakes and rivers as follows:

- (1) *No person may, in relation to the bed of any lake or river, -*
- (a) *Use, erect, reconstruct, place, alter, extend, remove, or demolish any structure or part of any structure in, on, under, or over the bed; or*
 - (b) *Excavate, drill, tunnel, or otherwise disturb the bed; or*
 - (c) *Introduce or plant any plant or any part of any plant (whether exotic or indigenous) in, on, or under the bed; or*
 - (d) *Deposit any substance in, on, or under the bed; or*
 - (e) *Reclaim or drain the bed –*

unless expressly allowed by a rule in a regional plan and in any relevant proposed regional plan or a resource consent.

- (2) *No person may –*
- (a) *Enter or pass across the bed of any river or lake; or*
 - (b) *Disturb, remove, damage, or destroy any plant or part of any plant (whether exotic or indigenous) or the habitats of any such plants or of animals in, on, or under the bed of any lake or river –*
- in a manner that contravenes a rule in a regional plan or proposed regional plan unless that activity is –*
- (c) *Expressly allowed by a resource consent granted by the regional council responsible for the plan; or*
 - (d) *Allowed by Section 20 (certain existing lawful uses allowed).*

Section 13(1) means that all activities that affect the beds of lakes and rivers are prohibited unless they are either:

- (a) Permitted by a rule in a regional plan, or
- (b) Allowed, subject to a resource consent.

Section 13(2) means that a person's access to lake and river beds, including any access for stock under a person's control, and any activities which generally disturb plants, or plant and animal habitats, are permitted unless a rule in a Regional Plan states that:

- (a) A resource consent is required, or
- (a) The activity is still permitted but is now subject to certain conditions.

The term 'bed' is defined in the Act and is contained in Section 41.

The restrictions in s.13 do not apply to any artificial watercourses, because they have been specifically excluded from the definition of "river". The artificial watercourses most commonly encountered in Northland are those for the drainage of land and those constructed for carrying floodwaters.

The definition of river includes an intermittently flowing body of fresh water.

In some instances, the definition of 'river' and 'bed' may also include wetlands.

Section 14 of the Act contains restrictions relating to water including the taking, use, damming or diverting of water. Some of these activities may occur in association with s.13.01 activities (use of a river or lake bed), such as the diversion of water around structures. Section 9 activities (use of land) and s.15 activities (discharges of water and contaminants) must also be considered when assessing the resource consent requirements for activities associated with the bed of lakes or rivers.

11.3 ISSUES

1. The potential for adverse effects on aquatic ecosystems and water quality arising from the need to manage watercourses so as to maintain free flow of water.
2. The channelisation and stopbanking of streams and rivers for flood control and/or land drainage and the possibility of adverse effects downstream as a result, including flooding, channel erosion, siltation and degradation of water quality.
3. The extent, duration and frequency of flooding in watercourses and floodplains, and hampered drainage of low or flat land which may be made worse by inappropriate use and development, or by lack of maintenance in or near watercourses.
4. The erosion of the beds or banks of rivers and lakes and siltation resulting from obstructions to flow or disturbance of the river or lake beds, from structures such as bridges, culverts, weirs, dam structures and pump intake structures.
5. The loss of wetlands and peatlands resulting from works within river and lake beds and land drainage activities.
6. The potential for wetlands to be restored naturally when drained land is no longer managed for production purposes, and the subsequent conflict when drain maintenance recommences.

7. The potential for adverse effects on aquatic ecosystems and the Riparian Management Zone, as a result of dam structures, weirs, and other structures and other activities in, on, over or under the beds of rivers and lakes.
8. The degradation and loss of riparian and aquatic habitats, and the accelerated erosion of the river and lake beds and their margins, when stock congregate in the stream. This can be especially significant during hot dry weather conditions or where the stream is the only source of drinking water provided. This can increase sediment input into the water and also increases the potential for direct contamination of the water from animal wastes.
9. Short-term contamination of water bodies from construction activities such as; concreting, earthworks or use of vehicles and machinery, on river or lake beds and banks.
10. The potential adverse effect on aquatic indigenous vegetation and habitats of indigenous aquatic animals through the introduction of exotic plants and animals into a river or lake or into the bed of a river or lake.
11. The potential for factors, such as the placement of structures, climate change, land use change and water takes to cause flow reductions within rivers and lakes and other water bodies, which (either cumulatively or individually) during resource allocation may lead to adverse effects upon the viability of the following;
 - (a) Aquatic ecosystems within rivers, lakes and indigenous wetlands,
 - (b) The ability of downstream lawful water users to meet their reasonable needs, especially during times of low flow.
12. The use, placement, alteration or replacement of structures in, on, over or under the beds of rivers and lakes leading to over-utilisation or inappropriate use of surface water resources.
13. The use, placement, alteration or replacement of structures in, on, over or under the beds of rivers and lakes that adversely affect continuation flows.
14. The reduction in freshwater biodiversity and biological productivity due to the loss of access to some parts of rivers and lakes by migratory indigenous fish and invertebrate species and trout, as a result of the use, placement, alteration or replacement of structures in, on, over or under the beds of rivers and lakes.

11.4 OBJECTIVES

1. **To ensure that the use of river and lake beds is undertaken in a manner that preserves natural character through, and has regard to maintaining amenity values, minimising erosion and safeguarding the life supporting capacity of associated ecosystems.**

Cross-reference 11.03.09 and 11.03.14

2. **Flood control of floodplains that protects individuals, communities and their properties.**

- 3. The management of land drainage activities so that adverse effects on water and soil resources are avoided, remedied or mitigated.**

Explanation: The objective recognises that activities within the beds of rivers and lakes change the dynamics of the flow paths, particularly for rivers. This can cause erosion within the channel, and flooding of land upstream and downstream. Structures may reduce the natural character of the environment, as can the removal of vegetation on the beds and/or banks of rivers. Water quality can also be reduced by bed disturbance as well as from the release by dam structures of impounded water.

- 4. The management, control of location and frequency of structures in, on, under or over the beds of rivers and lakes so as to maintain adequate minimum continuation flows in order to provide for:**

- (a) The protection of indigenous aquatic ecosystems and habitats;**
- (b) The current and potential needs of existing lawful water users;**
- (c) The need to manage potential risk upon property and people; and**
- (d) The maintenance of natural character.**

Cross-reference 11.03.07, 11.03.11 and 11.03.13

- 5. The provision of fish and invertebrate passage for indigenous fish and invertebrate species and trout, within rivers, lakes and indigenous wetlands sufficient to sustain viable fish and invertebrate populations.**

Cross-reference 11.03.14

- 6. The use of off-stream reservoirs and other off-stream water storage techniques as an alternative to the placement of dam structures on the beds of rivers and lakes.**

Cross-reference 11.03.11 and 11.03.12

Explanation: These objectives recognise and promote the environmental responsibilities and duties devolved to all resource users in Northland pursuant to Part II of the Act. At the same time the objectives recognise that the Regional Council has specific functions and duties pursuant to s.13 (through ss.30) of the Act to set in place a policy framework so that sustainable management of freshwater resources is achieved. These objectives highlight the community's aspirations for; maintaining and improving ecologically viable and healthy freshwater, while also providing for the maintenance of natural character of Northlands freshwater environments. These objectives also promote off-stream reservoir storage options as they provide greater certainty for resource users with minimal environmental effect.

11.5 POLICIES

Adverse Effects

1. To ensure that as a result of any use of a river or lake bed:
 - (a) The natural character of the river or lake and its margins is preserved, except where preservation is not consistent with sustainable management.
 - (b) There are no more than minor adverse effects of the aquatic habitats of rivers, or sections of rivers, or lakes deemed to have outstanding values identified in Policy 9.05.01 or any dune lake listed in Schedule E.
 - (c) Adverse effects on significant indigenous wetlands are avoided, and for indigenous wetlands adverse effects are remedied or mitigated.
 - (d) Existing lawful public access to and along rivers or lakes is maintained or enhanced.
 - (e) Any adverse effects on amenity or recreational values are avoided, remedied or mitigated.
 - (f) Bed and bank stability is maintained or enhanced.
 - (g) Significant ecosystem effects arising from short-term adverse water quality effects are avoided.
 - (h) Long-term water quality is maintained or enhanced.
 - (i) Access by indigenous fish and invertebrate species and trout to habitats is maintained, or, where appropriate, restored if such maintenance or access would promote the sustainable management of resources and enhance aquatic ecosystems.
 - (j) Adverse effects on peatlands and their hydrology and dependant ecosystems are not more than minor.
 - (k) Adverse effects on human life, health and safety, private and community property are avoided.
 - (l) Water temperature, dissolved oxygen and other chemical qualities of the water body are not changed to a point where there are significant adverse effects on the existing aquatic ecosystems.
 - (m) The relationship of Maori their culture and traditions with freshwater environments is recognised and provided for.

Explanation: *This policy sets out the effects based criteria that must be considered when a consent authority is assessing an application involving the use of a river or lake bed. It therefore requires that users and developers ensure that adverse effects on these values are identified, and are avoided, remedied or mitigated.*

Guidelines on fish pass design are provided in Appendix 15.

Uses in this policy include those activities listed in ss.13(1) of the Act, that is:

- (a) *Use, erect, reconstruct, place, alter, extend, remove or demolish any structure or part of any structure in, on, under or over the bed; or*

- (b) *Excavate, drill, tunnel or otherwise disturb the bed; or*
- (c) *Introduce or plant any plant or any part of any plant (whether exotic or indigenous) in, on, or under the bed; or*
- (d) *Deposit any substance in, on, or under the bed; or*
- (e) *Reclaim or drain the bed.*

Cultural Values

2. When considering applications for activities affecting the bed of a river or lake, to recognise, and as far as practicable, provide for the cultural and spiritual values held by the tangata whenua for the bed, and for the water body.

Explanation: *This policy reflects ss.6(e) of the Act and complements policies in Section 6 of this Plan (Recognition and Provision for Maori and their Culture and Traditions).*

Existing Drainage Districts and Flood Control Schemes

3. To avoid, remedy or mitigate adverse environmental effects resulting from the maintenance of existing land drainage and flood control schemes, and any new works associated with those existing schemes.

Explanation: *Land drainage and flood control schemes can occur on an individual property basis or on a catchment scale. The existing schemes which have already significantly modified the environment, should be managed so that any adverse effects on people and their properties are avoided, remedied or mitigated. Adverse environmental effects from further drainage activities or inadvertent over drainage should also be avoided.*

New Land Drainage

4. To ensure that, as a result of new land drainage activities outside the gazetted Drainage Districts and Flood Control Schemes:
 - (a) The adverse effects on aquatic and riparian habitats in rivers, or sections of rivers, deemed to have outstanding values identified in Policies 9.05.01 and 9.05.02, and in flow sensitive rivers, or sections of rivers, as described in Policies 9.05.03 and 9.05.04 are avoided and adverse effects on other rivers, lakes and indigenous wetlands, are avoided, remedied or mitigated.
 - (b) Bed and bank stability is maintained.
 - (c) Long-term water quality is maintained.
 - (d) Peatlands are not adversely affected.
 - (e) The adverse effects on groundwater levels are avoided, remedied or mitigated.
 - (f) The effects of ground subsidence from dewatering are mitigated.

Explanation: *Drains are often dug in developed land which has a low productivity due to high water tables. If the land is close to indigenous wetlands or peatlands, the drainage has the potential to lower the water table in those wetlands. The resulting discharge into the natural watercourse can*

also have an impact on the water quality of the receiving waters. Dewatering from settlement prone materials such as soft clays and peat soils can result in subsidence, resulting in building and property damage and flooding and drainage problems. Land drainage can also affect the ability of an aquifer to recharge which in turn affects the ability to take and use water.

Flooding and Erosion Mitigation

5. To promote structures and works that are effective in controlling floodwaters and in mitigating the effects of flooding and minimising erosion whilst avoiding, remedying or mitigating adverse environmental effects.

Explanation: *Ad hoc flood or erosion protection structures are structures which have been developed on an individual property basis to protect individual sections from flooding or erosion. While such structures can be desirable, providing they do not have adverse off-site effects, they can at times generate problems which negate the intended benefits.*

Alternatives to flood or erosion mitigation measures can include “do nothing”, or relocation of developments under threat, if that is practical.

A catchment floodplain study which has been carried out on the Northern Wairoa River contains information which can be used to assess the impacts of any proposed flood mitigation structure in this catchment.

The Council will have regard to this policy when considering applications for land use consents in river beds and applications for land use consents for the construction of stopbanks.

Maintenance of the Free Flow of Water

6. To ensure that when undertaking works in the beds of rivers and on floodplains that are required to maintain a free flow of water, adverse environmental effects are avoided, remedied or mitigated.

Explanation: *While landowners are required under the Land Drainage Act 1908 to maintain watercourses on their property so that the water can flow through unimpeded from upstream properties, their duties under the Resource Management Act 1991 are not abrogated. Any adverse effects must still be avoided, remedied or mitigated.*

Role of Wetlands and Floodplains

7. To recognise the role that wetlands and low-lying areas of land play in the management of floodwaters.

Explanation: *Wetlands and other low-lying areas can provide an important buffer storage for floodwaters and buffer adverse effects from flooding. Works in the beds of rivers and lakes and on floodplains can increase the risk of flooding downstream, with potential adverse effects on property and human life.*

Plantings

8. To allow the introduction or planting of plants in, on or under the bed of any river or lake, and the on-going maintenance of such plantings where such plantings will:
 - (a) Enhance or maintain water quality through the interception of contaminants from adjoining land; or
 - (b) Avoid, remedy, or mitigate flooding or erosion; and
 - (c) Avoid, remedy or mitigate adverse effects on the aquatic ecosystem.

Explanation: *This policy is intended to ensure that any introduction or planting of any plant in a river or lake bed for flood mitigation, erosion protection, habitat restoration or enhancement, or for mitigating non-point source discharges of contaminants, will not result in the displacement of desirable species which are already present, nor will it adversely affect the ability of the river to carry floodwaters.*

“Desirable species” excludes any pest plants listed in a regional pest management strategy.

Land Uses on Floodplains

9. To encourage land uses on floodplains that do not result in adverse environmental effects or increased risks to people, properties or communities arising from the passage of floodwaters across floodplains.

Explanation: *Floodplains are created as a result of floodwaters overtopping the banks of the river. Some land uses, such as plantation forests, have the potential to trap flood debris, eventually creating a barrier to the floodwaters. The diverted water may affect some other structure or property which is not usually affected by floodwaters.*

10. To encourage the restoration and enhancement of riparian vegetation and habitats.

Explanation: *Developments on floodplains and the use of beds of lakes and rivers can affect riparian vegetation and habitats. Where opportunities arise to restore or enhance these areas, this should be undertaken to offset the effects of the use or development. Riparian vegetation can also be an important mitigation measure against flooding hazards.*

11. To manage indigenous wetlands in accordance with the objectives, policies and methods of the Regional Policy Statement.

Explanation: *The Regional Policy Statement contains specific objectives, policies and methods for the management of indigenous vegetation and habitat including wetlands. This policy recognises the importance of these objectives, policies and methods in providing protection for indigenous wetlands in Northland. The criteria provided within Appendix 13B of this Plan which are used to assess “significant indigenous wetlands” are derived directly from criteria provided within the Regional Policy Statement.*

12. To manage areas subject to land drainage and flood control schemes through long duration resource consents that are supported by management plans prepared in accordance with Appendix 17.

Explanation: *The Council will grant consent for the taking, diversion and discharge of drainage water within those areas specified in Schedule D, where an application is supported by a comprehensive drainage district management plan. These resource consents will provide for all diversion and discharge of drainage water within the area covered by the drainage district management plan that is existing or anticipated in the long-term.*

Dam Structures (Including Weirs) in Rivers and Lakes

13. When considering consents for constructing new dam structures on the bed of a river or lake to require:
- (a) In permanently flowing rivers the maintenance of design minimum flows sufficient to meet the needs of existing aquatic ecosystems;
 - (b) That the migration of indigenous fish and invertebrate species, and trout is provided for in accordance with Policies 11.05.15 and 11.05.16;
 - (c) Dissolved oxygen, water temperature and other chemical thresholds that are critical to indigenous aquatic life and healthy ecosystem functioning are maintained;
 - (d) Current and potential future land uses are considered;
 - (e) The proximity of dwellings, public land and areas where the public reside or congregate are taken into consideration with regards to the potential risks and hazards;
 - (f) Adverse effects on significant indigenous vegetation and significant habitats of indigenous fauna are avoided, remedied or mitigated;
 - (g) Potential adverse effects on existing lawful water users are avoided, remedied or mitigated.

Cross-reference 11.04.01 and 11.04.04

14. To control the location, size, scale and frequency of dam structures within rivers and lakes to ensure that adequate continuation flows are maintained within the catchment.

Cross-reference 11.04.04 and 11.04.06

15. Depending on actual or potential upstream existence of habitat for indigenous fish or invertebrate species or trout, the construction and maintenance of fish and invertebrate passes for new dam structures on the beds of rivers or lakes is required, except where no flow beyond the structure is required.
16. To consider the construction of fish and invertebrate passes for existing dam structures on the beds of rivers and lakes where currently no indigenous fish and invertebrate or trout passage exists and where the placement of a fish pass would enhance the fish and invertebrate ecosystem.

17. For existing dam structures on the beds of rivers and lakes to require the maintenance of existing fish and invertebrate passes in good operational order.

Cross-reference 11.04.05

Explanation (For Policies 15, 16 and 17): *The Council aims to promote the maintenance of existing fish passes and the mandatory installation of fish and invertebrate passes (when associated with any new dam structure or alteration where one could be installed) in order to maintain current (and where practical improve future) fish and invertebrate access, and/or restoration of fish and invertebrate passage in order to improve biological diversity particularly within degraded ecosystems.*

11.6 METHODS OF IMPLEMENTATION

For Policy 1

1. Include rules that permit activities associated with the beds of rivers and lakes which have little or no adverse effects, or have beneficial effects.

Cross-references: 27.01.03, 28.01.01, 28.01.02, 28.01.03, 28.01.04, 29.01.01 – 29.01.11, 30.01.01, 31.01.01

2. Include rules that control activities associated with the beds of rivers and lakes which have or are likely to have adverse effects on the environment, particularly on rivers, or sections of rivers, or lakes deemed to have outstanding values pursuant to Policies 9.05.01 and 9.05.02 and flow sensitive rivers.

Cross-references: 27.03.02, 28.03.01, 29.03.01, 31.03.01

3. Require an assessment of environmental effects of any proposed activity on those matters listed in Policy 11.05.01.

Cross-reference: 35.03.01

4. Promote the inclusion of appropriate provisions in district plans controlling subdivision, use and development of land on floodplains where:

- (a) The effect of flooding increases risk to human life, health and safety, or
- (b) The effect of flooding has significant adverse effect on private and community property, flood flows, or flood mitigation structures or works.

5. Provide information on erosion and sediment control measures, fish pass designs, appropriate design criteria for structures, and measures to protect aquatic habitat and fauna.

6. Within two years of the Regional Water and Soil Plan becoming operative prepare a report reviewing Rule 28.04.01, Information Requirements 36.02.01(e) and 36.02.01(f) and Assessment Criteria 36.02.05 in order to identify how these provisions may be amended so as to give effect to ss.6(c)

of the Act. Prepare a plan change to give effect to this review on its completion.

For Policy 2

7. Encourage applicants for land use consents to include information regarding the effects of the activities on cultural values. Where necessary, the Council will commission a report from the appropriate tangata whenua (as defined in Section 41 of this Plan) on the effects of the activity on their cultural values. The commissioning of such reports shall be subject to prior discussion with the applicant and shall be deemed to be a report coming within the scope of Section 92 of the *Resource Management Act 1991*.

Refer also Methods 6.05.01, 6.05.02 and 6.05.04.

For Policy 3

8. Include rules which ensure existing drainage districts and flood control schemes are operated in accordance with an approved management plan. (Matters that should be addressed in a drainage district management plan are given in Appendix 18).

Cross-reference: 27.01.03

For Policy 4

9. Include rules which control new land drainage activities which may adversely affect the environment, particularly those matters listed in Policy 11.05.04.

Cross-reference: 27.03.03

For Policies 5 and 6

10. Include rules which control the use, placement, alteration or removal of stopbanks and approaches to river crossings.

Cross-references: 27.01.04, 27.03.01, 29.01.03 – 5, 29.03.01

11. Include rules which permit disturbance of river beds for the maintenance of the free flow of water, subject to environmental standards.

12. Require the assessment of the effects of structures or works on land or on the bed of a river which are intended to control floodwaters or mitigate erosion, to include a consideration of alternative methods or taking no action. (This should demonstrate that the proposal is the best practicable option.)

Cross-reference: 27.01.03

13. Require an assessment of environmental effects pursuant to the Fourth Schedule of the Act to accompany an application for a land use consent. The level of information should be consistent with the scale of the activity.

Cross-reference: 35.03.01

For Policy 7

14. Include rules which make works or structures that would result in the drainage, destruction, or result in significant adverse effects on indigenous wetlands a prohibited activity.
15. To promote and encourage the restoration of wetlands where this can mitigate the potential for and effects of flooding and erosion.
16. Provide information on the importance of wetlands by preparing pamphlets, organising seminars, and having displays at field days, in liaison with other relevant organisations wherever possible.

For Policy 8

17. Include rules which permit the introduction or planting of plants which have beneficial effects on the environment.

Cross-reference: 30.01.01

For Policy 9

18. Provide information regarding the likely effects of developments on floodplains.

For Policy 10

19. Within two years of the Plan becoming operative prepare a report reviewing Section 32.01 in order to identify whether new standards are necessary to provide for the protection of significant areas of indigenous vegetation and significant habitats of indigenous fauna. If required, prepare a plan change to give effect to this review on its completion.

For Policy 11

20. The Council will, in consultation with District Councils', landowners, iwi and stakeholders, identify and prepare a comprehensive state of the environment report on significant indigenous wetlands in accordance with the objectives policies and methods set out in the Regional Policy Statement (in relation to indigenous vegetation and habitats of indigenous fauna), within 5 years of the Plan becoming operative.
21. The relevant provisions will be reviewed to assess their adequacy and appropriateness for the management of significant indigenous wetlands following the identification and the state of the environment evaluation of such areas in accordance with Method of Implementation 11.06.20 above, and following consultation with District Councils', landowners, Iwi and stakeholders.
22. Until the identification process has been undertaken, the Council will assess the significance of indigenous wetlands on a case-by-case basis using the criteria set out in Appendix 13B.

For Policy 12

23. Require drainage district management plans to be prepared by the Council, relevant District Council or by groups of landholders within Scheme area.

For Policies 13 - 17

24. Include provisions for the passage of indigenous fish and invertebrate species, and trout in the rules for new and existing dam structures.
25. The Council will monitor any new dam structure on the bed of a river or lake, which results in the need for minimum flow requirements to be monitored on a schedule of not less than every two years, except in drought conditions where monitoring may be required on a more frequent basis.
26. Investigate and promote best practice in accordance with Policy 11.05.13.
27. Make comments and submissions on land use and subdivision consent applications if located downstream or in close proximity to any existing dam structure.
28. In relation to the beds of rivers and lakes require a resource consent for:
- (a) All new dam structures (established after 18 March 2006);
 - (b) An existing dam structure if it is altered so as to hold more or less water;
 - (c) Replaced or removed dam structures; or
 - (d) The continued damming, diversion and discharge of water for all new dam structures (established after 18 March 2006) which are more than minor.

Cross-reference: 28.02.01, 28.02.02, 28.03.01

Explanation: Through requirements under s.14 of the Act, damming and diversion of water and the discharge of water to water is a discretionary activity unless authorised by a rule in a regional plan. Therefore any new damming, diversion and discharge of water to water will require consent from 18 March 2006. Any lawfully established (after 18 March 2006) damming, diversion or discharge if considered to have a more than minor effect will require continued consent.

29. To require applications for land use consents on the beds of rivers or lakes to include an assessment (as required by Section 88 and the Fourth Schedule of the Act) which demonstrates inter-alia the effects of the proposal on the matters listed in Policy 11.05.13.
31. To permit the use and repair of legally established (as at 18 March 2006) or new dam structures on the bed of a river or lake, established after 18 March 2006, once consent has expired (that original consent being for no less than a 10-year term).
32. Include consideration of principles for fish pass design in dam structures that have the ability to block or reduce stream flow.

Cross-reference: Appendix 15.

- 33. To promote and advocate through pamphlets, information days, seminars and field days, the need to create and maintain fish and invertebrate passage.
- 34. To promote and advocate through pamphlets, information days, seminars and field days the construction of water storage sites off-stream as a means of reducing the adverse effects upon indigenous aquatic ecosystems and lawfully existing downstream water users.

11.7 PRINCIPAL REASONS FOR ADOPTING THE OBJECTIVES, POLICIES, AND METHODS RELATING TO RIVERS AND LAKE BEDS

The principal reasons for adopting the objectives are set out in the introduction and issues sections. The principal reasons for adopting each policy are incorporated in the explanation. The principal reasons for the methods of implementation are as follows.

11.7.1 Rules and Environmental Standards

There are a number of restrictions in the Act relating to the use of river and lake beds, which means that many activities are prohibited unless allowed by a rule or a resource consent. The use of rules in this instance seeks to allow activities which have minor adverse effects if environmental standards are met.

The rules permit minor structures such as culverts, bridges, fords and bank protection works subject to environmental standards relating to drainage and flooding effects, riverbeds, bank stability, fish passage, protection of indigenous wetlands, high value flow sensitive rivers, water quality and natural characteristics. The rules also permit some land drainage activities, minor extractions and the planting of appropriate vegetation in the river or lake bed.

The following methods relate to rules and environmental standards:

11.06.01	11.06.02	11.06.03	11.06.06	11.06.07
11.06.08	11.06.09	11.06.10	11.06.11	11.06.12
11.06.13	11.06.14	11.06.17	11.06.19	11.06.20
11.06.21	11.06.22	11.06.23		

11.7.2 Education, Provision of Information and Advice

An educative approach, in conjunction with rules, environmental standards and the provision of information will assist in achieving integrated resource management. Alone, rules are unlikely to achieve the environmental outcomes sought.

To complement the permitted activity rules and the effects based environmental standards, the provision of guidelines to assist users to comply with the environmental standards is proposed. While these guidelines will contain recommended design criteria for structures and flood paths, complying with design criteria is not compulsory if the appropriate effects are achieved. Conversely, in some situations, compliance with the design criteria may not achieve the effects desired. This is inherent in the use of guidelines.

Relevant Regional Council records relating to past flooding and drainage problems and the likely effects of development in those areas should be passed on to applicants to assist them to achieve the objectives.

The following methods relate to education, provision of information and advice:

11.06.05 11.06.16

11.7.3 Advocacy

As for the provision of information relating to the likely effects of development, the Regional Council has a role in ensuring that subdivisions, use and development on floodplains are appropriately controlled in District Plans.

The following method relates to advocacy:

11.06.04 11.06.15

12. LAND MANAGEMENT

12.1 INTRODUCTION

Land is made up of the material of the earth's crust, the soils that overlay it, and the vegetative cover on that soil. Weathering processes, influenced by climatic and biological activity, have acted and continue to act through time to produce the characteristics and pattern of Northland's soils, landforms and drainage patterns. A description of Northland's geology and soils and associated landforms is contained in the Resource Description Section of this Plan.

Northland's drainage pattern consists of many short rivers with relatively small flows. Most of these drain into harbours which are generally shallow and are vulnerable to sedimentation. The flood flows which carry the sediments from the hill country to the sea are not large enough to completely flush the sediment through the harbour systems, and therefore sedimentation of Northland's harbours is a potential cumulative effect of naturally occurring and accelerated erosion.

The main rural land uses in Northland include dairying, drystock farming, intensive farming such as pig and poultry farms, cropping, horticulture, forestry and quarrying. All of these can contribute to sediment and other contaminants entering water bodies via surface runoff. These discharges are known as non-point source or diffuse source discharges.

Surface runoff is affected by some agricultural management systems, such as mob stocking or land cultivation, which can compact the soil's upper layer. Overgrazing increases this runoff as the land is left with little vegetative cover. Runoff from cattle races, especially when located adjacent to streams, can have adverse effects on the water quality as can animals where they have access to the stream banks and beds.

Excessive fertiliser use, inaccurate spreading and applying fertiliser just before rain can lead to an increase of nutrient levels in ground and surface waters.

Wetlands, especially those along the banks of water bodies, have an important role in trapping nitrogen and sediment, reducing peak flood flows, and in providing suitable habitats for instream fauna during periods of low river flow. Unfortunately, many farmers view wetland areas as land with potential for pasture, and so drainage of natural wetlands is still relatively common.

Land clearance and earthworks including activities such as crushing, logging, preparation of house platforms, roading, and tracking can increase the volume of sediment and nutrients entering the waterways, and increase the amount of debris in streams, especially where inappropriate land management practices are used. Roads and tracks on steep land are dependent on careful design, location, construction and maintenance in order to avoid major sediment inputs to streams through earthslips and runoff. The temperature of the water can also be increased through the removal of shading riparian vegetation.

The regional roading network is another diffuse source of sediment, nutrients, heavy metals, oil and grease which can enter Northland's water bodies. Effluent on roads from stock trucks is another source of contamination. Because of this, many stock trucks now have effluent holding tanks.

Some land use practices (such as grazing and vegetation clearance), particularly if poorly managed or on steep erosion prone land, can make the land more vulnerable to erosion. Where accelerated erosion occurs, the productivity of the eroded land is lowered and it is unlikely to return to its former productivity.

12.2 CONTROLS UNDER THE RESOURCE MANAGEMENT ACT 1991

Section 30 of the Act sets out the functions of regional councils. Subsections 1(a) and 1(b) direct the Council towards establishing and implementing policies and methods to achieve integrated management of the resources of the region and to prepare policies as to any effects of the use of land which are of regional significance, respectively. For these two functions, the Council cannot regulate by the use of rules in a regional plan. In contrast ss.30(1)(c) sets out more specific purposes for which the Council can include policies, methods and rules.

Under ss.30(1)(c) of the Act, it is a function of the Council “ *to control the use of land for the purposes of-*

- (i) *Soil conservation:*
- (ii) *The maintenance and enhancement of the quality of water in water bodies and coastal water:*
- (iii) *The maintenance of the quantity of water in water bodies and coastal water:*
- (iv) *The avoidance or mitigation of natural hazards:*
- (v) *The prevention or mitigation of any adverse effects of the storage, use, disposal or transportation of hazardous substances”.*

Under s.9 of the Act, no person may use land in a manner that contravenes a rule in a plan or proposed plan. Therefore, unless a rule in this Plan or a district plan restricts an activity on land, the activity can be undertaken without a resource consent.

Regional plans can contain land use rules only for the purposes stated in Section 30 of the Act. Although the Council can include objectives and policies for the protection of values in Part II of the Act, such as indigenous vegetation and sites of cultural significance, this Plan can only contain rules where these impact on regional council functions. They cannot contain rules solely for the protection of indigenous vegetation or sites of cultural significance. That is a function of the district councils and such rules should be contained within district plans.

12.3 EROSION AND DISCHARGE OF SEDIMENT

Erosion is a natural process which occurs extensively in Northland because of the nature of its geology and soils and climate patterns. Erosion can be accelerated through people’s land use practices. The main products of natural and accelerated erosion are sediment, and degraded soils which may never recover to their former level of production.

When sediment enters water, it can have a number of adverse effects on the stream environment. For example:

- It can act as a carrier of nutrients, particularly phosphorus;
- It can smother aquatic organisms, habitats and food sources;
- It can cause discoloration of the water, detracting from its aesthetic qualities;
- It can reduce light penetration and damage habitat value for fish and plant life;
- It can clog filters and machinery if the water is used for water supplies and lead to an unacceptable drinking quality;
- It can reduce the water carrying capacity of streams, increasing their susceptibility to flooding.

12.4 ISSUES

1. The accelerated soil loss resulting from the exposure of soil to sun, wind and rain through land use and land disturbance practices such as roading, vegetation clearance, overgrazing in dry or wet conditions, urban subdivision developments, quarrying, mining and cultivation. These practices increase the potential for sediment to be washed into streams, particularly on steep, erosion prone land.
2. The cumulative adverse effects of sedimentation on estuarine and harbour environments.
3. The degradation of surface water and groundwater quality as a result of discharges of contaminants such as sediment, nutrients and bacteria from non-point sources, particularly from pastoral land, and from direct defecation by stock into water.
4. The loss of soil quality and productivity from land management practices such as burning, overgrazing which can cause pugging, and the use of heavy machinery on wet soils, together with practices which result in accelerated erosion.
5. The potential for an increase in peak flood flows as a result of large scale vegetation clearance within a single catchment.
6. The loss of wetland functions such as nutrient and sediment trapping, indigenous habitat values, and buffer storage of water through land development practices such as drainage, stock grazing and watering.
7. The loss or degradation of waahi tapu and other sites of significance to Maori through land disturbance activities.
8. The adverse effects on aquatic habitats and the loss of natural character of rivers, lakes and wetlands and their margins as a result of the removal of riparian vegetation.
9. The loss of areas of significant indigenous vegetation and habitats of significant indigenous fauna through land management practices.
10. Land users are often unaware of the effects of their activities on the environment and the range of alternative methods/practices that may be available.

12.5 OBJECTIVES

1. The protection of the soil resources including soil quality and soil quantity, from degradation or loss as a result of unsustainable land use and land use practices.
2. The safeguarding of the life-supporting capacity of water and ecosystems from the adverse effects of unsustainable land uses and land use practices.
3. People and communities are informed about sustainable land management and the impacts of their activities on soil and water resources.
4. Avoid, remedy or mitigate the adverse effects of activities so as to achieve the protection of areas of significant indigenous vegetation, significant habitats of indigenous fauna, natural character of water bodies and their margins; and to recognise and provide for waahi tapu and other sites of significance to tangata whenua.

12.6 POLICIES

1. To promote soil conservation as an integral part of all land use and development activities by:
 - (a) Encouraging sustainable land use practices;
 - (b) Addressing on-site and off-site water and soil problems;
 - (c) Addressing actual and potential erosion problems;
 - (d) Maintaining soil quality (depth, structure, water holding capacity, organic matter and fertility) as far as practicable.

Explanation: *Soil conservation is the key land management practice that will help to keep soil on hillslopes and maintain productivity. By raising awareness by landowners of on-site and off-site effects of soil loss through education and advice on wise land use practices, the amount of soil entering water bodies will be reduced.*

2. To avoid, remedy or mitigate adverse effects of land use activities on water bodies and their margins, particularly on water quality, water flows and levels, aquatic ecosystems and riparian habitats.

Explanation: *This policy seeks to ensure that the adverse effects of land use activities on potentially affected water bodies are avoided, remedied or mitigated. Adverse effects could result from sediment discharges, increases in water temperature and loss of habitat.*

3. To avoid or reduce the discharge of sediment to all surface waters and to minimise soil losses from land use activities, particularly on erosion prone land.

Explanation: *This policy seeks to minimise soil losses from land use activities on highly erodible land and to control activities adjacent to all surface waters. Water bodies and highly erodible land are targeted as being the most at risk from adverse effects of erosion and sedimentation.*

4. When assessing applications for resource consents for land disturbance activities adjacent to water bodies, to have regard to:
 - (a) The maintenance of biological and physical processes;
 - (b) The maintenance of habitat for feeding, breeding and sheltering indigenous fauna;
 - (c) The maintenance of biodiversity;
 - (d) The maintenance of migratory pathways for fish;
 - (e) The times of day, or year which will least affect feeding, spawning or migratory patterns of fish and other aquatic species;
 - (f) The amount of shading the existing riparian vegetation provides;
 - (g) Any proposals for restoration or enhancement of riparian vegetation or aquatic ecosystems.

Explanation: *This policy provides direction for when assessing consent applications in order to avoid, remedy or mitigate any adverse effect on water bodies that may result from land disturbance activities adjacent to water bodies.*

5. To recognise the value of forests, shrublands and wetlands, in particular those containing permanent indigenous vegetation, in preventing and ameliorating erosion and flooding.

Explanation: *This policy recognises the important role of the root structure of trees and shrubs in reducing erosion on steep erosion prone land.*

Wetlands are recognised for their role in trapping sediments and storing floodwaters.

6. To avoid, remedy or mitigate adverse effects of vegetation clearance, where any resulting increase in flood flows may have an adverse effect on human life, health and safety, and private and community property.

Explanation: *This policy recognises that large scale vegetation clearance in a catchment can increase the frequency of moderate flood events which can adversely affect downstream property and landowners. In a mature forest, a large proportion of the rainfall is intercepted by the leaves of the trees and trapped in hollows between roots, thus reducing the stormwater runoff. This can have significant effects on reducing flooding downstream, particularly at lower rainfall intensities.*

7. To promote riparian management along the margins of lakes, rivers and streams, and coastal waters by:
 - (a) recognising the benefits of riparian vegetation;

- (b) protecting or enhancing existing riparian vegetation, particularly indigenous vegetation;
- (c) managing and where appropriate, protecting and enhancing existing riparian vegetation, particularly indigenous vegetation;
- (d) encouraging the rehabilitation or the creation of wetlands;
- (e) educating landusers;

such that the discharges from non-point sources into water bodies are reduced, and river systems are buffered against extremes of high and low flows.

Explanation: *Riparian management is effective in reducing the effects of non-point source discharges. The mechanisms involved are complex, and therefore education and site specific investigations are required before riparian management on a catchment basis could be implemented. It is the Council's long-term intention that all Riparian Management Zones be protected from stock. However, a number of commonsense measures, such as the maintenance of a riparian vegetation strip adjacent to water bodies, where appropriate fencing areas where stock have access to water bodies, and fencing wetland areas associated with rivers and streams, can be effective in reducing non-point source discharges from particular sites on a property.*

8. To support industry based training programmes and the development of codes of practice for Northland, in association with manuals of best management practices, which promote sustainable land management.

Explanation: *Some industries are already using codes of practice, and are reviewing them to provide more guidance to operators as to how certain effects could be avoided. Manuals of best management practices, which give more prescriptive detail, can be used alongside codes of practice. The development of guidelines or best management practices is supported through the establishment of a Working Group.*

Suitable training is also an important aspect of using codes of practice and best management practices. Where accredited training programmes are developed, the Council may recognise operators through a streamlined consent process.

9. To encourage voluntary retirement and where necessary the revegetation of land for the purposes of water and soil conservation.

Explanation: *An important land management method, that almost guarantees protection and enhancement of water quality and reduction in erosion, is to retire highly erosion prone land in vegetation that will not be removed. However, government agencies and local authorities are often not sufficiently resourced to purchase land for the purpose of retiring it permanently. Other ways need to be investigated in addition to the current options.*

10. To promote the protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna.

Explanation: *While this Plan cannot contain rules for the protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna, it is an important policy matter to provide for. Effective protection will involve the integration of provisions within this Plan and District Plans.*

11. To avoid, remedy or mitigate the adverse effects of vegetation disturbance by promoting:
 - (a) The maintenance, enhancement or revegetation of erosion prone areas,
 - (b) The conversion of erosion prone areas to forestry or soil conservation woodlots or reversion or active restoration to native bush,
 - (c) Compliance with industry recognised standards and procedures,
 - (d) The maintenance and retention of erosion control plantings.

Explanation: *All land is inherently erodible and following vegetation clearance, the potential for erosion can be enhanced. However, much accelerated erosion can be avoided, remedied, or mitigated by ensuring long-term vegetation cover on land and adhering to industry recognised standards and procedures.*

12. To have regard to the cultural and spiritual values held by the tangata whenua for the resource when considering applications for land disturbance activities.

Explanation: *This policy requires the consideration of any cultural and spiritual values held by the tangata whenua when assessing applications for land disturbance activities, including the consideration of any site or place of significance to tangata whenua. This is expressed in ss.6(e) of the Act.*

Refer also Policies in Section 6.06.

12.7 METHODS OF IMPLEMENTATION

For Policy 1

1. Encourage landowners and/or managers to prepare environmental property plans, particularly those in erosion prone areas, through education.
2. Promote and facilitate the establishment of landcare groups to achieve sustainable catchment management.
3. Provide information on soil conservation, riparian management, land rehabilitation, and revegetation techniques by preparing pamphlets, organising seminars, holding workshops, having displays at field days, including on-farm seminars for catchment based land care groups.

The Council will set priorities for such programmes each year through the Annual Plan.

4. Facilitate a land management working group who will review best land management practices.

Possible members of the working group could include representatives from central and local government, environmental groups, resource user groups and iwi.

For Policies 1, 3, 4 and 7

5. In conjunction with District Council's develop a comprehensive strategy for the management of land adjacent to the Coastal Marine Area and develop rules to give effect to the strategy within 5 years.
6. Develop and implement a strategy for monitoring sustainable land use in the region.

For Policies 2, 3, 4, 5, 6 and 7

7. Include all land with severe to extreme erosion risk in the definition of erosion prone land – that is land use capability classes VIIe1, VIIe2, VIIe3, VIIe4, VIIe5, VIIe6, VIIe7, VIIe8, VIIe9, VIIe10, VIIIe1, VIIIe2, VIIIe3 and VIIIs1 and include these areas on 1:100,000 scale maps in this Plan showing readily identifiable topographical features.
8. Include rules requiring resource consents for vegetation clearance which may result in adverse effects on water and soil resources.
9. Co-ordinate and initiate the development of sustainable land management guidelines for the Northland region, including topics such as, but not limited to, soils, erosion, grazing, land preparation, farm waste, weeds and pests.
10. Include rules requiring resource consents where there is a high risk of erosion to avoid, remedy or mitigate the adverse effects of land disturbance activities.

Cross-references: 33.02, 33.03, 34.02, 34.03

11. Identify the Riparian Management Zone using the criteria in Figure 7 and where appropriate include rules relating to activities within the Riparian Management Zone.

Refer also to Method 12.07.03

12. Follow up non-compliance with standards and conditions on permitted activities rules and on resource consents by education, advice, or abatement or enforcement notices.
13. For applications for resource consents for land disturbance activities in the Riparian Management Zone, require an assessment of effects in addition to that outlined in the Fourth Schedule of the Act on the water body (water quality, natural character, aquatic habitats and riparian vegetation) particularly if it is an outstanding value or flow sensitive section of river as described in Policies 9.05.01 to 9.05.04.

Cross-reference: 35.04

14. To investigate and monitor any long-term effects on hydrological patterns which may result from land use change.

15. Include rules restricting land use activities where they will result in the dewatering of groundwater to an extent that it results in ground subsidence, or a reduction in seasonal or annual groundwater levels.

For Policies 6, 7 and 9

16. Assess incentives and other methods that could be used to encourage voluntary retirement or protection of land and vegetation for the purposes of water quality, soil conservation, and the protection of indigenous vegetation and habitats of indigenous fauna.

Refer also Method 3 for Policy 9.05.07.

For Policy 8

17. Institute appropriate awards to landowners, organisations, companies or schools that demonstrate initiatives and works (including publications and essays) that promote the sustainable management of land in the region.

For Policy 10

18. When processing resource consent applications for land use, obtain information relating to indigenous vegetation and habitats, and provide for the protection of significant areas when making decisions.
19. Within two years of the Regional Water and Soil Plan becoming operative prepare a report reviewing Section 32.01 in order to identify whether new standards are necessary to provide for the protection of significant areas of indigenous vegetation and significant habitats of indigenous fauna. If required, prepare a plan change to give effect to this review on its completion.

For Policy 11

20. Encourage District Councils to consider soil conservation matters when controlling the effects of the use of land.

For Policy 12

21. Encourage applicants for resource consent activities that may have an adverse effect on waahi tapu and other taonga to consult with tangata whenua prior to their application being processed.

12.8 PRINCIPAL REASONS FOR ADOPTING THE OBJECTIVES, POLICIES AND METHODS RELATING TO LAND DISTURBANCE ACTIVITIES

The principal reasons for adopting the objectives are set out in Sections 12.01 and 12.02. The principal reason for adopting each policy is incorporated in the explanation. The principal reasons for the methods of implementation are as follows:

12.8.1 Rules and Environmental Standards

Northland's land and water resources have suffered from the effects of land use practices ever since land was converted from forests and wetlands to pasture.

Catchment studies have illustrated that pastoral farming degrades water quality when compared with catchments in native vegetation.

The underlying assumption in the Act is that a person can undertake any land use activity unless there are restrictions in a Regional Plan. The Council has made a decision to restrict the adverse effects of land use activities and has targeted greatest control on those areas at greatest risk; steep land with high erosion potential, and the area adjacent to water bodies which has been defined as the “Riparian Management Zone”.

The following methods relate to rules and environmental standards:

12.07.08 12.07.09 12.07.10 12.07.11 12.07.12

12.8.2 Education, Provision of Information and Advice

Education, provision of information and advice go hand in hand with rules and environmental standards. Alone, these types of methods are unlikely to achieve the objective.

The following methods relate to education, provision of information and advice:

12.07.01 12.07.02 12.07.03 12.07.04 12.07.16

12.8.3 Incentives

Landcare groups can deal with specific problems or develop a sustainable catchment plan for their area. Personal satisfaction and a co-operative community effort can be gained from these groups. Landcare groups also benefit the community through off-site effects, such as improved downstream water quality.

Other incentives and methods to encourage protection works or to protect significant areas for the benefits of the community or region need to be investigated.

Awards for sustainable land management will assist in achieving the objectives.

The following methods relate to incentives:

12.07.02 12.07.14 12.07.15

12.8.4 Investigation and Monitoring

The method recognises the need to develop understanding of the potential effect of land use change on hydrological patterns. Monitoring the state of the environment is a function of the Council. However, this specific method is considered significant in achieving the objectives and policies of this Plan.

The following methods relate to investigations and monitoring:

12.07.05 12.07.06 12.07.07 12.07.13 12.07.14

13. INTEGRATED CATCHMENT MANAGEMENT

13.1 INTRODUCTION

Integrated catchment management includes the consideration of:

- The catchment geology, soils, climate, vegetation including riparian vegetation, current and future land uses and water uses, non-point source and point source discharges and catchment drainage;
- Their effects on water quantity, water quality, habitats and ecological values;
- The amenity values of the catchment, and the community's objectives for the use, development and protection of the natural and physical resources; and
- The identification of the special resource values within a catchment which require particular recognition and protection.

The objectives and policies in this Plan seek to achieve integrated management of Northland's natural and physical resources. The objectives and policies must be considered together when addressing activities within catchments.

However, the effects of use and development of resources can be more complex in some catchments than in others. In Northland, the most common issue which has a number of interrelated effects is high water demand. High water demand can:

- Adversely affect other users;
- Adversely affect water quality directly through flow reduction; and
- Adversely affect water quality by reducing the ability of the stream to assimilate discharges.

Another common issue is the reduction in water quality through discharges and land use practices, particularly in closed systems such as lakes.

For these catchments, a regional plan to deal with specific catchment issues may be appropriate.

Unsustainable land uses can also have wide ranging effects through soil loss. Soil loss reduces the land's productive capacity, either through insidious losses of soil particles and nutrients through overland or subsurface flow, or through soil erosion processes. The soil finds its way into the waterways and is eventually deposited in estuaries and harbours. Siltation of estuaries can have a major impact on sensitive ecosystems. Soil erosion and soil productivity loss can generally be managed through better land management practices. However, given the high intensity rainfall that can occur in Northland, and the effect on Northland's ecosystems, soil erosion is considered to be a significant resource management issue which may warrant the preparation of specific regional plans.

Section 65 of the Act sets out some of the circumstances in which a regional council may think it desirable to prepare a regional plan for all or any part of the region. For example, groundwater aquifers may extend across a number of catchments, and necessitate an approach which integrates management of the resource across catchment boundaries. Given the complex nature of the many catchments in Northland, specific regional plans for some catchments and resources will achieve

more effective integrated management of the natural and physical resources. There are other mechanisms that can be used to effectively manage the effects of activities. These include setting common expiry dates for resource consents in a catchment so that the effects of all activities can be assessed at the same time.

13.2 ISSUES

1. The complex interrelated effects of water use, land use, water quantity and water quality within catchments, further complicated when the pressure on one resource increases.
2. Significant conflicts between the use and development of a catchment's natural and physical resources and their protection, and the uncertainty as to the long-term effects of the use and development.
3. Major land use changes may have both beneficial and adverse effects on the land and water resources within a catchment, in the short-term and the long-term. These effects are better addressed on a catchment basis.
4. The complexity of groundwater aquifer systems and the potential adverse effect of taking from groundwater resource on the long-term sustainability of the resource, and on associated surface water resources.
5. The high value placed on the natural resources of the catchment by the community and their desire for involvement and information about the effects of different activities on those resources.

13.3 OBJECTIVE

1. **Integrated catchment management to achieve the sustainable use of all resources and the minimisation of conflicts.**

Explanation: To give effect to the purpose and principles of the Act, the Council can establish and implement objectives, policies and methods to achieve integrated management of the natural and physical resources. While this Plan achieves this on a regional basis, more effective integrated management for specific catchment issues may be achieved by preparing Regional Plans on a catchment basis.

13.4 POLICIES

1. Regional catchment management plans will be prepared for a specific catchment, where there is:
 - (a) A significant conflict between the use, development or protection of natural and physical resources, or the avoidance or mitigation of such conflict;
 - (b) A use of land or water that has, or is likely to have, actual or potential adverse effects on soil conservation, air quality or water quality;

- (c) A significant concern of tangata whenua for their cultural well being in relation to the natural and physical resources within the catchment;
- (d) Significant potential benefits from the restoration or enhancement of any natural and physical resources which are in a deteriorated state.

