

Appendix 3.28.4 Natural Hazard Mapping: Paper for the Senior Leadership Team

March 2012

Outcome sought

A direction is requested from the Senior Leadership team on whether natural hazards are mapped in the Unitary Plan or not.

Draft Position of Officers

The current advice from a number of the 'technical teams' is that most natural hazards will not be able to be mapped in the Unitary Plan. This is due to (in summary):

- Accuracy of information
- Disaggregated nature of the information (held by different groups within the Council and CCO's),
- Lack of universal coverage

The Unitary Plan team's 'desire' is that, if possible, natural hazards should be mapped in the Unitary Plan. However there is a time, cost and risk perspective.

Overview

Under the RMA, Auckland Council is required to gather, monitor and keep records of natural hazards (s.35). Under LGOIMA, Auckland Council is also required to provide this information to the public through a LIM report, which must include any natural hazard information that is known to Council that is not apparent in the district plan.

The definition of Natural Hazard in the RMA is:

"...any atmospheric or earth or water related occurrence...the action of which adversely affects or may adversely affect human life, property, or other aspects of the environment".

This includes:

- flooding
- coastal erosion
- coastal inundation
- land stability
- earthquakes (including liquefaction)
- volcanic activity and
- tsunami

The first four are the most frequent and are addressed in regional and district planning documents.

The latter three are of low frequency (occur very rarely) but are potentially high in magnitude (wide-spread destructive effects) in nature. These hazards have not been dealt

with by land use planning tools in the Auckland Region. The Council also holds little information on these hazards.

Current Information and Approaches

Auckland Council holds a large amount of data on natural hazards throughout the region. This includes data from primary research done by Council as well as secondary information based on geotechnical reports, historical data and information collected during the resource consent process.

Natural hazards are currently mapped to a very limited extent in operative plans across the Auckland region. This includes small land instability areas in Manukau and Franklin, a small flood prone area in Franklin and potentially affected coastal inundation areas in Rodney (see Appendix A). The majority of natural hazard information is contained within legacy databases that inform PIMS and LIMS as well as reports and research projects.

The exception to the current mapping regime in Auckland is the Proposed Hauraki Gulf Islands Plan which has mapped hazard prone areas across Waiheke Island. This is the latest full plan review in Auckland and possibly signals that in the future, Auckland Council should look to map natural hazards as detailed as possible across as much of the region as possible.

Natural hazards are a contentious issue within the Auckland region due the scale and nature of their possible effects on people, property, infrastructure and the economy. The resulting need to manage land use activities to minimise the impacts from natural hazards can also be contentious. It is therefore important to provide the public with the most up to date quality information Council has. This had led to arguments both for and against whether mapping natural hazards in a statutory document such as the Unitary Plan is the best route or whether other processes should be utilised.

Issues

Data

Auckland Council holds a lot of information on natural hazards. This includes information spread across eight legacy registers/databases, LIMs, research reports, institutional knowledge etc (location of much of the information is not known to all parts of Council – no central inventory).

Despite the large volume of information that Council holds, there are currently several issues with the data. This includes:

- Inconsistencies i.e. methodologies and scale between mapped areas
- Spatial extent of the data – patchy, much of the region has no data at all i.e. little coastal hazard information for the west coast
- Age and quality of the data

Operational

Natural hazard data to inform mapping in a statutory document like the Unitary Plan needs to be as up-to-date and robust as possible. Ideally, the information needs to be mapped at a level to ensure that the mapping is clear, and defensible. Ideally this would be at the cadastral level, however it is accepted that natural hazards do not relate to title boundaries.

Operational challenges also arise when updating information in a plan i.e. time and cost of a variation or plan change as mapping natural hazards essentially “locks” the information into the plan. Therefore, information should only be included if it is robust and able to withstand challenge.

Liability issues

Auckland Council has a duty to gather information, monitor and keep records of natural hazards as well as provide this information to the public under s.44A of LGOIMA. Liability issues relevant to natural hazards include providing information that is not factually correct or if Council fails to provide information.