Explanation: *The circumstances prioritised in this Policy are derived from a list of eight in s.65 of the Act. The preparation of regional plans for these circumstances will be given priority in Northland. Northland has a number of catchments which meet the listed criteria, and the Council has had a number of informal requests for regional plans to be prepared for particular catchments.*

2. To ensure individuals, industry and others with an interest in, or who are affected by, resource use within a catchment, are adequately informed about resource use issues and are given the opportunity to be involved in the preparation of catchment plans.

Explanation: *A lack of information may result in the community making inaccurate assumptions about the effects of a particular resource use such as taking water or discharged contaminants to water. The results of the Regional Councils and consent holder monitoring need to be conveyed to the public in a way that is easily understood*

3. To promote integrated catchment management in absence of 'catchment specific' regional plan.

Explanation: *Catchment specific regional plans cannot be prepared for all catchments. However, by ensuring a specific catchment has a specific review date, the effect on resources of all resource consents issued in that catchment can be reviewed and a management plan process initiated if necessary. Review clauses may be included as a resource consent condition to coincide with a catchment review date. On reaching the review date, the Council will evaluate the pressures on that resource. If a particular catchment is under pressure, consents can be 'called in' within the framework of the management plan.*

4. To integrate the findings of research and monitoring of land use effects on water quantity into water resource management.

Explanation: *Sustainable use and development of Northland's water resource requires prediction of effects so that appropriate management options can be implemented which avoid, remedy or mitigate adverse effects. It is essential to integrate the effects of land uses with other water resource information. For example, a change in land use may change the hydrological characteristics of a catchment, which may in turn, influence water quality. This may increase the significance of other activities such as discharges.*

5. To encourage and promote the integration of resource management between District Councils and the Regional Council.

Explanation: *Many resource management issues cross jurisdiction boundaries and thus require a consistent and joint approach to addressing them.*

13.5 METHODS OF IMPLEMENTATION

For Policy 1

1. The timing and priority of the preparation of regional catchment management plans will be decided in accordance with Policy 13.04.01 and through the Strategic and Annual Plan process. The process of preparation will be in accordance with the First Schedule of the Act. The following group may be considered first:
 - (a) Mangakahia River catchment;
 - (b) Awanui River catchment, including the Kaitaia Drainage District;
 - (c) Kaikohe Basalt Aquifer System and the Punakitere/Taheke River;
 - (d) Kaihu River Catchment.
2. Identify any other catchments which meet the criteria in Policy 13.04.01 by analysing the state of the environment reports.
3. Collect relevant data in a timely manner, to assist in the preparation of the plans outlined in Method 13.05.01 and 13.05.02.
4. The scope of a regional plan for a specific catchment, while dealing with specific catchment issues, should generally follow the terms of reference outlined in Appendix 16.
5. When preparing a regional plan for a specific catchment, the Council shall consult with interested parties.

For Policy 2

6. Liaise with community agencies and groups including territorial authorities, ratepayer associations, resource users, environmental groups and iwi, and hold public meetings to collect and disseminate information, particularly with regard to the results of monitoring within the catchment.

For Policy 3

7. Establish review dates for each catchment, and in catchments with high demand for and pressure on resources, include review dates on resource consents, while not limiting the duration of the resource consents unnecessarily.

For Policy 4

8. Carry out regular review of research and monitoring findings.
9. Advise District Councils, other agencies and water users where effects on water availability are likely to be of concern.
10. Incorporate relevant findings into five yearly reviews of Design Minimum Flows where such flows may be affected.
11. Promote land and rivercare groups.

For Policy 5

12. Comment on and lodge submissions to plans prepared by District Councils and resource consent applications.

13.6 PRINCIPAL REASONS FOR ADOPTING THE OBJECTIVE, POLICY AND METHODS RELATING TO INTEGRATED CATCHMENT MANAGEMENT

The principal reasons for adopting the objectives are set out in the Sections 13.01 and 13.02. The principal reason for adopting each policy is incorporated in the explanation. The principal reasons for the methods of implementation are as follows.

13.6.1 Preparation of Catchment Specific Regional Plans

While this Plan seeks to achieve integrated management of the natural and physical resources on a regional basis, more effective integrated management for specific catchment issues may be achieved by preparing regional plans on a catchment basis. Catchment specific regional plans would also allow for better consideration of community values.

The following methods relate to the preparation of catchment specific regional plans:

13.05.01 13.05.02 13.05.04 13.05.05

13.6.2 Monitoring and Research

Detailed land and water resource investigations will be required to collect information on which to base water policies and methods in catchment specific regional plans. In catchments for which it is unlikely that catchment specific regional plans will be prepared, a review of monitoring results on a catchment basis will provide essential information for resource management in conjunction with reviewing state of the environment monitoring.

The following methods relate to monitoring and research:

13.05.03 13.05.08 13.05.10

13.6.3 Education, Provision of Information and Advice

Integrated management requires consideration of information about all activities in a catchment and how they affect the natural and physical resources. This information needs to be collated and presented in a form that enables that kind of consideration. Often landowners observe a change in the water resource and link it to only one known activity when there could be a number of reasons for the change. Education and provision of information and advice is important to ensure that all stakeholders with an interest in, or affected by, the use of resources in a catchment understand the processes that are occurring in the catchment.

The following methods relate to education, provision of information and advice:

13.05.06 13.05.09 13.05.11

13.6.4 Common Expiry Dates

Given the large number of catchments in Northland, it is not realistic to prepare catchment specific regional plans for all of them. For those catchments which do not have specific management plans, having a common expiry date on resource consents will allow a review of all the activities at the same time thus achieving integrated management.

The following method relates to common expiry dates:

13.05.07

PART V:

RULES

This part identifies those activities which will be allowed without a resource consent, and those activities which can only be undertaken with a resource consent. It also contains the Information Requirements for Resource Consent Applications and the Assessment Criteria that will be used by the Council to make decisions.

14. RULES

14.1 INTRODUCTION

This section sets out the rules which apply to:

1. Activities involving the taking, use, damming and diverting of surface water and groundwater, including the construction of groundwater bores;
2. Activities associated with the beds of rivers and lakes, such as structures and excavation;
3. Discharges of water into water, and the discharge of contaminants into water, or onto or into land;
4. Land disturbance activities for the purposes of soil conservation and the maintenance and enhancement of water quality, water quantity, and the avoidance or mitigation of natural hazards.

Each rule specifies activities which are permitted, controlled, restricted discretionary, discretionary or prohibited.

A **permitted activity** is an activity which is allowed without a resource consent if it complies with the conditions specified in this Plan.

A **controlled activity** is an activity which:

1. Is provided for as a controlled activity by a rule in this Plan; and
2. Complies with the standards and terms specified in this Plan for such controlled activities; and
3. Is assessed according to the matters that the Council has reserved control over in this Plan; and
4. Is allowed only if a resource consent is obtained in respect of the activity.

An application for a resource consent for a controlled activity must be granted by the Council, but it may impose conditions relating to the specific matters stated in the rule. These applications will be non-notified unless the Council considers special circumstances exist to require notification.

A **restricted discretionary activity** is an activity:

1. Which is provided for, as a restricted discretionary activity, by a rule in this Plan; and
2. Which may have standards and terms specified in this Plan; and
3. Which is allowed only if a resource consent is obtained in respect of that activity; and
4. Is assessed according to the matters over which the Regional Council has reserved discretion in this Plan.

A **discretionary activity** is an activity:

1. Which is provided for, as a discretionary activity, by a rule in this Plan; and
2. Which is allowed only if a resource consent is obtained in respect of that activity; and
3. Which may have standards and terms specified in this Plan; and
4. In respect of which the consent authority may restrict the exercise of its discretion to those matters specified in this Plan for that activity.

Clause (d) provides for the limited discretionary class of consents.

A **prohibited activity** is an activity which this Plan expressly prohibits, and for which no resource consent can be applied for or granted. It is possible to seek a plan change reclassifying an activity that is prohibited.

A **non-complying activity** is an activity (not being a prohibited activity) which:

1. Contravenes a rule in this Plan; and
2. Is allowed only if a resource consent is obtained in respect of that activity.

A consent authority cannot grant a resource consent for a non-complying activity unless it is satisfied that the adverse effects on the environment will be minor, or granting the consent will not be contrary to objectives and policies of this Plan.

A resource consent to take, use, dam or divert surface or groundwater is called a 'water permit'. A resource consent to discharge water or contaminants to land or water is called a 'discharge permit'. A 'land use consent' is the term given to resource consents for structures or works associated with the beds of rivers and lakes, and land disturbances activities on land.

Sections 36 and 37 set out the Information Requirements and Assessment Criteria which support the rules and are applied to the assessment of applications. These are in addition to the more general provisions of Section 88 and the Fourth Schedule to the Act.

14.2 HOW TO USE THE RULES

14.2.1 Rules for Discharges to Land or Water

The rules for discharges are grouped according to the type and/or source of the contaminant. For each type of contaminant, rules for permitted activities are listed, followed by those which are controlled activities, restricted discretionary activities, discretionary activities, non-complying activities and finally prohibited activities. For some discharges, there may be no rule for controlled or discretionary activities. The type of contaminants and the section number is as follows:

Section 15 Sewage.

Section 16 Animal effluent.

Section 17	Other agrichemical waste – silage leachate, dead stock, offal, waste fruit and vegetable produce.
Section 18	Agrichemicals.
Section 19	Solid waste – cleanfills, landfills.
Section 20	Industrial or trade discharges.
Section 21	Stormwater (urban).
Section 22	Runoff from roads (not urban) and from land disturbance activities.
Section 23	Other – fertilisers, subsurface drainage, holding tank water, swimming and spa pool water, tracer substances, sluicing water, petroleum oil and diesel.

Under s.15 of the Act;

- (1) *No person may discharge any –*
- (a) *Contaminant or water into water; or*
 - (b) *Contaminant onto or into land in circumstances which may result in that contaminant (or any other contaminant emanating as a result of natural processes from that contaminant) entering water; or*
 - (c) *Contaminant from any industrial or trade premise into air; or*
 - (d) *Contaminant from any industrial or trade premise onto or into land –*
- Unless the discharge is expressly allowed by a rule (in a regional plan and in any relevant proposed regional plan), a resource consent or regulations.*

An explanation of a rule is given where it is considered necessary.

14.2.2 Rules for Take, Use, Damming or Diverting of Water

Rules for taking, using, damming or diverting water are grouped according to the nature of the activity, for example, rules for the take, use, damming and diverting groundwater or rules for bore construction works are grouped together. Rules are also included for the use in, on, under or over the bed of a river or lake. For each section permitted activities are listed, followed by controlled activities, restricted discretionary activities, discretionary activities, non-complying activities and finally prohibited activities. However, not all of the sections dealing with the take, use, damming or diverting of water contain all of the levels of regulation. The sections dealing with the take, use, damming or diverting of water are as follows:

Section 24	Rules for the taking, use, damming and diverting of surface water.
Section 25	Rules for the taking, use and diverting of groundwater.
Section 26	Rules for bore construction activities.
Section 27	Rules for drainage and river control activities.
Section 28	Rules for dams.
Section 29	Rules for structures (other than dams) in, on, under or over the beds of rivers or lakes.
Section 30	Rules for introduction or planting of plants in, on or under the bed of a rivers or lakes

Section 31 Rules for other uses of rivers or lake beds.

An explanation of a rule is given where it is considered necessary.

Under s.13 of the Act;

- (1) *No person may, in relation to the bed of any lake or rivers –*
- (a) *Use, erect, reconstruct, place, alter, extend, remove, or demolish any structure or part of a structure in, on, under, or over the bed; or*
 - (b) *Excavate, drill, tunnel or otherwise disturb the bed; or*
 - (c) *Introduce or plant any plant or part of any plant (whether exotic or indigenous) in, on, or under the bed; or*
 - (d) *Deposit any substance in, on, or under the bed; or*
 - (e) *Reclaim or drain the bed-*
- unless expressly allowed by a rule in a regional plan and in any relevant proposed regional plan.*

Section 14 of the Act provides for the taking, use, damming or diverting of water. The subsections relevant to this Plan read:

- (1) *No person may take, use, dam or divert any-*
- (a) *Water (other than open coastal water); or*
 - (b) *Heat or energy from water (other than open coastal water); or*
 - (c) *Heat or energy from the material surrounding any geothermal water-*
- unless the taking, use, damming, or diversion is allowed by subsection (3).*
- ...
- (3) *A person is not prohibited by subsection (1) from taking, using, damming, or diverting any water, heat, or energy if-*
- (a) *The taking, use, damming or diversion is expressly allowed by a rule in a regional plan (and in any relevant proposed regional plan) or a resource consent; or*
 - (b) *In the case of freshwater, the water, heat, or energy is required to be taken or used for-*
 - (i) *An individual's reasonable domestic needs; or*
 - (ii) *The reasonable needs of an individual's animals for drinking water,-*
- and the taking or use does not, or is not likely to, have an adverse effect on the environment; ...*

It should be noted that, to ensure comprehensive coverage of the use of beds of lakes and rivers, and the taking, using, damming, or diverting of water within this Plan, if any such activity is not covered by a rule in the above sections, then it becomes a discretionary activity except for Section 24, where the activity becomes non-complying.

14.2.3 Rules for Land Disturbance Activities

Rules for Land Disturbance Activities are grouped according to the land's sensitivity to land disturbance activities. This is based on how erosion prone the land is, and the proximity to water bodies. Erosion prone land (refer Definitions) has been determined using the New Zealand Land Resource Inventory. The sections which contain rules for those areas are as follows:

Section 33 Land disturbance activities.

Section 34 Land disturbance activities in the Riparian Management Zone.

The types of land disturbance activities for which there are rules include Vegetation Clearance, Earthworks, and Land Preparation. These are defined in Section 41.

To determine whether a resource consent is needed to undertake one of these activities on a property, it will be necessary to look at a Land Use Capability map. Erosion Prone Land is shown on maps at 1:100,000 which are included in the Maps folder of this Plan. Further information and advice are available at all Regional Council offices.

For any activity which is not covered by the scope of the definitions and rules, that activity can be undertaken without a resource consent.

However, it is every person's duty to avoid, remedy or mitigate adverse effects on the environment arising from an activity carried on, by or on behalf of that person. Land users are therefore advised to take heed of the environmental standards for land disturbance activities that are contained in Section 32, in order to avoid any adverse effects on the environment.

15. RULES FOR SEWAGE DISCHARGES

15.1 PERMITTED ACTIVITIES

The following discharges of sewage effluent are permitted activities:

1. **The discharge of domestic sewage effluent (not including stormwater or sullage water) into land from a pit privy is a permitted activity**, provided that:
 - (a) The lowest point of the disposal hole is not less than 1.2 metres above the winter (June, July or August) groundwater table.
 - (b) The privy is constructed in soil with an infiltration (percolation) rate not exceeding 150 millimetres per hour.
 - (c) The separation distance between the pit privy and any surface water body is not less than 10 metres.
 - (d) The separation distance between the pit privy and any water supply bore is not less than 20 metres.
 - (e) The pit privy is more than 60 metres away from a connection to a public sewer.
 - (f) There is a minimum separation distance of 3 metres from property boundaries and from any building other than out-buildings or ancillary buildings and it should be constructed to exclude flies.
 - (g) The minimum property area or the total lot area for one pit privy shall be no less than 350 square metres.

Explanation: *In order to be an effective means of sewage effluent disposal, pit privies need to be situated above groundwater tables and away from surface water bodies and/or water supply bores. Pit privies should not be situated in very free draining soils such as coarse sands and gravels. NZS: 4610:1982 "Household Septic Tank Systems Amendment No. 1" (June 1991) provides an appropriate procedure for percolation testing of soils (Appendix 8).*

2. **Any existing discharge, at the date this Plan was notified², of:**
 - (1) **Sewage effluent (not including stormwater) into or onto land from on-site sewage treatment and disposal systems; or**
 - (2) **Primary treated sewage effluent into land via deep soakage or rapid infiltration systems;**

is a permitted activity, provided that:

- (a) The discharge results in no more than minor contamination of ground and surface water beyond a 20 metre separation distance measured horizontally from any part of the disposal system, or beyond the

² Date of Notification of Plan 27 April 1995

boundary of the property on which the discharge is taking place, whichever is the lesser.

- (b) There is no surface runoff of any contaminants from the disposal area.
- (c) The effluent discharge volume does not exceed 3 cubic metres per day, averaged over the month of greatest discharge.
- (d) The maximum volume of effluent discharged does not exceed 6 cubic metres over any 24-hour period.
- (e) Where the total lot area of the property is reduced (e.g. through subdivision), the newly created lot on which the existing discharge is continuing is large enough to accommodate a reserve area equivalent to:
 - (i) 100% of the existing effluent disposal area where the sewage effluent has received primary treatment; or
 - (ii) 30% of the existing effluent disposal area where the sewage effluent has received secondary treatment.

Explanation: *There are many existing on-site treatment and disposal systems that fail to meet the minimum groundwater and surface water separation distances required for new on-site treatment and disposal systems (refer also Rule 15.01.03). It is considered that provided an existing on-site treatment and disposal system is having no more than a minor effect on ground and surface water quality then that discharge can continue.*

Subdivision of land that has an existing on-site treatment and disposal system often results in the reduction of available land that was previously set aside for reserve disposal area purposes. The reduced reserve area for secondary treated wastewater is due to the higher quality wastewater reducing the likelihood of premature failure of the disposal area.

3. The discharge of primary treated sewage effluent (not including stormwater) into or onto land from on-site treatment and disposal systems is a permitted activity, provided that:

- (a) The lowest point of the disposal system is not less than 1.2 metres above the winter (June, July or August) groundwater table.
- (b) A filter, which screens the effluent to less than 3.5 millimetres, is fitted on the outlet of the septic tank.
- (c) No part of the disposal area and reserve area is located within 20 metres, measured horizontally, of any existing groundwater bore located on any other property.
- (d) No part of the disposal area and reserve area is located within 20 metres, measured horizontally, of any surface water (as defined in this Plan).
- (e) The effluent is evenly distributed to the entire infiltration surface of the disposal system.
- (f) The selection and sizing of the treatment and disposal system has been based on:
 - (i) the volume of the discharge;

- (ii) the appropriate design loading rate for the identified soil type; and
- (iii) has taken into account any constraints identified by a detailed site investigation.

The Council will accept as compliance with (f)(i – iii) an effluent treatment system designed in accordance with the principles and procedures outlined in Australian/New Zealand Standard “*On-site Domestic Wastewater Management*” (AS/NZS 1547:2000).

- (g) There is no surface runoff of any contaminants from the disposal area.
- (h) The discharge results in no more than minor contamination of ground and surface water beyond a 20 metre separation distance measured horizontally from any part of the disposal system, or beyond the boundary of the property on which the discharge is taking place, whichever is the lesser.
- (i) The volume of effluent discharged does not exceed 3 cubic metres per day, averaged over the month of the greatest discharge.
- (j) The maximum volume of effluent discharged does not exceed 6 cubic metres over any 24 hour period.
- (k) A reserve area equivalent to 100% of the design disposal area has been allowed for and set aside.

4. The discharge of secondary treated sewage effluent (not including stormwater) into or onto land from on-site treatment and disposal systems is a permitted activity, provided that:

- (a) The lowest point of the disposal system is not less than 0.6 metres (600 millimetres) above the winter (June, July or August) groundwater table.
- (b) Prior to being discharged to ground the effluent is treated to a standard such that:
 - (i) the five day biochemical oxygen demand (BOD₅) of any sample taken is less than or equal to 30 grams per cubic metre; and
 - (ii) the total suspended solids (TSS) concentration of any sample taken is less than or equal to 45 grams per cubic metre.
- (c) No part of the disposal area and reserve area is located within 20 metres, measured horizontally, of any existing groundwater bore located on any other property.
- (d) No part of the disposal area and reserve area is located within 15 metres, measured horizontally, of any surface water (as defined in this Plan).
- (e) The effluent is discharged into or onto land using a dripper system that has been designed to evenly distribute effluent and to avoid clogging by soil or root intrusion.
- (f) The selection and sizing of the treatment and disposal system has been based on:
 - (i) the volume of the discharge;

- (ii) the appropriate design loading rates for the identified soil type; and
- (iii) has taken into account any constraints identified by a detailed site investigation.

The Council will accept as compliance with (f)(i – iii) an effluent treatment system designed in accordance with the principles and procedures outlined in Australian/New Zealand Standard “*On-site Domestic Wastewater Management*” (AS/NZS 1547:2000).

- (g) There is no surface runoff of any contaminants from the disposal area.
- (h) The discharge results in no more than minor contamination of ground and surface water beyond a 20 metre separation distance measured horizontally from any part of the disposal system, or beyond the boundary of the property on which the discharge is taking place, whichever is the lesser.
- (i) The volume of effluent discharged does not exceed 3 cubic metres per day, averaged over the month of greatest discharge.
- (j) The maximum volume of effluent discharge does not exceed 6 cubic metres over any 24 hour period.
- (k) A reserve area equivalent to 30% of the design disposal area has been allowed for and set aside.
- (l) A programmed maintenance contract for the treatment and disposal system is entered into.

Explanation: Any new on-site sewage effluent treatment and disposal system will need to comply with Rules 15.01.03 or 15.01.04 in order to be a permitted activity.

The above rules do not cover the discharge of sewage effluent to deep soakage or rapid infiltration systems (refer also Rule 15.03.03).

The clearance between the bottom of the disposal system and the winter groundwater table provides protection for groundwater quality as the effluent will receive further treatment as it moves through the unsaturated soil horizons. A methodology for determining the winter groundwater level from soil investigations carried out during other seasons of the year is contained in the Auckland Regional Council’s Technical Publication Number 58 “On-site Wastewater Disposal from Households and Institutions” (TP58), Second Edition (November, 1994).

Secondary treatment systems rely upon servicing to ensure that the system functions correctly. The maintenance contract required in 15.01.04(l) is entered into between the supplier and the owner of the system and not with the Council.

5. The discharge of sullage water into or onto land from a disposal system is a permitted activity, provided that:

- (a) The lowest point of the disposal system is not less than 0.6 metres (600 millimetres) above the winter (June, July or August) groundwater table.

- (b) The sullage water receives pre-treatment before discharge to ground in a settlement tank with a minimum capacity of 1,800 litres.
- (c) A filter, which screens the sullage water to less than 3.5 millimetres, is fitted on the outlet of the settlement tank.
- (d) No part of the disposal area and reserve area is located within 20 metres, measured horizontally, of any existing groundwater bore located on any other property.
- (e) No part of the disposal area and reserve area is located within 20 metres, measured horizontally, of any surface water (as defined in this Plan).
- (f) The sullage water is evenly distributed to the entire infiltration surface of the disposal system.
- (g) The selection and sizing of the treatment and disposal system has been based on:
 - (i) the volume of the discharge;
 - (ii) the appropriate design loading rates for the identified soil type; and
 - (iii) has taken into account any constraints identified by a detailed site investigation.

The Council will accept as compliance with (g)(i – iii) an effluent treatment system designed in accordance with the principles and procedures outlined in Australian/New Zealand Standard “*On-site Domestic Wastewater Management*” (AS/NZS 1547:2000).

- (h) There is no surface runoff of any contaminants from the disposal area.
- (i) The discharge results in no more than minor contamination of ground and surface water beyond a 20 metre separation distance measured horizontally from any part of the disposal system, or beyond the boundary of the property on which the discharge is taking place, whichever is the lesser.
- (j) The volume of the sullage water discharged does not exceed 3 cubic metres per day, averaged over the month of greatest discharge.
- (k) The maximum volume of sullage water discharged does not exceed 6 cubic metres over any 24 hour period.
- (l) A reserve area equivalent to 100% of the design disposal area has been allowed for and set aside.

Explanation: *Any new discharges of sullage water (wastewater from showers, kitchens and laundries) into or onto land will need to comply with this rule in order to be a permitted activity.*

Raw sullage water has low concentrations of biological contaminants but relatively high concentrations of organic matter, suspended solids and nutrients. When there is insufficient pre-treatment of sullage water the high concentration of suspended solids and organic matter can cause the disposal system to fail prematurely.

The clearance between the bottom of the disposal system and the winter groundwater table provides protection for groundwater quality as the sullage water will receive further treatment as it moves through the unsaturated soil horizons. A methodology for determining the winter groundwater level from soil investigations carried out during other seasons of the year is contained in the Auckland Regional Council's Technical Publication Number 58 (TP58) "On-site Wastewater Disposal from Households and Institutions", Second Edition (November, 1994).

A 20 metre horizontal separation distance from existing groundwater bores and surface water is considered sufficient to protect the water quality of these resources.

Note: For the purposes of this section, the following criteria will be used to determine whether contamination of ground and surface water is no more than minor.

Criteria:

1. The level of treatment the sewage receives prior to discharge and the expected quality of the final sewage effluent prior to being discharged.
2. The drainage characteristics of the soils in the vicinity of the discharge point and their ability to retain contaminants expected in sewage effluent.
3. The separation distance between the lowest point of the disposal system and the underlying groundwater and whether or not there are any impervious layers beneath the disposal system.
4. The proximity and relative location of surface water bodies to the discharge point, the nature of the water bodies, and the existing uses of the water bodies.
5. The mitigation measures associated with the disposal system (e.g. perimeter cutoff drains, planting of species around the disposal system that have high evapotranspiration rates, management plans etc).

15.2 CONTROLLED ACTIVITIES

The following discharge of sewage is a controlled activity:

1. **The unplanned discharge of raw sewage from a sewage pump station or contributing pipe network onto or into land or into water is a controlled activity** provided that:
 - (a) Each sewage pump station in the sewerage system has an automatic control and alarm system that provides:
 - (i) immediate notification of pump failure;
 - (ii) automatic switching to a standby pump;
 - (iii) immediate notification of station failure to pump sewage;

- (iv) notification when a system overflow is imminent, where imminent is not less than five minutes; and
- (v) power supply backup for the alarm system.
- (b) Each sewage pumping station has at least one dedicated standby pump that will activate in the event of failure of the duty pump(s). The capacity of the standby pump(s) shall be at least equal to that of the largest pump in the station.
- (c) The sewage pump station has a storage capacity of not less than 12 hours (based on the average dry weather flow) to reduce the frequency of overflows of sewage.

For the purpose of determining compliance with condition (c) the storage volume provided shall be that calculated from the pump high level alarm point to the lowest point at which an overflow will occur, including any storage provided in the upstream reticulation.

Matters Subject to Control

- (1) Alarm systems and response standards.
- (2) Notification procedures in the event of a discharge occurring
- (3) Overflow monitoring and remediation measures to receiving environment.
- (4) Frequency of overflows.
- (5) Measures provided to minimise the discharge of floatable solids.
- (6) Record keeping and reporting requirements.
- (7) Alternation of duty pump.

Notification: An application for a controlled activity under Section 15.02.01 will not be notified unless the Council considers that subject to the provisions of Section 94C(2) of the Act special circumstances exist.

Note: Sensitivity of the receiving environment is an important factor in assessing the special circumstances that will require notification. Discharges in the vicinity of a marine farm or bathing beach are examples of areas where the Council may require notification.

Explanation: *This rule allows for discharges, which do occur from time to time but are not covered by Section 330A of the Act, Emergency Works.*

This rule recognises that overflows can only be managed and not entirely prevented. Mechanical failure can be reduced to a minimum by effective maintenance.

Sewage pumping stations that existed before the notification of this document may be required to upgrade over a period of time. It may not be possible to have all pump stations on a large network able to meet all criteria for a controlled activity. Some may be discretionary activities. Therefore, an

individual assessment is required that identifies upgrading for existing pump stations.

15.3 DISCRETIONARY ACTIVITIES

The following discharges of sewage effluent are discretionary activities:

1. The discharge of:

- (a) sewage effluent; or**
- (b) sewage sludge;**

into or onto land in a manner outside the scope of or unable to meet the conditions pertaining to the permitted activity Rules 15.01.01, 15.01.02, 15.01.03, 15.01.04, is a discretionary activity.

However, any discharge to land which results in runoff to water via discrete flow paths, such as channels, drains or tracks, is considered to be a direct discharge to water and would be covered by Rule 15.03.02.

Existing discharges of sewage effluent to deep soakage systems (including deep bores and soak holes) and rapid infiltration systems which are having adverse effects can either be upgraded to comply with Rule 15.01.03 as a permitted activity or will, under this rule, require a resource consent in order to avoid, minimise or mitigate the adverse effects.

2. The discharge of treated sewage effluent directly into a water course from a sewage treatment and disposal system is a discretionary activity, provided that:

- (a) The watercourse does not flow into any dune lake listed in Schedule E.**

Explanation: *The effect of any discharge of treated effluent to water depends on the level of treatment and the size of the receiving water body. It also depends on the sensitivity of the receiving water, ecologically and culturally. Site specific investigations are required to ensure any adverse effects are avoided, minimised or mitigated. Therefore a resource consent is required.*

Closed systems such as dune lakes are more sensitive to the adverse effects of effluent discharges. Dune lakes have high recreational and aesthetic qualities and are an important tourist feature of Northland. Discharges to water in these catchments would threaten those qualities.

Applications for a resource consent in respect of these discretionary activities will be publicly notified unless the provisions of s.94 of the Act are complied with; see Section 38 of this Plan.

3. Any new discharge of sewage effluent into land via deep soakage systems (including deep bores and soak holes) is a discretionary activity.

Explanation: *There is a high risk of groundwater and surface water pollution occurring as a result of this level of treatment and method of disposal. In addition such systems have an adverse effect on land stability. Therefore a resource consent is required.*

4. **The discharge of sewage from a sewage pump station and pipe network onto or into land or into water that is unable to comply with the requirements of Rule 15.02.01 is a discretionary activity.**

15.4 NON-COMPLYING ACTIVITIES

There are no non-complying activities for discharges of sewage effluent.

15.5 PROHIBITED ACTIVITIES

The following discharges of sewage effluent are prohibited activities:

1. **The discharge of untreated sewage into water, except as provided for under Rules 15.02.01 or Rule 15.03.04 is a prohibited activity.**
2. **The discharge of treated sewage effluent into any dune lake listed in Schedule E is a prohibited activity.**

Explanation: *Closed systems such as dune lakes are more sensitive to the adverse effects of effluent discharges. Dune lakes have high recreational and aesthetic qualities and are an important tourist feature of Northland. Discharges into these lakes would threaten those qualities.*

3. **The discharge of untreated or disinfected sewage effluent from portable toilets except to an authorised treatment system is a prohibited activity.**

Explanation: *This rule seeks to address the discharge of untreated or disinfected sewage effluent from portable toilets such as those found in mobile homes. The discharges of such sewage is only acceptable in an authorised treatment system.*

16. RULES FOR ANIMAL EFFLUENT DISCHARGES

16.1 PERMITTED ACTIVITIES

The following discharges of animal effluent are permitted activities:

The discharge of the following effluents:

- (i) Animal effluent;**
- (ii) Water containing animal effluent; and/or**
- (iii) Farm wastewater**

onto or into land is a permitted activity, provided that:

- (a) There is no discharge:
 - (i) Directly into surface water;
 - (ii) Into surface water or Coastal Marine Area via overland flow;
 - (iii) Into surface water or Coastal Marine Area via any tile, mole or other subsurface drain; and/or
 - (iv) Directly into groundwater.
- (b) The effluent is not discharged to land within a distance of:
 - (i) 20 metres of any river, stream, lake, Coastal Marine Area or indigenous wetland;
 - (ii) 20 metres of any artificial watercourse (including an open drain) when containing water or 10 metres when not containing any water;
 - (iii) 20 metres from the bore head for any water supply bore;
 - (iv) 20 metres from any neighbouring property owned or occupied by another person; and/or
 - (v) 50 metres from any occupied dwelling.
- (c) There are contingency measures in place to ensure that there is no contravention of the conditions 16.01.01 (a), (b), (e), (f), (g) and (i) –
 - (i) In the event of pump, irrigator or other system failure;
 - (ii) When the soil and/or weather conditions are unsuitable for discharge to land.
- (d) Any effluent storage or effluent treatment facilities shall be sealed or lined with low permeability material to ensure no more than minor contamination of groundwater by seepage.
- (e) The effluent is not discharged in a manner that results in ponding on the land surface for longer than 3 hours following application.
- (f) The effluent is discharged in a manner that:
 - (i) evenly distributes the effluent;
 - (ii) does not exceed the soil's ability to assimilate (absorb) the effluent; and
 - (iii) minimises overland flow. In addition, any overland flow of effluent that does occur does not enter any setback distances in (b)(i-v) at any time.
- (g) The discharge does not cause an offensive or objectionable odour to the extent that it causes an adverse effect beyond the boundary of the property.

- (h) Any discharge from vehicles used for the purpose of transporting animals onto any public road or roadside reserve does not involve the emptying (in part or in whole) of containment facilities and:
- is no greater than 10 metres in length or 10 litres in volume (whichever is the lesser) during dry weather conditions or during rainfall events of up to 5mm per hour; or
 - occurs during rainfall events of 5 mm per hour or more.
- (i) The discharge results in no more than minor contamination of groundwater and surface water beyond a 20 metre separation distance measured horizontally from the outer edge of the land application area. In no case shall the discharge result in a lowering of water quality so that the receiving water body can no longer meet the water quality purpose set out in Objective 7.4.1.
- (j) From the date that a written request is received from the Northland Regional Council (if one is made), the person(s) undertaking this activity shall commence keeping a written record of the following information and provide a copy of it to the Council:
- Date and time of discharge;
 - Discharge rates;
 - Land application area;
 - Frequency of discharges;
 - Contingency measures; and
 - Maintenance records.

Explanation: *This rule provides for the discharge and disposal/management of animal effluent and farm wastewater from dairies and adjacent entrance and exit races, dairy yards, holding yards, standoff pads, loafing pads, feed pads, wintering barns, calf rearing facilities, piggeries, poultry farms, stock underpasses, sale yards, transit races if used for standoff and the like. It includes feedlots and standoff areas on beef farms and land application of liquid and sludge from treatment/storage ponds.*

The discharge of animal effluent and farm wastewater to land will have no more than minor adverse effects on the environment if effluent is not applied in excess of the soil's ability to assimilate (absorb) the effluent and remove contaminants. Discharging in a manner that does not take this into account risks pollution of surface and ground water and results in pasture that is unsuitable for grazing.

It is not the intent of the permitted activity rule to control dung and urine deposited by individual animals put out to graze on the land or while crossing roads. It is however the intent of the rule to control the discharge of dung and urine collected from individual animals whilst they are grazing on supplementary feed within farm buildings and yards, feedpads, races or other stand-off areas.

Contingency measures, such as storage ponds, excess storage or large available disposal areas, are required to ensure that no discharge of animal effluent or farm wastewater to any surface water body will occur, even during prolonged wet weather.

Due to different soil types and pond designs, advice should be sought, on a case-by-case basis, from a suitable qualified engineer to determine what is required to effectively seal any effluent pond prior to construction.

Discharges from vehicles transporting animals on public roads or roadside reserves, whether accidental or not, may constitute a breach of this permitted activity rule.

Criteria (h) permits discharges in certain circumstances to recognise the practicalities of transporting animals and to cater for such occurrences as extremely heavy rainfall events where the capacity of holding tanks are unable to accommodate the extra volume of water.

Council will monitor compliance with conditions (a) through (i) and charge for inspections as established through the LTCCP and Council's charging policy.

16.2 CONTROLLED ACTIVITIES

There are no controlled activities for animal effluent discharges.

16.3 DISCRETIONARY ACTIVITIES

The discharge of the following effluents:

- (i) Animal effluent;
- (ii) Water containing animal effluent; and/or
- (iii) Farm wastewater.

in a manner which is outside of the scope of permitted activity rule and is not a prohibited activity is a discretionary activity.

Note: This rule applies to all discharges to land that do not comply with permitted activity rule 16.01.01 and all discharges to water that are not prohibited activities under rules 16.05.01 and 16.05.02.

16.4 NON-COMPLYING ACTIVITIES

There are no non-complying activities for animal effluent discharges.

16.5 PROHIBITED ACTIVITIES

The following discharges of animal effluent are prohibited activities:

1. **The discharge of treated animal effluent into any dune lake or any watercourse flowing into any dune lake listed in Schedule E or any river, section of river or lake deemed to have outstanding values, as shown in Appendix 18 is a prohibited activity.**

***Explanation:** Closed systems such as dune lakes are more sensitive to the adverse effects of effluent discharges. Dune lakes have high recreational and aesthetic qualities and are an important tourist feature of Northland. Discharges into these lakes would threaten those qualities.*

2. **The discharge of untreated animal effluent from point sources directly to water is a prohibited activity.**

***Explanation:** The discharge of untreated animal effluent to water will have adverse effects on water quality and stream life, particularly in low-flowing rivers and streams in intensively farmed areas. The discharge of untreated*

animal effluent to water is prohibited as it does not provide for the cultural well-being, health and safety, of individuals and communities, nor the other matters in Part II of the Act. This rule applies to animal effluent from farm dairies, piggeries, stock and sale yards, wintering barns and the like.

It is not considered practical to apply this rule to animals defecating directly into water.

17. RULES FOR OTHER AGRICULTURAL WASTE DISCHARGES

17.1 PERMITTED ACTIVITIES

The following discharges of agricultural wastes are permitted activities:

1. The discharge of contaminants into or onto land in association with the:

- (1) making of silage;**
- (2) disposal of dead stock; or the**
- (3) disposal of offal;**

is a permitted activity, provided that:

- (a) The discharge is not less than 50 metres measured horizontally from any surface water or water supply bore.
- (b) The discharge is not less than 50 metres from any residence.
- (c) There is no direct discharge of leachate to surface water.
- (d) Catchment runoff is prevented from entering the disposal site.
- (e) Offal pits and dead stock disposal sites are covered to prevent nuisance odours and exclude vermin.
- (f) The volume of offal or dead stock disposed of on any one property does not exceed five cubic metres per year.
- (g) The volume of any silage pit is not greater than 1,000 cubic metres per site.

Explanation: The leachate from the breakdown of plant and animal matter contains high levels of organic matter and nutrients which can have an adverse effect on water quality. The siting of silage pits and offal holes away from water bodies and water supply bores will avoid those effects. Areas that carry water during storm conditions, such as gullies and low lying areas, or which have highly porous soils, should also be avoided.

Staff Interpretation Available <https://thehub:443/id:A118197>

2. The discharge of contaminants into or onto land in association with the disposal (dumping) of produce (fruit and vegetables) is a permitted activity, provided that:

- (a) Where disposal is into land (trenches or pits):
 - (i) The discharge is not less than 50 metres measured horizontally from any water body or water supply bore,
 - (ii) The discharge is not less than 50 metres from any residence.
 - (iii) Disposal trenches or pits are not more than two metres deep.
 - (iv) Catchment runoff is prevented from entering the disposal site.

- (b) Where disposal is onto land (land spreading):
 - (i) The discharge is not less than 20 metres from any water body or water supply bore.
 - (ii) The discharge is not less than 20 metres from any residence.
 - (iii) The produce is spread no more than one layer deep or to a depth of not more than 100 millimetres.
- (c) There is no direct discharge of leachate to surface water.
- (d) There is no odour that is offensive or objectionable at or beyond the boundary of the property of the disposal site.

***Explanation:** Decomposing fruit in dumps can discharge a leachate of high organic content (leachate from decomposing kiwifruit is 40 times more concentrated than sewage). Adequate separation distances are therefore important. Fruit also breaks down more rapidly in shallow trenches, and therefore a maximum depth is restricted to two metres.*

17.2 CONTROLLED ACTIVITIES

There are no controlled activities for other agricultural waste discharges.

17.3 DISCRETIONARY ACTIVITIES

The following discharges of agricultural wastes are discretionary activities:

1. **The discharge of contaminants into or onto land in association with the:**
 - (1) **making of silage;**
 - (2) **disposal of dead stock;**
 - (3) **disposal of offal; or the**
 - (4) **disposal of waste vegetables and fruit produce;**

in a manner outside the scope of or unable to meet the conditions pertaining to Rules 17.01.01 and 17.01.02 is a discretionary activity.

Applications for a resource consent in respect of these discretionary activities will be notified unless the provisions of Section 94 of the Act are complied with; see Section 38 of this Plan.

17.4 NON-COMPLYING ACTIVITIES

There are no non-complying activities for other agricultural waste discharges.

17.5 PROHIBITED ACTIVITIES

The following discharge of agricultural waste is a prohibited activity:

1. **The discharge (disposal) of dead stock, offal, and waste vegetable and fruit produce into water is a prohibited activity.**

***Explanation:** The disposal of dead stock and offal into water is offensive to most people, degrades water quality and causes human and animal health risks. Dumping of waste vegetation and fruit produce into streams also degrades water quality.*

18. RULES FOR THE DISCHARGE OF AGRICHEMICALS

18.1 PERMITTED ACTIVITIES

The following discharges of agrichemicals are permitted activities:

1. **The discharge of any vertebrate control chemical that has been approved for use by the Environmental Risk Management Authority into or onto land by way of a ground based application method in circumstances which may result in the vertebrate control chemical (or any other contaminant emanating as a result of natural processes from the vertebrate control chemical) entering water is a permitted activity, provided that:**
 - (a) All reasonable steps are taken to ensure that the controlled vertebrate control chemical is applied in a manner which ensures:
 - (i) the vertebrate control chemical does not enter water; and
 - (ii) adverse effects on non target species are minimized.
 - (b) All land owners or occupiers adjoining the property are notified at least one week before the discharge commences.
 - (c) The vertebrate control chemical is applied in accordance with the manufacturer's instructions.

Explanation: Some "vertebrate control chemicals" are listed in Appendix 9. They include sodium fluoroacetate (1080), cyanide and phosphorous. Applicators of vertebrate control chemicals are required to be registered and qualified.

2. **The discharge of any agrichemical, excluding vertebrate control chemicals, that has been approved for use by the Environmental Risk Management Authority into or onto land by way of a ground based application method in circumstances which may result in the agrichemical (or any other contaminant emanating as a result of natural processes from the agrichemical) entering water is a permitted activity, provided that:**
 - (a) All reasonable steps are taken to ensure that the controlled agrichemical is applied in a manner which ensures:
 - (i) the controlled agrichemical does not enter water; and
 - (ii) adverse effects on non target species are minimised.
 - (b) The agrichemical is applied in accordance with the manufacturer's instructions, and application rates do not exceed those stated on the most recent product label for the relevant application equipment or method and target species.
 - (c) All land owners or occupiers adjoining the property are notified at least one week before the discharge commences.

Explanation: This rule allows the use of land based agrichemicals. Compliance with Condition (a) is considered to be met if the operation is undertaken in accordance with the "Growsafe Agrichemical Users' Code of

Practice” or another similar document. Users are encouraged to undertake appropriate training in the use of agrichemicals. Relevant rules for the discharge to air associated with agrichemical application are contained in the Regional Air Quality Plan.

3. The discharge of herbicides into water is a permitted activity, provided that:

- (a) The herbicide used is one approved for aquatic use by the Environmental Risk Management Authority.
- (b) The application is carried out by a suitably qualified person.
- (c) Application rates of the herbicide do not exceed those stated on the most recent product label for the relevant application equipment or method and target plant.
- (d) The discharger shall notify:
 - (i) every person taking water for domestic supply within one kilometre downstream of the proposed discharge; and
 - (ii) every holder of a resource consent for the taking of water for water supply purposes downstream of the proposed discharge, at least one week before commencing the discharge.

Explanation: *A suitably qualified person is likely to be one with an appropriate Growsafe certificate who must therefore comply with the Growsafe Agrichemical User’s Code of Practice. The Growsafe Code of Practice requires adequate public notification when spraying in a public place and strongly recommends that users spraying on their own property prepare a property spray plan which identifies sensitive areas and persons who may be affected.*

4. The discharge of contaminants from an animal dip into or onto land is a permitted activity, provided that:

- (a) The distance from the disposal area to any water body or water supply bore is not less than 50 metres.
- (b) The disposal area is not less than 50 metres from any neighbouring property owned or occupied by another person.
- (c) There is no direct discharge of contaminants into groundwater or surface water.
- (d) The discharge meets the “Agrichemical Users Code of Practice” (New Zealand Agrichemical Education Trust 1995) for the discharge of contaminants from an animal dip.

Explanation: *The “Agrichemical Users Code of Practice” (New Zealand Agrichemical Education Trust, 1995) includes the following guidelines for the disposal of animal dips onto land:*

- (a) *The land needs to be capable of absorbing the volume of the liquid to be discharged without runoff risk to wildlife, ground or surface water.*
- (b) *As a guide, not more than 5,000 litres of spent dip should be applied per hectare.*

- (c) *Land used for disposal should not be producing food crops at the time of disposal. Stock should not be given access to land that has been used as a disposal site for at least 28 days following disposal.*

18.2 CONTROLLED ACTIVITIES

The following discharge of agrichemicals is a controlled activity:

1. **The discharge of any vertebrate control chemical listed as a “controlled pesticide” in the First Schedule of the *Pesticides Act 1979* into or onto land by way of aerial application for the purpose of pest control is a controlled activity, provided that:**
 - (a) Approval has been gained from the Medical Officer of Health in accordance with the *Pesticides Act 1979*.
 - (b) A navigational guidance system is used to ensure application is within the defined areas, and records of flight paths are made available for public viewing.

Matters Subject to Control

- (1) Separation distances from residential areas.
- (2) Separation distances from water bodies.
- (3) Adequacy of public notification of the activity.
- (4) Information and monitoring requirements

An application in respect of this controlled activity will be non-notified, unless the Council considers special circumstances exist in terms of ss.94 of the Act. In considering whether or not special circumstances exist, the Regional Council will include consideration of:

1. The use of the receiving environment.
2. The extent of public and tangata whenua interest in the activity and/or its effects.

Explanation: *This rule covers the application of pesticides such as 1080 by aerial drop. Prior approvals are required from the Medical Officer of Health (MOH) who may impose a number of conditions on the operation, including notification and separation distances. The Regional Council will also control those matters if the conditions imposed by the MOH are not considered adequate to deal with environmental concerns.*

18.3 DISCRETIONARY ACTIVITIES

The following discharges of agrichemicals are discretionary activities:

1. **The discharge of any herbicide over or into water that is not approved for use by the Environmental Risk Management Authority is a discretionary activity.**

2. **The discharge of any agrichemical which fails to comply with the conditions, or contravenes Rules 18.01.01 to 18.01.03 and 18.02.01 is a discretionary activity.**
3. **The discharge of any vertebrate control chemical other than 1080 that has been approved for use by Environmental Risk Management Authority into or onto land by way of an aerial application in circumstances which may result in the chemical (or any other contaminant emanating as a result of natural processes from the vertebrate control chemical) entering water is a discretionary activity.**

Applications for a resource consent in respect of these discretionary activities will be publicly notified unless the provisions of s.94 of the Act are complied with; refer also Section 38 of this Plan.

***Explanation:** The release of agrichemicals into water can have adverse effects upon aquatic ecosystems and water quality. Where the application of these agrichemicals could possibly result in the contamination of water, the risk of this needs to be assessed before the activity can proceed.*

18.4 NON-COMPLYING ACTIVITIES

There are no non-complying activities for the discharge of agrichemicals.

18.5 PROHIBITED ACTIVITIES

The following discharge of agrichemicals is a prohibited activity:

1. **The discharge of contaminants from an animal dip into water is a prohibited activity.**

***Explanation:** Animal dips contain chemicals which have adverse effects on aquatic life in low concentrations. The discharge of spent animal dip effluent from the dip tanks directly into water is therefore prohibited.*

19. RULES FOR SOLID WASTE DISCHARGES

19.1 PERMITTED ACTIVITIES

The following discharges of solid waste and associated discharges of leachate are permitted activities:

1. The discharge of contaminants onto or into land from an open or closed clean fill landfill (including industrial and trade premises) is a permitted activity, provided that:

- (a) The volume of material disposed at a cleanfill landfill does not exceed 1,000 cubic metres in any one year.
- (b) No organic and/or hazardous wastes (refer definitions) are disposed of in the cleanfill landfill.
- (c) Any excavation, or the lowest point of any filled area, is above the winter groundwater table.
- (d) The cleanfill landfill is situated at least 20 metres from any water supply bore or water body.
- (e) The discharge does not increase the concentrations of the following metals in any receiving waters above the following limits:

	Groundwater	Surface Water
Total Chromium	50 mg/m ³	2 mg/m ³
Total Copper	2,000 mg/m ³	2 mg/m ³
Total Lead	10 mg/m ³	1 mg/m ³
Total Zinc	-	5 mg/m ³

or result in other contaminants entering groundwater in concentrations that would render it unsuitable for human consumption, or surface water in concentrations that have a more than minor adverse effect on aquatic life.

- (f) The surface of the cleanfill landfill is rehabilitated when no longer in use to avoid erosion and sediment runoff.

Legal Opinion Available <https://thehub:443/id:A118188>

2. The discharge of contaminants onto or into land from a closed landfill (other than a cleanfill landfill including industrial and trade premises) is a permitted activity, provided that:

- (a) The discharge does not increase the concentrations of the following metals in any receiving waters above the following limits:

	Groundwater	Surface Water
Total Arsenic	10 mg/m ³	50 mg/m ³
Total Cadmium	3 mg/m ³	0.2 mg/m ³
Total Chromium	50 mg/m ³	2 mg/m ³
Total Copper	2,000 mg/m ³	2 mg/m ³

Total Lead	10 mg/m ³	1 mg/m ³
Total Zinc	-	5 mg/m ³

or result in other contaminants entering groundwater in concentrations that would render it unsuitable for human consumption or surface water in concentrations that have more than a minor adverse effect on aquatic life.

- (b) The following practices are complied with to reduce infiltration and leaching of contaminants from the landfill:
 - (i) Refuse in the landfill is capped with a layer of compacted material not less than 600 millimetres thick and of a permeability not greater than 9 millimetres per day (1×10^{-7} metres per second).
 - (ii) The site is protected from both saltwater and freshwater/groundwater intrusion or inundation by the use of stop banks or impermeable seals.
 - (iii) The surface of the landfill is sloped to facilitate surface runoff and to prevent ponding of surface water.
- (c) The final capping layer consists of a soil material that can be planted using vegetation that will maintain groundcover as far as practicable and whose roots will not intrude through the capping layer into the refuse in the landfill.
- (d) Catchment runoff is prevented from entering the landfill.

3. The discharge of refuse onto or into land which is not an industrial or trade premises is a permitted activity, provided that:

- (a) The refuse comprises domestic refuse or refuse from farming activities but does not include offal, dead stock, agricultural containers or hazardous wastes.
- (b) The volume of refuse discharged does not exceed 12 cubic metres per year per property.
- (c) The discharge is not less than 50 metres measured horizontally from any water body or water supply bore.
- (d) The discharge is not less than 50 metres measured horizontally from any neighbouring property owned or occupied by another person.
- (e) Catchment runoff is prevented from entering the site of the refuse disposal.
- (f) The waste is covered with soil as may be required to prevent windblown refuse and nuisance odours.

Explanation: *While the Council recognises that all wastes should be disposed of in a properly operated landfill, or should be recycled, it also recognises that it is sometimes not practical or feasible to do so. Provided the volumes of wastes to be disposed are relatively small, and measures are taken to ensure the effects of these waste disposal sites on surface water and groundwater are minor, these discharges do not require a resource consent.*

- 4. The discharge of refuse onto or into land from a refuse disposal site which is no longer used is a permitted activity, provided that:**
- (a) The refuse comprises domestic refuse or refuse from farming activities but does not include offal, dead stock, agrichemical containers or hazardous wastes.
 - (b) The discharge is not less than 50 metres measured horizontally from any water body or water supply bore.
 - (c) The discharge is not less than 50 metres measured horizontally from any neighbouring property owned or occupied by another person.
 - (d) Catchment runoff is prevented from entering the site of the refuse disposal site.
 - (e) The final capping layer is topsoiled and planted using plants that will maintain groundcover as far as practicable and whose roots will not intrude into the refuse in the landfill.

Explanation: See *Explanation to 19.01.03*.

- 5. The discharge from transfer stations and green dumps into or onto land is a permitted activity, provided that:**
- (a) There is no direct discharge of contaminants into water.
 - (b) The discharge does not contain hazardous substances.
 - (c) No contaminant is discharged in circumstances which may result in that contaminant (or any other contaminant emanating as a result of natural processes from that contaminant) entering:
 - (i) Groundwater in concentrations that would render it unsuitable for human consumption.
 - (ii) Surface water in concentrations that have a more than minor adverse effect on aquatic life.
 - (d) No offensive odour or other nuisance is discernible from the boundary of the property owned or occupied by the discharger as a result of that discharge.

Explanation: *Transfer stations provide a collection and temporary storage point for solid waste prior to disposal at a landfill. Green dumps provide a collection and temporary storage point for vegetation at a refuse transfer station. Environmental standards are placed on these activities to reduce the risk of contamination of water and to reduce the nuisance effects that can be associated with them. These standards also ensure that no hazardous substances are placed in these transfer stations and green dumps.*

Note: For the purposes of this section, the following criteria will be used to determine whether adverse effects on aquatic life are no more than minor.

Criteria:

- 1. The presence and type of liner and leachate collection system (if any).
- 2. The nature of contaminants, other than those specified in 19.01.01(e), likely to be present in the leachate.

3. The drainage characteristics of the soils in the vicinity of the landfill and their ability to retain contaminants expected in the landfill leachate.
4. The separation distance between the lowest point of the landfill and the underlying groundwater and whether or not there are any naturally occurring impervious layers beneath the landfill.
5. The proximity and relative location of surface water bodies to the landfill, the nature of the water bodies, and the existing uses of the water bodies.
6. The mitigation measures associated with the landfill (e.g. capping practices, cut off drains, management plan etc.).

19.2 CONTROLLED ACTIVITIES

The following discharge of contaminants from solid waste and associated discharges of leachate is a controlled activity:

1. **The discharge of contaminants onto or into land or into water from:**
 - (1) **a closed landfill which fails to comply with or is outside the scope of Rule 19.01.02; or**
 - (2) **any refuse disposal site which is no longer used and which fails to comply with Rule 19.01.04;**

is a controlled activity, provided that:

- (a) The following practices are complied with to reduce infiltration and leaching of contaminants from the landfill:
 - (i) Refuse in the landfill is capped with a layer of compacted clay material.
 - (ii) The site is protected from both saltwater and freshwater/groundwater intrusion or inundation by the use of stop banks or impermeable seals.
 - (iii) The surface of the landfill is sloped to facilitate surface runoff and to prevent ponding of surface water.
- (b) The final capping layer is topsoiled and planted with vegetation that will maintain groundcover as far as practicable and whose roots will not intrude into the refuse in the landfill.
- (c) Catchment runoff is prevented from entering the landfill.

Matters Subject to Control

The matters over which the Council will exercise its control are:

- (1) The adequacy of the protection from saltwater and freshwater/groundwater intrusion.

- (2) The permeability of the compacted clay capping.
- (3) The ability of landfill surfaces to prevent ponding.
- (4) The adequacy of the vegetation cover.
- (5) The mitigation measures necessary to meet the required receiving water quality standards, including such measures as contaminant treatment and disposal systems.
- (6) The frequency, location and method of sampling and the determinants to be measured and method of measurement.
- (7) Size of the reasonable mixing zone.

Any application in respect of this controlled activity will be non-notified unless the Council considers special circumstances exist to require notification in terms of s.94 of the Act. In considering whether or not special circumstances exist, the Council will include consideration of:

1. The use of the receiving environment; and
2. The extent of public and tangata whenua interest in the activity and/or its effects.

The Council will require that written approvals are obtained from any landowner/occupier whose land or water supply may be adversely affected by the activity.

19.3 DISCRETIONARY ACTIVITY

The following discharge of contaminants from solid waste and associated discharges of leachate is a discretionary activity:

1. **The discharge of contaminants into or onto land or into water from:**
 - (a) **a clean fill landfill which fails to comply with 19.01.01; or**
 - (b) **a refuse disposal site which fails to comply with Rule 19.01.03 or Rule 19.02.01; or**
 - (c) **any new or existing operational landfill (other than a cleanfill landfill);**

is a discretionary activity.

Applications for a resource consent in respect of this discretionary activity will be publicly notified unless the provisions of s.94 of the Act are complied with.

Refer also Section 38

19.4 NON-COMPLYING ACTIVITIES

There are no non-complying activities for solid waste discharges.

19.5 PROHIBITED ACTIVITIES

There are no prohibited activities for solid waste discharges.

20. RULES FOR INDUSTRIAL OR TRADE DISCHARGES

20.1 PERMITTED ACTIVITIES

The following discharges of contaminants from industrial or trade premises are permitted activities:

1. **The discharge of cooling water into water is a permitted activity,** provided that it does not:
 - (a) Contain concentrations of any contaminants that have more than minor adverse effect on aquatic life.
 - (b) Increase the natural temperature of the receiving water by more than 3° Celsius outside a 10 metre radius from the discharge point.
 - (c) Cause the pH of the receiving water to fall outside of the range 6.5 to 9.0 at or beyond a 10 metre radius from the discharge point.
 - (d) Cause the production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials in the receiving water, at or beyond a 10 metre radius from the discharge point.
 - (e) Cause any conspicuous change in the colour, or visual clarity of the receiving water, at or beyond a 10 metre radius from the discharge point.
 - (f) Cause any emission of objectionable odour in the receiving water at or beyond a 10 metre radius from the discharge point.
 - (g) Cause scour or erosion of the bed of receiving water at the point of discharge.

2. **The discharge of wastewater onto or into land from an industrial or trade premise is a permitted activity,** provided that:
 - (a) The lowest point of the disposal system is not less than 0.9 metres (900 millimetres) above the winter (June, July or August) groundwater table.
 - (b) The disposal system does not utilise deep soakage or rapid infiltration systems.
 - (c) The concentration of contaminants within the wastewater do not exceed the following limits:

Contaminant	Maximum Concentration
Total Aluminium	5.0 mg/L
Total Arsenic	0.1 mg/L
Total Boron	0.5 mg/L
Total Cadmium	0.01 mg/L
Total Chromium	0.1 mg/L
Total Cobalt	0.05 mg/L
Total Copper	0.2 mg/L
Total Iron	5.0 mg/L
Total Lead	0.2 mg/L
Total Mercury	0.002 mg/L

Total Nickel	0.2 mg/L
Total Nitrogen	100 mg/L
Total Phosphorous	30 mg/L
Total Zinc	2.0 mg/L
Total Suspended Solids (TSS)	300 mg/L

- (d) The median number of faecal coliforms, based on no less than 5 samples, is less than 50,000 per 100 millilitres.
- (e) The pH of the wastewater is between 5 and 8.
- (f) The sodium absorption ratio (SAR) of the wastewater is less than 10.
- (g) The discharge does not result in concentrations of contaminants in groundwater that would render it unsuitable for human consumption beyond a 20 metre separation distance measured horizontally from the discharge point, or beyond the boundary of the property on which the discharge is taking place, whichever is the lesser.
- (h) No part of the disposal and reserve area is located within 20 metres, measured horizontally, of any existing groundwater bore located on any other property.
- (i) No part of the disposal and reserve area is located within 20 metres, measured horizontally, of any surface water (as defined in this Plan).
- (j) The design, operation, and construction of the wastewater treatment and disposal system must achieve the following conditions:
 - (i) Pre-treatment of the effluent to a standard that does not cause clogging of the disposal system or soils such that the long-term acceptance rate is maintained;
 - (ii) Even distribution of effluent to the entire infiltration surface of the disposal system;
 - (iii) Allowance has been made for a reserve area equivalent to 100% of the disposal area.
- (k) Where the wastewater is spray irrigated onto land, it is not to be applied within 20 metres of any surface water.
- (l) Notwithstanding (j) and (k), the wastewater is not discharged in a manner that results in any surface runoff of any contaminants from the disposal area.
- (m) The volume of wastewater discharged does not exceed 3 cubic metres per day, averaged over the month of greatest discharge.
- (n) The maximum volume of wastewater discharged does not exceed 6 cubic metres over any 24 hour period.

Note: Any discharge that only contains human effluent or sullage water, or animal effluent from an industrial or trade premise shall be dealt with under Section 15 and Section 16 respectively of this Plan. In the event that industrial or trade wastewater and either human effluent, sullage water or animal effluent are to be combined and then discharged within the boundaries of the same lot, then the discharge volumes of (m) and (n) of this rule shall apply to the combined discharge volume.

Explanation: Any discharge of wastewater onto or into land from an industrial or trade premise must meet all the above criteria to be a permitted

activity. It is intended that this rule will cover those discharges that are similar in character to cooling water, filter backwash water, vehicle wash water and rock aggregate wash water.

The SAR is a ratio between the concentration of sodium and the concentrations of both calcium and magnesium. Wastewater with a SAR greater than ten may lead to a breakdown in soil structure when discharged onto or into land.

Note: For the purposes of this Section, the following criteria will be used to determine whether adverse effects on aquatic life are no more than minor.

Criteria:

1. The nature (type and concentration) of contaminants likely to be present in the discharge.
2. The design of discharge outlet structure.
3. The nature of the receiving surface water bodies and existing uses of those bodies (including aquatic habitat values).
4. The mitigation measures associated with the discharge.

20.2 CONTROLLED ACTIVITIES

The following discharge from an industrial or trade premises is a controlled activity:

1. **The discharge of water containing contaminants into water from water treatment plants for potable water supply, is a controlled activity** provided that:
 - (a) The discharge existed prior to this Plan becoming operative;
 - (b) The discharge only occurs during times of high total suspended solids concentrations in the source water which may result in significant problems within the treatment plant;
 - (c) The discharge consists only of primary treated potable water;
 - (d) The maximum volume of water discharged does not exceed 200 cubic metres over any 24 hour period and the water is discharged back into the same watercourse from which the water has been taken;
 - (e) The discharge does not cause scour or erosion of the beds or banks of the receiving water body or cause or exacerbate flooding.
 - (f) The discharge does not, at or beyond a 10 metre radius from the discharge point, result in any of the following when compared to the water quality immediately upstream of the discharge point:
 - (i) Increase the natural temperature of the receiving water by more than 3 degrees Celsius.
 - (ii) Cause the pH of the receiving water to fall outside of the range of 5 to 8.5. Where the background water has a pH outside this range then the discharge causes no change in pH.

- (iii) Cause the production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials in the receiving water.
- (iv) Cause any emission of objectionable odour in the receiving water.
- (v) Cause concentrations of any contaminants in the receiving water to have more than minor adverse effect on aquatic life.
- (vi) Cause the natural colour and clarity of the water to be change to a conspicuous extent.

Matters subject to Control:

- (1) Alarm systems and response standards.
- (2) Notification procedures in the event of a discharge occurring.
- (3) Overflow monitoring and remediation measures to receiving environment.
- (4) Frequency of overflows.
- (5) Measures provided to minimise the discharge of flocculants.
- (6) Measures to be incorporated in the design of the discharge treatment system to minimise the concentration of suspended solids and/or contaminants entering the receiving water.
- (7) The maximum concentration of contaminants in the discharge and/or the receiving environment after reasonable mixing.

Notification: an application for a controlled activity under Section 15.02.01 will not be notified unless the Council considers that subject to the provisions of ss.94C(2) of the Act special circumstances exist.

Explanation: *This rule covers the discharge of partially treated water which, on occasions, is required to be discharged from a water treatment plant during periods when the quality of source water is such that its treatment is impossible as this would result in significant problems within the treatment plant (e.g. rapid clogging of the filters). Such water may have received chemical flocculation treatment and/or have flowed through clarifiers but such water will not have flowed through the final filters nor have received its final chlorine dosing. The controlled activity status assigned to this activity recognizes the need for a precautionary approach in the absence of more detailed information about the nature of discharges under flood conditions. District Councils are encouraged to undertake a formal monitoring programme over the two years from this plan becoming operative and together with the Council will evaluate the data for the purposes reassessing the status of the activity.*

20.3 DISCRETIONARY ACTIVITIES

The following discharge of industrial or trade effluents is a discretionary activity:

- 1. The discharge of contaminants from an industrial or trade premise into or onto land or into water in a manner outside the scope of, or unable to**

meet the conditions pertaining to Rule 20.01.01, 20.01.02, 20.02.01 or any other rule relating to discharges of contaminants from industrial or trade premises is a discretionary activity.

Applications for a resource consent in respect of this discretionary activity will be publicly notified unless the provisions of s.94 of the Act are complied with; see Section 38 of this Plan.

***Explanation:** Industrial effluents can have a high organic content and can also contain a large number of other types of contaminants which may be toxic, persistent or bioaccumulative, such as heavy metals. For this reason, industrial effluent discharges to land, as well as discharges to water, are discretionary activities.*

The discharge of filter backwash water to water from water treatment plants for potable water supply is a discretionary activity as it involves regular discharges of contaminants into the water.

20.4 NON-COMPLYING ACTIVITIES

There are no non-complying activities for industrial or trade discharges.

20.5 PROHIBITED ACTIVITIES

There are no prohibited activities for industrial or trade discharges.

21. RULES FOR STORMWATER DISCHARGES

21.1 PERMITTED ACTIVITIES

The following diversions and discharges of stormwater are permitted activities:

1. **The diversion and discharge of stormwater by way of an open constructed stormwater collection system or piped stormwater collection system into water or onto or into land where it may enter water, where the stormwater collection system is connected to, or part of, a stormwater system for which a resource consent exists is a permitted activity.**

***Explanation:** This rule enables the diversion and discharge of stormwater into a public stormwater collection system or to any stormwater system where a resource consent is held. Connection to stormwater collection systems is at the approval of the consent holder and subject to any site specific technical standards of that consent. If the stormwater collection system is not authorised by resource consent then individual discharges into that system are not a permitted activity.*

2. **The diversion and discharge of stormwater, not otherwise permitted by Rule 21.01.01, by way of an open constructed stormwater collection system or piped stormwater collection system into water or onto or into land where it may enter water is a permitted activity, provided the following conditions are complied with:**
 - (a) For new subdivision and development, the best practicable option for on-site stormwater disposal shall be identified and incorporated into the stormwater management design to avoid or minimise changes to stormwater flows after development for the 1 in 5 year return period storm event.
 - (b) Where the diversion and/or discharge drains a hazardous substance storage area:
 - (i) for hazardous substances stored in fluid form or likely to liquify in fire, the area is bunded or otherwise designed with sufficient capacity to provide secondary containment that meets the following criteria:
 - Where containers are stored that have capacities of less than or equal to 450 litres, the secondary containment is able to contain the total capacity of substances stored; and
 - Where a single container with a capacity of greater than 450 litres is stored, the secondary containment is able to contain 110% of the volume of the container, or where two or more containers with capacities of greater than 450 litres are stored, the secondary containment is able to contain 100% of the volume of the largest container plus 10% of the aggregate capacity of all other containers.
 - (ii) the stormwater collection system is designed to avoid any hazardous substances (including unintentional releases) entering the system, or a stormwater interceptor system shall be installed; or

- (iii) the specific area complies with the following:
 - Hazardous substances are contained within vehicles, boats, aircraft or small engines;
 - It is for domestic storage of hazardous consumer products;
 - It is a retail outlet for the sale of hazardous substances for domestic use (e.g. supermarkets, hardware shops, pharmacies);
 - Agrichemicals are stored in accordance with the New Zealand Standard “*The Code of Practice for the Management of Agrichemicals*” (NZS 8409:1999).
- (c) Where the diversion and/or discharge drains an industrial or trade premise:
 - (i) the stormwater collection system shall be designed to avoid any contaminants stored or used on the site from being entrained in any stormwater discharge unless that stormwater is discharged through a stormwater interceptor system; and
 - (ii) any process water or waste stream on the site shall be bunded or otherwise contained, within an area of sufficient capacity to provide secondary containment equivalent to 100% of the quantity of any process water or waste that has the potential to spill into a stormwater collection system, in order to prevent process water or waste entering the stormwater collection system; and
 - (iii) the site is managed such that the concentration of contaminants in stormwater leaving the site do not pose an immediate or long-term hazard to human health or the environment beyond a 10 metre radius of the discharge point.
- (d) The stormwater collection system is designed to cater for stormwater flows resulting from not less than a 1 in 5 year return period storm event and a stabilised overland flow path is provided for to allow flows up to and including a 1 in 50 year storm event in excess of the capacity of the primary collection system.
- (e) For discharges to water, the discharge does not:
 - (i) Increase the natural temperature of the receiving water by more than 3° Celsius at or beyond a 20 metre radius from the discharge point.
 - (ii) Cause the pH of the receiving water to fall outside of the range 6.5 to 9 at or beyond a 20 metre radius of the discharge point.
 - (iii) Cause the production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials in the receiving water at or beyond a 20 metre radius of the discharge point.
 - (iv) cause any emission of objectionable odour in the receiving water at or beyond a 20 metre radius of the discharge point.
 - (v) contain more than:
 - 20 g/m³ of total petroleum hydrocarbons

- 10 mg/m³ of total copper
 - 10 mg/m³ of total lead
 - 100 mg/m³ of total zinc
 - 100 g/m³ of suspended solids.
- (f) The discharge does not cause scour or erosion of the beds or banks of the receiving water body.
- (g) For diversion and/or discharges onto or into land, stormwater quality control measures or treatment systems such as silt, oil and grease traps are incorporated to minimise the level of contaminants prior to final disposal.
- (h) The stormwater management or treatment systems, and any associated works or equipment shall be operated and maintained in an effective operating condition.
- (i) The diversion and/or discharge does not cause flooding of adjacent properties.

Explanation: *Although some stormwater from urban areas, and industrial and trade premises can contain significant quantities of contaminants, a high level of dilution is usually available and the stormwater can usually be discharged into water or onto or into land without significant adverse effects. Consequently, it is reasonable to provide for discharges as a permitted activity subject to compliance with specified conditions. A consent will be needed for stormwater discharges unable to meet these conditions.*

Diversions and discharges subject to this rule include those from roofs and formed car parking areas, areas draining a hazardous substance storage area, industrial areas and residential lots. Roads which drain roofs and formed carparking areas and trade and industrial premises are also covered by this rule. Other drainage of roads is covered in Section 22.

To help achieve the best practicable option for on-site stormwater disposal in clause (a), the following measures should be considered:

- *Infiltration facilities in permeable soil types;*
- *The retention of natural stream channels;*
- *Minimise areas of impermeable surfaces;*
- *Stormwater detention before dispersal into waterways.*

One means of complying with Clauses (a) and (f) is to implement on-site volume control practices as contained in “Technical Publication 124, Low Impact Design Manual for the Auckland Region”, Auckland Regional Council, 2000. The Council is planning to work with the District Councils in developing a Northland code of practice for on-site stormwater management outside urban areas to further assist in meeting the provisions of this Plan.

It is inappropriate to allow stormwater discharge from hazardous substances storage areas or contaminated sites without subjecting the discharges to full scrutiny.

It should be noted that the Hazardous Substances and New Organisms Act 1996 (HSNO) and the relevant District Plan contain requirements for the use, transportation, storage, and disposal of hazardous substances, and for hazardous facilities. HSNO controls are substance-based and in particular circumstances set minimum national standards to prevent the escape of hazardous substances or contamination.

The 1 in 5 year return period criterion is aimed at ensuring that stormwater systems are designed or upgraded to ensure sufficient capacity to handle at least modest-sized floods.

The 10 metre mixing zone is somewhat arbitrary but is considered necessary to provide some certainty and some assurance that any adverse effects are in fact minor.

Note: Subclause 21.01.02(c)(i) is not intended to apply to transfer station storage bins.

21.2 CONTROLLED ACTIVITIES

The following diversion and discharge of stormwater is a controlled activity:

- 1. The diversion and discharge of stormwater, by way of an open constructed diversion system or piped system, into water or onto or into land where it may enter water which does not meet the requirements of Rule 21.01.01 or 21.01.02 is a controlled activity, provided that:**
 - (a) Compliance with conditions (b), (c), (d), (f), and (h) of Rule 21.01.02.
 - (b) The diversion and/or discharge does not result in any of the following effects outside of a reasonable mixing zone:
 - (i) The production of any conspicuous oil or grease films, scums or foams, or floatable suspended materials;
 - (ii) Any conspicuous change in the colour or visual clarity;
 - (iii) Any emission of objectionable odour;
 - (iv) The rendering of fresh water unsuitable for consumption by farm animals;
 - (v) Any significant adverse effects on aquatic life.

Matters Subject to Control:

- (1) The permissible maximum concentration of contaminants in the discharge.
- (2) The size of the zone of reasonable mixing.
- (3) The adequacy of the proposed stormwater management and treatment systems.
- (4) The adequacy of the proposed inlets to collect the stormwater at the design return period.
- (5) The adequacy of the proposed measures to prevent scouring and erosion of riverbanks or river beds.

- (6) The acceptable degree of flooding of adjacent properties.
- (7) Information and monitoring requirements.
- (8) Any necessary staging of works.
- (9) The matters addressed in any stormwater management plan prepared in accordance with Section 35.01(i) of this Plan.
- (10) The degree of compliance with any relevant code of practice.

Explanation: Rule 21.02.01 provides for the same activities as Rule 21.01.02, the principal difference being that Rule 21.02.01 allows for Council discretion as to the level of contaminants in the discharge, the size of the mixing zone and the level of management control. In relation to the assessment of mitigation measures (b), (c) and (e), the Council will adopt a “best practicable option” approach. In situations where a discharger cannot comply with any of the conditions in Rule 21.01.01, or there is doubt about the ability of the discharge to meet receiving water standards within 10 metres of the discharge point, the discharger will need to seek a resource consent under Rule 21.02.01 or Rule 21.03.01.

21.3 DISCRETIONARY ACTIVITIES

The following diversions and discharges of stormwater are discretionary activities:

1. **The diversion and discharge of stormwater, by way of an open constructed stormwater collection system or piped stormwater collection system into water or onto or into land where it may enter water which:**
 - (a) has a design capacity of less than a 1 in 5 year period return period storm event;
 - (b) is contaminated to a degree which suggests that, even after reasonable mixing, receiving water standards may not be able to be met; or
 - (c) in any other way fails to comply with Rules 21.01.01, 21.01.02, and 21.02.01.

is a discretionary activity.

Explanation: Consent applications will be processed as a discretionary activity where the standards under controlled use activity Rule 21.02.01 cannot be met.

21.4 NON-COMPLYING ACTIVITIES

There are no non-complying activities for stormwater discharges.

21.5 PROHIBITED ACTIVITIES

There are no prohibited activities for stormwater discharges.

22. RULES FOR STORMWATER DISCHARGES AND DIVERSIONS FROM ROADS AND FROM LAND DISTURBANCE ACTIVITIES

22.1 PERMITTED ACTIVITIES

The following diversions and discharges associated with stormwater from roads and land disturbance activities are permitted activities:

1. **The diversion and discharge of stormwater into water or onto or into land where it may enter water from any land disturbance activity, which is permitted under a land disturbance activity rule in this Plan is a permitted activity**, provided that:

- (a) The stormwater is diverted or discharged in the catchment from which it originates.
- (b) Water and sediment control measures (e.g. rock rip-rap, cut-off drains, sediment traps) are installed and maintained, to avoid or minimise erosion and to avoid or minimise sediment discharges to any adjacent water bodies or to any coastal waters.
- (c) The diversion and discharge has a no more than minor adverse effect (as determined by the relevant water quality guidelines in Section 7) on aquatic ecosystems and/or on neighbouring or downstream landowners/occupiers (e.g. deposition of sediment, exacerbation of flooding).

***Explanation:** The land disturbance rules have environmental standards, which also relate to the discharge of stormwater from the activity. The discharge of stormwater would require a consent unless permitted by a rule. This rule allows the discharge provided conditions 1(a) and 1(b), and the land disturbance rule are complied with. Clause (a) relates to Maori culture objections to the diversion of water from one catchment to another.*

2. **The diversion and discharge of stormwater from any road or track by way of an open constructed stormwater collection system or piped stormwater collection system into water or onto or into land where it may enter water provided the stormwater collection system is connected to, or part of, a stormwater system for which a resource consent exists is a permitted activity.**

3. **The diversion and discharge of stormwater, not otherwise permitted by Rule 22.01.02 from any road or track into water or onto or into land where it may enter water is a permitted activity**, provided that:

- (a) The road does not form part of a stormwater collection system that is designed to divert or discharge stormwater from any of the sources otherwise regulated by rules contained in Section 21 of this Plan.
- (b) Water and sediment control measures (e.g. rock rip-rap, cut-off drains, sediment traps) are installed and maintained to avoid or minimise erosion and to avoid or minimise sediment discharges to any adjacent water bodies or to any coastal water.

- (c) The diversion and discharge does not cause adverse effects on neighbouring properties.
- (d) The stormwater collection system is designed to cater for stormwater flows resulting from not less than a 1 in 5 year return period storm event, and a stabilised overland flow path including the use of a road is provided for to allow flows up to and including the 1 in 50 year storm event in excess of the capacity of the primary collection system.
- (e) Environmental Standards 32.02.02 and 32.02.03 are complied with.
- (f) For discharges to a water body, the discharge does not:
 - (i) Increase the natural temperature of the receiving water by more than 3° Celsius at or beyond a 20 metre radius from the discharge point.
 - (ii) Cause the pH of the receiving water to fall outside of the range of 6.5 to 9 at or beyond a 20 metre radius of the discharge point.
 - (iii) Cause the production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials in the receiving water at or beyond a 20 metre radius of the discharge point.
 - (iv) Cause the emission of objectionable odour in the receiving water at or beyond a 20 metre radius of the discharge point.
 - (v) Cause at or beyond a 20 metre radius the following concentrations of contaminants to be exceeded:
 - 5 mg/m³ of total copper
 - 5 mg/m³ of total lead
 - 50 mg/m³ of total zinc
 - 50 g/m³ of suspended solids; and/or
 - (vi) Contain more than:
 - 20 g/m³ of total petroleum hydrocarbons

22.2 CONTROLLED ACTIVITIES

The following diversion and discharge associated with land disturbance activities or from roads is a controlled activity:

1. **The diversion and discharge of stormwater into water or onto or into land where it may enter water:**
 - (1) **from any land disturbance activity, where that activity is a controlled activity under a Land Disturbance Activity Rule in this Plan (refer also Section 33); or**
 - (2) **from any road that does not meet the requirements of permitted activity Rule 22.01.02 and 22.01.03;**

is a controlled activity, provided that:

- (a) The road does not form part of a stormwater collection system that is designed to divert or discharge stormwater from any of the sources otherwise regulated by rules contained in Section 21.
- (b) There are no adverse effects on soil conservation beyond the property boundary.
- (c) The environmental standards in Section 32 are complied with.

Matters Subject to Control:

The matters over which the Council will exercise control are:

- (1) The permissible maximum concentration of contaminants in the discharge.
- (2) The size and zone of reasonable mixing.
- (3) The adequacy of the proposed stormwater management and treatment systems.
- (4) The adequacy of the proposed inlets to collect the stormwater at the design return period.
- (5) The adequacy of the proposed measures to prevent scouring and erosion of riverbanks or river beds.
- (6) The acceptable degree of flooding of adjacent properties.
- (7) Information and monitoring requirements.
- (8) The duration of any resource consent.
- (9) Any necessary staging of works.

22.3 DISCRETIONARY ACTIVITIES

The following diversion and discharge associated with land disturbance activities and stormwater from roads is a discretionary activity:

- 1. **The diversion and discharge of stormwater from any land disturbance activity or stormwater diverted by a discharge from roads that in any way fails to comply with Rules 22.01.01, 22.01.02, 22.01.03, and 22.02.01 of this Plan is a discretionary activity.**

22.4 NON-COMPLYING ACTIVITIES

There are no non-complying activities for runoff from roads and from land disturbance activities.

22.5 PROHIBITED ACTIVITIES

There are no prohibited activities for runoff from roads and from land disturbance activities.

23. RULES FOR DISCHARGES FROM OTHER ACTIVITIES

23.1 PERMITTED ACTIVITIES

The following discharges of contaminants are permitted activities:

1. The discharge of fertiliser, other than animal effluent, into or onto land is a permitted activity, provided that:

- (a) All reasonable steps are taken to ensure that the fertiliser is applied in a manner which minimises the potential for contaminants to enter water, directly or indirectly, as a result of the discharge.

***Explanation:** The quantity of fertiliser applied to land should not be more than the assimilative capacity of the land so that there is minimal leaching of any contaminants into groundwater or surface water. For the purposes of condition (a) “reasonable steps” include:*

- (i) *Avoiding fertiliser application during, or immediately before, heavy rain which is likely to result in runoff;*
- (ii) *Avoiding fertiliser application during high wind which is likely to cause drift into rivers, lakes or wetlands;*
- (iii) *Minimising the use of fertiliser on the margins of rivers, lakes and wetlands; and for aerial applications, ensuring that pilots are aware of the location of water bodies”.*

2. The discharge of contaminants onto or into land, other than discharges provided for by other rules in this Plan is a permitted activity, provided that:

- (a) There is no direct discharge of contaminants into water.
- (b) The discharge does not contain hazardous substances.
- (c) No contaminant is discharged in circumstances which may result in that contaminant (or any other contaminant emanating as a result of natural processes from that contaminant) entering:
- (i) Groundwater in concentrations that would render it unsuitable for human consumption.
- (ii) Surface water in concentrations that have more than a minor adverse effect on aquatic life.
- (d) There is no odour that is offensive or objectionable at or beyond the boundary of the property of the disposal site.

***Explanation:** This rule allows for common discharges otherwise not regulated by other rules in this Plan. For example, domestic composting and the use of uncontaminated wood waste/product such as bark as a soil conditioner or weed suppressant for landscaping purposes. It also allows for less obvious discharges such as those from cemeteries. Nevertheless, this rule recognises the potential for these activities to cause adverse effects, particularly if contaminants enter water or produce odour.*

Groundwater will be deemed unsuitable for human consumption if it does not meet the drinking water standards for New Zealand (New Zealand Ministry of Health 1995. "Drinking Water Standards for New Zealand". Ministry of Health, Wellington).

3. The discharge of contaminants associated with the construction and maintenance of roads and tracks and other sealed areas onto or into land is a permitted activity, provided that:

- (a) The discharge consists only of material, normally associated with the construction and maintenance of roads and sealed areas, and includes the use of bituminous products which are bound with roading aggregate and compacted to create a temporary or permanent road surface.
- (b) The product is not a bituminous emulsion specifically designed for the suppression of dust or the discharge of any agrichemical or petroleum oil.
- (c) No contaminant directly enters the surface water for the duration of the activity.
- (d) Roding metal does not contain contaminants likely to cause a more than minor effect on the receiving environment.

Staff Interpretation Available <https://thehub.443/id:A118199>

Explanation: *Some of the materials used in road construction and maintenance can be construed as contaminants. With adequate environmental standards, the environmental effects of using these materials can be avoided. There are some materials that should not be permitted due to their effects on the environment being more than minor thus a resource consent is required.*

The use of bituminous products which are bound with roading aggregate and compacted to create temporary or permanent road surface is a technique that can have applications for dust suppression on unsealed roads and tracks, but recognises that this is a different binding technique than that offered by bituminous products which are sprayed onto unsealed surfaces specifically designed for the suppression of dust.

4. The discharge of:

- (1) continually flowing water which has been used for holding aquatic organisms;**
- (2) water (excluding geothermal water) from swimming and spa pools;**
- (3) filter backwash water;**
- (4) water from propulsion units and vessels;**
- (5) water from reservoirs or other impounded areas;**

to water or onto or into land where it may enter water is a permitted activity, provided that:

- (a) The discharge does not contain concentrations of any contaminants that could have an adverse effect on aquatic life.
- (b) The discharge does not contain any exotic organisms.
- (c) The discharge does not increase the natural temperature of the receiving water by more than 3° Celsius at or beyond a 10 metre radius from the discharge point.
- (d) The discharge rate is controlled so that it does not cause erosion of the land or stream channel, or flooding of properties below the discharge point.
- (e) The discharge does not cause the pH of the receiving water to fall outside of the range 6.5 to 9.0 at or beyond a 10 metre radius from the discharge point.
- (f) The discharge does not cause the production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials in the receiving water, at or beyond a 10 metre radius from the discharge point.
- (g) The discharge does not cause any conspicuous change in the colour or visual clarity of the receiving water, at or beyond a 10 metre radius from the discharge point.
- (h) The discharge does not cause any emission of objectionable odour in the receiving water at or beyond a 10 metre radius from the discharge point.

Explanation: For the purposes of 23.01.05(a) Policy 7.05.03 and corresponding Method 7.06.07 in this Plan provide the guidelines used by the Council for the purpose of the management of aquatic ecosystems.

5. The discharge of the following tracer substances into water:

- (1) Fluorescent dyes;**
- (2) Salts;**
- (3) Non-pathogenic micro organisms, and**
- (4) Plant spores**

is a permitted activity, provided that:

- (a) The discharge of dye concentrate or salts does not exceed 20 litres per day.
- (b) The discharge does not render aquatic organisms unsuitable for human consumption.
- (c) The discharger notifies the Council, at least 24 hours prior to the discharge but not more than 1 week prior to the discharge, of the location of the discharge point(s), the receiving water body likely to be affected and the intended period of that discharge.

- (d) The discharge does not at or beyond a 10 metre radius of the discharge point cause:
 - (i) The production of conspicuous oil or grease films, scums or foams, or floatable or suspended materials;
 - (ii) Any emission of objectionable odour;
 - (iii) The rendering of fresh water unsuitable for consumption by farm animals;
 - (iv) Any significant adverse effects on aquatic life.

6. The discharge of sluicing water into water is a permitted activity, provided that:

- (a) The activity is associated with the sluicing of public or community water supply mains or the testing of pipelines by way of scour valves.
- (b) The discharge does not cause any erosion of the channel or banks of the receiving water body.
- (c) The discharge does not cause any conspicuous change in colour, or the visual clarity of the receiving water is not reduced by more than 40% at or beyond a 10 metre radius of the discharge point.
- (d) The discharge does not increase the natural temperature of the receiving water by more than 3° Celsius at or beyond a 10 metre radius of the discharge point.
- (e) The discharge does not at or beyond a 10 metre radius of the discharge point cause:
 - (i) The production of conspicuous oil or grease films, scums or foams, or floatable or suspended materials;
 - (ii) Any conspicuous change in the colour or visual clarity;
 - (iii) Any emission of objectionable odour;
 - (iv) The rendering of fresh water unsuitable for consumption by farm animals;
 - (v) Any significant adverse effects on aquatic life.

7. The discharge of contaminants into water from maintenance activities associated with a structure over a water body is a permitted activity, provided that:

- (a) The discharge does not contain any hazardous substances.
- (b) The abrasive in any abrasive blasting activity is not nickel, iron, copper slag and any other similar type of material.
- (c) The surface area, from which old paint or other material is being removed, does not exceed 50 square metres.
- (d) The discharge does not cause the following effects, at or beyond a 10 metre radius from the discharge point:
 - (i) the pH of the water being outside the range of 6.5 – 9.0, except where due to natural causes,

- (e) The discharge does not at or beyond a 10 metre radius of the discharge point cause:
- (i) The production of conspicuous oil or grease films, scums or foams, or floatable or suspended materials;
 - (ii) Any conspicuous change in the colour or visual clarity;
 - (iii) Any emission of objectionable odour;
 - (iv) The rendering of fresh water unsuitable for consumption by farm animals;
 - (v) Any significant adverse effects on aquatic life.

Explanation: *This rule allows discharges to water of small volumes of non-hazardous contaminants from maintenance activities such as water blasting, and wet and dry abrasive blasting. Where the discharge, including the abrasive used contains hazardous substances such as lead paint flakes or heavy metals, a resource consent will be required. Where the abrasive blasting activity is completely enclosed so that there is no discharge to water, no resource consent is required.*

8. The discharge of lignin-based products onto or into land for the express purpose of dust suppression on unsealed roads is a permitted activity, provided that:

- (a) No contaminant directly enters surface water for the duration of the activity.
- (b) The product does not contain contaminants likely to cause a more than minor adverse effect on the receiving environment.
- (c) Application is in accordance with manufacturer's instructions, by an experienced applicator using appropriate equipment.

Note: For the purposes of this Section, the following criteria will be used in assessing whether adverse effects on the receiving environment are no more than minor.

Criteria:

1. The source of the rock aggregate and any potential contaminants likely to be associated with the rock aggregate. This clause is specific to Rule 23.01.03.
2. The proximity and relative location of surface water bodies (including roadside drains) to the discharge point, the nature of the water bodies, and the existing uses of the water bodies.

Note: The sluicing of material deposited behind a dam or weir is unlikely to comply with the conditions of permitted activity rules.

23.2 CONTROLLED ACTIVITIES

There are no controlled activities relating to the discharges described in Section 23.01.

23.3 DISCRETIONARY ACTIVITIES

The following discharges are discretionary activities:

1. **The discharge of contaminants onto or into land or into water from any of the activities described in Section 23.01 which fail to comply with the conditions of, or contravene Rules 23.01.01 – 23.01.09, but which is not prohibited is a discretionary activity.**
2. **The discharge of contaminants into water which falls outside the scope of any other rules in this Plan is a discretionary activity.**
3. **The discharge onto or into land of:**
 - (a) **bituminous emulsions specifically designed for the suppression of dust; or**
 - (b) **oil which is unused or uncontaminated and which does not contain additives for the purpose of dust suppression, onto or into land,**

is a discretionary activity.

***Explanation:** Unused or uncontaminated oil does not include ‘off the shelf’ motor oil, which contains potential contaminants such as zinc, calcium and magnesium. The use of bituminous emulsions for dust suppression such as Slowbreak or Spraymul-A55 is covered by this rule.*

23.4 NON-COMPLYING ACTIVITIES

There are no non-complying activities for discharges from other activities.

23.5 PROHIBITED ACTIVITIES

The following discharge of contaminants is a prohibited activity:

1. **The discharge onto or into land, or into water of petroleum oil and diesel as a dust suppressant where such a discharge is unable to meet the requirements of Rules 23.01.03 and 23.03.03, is a prohibited activity.**

***Explanation:** Petroleum oil and diesel has been applied to unpaved surfaces such as unsealed roads and carparks as a dust suppressant. Petroleum oil and diesel are hazardous substances which contain numerous potentially harmful substances. These can cause adverse effects if they enter water bodies so this practice is now prohibited. Other environmentally acceptable alternatives are available.*

24. RULES FOR THE TAKING, USE, DAMMING AND DIVERTING OF SURFACE WATER

ADVICE NOTE: SURFACE WATER TAKES FOR REASONABLE DOMESTIC NEEDS AND ANIMAL DRINKING WATER NEEDS

Under Section 14(3)(b) of the Act, the taking and use of fresh water for an individual's reasonable domestic needs or the reasonable needs of an individual's animals for drinking water is allowed without a resource consent, provided the taking or use does not, or is not likely to, have an adverse effect on the environment.

Domestic needs include the taking of water for consumption and household activities such as kitchens, bathrooms, laundries, gardens and toilets. Animal drinking water is for the drinking water requirements of an individual's animals only, and does not include other water requirements, for example, washing down water.

Examples of where an adverse effect on the environment in terms of Section 14(3)(b) of the Act can arise in instances where the take:

- i. Limits or prevents the ability of an existing lawful user to take water;
- ii. Is from an Outstanding Value River, Section of River or Lake shown in Appendix 18, from a dune lake listed in Schedule E or from a flow sensitive river of high ecological value detailed in Section 9;
- iii. Is taken by a water intake that has holes or slots greater than 5mm in width or diameter;
- iv. Results in a water velocity across an intake screen of greater than 0.3 metres per second;
- v. Changes the seasonal or annual range in water level of any indigenous wetland to an extent and manner that may adversely affect the wetland's natural ecosystem;
- vi. Affects the flow to any associated water body, or the water level in any lake to an extent and manner that may adversely affect the water body's natural ecosystem;
- vii. Results in, or contributes towards cumulative adverse effects on downstream water users.
- viii. The take or use does not result in a reduction in the water level below the design minimum flow.

The water user must provide the Council on request the following information:

- (i) Name, address and phone number of the water user.
- (ii) Location of the water take, including river or lake name.
- (iii) Volume of water taken.
- (iv) Purpose for which the water is taken.
- (v) For animal drinking water takes – the number of stock units and the area served.

The reticulation system and components are maintained in good working order to minimise leakage and wastage.

Note: Where necessary the Council may require the use or take to be monitored (metered).

24.1 PERMITTED ACTIVITIES

The following activities relating to the taking, use, damming and diverting of surface water are permitted activities:

Small surface water takes, excluding those from artificial water courses

1. The taking or use of surface water (excluding from artificial water courses) is a permitted activity, provided that:

- (a) The take is not from a river, or section of river, or lake deemed to have outstanding values as shown in Appendix 18.
- (b) The take is not from any significant indigenous wetland or from a dune lake listed in Schedule E.
- (c) The total take does not exceed the following volumes:
 - (i) 30 cubic metres per day for the period 1 June to 30 November,
 - (ii) 10 cubic metres per day for the period 1 December to 31 May.
- (d) The velocity across the intake screen does not exceed 0.3 metres per second. The screen shall have no holes or slots with a diameter or width greater than 5mm.
- (e) The take does not limit or prevent the ability of an existing lawful user to take water to meet their needs;
- (f) The water user provides the Council on request the following information:
 - (i) Name, address and phone number of the water user.
 - (ii) Location of the water take, including river or lake name.
 - (iii) Volume of water taken.
 - (iv) Purpose for which the water is taken.
- (g) The take or use does not result in a reduction in the water level below the design minimum flow.
- (h) The water take shall not cause any change in the seasonal or annual range in water level of any indigenous wetland to an extent and manner that may adversely affect the wetland's natural ecosystem.
- (i) The reticulation system and components are maintained in good working order to minimise leakage and wastage.

Explanation: *This rule allows the taking of water from rivers and streams, including any dams on those streams, springs, lakes and indigenous wetlands. The conditions on this rule are considered to address the main environmental effects that may occur.*

Outstanding value rivers, lakes, significant indigenous wetlands and dune lakes are protected from these additional surface water takes. The volume of the take is dependent upon the time of year, which reflects the availability of surface water. Stricter controls apply during the drier months.

While most domestic or farm water supply pumps are unlikely to pump at fast rates, condition (d) is a safeguard to prevent fish and invertebrates entering the pump system.

Condition (e) is based on a ‘first in first served’ principle. Existing lawful animal drinking water and domestic users are safeguarded from any users who start taking water after them. This may occur when land upstream of an existing user is subdivided, increasing the number of dwellings, and therefore the number of takes from the river. Should a new user start taking water downstream of an existing user, and there is insufficient water for the new user at any time, the existing user will not be required to cut back in order to comply with condition (e). However, the existing user must only be taking his or her reasonable needs.

For guidance on what design minimum flow requirements in condition (g) refer to Section 9 of this Plan.

Where there are cumulative adverse effects in a catchment as a result of additional takes, the Council will seek to ensure that users are only taking their reasonable requirements and that no water is being wasted through poorly maintained equipment. Where necessary, the Council will require users to reduce their takes or seek alternative sources of water.

Surface water takes from rivers in nominated catchments

2. In addition to the taking and use of water in accordance with Rule 24.01.01 the taking and use of surface water from a river is a permitted activity, provided that:

- (a) The take is from a river in the following catchments:
- Mangatete (Mangetete) River catchment
 - Aurere River catchment
 - Parapara River catchment
 - Taipa River catchment
 - Oruaiti River catchment
 - Kaeo River catchment
 - Hakaru River catchment
 - Otamatea River catchment but excluding Wairua River Catchment
 - Arapaoa River catchment but excluding Paparoa Creek catchment
 - Rivers draining west from The Bluff, Tinopai to Te Kowhai Floodgate Rd
 - Northern Wairoa River from below the Mangakahia River - Wairua River confluence, but not including the Manganui, Omana, and Waiotama River catchments
 - Whangape Harbour and river catchments

- Herekino Harbour and river catchments
 - Hokianga Harbour and river catchments but excluding Taheke River Catchment
 - West Coast draining rivers and streams from Maunganui Bluff to, but not including Shipwrecks Bay (excludes harbour catchments)
- (b) The take is not from a river, or section of river, or lake deemed to have outstanding values as shown in Appendix 18.
- (c) The take is not from any dune lake listed in Schedule E.
- (d) The take does not exceed 100 cubic metres per week with no more than 30 cubic metres taken per day.
- (e) The water user provides on request the following information to the Council:
- (i) Name, address and phone number of the water user.
 - (ii) Location of the water take, including river name.
 - (iii) Volume of water taken.
 - (iv) Purpose for which the water is taken.
- (f) The intake is screened so that the velocity across the screen does not exceed 0.3 metres per second. The screen shall have no holes or slots with a diameter or width greater than 5 millimetres.
- (g) The take or use does not result in a reduction in the water level below the design minimum flow.
- (h) There is no adverse effect on the ability of any existing lawful downstream water user to take water for their needs.
- (i) The water take shall not cause any change to the seasonal or annual range in water level of any indigenous wetland to an extent that may adversely affect the wetland's natural ecosystem.
- (j) The reticulation system and components are maintained in good working order to minimise leakage and wastage.

Explanation: *This rule allows minor surface water takes from those rivers in the listed catchments where such takes are unlikely to have an adverse effect. The water contained in a dam, cistern or reservoir can be used for any purpose.*

For guidance on what design minimum flow requirements in condition (g) refer to Section 9 of this Plan.

Artificial Watercourses

3. The taking, use, damming or diversion of surface water in an artificial watercourse which meet the following criteria:

- (1) The artificial watercourse is regularly maintained by drain cleaning activities, and floodgated or managed to ensure that no backflow occurs from rivers, lakes or coastal water; and**
- (2) The artificial watercourse is not connected upstream to a river, lake or indigenous wetland;**

is a permitted activity, provided that:

- (a) The take, use, damming or diversion does not limit or prevent any existing lawful user from being able to take water.
- (b) There are no more than minor adverse effects on the environment as a result of the activity.
- (c) The water take shall not cause any change to the seasonal or annual range in water level of any indigenous wetland to an extent that may adversely affect the wetland's natural ecosystem.

Explanation: *The rule allows for water takes from manmade water courses. The rule is based on a "first in first served" principle. Existing users are safeguarded from any users who start taking water after them. Should a new user start taking water down flow of an existing user, and there is insufficient water for the new user at any time, the existing user will not be required to cut back in order to comply with condition (a).*

Stored Water

4. The:

- (1) damming and diversion of rainfall runoff (but not water from a river, lake or indigenous wetland) into an off-stream reservoir which is not in the bed of a river, lake or indigenous wetland, and the unlimited taking and use of that stored water; or**
- (2) diversion and storing of water lawfully taken under the permitted rules in Sections 24 or 25 of this Plan or by way of a resource consent, into an off-stream reservoir not on the bed of a river, lake or indigenous wetland, and the unlimited taking and use of that stored water;**

is a permitted activity provided that:

- (a) The take, damming or diversion does not limit or prevent the ability of an existing lawful user to take water;
- (b) The take, damming or diversion does not change the seasonal or annual range in water level of any indigenous wetland to an extent and manner that may adversely affect the wetland's natural ecosystem;
- (c) The take, damming or diversion does not affect the flow of water to any associated water body, or the water level in any lake or indigenous wetland, to an extent and manner that adversely affects the water body's natural ecosystem;
- (d) Any discharge from the reservoir meets the requirements of Rule 23.01.04.