Unitary Plan Approach

Based on the ‘Option Evaluation Paper for Natural Environment Workstream – Natural Hazard Mapping’, several options for each hazard type were outlined and analysed. These include:

1. Status quo
 - Mapping in the Unitary Plan what was mapped in operative plans (see Appendix A to see what is currently included in operative plans). The rest of the information would continue to be stored in the current databases
 - This option would be able to be achieved before notification, but would most likely cause many operational issues in the future

Benefits/Advantages	Costs/Disadvantages
<ul style="list-style-type: none"> • Easy to implement (time and resources) 	<ul style="list-style-type: none"> • Inconsistent regional coverage i.e. scale, methods used, extent of region mapped
<ul style="list-style-type: none"> • Low cost to implement (information already there, just need to bring across to new UP GIS system) 	<ul style="list-style-type: none"> • Inconsistent and patchy mapping could be misleading and mean that non-mapped areas are perceived to be safe
	<ul style="list-style-type: none"> • Provides a poor basis for implementing any land use controls – arguable how much value this amount of mapping provides
	<ul style="list-style-type: none"> • Will require upgrade in the future and any maps that are included in the Unitary Plan will be statutory and subject to lengthy plan change processes. These maps are also quite outdated in most cases

2. Plan change/variation in 2 to 3 years to incorporate mapping
 - This would see no natural hazard maps in the initial notification of the Unitary Plan. Rather,
 - a Council wide project would commence with the goal of mapping natural hazards known to Auckland Council and including information via a plan change/variation in the future (includes all information, i.e. site specific data held in databases and reports)

- This option would require a lot of resources to find the data, make the data consistent i.e. map scales, mapping methodologies etc, present the data as well as maintain the data
- A centralised repository for information would also need to be established, rather than using the current 8 databases/registers
- Auckland Council should look to possibly implement this option in the future

Benefits/Advantages	Costs/Disadvantages
<ul style="list-style-type: none"> • Open communication about natural hazards and Council’s position on how to manage 	<ul style="list-style-type: none"> • Most expensive and time consuming option (likely to cost millions of dollar and take several years), not able to be achieved before notification
<ul style="list-style-type: none"> • Council is proactive in providing natural hazard information rather than storing information in a database of which the public has to request to see 	<ul style="list-style-type: none"> • High number of submissions and challenges as many properties would be included in Plan (legal opinions suggest however that if information is accurate there is no strong basis for challenge)
<ul style="list-style-type: none"> • Would result in a consistent hazards approach across Auckland and lessen council liability. Process would also be streamlined meaning a plan change could be done at once rather than staged across different areas in Auckland 	<ul style="list-style-type: none"> • “Locked” into statutory process, all information that needs to be updated would have to go through a plan change process
<ul style="list-style-type: none"> • Auckland Council would be seen to be leading the way in hazard mapping in New Zealand – no other Council has done this on such a large scale 	
<ul style="list-style-type: none"> • Auckland Council’s information database could be well organised 	

3. No maps in Unitary Plan, use of databases

- This option would generally follow the current approach of the legacy councils in Auckland with no maps included in the Unitary Plan (only a small amount of the region has been mapped in plans to date)
- Current legacy processes would continue to be used in relation to the updating of databases and registers

Benefits/Advantages	Costs/Disadvantages
<ul style="list-style-type: none"> • Would result in a consistent hazards approach across Auckland 	<ul style="list-style-type: none"> • Information not as readily available to the public
<ul style="list-style-type: none"> • Easy to implement (time and resources) 	<ul style="list-style-type: none"> • Hazard risk is not communicated to public early, left to the consent process (possibility of liability for Council if information is not provided during consent)
<ul style="list-style-type: none"> • Legal challenges not likely as no properties will be mapped 	<ul style="list-style-type: none"> • Although mapping is out of date in many areas, this option still means that information which may be in the plan for a good reason will not be included – reversing the work of legacy councils?
<ul style="list-style-type: none"> • Less regulatory method, more 	