Note: Where a structure is located in, on, under or over the bed of a river or lake reference should be made to the rules in Sections 28 and 29.

Explanation: *This rule allows landowners to catch rainfall runoff, store it in an off-stream reservoir that is not on the bed of a river, lake or indigenous wetland, and to take water from that reservoir for any purpose. It also allows for users to divert water into the off-stream reservoir from outside the*

immediate catchment. This has benefits in that it may reduce sediment-laden runoff entering streams, and may encourage infiltration back into the soil. Any adverse effects of this activity depend on its scale. Provided such damming or diversion does not reduce the beneficial downstream flushing effects of freshes nor adversely affect fish migration, off-stream storage of water is encouraged.

This rule also allows for users who have taken surface water under permitted activity Rules 24.01.01, 24.01.02 and 24.01.03 or under a resource consent to store that water in an off-stream reservoir not on the bed of a river, lake or indigenous wetland and to subsequently take that stored water at an unlimited rate for any purpose.

Surface Water Takes for Road Construction

6. The take or use of surface water for road construction or maintenance purposes, including dust suppression during construction activities, is a permitted activity, provided that:

- (a) The total take does not exceed 150 cubic metres per day, or 450 cubic metres over any consecutive 5 day period, from any single water source.
- (b) The water user provides the Council, at least two weeks before any proposed water take which exceeds 30 m³ per day, or at least 24 hours before any proposed water take of less than 30 m³ per day, with the following information:
 - (i) Name, address, and phone number of the water user;
 - (ii) The location and duration of the proposed take, including river or lake name;
 - (iii) Volume of the proposed take;
 - (iv) The instantaneous rate of taking;
 - (v) Details of the screening device proposed to be used.
- (c) The water user keeps a record, which may be inspected by the Council, of the times and volumes of water actually taken, the location of the take, and the instantaneous rate of taking.
- (d) The instantaneous rate of taking does not reduce the flow in the river or stream by more than 20% of its flow at the time water is being taken nor to below its 1 in 5 year, 7 day low flow.
- (e) The take is not from:
 - (i) a river, or section of river, or lake deemed to have outstanding values shown in Appendix 18;
 - (ii) an indigenous wetland; or
 - (iii) any dune lake listed in Schedule E.
- (f) The velocity across the intake screen does not exceed 0.3 metres per second. The screen shall have no holes or slots with a diameter or width greater than 5 millimetres.
- (g) The take does not prevent any existing authorised water users from being able to take water to meet their needs.

- (h) There are not more than minor adverse effects on the environment as a result of the activity.

Explanation: *This rule permits the take of water for road construction and maintenance activities including dust suppression during works. It recognises that the water bodies from which water can be taken is dependent upon the area in which road construction and maintenance is being undertaken. It also recognises that such takes should not affect existing authorised users and result in adverse effects on the environment. To this extent water take is not permitted in conditions where water take would reduce water levels below 20% of the flow or where flows are reaching a 1 in 5 year, 7 day low flow.*

The Council maintains automatic water level recorder stations in various rivers in Northland. Recorder station information will be passed onto roading contractors when flows are reaching 1 in 5 year, 7 day low flow. This may result in those undertaking road construction not being able to take water from a water body or alternatively needing to seek a resource consent to take water.

Generally, if the take is from a first or second order stream as shown on any New Zealand Topographic Map Series 260, it will be unlikely to comply with (d) above.

Water take which results in a change in natural temperature of greater than 3 degrees Celsius or a reduction in the concentration of dissolved oxygen (daily minimum) to below six grams per cubic metre is likely to result in more than minor adverse effects on the environment.

24.2 CONTROLLED ACTIVITIES

There are no controlled activities for the taking, use, damming and diverting of surface water, except as may be provided for in Sections 27, 28, and 29.

24.3 DISCRETIONARY ACTIVITIES

The following activities relating to taking, use, damming and diverting of surface water are discretionary activities:

Lakes (other than Dune Lakes and Lakes deemed to have Outstanding Values)

- 1. Any taking, use, damming or diverting of water from a lake, other than any dune lake listed in Schedule E, or a lake deemed to have outstanding values as shown in Appendix 18, which cannot meet the requirements of the permitted activity rules, is a discretionary activity.**

Dune Lakes

- 2. Any existing take, use, damming or diverting of surface water, which is otherwise not provided for as a permitted activity, for which there is an application for renewal, from any dune lake listed in Schedule E, is a discretionary activity.**

All Other Takes

3. **The taking, use, damming or diverting of surface water which does not meet the requirements of the permitted activity rules, or is not covered by the non-complying activity rules, and is not otherwise covered by a rule in any other section of this Plan, is a discretionary activity.**

24.4 NON-COMPLYING ACTIVITIES

The following activities relating to taking, use, damming or diverting of surface water are non-complying activities:

Dune Lakes

1. **Any proposed taking, use, damming or diverting of surface water from any dune lake listed in Schedule E which is otherwise not provided for as a permitted or discretionary activity, is a non-complying activity.**

Indigenous Wetlands

2. **The taking, use, damming or diversion of water from within a significant indigenous wetland identified in accordance with Appendix 13B, which does not meet the requirements of the permitted activity rules is a non-complying activity.**

***Explanation:** The term ‘indigenous wetland’ is defined in Section 42. There are also a number of photographs of the different types of wetlands in Northland shown in Appendix 13A as well as photographs of ‘wet’ areas which are not considered to be wetlands in terms of this rule. Criteria for significant indigenous wetlands are contained in Appendix 13B. The areas containing outstanding value rivers and lakes are shown in Appendix 18.*

The Council will assess the significance of indigenous wetlands on a case-by-case basis.

Rivers, or Sections of Rivers and Lakes deemed to have Outstanding Values

3. **The taking, diversion or use of surface water from a river, or section of river, or lake deemed to have outstanding values as shown in Appendix 18, which do not meet the requirements of the permitted activity rules is a non-complying activity.**

***Explanation:** Rivers, or sections of rivers, and lakes deemed to be outstanding are shown in Appendix 18.*

24.5 PROHIBITED ACTIVITIES

There are no prohibited activities for the taking, use, damming or diversion of surface water.

25. RULES FOR THE TAKING, USE AND DIVERTING OF GROUNDWATER (INCLUDING GEOTHERMAL WATER)

ADVICE NOTE: GROUND WATER TAKES FOR REASONABLE DOMESTIC NEEDS AND ANIMAL DRINKING WATER NEEDS

(A) Reasonable use

Under Section 14(3)(b) of the Act, the taking and use of fresh water for an individual's reasonable domestic needs or the reasonable needs of an individual's animals for drinking water is allowed without a resource consent, provided the taking or use does not, or is not likely to, have an adverse effect on the environment.

Domestic needs include the taking of water for consumption and household activities such as kitchens, bathrooms, laundries, gardens and toilets. Animal drinking water is for the drinking water requirements of an individual's animals only, and does not include other water requirements, for example, washing down water.

(B) General adverse effects

A take will be considered likely to cause an adverse effect on the environment in terms of Section 14(3)(b) of the Act where it:

- i. Limits or prevents the ability of an existing lawful user to take water;
- ii. Is being taken for reasonable animal drinking water purposes and is from the same hydrologic system, and the bore is located less than 50 metres away from any other bore, dune lake, indigenous wetland or spring;
- iii. Changes the seasonal or annual range in water level of any indigenous wetland to an extent and manner that may adversely affect the wetland's natural ecosystem;
- iv. Results in significant ground settlement;
- v. Affects the springflows to any associated water body, or the water level in any lake or indigenous wetland, to an extent and manner that adversely affects the water body's natural ecosystem.

(C) Aquifer specific adverse effects

The aquifers listed in Schedule B are considered to be at risk from saltwater intrusion, particularly if large amounts of water are taken without the consideration of environmental effects.

Aquifers listed in Schedule A are high demand aquifers where the cumulative effects of new users need to be considered when allocating the water.

Therefore in addition to the criteria set out above, a take will be considered likely to cause an adverse effect on the environment in terms of Section 14(3)(b) of the Act where the take:

- i. Is from an aquifer listed in Schedule B and is a take for animal drinking water purposes;
- ii. Is from an aquifer listed in Schedule B and is a take for domestic needs where the take is greater than 1 m³ per day;
- iii. Is not an existing lawful take for animal drinking water purposes from an aquifer listed in Schedule A;
- iv. Is not an existing lawful take for domestic needs from an aquifer listed in Schedule A where the take is greater than 1 m³ per day.
- v. Is fitted with an appropriate backflow preventer as close as practicable to the bore head.
- vi. Results in or contributes towards cumulative adverse effects on water bodies and/or water quality.
- vii. The reticulation system and components are not maintained in good working order to minimise leakage and wastage.
- viii. The water user must provide the Council on request the following information:
 - (i) Name.
 - (ii) Postal address and phone number.
 - (iii) Property address.
 - (iv) Location of the groundwater take.
 - (v) Volume of water taken.
 - (vi) Purpose for which the water is taken.
 - (vii) For animal drinking water takes – the number of stock units and the area served.

Note: Where necessary the Council may require the use or take to be monitored (metered).

25.1 PERMITTED ACTIVITIES

The following activities associated with the taking, use and diversion of groundwater are permitted activities:

1. **The taking and use of groundwater from an aquifer, other than those aquifers listed in Schedules A, B or C, for any purpose is a permitted activity, provided that:**
 - (a) The daily volume taken does not exceed 10 cubic metres per day per bore and the rate of taking does not exceed 5 litres per second.
 - (b) Where the water is being taken from the same hydrologic system, the bore is located:
 - (i) at least 50 metres from any other bore existing at the date of commencement of this permitted activity, (unless any adjacent bore is owned by the person undertaking the activity); and
 - (ii) at least 100 metres away from any groundwater discharge point (spring).

- (c) The water take does not occur within any indigenous wetland, nor shall it cause any change to the seasonal or annual range in water level of any indigenous wetland to an extent that may adversely affect the wetland's natural ecosystem.
- (d) The water take does not cause any change to the seasonal or annual range in water level of any dune lake listed in Schedule E to an extent that may adversely affect the dune lake's natural ecosystem.
- (e) The water user provides the following information to the Council on request:
 - (i) Name of water user.
 - (ii) Postal address and phone number.
 - (iii) Property address.
 - (iv) Location of the groundwater take.
 - (v) Volume of water to be taken.
 - (vi) Purpose for which the water is taken.
- (f) The take or use does not limit or prevent the ability of an existing lawful user to take water.
- (g) The take or use does not affect the springflows to any associated water body, or the water level in any lake or indigenous wetland, to an extent and manner that may adversely affect the water body's natural ecosystem.
- (h) The taking does not result in significant ground settlement.
- (i) The take is fitted with an appropriate backflow preventer as close as practicable to the bore head.
- (j) The reticulation system and components are maintained in good working order to minimise leakage and wastage.

Explanation: This rule permits small quantities of water to be taken from high producing aquifers, and from aquifers that are lower producing but are subject to low demand. The taking of small quantities from these aquifers should only have minor adverse effects on the groundwater resource. An example of the first category is the Aupouri shell and sand aquifers. The latter category would include greywacke aquifers that are overlain by soils and landforms generally suitable for farming and forestry land uses.

The basalt aquifers listed in Schedule A that have been excluded from this permitted activity rule, represent groundwater resources which are currently, or have the potential to be, under significant demand with consequent adverse effects on associated surface water resources.

The shallow coastal aquifers listed in Schedule B are currently being used for individual water supplies in existing settlements. These aquifers are at risk of contamination by saltwater intrusion should development continue. One of these aquifers has already experienced saltwater intrusion problems.

Users who comply with this rule may request the Council to issue a certificate of compliance in accordance with Section 139 of the Resource Management Act 1991. (An administrative charge will apply.) This will protect them from

possible future conflicts that may be associated with a new bore being drilled within 50 metres of an existing bore after the permitted activity commences.

This rule does not restrict the number of bores that any person may take water from. While this may allow a person to take 10 cubic metres per day each from a number of bores as permitted activities, the Council considers that the costs of drilling several bores and the pumping equipment would be restrictive, and that users would find it more cost effective to apply for a resource consent for larger quantities from one bore.

2. Notwithstanding Rule 25.01.01, the taking, diverting and discharge of groundwater from an aquifer for bore development, bore testing, or dewatering by pumping, and the discharge of that water onto or into land or into water is a permitted activity, provided that:

- (a) In the coastal aquifers listed in Schedule B, the site of the bore testing or ground dewatering does not occur within 100 metres of mean high water springs (MHWS), and
 - (i) the activity is completed within 7 days of commencement and the daily volume of water taken does not exceed 50 cubic metres per day, or
 - (ii) the activity is completed within 24 hours of commencement and the daily volume of water taken does not exceed 100 cubic metres per day.
- (b) In any other aquifer not covered by Condition (a), the activity is completed within 7 days of commencement.
- (c) The discharged water does not result in erosion of the banks of any receiving water body.
- (d) Where the discharge is to water or onto land where it may enter water the discharge does not cause any of the following effects in the receiving water, at or beyond a 10 metre radius from the discharge point:
 - (i) The pH of the water being outside the range of 6.5 – 9.0, except where due to natural causes.
 - (ii) Any conspicuous oil or grease films, scums or foams, floatable or suspended materials.
 - (iii) Any increase in the level of faecal coliform bacteria.
 - (iv) Any conspicuous change in colour or reduction in the visual clarity of the receiving waters by more than 40%.
- (e) The groundwater level in any adjacent bore, or the flow or water level of any surface water body which is used for water supply purposes, is not reduced to the extent that the bore or surface water body cannot continue to be used for that purpose.
- (f) The water take does not occur within any indigenous wetland, nor shall it cause any change to the seasonal or annual range in water level of any indigenous wetland to an extent that may adversely affect the wetland's natural ecosystem.
- (g) Any resulting settlement shall not cause adverse effects on buildings, structures and services.

- (h) The take shall not change the water level regime or direction of flow of the aquifer after the completion of works.

Explanation: *This rule allows groundwater to be taken and discharged as required for road building, drain laying, building site dewatering and bore testing. It permits ground dewatering by pumping only, as distinct from the diversion and discharge of subsurface water during drainage works.*

Condition (a) relates to the risk of seawater intrusion where groundwater is being taken in the vicinity of the freshwater/saltwater interface. Bore testing is often required to collect the necessary information about a proposed groundwater abstraction.

A bore test may result in a neighbour's water supply being temporarily affected. However, if a suitable alternative water supply is provided, so that the neighbour does not consider himself or herself to be adversely affected, Condition (e) will be considered met.

25.2 CONTROLLED ACTIVITIES

The following activities for taking, using or diverting groundwater are controlled activities:

Existing Quarry and Mine Site Dewatering

1. **Ground dewatering of existing quarries and mine sites and ground dewatering by way of existing drainage sumps which do not draw water from at risk aquifers are controlled activities.**

Matters Subject to Control:

- (1) Location and design of dewatering wells;
- (2) Extent of dewatering;
- (3) Mitigation measures.

Explanation: *This rule covers existing dewatering of quarries and mine sites in the region. When considering renewal consents for these operations the Regional Council will be able to control the effects of such activities on the adjacent environment.*

An application in respect of this controlled activity will be non-notified unless the Council considers special circumstances exist to require notification (refer also Section 38.02). The Council will require that written approvals are obtained from any landowner/occupier whose water supplies may be adversely affected as the result of the investigations.

25.3 DISCRETIONARY ACTIVITIES

The following activities associated with taking groundwater are discretionary activities:

1. **The taking, use or diversion of groundwater from an aquifer, and any associated discharge of groundwater onto or into land or into water, which does not meet the requirements of the permitted, controlled or non-complying activity rules is a discretionary activity.**

Any resource consent granted in accordance with this rule will include a requirement to install a water meter with an accuracy of $\pm 5\%$ to measure the instantaneous rate and quantity of water taken from the aquifer, where:

- (a) The daily volume to be taken is 200 cubic metres or greater, or
- (b) The volume taken is likely to adversely affect an associated surface water resource, or
- (c) The average annual recharge of the aquifer is more than 50% allocated.

Explanation: *This rule applies to any new groundwater (including geothermal) takes from any aquifer and any existing but unlawful takes from those aquifers. The requirement for a water meter will be determined at the time of application. Rule 25.03.01 applies to all new applications and to any application for the replacement of an existing resource consent. The average annual recharge on the aquifer will be estimated using information collected from groundwater investigations from the Aupouri, Kaikohe, Maunu-Maungatapere-Whatitiri aquifers and using a simple water balance/model for other aquifers.*

It also applies to the taking and use of water, heat or energy from a bore constructed in the Ngawha Geothermal Field as defined in Schedule C, except where the activity is in accordance with tikanga Maori for the communal benefit of the tangata whenua of the area and the activity does not have an adverse effect on the environment. The taking and use of geothermal water, heat, or energy where the activity is in accordance with tikanga Maori and does not have an adverse effect is authorised by ss.14(3)(c) of the Act.

25.4 NON-COMPLYING ACTIVITIES

1. **The taking, use, damming or diversion of water from within a significant indigenous wetland identified in accordance with Appendix 13B, which does not meet the requirements of the permitted activity rules is a non-complying activity.**

Explanation: *The term 'indigenous wetland' is defined in Section 41. There are also a number of photographs of the different types of wetlands in Northland shown in Appendix 13A as well as photographs of 'wet' areas which are not considered to be wetlands in terms of this rule.*

25.5 PROHIBITED ACTIVITIES

There are no prohibited activities associated with the taking of groundwater.

26. RULES FOR GROUNDWATER BORE CONSTRUCTION ACTIVITIES

26.1 PERMITTED ACTIVITIES

The following activities associated with bore construction are permitted activities:

1. **The construction of a temporary bore is a permitted activity**, provided that:
 - (a) The bore is decommissioned in accordance with Section 2.7 of the New Zealand Environmental Standard for Drilling Soil and Rock (NZS 4411:2001) within 14 days of construction commencing.
 - (b) The bore is not for the purpose of taking samples of groundwater from an aquifer in association with the investigation or monitoring of a contaminated site or potential contaminated site.

Note: Where the construction of any bore (including exploratory bores) is unlikely to meet the criteria in Rule 26.01.01 a resource consent is required prior to the drilling commencing.

2. **The maintenance of a bore is a permitted activity**, provided that:
 - (a) The activity is in accordance with all requirements set out in the *New Zealand Standard Environmental Standard for Drilling of Soil and Rock* (NZS 4411:2001).
 - (b) In flowing or potentially flowing artesian aquifers, the upper bore casing is cement grouted prior to deeper drilling so as to prevent escape of high pressure waters and the development of ground instability at the bore head.

Explanation: *This rule ensures that bores are maintained in a way that prevents groundwater contamination.*

3. **The discharge of water or contaminants (drilling fluids) into groundwater for bore construction, maintenance or alteration purposes is a permitted activity**, provided that:

- (a) Drilling fluid is removed from the bore during bore development.

Explanation: *The use of drilling fluids is a necessary component of most bore construction. Some drilling fluids contain substances which may fall under the definition “hazardous substances”. If the drilling fluid is not removed during the bore development phase of bore construction, an adverse effect on groundwater quality may occur. Drillers are encouraged to use drilling fluids which do not contain hazardous substances.*

26.2 CONTROLLED ACTIVITIES

The following activity associated with bore construction is a controlled activity:

1. **Any bore constructed for the purpose of taking samples of groundwater from an aquifer in association with the investigation or monitoring of a contaminated site or potentially contaminated site is a controlled activity**, provided that:
 - (a) The bore head is constructed in accordance with the Monitoring Bore Surface Completion Specifications as shown in Appendix 14.

Matters Subject to Control:

- (1) Bore construction.
- (2) Closure of the bore.

An application in respect of this controlled activity will be non-notified unless the Regional Council considers special circumstances exist to require notification (refer also Section 38.02). The Council will require that written approvals are obtained from any landowner/occupier whose water supplies may be adversely affected as the result of the investigations.

***Explanation:** This rule ensures that the construction of bores for groundwater sampling in or around contaminated or potentially contaminated sites avoids any possible further contamination of the aquifer. A contaminated site is broadly defined as a site at which hazardous substances occur at concentrations above background levels and pose or are likely to pose an immediate or long-term hazard to human health or the environment. The definition includes landfills and sewage disposal fields.*

26.3 RESTRICTED DISCRETIONARY ACTIVITIES

The following activities in relating to groundwater bore construction activities are restricted discretionary activities:

1. **The construction or alteration of a bore that is not within any area identified in Schedules A, B, C, or F is a restricted discretionary activity.**

The Council will restrict its discretion to:

- (a) The location of the bore including the proximity to other bores.
- (b) The proximity of the bore to any contaminated site or potentially contaminated sites, including any effluent disposal field existing at the time of drilling.
- (c) Compliance with the *New Zealand Standard NZS 4411:2001: Environmental Standard for the Drilling of Soil and Rock*.
- (d) The bores design, construction, operation and maintenance requirements.

26.4 DISCRETIONARY ACTIVITIES

The following activity associated with bore construction is a discretionary activity:

- 1. The construction, maintenance or alteration of any bore that is not a permitted controlled, or restricted discretionary activity is a discretionary activity.**

***Explanation:** This rule includes the construction or alteration of any new bore within an aquifer identified in Schedules A, B, C or F.*

26.5 NON-COMPLYING ACTIVITIES

There are no non-complying activities for groundwater bore construction activities.

26.6 PROHIBITED ACTIVITIES

There are no prohibited activities for groundwater bore construction activities.

27. RULES FOR DRAINAGE AND RIVER CONTROL ACTIVITIES

Note: Section 13 restrictions in the Act relating to activities in, on, under or over the bed of a river or lake do not apply to artificial watercourses and therefore do not apply to farm drainage canals.

Section 13 restrictions do apply to wetlands where the wetland becomes part of the bed of the river when the river is at its fullest flow, or part of the bed of the lake when the lake reaches its highest level without exceeding its margins.

27.1 PERMITTED ACTIVITIES

The following activities relating to land drainage and river control activities are permitted activities:

Existing Land Drainage

1. **The taking, diversion and discharge of drainage water associated with drainage of land, other than public drainage networks within Drainage Districts and Flood Control Schemes, established prior to the notification of this Plan is a permitted activity, provided that:**
 - (a) The land drainage does not result in flooding or adverse over-drainage effects on any property owned or occupied by another person.
 - (b) The discharged drainage water does not cause any accelerated erosion of any land or water body beyond the point of discharge.
 - (c) The land drainage shall not cause any change to the seasonal or annual range in water level of any indigenous wetland (including any significant indigenous wetland) to an extent that may adversely affect the wetland's natural ecosystem.
 - (d) At or beyond a 10 metre radius from the discharge point the discharge does not:
 - (i) result in any conspicuous oil or grease films, scums or foams, or floatable or suspended material except where caused by natural events in the receiving water;
 - (ii) cause the pH of the receiving water to fall outside the range of 6.5 to 9.0 (except where caused by natural events, or when natural background levels fall outside that range);
 - (iii) cause any emission of objectionable odour in the receiving water;
 - (iv) cause any conspicuous change in colour, or reduction in visual clarity of the receiving water by more than 40%;
 - (v) cause the natural temperature of the receiving water body to be changed by more than 3°C.
 - (e) The discharge does not contain concentrations of contaminants which have or are likely to have an adverse effect on aquatic life.

Explanation: *The majority of Northland’s low-lying land has already been drained for primary production or urban development. Land drainage involves the taking, diverting and discharge of water – activities which are restricted by s.14 of the Act. Rule 27.01.01 permits established land drainage outside of Scheme areas, together with established land drainage within Scheme areas where it is on private land. However, it does not permit the “public” network within Scheme areas. A resource consent is required for public land drainage networks managed by local authorities or groups of landholders within Scheme areas, in accordance with Rule 27.02.01.*

Drainage Districts and Flood Control Schemes are established and managed by local authorities exercising their powers, functions and duties under the “Soil Conservation and Rivers Control Act” 1941, the “Land Drainage Act” 1908, or the “Local Government Act” 1974. Alternatively, they may be managed by a group of landholders which has assumed control pursuant to ss.517A to ss.517ZM of the “Local Government Act” 1974. Drainage Districts and Flood Control Schemes existing at the time of notification of this Plan are listed in Schedule D.

New Land Drainage

2. The taking, diversion and discharge of drainage water associated with the drainage of land, other than public drainage networks within Drainage Districts and Flood Control Schemes, established after 27 April 1995 is a permitted activity provided that:

- (a) All of the conditions of Rule 27.01.01 are complied with.
- (b) The discharge shall be to the same catchment as that to which the water would naturally flow.
- (c) In the case that the activity is occurring in a Drainage District or Flood Control Scheme area the activity shall meet the conditions of an approved Management Plan prepared by the Drainage Authority.
- (d) The taking or diverting of groundwater from an aquifer is undertaken in accordance with permitted activity rule 25.01.02.

Explanation: *As with Rule 27.01.01, Rule 27.01.02 excludes “public” land drainage networks managed by local authorities or groups of landholders within Scheme areas, in accordance with Rule 27.02.01.*

Maintenance of the free flow of water in Rivers and Lakes

3. Any:

- (1) **excavation or disturbance of the bed of a river or lake;**
- (2) **deposition of any substance in, on, or under the bed of a river or lake;**
- (3) **diversion or discharge of water; and/or**
- (4) **discharge of sediment or other material derived from the subject water body into water and into or onto land;**

undertaken for the purpose of maintaining the free flow of water in a river or lake, including minor channel realignments and clearance of debris blockages, is a permitted activity, provided that:

- (a) No earthworks are carried out in a river, or section of river, or lake deemed to have outstanding values as shown in Appendix 18.
- (b) There shall be no change to the seasonal or annual range in water level of any indigenous wetland (including any significant indigenous wetland), to an extent that may adversely affect the wetland's natural ecosystem.
- (c) Any vegetation clearance shall be limited to that required to maintain the free flow of water in the water body, including the removal of blockages that would exacerbate flooding, or to remove exotic weed species including those identified in a regional pest management strategy pursuant to the *Biosecurity Act 1993*.
- (d) No material removed from the bed shall be allowed to re-enter or shall be placed in a position where it could readily re-enter, or be carried into, a lake or wetland or a permanently flowing river that may result in:
 - diversion or damming; and/or
 - bed or bank erosion; and/or
 - adverse effects on ecosystems that are more than minor.
- (e) Any removal of sand, gravel or rock shall be limited to that required to maintain the free flow of water.

Note: Removal of sand, gravel or rock for other purposes is required to comply with Rule 31.01.01.
- (f) No refuelling or maintenance of equipment takes place on any area of the bed of a river or lake.
- (g) There are no adverse flooding effects on any property owned or occupied by another person, as a result of activity.
- (h) There is no significant erosion of the bed of the river or lake as a result of the activity.
- (i) The activity does not result in deepening or widening of the channel by more than 20%.
- (j) Any diversion of water, or realignment of the bed of the river or lake shall be restricted to within the lateral confines of the bed.
- (k) Any adverse effect on the ability of any downstream water users to take water to meet their authorised needs is minimised during the period of the works.
- (l) There is no damage to any existing lake or river protection, or any other lawfully established structure as a result of the activity.
- (m) The activity shall not prevent existing fish passage.
- (n) Any discharge of sediment associated with the activity shall not cause:
 - (i) any conspicuous change in colour; or
 - (ii) the reduction in visual clarity by more than 40%;

of the receiving water beyond a 10 metre radius from the activity at any time from 24 hours after completion of the activity.

- (o) The activity shall not interfere with or destroy any waahi tapu, as defined in the definitions, urupa or site of spiritual or cultural significance to Maori, which has been identified to the Council. Should archaeological remains or features be uncovered, the activity shall cease and the Council notified as soon as practicable. Also as soon as practicable the Council will then notify the appropriate tangata whenua entity. The activity shall not be recommenced without the authority of the New Zealand Historic Places Trust.

- Note:** (1) Rule 27.01.03(o) complements the duties and obligations imposed on all persons by the *Historic Places Act 1993* in respect of archaeological sites. The *Historic Places Act 1993* (s.10) makes it an offence to destroy, damage or modify or cause to be destroyed, damaged or modified the whole or part of an archaeological site, knowing or having reasonable cause to suspect that it is an archaeological site.
- (2) The Department of Conservation is the holder of the records of the New Zealand Archaeological Association. The existing records are subject to ongoing review and new records are continually added. The Department of Conservation should be consulted to determine whether there are any known archaeological sites in a particular area.
- (3) Rule 27.01.03(o) does not abrogate the responsibility of people to satisfy themselves prior to the commencement of work as to the location of waahi tapu etc. and their need to consult with tangata whenua with an interest in the area. The Council can provide lists of local contacts.

Explanation: *Landowners are required under the “Land Drainage Act” 1908 to maintain watercourses on their property so that the water can flow through unimpeded from upstream properties. However, this requirement does not abrogate their duties under the “Resource Management Act” 1991. Rule 27.01.03 is intended to facilitate the maintenance of watercourses while ensuring that any adverse effects are no more than minor.*

Existing Stopbanks

- 4. Notwithstanding the rules for earthworks in Sections 33 and 34 the repair of any existing stopbank, and any associated earthworks and diversion and discharge of water is a permitted activity, provided that:**

- (a) There are no adverse flooding effects on any property owned or occupied by another person, as a result of the activity.
- (b) No vegetation, soil, or any other debris is placed in a position where it may readily enter water, or be carried into a permanently flowing river, wetland, lake or coastal water.

Note: Repair of an existing stopbank does not include modification to the stopbank such as raising the crest.

27.2 CONTROLLED ACTIVITIES

The following activities relating to land drainage and river control are controlled activities:

Land Drainage and Flood Control Schemes

1. **Except for activities provided for by permitted activity rules in this Plan, any activity in a Drainage District or Flood Control Scheme area that is carried out by:**

- (1) **a local authority exercising its powers, functions and duties under the Soil Conservation and Rivers Control Act 1941, the Land Drainage Act 1908; or**
- (2) **a group of landowners who have assumed control pursuant to ss.517A to ss.517ZM of the Local Government Act 1974;**

Which would otherwise contravene Section 13, 14 or 15 of the Resource Management Act 1991, is a controlled activity, provided that:

- (a) The activity and any new structure shall not cause any significant erosion to any land or water body.
- (b) The activity and any new structure shall not prevent existing fish passage.
- (c) There shall be no discharge of contaminants, other than sediment and other material derived from the subject water bodies, arising from the use of machinery in the bed of a water body.
- (d) Any discharge of sediment associated with the activity shall not occur for more than five consecutive days, or for more than 12 hours on any one day within those five days, and there shall be no:
 - (i) conspicuous change in colour; or
 - (ii) reduction in visual clarity by more than 40%;
 of the receiving water after reasonable mixing at any time from 24 hours after completion of the activity.
- (e) Except as provided for by (d) above, any discharge shall not result in any of the following effects after reasonable mixing:
 - (i) The production of conspicuous oil or grease films, scums or foams, or floatable or suspended materials;
 - (ii) Any emission of objectionable odour;
 - (iii) *The rendering of fresh water unsuitable for consumption by farm animals;*
 - (iv) Any significant adverse effects on aquatic life.
- (f) A management plan shall be prepared in accordance with Appendix 17 of this Plan, and all works undertaken in accordance with the management plan.
- (g) There shall be no change to the seasonal or annual range in water level of any indigenous wetland (including any significant indigenous

wetland) to an extent that may adversely affect the wetland's natural ecosystem.

- (h) Any resulting settlement shall not cause adverse effects on buildings, structures and services.

Matters Subject to Control:

- (1) The management of drainage and flooding effects.
- (2) The adequacy of the proposed measures to prevent erosion of land and water bodies.
- (3) The size and zone of reasonable mixing.
- (4) Information and monitoring requirements.
- (5) The duration of resource consent.
- (6) The review of consent conditions.
- (7) Any necessary staging of works.
- (8) The matters addressed in a management plan prepared in accordance with Appendix 17 of this Plan.

- 2. **Except for activities provided by permitted activity rules in this Plan, the taking, diversion and discharge of drainage water associated with the drainage of land other than public drainage networks, for which there is no approved management plan and which would otherwise contravene s.13, s.14 or s.15 of the Act is a controlled activity provided that:**

- (a) All the conditions of 27.01.01 are complied with.
- (b) The discharge shall be in the same catchment as that to which the water would naturally flow.
- (c) Any dewatering is undertaken in accordance with Section 25 of this Plan.

Matters Subject to Control:

- (1) The management of drainage and flooding effects.
- (2) The adequacy of the proposed measures to prevent erosion of land and water bodies.
- (3) The size and zone of reasonable mixing.
- (4) Information and monitoring requirements.
- (5) The duration of resource consent.
- (5) The review of consent conditions.
- (6) The matters addressed in any proposed management plan prepared in accordance with Appendix 17 of this Plan.

Explanation: Consent is required for new land drainage associated with the drainage of land other than public drainage networks within drainage districts and flood control schemes until an approved management plan is in place.

Management plans prepared under Appendix 17 are intended to satisfy two purposes:

- *The management of effects on the environment, as required by the Act; and*
- *Achievement of the objectives of the Soil Conservation and Rivers Control Act 1941 including in relation to the flood management integrity of the Scheme.*

In addition to requiring a resource consent under the Resource Management Act 1991, approval of the Council as the catchment board for Northland is required under the Soil Conservation and Rivers Control Act 1941.

27.3 DISCRETIONARY ACTIVITIES

The following activities relating to drainage and river control activities are discretionary activities:

New Stopbanks or Modification to Existing Stopbanks

1. **Except as regulated by Rule 27.01.04, the erection and placement of any new stopbank or modification to an existing stopbank is a discretionary activity.**

Activities affecting Land Drainage and Flood Control Schemes

2. **Any of the following activities where they are undertaken within a drainage district or flood control scheme area:**
 - (a) **The introduction of planting of any plant in, on, or under the bed of any river, lake or artificial watercourse, or within 3 metres of the bed;**
 - (b) **The erection of any building, fence or other structure in, on, or under the bed of any river, lake or artificial watercourse, or within 3 metres of the bed;**
 - (c) **The deposition of any rock, shingle, earth, debris or other substance in, on, or under the bed of any river, lake or artificial watercourse, or within 3 metres of the bed;**
 - (d) **The undertaking of any other land disturbance activity within 3 metres of the bed of any river, lake or artificial watercourse;**

which impedes the functional integrity of the drainage district or flood control scheme, or which impedes access required for maintenance purposes, is a discretionary activity.

Land Drainage and Flood Control Activities that Do Not Comply with Other Rules

3. **Any activity associated with land drainage or flood control which does not comply with any condition on a permitted activity rule, or any standard or term on a controlled activity rule, but which is not expressly**

classified as a discretionary, or non-complying activity, is a discretionary activity.

Land Drainage and Flood Control Activities that are Not Expressly Regulated

- 4. An activity associates with land drainage or flood control, which is restricted by Section 13, 14 or 15 of the Act but not expressly regulated by other rules within this Plan, is a discretionary activity.**

27.4 NON-COMPLYING ACTIVITIES

The following activities relating to land drainage and flood control are non-complying activities.

Drainage of Significant Indigenous Wetlands

- 1. The drainage of any significant indigenous wetland identified in accordance with Appendix 13B, is a non-complying activity.**

27.5 PROHIBITED ACTIVITIES

There are no prohibited activities for drainage and river control activities.

28. RULES FOR DAM STRUCTURES (INCLUDING WEIRS) ON THE BEDS OF RIVERS AND LAKES

Note: Rules relating to the taking, use, or (unless otherwise specified in this section) the damming and diversion of water are included in Section 24 of this Plan.

Section 13 restrictions of the Act relating to activities in, on, under or over the bed of a river or lake do not apply to artificial watercourses and therefore do not apply to completely artificial farm drainage canals, however the damming and diversion of water in these waterways is provided for in Section 24 of this Plan as required by Section 14 of the Act. Furthermore, off-stream reservoirs constructed within stormwater flow paths are only subject to rules in Sections 24 and 33 of this Plan.

Section 13 restrictions of the Act do apply to wetlands where the wetland becomes part of the bed of the river when the river is at its fullest flow, or part of the bed of the lake when the lake reaches its highest level without exceeding its margins.

28.1 PERMITTED ACTIVITIES

The following activities relating to dam structures on the beds of rivers and lakes are permitted activities:

1. **The damming, diversion and discharge of water, and the use and repair of an existing dam structure, which has been lawfully established (prior to 18 March 2006) on the bed of a river or lake is a permitted activity, provided that:**
 - (a) The water impounded by the dam structure does not adversely affect adjoining land owned or occupied by another person.
 - (b) The damming, diversion and discharge of water does not cause any change to the seasonal or annual range in water level of any indigenous wetland to an extent that may adversely affect the wetland's natural ecosystem.
 - (c) The dam structure wall and spillway(s) are constructed and maintained so that dam structure failure is avoided, and flood overflows do not result in erosion of land or flooding of downstream properties.
 - (d) The dam structure face and spillway is not used or grazed in a manner that could damage its stability or result in erosion.
 - (e) The activity does not take place in a river, or section of river, or lake deemed to have outstanding values as shown in Appendix 18.
 - (f) It is not regulated by Rule 27.03.02.
 - (g) Any repairs do not result in the dam structure being able to retain a greater water volume than that which could be held by the dam structure prior to the repair under average annual rainfall conditions.
 - (h) Fish and invertebrate passage is maintained where this is part of the dam structures original design.
 - (i) The downstream flows are not caused to fall below their design minimum flow as a consequence of the dam structure.
 - (j) Any discharge of water meets the requirements of permitted activity Rule 23.01.04.

Note: Refer also to stormwater control rules in Section 22 of this Plan.

The Building Act 2004 provides restrictions and responsibilities that dam structure owners must also adhere to.

Explanation: *This rule provides for dam structures, which existed prior to 18 March 2006, on the beds of rivers and lakes as a permitted activity. Guidance is available from the Regional Council to assist with compliance of the conditions.*

2. The use and repair of a dam structure on the bed of a river or lake lawfully established after 18 March 2006 is a permitted activity, provided that:

- (a) The dam structure wall and spillway(s) are constructed and maintained so that dam structure failure is avoided and flood overflows do not result in erosion of land or flooding of neighbouring properties.
- (b) The dam structure face and spillway is not used or grazed in a manner that could damage its stability or result in erosion.
- (c) After Regional Council review upon expiry of consent the flows downstream are not caused to fall below their design minimum flow as a consequence of the dam structure.
- (d) Fish and invertebrate passage is maintained where this is part of the dam structures original design and construction.
- (e) It is not regulated by Rule 27.03.02.
- (f) Any repairs do not result in the dam structure being able to retain a greater water volume than that which could be held by the dam structure prior to the repair under average annual rainfall conditions.
- (g) Any existing vegetative strip required by way of resource consent conditions around the perimeter of the reservoir shall be maintained.
- (h) The dam structure was created in accordance with the original resource consent and held for a time span of not less than a 10 year term.
- (i) On request photographic and written evidence is provided to the Regional Council showing that:
 - (i) Fish and invertebrate passage, where this was required as part of the original consent, is being maintained,
 - (ii) The original continuation flow continues to be maintained, and
 - (iii) The dam structure including any spillways or other appurtenant structures are maintained.
- (j) The water impounded by the dam structure does not adversely affect adjoining land owned or occupied by another person.

Note: This rule allows for the consent of dam structures established after 18 March 2006 to become permitted activities so long as conditions (a) – (k) can be complied with. If any conditions cannot be complied with then a resource consent is required. Refer also to stormwater control rules in Section 22, of this Plan. The Building Act 2004 provides restrictions and responsibilities on dam structure owners that must also be adhered to.

- 3. The damming, diversion and discharge of water associated with a dam structure permitted under Rule 28.01.02 on the bed of a river or lake is a permitted activity, provided that:**
- (a) The dam structure retains not more than 3 metres in depth, and not more than 20,000 cubic metres in volume, of water.
 - (b) The discharge from the dam structure does not cause the water quality of the receiving water at or beyond 20 metres downstream of the discharge point to:
 - (i) Contain concentrations of contaminants to the extent that the water is rendered unsuitable for consumption by farm animals, nor shall the water emit objectionable odours, except when due to natural causes.
 - (ii) Contain hazardous substances, which have an adverse effect on aquatic life or result in the production of scums and foams, conspicuous oil or grease or floatable or suspended solids.
 - (iii) Change the natural colour and clarity of the water to a conspicuous extent.
 - (iv) Reduce the daily minimum oxygen content in solution in the discharged waters by more than 10%, except when due to natural causes.
 - (v) Result in an increase in the temperature of the receiving water by more than 3 degrees Celsius.
 - (vi) Result in the pH falling outside of the range 6.5 – 9,
 - (c) The damming, diversion and discharge of water does not cause any change to the seasonal or annual range in water level of any indigenous wetland to an extent that may adversely affect the wetland's natural ecosystem.

Explanation: *This rule allows for the damming, diversion and discharges associated with dam structures established after 18 March 2006 to become permitted activities if they comply with the above conditions.*

- 4. The construction, placement and repair of a temporary weir structure and the use of the bed of a river or lake for a temporary weir structure (and associated flow measuring devices) necessary for hydrological monitoring purposes and the associated damming, diversion or discharges of water to water in, on or under the bed of a river or lake is a permitted activity, provided that:**
- (a) The overall vertical height of the structure is no more than 600 mm above the bed of the river or lake.
 - (b) The weir opening vertical height is no more than 400 mm from the invert of the structure.
 - (c) The overall width of the structure is no more than 1.5 metres.
 - (d) The structure shall not cause a more than minor impediment to the passage of flood flows.
 - (e) Debris behind the temporary weir is cleared so as to prevent scouring and erosion.

- (f) The structure does not restrict or prevent an existing lawful user to take water.
- (g) The structure does not reduce summer low flows below the level of the 7 day 1 in five year return period or Mean Annual Low Flow of any flow sensitive rivers of high ecological value detailed in Section 9 of this Plan.
- (h) The structure does not affect the flows or change the seasonal or annual range in water levels in any associated water body, or the water level in any lake or indigenous wetland, to an extent and in a manner that may adversely affect the water body's natural ecosystem.
- (i) The use of the structure will not result in the discharge of any contaminants (including but not limited to oil, petrol, diesel, paint, or solvent) into water or onto land in a manner where it may enter water.
- (j) All excess construction materials are removed after placement of the structure.
- (k) All reasonable steps are taken to minimise the release of sediment to water during the construction, placement, use or removal of the structure and any associated equipment.
- (l) The structure is not in, on, over or under the bed of a river, or section of river or lake deemed to have outstanding values as shown in Appendix 18 or any Dune Lake in Schedule E.
- (m) The structure is removed within 1 week after monitoring activities are completed.
- (n) Monitoring activities are completed within a maximum of 21 consecutive days after structure placement once in any two-month period.

Note: Any temporary weir structure, which cannot meet the permitted activity conditions, is a discretionary activity.

5. The construction, placement and repair of a temporary dam structure where it is to give effect to permitted activity rules 29.01.03 and 29.01.05 for culvert and ford construction and the associated damming, diversion or discharges of water to water in, on or under the bed of a river or lake is a permitted activity, provided that:

- (a) The overall height of the structure is no more than 600mm above the bed of the river or lake.
- (b) The dam structure has sufficient strength to ensure they do not collapse under hydrostatic pressure or normal stream flows.
- (c) The dam structure is constructed of materials that are free of contaminants and the faces are protected against erosion.
- (d) The activity does not take place within any indigenous wetland, nor shall it cause any change to the seasonal or annual range in water levels in any associated water body, or the water level in any lake or indigenous wetland, to an extent and in a manner that may adversely affect the water bodies natural ecosystem.

- (e) The activity does not take place in a river, or section or river, or lake deemed to have outstanding values as shown in Appendix 18 or any Dune Lake listed in Schedule e.
- (f) The works are constructed during a period of low flow when there is a low risk of flooding.
- (g) The stream flow is maintained upstream and downstream of the works at all times.
- (h) The structure shall not cause a more than minor impediment to the passage of flood flows.
- (i) All excess construction materials are removed after placement of the structure.
- (j) All reasonable steps are taken to minimise the release of sediment to water during the construction, placement, use or removal of the structure and any associated equipment.
- (k) The structure is removed and the bed upstream and downstream of the culvert or ford is returned to its original condition within five days of commencing construction.

***Explanation:** this rule allows temporary dams (including coffer dams) to be constructed to dam and/or divert the flow of water during the construction of culverts and ford crossings that are permitted under Section 29 of the Plan.*

28.2 CONTROLLED ACTIVITIES

The following activities relating to dam structures on the beds of rivers and lakes are controlled activities:

1. **The use and repair of any lawfully established dam structure on a river or lake, which does not meet the permitted activity Rules 28.01.01 and 28.01.02, is a controlled activity.**

Matters Subject to Control:

- (1) The adequacy of the maintenance of the dam structure wall and the spillway(s).
- (2) The condition and maintenance needs of fish and invertebrate passes.
- (3) The extent to which it requires monitoring (including the need for a report from an engineer who is suitably qualified in that field).
- (4) The required design minimum flow and flushing flows.

Applications for resource consents in respect of this controlled activity will be generally non-notified unless the Council considers special circumstances exist to require notification (refer also Section 37.02). No written approvals will be required.

***Explanation:** It is a controlled activity because, for practical purposes, a resource consent application for existing dam structures is unlikely to be declined. Flushing flows are necessary for the health of river ecosystems, as they allow for the removal of built up sediment and algae. Flushing flows are different from sluicing which is provided for in Rule 31.01.02.*

2. **The damming, diversion and discharge of water associated with a permitted dam structure, which cannot meet the requirement of, permitted rules 28.01.01 and 28.01.03 or is controlled under Rule 28.02.01 is a controlled activity.**

Matters Subject to Control:

- (1) The adequacy of any design minimum flow and flushing flows;
- (2) The effects of discharges on aquatic life;
- (3) The level of reduction of dissolved oxygen;
- (4) Changes in temperature;
- (5) The zone of reasonable mixing.

Applications for resource consents in respect of this controlled activity will be generally non-notified unless the Council considers special circumstances exist to require notification (refer also Section 37.02). No written approvals will be required.

***Explanation:** The Rule allows for consent to be retained for an existing dam structures and associated activities which have a more than minor adverse effect. Flushing flow requirements are necessary for the health of river ecosystems primarily as flushing flows allow for the removal of built up sediment and algae which is necessary to maintain river health. This rule does not allow sluicing activities as these are covered by Rule 31.01.02.*

28.3 DISCRETIONARY ACTIVITIES

The following activities relating to dam structures (including new dam structures) on the beds of rivers and lakes and the associated damming, diversion and discharges are discretionary activities:

1. **Any activity which cannot meet the requirements of the permitted or controlled activity rules, or is not covered by the non-complying or prohibited activity rules, is a discretionary activity.**

Note: Refer also to stormwater, earthworks, vegetation clearance rules and Environmental Standards in Sections 22, 32, 33 and 34 of this Plan.

***Explanation:** This rule provides for the construction of new dam structures and any associated damming, diversion or discharges on rivers or lakes (after 18 March 2006). Further to this, any alteration (resulting in more or less water being held behind the wall of the dam structure), or replacement or removal of any dam structure on the bed of a river or lake is a discretionary activity unless authorised by an existing resource consent that has not yet been exercised.*

28.4 NON-COMPLYING ACTIVITIES

The following activities relating to dam structures on the beds of rivers and lakes are non-complying activities:

1. **Any activity which takes place within a significant indigenous wetland identified in accordance with Appendix 13B is a non-complying activity.**
2. **The placement of a new dam structure on the bed of a river or lake and the associated damming, diversion and discharge of water that flows directly into or out of an outstanding value river section of river or lake shown in Appendix 18 is a non-complying activity.**

***Explanation:** Rule 28.04.02 adds a further level of management to sections of rivers or lakes deemed to have outstanding value as shown in Appendix 18. The rule does not replace prohibited activity rule 28.05.01 it recognises that activities outside of the zoned sections of rivers deemed to have outstanding value can have an adverse affect if not directly regulated.*

28.5 PROHIBITED ACTIVITIES

The following activities relating to dams on the beds of rivers and lakes are prohibited activities.

1. **Any dam structure on the bed of a river, or section of river, or lake deemed to have outstanding values as shown in Appendix 18, is a prohibited activity.**

***Explanation:** This rule protects rivers, or sections of rivers, or lakes deemed to have outstanding values from the potential adverse effects related to dams on the beds of these water bodies.*

29. RULES FOR STRUCTURES (OTHER THAN DAM STRUCTURES OR WEIRS) IN, ON, UNDER OR OVER THE BED OF A RIVER OR LAKE

Note: Section 13 restrictions in the Act relating to structures in, on, under or over the bed of a river or lake do not apply to artificial watercourses and therefore do not apply to farm drainage channels. Nor do the restrictions relate to excavation and disturbance of the beds of farm drainage channels.

Section 13 restrictions do apply to wetlands where the wetland becomes part of the bed of the river when the river is at its fullest flow, or part of the bed of the lake when the lake reaches its highest level without exceeding its margins.