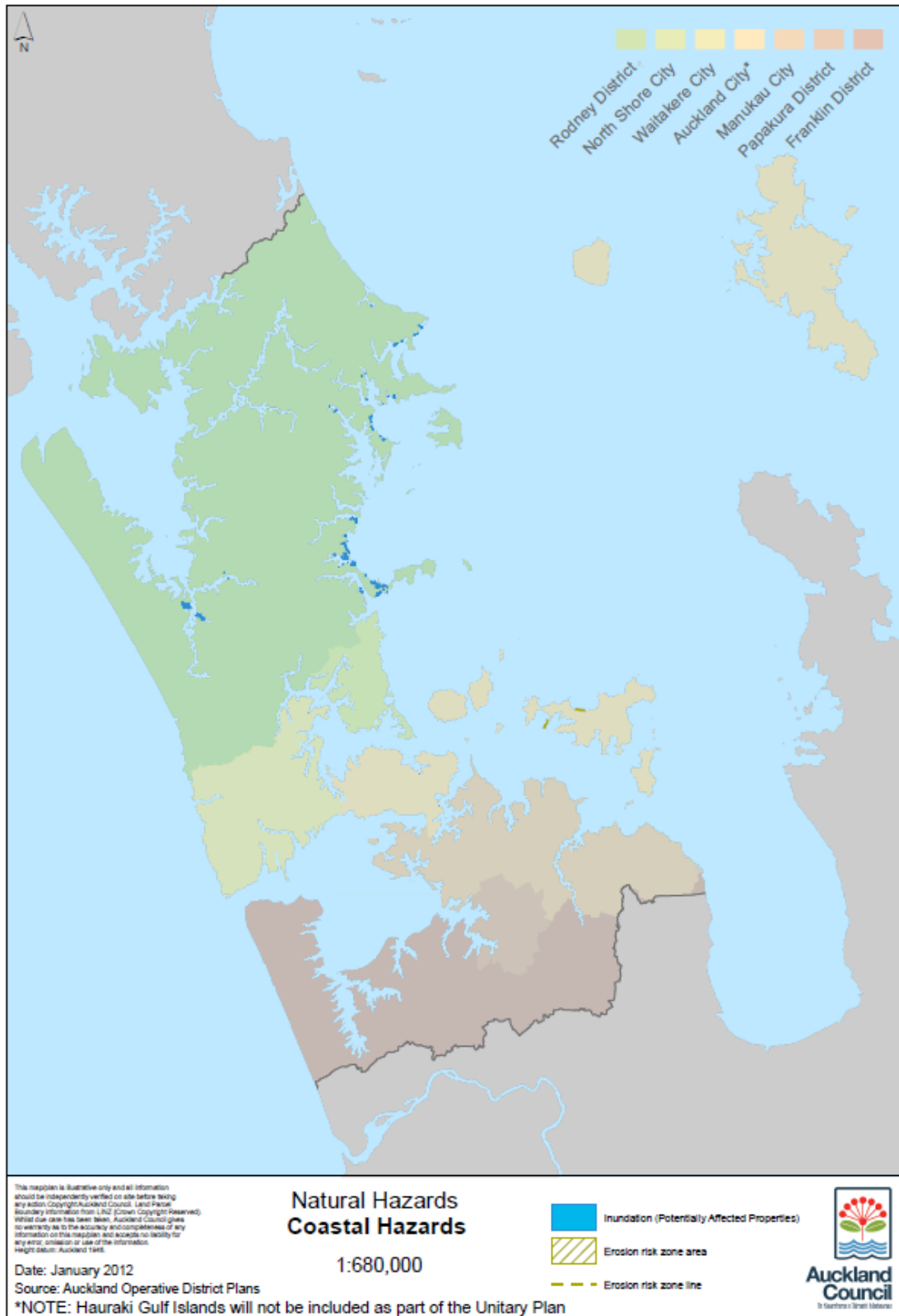
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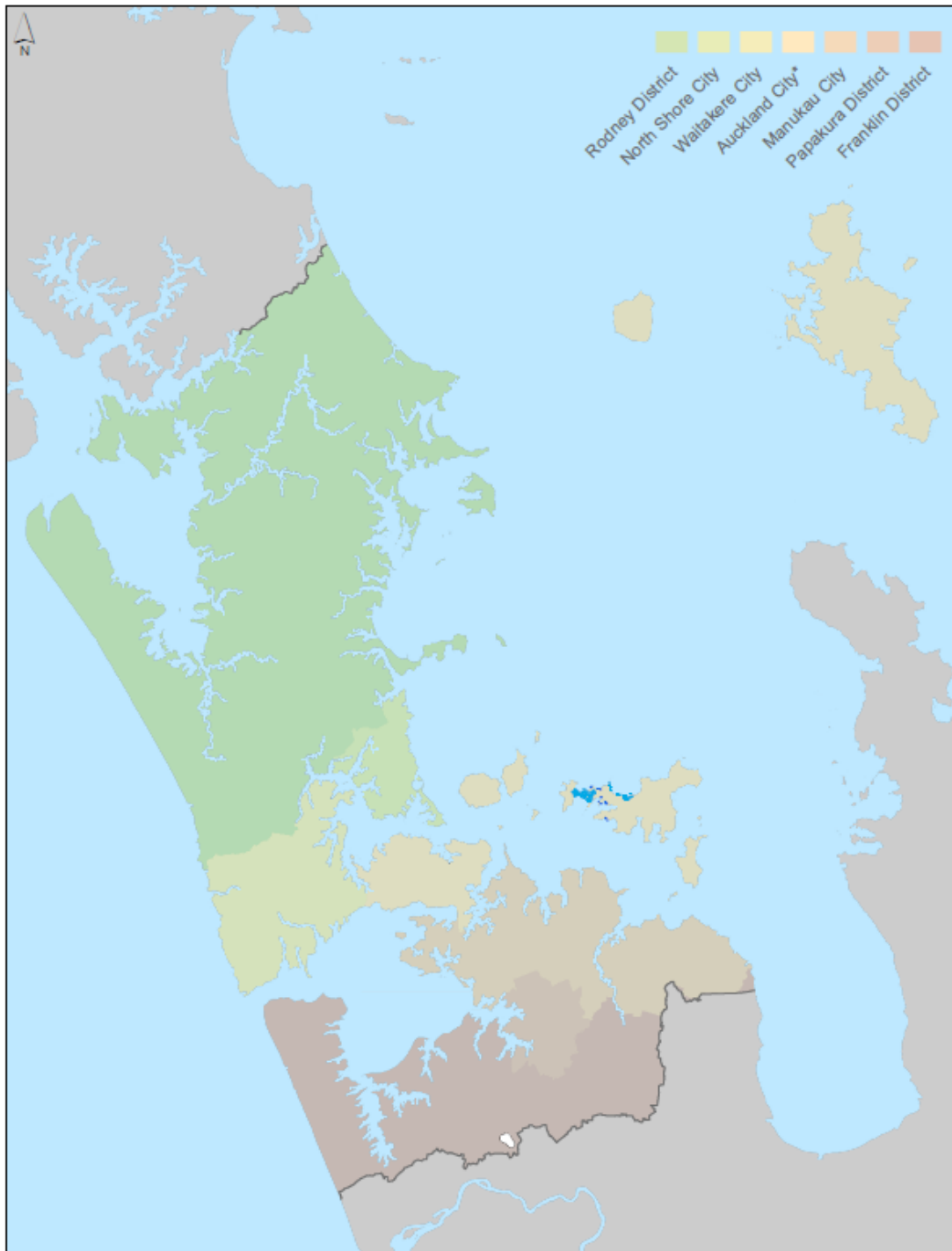
4. No mapping in UP, specific maps sit outside in database/register
- This approach would see no natural hazard maps in the Unitary Plan, rather specific hazard maps would be held elsewhere
 - These maps could help to inform consent planners areas of high risk and could also be provided to the public as an advisory tool

Benefits/Advantages	Costs/Disadvantages
<ul style="list-style-type: none"> • Would result in a consistent hazards approach across Auckland 	<ul style="list-style-type: none"> • Require funding to prepare maps before notification (still requires mapping work to be done i.e. making everything consistent and available in an internal GIS)
<ul style="list-style-type: none"> • Easy to implement (time and resources) 	<ul style="list-style-type: none"> • Although mapping is out of date in many areas, this option still means that information which may be in the plan for a good reason will not be included – reversing the work of legacy councils?
<ul style="list-style-type: none"> • Easy to update maps with information as it comes to light 	
<ul style="list-style-type: none"> • Provide an informed form of communicating risk to property owners – advisory approach 	
<ul style="list-style-type: none"> • Less regulatory method, more flexibility 	

These options are based on a whole hazards approach i.e. issues for each hazard is considered to be the same. In reality, flooding data held by Auckland is of a much better quality and covers a greater extent than data of any other hazard. It is possible that information for specific hazards could be introduced into the Unitary Plan but this would result in an inconsistent approach to hazards on a whole. This may also see mapping for one hazard become outdated by the time data for other hazards could be introduced. Due to these reasons and those outlined above, the paper recommends option 4 is undertaken for the initial notification of the Unitary Plan in early 2013.