29.1 PERMITTED ACTIVITIES

The following activities relating to structures (other than dam structures or weirs) in, on, under or over the beds of rivers and lakes are permitted activities:

Existing Structures Not Otherwise Allowed by a Permitted Activity or Resource Consent

1. The use or repair of any structure in, on, under or over the bed of a lake or river

- (1) which was existing as at 27 April 1995; and**
- (2) whose construction was not otherwise allowed by a regional rule or a resource consent; and**
- (3) is not regulated by Rule 27.03.02; and**

the diversion of water around or through that structure, is a permitted activity, provided that:

- (a) The structure is not within any dune lake listed in Schedule E; or an indigenous wetland; or river, or section of river, or lake deemed to have outstanding values as shown in Appendix 18.
- (b) The existing structure is not associated with the launching, retrieval, mooring, maintenance or repair of vessels, except for boat ramps or concreted slipways less than 15 metres in length or 3 metres in width (refer also Rule 29.02.01).
- (c) The structure is maintained in good order and repair so as to avoid building material or other contaminants being deposited into the water body.
- (d) There are no adverse flooding effects on any upstream, adjoining or downstream properties as a result of the activity.
- (e) Any debris which accumulates around the structure is removed so as to avoid any adverse flooding or erosion effects.
- (f) The activity complies with the Environmental Standards in 29.01.11.

Explanation: *There are many existing structures in, on, under or over the bed of rivers or lakes which may not have been formally approved by the Council or any of its predecessors, or there is no record of their approval. To avoid time-consuming investigations into whether an existing structure is lawful or not (where there are no records), this rule authorises those structures provided appropriate environmental conditions are being met.*

Existing structures used for the launching, retrieval or mooring of vessels are excluded in order to be consistent with the Regional Coastal Plan. These structures are either controlled or discretionary activities.

Existing Lawful Structures

2. The use or repair of any existing structure, fixed in, on, under or over the bed of a river, which:

- (1) is not specifically provided for in Rules 29.01.03 – 29.01.10; or**
- (2) was lawfully established as at 27 April 1995; or**
- (3) was allowed subsequent to 27 April 1995; or**
- (4) is not regulated by Rule 27.03.02;**

and any associated excavation or disturbance of the bed, and any associated diversion and discharge of water, is a permitted activity, provided that:

- (a) The activity complies with the Environmental Standards in 29.01.11.**

Explanation: *This rule permits the ongoing use and repair of any structure whose placement and construction was authorised by a land use consent. It also permits the ongoing diversion of water around or through the structure. The land use consent for the initial construction of the structure can therefore be granted for a relatively short term of 2 – 5 years to cover the construction and stabilisation period.*

Culvert Crossings

3. The use, placement, replacement, repair or alteration of a culvert crossing on the bed of a river or lake and any associated excavation or disturbance of the bed, and diversion of water through the structure, is a permitted activity, provided that:

- (a) The length of the culvert crossing does not exceed 25 metres and is of sufficient size to contain the bankfull flow without causing flooding onto neighbouring properties.**
- (b) There are no adverse flooding or erosion effects on any upstream, adjoining or downstream properties as a result of the activity.**
- (c) The works shall include the provision of an overland flowpath on the same property to ensure the safe passage of a 1 in 100 year period flood flow event.**

- (d) During the disturbance of the bed, upstream flow up to a 1 in 5 year return period storm event, is temporarily diverted around the area of disturbance except where the temporary damming of the water is undertaken in accordance with Rule 28.01.05.
- (e) The activity does not take place in any dune lake listed in Schedule E; or in an indigenous wetland; or a river, or section of river or lake, deemed to have outstanding values as shown in Appendix 18.
- (f) It is not regulated by Rule 27.03.02.
- (g) The activity complies with the Environmental Standards in 29.01.11.

Note: Refer also to Section 34 – Rules for Land Disturbance Activities in the Riparian Management Zone.

Explanation: *This rule permits the use, placement, replacement, repair and alteration of a culvert crossing. The conditions relating to the size of culvert crossings control the potential loss of stream habitat and the cumulative effects on stream ecology and flooding. It will generally apply to a culvert crossing being constructed within a property where the flood overflow path can be kept within the property boundaries. Based on requirement (b), placing fill on top of a culvert in a confined valley, where there is no room for an overflow, except over top of the fill, would be a discretionary activity.*

Rule 34.01.02 and 34.01.03 and the Environmental Standards in 29.01.11 must also be complied with.

Single Span Bridges

4. **The use, placement, repair or alteration of a single span bridge over the bed of a lake or river is a permitted activity, provided that:**
- (a) No part of the bridge is in contact with the bed of the river or lake.
 - (b) Any abutments are stabilised and protected against erosion.
 - (c) The approaches to the bridge are constructed and maintained to minimise the discharge of contaminated runoff entering the water.
 - (d) The activity does not take place in any dune lake listed in Schedule E; or an indigenous wetland; or a river, or section of river, or lake deemed to have outstanding values as shown in Appendix 18.
 - (e) It is not regulated by Rule 27.03.02.
 - (f) The activity complies with the Environmental Standards in 29.01.11.

Note: Refer also to Section 34 – Land Disturbance Activities in the Riparian Management Zone.

Explanation: *This rule applies to the use, placement, repair or alteration of a single span bridge whose abutments are not located in or on the bed (or banks) of the river. The flow is therefore not impeded by structures within the channel.*

Guidelines are available from the Council to assist with compliance with these conditions.

Ford Crossings

5. **The use and repair of the bed of a river as a ford crossing, and the placement or deposition of any construction material, and any associated disturbance of the bed, is a permitted activity, provided that:**
- (a) The construction does not result in a vertical drop or discontinuity in the flow of water under any flow conditions.
 - (b) The approaches to the crossing are constructed and maintained to minimise the discharge of contaminated runoff entering the water.
 - (c) The ford crossing is not on the bed of a river, or section of river, deemed to have outstanding values as shown in Appendix 18.
 - (d) It is not regulated by Rule 27.03.02.
 - (e) The activity complies with the Environmental Standards in 29.01.11.

Note: Refer also to Section 34 – Land Disturbance Activities in the Riparian Management Zone.

***Explanation:** Fords are generally shallow places to cross a river, often where the bed of the river is hard. The adverse effects of the use of a ford is generally minor and/or temporary. However care must be taken to maintain the flow characteristics that avoid adverse effects on aquatic life, such as sheer downstream lips and vertical discontinuities in flow.*

Telecommunications, Powerlines and Water Pipelines

6. **The use, placement, repair, maintenance, upgrading or alteration of any lines defined in Section 2 of the *Telecommunications Act 1987* and any powerlines and any water pipelines in, on, under or over the bed of a river or lake, and any associated drilling, tunnelling or other disturbance is a permitted activity, provided that:**
- (a) Any new telecommunications line, or new powerline or water pipeline is not in, under or over the bed of a dune lake in any dune lake listed in Schedule E; or an indigenous wetland; or a river, or section of river, or lake deemed to have outstanding values as shown in Appendix 18.
 - (b) It is not regulated by Rule 27.03.02.
 - (c) The activity complies with the Environmental Standards in 29.01.11.

***Explanation:** Cables and lines, once installed, have little or no adverse effect on the environment. This rule takes due account for the existing use provisions in the Resource Management Act 1991.*

Fish and Game Structures

7. **The use, placement, repair and removal of any structure on the bed of a lake or river for the purpose of catching fish or shooting game, and any associated disturbance of the bed and diversion of water around or through the structure, is a permitted activity, provided that:**
- (a) Any area of indigenous vegetation affected by the structure does not exceed 5 m².

- (b) The structure is removed when no longer required.
- (c) The structure is not on the bed of a river, or section of river, or lake deemed to have outstanding values as shown in Appendix 18.
- (d) It is not regulated by Rule 27.03.02.
- (e) The activity complies with the Environmental Standards in 29.01.11 except standards 29.01.11(1) and 29.01.11(2).

Explanation: Structures such as whitebaiting stands, eel traps and maimai are generally placed in rivers, streams and lakes on a temporary basis. The purpose of a maimai means the materials used to construct it will generally fit in with the surrounding background, thus maintaining the natural character of the environment. Unpainted timber would be considered a suitable material for the construction of whitebait stands.

Minor River Bank Protection Works

8. The use, placement or alteration of a structure in or on the bed of a river, or the deposition of material on the bed of a river for the purpose of bank protection or reinstatement, and any associated bed disturbance is a permitted activity, provided that:

- (a) The activity does not take place in a river, or section of river, deemed to have outstanding values as shown in Appendix 18.
- (b) It is not regulated by Rule 27.03.02.
- (c) The length of the bank protection works situated on the bed of a river is the minimum necessary, and in any case is not more than 50 metres in length cumulatively over any 200 metre stretch of the river bank.
- (d) The structure, or the material deposited, does not extend beyond the original bank position.
- (e) The activity complies with the Environmental Standards in 29.01.11.

Explanation: This rule permits minor bank protection works provided any structure does not extent into the river channel. It also requires that the works maintain the natural character of the river, in that the structure or other works are not intrusive within the river environment.

“Bank”, as referred to in this rule, is the area of the river edges which falls under the definition of “bed” (see Definition, Section 41).

Other minor structures and associated activities (constructed after this Plan was proposed)

9. The use, placement, repair or alteration of any minor structures or part of any structure in, on, under or over the bed of a river or lake and any other associated activity otherwise restricted by Section 13 and Section 14 of the Act, which is not specifically provided for in any rules in other sections of this Plan is a permitted activity, provided that:

- (a) The activity does not take place in an indigenous wetland, or river, or section of river, or lake deemed to have outstanding values as shown in Appendix 18.
- (b) It is not the placement of a new structure in any dune lake listed in Schedule E.
- (c) The disturbance of the bed is completed within 5 days of the work commencing.
- (d) The activity does not create adverse drainage or flooding effects on the upstream, downstream or adjacent properties.
- (e) The activity complies with the Environmental Standards in 29.01.11.

Explanation: *This rule applies to structures in, on, under or over the bed of a river or lake that are not already addressed in Rules 29.01.02 to 29.01.08, as well as rules relating to dam structures in Section 28, and drainage and river control structures in Section 27. That is, it applies to any structure which is not:*

- (i) *An existing structure at the time this Plan is proposed;*
- (ii) *A culvert, bridge or ford crossing;*
- (iii) *A dam;*
- (iv) *A telecommunication or powerline;*
- (v) *For catching fish or shooting game;*
- (vi) *A drainage or river control structure;*

It therefore applies to, but is not limited to:

- (i) *Fences;*
- (ii) *Water intakes;*
- (iii) *Monitoring and sampling structures.*

Structures which would not comply with this rule may include weirs, floodgates, water table control structures, and pipelines which convey materials other than water, such as sewage or gas.

Removal or Demolition of Any Structure

10. Except as provided for in Rule 29.01.07, the removal of any structure and any associated disturbance of the lake or river bed is a permitted activity, provided that:

- (a) The activity does not take place on the bed of any dune lake listed in Schedule E; or an indigenous wetland; or river, or section of river, or lake deemed to have outstanding values as shown in Appendix 18.
- (b) The disturbance of the bed is completed within 48 hours of the work commencing.
- (c) The activity is carried out in a manner which avoids risks to public health and safety.

- (d) The activity complies with the Environmental Standards in 29.01.11 except standard 29.01.11(1).

***Explanation:** The removal or demolition of structures where they are derelict, no longer required, or dangerous, is encouraged where the activity can be carried out over a short period of time. If it takes longer than 48 hours the adverse effects may be increased. The Council therefore requires discretion to add further conditions to avoid, remedy or mitigate those potential adverse effects.*

11. Environmental Standards

1. The structure does not prevent fish passage under any flow conditions.
2. Any placement of a new structure from 27 October 2001³ shall not take place within any indigenous wetland; and
3. The repair, alteration, use or removal of an existing structure shall not cause change to the seasonal or annual range in water level of any indigenous wetland to an extent that may adversely affect the wetland's natural ecosystem.
4. No activity or structure shall adversely affect any area of significant indigenous vegetation or significant habitats of indigenous fauna as defined in Appendix 13B of this Plan.
5. The structure does not cause the diversion, damming or blockage of any river or stream.
6. The short-term visual clarity of any permanently flowing river or wetland shall not be reduced by more than 40%, after reasonable mixing, due to sediment or sediment laden discharge originating from the site of the land disturbance activity.
7. There is no damage to, or restriction of the use of, any existing river or lake protection works, or any other lawfully established structure as a result of this activity.
8. There is no significant erosion of the bed of the river or lake as a result of the activity.
9. Any associated embankments are maintained to prevent sediment entering the river or lake.
10. No contaminants (including but not limited to oil, petrol, diesel, paint or solvent) are released into the water or to the bed of the river or lake from equipment being used for the activity, and no refuelling of equipment takes place on any area of the river or lake bed.
11. All demolition debris from the river or lake bed structure is removed from the site.

³ Date of Notification of Variation (No.2) to the Proposed Regional Water and Soil Plan for Northland

12. Existing lawful public access rights to and along rivers and lakes are not restricted.
13. The activity shall not interfere with or destroy any waahi tapu, as defined in the definitions, urupa or any other sites known to the local iwi that are of spiritual or cultural significance to Maori which have been identified to the Council. Should archaeological remains or features be uncovered the activity shall cease and the Regional Council notified as soon as practicable. Also as soon as practicable the Regional Council will then notify the appropriate tangata whenua entity. The activity shall not be recommenced without the authority of the New Zealand Historic Places Trust.

Note: (i) Rule 29.01.11(13) complements the duties and obligations imposed on all persons by the *Historic Places Act 1993* in respect of known archaeological sites. The *Historic Places Act 1993* (Section 10) makes it an offence to destroy, damage or modify or cause to be destroyed, damaged or modified the whole or part of an archaeological site, knowing or having reasonable cause to suspect that it is an archaeological site.

(ii) The Department of Conservation is the holder of the records of the New Zealand Archaeological Association. The existing records are subject to ongoing review and new records are continually being added. The Department of Conservation should be consulted to determine whether there are any known archaeological sites in a particular area.

(iii) Rule 29.01.11(12) does not abrogate the responsibility of people to satisfy themselves prior to the commencement of work as to the location of waahi tapu etc. and their need to consult with tangata whenua with interest in the area. The Regional Council can provide lists of local contacts.

Note: (1) The Civil Aviation Authority of New Zealand must be advised of any structure which may represent a hazard to aircraft. As of the date this Plan was proposed, the postal address is:

Civil Aviation Authority of New Zealand
PO Box 31-441
Lower Hutt
New Zealand.

(2) The structure must also meet the navigational and safety requirements of the Minister of Transport (Maritime Safety Authority) if the structure is on, or over the bed of a navigable river.

Explanation: *This set of Environmental Standards must be complied with if they have been referred to in a condition on a permitted activity rule in this section.*

29.2 CONTROLLED ACTIVITIES

The following activities relating to structures (other than dam structures or weirs) in, on, under or over the beds of rivers and lakes are controlled activities:

Structures, existing at the date this Plan was proposed⁴, associated with the launching, retrieval or mooring of vessels

1. **The use, placement, repair, or alteration of any boat ramp or concreted slipway greater than or equal to 15 metres in length and more than 3 metres in width, and any structure (other than boat ramps and concreted slipways) associated with the launching, retrieval, mooring, maintenance or repair of vessels in, on, under or over the bed of a river or lake, and the diversion of water around that structure:**
 - (1) **which was existing at the date of notification of this Plan; and**
 - (2) **whose construction was not otherwise allowed by a resource consent**

is a controlled activity, provided that:

- (a) The structure meets the navigational and safety requirements of the Minister of Transport.
- (b) There is no damage to any existing river or lake protection works, or any other lawfully established structure as a result of the activity.
- (c) The activity does not result in any discharge or deposition of contaminants into the water body unless permitted by a regional rule or resource consent.
- (d) The dimensions of the structure are not altered as a result of any reconstruction works.
- (e) All debris is removed and disposed of at a site or facility authorised by a regional rule or resource consent.

Matters Subject to Control:

- (1) The adequacy of proposed mitigation measures to minimise adverse effects on water quality during reconstruction.
- (2) The adequacy of any proposed mitigation measures to minimise any erosion of the bed or banks of the river or lake, particularly around the base of the structure.
- (3) Information and Monitoring Requirements.

Applications for resource consents in respect of this controlled activity will be generally non-notified unless the Council considers special circumstances exist to require notification (refer also Section 37.02). No written approvals will be required.

Explanation: *This rule authorises wharves and jetties and other similar structures which were existing at the time this Plan was proposed and were not otherwise allowed. This rule is consistent with the rule for similar structures in the Coastal Marine Area in the Regional Coastal Plan for Northland.*

⁴ The Plan was proposed 25 April 1995

Culvert Crossings

2. The replacement of a culvert crossing or alterations or repairs to a culvert crossing which cannot meet the requirements of Rule 29.01.03 is a controlled activity, provided that:

- (a) The activity does not take place in any dune lake listed in Schedule E; or in an indigenous wetland, or in a river, or section of river, deemed to have outstanding values as shown in Appendix 18.
- (b) The activity shall not cause any change to the seasonal or annual range in water level or any indigenous wetland to an extent that it may adversely affect the wetland's natural ecosystem.
- (c) The structure does not prevent fish passage under any flow conditions.
- (d) The length of the culvert crossing does not exceed 25 metres.

Matters Subject to Control

- (1) The specifications of the culvert crossing with respect to the:
 - Design flood event;
 - Proposed location; and
 - Potential flooding upstream.
- (2) The adequacy of proposed erosion mitigation and sediment control during construction.
- (3) The location and adequacy of the flood overflow path.
- (4) The adequacy of the proposed design to allow fish passage.

Explanation: *This rule applies to the replacement of any culvert crossing, or alterations or repairs of any culvert crossing which cannot meet the requirements of Rule 29.01.03. Fish passage requires particular attention as adequate design, evaluation and monitoring of culvert crossings can be difficult and add significant costs.*

Bridges

3. The placement, replacement, alteration or repair of a bridge which does not meet the requirements of Rule 29.01.04 is a controlled activity, provided that:

- (a) The activity does not take place in any dune lake listed in Schedule E; or in an indigenous wetland, or in a river, or section of river, deemed to have outstanding values as shown in Appendix 18.
- (b) The activity shall not cause any change to the seasonal or annual range in water level or any indigenous wetland to an extent that it may adversely affect the wetland's natural ecosystem.
- (c) Any abutments are stabilised and protected against erosion.

- (d) The structure does not prevent fish passage under any flow conditions.

Matters Subject to Control

- (1) The specifications of the bridge with respect to the:
- Design flood event
 - Proposed location, and
 - Potential flooding upstream.
- (2) The adequacy of proposed erosion mitigation and sediment control during construction.
- (3) The location and adequacy of the flood overflow path.
- (4) The adequacy of the proposed design to allow fish passage.
- (5) The adequacy of the proposal for restoration of riparian vegetation.

***Explanation:** This rule applies to the placement, replacement alteration or repair of any bridge.*

29.3 RESTRICTED DISCRETIONARY ACTIVITIES

The following activities relating to structures (other than dam structures or weirs) in, on, under or over the beds of rivers and lakes are restricted discretionary activities:

4. **The use, placement or alteration of a ‘run of river’ hydro-electric scheme of less than 7kW on the bed of a river and any associated taking, diversion and discharge of water is a restricted discretionary activity provided that:**
- (i) The activity does not take place in any dune lake listed in Schedule E; or in an indigenous wetland, or in a river, or section of river, deemed to have outstanding values as shown in Appendix 18.

The Council will restrict its discretion to:

- (a) The location of the structure, including the location of the intake and discharge points.
- (b) The schemes design, construction, operation and maintenance requirements.
- (c) The methods for achieving compliance with the Environmental Standards in 29.01.11.
- (d) The effects of a reduction in the flow of water.
- (e) The effects of the water take and use on existing lawful users and their ability to be able to meet their water needs.

Note: For earthworks in the riparian management zone refer to Section 34.

Applications for a restricted discretionary activity may be considered without notification or with limited notification in accordance with s.93 of the Act.

Hydro-electric schemes operated from stored water (i.e. from a dam structure or weir) are required to meet the conditions in Sections 24 and 28 for the take, use, damming, diversion and discharge of water.

Rule 29.01.02 permits the ongoing use and repair of the hydro-electrical generation scheme once the consent for its ongoing replacement has expired. A resource consent for a hydro-electrical generation scheme is likely to be for a period no less than ten years.

29.4 DISCRETIONARY ACTIVITIES

The following activities relating to structures (other than dam structures or weirs) in, on, under or over the beds of rivers and lakes are discretionary activities:

1. **Any activity otherwise restricted by Section 13(1) of the Act, which cannot meet the requirements for permitted, controlled or prohibited activity rules in Section 29 and falls outside of the scope of any other rule in this Plan, is a discretionary activity.**

Explanation: Discretionary activities therefore include, but are not limited to:

- (i) *Culvert crossings that cannot meet the requirements of Rules 29.01.03, 29.02.02 or 29.04.01.*
- (ii) *Bridges that cannot meet the requirements of Rules 29.01.04, 29.02.03 or 29.04.01.*
- (iii) *New floodgates.*
- (iv) *Any new major flood control and drainage works.*
- (v) *New structures associated with the launching, retrieval, mooring maintenance or repair of vessels.*
- (vi) *Pipelines carrying liquids, other than water, over river or lake beds.*
- (vii) *Existing structures which significantly impede or impair fish passage such that the viability of upstream fish populations is threatened or any significant fish values are adversely affected.*
- (viii) *The placement of any new powerline structure or new telecommunication structure that cannot meet the requirements of 29.01.06 or 29.04.01.*
- (ix) *The use, placement, repair or alteration of a 'run of river' hydro-electric scheme which is not a restricted discretionary rule.*

29.5 NON-COMPLYING ACTIVITIES

The following activity relating to structures (other than dam structures or weirs) in, on or under the beds of rivers and lakes are non-complying activities:

1. **Any activity which takes place within a significant indigenous wetland identified in accordance with Appendix 13B, is a non-complying activity.**

2. **The placement of any new structure, excluding the placement of any new powerline structure or new telecommunication structure, in, on, over or under the bed of a river, or section of river, or lake deemed to have outstanding values as shown in Appendix 18 is a non-complying activity.**

***Explanation:** This rule protects outstanding value rivers, or section of rivers, or lakes deemed to have outstanding values from the potential adverse effects related to structures on the beds of these water bodies.*

29.6 PROHIBITED ACTIVITIES

There are no prohibited activities for structures (other than dam structures or weirs) in, on, under or over the bed of a river or lake.

30. RULES FOR INTRODUCTION OR PLANTING OF PLANTS IN, ON, OR UNDER THE BED OF A RIVER OR LAKE

30.1 PERMITTED ACTIVITIES

The following activities relating to the introduction or planting of plants in, on, or under the beds of rivers and lakes are permitted activities:

1. **The introduction or planting of any plant except:**

- (1) **crack willow (*Salix fragilis*), grey willow (*Salix caprea*), weeping willow (*Salix babylonica*), and black alder (*Alnus glutinosa*), other than on the river margins of rivers where they are already predominant;**
- (2) **any exotic aquatic plant with the exception of watercress (*Rorippa nasturtium aquaticum*); and/or**
- (3) **any species listed in the Regional Pest Plant Management Strategies;**

in the bed of any river or lake to remedy or mitigate the adverse effects of flooding, erosion or contaminant discharges is a permitted activity, provided that:

- (a) Only indigenous wetland plant species are planted in natural indigenous wetlands.
- (b) The planted species are managed by the landowner or occupier to ensure that they do not create an obstruction to the free flow of water.
- (c) There is no erosion of the bed or banks of the river or lake, as a result of the planting.
- (d) The activity does not cause adverse flooding effects on upstream, downstream or adjacent properties.
- (e) It is not regulated by Rule 27.03.02.

30.2 CONTROLLED ACTIVITIES

There are no controlled activities relating to the introduction or planting of plants in, on, or under the beds of rivers and lakes.

30.3 DISCRETIONARY ACTIVITIES

The following activity relating to the introduction or planting of plants in, on, or under the beds of rivers and lakes is a discretionary activity:

1. **Any activity which cannot meet the requirements of the permitted activity or falls outside the scope of the prohibited activity rules in**

Section 30 and falls outside of the scope of any other rule in this Plan, is a discretionary activity.

30.4 NON-COMPLYING ACTIVITIES

There are no non-complying activities for the introduction or planting of plants, in, on, or under the bed of a river or lake.

30.5 PROHIBITED ACTIVITIES

The following activity relating to the introduction or planting of plants in, on, or under the beds of rivers and lakes is a prohibited activity:

- 1. The introduction or planting of any plant species listed in any Regional Pest Management Strategy for Northland, is a prohibited activity.**

***Explanation:** This rule applies to the deliberate introduction or planting of pest plants on the beds of rivers or lakes. It does not apply to pest plants which establish themselves through natural mechanisms such as wind or water borne seeds. However, it does apply to the introduction of such plants via machinery or boats.*

31. RULES FOR OTHER USES OF RIVER OR LAKE BEDS

Note: Rules in this section are for activities not identified or otherwise covered by the rules in Sections 27, 28, 29 and 30 of this Plan.

31.1 PERMITTED ACTIVITIES

The following activities relating to other uses of the beds of rivers and lakes are permitted activities:

Extraction

1. **The excavation and disturbance of the bed of a river associated with the extraction of material (sand, gravel, rock) by an individual for private use, except as regulated by Rule 27.03.02 is a permitted activity, provided that:**

- (a) No activity shall affect the seasonal or annual range in water level, to an extent that may adversely affect the natural ecosystem of any indigenous wetland.
- (b) The activity shall not take place within any indigenous wetland, nor shall it cause any change to the seasonal or annual range in the water level of any indigenous wetland to an extent that may adversely affect the wetlands natural ecosystem.
- (c) The volume extracted does not exceed 100 cubic metres in any 12 month period.
- (d) The material is extracted from an area of the river bed not covered by water at the time of the extraction.
- (e) There is no machinery within the area of the river bed covered by water while the activity is taking place.
- (f) No refuelling or maintenance of equipment takes place on any area of the bed of a river, lake, drain or other artificial watercourse.
- (g) The bed is graded on completion of the activity so that there are no barriers to water movement within the channel.

Note: Rules relating to land disturbance activities within the Riparian Management Zone are included within Section 34 of this Plan.

Explanation: *It is a common occurrence for individuals to remove shingle or gravel from the beds of rivers where it is building up and perhaps increasing the risk of flooding or erosion. Often, the extracted material is used on properties for road construction or maintenance. When material is extracted from the river at a rate greater than it is produced and deposited, it is then being used unsustainably. The limit of 100 cubic metres per year is conservative due to the lack of information on the yields of Northland rivers.*

Note: Rule 31.01.01 does not allow a person to enter a property without the individual landowner's permission.

2. The excavation and disturbance of the bed of a lake or river associated with the extraction of material deposited behind a dam structure or weir is a permitted activity, provided that:

- (a) Both the extraction of material and the disturbance of the bed shall be limited to that depositional area directly impounded by the dam or weir structure.
- (b) The disturbance of the bed must be completed within 48 hours of the work commencing. (This time constraint does not apply in cases where no water flows through the area of extraction).
- (c) There is no damage to, or restrictions to the use of, any existing lake or river protection works, or any other lawfully established structure as a result of this activity.
- (d) There is no significant erosion of the bed of the lake or river (outside the extraction site) as a result of this activity.
- (e) No extracted material is placed in a position where it may readily enter water.
- (f) No contaminants (including but not limited to oil, petrol, diesel, paint or solvent) are released to water or to the bed of the river from equipment being used for the activity, and no refuelling of equipment takes place on any area of the river bed.
- (g) The short-term visual clarity of any permanent flowing river or wetland shall not be reduced by more than 40%, after reasonable mixing, due to sediment or sediment-laden discharge originating from the site of the disturbance activity.
- (h) No activity shall affect the seasonal or annual range in water levels concentrations, to an extent that may adversely affect the natural ecosystem of any indigenous wetland.
- (i) The volume removed or disturbed is less than 100 m³ in any 12-month period.

Note: Rules relating to land disturbance activities within the Riparian Management Zone are included within Section 34 of this Plan.

Explanation: *This rule allows for land owners to remove deposited material from the riverbed on the upstream side of a dam structure where it has built up and thereby decreased the water storage capacity of the dam structure.*

31.2 CONTROLLED ACTIVITIES

There are no controlled activities for other uses of the bed of the river or lake.

31.3 DISCRETIONARY ACTIVITIES

The following activity relating to other uses of the beds of rivers and lakes is a discretionary activity:

- 1. Any activity restricted by Section 13(1) of the Act, which cannot meet the requirements of the permitted activity rules or is a non-complying**

rule in Section 31, and falls outside the scope of any other rule in this Plan, is a discretionary activity.

31.4 NON-COMPLYING ACTIVITIES

The following activity relating to other uses of the beds of rivers and lakes is a non-complying activity:

- 1. Any activity which takes place within a significant indigenous wetland identified in accordance with Appendix 13B, is a non-complying activity.**

31.5 PROHIBITED ACTIVITIES

There are no prohibited activities for other uses of river or lake beds.

32. ENVIRONMENTAL STANDARDS FOR LAND DISTURBANCE ACTIVITIES

The environmental standards that follow are referred to in the rules set out in Sections 33 and 34.

Staff Interpretation Available <https://thehub:443/id:A118190>

32.1 GENERAL ENVIRONMENTAL STANDARDS

1. The short-term visual clarity of any permanently flowing river or wetland shall not be reduced by more than 40%, after reasonable mixing, due to sediment or sediment laden discharge originating from the site of the land disturbance activity.
2. The short-term visual clarity of any lake or coastal waters shall not be reduced by more than 20%, after reasonable mixing, due to sediment or sediment laden discharge originating from the site of the land disturbance activity.

Note: See Appendix 1 for explanation on the measurement of visual clarity.

3. No vegetation, slash, soil, earth, rock, or any other debris shall be allowed to enter or shall be placed in a position where it could readily enter, or be carried into, a river, lake or wetland, that may result in:
 - Diversion or damming; and/or
 - Bed or bank erosion; and/or
 - Adverse effects on ecosystems that are more than minor.

Legal Opinion Available <https://thehub:443/id:A118203>

4. No vegetation, slash, soil, earth, rock or any other debris shall be allowed to enter or shall be placed in a position where it could enter and have more than minor adverse effects within the Coastal Marine Area.
5. All practicable measures shall be taken to avoid creating erosion features such as sheet wash, slips, slumps, rills and gullies, wind erosion, blow outs and stream bank erosion and to mitigate the effects of existing erosion features.
6. The activity shall not interfere with or destroy any waahi tapu, as defined in the Definitions, urupa or any other sites known to the local iwi which are of spiritual or cultural significance to Maori, which have been identified to the Council. Should archaeological remains or features be uncovered the activity shall cease and the Council notified as soon as practicable. Also as soon as practicable the Council will then notify the appropriate tangata whenua entity. The activity shall not be recommenced without the authority of the New Zealand Historic Places Trust.

Note: (i) Rule 32.01.06 complements the duties and obligations imposed on all persons by the *Historic Places Act 1993* in respect of archaeological sites. The *Historic Places Act 1993* (Section 10) makes it an offence to destroy, damage or modify or cause to be

destroyed, damaged or modified the whole or part of an archaeological site, knowing or having reasonable cause to suspect that it is an archaeological site.

- (ii) The Department of Conservation is the holder of the records of the New Zealand Archaeological Association. The existing records are subject to ongoing review and new records are continually being added. The Department of Conservation should be consulted to determine whether there are any known archaeological sites in a particular area.
 - (iii) Rule 32.01.06 does not abrogate the responsibility of people to satisfy themselves prior to commencement of work as to the location of waahi tapu etc. and their need to consult with tangata whenua with interest in the area. The Council can provide lists of local contacts.
7. To prevent erosion where vegetation clearance results in areas of exposed soil, these areas shall be revegetated as soon as practicable in the spring or autumn immediately following, to achieve an 80% ground cover within 24 months of the operation being completed.
 8. No storage, mixing of fuels, oils, agrichemicals or other similar substances shall take place in the Riparian Management Zone.
 9. All vegetation shall be felled away from any water body unless, for safety reasons, it is impractical to do so.
 10. There are no more than minor adverse effects on aquatic life.
 11. The activity shall not take place within any indigenous wetland and, where the activity involves the taking, use, drainage or diversion of water, the activity shall not cause any change to the seasonal or annual range in water level of any indigenous wetland to an extent that may adversely affect the wetland's natural ecosystem.
 12. Any adverse effect on the ability of any downstream water users to take water to meet their authorised needs is minimised.

32.2 ENVIRONMENTAL STANDARDS FOR EARTHWORKS

1. Where earthworks result in areas without vegetation cover, these areas shall be revegetated as soon as practicable in the spring or autumn immediately following, to an 80% ground cover within 24 months of the operation being completed. Where the operation is not finished but will need to stop for the winter months, any bare area must be over sown with a temporary cover or mulched in autumn or there must be contingency measures in place, to minimise soil loss.
2. Batters and side castings are to be stabilised by appropriate measures such as compacting, seeding, drainage and/or other methods of stabilisation to avoid slumping of upslope land and movement of soil offsite such that it can enter a water body or the Coastal Marine Area.
3. Roading and tracking shall be adequately maintained at all times or revegetated when no longer in use, to avoid or minimise erosion and

sediment discharges to any adjacent water bodies or the Coastal Marine Area.

4. All earthworks shall incorporate stormwater controls including water tables, grade control structures and cut-off drains and any other runoff control measures necessary to prevent scour from channelled water and to prevent sediment discharges.

32.3 ENVIRONMENTAL STANDARDS FOR LAND PREPARATION

1. Mechanical preparation of land, with the exception of subsurface drainage, shall be carried out parallel to the contour, where feasible. Where it is physically not possible to carry out land preparation parallel to the contour due to slope, sufficient runoff control measures shall be provided to prevent gully and rill erosion.
2. Windrows of slash shall be parallel to the contour to reduce sediment runoff.

32.4 ENVIRONMENTAL STANDARDS FOR PLANTATION FORESTRY

1. Where practicable and safe to do so, all trees shall be directionally felled or pulled back from any river, lake, indigenous wetland or the Coastal Marine Area. The removal of any tree that has been felled into any river, lake or indigenous wetland shall be undertaken so as to minimise damage to the bed and/or banks.

Note: Where a tree has entered an indigenous wetland, it may be more appropriate to leave it in place rather than remove the tree if doing so will cause excessive damage.

2. During forest harvesting operations, all stem butts shall be raised above the ground when cable logging through the Riparian Management Zone. That is, when hauling the operation shall be undertaken in such a manner so as to minimise damage to remaining riparian vegetation.
3. Machines from ground harvesting operations shall not operate within 5 metres of the bed of a river, lake, indigenous wetland or the Coastal Marine Area other than at a designated crossing or on existing roads or tracks or to assist with directional felling or to lift the stem butt out of any river, lake, indigenous wetland or the Coastal marine Area ('Turning' or 'screwing' of machines shall not occur within 5 metres of the bed of a river, lake, indigenous wetland, or the Coastal Marine Area).
4. Harvesting in or adjacent to the Riparian Management Zone shall be undertaken in such a way as to minimise disturbance of riparian edge vegetation (other than plantation forestry species being harvested that has formed part of the riparian vegetation).
5. Where soil disturbance within the Riparian Management Zone results from harvesting an 80% ground cover shall be achieved within 12 months of the operation being completed.

6. During the period 1 May to 30 September inclusive, the vegetation disturbance activity shall not result in more than 10% of the activity being disturbed to the extent that mineral subsoil (B₃ Horizon or deeper) is exposed. Operations on sand soils are excluded.

Note: A discretionary activity consent is required for the harvest of any trees planted after the date this Plan became operative⁵ where those trees are within 5 metres of a water body or the Coastal Marine Area. Consent may be refused for a discretionary activity, or it may be granted with or without conditions.

⁵ The Plan became Operative on 28 August 2004

33. RULES FOR LAND DISTURBANCE ACTIVITIES

33.1 PERMITTED ACTIVITIES

The following land disturbance activities are permitted activities:

1. **Vegetation clearance that is not on erosion prone land, and is not in a Riparian Management Zone, is a permitted activity**, provided that:
 - (a) The Environmental Standards in Section 32 are complied with; and
 - (b) Vegetation clearance by burning does not take place on peat soils, nor on any contiguous area in excess of 5 hectares on other soils.

2. **Vegetation clearance on erosion prone land that is not in the Riparian Management Zone, is a permitted activity**, provided that:
 - (a) The Council is notified at least 15 days prior to the vegetation clearance being undertaken;
 - (b) The Environmental Standards in Section 32 are complied with;
 - (c) The area of vegetation clearance is less than 5 hectares in any 12 month period unless the clearance is plantation forestry;
 - (d) Vegetation clearance by burning does not take place on peat soils; nor any contiguous area in excess of 5 hectares on other soils;
 - (e) The site of the activity will be re-established in woody vegetation within 24 months from the start of the vegetation clearance operation;
 - (f) Ground based methods of vegetation clearance are only undertaken during the period 1 October to 30 April inclusive, unless it is on sand country; and
 - (g) There are no more than minor adverse effects on soil conservation.

3. **Any earthworks that are not in a Riparian Management Zone, are a permitted activity**, provided that:
 - (a) The volume moved or disturbed is less than 5,000 m³ in any 12 month period where the activity is not undertaken on erosion prone land;
 - (b) The volume moved or disturbed is less than 1,000 m³ in any 12 month period and the surface area of the soil exposed is less than 1,000 square metres where the activity is undertaken on erosion prone land;
 - (c) There are no more than minor adverse effects on soil conservation beyond the property boundary; and
 - (d) The Environmental Standards in Section 32 are complied with.

4. **Any land preparation that is not on erosion prone land, and that is not in a Riparian Management Zone, is a permitted activity**, provided that:
 - (a) The Environmental Standards in Section 32 are complied with; and
 - (b) There are no more than minor adverse effects on soil conservation.

Note: On land having a slope of greater than 15 degrees particular care needs to be taken to ensure there are no more than minor adverse effects, and reference should be made to the Council for guidance.

Explanation (For Rules 33.01.01 – 33.01.04): Land use activities on non-erosion prone land should, as a general rule, be able to be undertaken with minimal adverse effects. There are however, certain combinations of geology, soils and slope which are more susceptible to erosion as a result of land disturbance activities, so environmental standards are required to be complied with in order to avoid or minimise potential adverse effects.

33.2 CONTROLLED ACTIVITIES

The following land disturbance activities are controlled activities:

1. **Any earthworks which are not located in the Riparian Management Zone; and**

- (1) **Are not located on erosion prone land and the volume moved or disturbed is greater than 5,000 m³ in any 12 month period; or**
- (2) **The earthworks are associated with the harvest of plantation forestry on erosion prone land with a slope of less than 26 degrees or where the soils are sand soils; and the volume moved or disturbed is greater than 1,000 m³ in any 12 month period and/or the surface area of the soil is exposed is greater than 1,000 m²;**

are a controlled activity, provided that:

- (a) The Environmental Standards in Section 32 are complied with; and
- (b) There are no more than minor adverse effects on soil conservation beyond the property boundary.

Matters Subject to Control

The matters over which the Council will exercise control are:

- (1) The adequacy of sediment and runoff control measures.
- (2) The location and extent of any earthworks.
- (3) The adequacy of site rehabilitation and revegetation measures to control sediment discharge and adverse effects on soil conservation.
- (4) Information and monitoring requirements.

An application for a controlled activity under Rule 33.02.01 need not be notified in accordance with ss.94.1(c) of the Act if the written approvals of those who the Council considers to be adversely affected by the activity have been obtained unless:

1. The Council considers it unreasonable in the circumstances to require every such approval to be obtained; or
2. The Council considers in accordance with Section 94(5) that special circumstances exist to require notification.

In making a decision about whether for the purposes of s.94 of the Act any person is adversely affected by the granting of a resource consent, the Council may take into account effects on the following:

- (a) Any landowner/occupier whose property may be adversely affected through any earth movement associated with the activity (refer also to Rule 22.02.01);
- (b) The Department of Conservation where there is a known historical feature or area of significant indigenous vegetation or significant habitats of indigenous fauna as defined in Appendix 13B, at or near the site of the activity; and/or
- (c) The local Iwi where there is a known site of spiritual or cultural significance.

33.3 DISCRETIONARY ACTIVITIES

The following land disturbance activities are discretionary activities:

1. **Any earthworks, that are not located in the Riparian Management Zone that are not permitted, controlled or non-complying activities are discretionary activities.**
2. **Any vegetation clearance, that is not located in the Riparian Management Zone and is not a permitted, or non-complying activity is a discretionary activity.**
3. **Any land preparation, that is not located in the Riparian Management Zone which;**
 - (a) **is undertaken on erosion prone land; or**
 - (b) **does not comply with Rule 33.01.04,****is a discretionary activity.**

33.4 NON-COMPLYING ACTIVITIES

The following land disturbance activity is a non-complying activity:

1. **Any activity which takes place within a significant indigenous wetland identified in accordance with Appendix 13B is a non-complying activity.**

33.5 PROHIBITED ACTIVITIES

There are no prohibited activities for land disturbance activities.

34. RULES FOR LAND DISTURBANCE ACTIVITIES WITHIN THE RIPARIAN MANAGEMENT ZONE

The criteria for determining the Riparian Management Zone are shown in Figure 7, which is repeated at the end of this section for convenience.

34.1 PERMITTED ACTIVITIES

The following land disturbance activities within the Riparian Management Zone are permitted activities:

1. Grazing or access of stock is a permitted activity, provided that:

- (a) The Environmental Standards in Section 32.01 are complied with; and
- (b) Stream bank vegetation, excluding grass, is only removed where:
 - (i) it impedes flood flows; or
 - (ii) it causes stream bank erosion; or
 - (iii) it is a pest plant; and
 - (iv) it does not contribute to shading of the water; or
 - (v) it is not necessary to prevent stream bank erosion.

Explanation: *Grazing in the Riparian Management Zone can reduce the effectiveness of the vegetation in that area to trap nutrients and sediments, and therefore to reduce the volumes of contaminants entering the water body. Animal excreta directly discharged into this sensitive area is more likely to be carried into streams during rain. Where stock are able to enter the water, more immediate pollution of the water can occur.*

Where stock browse the stream bank vegetation, particularly during drought conditions when feed may be low, important sources of food and shade for aquatic habitats may be lost. Rises in temperature due to loss of shade are likely to contribute to the degradation of water quality.

Where cattle have access to stream banks and stream beds, there can be considerable disturbance of earth and stream sediments, which may destroy or modify aquatic habitats.

2. Vegetation Clearance within the Riparian Management Zone is a permitted activity, provided that:

- (a) The Environmental Standards in Section 32 are complied with; and
- (b) The Vegetation;
 - (i) impedes or is likely to impede flood flows; or
 - (ii) causes or is likely to cause stream bank erosion; or
 - (iii) is a plantation forest planted prior to this Plan becoming operative⁶; or

⁶ The Plan became Operative on 28 August 2004.

- (iv) is a plantation forest planted after this Plan became operative and the clearance is outside a setback of 5 metres from a water body; or
 - (c) The vegetation clearance:
 - (i) is the minimum necessary to give effect to the permitted activity rules in this Plan; and
 - (ii) does not exceed 200 m² in total; or
 - (iii) it is the minimum necessary for track and road maintenance.
- 3. Earthworks in the Riparian Management Zone are a permitted activity, provided that:**
 - (a) The Environmental Standards in Section 32 are complied with;
 - (b) The earthworks are the minimum necessary;
 - (i) to give effect to the permitted activity rules in this Plan; and
 - (ii) the area of exposed soil is less than 200 m² and the volume of earth disturbed is less than 50 m³; or
 - (iii) for track or road maintenance;
 - (c) Following the completion of any earthworks those parts of the Riparian Management Zone that are not required for the permitted activity are reinstated to a stable contour and revegetated as soon as practicable; and
 - (d) As a result of the earthworks in the Riparian Management Zone there are no adverse flooding or drainage effect on any property owned or occupied by another person.
- 4. Land preparation in the Riparian Management Zone is a permitted activity, provided that:**
 - (a) The Environmental Standards in Section 32 are complied with; and
 - (b) The activity takes place outside a setback of 5 metres from the water body and the dominant slope is less than 15 degrees.

34.2 CONTROLLED ACTIVITIES

There are no controlled activities for land disturbance activities within the Riparian Management Zone.

34.3 DISCRETIONARY ACTIVITIES

The following land disturbance activities within the Riparian Management Zone are discretionary activities:

- 1. Any activity which cannot comply with, or is outside the scope of, the permitted rules, or is not a non-complying activity, is a discretionary activity.**

- 2. The burning of waste vegetation within the Riparian Management Zone is a discretionary activity.**

***Explanation:** The Riparian Management Zone plays an important role in protecting and enhancing the water quality of adjacent water bodies. The clearance of shade-giving shrubs and trees can be detrimental to stream life, particularly where the stream is shallow and slow moving. Where vegetation is cleared, mitigation measures such as replanting in species and densities appropriate to that Riparian Management Zone may be required.*

Burning of any vegetation as a land preparation method is not a technique that the Council encourages. In the Riparian Management Zone, burning would remove any protective vegetation including that on the stream banks, leaving the banks and channel most vulnerable to erosion.

34.4 NON-COMPLYING ACTIVITIES

The following land disturbance activity within the Riparian Management Zone is a non-complying activity:

- 1. Any activity which takes place within a significant indigenous wetland identified in accordance with Appendix 13B is a non-complying activity.**
- 2. Vegetation clearance by burning in the Riparian Management Zone is a non-complying activity.**

34.5 PROHIBITED ACTIVITIES

There are no prohibited activities for land disturbance activities in the Riparian Management Zone.

FIGURE 7: RIPARIAN AND FOREDUNE MANAGEMENT ZONE

- Note:**
- (i) Figures (7A) and (7B) define land adjacent to water bodies and the Coastal Marine Area except where that land comprises sand dunes.
 - (ii) Figure (7C) defines the Riparian Management Zone in relation to the foredune.
 - (iii) These figures are not to scale
 - (iv) Contact the Council should you require any assistance with the practical application of these diagrams.

FIGURE 7A: RIPARIAN MANGEMENT ZONE

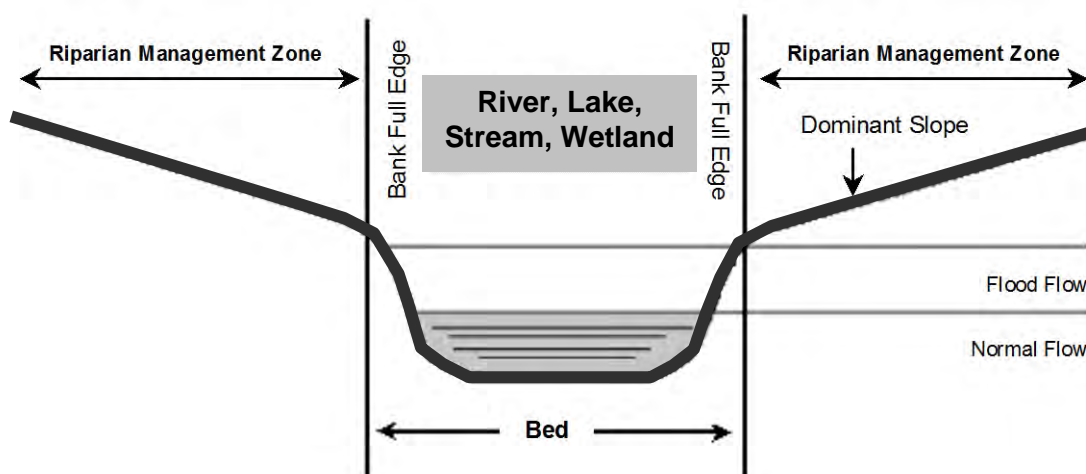
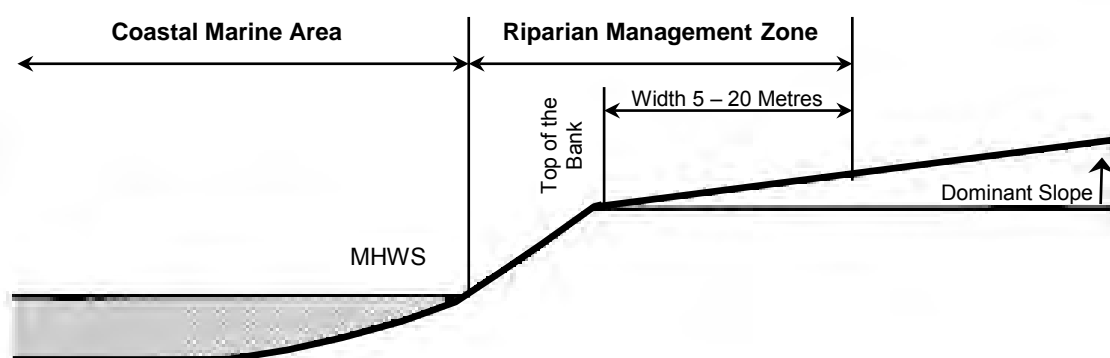
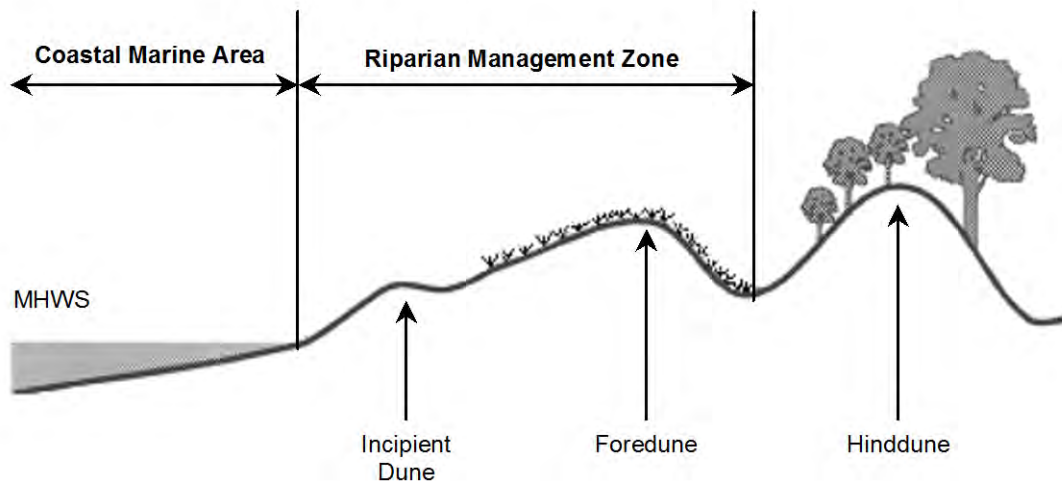


FIGURE 7B: RELATIONSHIP BETWEEN THE RIPARIAN MANAGEMENT ZONE AND THE COASTAL MARINE AREA



- Note:** If the top of the bank cannot be identified it should be taken from the beginning of the vegetated area.