Appendix A








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Date: January 2012
 Source: Auckland Operative District Plans

*NOTE: Hauraki Gulf Islands will not be included as part of the Unitary Plan

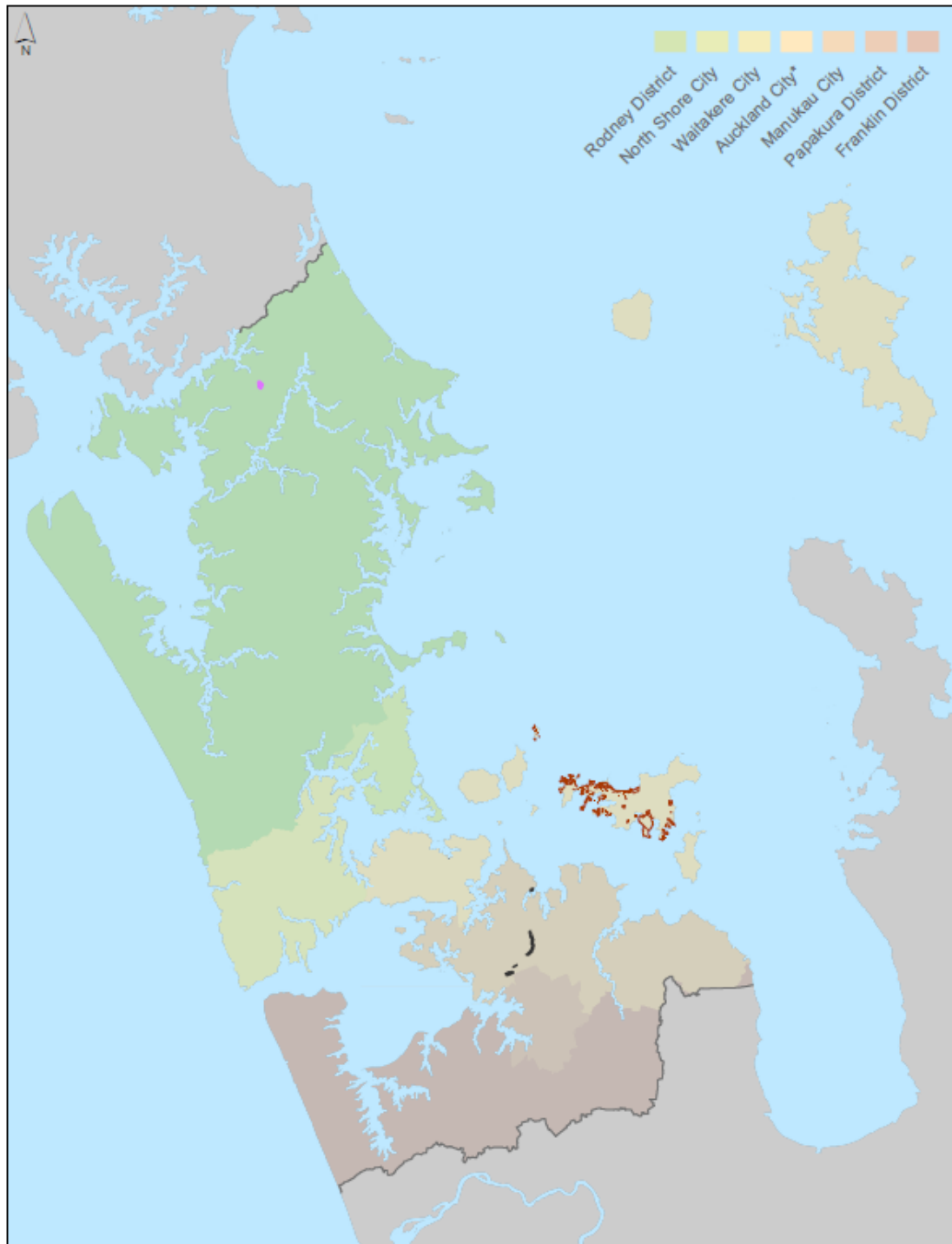
Natural Hazards Flood Hazards

1:680,000

-  Flood prone land - type A flood plain
-  Flood prone land - type B flood plain
-  Tutenui Floodway Policy Area