FIGURE 7C: RIPARIAN MANAGEMENT ZONE IN RELATION TO THE FOREDUNE



The Riparian Management Zone is the land between the bed of the river, lake, or indigenous wetland or the Coastal Marine Area and a distance measured inland from the bank full edge of the water body or from the top of the bank adjacent to the Coastal Marine Area of:

- 5 metres where the dominant slope is less than 8 degrees
- 10 metres where the dominant slope is between 8 – 15 degrees
- 20 metres where the dominant slope is greater than 15 degrees

Where the dominant slope is 0 degrees or less there shall be no Riparian Management Zone.

Notwithstanding the above where the land adjacent to the Coastal Marine Area is unvegetated or vegetated sand dunes, the Riparian Management Zone in this instance is the land between the Coastal Marine Area and the bottom of the leeward side of the foredune.

35. INFORMATION REQUIREMENTS

Section 88 of the Act and the Fourth Schedule contain general information requirements for resource consent applications, and outline what should be included in an Assessment of Environmental Effects. The full text of these Sections are given in Appendix 3 and should be read in conjunction with this section.

This section builds on the information requirements of the Fourth Schedule and Section 88, and describes the information requirements in more detail for applications, discharge permits, water permits, land use consents for activities associated with the beds of rivers and lakes and land use consents for land disturbance activities.

If the information supplied with a resource consent application is insufficient to understand the nature of the activity or its effect, further information will be requested in accordance with s.92 of the Act.

35.1 INFORMATION REQUIREMENTS FOR DISCHARGE PERMIT APPLICATIONS

The information supplied with a discharge permit application should include:

- (a) Details and scale plan(s) of the proposed effluent or stormwater collection, treatment and disposal system.
- (b) Site plan(s) showing:
 - (i) the location of the effluent or stormwater collection, treatment and disposal system and its discharge point(s);
 - (ii) separation distances between the land disposal site and nearby water bodies;
 - (iii) site contours;
 - (iv) water bodies within the vicinity of the discharge point(s);
 - (v) flood levels (where appropriate);
 - (vi) property boundaries, and adjoining properties with the names of the current owners and occupiers marked.
- (c) For land disposal, a description of the soil type and geology underlying the disposal area, soakage tests undertaken and the results, and a water balance assessment (where appropriate), and a description of groundwater and surface water quality.
- (d) Where the application is for a discretionary activity to discharge effluent of high organic content to water, evidence showing that the proposed option is the best practicable option.
- (e) Where the application is for a discretionary activity consent for the disposal of sewage effluent to deep soakage systems, the following additional information is required:
 - (i) soil profile study identifying suitable permeable soil layers at depth;

- (ii) the depth of winter (June, July and August) groundwater at the discharge point or evidence that sufficient groundwater separation can be achieved;
 - (iii) evidence showing that use of a deep soakage system is the best practicable option for the site; and
 - (iv) consideration of ground conditions with respect to potential adverse effects on land stability.
- (f) Sufficient information to assess the mixing zone boundary and the water quality monitoring sites for discharges to water:
- (i) a photograph of the discharge point and representative reaches immediately upstream and downstream of the discharge point;
 - (ii) an estimate of the average width, depth and flow of the receiving water body during mean annual flow conditions and low flow conditions;
 - (iii) the distance downstream to the confluence of the next surface water inflow;
 - (iv) stream bed substrate and instream vegetation;
 - (v) any existing water quality information;
 - (vi) other uses (takes and discharges) upstream and downstream of the point of discharge (of sufficient distance to enable cumulative effects to be assessed);
 - (vii) a description of the outfall and how the effluent will mix with the receiving water (i.e. will it stay close to the bank, or will it mix across the entire width within several metres of the discharge point);
 - (viii) design criteria of any diffuser which is incorporated into the outfall structure.
- (g) A report outlining the consultation undertaken, the information supplied and any response to the views of those consulted. Consultation should be undertaken with the following:
- (i) the local iwi;
 - (ii) the Department of Conservation;
 - (iii) landowners and occupiers adjoining the site of the proposed activity;
 - (iv) any downstream users of the water who may be affected by the proposal;
 - (v) other relevant groups.
- (h) A management plan for the operation and maintenance of the effluent or stormwater collection, treatment and disposal system, including contingency measures. (The matters to be addressed in a management plan for a landfill operation are listed in Appendix 4.)
- (i) For stormwater discharges from catchments with a high proportion of impervious areas, a stormwater management plan. (The matters to be addressed in a stormwater management plan are listed in Appendix 5.)
- (j) A monitoring programme outlining how the effects will be monitored and by whom.

35.2 INFORMATION REQUIREMENTS FOR WATER PERMITS

35.2.1 General Information Requirements

The information supplied with a water permit application should include:

- (a) A plan showing the proposed point of taking, the boundary of the property, the location of any existing water takes and any indigenous wetlands which may be affected by the proposed take.
- (b) A description of the maximum and average quantities of water to be taken, the proposed methods of taking, reticulation, application and use, and any proposed measures to avoid wastage.
- (c) Provision of specific information or any accepted industry standard or guideline justifying the quantity of water applied for.
- (d) Where an applicant applies for more than 500 cubic metres per day for irrigation purposes, the provision of a water balance sheet estimating average daily water needs for each month over the period of irrigation, and estimating peak requirements. The water balance should take into account rainfall, soil types, evapotranspiration and soil moisture deficits and how these change over the irrigation season.
- (e) An assessment of the effect of the take directly or indirectly on any areas of indigenous wetland.
- (f) A description of the means by which effects on indigenous wetlands will be avoided, remedied or mitigated.
- (g) An assessment of the effects of the proposed take on the natural character of the environment, and any:
 - (i) ecological;
 - (ii) amenity;
 - (iii) cultural; and
 - (iv) recreational values of the water body.
- (h) A description of the means by which effects on the natural character of the environment and any ecological, amenity, cultural and recreational values will be avoided, remedied or mitigated.
- (i) A report outlining the consultation undertaken, the information supplied and any response to the views of those consulted. Consultation by the applicant is encouraged with the following where they have an interest in or are affected by the proposal:
 - (i) the local iwi;
 - (ii) the Department of Conservation;
 - (iii) landowners and occupiers adjoining the site of the proposed activity;
 - (iv) any downstream users of the water who may be affected by the proposal;
 - (iv) other affected groups;
 - (v) the local authority for the territorial district to which an application relates.

- (j) A monitoring programme outlining how the effects will be monitored and by whom.

35.2.2 Specific Information Requirements for River Takes

In addition to the general information requirements in Section 36.02.01, the information supplied with a water permit application for taking water from a river or stream should also include:

- (a) A description of any alternatives to direct river abstraction that have been considered, particularly over dry periods, including the possible use of groundwater and water storage dams, and the reasons for selecting the proposed source(s).
- (b) An assessment of the Design Minimum Flow at the point of the take with a description of the method used and supporting calculations.
- (c) An assessment of the typical grain size together with a description used in its calculation.
- (d) A description of the method used to estimate the average depth in fast flowing stretches of the river. A recommended procedure is described in Appendix 12.
- (e) The length of the river required to be assessed by the applicant in relation to (c) and (d) above will be that part of the river likely to be affected by the take. This will usually be to that point downstream beyond which inflow from runoff or tributaries equals or exceeds the volume of water sought by the applicant.

Where a minimum flow less than the Design Minimum Flow is proposed:

- (a) A description of the typical cross-sectional profile of the stream or representative sections.
- (b) The effect of the proposed take on water level (depth) downstream and the distance downstream at which this effect, under worse case conditions, could be regarded as being negligible. Worse case conditions will be maximum take under low flows.
- (c) The effects (if any) on water velocity and water quality downstream.
- (d) The distance from the take point to downstream waterfalls or other obstacles, and a description of the features of the obstacle including a statement as to its probable effect on the diversity and abundance of aquatic life upstream.
- (e) A description of the scale, timing and method of any regular instream or bank management works above or below the proposed take.
- (f) The effect on any downstream users and the potential for saltwater to extend further upstream.
- (g) A description of the aquatic plants present and an indication as to their general abundance, particularly during low flow periods.
- (h) An assessment of different measures proposed to mitigate potential flow related effects. Such measures might include the planting and/or fencing of riparian strips, tertiary treatment or land application of effluent.
- (i) The provision of data, which models or predicts the effect of flow on oxygenation, based on in situ dissolved oxygen measurements.

- (j) A description of any rare or threatened aquatic fauna or flora and an assessment of their flow-related habitat requirements.

35.2.3 Specific Information Requirements for Takes from Dams or Other Impoundment Structures

In addition to the general information requirements in Section 36.02.01, the information supplied with a water permit application for taking water from a dam or other impoundment structures should also include:

- (a) A description of the fish migration patterns in the river. This may involve fish surveys, local observations and/or predictions based on habitat and catchment features.
- (b) An assessment of the extent to which bypass flows, including flow pulses, might be needed to maintain fish migration and upstream fish populations.
- (c) Where appropriate, a description of how the discharge of water below the dam will be managed to meet fish migration needs, and avoid the discharge of poor quality water.
- (d) An assessment of the degree to which siltation and plant growth might be affected downstream to the extent that the discharge from the dam might need to be managed to avoid potential adverse effects.

35.2.4 Specific Information Requirement for Water Takes from Lakes

In addition to the general information requirements in Section 36.02.01, the information supplied with a water permit application for taking water from a lake should also include:

- (a) A description of the effects of the take on lake levels, taking into account the natural range in lake level.
- (b) An assessment of the effect of any lake level changes on the ecology of the lake ecosystem.

35.2.5 Specific Information Requirements for Water Diversions

In addition to the general information requirements in Section 36.02.01, and specific information requirements for river takes in Section 36.02.02, the information supplied with a water permit application to divert water should also include:

- (a) A plan showing the point in the water body from which the water is to be diverted, the diversion channel, the point at which the water is discharged and the water body affected.
- (b) A description of any alternative methods and sources that have been considered and the reasons for selecting the proposed source and method.
- (c) Where the water is diverted into another water body, an assessment of the effects of the diversion on the cultural and spiritual values of the tangata whenua.
- (d) A description of how the water diversion is to be controlled during low flows and high flows.

35.2.6 Specific Information Requirements for Groundwater Takes

In addition to the general information requirements in Section 36.02.01, the information supplied with a water permit application to take groundwater should also include:

- (a) A plan showing the proposed location of the bore, the boundary of the property, the location of any neighbouring bores and surface water resources, including coastal water, and the location and description of any land based effluent disposal system.
- (b) A copy of the borelog showing the total depth, casing depth, screen depth, recommended pumping rate, standing water level and pumping water level.
- (c) An assessment of the effects and sustainability of pumping the proposed volume on the groundwater resource, and any adjacent bores or surface or coastal water resources. A pump test may be required where the proposed volumes are large in relation to the resource or there are neighbouring bores supplying existing users who may be affected by the proposed take.

35.3 INFORMATION REQUIREMENTS FOR STRUCTURES OR WORKS IN, ON, UNDER OR OVER THE BED OF A RIVER OR LAKE

35.3.1 General Information Requirements

The information supplied with a land use consent application for a structure or works associated with the beds or rivers or lakes should include:

- (a) A site plan showing the location of the proposed structure or works, the boundary of the property and adjoining properties with the names and addresses of the current owners and occupiers marked.
- (b) A plan, drawn to scale, showing the design specifications for the structure, and/or area of works. (For dams, refer Section 36.03.02.)
- (c) A description of any proposed works to prevent erosion of the bed of the water body, as a result of the structure.
- (d) The timing of the proposed works, and a description of how adverse effects on water quality will be minimised during construction and after the works.
- (e) A description of the aquatic habitat and fish migration patterns in the catchment within which the structure or works is proposed and an assessment of any effects the proposed activity may have on those habitats, and fish migration patterns.
- (f) An assessment of the extent to which bypass flows around the structure might be needed to maintain fish migration and upstream fish populations.
- (g) An assessment of the effects of the proposed structure or works on the environment, having particular regard to any drainage or flooding effects off site.
- (h) A description of alternative methods that have been considered and the reasons for selecting the proposed method.
- (i) A description of the means by which effects on the natural character of the environment and any ecological, amenity, cultural and recreational values will be avoided, remedied or mitigated.

- (j) An assessment of the effects of the proposed structure or works on human life, health and safety, private and community property and existing flood mitigation structures or works.
- (k) A description of any mitigation measures proposed to help prevent or minimise actual and potential adverse effects.
- (l) A report outlining the consultation undertaken, the information supplied and any response to views of those consulted. Consultation by the applicant is encouraged with the following where they have an interest in or are affected by the proposal:
 - (i) the local iwi;
 - (ii) the Department of Conservation;
 - (iii) landowners and occupiers adjoining the site of the proposed activity;
 - (iv) any downstream users of the water who may be affected by the proposal;
 - (v) other affected groups.
- (m) A monitoring programme outlining how the effects will be monitored and by whom.

35.3.2 Specific Information Requirements for Dams

In addition to the general information requirements in Section 36.03.01, the information supplied with a land use consent application to build a dam structure in the bed of a river or lake should also include:

- (a) A plan, drawn to scale, showing the design specifications for the dam structure wall, the storage area, fish and invertebrate passage design, the spillway dimensions and low flow bypass provisions, including the level of the intake for the low flow bypass pipe within the reservoir.
- (b) The specification of the water supply intake pipe and structure, and the level of the intake pipe within the reservoir.
- (c) A statement of the catchment area behind the proposed dam.
- (d) Calculations to justify the spillway dimensions.
- (e) A description of the geology and soils in the vicinity of the dam site.
- (f) An estimation of the volume of soil required to construct the dam and the proposed source of the soil.
- (g) An explanation of the works programme including start and finish dates.
- (h) A description of the aquatic habitat in the catchment within which the dam is proposed.
- (i) An assessment of the effects of the proposed dam on other users within the catchment, water quality and aquatic habitat values.
- (j) A description of the geology, soil types, existing land use, vegetation, habitats of indigenous fauna, and any historic, cultural or natural features.

Note: Where relevant, refer also to Sections 36.02.03 (Information Requirements for Dams and other Impoundment Structures).

35.3.3 Specific Information Requirements for River Crossings

In addition to the general information requirements in Section 36.03.01, the information supplied with a land use consent application to construct a crossing (bridge, culvert, ford) should also include:

- (a) The design specifications of the proposed crossing including the road approaches to the crossing.
- (b) The location of the crossing in relation to any bends in the stream and location of flood overflow path.

35.3.4 Specific Information Requirements for Extraction of Riverbed Material

In addition to the general information requirements in Section 36.03.01, the information supplied with a land use consent application to extract riverbed material should also include:

- (a) A description of the activity including the methods to be used and volumes to be extracted on a daily, monthly and yearly basis.
- (b) A description of the water body from which the extraction is proposed including its hydrology and sediment bedload regime, and any aquatic habitat values.

35.3.5 Specific Information Requirements for Planting

In addition to the general information requirements in Section 36.03.01, the information supplied with a land use consent application to plant vegetation in the bed of a river or lake should also include:

- (a) A description of the plant species to be planted, the purpose for which they are to be planted, and the location within the bed of the river or lake.
- (b) Evidence of the likely effectiveness for the desired purpose, and an assessment of the effects on desirable species already present in areas adjacent to and downstream from the proposed plantings.
- (c) Any required maintenance programme to control the growth.
- (d) A description of alternative methods and reasons for selecting the planting method.

35.3.6 Specific Information Requirements for Reclamation and Drainage

In addition to the general information requirements in Section 36.03.01, the information supplied with a land use consent application to reclaim or drain the bed of a river or lake should also include:

- (a) Evidence that there is no alternative to the proposed activity which does not involve reclamation and drainage; and that there is a demonstrated need for reclamation or drainage which provides significant benefits to the community.
- (b) A statement detailing the ecological values of the area to be reclaimed or drained.

35.4 SPECIFIC INFORMATION REQUIREMENTS FOR LAND USE CONSENT APPLICATIONS

The information supplied with land use consent applications should include:

- (a) A locality map showing property boundaries, and area(s) of works;
- (b) A Plan, preferably on an aerial photograph, showing catchment boundaries, any water bodies, sources of runoff and sediment control measures;
- (c) A description of the geology, soil types, existing land use, vegetation, habitats of indigenous fauna, and any historic, cultural or natural features;
- (d) Details of proposed works, areas affected, and methods to be used, especially vegetation removal;
- (e) An explanation of the works programme including expected start and finish dates;
- (f) Details of major cut and fill operations;
- (g) Descriptions of mitigation measures proposed to help prevent or reduce actual or potential effects, including extra precautions to be taken near or in the Riparian Management Zone;
- (h) A description of revegetation programmes planned for cleared areas or rehabilitation programmes for major excavations;
- (i) A report outlining the consultation undertaken, the information supplied and any response to the views of those consulted. Consultation by the applicant is encouraged with the following where they have an interest in or are affected by the proposal:
 - (i) the local iwi;
 - (ii) the Department of Conservation;
 - (iii) landowners and occupiers adjacent to the land disturbance activity;
 - (iv) any downstream users of the water who may be affected by the proposal;
 - (v) other relevant groups.
- (j) A monitoring programme outlining how the effects will be monitored and by whom.

36. ASSESSMENT CRITERIA

This section sets out matters in respect of which the Council may exercise its discretion when making decisions on resource consent applications.

The primary criteria for assessing and deciding on applications for resource consents are listed in the Act under s.104 – Matters to be considered and s.105 – Decisions on applications. Under these Sections, decisions are subject to Part II of the Act. Additional assessment criteria which will be applied in the consideration of applications for discretionary and non-complying activities are detailed below.

36.1 ASSESSMENT CRITERIA FOR DISCHARGE PERMIT APPLICATIONS

Applications for discharge permits for discretionary activities and non-complying activities will be assessed in accordance with s.104, s.105, and s.107 (Restriction of grant of certain discharge permits) of the Act and having regard to the following:

- (a) The level of treatment provided by the proposed effluent or stormwater collection, treatment and disposal system.
- (b) The concentrations and loadings of contaminants in the discharge.
- (c) The nature and sensitivity of the receiving environment including the proximity of the discharge to water bodies and the water body's associated cultural values, and the proximity to identified significant natural features, archaeological sites and historic features.
- (d) The mitigation measures and safeguards incorporated into the design of the various components of the proposed effluent or stormwater collection, treatment and disposal system.
- (e) The adequacy of the Assessment of Environmental Effects.
- (f) The adequacy of the assessment of alternatives and whether or not the proposed effluent treatment and disposal system is the best practicable option.
- (g) The adequacy of any Management Plan (where required) for the operation and management of the proposed effluent treatment and disposal system.
- (h) For stormwater discharges, the adequacy of the collection and reticulation system in relation to the overall catchment drainage and the need for a stormwater management plan to be prepared.
- (i) The adequacy of any proposed monitoring programme to monitor the effects of the discharge.

Applications for discharge permits for Controlled Activities will be assessed on the matters over which the Regional Council has retained control (refer to the relevant controlled activity rule).

36.2 ASSESSMENT CRITERIA FOR WATER PERMIT APPLICATIONS TO TAKE, USE, DAM AND DIVERT WATER

Applications for water permits for discretionary and non-complying activities will be assessed in accordance with s.104 and s.105 of the Act and having regard to the following:

36.2.1 General Assessment Criteria

- (a) The adequacy of the Assessment of Environmental Effects, in terms of the Fourth Schedule of the Act.
- (b) The adequacy of information substantiating the applicant's need for water.
- (c) The extent to which the taking of water from the proposed source will impact on the resource, and on other users, including any cumulative effects of the takes on the resource.
- (d) The adequacy of the assessment of any alternative water sources considered, or other water management strategies and the reasons for selecting the proposed water source.
- (e) The adequacy of any water conservation and mitigation measures for the proposed system.
- (f) The number, location and type of point source discharges which could contribute nutrients and organic material to the river, and the effect of the water take on the ability of the water body to assimilate those contaminants.
- (g) The extent to which the natural character of the environment is maintained.
- (h) The extent to which amenity, cultural, recreational and social values and economic well-being are adversely affected.
- (i) The adequacy of any proposed monitoring programme to monitor the effects of the taking, use, damming or diverting of water.

36.2.2 Assessment Criteria for River Takes and Diversion

- (a) The accuracy of the Design Minimum Flow estimate below the take point, or point of diversion and the possible adverse effects of reduced flows on downstream river water quality and ecology.
- (b) The adequacy of the assessment of substrate characteristics and water depths in the potentially affected river sections below the take point and the proportion of native bush or riparian habitat in the catchment.
- (c) The adequacy of information used to determine the downstream physical habitat features in the potentially affected river sections.

Note: Where a departure below the Design Minimum Flow is requested, refer Policy 9.05.08.

36.2.3 Assessment Criteria for Takes from Dams

- (a) The adequacy of information on fish migration in the catchment and the likely effects of the proposed dam on fish migration.
- (b) The extent to which siltation and plant growth downstream of the dam may be affected, particularly during dam replenishment.

- (c) The adequacy of any provisions made to ensure downstream water quality is maintained.
- (d) The level of the water supply intake within the dam reservoir, and the likelihood of offensive odours from the intended use of the water.

Note: Refer also Section relating to assessment criteria for Design Minimum Flow.

Note: Assessment Criteria 37.02.02 (a) – (c) also apply.

36.2.4 Assessment Criteria for Takes from Lakes

- (a) The adequacy of information on lake levels, bathymetry, volume and evaporation, upon which, the effects of water level changes can be assessed.
- (b) The extent to which the lakes ecology may be adversely affected.

36.2.5 Assessment Criteria for Takes and Diversions which may affect Indigenous Wetlands

- (a) The adequacy of information on the physical and hydrological relationship between the taking and diverting of water, and any areas of indigenous wetlands.
- (b) Where an indigenous wetland is likely to be adversely affected, whether the indigenous wetland has significant ecological values in accordance with the criteria outlined in Appendix 13B, Criteria for Significant Areas of Indigenous Vegetation and Habitats of Indigenous Fauna (Regional Policy Statement, Section 23).
- (c) The adequacy of any proposed provisions to avoid, remedy or mitigate direct or indirect effects on indigenous wetlands, having regard to any significant ecological values.

36.2.6 Assessment Criteria for Groundwater Takes

- (a) The cumulative effects of the proposed groundwater take and existing groundwater users in relation to the average annual recharge of the aquifer.
- (b) The extent to which the proposed groundwater take may adversely affect other groundwater and surface water users, and the adequacy of any pump test analysis to confirm those effects.
- (c) The proximity to the freshwater/seawater interface and the likelihood of any seawater intrusion affecting groundwater users.
- (d) The proximity of the bore and the standing groundwater level to any effluent disposal field and the likelihood of contaminants being drawn into the aquifer as a result of pumping.

36.3 ASSESSMENT CRITERIA FOR LAND USE CONSENT APPLICATIONS FOR STRUCTURES AND WORKS IN, ON, UNDER OR OVER THE BED OF A RIVER OR LAKE

Applications for land use consents for discretionary and non-complying activities will be assessed in accordance with s.104 and s.105 of the Act and having regard to the following:

36.3.1 General Assessment Criteria

- (a) The adequacy of the Assessment of Environmental Effects, in terms of the Fourth Schedule of the Act.
- (b) The adequacy of the assessment of any alternative locations or methods considered, and the reasons for selecting the proposed location and/or method.
- (c) The length of time to complete the works and whether the resulting degradation in water quality is considered to be temporary.
- (d) The adequacy of any proposed mitigation measures for the proposed system.
- (e) The adequacy of any proposed monitoring programme to monitor the effects of the proposed structure or works.
- (f) The proximity of the proposed works to any protected natural feature, protected archaeological site or historic feature, waahi tapu or urupa and any effects on them.
- (g) The adequacy of the provision made to maintain fish movement upstream and downstream where this is required.
- (h) The extent to which the structure or works would cause adverse drainage or flooding effects on surrounding properties.
- (i) Where an indigenous wetland is likely to be adversely affected, whether the indigenous wetland has significant ecological values in accordance with the criteria outlined in Appendix 13B, Criteria for Significant Areas of Indigenous Vegetation and Habitats of Indigenous Fauna (Also in Regional Policy Statement, Section 23).
- (j) The extent to which amenity, cultural, recreational and social values and economic well-being are adversely affected.
- (k) The extent to which the structure is likely to cause scour or erosion and the methods proposed for avoiding these effects.
- (l) The extent to which the proposal would require the destruction of riparian vegetation and the adequacy of proposals for enhancement or restoration of riparian vegetation.

36.3.2 Assessment Criteria for Dam Structures

- (a) The adequacy of the proposed foundation works, given the geology and soil at the dam structure site.
- (b) The location of the flood flow bypass with respect to the stability of the flood path and areas of fill and the ability to contain the flood flow on the property.
- (c) The adequacy of any proposed fish pass.
- (d) Whether there is a need to provide for larger pulses of water to be maintained below the dam structure during filling.
- (e) The likely quality of the water to be released below the dam structure and the effect on downstream water quality and aquatic habitats.
- (f) The adequacy or need for flushing flows is to be provided for after dam structure construction.

Note: Assessment Criteria 36.02.02 (a) – (c), 36.02.03 and 36.02.05 also apply.

36.3.3 Assessment Criteria for Planting

- (a) The adequacy of the proposed maintenance programme.
- (b) The appropriateness of the proposed method for the stated purpose.
- (c) The extent to which the proposed planting may adversely affect the existing indigenous vegetation on the bed of the river or lake and ecology of the water body.

36.3.4 Assessment Criteria for Extraction of River Bed Materials

- (a) The adequacy of the assessment of the sustainable yield of the river material.
- (b) The extent to which the proposed extraction may adversely affect the existing indigenous vegetation on the bed of the river or lake, and aquatic habitats.

36.3.5 Assessment Criteria for Drainage and Reclamations

- (a) Whether it has been adequately demonstrated that the proposed drainage or reclamation provides significant benefits to the community and that there are no alternatives to the proposed activity.

36.3.6 Assessment Criteria for Stopbanks on Flood Plains

- (a) Whether it has been adequately demonstrated that the proposed stopbank is the only effective alternative.
- (b) The adequacy of the assessment of effects on other properties.

36.4 ASSESSMENT CRITERIA FOR APPLICATIONS FOR LAND DISTURBANCE ACTIVITIES

Applications for land use consents for the discretionary and non-complying activities will be assessed in accordance with s.104 and s.105 the Act, and having regard to the following:

- (a) The scale, method and timing of the land disturbance activity and the nature of the surrounding catchment.
- (b) The proximity of the land disturbance activity to any water body, the nature and sensitivity of the water body and any associated values and the likely effects on that water body.
- (c) The proximity of the land disturbance activity to any areas of significant indigenous vegetation and significant habitats of indigenous fauna that meet the criteria in Appendix 13B, any outstanding or significant natural feature identified in a regional or district plan, any known archaeological site or historic feature, waahi tapu or urupa; and any effects on them.
- (d) The expected efficiency of sediment control measures and any other mitigation measures.
- (e) The removal and/or any retention of vegetation and the expected efficiency of any revegetation and/or rehabilitation programme.
- (f) The adequacy of any proposed monitoring programme to assess the effects of the activity on the environment.

- (g) The practicality of alternative methods to undertake the activity and their likelihood of having reduced environmental effects.

Applications for Land Use Consents for Controlled Activities will be assessed on the matters over which the Council has retained control (refer to the relevant controlled activity rule).

PART VI:

ADMINISTRATIVE ISSUES

This Part provides details of the statutory resource consent process including notification, joint hearings, duration of consents, review of conditions and objection and appeal provisions.

The following administrative matters are also covered:

- (a) Council charges;*
- (b) Financial contributions (objectives, policies and methods), and Bonds; and,*
- (c) Transfer of powers.*

37. RESOURCE CONSENT APPLICATION PROCEDURES

37.1 INTRODUCTION

In preparing a regional plan, the Act provides flexibility in identifying how particular activities are considered, i.e. as permitted, controlled, restricted discretionary, discretionary, prohibited or non-complying activities. These are specified in Section 14.

For controlled, restricted discretionary or discretionary activities, a resource consent is required. Resource consents are also required for non-complying activities.

37.2 NOTIFICATION AND NON-NOTIFICATION OF APPLICATIONS

Resource consent applications can be processed with or without public notification according to the provisions of s.93 and s.94D of the Act.

37.2.1 Controlled Activities

Applications for a controlled activity will require full notification, or the written approval of, or service of notice on affected parties unless stated by a rule in the Plan. Where the approval of affected parties is required but has not been given by all parties the Council will require limited notification of the application. For limited notification, the application will be served on all affected parties including those who have not given their approval.

37.2.2 Restricted Discretionary Activities

When processing an application for a restricted discretionary activity where the rule waives both notification and service of notice of an application it will be non-notified.

Where a rule waives notification (but not service), the application will either be notified on a limited basis or non-notified depending on an assessment of whether there are affected persons:

- If there are no affected persons, the application will be processed as non-notified.
- If all affected persons have given their written approval, the application will be processed as non-notified.
- Where some affected persons have not given their written approval, the notice of the application will be served on all affected persons, including any who have given their written approval for the activity.

Where a rule in the Plan does not state whether or not notification or service is required if the activity will have more than minor adverse effects on the environment then it will be publicly notified. Where the adverse effects are considered by the Council to be no more than minor the Council will decide on whether or not to deal with the application on a limited notification or non-notified basis.

37.2.3 Discretionary and Non-Complying Activities

When processing applications for discretionary or non-complying activities, the Council must determine whether the application can be dealt with as a non-notified

application. An application for a discretionary or non-complying activity can only be non-notified if it meets the tests contained in s.93 to s.94D of the Act, specifically ss.93(1):

- (b) *The consent authority is satisfied that the adverse effects of the activity on the environment will be minor.*

To determine whether the effect of the activity will be minor, the Council will consider the activity as submitted in the application, including any further information that the Council may request under s.92 of the Act, and will apply the appropriate assessment criteria listed in Section 36 of this Plan. It must also consider s.94B of the Act regarding approval from persons who would otherwise be "affected". In assessing the level of effect on the environment, the Council will also consider how practicable any mitigation measures proposed by the applicant would be, and the long-term management and monitoring requirements of the proposed activity.

When considering whether or not to notify an application for an existing activity for which there is already a resource consent but which is due to expire, the Council will consider:

1. Any change in the scale of activity (either as proposed by the applicant or as required by a policy in this Plan),
2. The record of compliance during the term of the previous consent; and
3. Any adverse effects that may have occurred during the term of the previous consent.

Where there is doubt about whether the effects will be minor, the application will be notified.

Where it can be demonstrated that an application does meet the tests for non-notification, but the Council considers special circumstances exist in relation to the proposal, the application may be notified. While those special circumstances are specific to the application, the following proposed activities will be considered for notification:

1. Any discharges of contaminants which are toxic, persistent or bioaccumulative;
2. Any activity which may adversely affect the wider community including any socio-economic and cultural effects; and
3. Any activity which may be a risk to the neighbourhood, the wider community or the environment through the use of hazardous substances or hazardous installations.

Persons who may be adversely affected can only be identified on an application-specific basis. Where written approvals are required in order for an application for a resource consent for a controlled, restricted discretionary, discretionary or non-complying activity to be non-notified, the written approval must clearly identify the information provided to the affected person, upon which the assessment of the effects and subsequent approval was made.

37.3 ASSESSMENT OF EFFECTS

The Act identifies matters which should be considered when assessing the effects of an activity on the environment. These are set out in the Fourth Schedule of the Act.

For the purposes of implementing this Plan, the Assessment Criteria set out in Section 36 will be an additional guide for applicants preparing applications.

37.4 JOINT HEARINGS

A number of proposed developments include activities which may require consents from both the Regional Council and the relevant District Council. In these circumstances, joint hearings are usually held, in which all consent applications are heard together, thus avoiding unnecessary duplication of effort and delay for the applicant and any other interested parties.

Under s.102 of the Act, the Council is responsible for notifying the hearing, setting the procedure and providing administrative services unless the consent authorities involved in the hearing agree that another consent authority should be so responsible.

A joint decision is required from the Hearings Committee unless:

1. One of the resource consent applications is for a restricted coastal activity; or
2. The consent authorities agree that the applications are sufficiently unrelated that a joint hearing is unnecessary, and the applicant agrees that a joint hearing need not be held.

37.5 DURATION OF RESOURCE CONSENTS

The Act provides the consent authority with the power to determine the duration of a consent. The maximum period for a resource consent is 35 years.

In determining the term of a particular consent, the Regional Council may have regard to matters including:

- (a) The sustainable nature of the resource affected by the proposed activity;
- (b) Extent of knowledge of the environmental effects associated with the activity;
- (c) Northland Regional Council's Regional Monitoring Strategy;
- (d) The period of the operative Regional Water and Soil Plan and the extent of possible changes to it;
- (e) The capital costs of the development and the anticipated "life" of any structure which is the subject of the application;
- (f) The expiry date of other resource consents in the same catchment area where comprehensive reviews of all resource consents within that area are desirable;
- (g) History of satisfactory compliance with the terms and conditions of the expired consent for the same activity.

As a general guide, a Land Use Consent for a land disturbance activity, or a structure or works in, on, under, or over the bed of a river or lake, is given an expiry date determined by the likely date of completion of the works. New Water or Discharge Permits are generally granted for five years or in line with the expiry date of other resource consents in the same catchment area. Water Permits which replace a recently expired water permit may be granted for a ten year period.

37.6 REVIEW OF RESOURCE CONSENT CONDITIONS

Section 128(1)(a) of the Act provides the circumstances when consent conditions can be reviewed, as follows:

- (1) *A consent authority may, in accordance with Section 129, serve notice on a consent holder of its intention to review the conditions of a resource consent -*
- (a) *At any time or times specified for that purpose in the consent for any of the following purposes:*
 - (i) *To deal with any adverse effects on the environment which may arise from the exercise of the consent and which is appropriate to deal with at a later stage; or*
 - (ii) *To require a holder of a discharge permit ... to do something that would otherwise contravene section 15 [or 15b] to adopt the best practicable option to remove or reduce any adverse effect on the environment; or*
 - (iii) *For any other purpose specified in the consent; or*
 - (b) *In the case of water ... or discharge permit, when a regional plan has been made operative which sets rules relating to a maximum or minimum levels or flows or rates of use of water, or minimum standards of water quality ... or ranges of temperature or pressure of geothermal water, and in the regional council's opinion it is appropriate to review the conditions of the permit in order to enable the levels, flows, rates, or standards set by the rule to be met; or*
 - [(ba) *in the case of a water ... or discharge permit, when relevant national environmental standards have been made under section 43; or]*
 - (c) *If the information made available to the consent authority by the applicant for the purposes of the application contains inaccuracies which materially influenced the decision made on the application and the effects of the exercise of the consent are such that it is necessary to apply more appropriate conditions.*
- ...

37.7 OBJECTIONS AND APPEALS

Once a decision has been made by the Council on an application, there is provision in the Act for either the applicant, or any person who made a submission, to contest the decision. These provisions are briefly summarised below.

37.7.1 Objections

Generally, for resource consents which were non-notified or did not attract submissions, the applicant has a right of objection to the decision. The objection is either formally heard by the Council's Hearings Committee or is resolved through variations to the conditions if this is agreed to by all parties involved. If unresolved, appeal provisions then apply.

37.7.2 Appeals

For non-notified applications where the objections to the decision have not been resolved, and for notified resource consent applications, Section 358 of the Act provides rights of appeal to the Environment Court of the Justice Department against the Council's decision. The determination of the Environment Court on an appeal is generally final, although it may be challenged in the High Court on points of law.

38. OTHER MATTERS

38.1 REGIONAL COUNCIL CHARGES

Section 36 of the Act provides for the Council to fix charges in respect of:

1. Applications for resource consents, including:
 - (a) Applications for controlled, discretionary or non-complying activities;
 - (b) Applications for changes to, or cancellation of, resource consents; and
 - (c) Applications for an extension of the period for a resource consent which has lapsed because the holder has failed to exercise it.
2. Administration, including:
 - (a) Applications to the Council for a change to this Plan;
 - (b) Providing information in respect of this Plan or resource consents;
 - (c) Issuing of compliance certificates; and
 - (d) Copies of Plans.
3. Monitoring functions, including:
 - (a) Monitoring and supervision of resource consents;
 - (b) Carrying out state of the environment monitoring; and
 - (c) Monitoring the effectiveness of this Plan.

However, when fixing charges such as these, the Council must have regard to the criteria in ss.36(4) of the Act. These are as follows:

- (a) The sole purpose of the charge is to recover the reasonable costs incurred by the Council in respect of the activity to which the charge relates.
- (b) A particular person or persons should only be required to pay a charge:
 - (i) To the extent that the benefit of the Council's actions to which the charge relates is obtained by those persons, as distinct from the region as a whole; or
 - (ii) Where the need for the Council's actions to which the charge relates is occasioned by the actions of those persons; or
 - (iii) In a case where the charge is in respect of the Council's monitoring functions under ss.35(2)(a) (which relates to 'state of the environment' monitoring), to the extent that the monitoring relates to the likely effects on the environment of those persons' activities, or to the extent that the likely benefits to those persons of the monitoring exceeds the likely benefits of the monitoring to the region as a whole.

38.2 BONDS AND FINANCIAL CONTRIBUTIONS

38.2.1 Introduction

Section 108 of the Act provides for financial contributions and bonds to be included as a condition on a resource consent.

“Financial contributions” are defined in the Act and may include not only money but also land, works and services for the purposes specified in a plan. The principal reason for including financial contributions in this Plan is to provide a mechanism to avoid, remedy or mitigate and/or offset adverse effects on the environment that may result from discharges to water or land, or from land disturbance activities. Financial contributions are aimed at meeting the costs to the public and the environment.

Bonds provide a mechanism for the recovery of costs of cleaning up or completing failed or incomplete projects, where the effects on the environment are unacceptable. Similarly, a condition can be included which requires a consent holder to take out adequate insurance to cover clean up costs in the event of equipment or structure failure.

38.2.2 Objectives

1. **The securing of fair and reasonable financial contributions on activities involving surface water takes, dams and diversions, groundwater takes, discharges of contaminants to water or land, and the disturbance of land, which represent a justifiable proportion of the public costs, including irreversible losses of environmental values, generated by any such activity.**
2. **The securing of adequate financial resources to cover costs of avoiding, remedying or mitigating adverse effects on the environment resulting from incomplete or failed works and structures.**

38.2.3 Policies

1. To provide for financial contributions to be a condition of a resource consent where:
 - (a) Quantifiable adverse effects on the environment cannot be expressed as environmental standards, except as provided for under controlled, restricted discretionary and discretionary activities, and a financial contribution is required to meet the public cost of avoiding, remedying or mitigating and/or offsetting the adverse effects.
 - (b) Indirect effects cannot be dealt with through project design and a financial contribution is required to offset adverse effects.

Explanation: *Financial contributions can only be required if they are specifically provided for in a Regional Plan. This policy outlines the criteria where financial contributions may be warranted.*

2. To ensure that the assessment of environmental effects for an activity shall:
- (a) As far as possible identify any adverse effects for an activity which are not readily quantifiable; and
 - (b) Indicate how these have been addressed; and
 - (c) As far as possible indicate any residual effects for which a financial contribution shall be appropriate.

Explanation: *This policy ensures that sufficient information is supplied with an application to determine whether it fits the criteria in Policy 1.*

3. To ensure that the maximum amount of the financial contribution shall not exceed the actual cost of fully avoiding, remedying or mitigating the adverse effects and/or providing environmental compensation necessary to offset the adverse effects caused or likely to be caused by the activity.

Explanation: *The Act requires that the financial contribution does not exceed the maximum amount specified in the plan. This policy specifies that the actual cost of addressing the adverse effects or providing environmental compensation will be the maximum amount.*

4. To determine the amount of the financial contribution by the justifiable proportion test –

Justifiable – The financial contribution must directly relate to avoiding, remedying or mitigating adverse effects on the environment and/or contribute to a positive effect which provides some compensation/relief for the adverse effect caused or likely to be caused by the activity.

Proportion – The amount of the contribution shall take into account:

- The significance of the adverse effect; and
- The extent to which the activity causes or is likely to cause the effect identified above; and
- The positive effects of the activity on the environment.

Explanation: *This policy provides the test of the reasonableness of a financial contribution. The Justifiable Proportion test is made up of two parts. The first part requires that a connection be demonstrated between the financial contribution, the adverse effect of the activity, and the benefit (to the activity or the community) which is proposed to offset the effect. The second part states that the developers of the new activity pay only his or her proportional share of the cost of new facilities.*

5. To use bonds to enable recovery of the Council's costs where it is necessary for the Council to undertake any of the following action(s) in the event of a consent holder's failure to avoid, remedy or mitigate adverse effects of the consent holder's activity:
- (a) Completion of any works or structures;
 - (b) Operation of any works or structures;

- (c) Alteration or removal of structures and any restoration works following any works or activity being completed or ceasing; and
- (d) Completion or compliance with any other conditions of the consent granted.

Explanation: Section 108(2)(b) of the Act provides for a condition to be placed on a resource consent, requiring that a bond be given in respect of the performance of any one or more conditions of the consent, including any condition relating to the alteration or removal of structures on the expiry of the consent. The Council will assess the likelihood of its needing to undertake the actions specified in the Policy 38.02.03(6) when considering and deciding on any application for a resource consent.

- 6. To provide for a bond as a condition on a resource consent to ensure that there are adequate financial resources for remediation and mitigation to be undertaken in the event of equipment breakdown or structure failure.

Explanation: Where a significant adverse effect may occur as a result of equipment failure, such as the failure of a dam wall or failure of an effluent pump resulting in an overflow of effluent into water, a bond in the form of an insurance indemnity may be required.

38.2.4 Methods of Implementation

For Policies 1 to 4

- 1. The Council may impose a condition on a resource consent requiring a financial contribution subject to the circumstances, purposes and assessment criteria specified in Section 38.02.05.
- 2. In determining whether to impose a condition requiring a financial contribution, the Council shall take into account whether reasonable effort has been made to avoid, remedy, or mitigate and/or offset adverse effects through project design and negotiation with affected parties, and whether overall the benefits outweigh the residual effects.
- 3. Financial contributions on particular activities for resource consents shall take the form of money, works, land or services, or any combination thereof.

For Policies 5 and 6

- 4. The Council may impose a condition on a resource consent requiring a bond subject to Method 38.02.04(5).
- 5. In determining whether to impose a condition requiring a bond in the event of the Consent Holder being unwilling or unable to carry out the conditions of the consent, the Council shall take into account the actual and potential effects on the environment, and the likely costs (inflation adjustable) of carrying out the works.
- 6. In determining whether to impose a condition requiring a bond to cover the costs of remedial works in the event of equipment or structure failure, the

Council shall take into account the risk of failure, and the potential effects on the environment, should failure occur.

38.2.5 Circumstances where Financial Contributions may be Required

Circumstances where a financial contribution may be required include where a use or development authorised under a resource consent will cause adverse effects on the environment including:

- Damage to riparian vegetation;
- Disturbance or re-alignment of river channels;
- Sedimentation of water;
- Nutrient enrichment of water;
- Riverbank erosion;
- Damage to river control or drainage works;
- Restriction of public access to or along the water body;
- Disturbance or damage of archaeological, culturally or ecologically significant sites.

38.2.6 Purposes for which Financial Contributions may be Required

The purposes for which a financial contribution may be required to avoid, remedy or mitigate and/or offset the adverse effects listed above, may be applied by:

- Planting, replanting, transplanting or maintaining new and existing plantings either at or adjacent to the water body;
- River alignment and bed stabilisation;
- Land retirement;
- Erosion control, restoration of river or drainage control works;
- Protecting, maintaining, restoring or enhancing water quality of affected bodies;
- Protecting, maintaining, restoring or enhancing archaeological or culturally significant sites;
- Protecting, restoring or enhancing lake and wetland habitats and margins including (without limitation) maintenance and planting of vegetation, erosion protection works, fencing, margin and wetland protection;
- Restoring or enhancing public access to or along lakes or rivers;
- Works required to avoid, remedy or mitigate any adverse effects on the environment resulting from an activity for which a consent is required.

38.2.7 Financial Contribution Assessment Criteria

In deciding whether or not to impose financial contributions, the types of contribution and their value, the Council will have particular regard to the following matters:

1. The extent to which any adverse effects resulting from the activity can and should be mitigated by way of works carried out on or near the site.

2. The extent to which a financial contribution may offset or provide compensation to the community or environment for adverse effects caused or contributed to by the activity and not otherwise mitigated by the consent holder.
3. The extent to which a contribution is required to achieve objectives and policies of this Plan.
4. In deciding the actual value of the financial contribution required, the Council shall have particular regard to:
 - (a) The significance of the effects attributable to the activity;
 - (b) Where such effects are contributed to by other activities, the extent to which those effects can be reasonably attributed to the activity for which consent is granted;
 - (c) The extent to which any positive effects of the activity offset any adverse effects.
5. Financial contributions should relate to the effects of the activity for which consent is granted and be reasonably proportionate to the significance of any adverse effects.
6. Financial contributions may not be appropriate in every case even where there are adverse effects.

38.3 TRANSFER OF POWERS

Both the *Resource Management Act* 1991 and the *Building Act* 1991 provide local authorities with the ability to transfer their functions, powers, and duties to other authorities. Section 25 of the *Building Act* gives the Council the ability to transfer its powers, duties and functions under that Act to a territorial authority in the interests of efficiency and technical or special capability or expertise.

Under Section 33 of the *Resource Management Act*, regional councils can transfer their functions, powers and duties to other public authorities which include other local authorities, iwi authorities, government departments, statutory authorities or joint committees. However, such transfer can only be exercised by the Council if:

1. The special consultative procedure specified in s.83 of the *Local Government Act* 2002 is used; and
2. Before using the special consultative procedure, notice is given to the Minister of the Environment of the proposal to transfer the function, power, or duty; and
3. Both the Council and the authority to which the transfer is being made, agree that the transfer is desirable on all of the following grounds:
 - (a) The authority to which the transfer is made represents the appropriate community of interest relating to the exercise of the function, power or duty;
 - (b) Efficiency;

- (c) Technical or special capability or expertise.

In any event, the Council still retains responsibility for the exercise of the function, power or duty, and the transfer has effect only within the statutory boundaries of the agency concerned.

PART VII:

PLAN

EFFECTIVENESS

This Part sets out the Environmental Results expected from the implementation of this Plan, the monitoring procedures for determining whether the Environmental Results have been achieved and this plan change and review provisions that may be used.

39. ENVIRONMENTAL RESULTS ANTICIPATED

39.1 INTRODUCTION

Under s.67(1) of the Act, this Plan is required to state the environmental results anticipated from the implementation of the policies and methods specified in this Plan. This essentially requires a judgement of the extent to which the objectives stated will be achieved within the ten year term of this Plan. Some objectives may require longer than the ten year term to be realised.

39.2 SURFACE WATER

- The natural character of Northland’s wetlands, rivers and lakes and their margins is preserved.
- No reduction in the biodiversity of Northland’s indigenous wetlands.
- Water in surface water bodies of sufficient flow or level to allow aquatic ecosystems to survive in a healthy state and to safeguard the life supporting capacity of the water.
- Allocated water is taken and used efficiently.
- An increase in the volume of water stored in off-stream reservoirs.

39.3 GROUNDWATER

- No movement of the freshwater/seawater interface into shallow coastal aquifers as a result of groundwater takes.
- Adverse effects of any long-term reduction in groundwater levels as a result of groundwater takes are avoided, remedied or mitigated.

39.4 USE OF RIVER AND LAKE BEDS

- The natural character of Northland’s wetlands, rivers and lakes and their margins is preserved.
- A reduced number of man-made barriers to fish migration in Northland’s waterways.
- Ecological values of indigenous wetlands maintained.
- The reduction of erosion and associated adverse effects within water bodies due to the use, placement, alteration, removal or replacement of structures in, on, under or over the beds of rivers and lakes.
- Ecological values within and adjacent to rivers and lakes are maintained and enhanced.
- Adverse effects upon aquatic ecosystems are avoided, remedied or mitigated and where possible the aquatic ecosystem restored.

39.5 WATER QUALITY

- Surface water to be of a quality that allows aquatic ecosystems to survive in a healthy state.
- Groundwater to be of a standard that allows the water to be used for water supply purposes with a minimum of treatment.
- No untreated effluent being discharged into water.
- Any discharge of treated effluent to water represents the best practicable option.
- Urban stormwater discharges which meet specified receiving water quality standards.
- A reduction in solid waste being generated and therefore being disposed of in landfills.

39.6 LAND MANAGEMENT

- Increasing landholder awareness of possible off-site and on-site adverse effects of individual land management decisions; and of methods and techniques to mitigate and remedy such effects and their integration into normal day-to-day management decisions.
- Riparian vegetation retained where that would assist the prevention of sedimentation and eutrophication of water.
- Riparian vegetation enhanced where that would mitigate soil loss from stream bank erosion and from intensive land uses adjacent to water bodies.
- The maintenance of soil quality through the implementation of soil conservation.

39.7 CULTURAL NEEDS

- Increased awareness of cultural needs of Maori, including recognition of Maori as a partner to the Treaty of Waitangi.
- Identification and protection of sites of special value to tangata whenua in accordance with tikanga Maori including, where appropriate, the direct involvement of Maori in their management.
- Provision for the particular cultural concerns regarding the disposal of human and animal effluents to water.

40. PLAN MONITORING, CHANGES AND REVIEW

40.1 INTRODUCTION

In order to ensure that the environmental results set out in Section 39 of this Plan are achieved, there needs to be an on-going process of monitoring the effectiveness of this Plan and, if necessary, changing relevant policies and rules. The Act also requires that the whole Plan be periodically reviewed.

40.2 MONITORING OF PLAN EFFECTIVENESS

Under s.35 of the Act, the Council is required to monitor the suitability and effectiveness of this Regional Water and Soil Plan and to change or review this Plan where this is shown to be necessary. Under s.67, procedures for monitoring the effectiveness of this Plan are required to be specified.

Procedures to be used to monitor the effectiveness of this Plan will include:

1. An annual evaluation of the results of the Council's 'state-of-the environment' monitoring programme for the region, including specific attention to:
 - (a) Any new areas of environmental degradation; and
 - (b) The likely causes of any such degradation; and
 - (c) The effectiveness of any relevant policies, rules, and methods within this Plan which are intended to prevent, halt or minimise such degradation.
2. Regular communication with district councils, industry groups, residents and ratepayers associations, and any other relevant organisations to gain their assessment of the effectiveness of this Plan.
3. An annual analysis of the feedback obtained through the news media, meetings, and correspondence regarding the effectiveness of this Plan.

40.3 PLAN CHANGES

If the Regional Council's monitoring of the effectiveness of this Plan reveals the need for changes to this Plan, then these will be initiated by the Council and carried out in accordance with the First Schedule of the Act.

Notwithstanding the above, changes to this Plan can be proposed by any person in a written request to the Council. The Council must, within 30 working days of receiving a request:

1. Decide whether to accept the request in whole or in part; or
2. Decide to reject the request in whole or in part, but only on the grounds that:
 - (a) The request is frivolous or vexatious; or
 - (b) The substance of the proposal has been considered and given effect to, or rejected by the Council within the last two years; or

- (c) The proposal has little or no planning merit; or
- (d) The proposal and its environmental impact has not been described with sufficient clarity for it to be readily understood; or
- (e) The proposal would make this Plan inconsistent with either the New Zealand Coastal Policy Statement, the Regional Policy Statement, the Regional Coastal Plan or any other Regional Plan that the Council may produce; or
- (f) The Regional Plan has been operative for less than two years.

If the request is agreed with, then the procedure set down in the First Schedule of the Act is followed.

If the request is refused or deferred, an applicant for a Plan change may appeal to the Environment Court.

40.4 PLAN REVIEW

Notwithstanding any changes which may be made to this Plan in the interim, the Council will commence a full review of this Plan not later than 10 years from the date that it becomes operative.

PART VIII: DEFINITIONS

This Part provides definitions of the key terms used throughout this Plan.

41. DEFINITIONS

These definitions are included to provide clarification of some terms used in this Plan. The use of *italics* indicates that meanings have been taken directly from the *Resource Management Act 1991*.

Absorption – The taking in of substances into a plant or other body through the cell membranes.

Act – *Resource Management Act 1991* and its amendments.

Adsorption – The taking up of one substance onto the surface of another.

Aerobic – A condition in which molecular oxygen is available and utilised in the free form.

Agrichemical – Any substance, whether inorganic or organic, man-made or naturally occurring, modified or in its original state, that is to eradicate, modify or control flora and fauna. (Including animal remedies but excluding fertilisers.)

Agricultural Waste – Any organic waste other than animal effluent and includes, but is not limited to, dead animals, vegetables, silage and fruit.

Alteration (alter) – Means to extend or change intensity or scale.

Amenity Values – *Those natural or physical qualities and characteristics of an area that contribute to people’s appreciation of its pleasantness, aesthetic coherence, and cultural and recreational attributes.*

Anaerobic – A condition in which no oxygen is present in a free dissolved form.

Animal effluent – Dung and urine from animals (other than humans) kept in captivity. This does not include dung and urine deposited by individual animals put out to graze.

Annual Plan – Under the *Local Government Act 1974*, every local authority must produce each year a draft Annual Plan for public comment. This sets out the objectives of the Council, the activities that it proposes carrying out and their cost. Performance measures by which the Council can be judged are also included. The Annual Plan must be finalised by 30 September each year.

Approach – A road or track, leading up to a ford, culvert or bridge crossing, which is raised above the surrounding land.

Appurtenant Structure – in relation to a dam structure, means a structure that is integral to the proper functioning of the dam structure, such as a weir or pump intake structure.

Aquifer – A geological formation or layer of rock or soil that is capable of yielding water in sufficient quantities for abstraction.

Artificial Watercourse – A man made channel constructed over land for carrying water and includes an irrigation canal, water supply race, canal for the supply of water for electricity power generation, and farm drainage canal.

Assimilate – Absorb or take-up.

Bank Full Edge – In relation to a river is the highest point at which the river can rise without overtopping the bank and in the case of a lake or wetland the point at which the waters cover at the highest level without exceeding its margin.

Barrier Ditch – A purpose built ditch with barriers, such as wooden planks, which receives farm dairy effluent. The purpose of the barriers is to retain solids.

Bed – Means –

- (a) *In relation to any river –*
 - (i) *for the purposes of esplanade reserves, esplanade strips, and subdivision, the space of land which the waters of the river cover at its annual fullest flow without overtopping its banks;*
 - (ii) *in all other cases, the space of land which the waters of the river cover at its fullest flow without overtopping its banks; and*
- (b) *In relation to any lake, except a lake controlled by artificial means, -*
 - (i) *for the purposes of esplanade reserves, esplanade strips, and subdivision, the space of land which the waters of the lake cover at its annual highest level without exceeding its margin;*
 - (ii) *in all other cases, the space of land which the waters of the lake cover at its highest level without exceeding its margin; and*
- (c) *In relation to any lake controlled by artificial means, the space of land which the waters of the lake cover at its maximum permitted operating level; and*
- (d) *In relation to the sea, the submarine areas covered by the internal waters and the territorial sea.*

Best Management Practices – Land use practices or combination of practices which are practical and effective in preventing or reducing pollution from non point sources.

Best Practicable Option – *In relation to a discharge of a contaminant or an emission of noise, means the best method for preventing or minimising the adverse effects on the environment having regard, among other things, to:*

- (a) *The nature of the discharge or emission and the sensitivity of the receiving environment to adverse effects; and*
- (b) *The financial implications, and the effects on the environment, of that option when compared with other options; and*
- (c) *The current state of technical knowledge and the likelihood that the option can be successfully applied.*

Biochemical Oxygen Demand – A measure of the oxygen consumed by the degradation of organic matter by organisms, and therefore a measure of organic pollution. Often measured as BOD₅ – the amount of oxygen consumed in five days.

Biodiversity – The variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are a part; this includes diversity within species, between species and of ecosystems.

Bore – Any hole, regardless of the method of formation, that is constructed to provide access to the ground for the purpose of taking groundwater, or which results in groundwater being taken, or for the investigation or monitoring of groundwater. For the purposes of this Plan, this definition does not include holes drilled for explosives blasting.

Catchment – The area of land which contributes water, via surface runoff or subsurface flow, to a particular water body. The term sub-catchment has also been used in this Plan to identify the drainage area for a tributary of a larger river system.

Note: Catchment drainage plans are now referred to as stormwater management plans.

Clean Fill – Material such as clay, soil and rock, and such other materials as concrete, brick or demolition products that are free of combustible or organic materials and are therefore not subject to biological or chemical breakdown. Cleanfill shall not contain hazardous substances or materials (such as municipal solid waste or metals) likely to create leachate by means of biological or chemical breakdown.

Clean Fill Landfill – A landfill used solely for the disposal of clean fill.

Closed Landfill – Any landfill which no longer accepts waste for disposal.

Co-disposal – The disposal of certain hazardous and/or special wastes in combination with community wastes for the purpose of using the interactive processes between different types of wastes to minimise the hazard.

Colour – Colour of water refers to the quality of the light back-scattered from a water body. There are three aspects:

Hue: The attribute of colour which varies with the dominant wave length in the spectrum of light energy and is described, for example, as “blue” or “green”.

Brightness: The attribute of colour which varies with the amount of light energy received by the eye.

Saturation: The attribute of colour which varies with the spread of the spectrum of light energy and is described as colour purity or (in the inverse sense) the “grayness”.

Composting – The biological reduction of organic waste to a relatively stable product.

Concentrated Development – Settlements which have a high density of dwellings, e.g. large residential subdivisions with small section sizes.

Consultation – Consulting involves putting forward a proposal which is not yet finally decided upon, listening to what others have to say about it, considering their responses, and then deciding what will be done.

...consultation should include:

- **Providing sufficient information** to the consulted parties so that they can make intelligent and informed decisions;
- **Allowing sufficient time** for both the participation of the consulted party and the consideration of the advice given; and,
- **Genuine consideration** of that advice, including an open mind and a willingness to change.

Contaminant – *Includes any substance (including gases, odourous compounds, liquids, solids, and micro-organisms) or energy (excluding noise) or heat, that either by itself or in combination with the same, similar, or other substances, energy, or heat:*

- (a) *When discharged into water, changes or is likely to change the physical, chemical or biological condition of water; or*
- (b) *When discharged onto or into land or into air, changes or is likely to change the physical, chemical, or biological condition of the land or air onto or into which it is discharged.*

Contaminated Site – A site at which hazardous substances occur at concentrations above “background” levels and poses or is likely to pose an immediate or long-term hazard to human health or the environment. It includes landfills and sewage soakage.

Council – The Northland Regional Council.

Cubic Metre – The equivalent of 1,000 litres or approximately 220 gallons.

Culvert Crossing – A piped structure that is placed on the bed of a watercourse for the purposes of providing continuous flow of water within, and permitting vehicular and other access over that water course.

Dam Structure – means an artificial barrier, and its appurtenant structures, constructed on the bed of a river or lake that:

- (a) is constructed to hold back water under constant pressure so as to form a reservoir on the bed of a river or lake; and
- (b) is used for the storage, control, or diversion of water

it includes –

- (i) a flood control dam; and
- (ii) a weir whether as part of the dam structure or separate from it

but it excludes –

- (i) a stopbank designed to control floodwaters.

Note: This definition of dam structure relates only to structures on the beds of rivers and lakes, so it does not include an off-stream reservoir as defined.

Deep Soakage Systems – A hole excavated to utilise permeable subsoil layers or weathered rock at depth under poorly draining upper soils for the purpose of disposing of effluent. These holes may be backfilled with material such as scoria. Deep bores and soak holes are common types of deep soakage systems.

Design Minimum Flow (DMF) – The flow required to be maintained in a river at a specified point. It is determined by applying Policies 9.05.02 to 9.05.05.

Dewatering – The removal of groundwater from an excavation that has perforated below the groundwater table in an aquifer.

Direct Discharge – Any discharge to water either via a pipe or similar conduit, or via a discrete flow path over land, such as channels, tracks or natural stormwater flow paths.

Discharge – *Includes emit, deposit, and allow to escape.*

Disposal Area – The total area required to dispose of a certain volume of effluent or wastewater. The disposal includes the basal area of the trench or bed, as well as the natural soil space between adjacent trenches, beds or irrigation lines plus a perimeter buffer area around the disposal site.

District – *In relation to a territorial authority –*

- (a) *Means the district of the territorial authority as defined in accordance with the Local Government Act 2002 but, except as provided in paragraph (b), does not include any area in the coastal marine area:*
- (b) *includes, for the purposes of section 89, any area in the coastal marine area.*

District Plan – *An operative plan approved by a territorial authority under the First Schedule; and includes all operative changes to such a plan (whether arising from a review or otherwise).*

Dominant Slope – The dominant slope is the slope which occurs over 50% of the site of a land disturbance activity.

Dune Lake – Those lakes listed in Schedule E of this Plan.

Drainage Water – Water resulting from land drainage. Drainage water may include sediment and other contaminants derived from land and watercourses through which drainage flows.

Earthworks – The disturbance of land surfaces by:

- Placing or replacing soil or earth;
- Excavation;
- Cutting and filling operations; or

- Quarrying (as defined) and mining.

But does not include:

- Hand cutting;
- The maintenance of walking or other recreational tracks;
- Digging post holes, planting trees; or
- The importation and placement of roading aggregates during road works.

Ecosystem – A dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit.

Edge (of a river, lake, stream or open drain) – As it relates to conditions on rules relating to separation distances, the edge of the river, etc., is the point on land which the water of the water body reaches at annual fullest flow without over topping its banks.

Edge (of a wetland) – As it relates to conditions on rules relating to separation distances, the edge of the wetland is the outer edge of the land/water margins which still supports plants and animals adapted to wet conditions.

Effect – *Unless the context otherwise requires, the term “effect” includes –*

- (a) Any positive or adverse effect; and*
- (b) Any temporary or permanent effect; and*
- (c) Any past, present, or future effect; and*
- (d) Any cumulative effect which arises over time or in combination with other effects –*

regardless of the scale, intensity, duration, or frequency of the effect, and also includes –

- (e) Any potential effect of high probability; and*
- (f) Any potential effect of low probability which has a high potential impact.*

Effluent – Applies to any waste or wastewater to be treated and/or disposed of. It does not include solid waste as defined in this Plan.

El Nino – Refers to global weather patterns which are influenced by negative values of the Southern Oscillation Index. El Nino episodes are usually characterised by a reduction in rainfall over eastern and northern New Zealand. The most recent El Nino was in 1994 and 1995. (Sourced from MetService). In Northland there are increased probabilities of dominant south-westerly wind conditions, reduced rainfalls, and lower probabilities of tropical depressions.

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.*

Environmental Results Expected – These outline the intended outcomes or results on the environment, which the community can expect to see or experience as a consequence of the implementation of policies and methods. These are closely related to the objectives set out in respective sections of the Regional Plan.

Erosion – Any particulate or mass movement of soil, rocks or sand, under the influence of wind, water or gravity.

Erosion Prone Land – For the purposes of this Plan, erosion prone land is defined as Class VIIe, VIIle and VIIIs1 land use capability units generally depicted on the 1:50,000 New Zealand Resource Inventory, Northland Region, Second Edition. Each Unit is described in the following table:

LUC Unit	Area in Northland Region Ha (%)**	Description	Key Erosion Hazards ***
VIIe1	46904ha (3.7%)	Steep to very steep slopes forming steep hilly and mountainous rocks (Tangihua volcanics)	Severe soil slip and debris avalanche
VIIe2	1049ha (0.1%)	Gently rolling, rolling to moderately steep slopes forming low hilly terrain on fractured and sheared mixed lithologies, in a matrix or multi-coloured clayey materials, with characteristically unstable hummocky and broken profiles	Severe to very severe earthflow, gully and slump
VIIe3	9.33ha (0.1%)	Steep to very steep slopes forming hilly terrain on limestone rock. Numerous rock outcrops and shallow soils.	Severe soil slip and sheet
VIIe4	2581ha (0.2%)	Steep to very steep slopes forming hilly and mountainous terrain, mainly on sandstone, interbedded with mudstone.	Severe soil slop and earthslip
VIIe5	2811ha (0.2%)	Steep to very steep slopes forming hilly and mountainous terrain on 'hard' greywacke. Includes escarpments and bluffly terrain.	Severe to very severe soil slop and debris avalanche
VIIe6	27994ha (2.2%)	Steep to very steep slopes forming hilly and mountainous terrain on greywacke. Includes escarpments and bluffly terrain.	Severe to very severe soil slip and debris avalanche
VIIe7	3537ha (0.3ha)	Moderately steep to very steep slopes forming hilly and mountainous terrain on 'acid' to 'intermediate' volcanic (e.g. granodiorite) rocks. Typically on the flanks on ancient volcanoes.	Very severe sheet and rill; severe gully, soil and slip
VIIe8	10213ha (0.8%)	Moderately steep to steep slopes, often with a regular patter on incision, forming hilly and mountainous terrain on fractured and sheared argillites (commonly referred to as siliceous shale or claystone). Usually severely eroded.	Very severe gully; severe sheet and soil slip

VIIe9	8077ha (0.6%)	Strongly rolling to very steep slopes forming gully sidewalls, narrow valleys, low but steep hills and terrace escarpments, on compact sands and gravels, near the coast.	Very severe sheet, wind and gully
VIIe10	41591ha (3.3%)	Sand dunes and sand plains immediately inland from the foredune complex (VIIIe1), generally more than 400 metres inland from the mean high water-mark.	Very severe wind, sheet and gully.
VIIIe1	19025ha (1.5%)	Coastal foredune complex, beaches and sand plains, along a narrow belt of recent wind-blown sand. Typically, up to 400 metres inland from the mean high water-mark. Highly erodible, with patches of coastal vegetation (marram, pingao and spinifex) and much bare sand.	Extreme wind
VIIIe2	4563ha (0.4%)	Very steep and precipitous cliffs, bluffs, gorge walls, etc., in mountainous areas on various 'hard' rock types (such as greywacke and old volcanic rock). Much bare rock.	Extreme soil slip and debris avalanche; very severe sheet and scree
VIIIe3	3217ha (0.3%)	Very steep to precipitous slopes adjacent to the coast, including cliffs, bluffs and high escarpments, on various rock types.	Extreme sheet and scree, severe debris avalanche and soil slip
VIIIs1	4623ha (0.4%)	Precipitous cliffs, bluffs, escarpments, or gorge walls, on various rock types with much bare rock, with lower potential for soil slip and debris avalanche than VIIIe2 as much soil has already been removed, but with potential for very severe surficial forms of erosion such as sheet.	Very severe sheet, severe scree.

Erosion Prone Land is shown on maps at 1:100,000 scale which are included in the *Regional Water and Soil Plan for Northland Maps* and detailed in Appendix 6 of this Plan.

** Areas from the 2nd Edition NZLRI of the Northland database, covering the administrative area of the Northland Region.

*** Erosion types that are characteristic of the behaviour of the LUC unit are given, along with potential severity ratings assessed under a permanent vegetation cover.

Eutrophication – Enrichment of waters with nutrients, primarily phosphorus, causing abundant aquatic plant growth.

Facultative Ponds – With respect to waste treatment, ponds which contain bacteria which are able to live in either aerobic or anaerobic conditions.

Farm Dairy – Commonly referred to as dairy shed, cowshed or milking shed.

Farm Wastewater – All waste water and solid matter leaving a farm dairy, dairy yard, feed pad, standoff area, stock yard, sale yard, holding yard, wintering barn, loafing pad, calf rearing barn, piggery, poultry farm, adjacent entrance and exit races, farm transit races when used for standoff, stock underpass or similar, including animal effluent, washdown water, pit washings, sediment, milk, milk residue, supplementary feed, molasses, detergents, soil, sterilising agents and other residues associated with routine farming practices.

Fresh Water – All water within the region except coastal water and geothermal water.

Grazing – The activity of eating growing grass or other types of growing vegetation by animals.

Green Dump – A collection point for the temporary storage of vegetation located at a transfer station, and excluding compost heaps.

Groundwater – Water which occurs beneath the groundwater table, including geothermal water, in soils and geologic formations which are fully saturated.

Groundwater Table – The plane which forms the upper surface of groundwater saturation.

Gully – A channel resulting from water erosion which is deep enough to interfere with, and not to be obliterated by, normal cultivation operations.

Habitat – The place or type of site where an organism or population naturally occurs.

Hapu – Sub-tribes, usually a number of whanau with a common ancestor.

Hazardous Substance – Means, unless expressly provided otherwise by regulations, any substance –

- (a) With one or more of the following intrinsic properties:
 - (i) explosiveness;
 - (ii) flammability;
 - (iii) a capacity to oxidise;
 - (iv) corrosiveness;
 - (v) toxicity (including chronic toxicity)
 - (vi) ecotoxicity, with or without bioaccumulation; or
- (b) Which on contact with air or water (other than air or water where the temperature or pressure has been artificially increased or decreased) generates a substance with any one or more of the properties specified in paragraph (a) of this definition.

(From *Hazardous Substances and New Organisms Act 1996*).

Hazardous Waste – Hazardous substances which have no further safe and/or economic use.

Heritage Feature – An area, place or site, including any building or natural object thereon, which is of historic, cultural or spiritual value and demonstrates or provides evidence of a significant linkage with the past.

Indigenous Flora and Fauna – Plants and animals which belong naturally to New Zealand (as opposed to being introduced).

Indigenous Wetland – An indigenous wetland is any naturally occurring wetland of 50 m² or more (with a minimum width of 5 metres) which is permanently or seasonally wet (in that the water table is at or near the ground surface during

high water table conditions), and which is dominated by indigenous wetland plant species including all or some of the following:

- (a) Raupo
- (b) Flax
- (c) Sedge associations
- (d) Kahikatea
- (e) Cabbage tree
- (f) Manuka/kanuka on peatlands
- (g) Mangrove and saltmarsh
- (h) Kuta

For the purposes of this Plan indigenous wetlands that have been created for conservation purposes, as a requirement of a resource consent, are included within the definition of “indigenous wetlands”. The definition excludes wetlands created and subsequently maintained principally for or in connection with:

- (a) Effluent treatment and disposal systems; or
- (b) Stormwater management; or
- (c) Water storage; or
- (d) Other artificial wetlands, water courses or open drains.

The definition also excludes:

- (a) Trees with a pasture understorey; or
- (b) Exotic rush/pasture communities; or
- (c) Land which was been modified prior to 27 October 2001 to the extent that it is no longer ecologically viable.

Note: Photos of indigenous wetlands are provided as a guide in Appendix 13A. If you are unsure if an area is an indigenous wetland and is subject to rules in this Plan contact the Council for advice.

Industrial or Trade Premises – Means-

- (a) *Any premises used for any industrial or trade purposes; or*
- (b) *Any premises used for the storage, transfer, treatment, or disposal of waste materials or for other waste-management purposes, or used for composting organic materials; or*
- (c) *Any other premises from which a contaminant is discharged in connection with any industrial or trade process- but does not include any production land.*

Industrial or Trade Process – Includes every part of a process from the receipt of raw material to the dispatch or use in another process or disposal of any product or waste material, and any intervening storage of the raw material, partly processed matter or product.

Interceptor System – With regards to a stormwater collection system means a system that is specifically designed and capable of:

- (a) Containing deliberate or accidental releases (spills) of hazardous substances or other contaminants used on the site from stormwater discharges; and
- (b) In the event of stormwater contamination by a hazardous substance or other contaminant, reducing all such substances in the stormwater prior to discharge, to concentrations that will not result in contamination of either water or sediments to such a degree that is likely to result in adverse effects on aquatic life or on the suitability of the waters for specific defined purposes if appropriate.

Intermittently Flowing River – A river that is dry at certain times and has one or more of the following characteristics:

- (a) Appears on the NZMS260 1:50 000 map: or
- (b) Has stable pools in late summer; or
- (c) Supports species of plants and animals that are adapted to wet conditions, for example:
 - Native fish (bullies, kokopu, inanga)
 - Crayfish
 - Aquatic snails or shrimp
 - Mayflies, stoneflies or caddisflies

Intrinsic Values – *In relation to ecosystems, means those aspects of ecosystems and their constituent parts which have value in their own right, including*

- (a) *Their biological and genetic diversity; and*
- (b) *The essential characteristics that determine an ecosystem's integrity, form, functioning, and resilience.*

Issue – A matter of concern over existing or potential effects of the protection, use or development of natural and physical resources within the Northland region.

Iwi - Tribe, people.

Iwi Authority – *The authority which represents an iwi and which is recognised by that iwi as having authority to do so.*

Kaitiaki – Guardian, steward: the meaning of kaitiaki in practical application may vary between different hapu and iwi.

Kaitiakitanga – *means the exercise of guardianship by the tangata whenua of an area in accordance with tikanga Maori in relation to the natural and physical resources; and includes the ethic of stewardship.*

La Nina – Refers to global weather patterns which are influenced by positive values of the Southern Oscillation Index. La Nina episodes usually result in a higher probability of higher rainfalls in northern and eastern New Zealand. Waters in

the central and eastern tropical Pacific Ocean become cooler. The most recent strong La Nina episode was in 1988/89. (Sourced from Metservice). In Northland there are increased probabilities of easterly conditions and tropical depressions.

Lake – *A body of fresh water which is entirely or nearly surrounded by land.*

Land – *Includes land covered by water and the air space above land.*

Land Disturbance – The disturbance of land by earthworks, land preparation, quarrying and vegetation clearance.

Land Drainage – the activity of lowering the water level in the soil to achieve productive land use, to facilitate the stability of land or structures, or to achieve some other resource management purpose.

Land Preparation – The disturbance of the soil by machinery in preparation for planting or replanting crops or pasture grasses or trees, and includes blading, contour ploughing and ripping, but does not include sod sowing, ripping with mounding or direct drilling.

Land Use Capability Classification – A measure of the limitation of land to productive use (as further explained in Appendix 6).

Landfill – A waste disposal site used for the controlled deposit of solid wastes onto or into the land.

Leachate – The liquid resulting from the percolation of matter through soil or the liquid resulting from the decomposition of material, e.g. refuse (tip/landfill leachate).

Local Authority – *A Regional Council or Territorial Authority.*

Long Drop – See definition for pit privy.

Mean Annual Low Flow (MALF) - The lowest average daily flow of each year of record, arithmetically meaned over the length of record.

Marae –The spiritual, social, political and economic gathering place of iwi, hapu or whanau.

Mauri – Life force, life essence.

Method of Implementation – A practical action by which a policy is to be put into effect.

National Policy Statement – A statement of national policies on matters of national significance relating to achieving the purposes of the Resource Management Act.

Natural and Physical Resources – *Includes land, water, air, soil, minerals, and energy, all forms of plants and animals (whether native to New Zealand or introduced), and all structures.*

Natural Hazard – *Any atmospheric or earth or water related occurrence (including earthquake, tsunami, erosion, volcanic and geothermal activity, landslip,*

subsidence, sedimentation, wind, drought, fire or flooding) the action of which adversely affects or may adversely affect human life, property or other aspects of the environment.

Non-point Source Discharge – Involves diffuse discharges such as runoff or leachate from land, onto or into land, air, a water body or the sea (as opposed to an effluent outfall).

Notification – Public notification of any Policy Statement or Plan, and changes thereto, or resource consent applications.

Objective – A measurable aim or end result to which efforts are directed.

Off-stream Reservoir – an artificial body of water that is not the bed of a river, lake or indigenous wetland created to collect and store rainfall runoff and water lawfully harvested from a water body.

One in Five Year Low Flow – The lowest mean daily flow averaged over any 7 day period which occurs, on average, once every five years. It is estimated by determining the lowest “mean daily flow averaged over any 7 day period” for each year of record, and using that data in a frequency analysis to establish the 1 in 5 year return period for that site.

Open Drain – Any man-made water course which has an outlet to water, or natural water course which is/has been channelised and is regularly maintained.

Pesticide – Any agrichemical that is specifically designed to:

- (a) Control or eradicate unwanted plants;
- (b) Control, eradicate or interrupt the growth processes of insects, fungal organisms;
- (c) Stop or prevent the growth and development of bacteria;
- (d) Control or eradicate unwanted animals.

Pipe Network – gravity and pressure sewer system that discharges to and from a pump station and ultimately discharges to a treatment plant.

Pit Privy – “A private room containing a receptacle (other than a wc) or an excavation for excreted liquid or solid human waste and with a means of disposal or containment of the waste” (BIA 1992).

Placement – For the purposes of Section 29 of this Plan, placement means: erect, place.

Plan – *A regional plan or a district plan.*

Plantation Forestry – An area of trees managed for commercial activities and includes all planting, tending and harvesting and associated land disturbance activities.

Point Source Discharge – A discharge from a specific and identifiable outlet, onto or into land, air, a water body or the sea.

Policy – A specific statement that guides or directs decision making. A policy indicates a commitment to a general course of action in working towards an objective.

Practicable Measures – Actions that can be taken to avoid, remedy or mitigate adverse effects, and that are feasible. (For example, with respect to environmental standards for land disturbance activities, where soil and debris have been left in a position where it may enter water, it may be physically possible to move it away from the area with a bulldozer. That would be a practicable measure despite a bulldozer not being readily available on the site.)

Primary Treatment – The first stage of effluent treatment usually involving the removal of a proportion of floatable and settleable solids.

Public Costs – The significant or likely restriction of the opportunities of people and communities to use public resources, e.g. water, soil and air.

Quarrying – The open surface extraction of weathered or unweathered rock material from the ground, including the removal of overlying earth or soil. The stacking, crushing, conveying, storing, depositing and treatment of the excavated material and the removal of unwanted materials.

Rapid Infiltration System – Effluent disposal systems such as pits or trenches which can be used in rapid to free draining soils. (Refer Technical Publication No.58. *“On-site Waste-water Disposal from Household and Institutions”* (Auckland Regional Council, 1994)).

Receiving Water – Any water, as defined by the Act, which receives contaminants or water from point source or non-point source discharges.

Region – *In relation to a regional council, the region of the Regional Council as determined in accordance with the Local Government Act 2002.*

Region – In relation to this Plan, the region is the coverage area as described in Section 2.03 and excludes the coastal marine area.

Regional Coastal Plan – An Environmental Management Plan or Plans for the Coastal Marine Area of a region, prepared by the Regional Council and approved by the Minister of Conservation.

Regional Council – *means a regional council within the meaning of the Local Government Act 2002.*

Regional Plan – A Plan or Plans prepared by the Regional Council for managing the use and/or protection of resources (e.g. within the region – coastal, water, air).

Regional Policy Statement – An operative regional policy statement prepared by the Regional Council under the First Schedule to the Act.

Removal – For the purposes of Section 29 of this Plan, removal means: remove, demolish.

Repair – For the purposes of this Plan, repair means: reconstruct part of a structure to its former dimensions, maintain.

- Replacement** – Take the place of, put back in previous place or position.
- Reserve Area** – An area set aside for future use as a disposal area to replace or extend the original disposal system.
- Resource Consent** – A consent to do something that is not otherwise permitted by a Plan or the Act.
- Rill** - A small channel, caused by erosive runoff, which is a few centimetres deep and is no obstacle to cultivation operations.
- Riparian Management Zone** – The Riparian Management Zone is a zone of varying widths adjacent to the bed of a river, lake, indigenous wetland, or the Coastal Marine Area which needs to be managed carefully to protect the water body from the adverse effects of land use. Criteria for identifying the Riparian Management Zone are contained within Figure 7.
- Ripping** – A land preparation technique involving deep cutting of the ground to penetrate impermeable layers such as iron pans or areas of impeded drainage.
- River** – *Means a continually or intermittently flowing body of fresh water and includes a stream and modified water course; but does not include any artificial watercourse (including an irrigation canal, water supply race, canal for the supply of water for electricity power generation, and farm drainage canal).*
- Rohe** – Territory, boundary: defines areas within which a tangata whenua group claims traditional association and mana whenua.
- Rule** – *A district rule or a regional rule (contained in a District or Regional Plan).*
- Runoff Control Measures** – Methods which may be implemented to control runoff around a land disturbance activity such as roading and tracking, quarrying and subdivision development and may include runoff diversion channels, contour drains, earth bunds, sediment retention ponds, silt fences, hay bales, water tables, culverting.
- Run of River Hydro-Electric Scheme** – A hydro-electric scheme on the bed of a river or lake that extracts water from that river or lake and has limited or no storage of water and relies on the flow of water and/or the height of the drop to push water through turbines and generate electricity.
- Sacrifice Area** – An area of land onto which farm dairy wastes are discharged generally without treatment or further management of the disposal site.
- Secondary Treatment** – The further treatment of primary treated effluent which involves either anaerobic or aerobic biological or chemical or physical treatment which removes the bulk of the organic contaminants.
- Sediment** – Particulate soil or organic matter.
- Septage** – The scum, sludge and full liquid contents of a septic tank or primary compartment of an aeration tank/plant.

Sewage – The liquid wastes of a community, including toilet wastes, sullage, trade wastes.

Sewage Pump Station – A chamber(s) in a reticulated sewerage system which collects and pumps sewage along the sewerage lines to the treatment plant.

Sheet Erosion – Erosion where thin layers of surface material are gradually removed more or less evenly from an extensive area of sloping land.

Significant Indigenous Wetlands – An indigenous wetland which meets one or more of the criteria given in Appendix 13B.

Slope – The angle of a hillslope from the horizontal, measured at right angles to the contour. Slope is measured in degrees and to an accuracy no less than that achieved by a hand-held clinometer or abney level.

Sludge – The solid material settled out from effluent during the treatment process.

Soil Conservation – The management of land to maintain New Zealand's soil and water resources to provide the widest range of sustainable benefits for the needs and aspirations of present and future generations. (*National Water and Soil Conservation Authority; Ministry of Works and Development 1987*)

Solid Waste – The combination of domestic, industrial and commercial waste including non-hazardous special wastes also known as community waste.

Southern Oscillation Index – Calculated from monthly or seasonal fluctuations in the air pressure difference between Tahiti and Darwin. A negative value indicates El Nino episodes. A positive value indicates La Nina episodes. (Sourced from Metservice).

Stopbank – A constructed embankment bordering one or both sides of a river or channel to contain flows or divert flows.

Stormwater – Water than flows off pervious or impervious surfaces as a result of precipitation.

Stormwater Management Plan – A Plan providing for the management of stormwater quantity and quality which enables appropriate controls during and after the development of a catchment [or subcatchment], and which incorporates safeguards against and minimisation of flooding, soil erosion, and stormwater water pollution during and after the development phase.

Stream – Refer to definition of River.

Structure – *Any building, equipment, device, or other facility made by people and which is fixed to land; and includes any raft.*

Submission – *A written submission and, in relation to the preparation or change of a policy statement or plan, includes any submission made under clause 8 of the First Schedule in support of or in opposition to an original submission.*

Subsurface Drainage – The collection of excess soilwater in pipes, such as tile drains, and its discharge to surface water.

Sullage – Wastewaters from kitchen, bathroom, laundry, other than toilet wastes. Also termed “greywater”.

Surface Water – All water, flowing or not, above the ground. It includes water in continually or intermittently flowing rivers, artificial watercourses, lakes and wetlands, and water impounded by structures such as dams or weirs but does not include water while in pipes, tanks, cisterns, nor water within the Coastal Marine Area.

Sustainable Management – *Managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural well-being and for their health and safety while –*

- (a) *Sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and*
- (b) *Safeguarding the life-supporting capacity of air, water, soil, and ecosystems; and*
- (c) *Avoiding, remedying, or mitigating any adverse effects of activities on the environment.*

Tangata Whenua - In relation to a particular area, means the iwi, or hapu, that holds mana whenua over that area.

Taonga - Treasure, property: taonga are prized and protected as sacred possessions of the tribe, not merely as temporal property in the Western sense. The term carries a deep spiritual meaning, and taonga may be things that cannot be seen or touched. Included, for example, are: te reo (the Maori language), waahi tapu, waterways, fishing grounds, and mountains.

Technical Publication No. 58 - A publication containing criteria for the design and construction of on-site effluent treatment and disposal systems (*Technical Publication 58 On-Site Waste-Water Disposal from Household and Institutions. Auckland Regional Council, November 1994*).

Territorial Authority - *means a territorial authority within the meaning of the Local Government Act 2002.*

Tertiary Treatment - Further treatment of biological or chemically treated secondary treated effluent to further remove contaminants such as nutrients, organic matter and micro-organisms. It involves physical processes such as adsorption, absorption and filtering.

Tikanga Maori - *Maori customary values and practices.*

Trade Wastes - The wastes from an industrial or trade premise which are discharged into a reticulated sewerage system.

Treated Effluent - Effluent which has undergone some physico-chemical and/or biological change.

Untreated Effluent - Effluent which has not undergone any chemical or biological changes prior to disposal in the receiving environment. Untreated effluent

may undergo some solids separation in a storage facility such as a pond or sump.

Urban - In relation to stormwater, an area with a high proportion of impervious surfaces (roads and footpaths, carparks and roofs) as can be found in an urban catchment or in a catchment in the process of becoming urbanised.

Vegetation Clearance - The cutting, burning, crushing or destruction of trees, shrubs and plants but excludes:

- (a) Grasses, scattered trees, shrubs, or regenerating bush amongst pasture,
- (b) Forest thinnings, agricultural or horticultural crops,
- (c) Clearance around public utility networks,
- (d) Any vegetation clearance required under a Regional Pest Management Strategy under the Biosecurity Act,
- (f) Land preparation such as oversowing, ploughing, ripping and so on, (see definition for land preparation),
- (f) Vegetation clearance using the line cutting method,
- (g) Vegetation clearance for visibility and road safety.

Visual Clarity - Clarity of water refers to the transmission of light through water. There are two aspects of measurement:

- (a) The distance a perfect black body can be seen horizontally under water.
- (b) The depth to which diffused light can penetrate vertically into water.

Waahi Tapu - Sacred site: these are defined locally by the hapu and iwi which are kaitiaki for the waahi tapu. Typically includes burial grounds and sites of historical importance to the tribe. In order to protect particular sites from interference and desecration, some tribes will refuse to disclose the exact location to outsiders.

Wairua - Spirit.

Waste Management - Waste management refers to the transportation, resource recovery, storage, treatment and/or disposal of wastes including management systems to ensure that the environmental effects of these procedures are minimised. Waste management also encompasses measures to avoid waste generation.

Waste Minimisation - The modification of existing processes or behaviours to reduce waste production to a minimum.

Wastewater - Water-borne wastes, the liquid component of effluent.

Water –

- (a) *Means water in all its physical forms whether flowing or not and whether over or under the ground:*

- (b) *Includes fresh water, coastal water, and geothermal water:*
- (c) *Does not include water in any form while in any pipe, tank, or cistern.*

Water Body - *Means freshwater or geothermal water in a river, lake, stream, pond, wetland or aquifer, or any part thereof, that is not located within the Coastal Marine Area.*

Water Course - See water body.

Water Quality Guideline - A numerical concentration limit or narrative statement recommended to support and maintain a designated water use.

Water Quality Standard - An objective which is recognised in enforceable environmental control laws, such as water classification or regional rules.

Water Shortage Direction -

- (a) *Where a Regional Council considers that at any time there is a serious temporary shortage of water in its region or any part of its region, the Regional Council may issue a direction for either or both of the following –*
 - (i) *that the taking, use, damming, or diversion of water:*
 - (ii) *that the discharge of any contaminant into water, -*
is to be apportioned, restricted or suspended to the extent and in the manner set out in the direction.
- (b) *A direction may relate to any specified water, to water in any specified area, or to water in any specified water body.*
- (c) *A direction may not last for more than 14 days but may be amended, revoked, or renewed by the Regional Council by a subsequent direction.*
- (d) *A direction comes into force on its issue and continues in force until it expires or is revoked.*
- (e) *A direction may be issued by any means the Regional Council thinks appropriate, but notice of the particulars of the direction shall be given to all persons required to apportion, restrict or suspend -*
 - (i) *the taking, use, damming, or diversion of water; or*
 - (ii) *the discharge of any contaminant into water, - as far as they can be ascertained, as soon as practicable after its issue.*

For the purpose of this section, notice may be given to a person by serving it on the person or by publishing the notice in one or more daily newspapers circulation in the area where the person takes, uses, dams, or diverts the water, or discharges a contaminant into water.

Wetland - *Includes permanently or intermittently wet areas, shallow water, and land water margins that support a natural ecosystem of plants and animals that are adapted to wet conditions.*

APPENDICES

This part contains the Appendices, where maps are referred to these are contained in the separate folder Water and Soil Plan for Northland Maps under the specific Appendix number.

APPENDIX 1: DERIVATION AND RATIONALE FOR WATER QUALITY GUIDELINES FOR AQUATIC ECOSYSTEMS, CONTACT RECREATION, WATER SUPPLY, AESTHETIC OR CULTURAL PURPOSES

1. DERIVATION

The water quality guidelines have been derived from a number of sources as follows:

1. Australia and New Zealand Environment and Conservation Council, November 1992: *Australian Water Quality Guidelines for Fresh and Marine Waters*.

This source has been used for the following guidelines: pH, Toxic metals (except Chromium), Faecal Coliforms, Nutrients.

2. Ministry for the Environment, June 1994: *Water Quality Guidelines No. 2 - Guidelines for the Management of Water Colour and Clarity*.

This source has been used for the water clarity guideline.

3. *Resource Management Act 1991*: Sections 70 and 107; Third Schedule.

Sections 70 and 107 provide narrative guidelines for aesthetic values. The third schedule provides the temperature guideline.

4. Northland Regional Council Consultancy Report NRC 101/6, September 1994: *Low Flow Options for Northland*.

This source has been used for the Dissolved Oxygen Guidelines.

5. United States Environmental Protection Agency, 1985: *Ambient Water Quality Criteria for Ammonia*.

This source has been used for the Ammonia Guidelines.

6. Canadian Council of Resource and Environmental Ministers, 1991: *Canadian Water Quality Guidelines*.

This source has been used for the water quality guideline for Chromium.

The 1992 ANZECC Water Quality Guidelines are a further "distillation" of the USEPA and Canadian guidelines, particularly the more stringent Canadian guidelines which have been refined to be more relevant to Australasia. With the exception of the standard for protection of freshwater aquatic life from chromium, the ANZECC standards are virtually identical to the Canadian standards, and are supported here because of their local and up-to-date refinement.

2. RATIONALE

2.1 Temperature

Changes in water temperature can adversely affect the habitats and functioning of aquatic ecosystems and the physiology of river life. Changes in ambient water temperature may adversely affect the growth, metabolism, timing and success of reproduction, mobility and migration patterns of river life. The effects of the changes in water temperature depend on the sensitivity of the different river life.

Temperature changes also affect the ability of water to hold oxygen, with subsequent effects on aquatic life.

2.2 pH

pH is a measure of the acidity or alkalinity of a solution. The pH index has a scale of 0 to 14. pH of 0 to 6.99 describe acidic solutions, a pH of 7 describes a neutral solution, and pH of 7.01 - 14 describes an alkaline solution. Most natural fresh waters have a pH close to 7. In natural conditions, the pH of water bodies is influenced by the soil type and vegetation cover of the land through which the respective water body passes, as well as the aquatic vegetation. Human induced point source or diffuse discharges, and land use and land use practices, can make a water body unnaturally acidic or alkaline.

It is generally accepted that a pH range of 6.5 - 9.0 will not adversely affect trout, invertebrates or other aquatic life.

2.3 Dissolved Oxygen

Dissolved Oxygen (DO) in water is a physical parameter used to measure water quality. The concentration of oxygen in water is a primary factor which determines the life supporting capacity of a water body. Dissolved Oxygen levels vary from water body to water body, depending on temperature, the Biochemical Oxygen Demand (BOD) and the re-aeration rate. The upper reaches of rivers commonly exhibit a high dissolved oxygen content of about 10 g/m³ or more than 80% saturation. The concentration can be reduced in the lower reaches of rivers, due to greater BOD, a lower re-aeration rate and increased water temperature. Oxygen concentrations rise during the day as a result of photosynthetic activity of aquatic plants and fall at night as a result of plant (including algal) respiration. This is termed diurnal fluctuation.

Northland rivers commonly achieve DO levels of 7 - 9 g/m³, and can get as low as 2 - 4 g/m³ as a result of increased temperature. A minimum level of 6 g/m³ is considered to protect aquatic ecosystems.

2.4 Visual Clarity

Clarity is one of the main aspects of water appearance, and relates directly to the visual and aesthetic values of water. The other main aspect, colour, is related to the effect on the human eye of reflected light energy. Visual clarity relates to the maximum distance at which objects can be viewed through water. Variations in clarity can be caused by dissolved, colloidal and suspended material in the water.

Visual clarity can be measured using a black disk or a secchi disk. The black disk is viewed horizontally under water through an inverted periscope. The black disk

distance is the distance, in metres, at which the disk just disappears from sight. There have been few black disk measurements taken of Northland streams and lakes. The secchi disk is used to measure clarity vertically based on similar principles.

There are two guidelines for clarity for the stated purposes. The 20% reduction guideline will protect aquatic ecosystems and would apply to water bodies where visual clarity is an important characteristic, but it is a guideline to strive for. It is the degree of clarity reduction which is found to be detectable by most people. It is therefore the lower bound of "conspicuous". For other water bodies, the visual clarity should not be changed by more than 33 - 50% depending on site conditions.

The guideline of a minimum distance of 1.6 metres as measured by a 200 millimetres black disc protects the water for contact recreation purposes. Research shows that this guideline satisfies the safety requirements as well as the aesthetic preferences of bathers.

2.5 Conspicuous Oil or Grease Films, Scums or Foams, or Floatable Material

Foam is a mass of small bubbles of gas formed on the surface of a liquid. Foam can occur naturally due to natural carbohydrates washed from forested areas. Many substances in water will cause foaming when the water is agitated or air is entrained. It can also occur as the result of a discharge and mixing of contaminants. Scums are layers of matter that form on the surface of a liquid, such as the greenish film of algae and similar vegetation on the surface of a stagnant pond. Like foams, scums can and do occur naturally. They also arise from point source discharges. Floatable materials are materials which have not dissolved in the water body after allowing for reasonable mixing, and float on the surface.

2.6 Toxic Metals

The ranges for toxic trace metals are subject to water hardness. The exception is for total Chromium (Cr), which is the Canadian (CCREM 1988) guideline based on protection of all fresh water life, including species of Cladocerans (water fleas) known to exist in New Zealand. The use of the guideline for total Cr assumes that all of the metal is in the toxic hexavalent form.

2.7 Faecal Coliforms

The faecal coliform standard is aimed at contact recreation. It offers limited protection for aquatic life and other uses but is considered to be more achievable than a higher standard.

2.8 Nutrients

Nutrients are substances which provide nourishment for plants and animals. Nutrient levels strongly influence the growth of organisms, and in large quantities, can be undesirable. Nitrogen and phosphorus levels in water bodies are dependant on a number of factors including direct discharges to the water and the rate of removal of nutrients from the water by adsorption onto sediments or uptake by aquatic biota.

The addition of plant nutrients, such as nitrogen and phosphorus, from sewage and agricultural runoff can create an imbalance by stimulating excessive growth of aquatic plants. These plants are normally a natural and important component of a stream. They provide habitat areas, food for other aquatic life, and contribute to re-

aeration through photosynthetic production of oxygen. However, excessive summer growth due to nutrient enrichment can choke water bodies which have low flow rates. During autumn and winter, when the plants die off, oxygen depletion occurs as they are decomposed by bacteria.

Specific nutrient levels for prevention of slime and algal enrichment should be derived from site investigations.

2.9 Ammonia

The total ammonia concentration changes with pH and temperature. The guidelines protect trout habitats, however recent research on Toxicity of Ammonia to Nine Native New Zealand Freshwater Invertebrate Species (Hickey, Quinn 1994) indicates that native invertebrates may be more sensitive to ammonia toxicity and that this criteria may not provide adequate protection. Further research is required to determine their sensitivity to long-term exposure.

The diurnal fluctuations in ammonia and temperature complicate the application of the values. To simplify this and to err on the side of environmental protection, the pH and temperature shall be taken in the midday-early afternoon period (noon to 2 p.m. New Zealand Standard Time) when they are at their maximum, to derive the appropriate ammonia guideline from the table.

APPENDIX 2: DERIVATION AND RATIONALE FOR WATER QUALITY GUIDELINES FOR STOCK WATER AND IRRIGATION WATER SUPPLIES

1. DERIVATION

The derivation for the guidelines are the same as those given in Appendix 1.

2. RATIONALE

The rationale for the following guidelines is also the same as given in Appendix 1: temperature, pH, dissolved oxygen, conspicuous oil, grease films, scums or foams, or floatable materials, and ammonia.

The rationale for the remaining guidelines are set out below.

2.1 Toxic Metals

Various toxic metals are poisonous to stock or can accumulate in crops. As the maximum concentration for each toxic metal varied for stock water and irrigation water in the ANZECC guidelines, whichever is the lower concentration (that is, the most stringent standard) has been selected for these guidelines.

2.2 Faecal Coliforms

Faecal coliform bacteria are an indicator of faecal contamination from humans and warm blooded animals and, therefore, indicate the potential presence of pathogenic organisms in the water. Serious infections in stock can result if the water supply is contaminated with pathogenic organisms. The water quality guideline represents a four-fold increase on that used to protect aquatic ecosystems and contact recreation and so on. However, it is less than half that recommended in the ANZECC guidelines. The ANZECC guidelines appeared too high, given Northland's existing water quality, and could allow, in some instances, a deterioration in water quality. This would be contrary to the objectives and policies for water quality management. The guidelines in this Plan represent a realistic and achievable level of water quality to meet and provides a reasonable baseline on which to improve the water quality.