Auckland Council
 In Southern Green Matters



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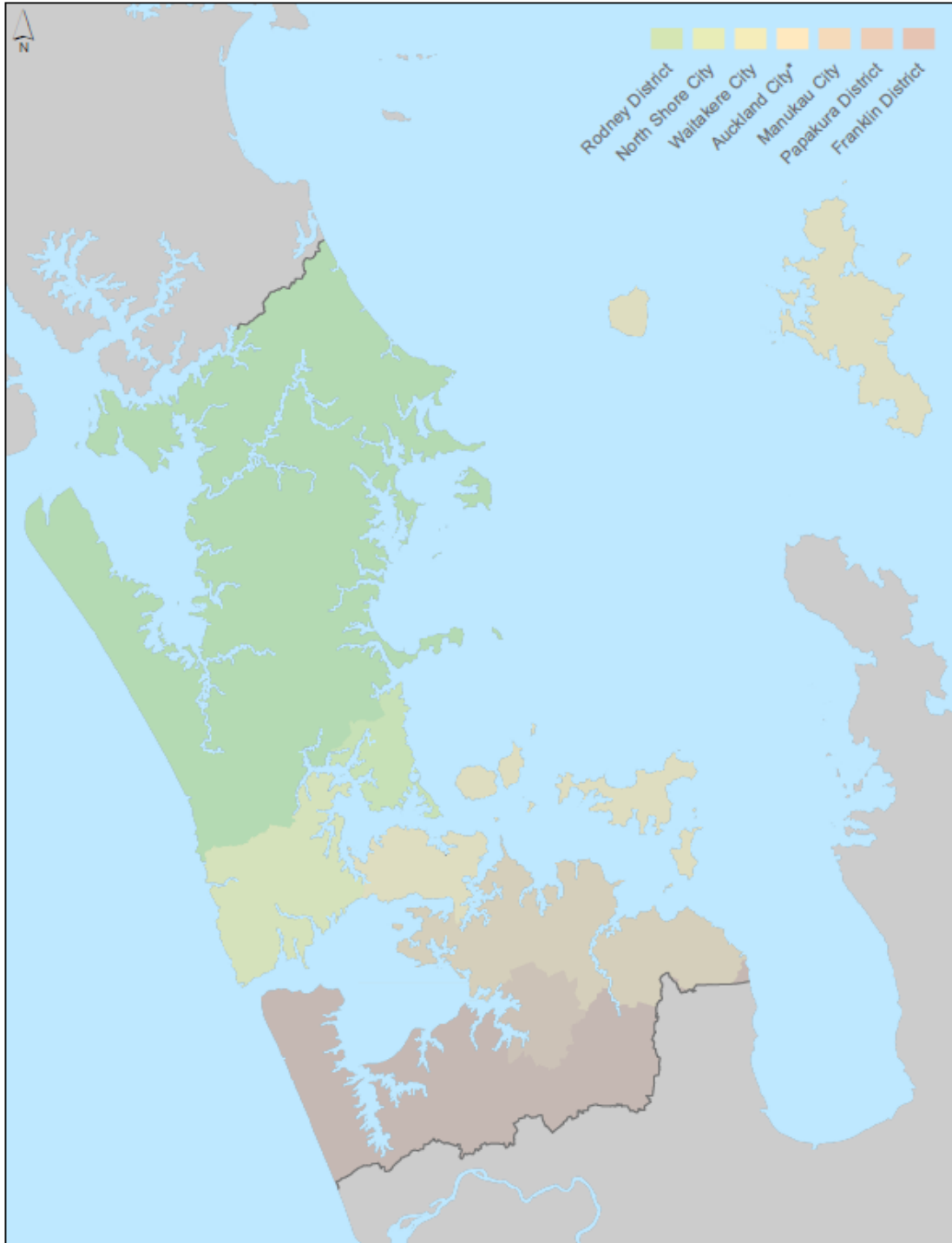
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Natural Hazards Land Instability Hazards

1:680,000

-  Residential Physical Limits
-  Soil warning area
-  Stability Area





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Date: January 2012

Source: Auckland Operative District Plans

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Natural Hazards Low Frequency High Magnitude (LFHM) Hazards

1:680,000

No Data



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