2.3 Nitrate

Given that nitrate is a nutrient and beneficial to plant growth, there is no nitrate guideline for irrigation water in the ANZECC guidelines.

The recommended maximum concentration for nitrate in stock drinking water in the ANZECC manual is 30,000 milligrams per cubic metre. This guideline is based on protection of animal health. However, if this guideline was adopted it could allow nuisance growths in waters. Therefore, a significantly lower guideline of 500 milligrams per cubic metre has been adopted to reduce the potential for adverse effects.

APPENDIX 3: SECTION 88 AND THE FOURTH SCHEDULE OF THE RESOURCE MANAGEMENT ACT 1991

1. MAKING AN APPLICATION (SECTION 88)

- (1) *A person may apply to the relevant local authority for a resource consent.*
- (2) *An application must –*
 - (a) *be made in the prescribed form and manner; and*
 - (b) *include, in accordance with Schedule 4, an assessment of environmental effects in such detail as corresponds with the scale and significance of the effects that the activity may have on the environment.*
- (3) *If an application does not include an adequate assessment of environmental effects or the information required by regulations, a local authority may, within 5 working days after the application was first lodged, determine that the application is incomplete and return the application with written reasons for the determination, to the applicant.*
- (4) *If, after an application has been returned as incomplete, that is lodged again with the relevant local authority, that application is to be treated as a new application.*
- (5) *Sections 357 to 358 apply to a determination that an application is incomplete.*

2. FOURTH SCHEDULE

1. *Matters that should be included in an assessment of effects on the environment*

Subject to the provisions of any policy statement or plan, an assessment of effects on the environment for the purposes of Section 88 should include –

- (a) *A description of the proposal:*
- (b) *Where it is likely that an activity will result in any significant adverse effect on the environment, a description of any possible alternative locations or methods for undertaking the activity:*
- (c) *Repealed*
- (d) *An assessment of the actual or potential effect on the environment of the proposed activity:*
- (e) *Where the activity includes the use of hazardous substances and installations, an assessment of any risks to the environment which are likely to arise from such use:*
- (f) *Where the activity includes the discharge of any contaminant, a description of –*
 - (i) *the nature of the discharge and the sensitivity of the proposed receiving environment to adverse effects; and*
 - (ii) *any possible alternative methods of discharge, including discharge into any other receiving environment:*

- (g) *A description of the mitigation measures (safeguards and contingency plans where relevant) to be undertaken to help prevent or reduce the actual or potential effects:*
- (h) *Identification of the persons affected by the proposal, the consultation undertaken, if any, and any response to the views of any person consulted.*
- (i) Where the scale or significance of the activity's effect are such that monitoring is required, a description of how, once the proposal is approved, effects will be monitored and by whom.

1A Matters that must be included in an assessment of effects on the environment

An assessment of effects on the environment for the purposes of section 88 must include, in the case where a recognised customary activity is, or is likely to be, adversely affected, a description of possible alternative locations or methods for the proposed activity (unless written approval for that activity is given by the holder of the customary rights order).

3. MATTERS THAT SHOULD BE CONSIDERED WHEN PREPARING AN ASSESSMENT OF EFFECTS ON THE ENVIRONMENT

Subject to the provisions of any policy statement or plan, any person preparing an assessment of the effects on the environment should consider the following matters:

- (a) Any effect on those in the neighbourhood and, where relevant, the wider community including any socio-economic and cultural effects:
- (b) Any physical effect on the locality, including any landscape and visual effects:
- (c) Any effect on ecosystems, including effects on plants or animals and any physical disturbance of habitats in the vicinity:
- (d) Any effect on natural and physical resources having aesthetic, recreational, scientific, historical, spiritual, or cultural, or other special value for present or future generations:
- (e) Any discharge of contaminants into the environment, including any unreasonable emission of noise and options for the treatment and disposal of contaminants:
- (f) Any risk to the neighbourhood, the wider community, or the environment through natural hazards or the use of hazardous substances or hazardous installations.

APPENDIX 4: LANDFILL MANAGEMENT PLAN

Matters to be addressed in a management plan shall include, but not be restricted to, the following:

1. Description of the waste collection, treatment, storage, and disposal system.
2. Identification of discharges and environmental effects and the safeguards in place to avoid or reduce the environmental effects.
3. Identification of wastes which are prohibited.
4. Identification of wastes which can only be accepted under special (specified) conditions.
5. Identification of accepted cleaner production technologies for classes of activity (identified by New Zealand Standard Industrial Classification) which together contribute at least 80% of the waste stream contaminants (measured by mass) and commentary on:
 - The extent to which the cleaner technologies are in place in each activity, including commentary on the source and accuracy of that information;
 - The measures that the consent holder is putting in place to achieve greater conformance with accepted cleaner production technologies;
 - The timetable prepared by the consent holder for each industrial activity for achieving at least 95% compliance with accepted cleaner production technology.
6. Monitoring requirements and procedures including random checking of incoming wastes.
7. Emergency response procedures and contingency plans including:
 - Detection of leakage of contaminants and/or discharge of contaminants in contravention of resource consent conditions
 - Power failure
 - Fire
 - Staff training
 - Public access
8. Identification of management responsibilities for compliance with resource consents and environmental regulatory requirements.
9. Maintenance requirements.
10. Identification of corporate environmental performance standards, national or industry group codes of practice, or other recognised environmental safety, or health standards with which the operation of the facility will comply, and a description of the means for auditing compliance.

11. Description of recycling and reusing strategy.
12. Description of storage of interim toxic waste.

APPENDIX 4A: MATTERS TO BE ADDRESSED IN A LANDFILL CLOSURE PLAN

1. Description of the past landfilling operation and types of waste included in the landfill.
2. Identification of discharges and environmental effects.
3. The provision of a low permeability capping layer.
4. The final capping layer consists of a soil material that can be planted using vegetation that will maintain groundcover as far as practicable and whose roots will not intrude through the capping layer into the refuse in the landfill.
5. The facilitation of surface water runoff from the landfill surface and prevention of ponding.
6. The prevention of catchment runoff from entering the landfill.
7. The mitigation measures necessary to meet the required receiving water quality standards.
8. Monitoring requirements and procedures.

APPENDIX 5: STORMWATER MANAGEMENT PLANS

Matters to be addressed in a stormwater management plan shall include but not necessarily be restricted to the following:

- A description of the catchment and the drainage areas.
- The identification of existing drainage problems and potential flood hazards and other sensitive areas such as unstable land.
- The location of major drainage works and flood protection systems.
- Calculation of peak flows from each drainage area and the specifications for system design to avoid erosion and flooding.
- Identification of stormwater quality controls required for each drainage area.
- Upgrade requirements and a programme for upgrade.
- Monitoring requirements for inlet and outlet structures, flow channels and stormwater quality.
- A maintenance programme for the catchment drainage system.
- Identification of management responsibilities for compliance with resource consents.

APPENDIX 6: LAND USE CAPABILITY CLASSIFICATION

1. INTRODUCTION

This section explains the basis for the Land Use Capability Classification.

2. ASSUMPTIONS OF THE LAND USE CAPABILITY CLASSIFICATION

The Land Use Capability Classification (LUC), used throughout New Zealand, assesses land in terms of its suitability for long-term sustained productive use, taking into account physical limitations, management requirements and soil conservation needs. It considers the suitability of land to support broad agricultural uses, including cultivated crops, pasture, forestry and agro forestry.

The following assumptions are made when assessing Land Use Capability:

- (a) LUC is an interpretative assessment based on the permanent physical characteristics of the land.
- (b) Where it is feasible for an individual landowner to remove or significantly reduce physical limitations, for example, lower a high watertable, apply additional water, improve soil fertility, remove surface gravel, stones or boulders, or minimise erosion, the land is assessed according to the degree of limitations remaining after the changes have been made.
- (c) An above-average level of land management is or will be practised.
- (d) Appropriate soil conservation measures have been or will be applied and maintained.
- (e) The LUC classification is not a productivity rating for specific crops. Economics does not enter into LUC mapping.
- (f) LUC assessments of an area can be changed by major schemes that permanently change the nature and extent of the limitations, for example, large drainage, irrigation, or flood control schemes.
- (g) LUC is not influenced by such factors as location, distance from markets, or processing facilities, land ownership, or the skill of individual farmers.

3. STRUCTURE OF THE LAND USE CAPABILITY CLASSIFICATION

The LUC classification has three levels:

- (a) The LUC Class - which expresses the degree of limitation to productive use from nil or negligible in Class I to extreme in Class VIII.
- (b) The LUC Subclass - which identifies the main kind of limitation. These comprise (e) erosion, (w) wetness, (s) soil characteristics, and (c) climate.
- (c) The LUC Unit - which groups together mapped areas of land which respond similarly to the same management, are adapted to the same kinds of crops, pasture or forest species, have about the same potential yield, and require the application of the same soil conservation measures.

A physical inventory referred to as the Land Resource Inventory is recorded for each area on the map:

Rock Type - Soil - Slope Group

Erosion Severity and Type - Vegetation Cover

Erosion type, erosion severity and vegetation cover are those present at the date of mapping. Maps containing the LUC Classification and the Land Resource Inventory are available at a scale of 1:50,000. Maps for the Northland region (1973-75) have recently been updated as a result of field surveys carried out during 1985-90⁷. These maps identify land which, on the information currently available, is prone to soil erosion. Due to the scale of mapping, there will be areas within the identified land not susceptible to erosion, just as outside the identified land, there will be areas which are susceptible.

The key point is that within areas of land identified as erosion-prone at this scale, most of the surface is susceptible to erosion. There is no need to enlarge or use these maps to a more detailed scale than that used in the mapping of this data, that is, a scale of 1:50,000, because doing so does not provide any additional information.

3.1 LUC Class

The broadest level in the LUC classification is the 'Class'. The LUC Class expresses the degree of limitation to sustainable use. There are eight classes, from Class I to Class VIII, arranged in order of increasing limitations or hazards to use, and decreasing land use versatility.

- Classes I-IV land are determined on their physical limitations for cultivation. They may also be suitable for pastoral, or forestry use (36.5% of Northland).
- Class V land has too many limitations to be cultivated for cropping, although in some instances it can be cultivated for the purposes of development or pasture renewal. Class V has only slight limitations for pastoral use or forestry use.
- Class VI land is not suitable for cultivation for cropping. It has moderate limitations for pastoral use. It may be suited to forestry.
- Class VII land is not suitable for cultivation for cropping. It has severe limitations for pastoral use and may also be suitable for forestry.
(Classes V, VI and VII describe 61% of Northland).
- Class VIII land has physical limitations so severe that it is unsuitable for any form of cropping, pastoral or production forestry use. It is suitable only for catchment protection (2.5% of Northland).

3.2 LUC Subclass

The second level in the classification expresses the major kind of limitation contributing to the LUC assessment.

Four kinds of subclass limitations are used:

⁷ Harmsworth, G.R. 1996: Land Use Capability Classification of the Northland Region: a report to accompany the second edition New Zealand Land Research Inventory. Landcare Research Science Series No. 9, 269p

- **Erosion (e)** Erosion hazard including surface erosion of topsoil, rilling and gullyng and a mass movement erosion of subsoil (79% of Northland).
- **Wetness (w)** Wetness which limits plant growth through lack of aeration in the soil, high watertable levels, flooding or ponding (12% of Northland).
- **Soils (s)** Limitations in the plant rooting zone (apart from wetness) arising from, shallow soils, stoniness throughout the profile, low moisture holding capacity, low fertility or element deficiency, poor soil texture and structure (8% of Northland).
- **Climate (c)** Limitations imposed by unfavourable climate: prolonged high or low temperatures, frequent high-intensity rainfall, prolonged drought, wind exposure, salt spray (1% of Northland).

Generally more than one kind of physical limitation must be considered when assessing LUC. However, the person undertaking mapping is required to select a single dominant limitation. If two limitations are considered dominant, the decision is made using the progression e, w, s, c. The "e" limitation is not used for LUC Class I and Class V.

3.3 LUC Unit

The third level of the classification is the LUC unit. The LUC unit groups together those mapped areas which respond similarly to the same management, are adapted to the same kinds of crops, pastures or forest species, which have about the same potential yield, and require the application of the same soil conservation measures. This is the "management" level in the classification. The 1:50,000 NZLRI maps of Northland group 11,718 individually mapped areas into nine LUC units, which are defined in a Land Use Capability Classification specifically for the Northland Region.

More detailed information on the Land Use Capability Classification for Northland is available in the "Land Use Capability Classification of the Northland Region, New Zealand Parts 1 and 2". These are available at all Regional Council offices.

4. IDENTIFICATION OF LAND OF HIGH EROSION RISK

Land in Northland identified as being at most risk from erosion and requiring very careful management and soil conservation measures includes all Class VIIe and VIIIe units. The class VII and VIII lands selected as erosion-prone have severe or greater potential for erosion over most of their area, wherever mapped.

Class VIII land, by definition, has such severe, permanent physical limitations that it has no inherent productive value, that is, it is only suitable for ecological, conservation and protective uses.

Land classified as Class VIII because of extreme erosion risk must be carefully managed to maintain its protective vegetation. For example, a dense and healthy cover of dune-binding plants must be maintained on the foredune on both the coasts and the coastal cliffs from Glinks Gully to Maunganui Bluff. Similarly, the dense scrub and bush cover on the steep sides of river gorges is essential to maintain the stability of the gorge and to protect downstream land and river systems from sedimentation.

The recent sands inland of the west coast foredunes from Pouto to west of Te Kopuru and from Ahipara to the Te Paki Stream are particularly susceptible to wind erosion, forming large mobile sand drifts. During periods of abuse, for example, excessive burning and overgrazing, the dunes have migrated inland, engulfing forests, productive alluvial soils and lakes. Now largely stabilised by marram grass and lupins, all except the foredune and a narrow inland buffer strip is capable of production forestry, given careful management during harvest and replanting. This area, mapped as Unit VIIIe1 in the 1970's because it was bare sand at the time, was mostly remapped as Unit VIIe10 because it can be, and has been, successfully stabilised.

Class VII land comprises moderately steep to very steep sedimentary and volcanic rocks and flat to moderately steep coastal sands. The Class VII coastal sands are predominantly found inland of the Class VIII sands and are vulnerable to wind sheet and gully erosion if there is a loss of cover in these areas. Regular inputs of nitrogen and other fertilisers are required to maintain cover, as the raw sand has no structure or available nutrients.

Maintenance of a good vegetative cover on Class VII land farmed from sedimentary and volcanic rocks is essential as bare ground is often very difficult to revegetate. Under grazing regimes regular fertiliser inputs are required to maintain pasture cover. The steeper land should be retired into forestry. Soil conservation and runoff control measures must be an integral part of the management of this land.

Section 41 contains the definition of Erosion Prone Land for the purposes of this Plan, including descriptions of constituent LUC units.

Maps showing Erosion Prone Land at a Scale of 1:100,000 are contained in the Regional Water and Soil Plan for Northland Maps folder.
--

APPENDIX 7: PIT PRIVY SPECIFICATIONS

NON-FLUSHING SANITARY FIXTURES

Soil fixtures which are not water flushed, such as those using chemicals or biological treatment, shall be located where they will not cause a nuisance.

Privies are acceptable if located at least three metres from any building having a classified use, other than outbuildings or ancillary buildings. Receptacles for excreta are to be constructed to exclude flies and be fitted with a hinged lid.

APPENDIX 8: PROCEDURE FOR PERCOLATION TESTING

NEW ZEALAND STANDARD NZS 4610: 1982
HOUSEHOLD SEPTIC TANK SYSTEMS Pr 00
AMENDMENT No. 1

June 1991

EXPLANATORY NOTE - The amendment clarifies the requirements of the percolation test so as to provide more reliable test results.

APPROVAL

Amendment No. 1 was approved on 28 May 1991 by the Standards Council to be an amendment to NZS4610:1982 pursuant to the provisions of Section 10 of the Standards Act 1988.

SUGGESTED PROCEDURE FOR PERCOLATION TESTING

Delete Appendix A and substitute:

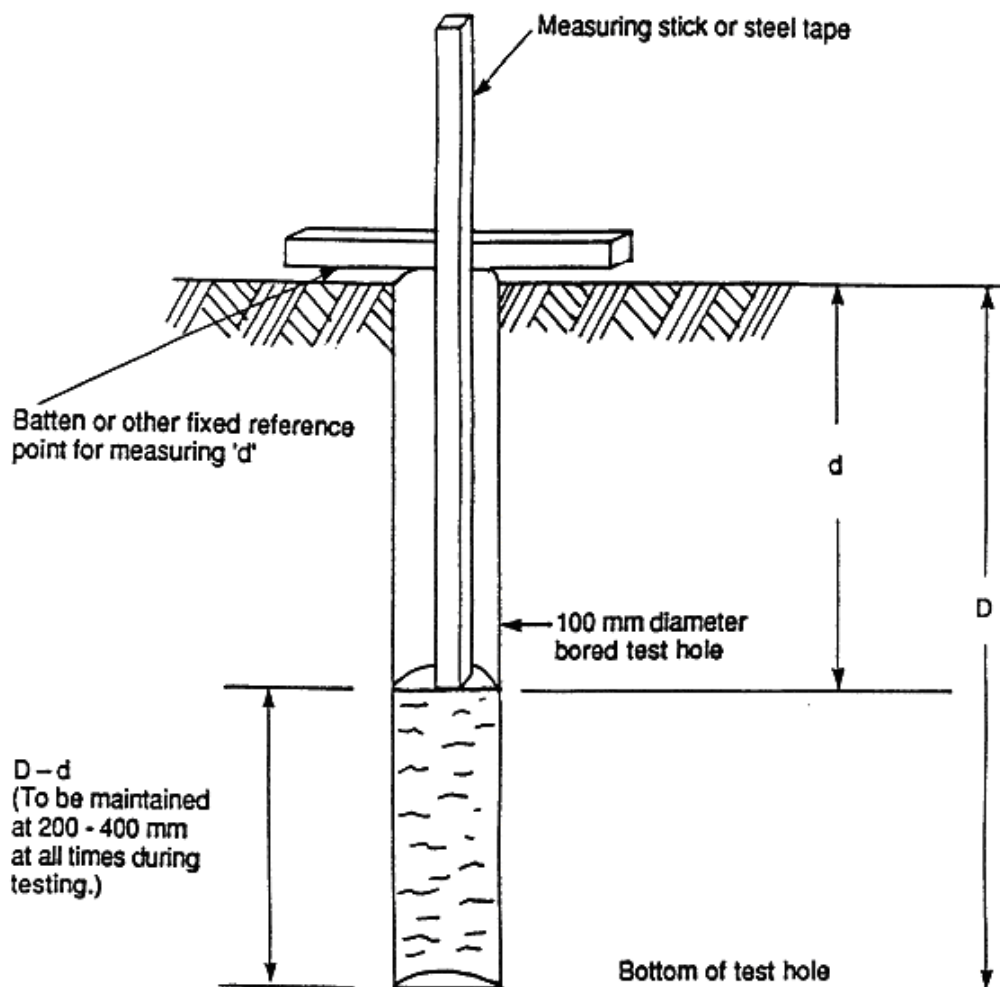
- A1** A minimum of three tests should be carried out in separate test holes spaced uniformly over the proposed disposal field site.
- A2** Test holes of 100 millimetres diameter should be bored to the base level of the proposed disposal trench or soakhole (depth D of Figure A1). The soil profile should be recorded as excavation proceeds.
- A3** The hole should be prepared by carefully scratching the sides with a sharp-pointed tool to remove any smeared soil surfaces and to provide a natural soil interface through which water may infiltrate.
- A4** The test should be performed in the following manner:
 - (a) The hole should be filled with clean water and maintained full for at least 4 hours but preferably overnight.
 - (b) The percolation rate should preferably be determined 24 hours after the water is first introduced into the hole. This procedure is to ensure that the soil is given ample opportunity to swell and approach close to normal operation condition for the season of the year in which the test is carried out. In sandy soils containing little or no clay, the swelling procedure is not appropriate and the test may be made after water from one filling of the hole has completely seeped away.
 - (c) The percolation test should be carried out by adding to the test hole a maximum depth of 400 millimetres of clean water, and recording the drop in water level at timed intervals down to a minimum depth of 200 millimetres, adding water as necessary to maintain the level within a depth range of 200 millimetres to 400 millimetres at all times. This procedure should be continued for a minimum period of 4 hours.

- (d) The test results should be plotted on a graph of cumulative water level drop versus time from the commencement of the test. The percolation rate to be reported should then be determined from the tangent to the curve at the point of minimum slope.

- A5** Information gathered on the soil profile should be reported together with the determined percolation rate, the test hole depth D, and other site conditions at the time of the test, e.g. season of the year, depth to watertable, general soil moisture conditions, antecedent weather conditions.

- A6** The percolation rate should NOT be used as the sole criterion upon which site selection and disposal field sizing is made - it should be but one component of the evaluation processes as set out in 6.1 and 7.1 of the Standard.

FIGURE A1: PERCOLATION TESTING



Note: Sides of bored hole to be carefully scratched with a sharp instrument prior to testing - Bottom of test hole to be at the base level of the proposed soakage trench or soakhole

(amendment No. 1, June 1991)

©1991 STANDARDS COUNCIL
STANDARDS ASSOCIATION OF NEW ZEALAND
WELLINGTON TRADE CENTRE, 181-187 VICTORIA STREET
WELLINGTON 1

APPENDIX 9: CONTROLLED PESTICIDES

Note: At the date of this Plan becoming Operative the functions of the *Pesticides Act 1979* has been transferred to other legislation such as the *Hazardous Substances and New Organisms Act 1996*. It is advisable that you contact the Northland Regional Council with regards to controlled pesticides.

Controlled Pesticides as listed in the First Schedule of the Pesticides Act 1979.

PART I

1. Sodium fluoroacetate (also known as 1080).
2. Methyl naphthyl fluoroacetamide.

PART II

1. Arsenic trioxide.
2. Phosphorus.
3. Strychnine.
4. Sodium cyanide.
5. Potassium cyanide.
6. Calcium cyanide.

PART III

1. 3-chloro-p-toluidine hydrochloride (also known as DRC 1339)
2. Alphachloralose (as an avicide), except when used as a bait immediately available for use, where the concentration of active ingredient does not exceed 25 g/kg (2.5%) of bait.
3. 4-aminopyridine (also known as Avitrol).

APPENDIX 10: REVOKED SECTIONS OF THE TRANSITIONAL REGIONAL PLAN

Upon this plan becoming operative, the Transitional Regional Plan is hereby revoked in its entirety and the following sections are no longer operative:

- Part I:** Explanatory notes for information purposes only, not being an instrument forming part of the plan.
- Part II:** The final classification of the Bay of Islands, under the *Water and Soil Conservation Act 1967*.
- Part III:**
1. General Authorisation for the use of natural water, under the *Water and Soil Conservation Act 1967*.
 2. Bylaw for the protection of watercourses and defences against water, under the *Soil Conservation and Rivers Control Act 1941*.
 3. Notice relating to clearance of vegetation and disturbance of land surfaces, under Section 34(2) of the *Soil Conservation and Rivers Control Amendment Act 1959*.

APPENDIX 11: ESTIMATION OF DESIGN MINIMUM FLOWS USING FLOW CORRELATION METHODS

The following methodology should be used when estimating the Design Minimum Flows (MALF or the 1 in 5 year 7 day low flow) in catchments with no long-term record. It is recommended that resource users contact the Northland Regional Council for advice prior to undertaking estimations of design minimum flows for rivers.

1. GAUGING DATA

A minimum of 5, and ideally at least 10 gaugings should be done at the site within the catchment for which the design minimum flow is being estimated. The gaugings should cover a range of flow conditions from mean flow and below.

In the event that there are less than 10 flow gaugings available from the “unknown” site, the resource user should contact the Northland Regional Council for advice regarding the adequacy of the smaller number of gaugings, and whether further flow gaugings will need to be obtained.

The flow data used should take into account any abstractions that may have been occurring at the time and the flow adjusted accordingly. The effects of any dams upstream of the gauging site and the continuation flow at the time of gauging should also be taken into account.

2. SELECTION OF LONG-TERM CATCHMENT

Where possible, an appropriate long-term site (of at least 20 years record) should be selected from the list included in Method 10.07.11. The catchment of the site selected should display similar hydrogeological characteristics to the catchment for which the design minimum flow is being estimated.

3. CORRELATION

Plot the \log_{10} flow from the “unknown” catchment (y-axis) with the \log_{10} average daily flow from the long-term recorder site (x-axis) for the same day (i.e. \log_{10} transformed flow data to be plotted). Draw a line through the points on the graph that represents the best fit. Ideally, computer software that enables regression analysis of the data should be used to determine the line of best fit.

Using the MALF and 1 in 5 year, 7 day low flow figures for the long-term recorder site, read off the design minimum flow for the site in the “unknown” catchment.

4. CORRELATION COEFFICIENT AND MARGIN OF ERROR

Correlation coefficients and the margin of error can be determined from statistical analysis. Council staff will check the correlation and the estimates put forward by applicants by putting it through a statistical analysis package on the computer.

The correlation coefficient should ideally be at least 0.9. However, lower correlation coefficients are not uncommon, and are considered to be an artefact of the methodology as it applies to flow gauging data.

The margin of error can vary depending on the number of points and the spread of them on the log-log plot, and the appropriateness of the long-term catchment. A

large margin of error could occur where there is a small number of points on the log-log plot¹.

Gauging-flow pair censoring is a common practice used to eliminate data points that may be erroneous, thus reducing scatter and improving the correlation coefficient and margin of error. For example, censoring may be applied to gaugings with higher than normal flows resulting from rainfall at one or both sites. Many factors need to be considered when determining the validity of a gauged flow, and assessing the recession in a river or stream from high flow to baseline levels. These factors may include climate, season, ground cover (vegetation), geology, topology, soil type, and previous rainfall in the catchment. Arbitrary elimination of data points should not be conducted to artificially improve the correlation coefficient. Evidence should be provided to justify any data that are eliminated from the regression using this method.

It is recommended that the applicant contact the Northland Regional Council hydrologist for advice regarding gauging flow-pair censoring and also where regression analysis results in a correlation coefficient that is below 0.9.

If, after flow censoring, the correlation coefficient is less than 0.9, further gaugings or a reassessment of the selected long-term recorder site should be considered. Land uses within the “unknown” catchment may also influence the correlation.

The most conservative estimate of the design minimum flow should be used within the margin of error where:

- (i) there are less than 10 valid gaugings from the “unknown” catchment over the desired range of flows, or
- (ii) there is more than 20% of afforestation within the “unknown” catchment between 4 and 13 years old, or
- (iii) the gaugings took place during El Nino weather pattern, or
- (iv) the correlation coefficient is less than 0.9.

The resource user should contact the Regional Council regarding the most conservative estimate that should be used, which will be determined on a case by case basis.

APPENDIX 12: GUIDELINES FOR FLOW SENSITIVE RIVERS AND SECTIONS OF RIVERS

The objective of these guidelines is to assist water permit applicants to identify flow sensitive rivers in accordance with Policy 9.05.03 and 9.05.04.

1. GUIDELINES ON THE DETERMINATION OF THE MEAN ANNUAL LOW FLOW (MALF)

Guidelines are contained in Appendix 11.

2. GUIDELINES ON DETERMINATION OF RIVER BED SUBSTRATE TYPE

1. The presence of coarse substrates below the take point within that part of the river potentially by the water take needs to be established by the applicant.
2. Coarse substrates are generally defined as those having a grain size of 2mm diameter and above. This includes gravels, cobbles, boulders or bedrock.
3. The presence of such river beds should be readily discernible and need only be documented by the applicant by:
 - A map showing the approximate location of such river bed in the potentially affected zones below the take point;
 - Photographs of the representative sections.
4. Where there is uncertainty or dispute as to the description of the river sections (i.e. whether they are coarse substrates or fine substrates) the Council may require a more formal sampling method.
5. The natural morphology of coarse river beds is characterised by sequences of shallow coarse sections interspersed with deeper pools. The latter tend to have fine substrate (silt and sand). Information will need to be supplied by the applicant as to the total amount of such habitat and the relative proportions of these different shallow and deeper zones in order that a conclusion can be drawn as to the significance of the area of coarse substrate. This information could include:
 - The number of pools versus shallow sections downstream of the take;
 - The relative lengths and widths of the pools and shallow sections downstream;
 - The area of coarse substrates downstream relative to the amount of such sites upstream of the take.

3. GUIDELINES ON DETERMINATION OF AVERAGE DEPTH OF THE RIVER

1. Select one or several fast flowing river stretches as is necessary to describe the morphological range.

2. In each stretch, select 3 cross-sectional transects which divide the stretch into approximately equal segments and which appear to be visually representative of the range in depths.
3. Across each transect, measure the depth from the bed to the water surface at 0.5 metre intervals or less if necessary to obtain at least 3 measurements per transect. Start the measurements about 0.2 - 0.5 metres in from the waters edge.
4. Calculate the average of all measurements.

Measurements can be taken at any time of the year provided conditions are at normal base flows. To this extent the applicant should provide the following record:

- Date and time of measurement;
- The climatic conditions on the day and some indication of the approximate rainfall over the preceding 5 days;
- A plan showing the locations of the river sections and the transect sites.

4. GUIDELINES ON DETERMINATION OF THE PROPORTION OF NATIVE BUSH IN A CATCHMENT, AND THE AREAS OF STREAM BANK VEGETATION OFFERING COVER AND SHADE

4.1 Percentage of Native Bush in a Catchment

The applicant need only provide an estimate of the proportion of the catchment above and below the take point that is in native bush. It would be expected that this estimate would be supported by any of the following:

- An up-to-date aerial photograph;
- A delineation of the catchment on a NZ Topographical Map (NZMS 260 series 1:50000 scale). These are available from any Department of Survey and Land Information office;
- A copy of relevant information obtained in the District Plan for the area;
- Information obtained from the Department of Conservation.

4.2 Percentage of River containing Riparian Vegetation

Riparian Vegetation' in this context is intended to mean vegetation within the riparian management zone and provides any or all of the following:

- Shade from sunlight (limiting heating effects);
- Instream cover from overhanging fronds, roots and the like;
- Buffer strips of vegetation which effectively intercept sediment and nutrients.

An indication of riparian features can be obtained from the same information sources cited above. However, the best information will be photographs of representative riparian zones.

5. ADDITIONAL INDICATORS OF POTENTIAL ECOLOGICAL SENSITIVITY TO FLOW REDUCTION

1. Specific indicators of flow sensitivity are:

An average depth in riffles of:

- 0.1 metres or less where the river provides habitat for invertebrates only;
- 0.25 metres or less where the river provides habitat for native fish;
- 0.5 metres or less where the river provides habitat for trout.

APPENDIX 13A: INDIGENOUS WETLANDS

The following plates are provided to assist in determining a “wetland” from a “wet” area which is not considered to be a wetland.

Note: If you are unsure if an area is an indigenous wetland and is subject to rules in this Plan contact the Council for advice.

For the purposes of this Plan, the following photographs show several types of indigenous wetlands and emphasise the range in such wetlands.



Natural old dune lake with aquatic vegetation. For example native Flax, Baumea and Schoenus Sedges. Habitat for Water Birds, Crakes and Fernbirds.



Acid peat bog dominated by acid loving aquatic plants and shrubs, for example Baumea and Schoenus Sedges, Gleichenia Fern and Manuka. Habitat for Bittern Fernbird, Black Mudfish and Native Orchids.



Mixed Kahikatea mineralised swamp dominated by Kahikatea and Raupo. Habitat for Bittern and Spotless Crake.



Mineralised Raupo Swamp dominated by Raupo with occasional Flax, Coprosma Shrubs, Carex Sedges and Juncas Rushes. Habitat for Spotless Crake, Banded Rail and Bittern.

For the purposes of this Plan, the following photographs are indicative of “wet areas” that are not considered to be indigenous wetlands.



A drainage channel containing emergent mangroves (*Avicennia marina* var. *resinifera*), is not regarded as an indigenous wetland.

APPENDIX 13B: CRITERIA FOR AREAS OF SIGNIFICANT INDIGENOUS VEGETATION, AND SIGNIFICANT HABITATS OF INDIGENOUS FAUNA AND SIGNIFICANT INDIGENOUS WETLANDS

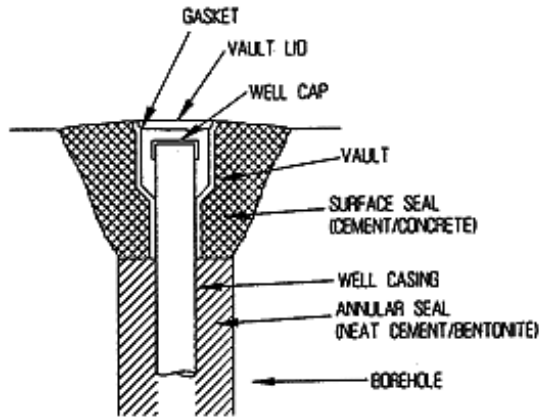
Natural areas which meet any of the following criteria are significant:

1. Contain critical, endangered, vulnerable, or rare taxa, taxa of indeterminate threatened status (sensu International Union for Conservation of Nature definitions).
2. Contain indigenous or endemic taxa that are threatened or rare in Northland.
3. Contain the best representative examples in an ecological district of a particular habitat type.
4. Have high density of taxa or habitat types for the ecological district.
5. Form ecological buffers, linkages or corridors to other areas of significant vegetation or significant habitats of indigenous fauna.
6. Contain habitat types that are rare in the ecological district.
7. Support good populations of taxa which are endemic to the Northland or Northland-Auckland regions.
8. Are important for indigenous or endemic migratory taxa.
9. Support viable populations of species, which are typical of that habitat type within an ecological district and retain a high degree of naturalness.

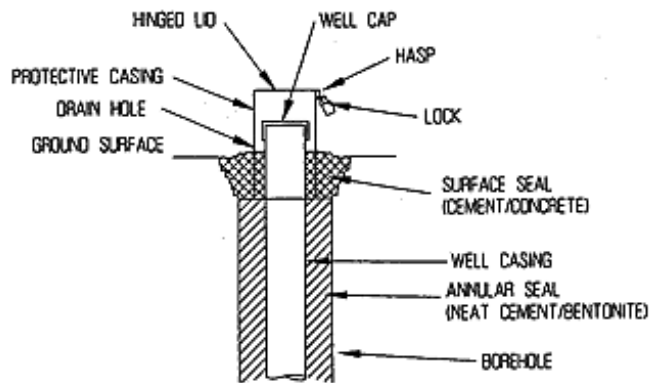
Note: Significant indigenous wetlands are a subset of indigenous wetlands.

APPENDIX 14: MONITORING BORE SURFACE COMPLETION SPECIFICATIONS

TYPICAL FLUSH-TO-GROUND-SURFACE MONITORING WELL COMPLETION



TYPICAL ABOVE-GROUND MONITORING WELL COMPLETION



APPENDIX 15: PRINCIPLES OF FISH PASS DESIGN

1. INTRODUCTION

Many native freshwater fish species found in Northland must move between the sea and their freshwater habitats. Activities such as dams, crossings, culverts, floodgates and water intakes can deny or impinge upon fish access both up and downstream. Fish populations may therefore be adversely affected.

As a result of the varying habitat preferences and abilities of fish to move inland, fish communities will vary depending on distance inland and elevation. In order to design an effective fish pass, knowledge of the aquatic life present, or migrating past, a particular location is therefore required.

Our knowledge of freshwater fish means that it is largely possible to predict the species which might occur at a particular site. Such predictions can be based on an assessment of the key features of the catchment and the particular river. If the approach is to be conservative there may not be the need for costly field surveys of the fish community. However, if there is doubt as to the fish which use the river at a particular location, then surveys may be needed in order to determine the design requirements of a fish pass. Potential solutions will vary according to this information. Identification of the need or otherwise for a fish pass and their design and construction, requires the input of appropriately experienced fisheries specialists in addition to any local knowledge.

The Council holds information on the provision of fish passage, including the design of culverts and fish passes for different rivers and stream types.

In the context of fish pass construction, design and operation, native fish can be divided into three groups:

- Swimmers,
- Climbers, and
- Insinulators

2. SWIMMERS

A fish pass for swimmers essentially reproduces a segment of stream, inclined at a gradient that will still maintain acceptably low water velocities. It will generally be achieved by a design that baffles the stream flow and although creating a wide range of water velocities and eddies, maintains pathways of unbroken water and resting areas.

If the velocity of water flowing downstream is too high then these fish simply cannot swim against the current.

The two factors controlling water velocity are slope and surface roughness. If the slope can be made long enough, then the water velocities can be reduced down to about 0.3 metres per second. This velocity is about the maximum small native fish can swim against. Roughness can be increased by baffles (rocks) and deflectors designed to slow the water and create turbulence and eddies.

3. CLIMBERS

Species capable of climbing can scale impressive natural obstacles. The presence of species such as banded kokopu and long-finned eels above large waterfalls is evidence of this ability.

The basic requirement of any fish pass for climber fish species is a sloping surface covered by a gentle trickle of water.

Basic problems for climbing fishes are:

- (a) **Continuity:** Many dams and weirs have places where climbing behaviour occurs but where water flow is discontinuous and prevents fish from scaling the obstacle. Relatively minor modifications can often solve these problems.
- (b) **Heating and Exposure:** Exposed dam faces can heat up during the day and result in temperatures exceeding acceptable levels. Shading and other forms of insulation of fish passes for climbing species may be required. Exposure to predators is also potentially important. Rats, cats, and some birds will all opportunistically feed on native fish climbing over natural or artificial structures within a stream.

4. INSINUATORS

Eels are adept at wriggling through the smallest crack. A pass for elvers can be very cheap and only use small amounts of water. A simple design for example could be a pipe filled with brushing, down which a small amount of water is trickled. Elvers move along the pass by worming through the damp brushing. By using this method they will even climb up a vertical pipe.

5. PUMPS

Insinator and climbing type fish passes face a potential problem. Fluctuating water levels upstream mean that it is often difficult to get fish back to the upstream water surface having passed over the structure. In practice this may require pumping water usually to a header tank where float switch controls pump operation. Water is then fed into the fish pass. There are a wide range of 240v single phase submersible pumps which will supply sufficient water for insinator and climbing type fish passes. A further complication is that fish are very sensitive to water quality. For example it is likely that fish would be repelled if a treated bore water supply was used. Using water from the upstream impoundment or river will give fish the necessary cues that following the flow will lead them over the pass.

6. INTAKE SCREENS

Piped intakes can potentially capture passing fish. Numbers of fish can be potentially large if pumping coincides with periods of peak fish migration. Properly designed screens and carefully located intakes can adequately mitigate the potential for adverse effects.

Slotted screens of 5 millimetres maximum mesh size are preferable. Smaller mesh sizes may be desirable in some circumstances. Examples are wedge wire screens and Johnson-T-screens. Screens should be sized to achieve screen surface intake velocities of no greater than 0.3 metres per second and preferably 0.15 metres per second. The latter is desirable to allow for up to 50% clogging of screen area with debris at times.

Velocities across the screen surface at least twice the through screen velocity will enhance self cleaning properties and minimise the potential for impingement of biota. This effectively means targeting high flow areas for siting of intakes, preferably away from the bank and one metre out into flowing water above the stream bed. This also is preferable because fish movement tends to be close to the bed or the bank of a river where velocities are lower and where there is more natural cover and refuge.

APPENDIX 16: CONTENTS OF A REGIONAL PLAN FOR SPECIFIC CATCHMENT

Section 67 of the Act outlines what a regional plan must state, and what matters a regional plan may make provision for. While following the provisions of these sections, a regional plan for a specific catchment should address the following matters:

1. WATER QUALITY

- (a) Existing baseline water quality;
- (b) Existing point source discharges and effects on water quality;
- (c) Existing non point source discharge and effects on water quality;
- (d) Water quality required for desired uses of water;
- (e) Methods to achieve desired water quality.

2. WATER QUANTITY

- (a) Existing water users;
- (b) Potential water users;
- (c) Catchment hydrology - surface and groundwater;
- (d) Effects of land user on catchment hydrology;
- (e) Alternative sources.

3. SOIL CONSERVATION

- (a) Current land uses;
- (b) Potential land uses;
- (c) Actual and potential areas of soil erosion;
- (d) Catchment protection works.

4. RIPARIAN MANAGEMENT

- (a) Purpose;
- (b) Management requirements.

5. VALUES OF WATER BODIES

- (a) Aquatic and wetland habitats;
- (b) Cultural;
- (c) Natural character;
- (d) Amenity/recreational.

6. NATURAL HAZARDS

- (a) Flooding.

This list is not comprehensive and further matters may be identified in relation to a particular resource.

APPENDIX 17: POSSIBLE CONTENTS OF DRAINAGE DISTRICT MANAGEMENT PLAN

Matters to be addressed in a management plan shall include, but not be restricted to, the following:

1. The objectives of the drainage scheme.
2. A summary of the statutory and legal mandate under which the drainage district was created, including reference to any Gazette Notices, Local Acts of Parliament, etc., and any resource consents or authorisations.
3. Definition of Drainage District and catchment area.
4. The planned/design level of protection.
5. Description of the works involved in the scheme. This would include drains, canals, stopbanks, floodgates, pumping stations or similar works which are owned by the Drainage District. Appendices would include schedules of drains, etc., their dimensions, and plans showing their location.
6. Programme for construction of planned and “approved” works. This section would apply to new schemes, to existing schemes which have not been completed to the design standard, and to those which are being brought back up to the design standard from a deteriorated state.
7. A description of work programmes to maintain the drainage scheme at the approved design levels. This section would involve a schedule which specifies the maintenance standard for each drain or other piece of the infrastructure, the method of maintenance (whether it will be by machine cleaning or herbicides), the timing and frequency of maintenance, resource consent conditions or performance standards on authorisations for maintenance, methods of disposing or revegetating drain cleanings, etc.
8. An outline of the rules or bylaws controlling things such as stock access to drains, culverts or crossings over drains, connecting private drains to the community drains, planting hedges or erecting fences near drains, machine access along drains, etc.
9. A description of the rating/funding classification, including a plan showing the rating classification for each property.
10. Provisions for the protection of any significant indigenous wetlands.
11. Details of resource consents and monitoring programmes.
12. Review date for the management plan.

APPENDIX 18: OUTSTANDING VALUE RIVERS AND LAKES

The following Rivers or Sections of Rivers and lakes have been identified in accordance with Policies 9.05.01 and 9.05.02:

- Waipoua
- Whirinaki
- Waipapa
- Mangamuka
- Punaruku
- Lake Ora
- Waikohatu
- Wairau

Maps showing the extent of these Rivers or Sections of Rivers and Lakes classed as outstanding are contained within the “Regional Water and Soil Plan for Northland, Maps”.

SCHEDULES

This part contains the Schedules, where maps are referred to these are contained in the separate folder Water and Soil Plan for Northland Maps under the specific Schedule Number.

SCHEDULE A: AQUIFERS WITH HIGH ACTUAL OR POTENTIAL DEMAND

Maps showing the following extents of Aquifers with High Actual or Potential Demand are contained within the “Regional Water and Soil Plan for Northland, Maps”:

- Kaikohe
- Matarau
- Three Mile Bush
- Glenbervie
- Maunu
- Maungakaramea
- Tara

SCHEDULE B: AQUIFERS AT RISK (SHORT TO MEDIUM TERM) OF SEAWATER INTRUSION

Maps showing the following extents of the aquifers at risk (short to medium term) of seawater intrusion are contained within the “Regional Water and Soil Plan for Northland, Maps”:

- Taipa Beach
- Cable Bay/Coopers Beach
- Taupo Bay
- Tauranga Bay
- Te Ngairē
- Matauri Bay/Putatua
- Otehei Bay
- Urupukapuka Bay
- Tapeka Point
- Russell
- Bland Bay Isthmus
- Ohawini Bay
- Parutahi Beach
- Oakura Bay
- Teal Bay
- Moureeses Bay
- Whananaki North
- Whananaki South
- Sandy Bay
- Woolleys Bay
- Matapouri
- Whangaumu Bay
- Church Bay
- Kowharewa Bay
- Ngunguru
- Pataua North
- Pataua South
- Taiharuru
- Mangawhai

SCHEDULE C: GEOTHERMAL AQUIFERS

A map showing the following extent of the above geothermal aquifers is contained within the “Regional Water and Soil Plan for Northland, Maps”:

- Ngawha Geothermal Field

SCHEDULE D: EXISTING DRAINAGE DISTRICTS AND FLOOD SCHEMES

FAR NORTH DISTRICT	Herekino Kaitaia Motutangi Waiharara Waikino
WHANGAREI DISTRICT	Hikurangi Swamp Major Scheme Hikurangi Swamp Drainage District
KAIPARA DISTRICT	Aoroa Arapohue No. 1 Arapohue No. 2 Aratapu Swamp Aratapu Village Awakino Land Awakino Point Greenhill Hoanga No. 1 Hoanga No. 2 Horehore Kaihu Valley Kaihu River Control Kopuru Koremoa Manganui Mangatara Mititai Notorious Okaka Okaro Oruariki Owairangi Otiria Raupo Sunnynook Tangowahine No. 1 Tangowahine No. 2 Tangaihi Tatarariki No. 1 Tatarariki No. 2 Tatarariki No. 3 Te Hapi Tikinui Waikere Waimamaku

Note: Maps of these Drainage Districts and Flood Schemes are available at the relevant district council. However, most landowners would know whether they are within these areas because their land would be rated for drainage works. Where there is doubt as to whether an activity which affects the bed of a river is within a drainage district and therefore should be authorised as part of the Resource Consent, the surface water sub-catchment boundary will be taken as the boundary of the drainage district.

SCHEDULE E: LIST OF DUNE LAKES IN NORTHLAND

Map co-ordinates are taken from the New Zealand Topographic Map Series 260.

AUPOURI AND KARIKARI PENINSULAS

Lake Austria	N02:958-369
Pretty Lake	N02:955-354
Waipara and Dead Lakes	N02:976-350
Ngatuwhete Lake	N02:004-359
Lake Kihona	N02:020-303
Lake Wahakari	N03:039-277
Lake Te Kahika	N02:110-308
Lake Morehurehu and smaller lake	N03:104-289
Lake Taeoro	N03:129-250
Lake Ngatumoroki	N02:091-229
Bulrush Lake	N03:106-216
Salt Lake	N03:132-217
Lake Waihopo	N03:148-161
Turks Lake	N04:244-995
Bacica Road Lake	N04:257-994
Lake Waiparera and associated lakes	N04:259-953 N04:273-952 N04:252-949
Jones Lake	N04:269-918
Gleeson's Lake	N04:279-907
Lake Ngakapua Complex and unnamed lake by Forest HQ	N04:279-865 N04:286-869 N04:283-869
Lake Rotokawau	N04:296-869
West Coast Road Lake	N04:275-855
Lake Ngatu	N04:289-855
Lake Heather	N04:285-833
Lake Rotoroa	N04:286-824
Round Lake	N04:281-807
Waimimiha Lakes	N04:263-729 N04:262-735
Rotokawau Lakes	O03:392-033 O03:401-032
Lake Waiporohita	O04:427-000

EASTERN NORTHLAND REGION DUNE LAKES

Racecourse Lake	Q07:421-890
-----------------	-------------

KAI IWI DUNE LAKES

Shag Lake	O07:655-009
Kai Iwi Lakes (Kai Iwi, Taharoa and Waikere Lakes)	O07:692-993 O07:697-983 O07:670-004 O07:676-001

POUTO PENINSULA

Lake Parawanui	P08:871-707
Lake Wainui	P08:899-663
Clarkes Lake	P08:918-649
Roundhill Lakes	P08:993-505 P08:994-501
Lake Rototuna	P09:040-494
Lake Unnamed (Roundhill South)	P09:017-470
Lake Karaka	P09:038-426
Lake cluster north of Lake Mokeno	P09:047-412 P09:045-417
Lake Mokeno	P09:056-392
Crescent Lake	P09:040-368
Unnamed lake just south of Lake Mokeno	P09:058-374
Lake Whakaneke	P09:058-365
Stick Lake (Lake Mathews)	P09:070-350
Pheobes Lake	P09:073-437
Lake Rotopouua	Q09:100-419
Lake Humuhumu	Q09:113-409
Lake Rotootuauru (Swan Lake)	Q09:128-406
Rotokawau Ponds	Q09:128-389 Q09:131-390
Lake Rotokawau	Q09:135-388
Lake Waingata	Q09:138-383
Lake Kanono	Q09:130-370
The Spectacles Lakes	Q09:142-373
Finalysons Lake	Q09:140-367
Lake Kahuparere	Q09:144-362

Northland contains numerous lakes. Most are small, shallow and located within consolidated sand dunes on the Aupouri, Karikari and Pouto peninsulas. The Council has produced two major reports pertaining to lakes in Northland, the Kai Iwi -

Pouto Dune Lakes Water Resources (1991) and, the Aupouri Peninsula Water Resources Assessment (1991).

For maps showing the locations of the dune lakes listed in Schedule E, contact the Northland Regional Council.

SCHEDULE F: AQUIFERS SENSITIVE TO BORE CONSTRUCTION

Maps showing the following extents of the aquifers which are sensitive to bore construction are contained within the “Water and Soil Plan for Northland, Maps”:

- Aupouri
- Ruawai