

**REPORT**

# **Heretaunga Plains Urban Development Strategy Phase 2 – Infrastructure**

Prepared for Hastings District, Napier City and Hawke's Bay Regional  
Councils

OCTOBER 2009



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# HASTINGS DISTRICT, NAPIER CITY AND HAWKE'S BAY REGIONAL COUNCILS

## Heretaunga Plains Urban Development Strategy Phase 2 - Infrastructure

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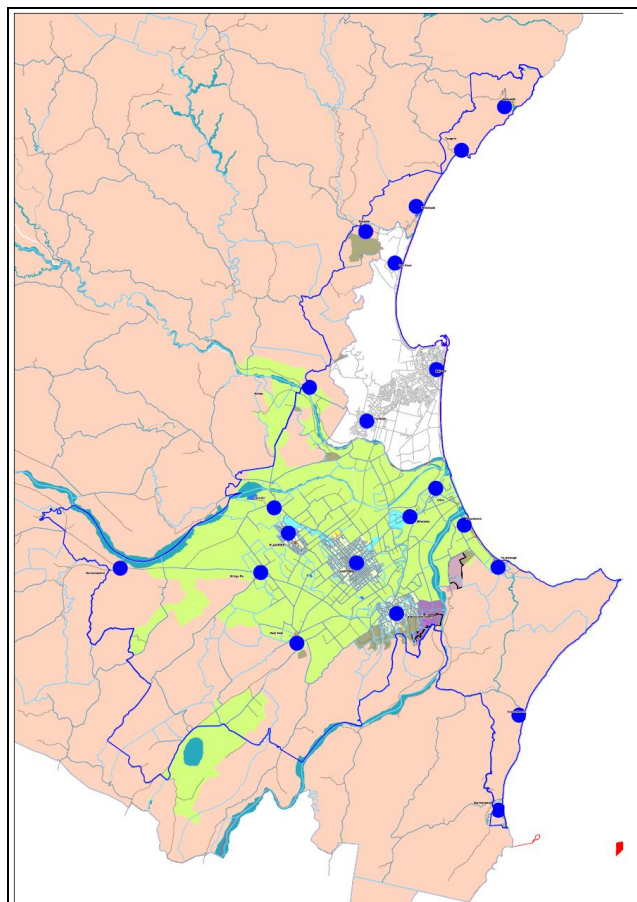
# 1 Introduction

## 1.1 Scope of work

This study assesses the infrastructure constraints and opportunities within the Heretaunga Plains. Infrastructure was noted as including electricity, telecommunications (voice and data), water, wastewater, stormwater, and transport.

For the purposes of this study transport was considered to include car, motorcycle, cycling, walking, public transport, trucks, rail, shipping, and air.

## 1.2 Study Area



## 1.3 Timeframe of study

This study covers the time period from 2015 – 2045.

## 1.4 Exclusions from Study

This report does not explicitly address community reserves, landfills, waste collection, fire-fighting or schools. The scope of service did not call for significant community or stakeholder consultation, detailed traffic modelling or analysis of the connectivity of transport between the Study Area and Central Hawke's Bay or Wairoa.

## 2 Methodology

Infrastructure constraints and opportunities have been collated from available information and knowledge of the key infrastructure and services considerations that could affect development. Discussions were held with asset managers at each of the three Councils, the Port, Airport, Aerodrome and Lines company. This report includes information from those discussions and information from key documents provided.

In these meetings we asked the attendees to identify any constraints their infrastructure places on development, and where they have surplus capacity in their existing infrastructure to accommodate growth. The status of each Councils current development areas was also discussed.

In some cases the agencies are already progressing work that would ultimately assist in determining constraints on development (e.g. Hastings DC's urban transportation modelling process currently underway and the phase 1 noted Hastings DC water strategy). This report does not attempt to cover those areas which are currently under development.

Documents to support the discussions were supplied by the asset managers and some were gathered through research. An overview of these documents along with the outcomes from our discussions was used to feed into the findings in this report.

The attached maps have been compiled using data provided with the parties consulted.

The details in this report and the supporting maps highlight areas for consideration; this report does not draw conclusions about the appropriate future level of servicing to an area nor the acceptable level of risk that a community may be willing to accept.

## 3 Summary of Key Findings

### 3.1 Overall

- Required Level of Service, including risk assessment needs to be taken into account across all infrastructure areas, as this ultimately affects the scale of the opportunities and constraints
- Capacity for development will exist from 2015 in areas previously identified for development.

### 3.2 Wastewater

- Shared treatment plants have been assessed but were not considered to be an option.
- Hastings City, Flaxmere, Havelock North, Napier and Taradale all have reticulated wastewater systems. There is also a wastewater system at Waipatiki.
- Intensification of existing settlements outside of Hastings, Flaxmere, Havelock North, Napier and Taradale is limited by the need for disposal field space on lots.
- The existing trunk mains have remaining capacity.
- The smaller communities are currently constrained by wastewater.

### 3.3 Stormwater

- There is no more capacity available in the Karamu system, beyond that planned in HUDs 2005.
- Stormwater is not seen as a constraint to intensification in Hastings as long as developments are planned with onsite solutions.
- 75% of Napier's Stormwater is pumped, intensification of development will increase the level of pumping.
- Sea level rise may impact on groundwater levels in coastal communities such as Clive.
- Natural detention areas (shown as ponding areas on Figure 5) need to be considered.

### 3.3.1 Water

- The aquifer has capacity to cope with additional demands from growth; the quality of this supply does vary by location.
- HBRC have identified a number of water short areas, which could limit ability for growth
- Havelock North currently has a constrained water supply
- Growth above that previously planned for will require additional reticulation capacity.
- There are limited areas in the aquifer that are outside of 400m from a surface water course.

### 3.3.2 Gas, Electricity, and Telecommunications

- No significant issues to note
- Cost of development is directly related to proximity of existing infrastructure

### 3.3.3 Transport

- Many of the assumptions used in the previous Heretaunga Plains transportation model have since changed. A number of the previously identified projects are unlikely to occur within the timeframe previously defined (or not at all) due to economic and planning constraints. Therefore this model is of limited use for this study period, and reference/linkages to the new model will be required.
- New transport models are being prepared at present (HDC urban and new Heretaunga Plains).
- Discussion on Level of Service resulted in different perspectives from the stakeholders.
- Existing rural roads are likely to require rebuilding where a change of land use occurs.
- Public transport not currently playing a significant role as a mode of travel to work and school.
- New mass limit routes may cause issues on structures, and industrial / commercial sites would ideally be placed close to the proposed heavy mass limit routes.

#### 3.3.3.1 Shipping – Port of Napier

- Storage is the main constraint of the existing site
- Further urban development in the port area is a possible constraint on the potential for growth of the Port.
- The previously discussed 'Inland' Port option has been discounted by the Port, due to operational inefficiencies.
- An increase of rail usage to the port would have a negative effect on the general roading network in Napier, due to the number of rail crossings.

#### 3.3.3.2 Air

- Airport fans and noise boundaries for the Napier Airport exist already, taking into account the planned runway extension.
- Sea level rise is likely to create additional stormwater management demands on the Napier airport
- Residential development around the Bridge Pa aerodrome could constrain the usage.
- Noise contours have been developed but are currently not included in the District Plan for the aerodrome.

### 3.3.4 Shared Services

No additional shared services were identified, however where development does occur alongside Council boundaries either Council could provide services to the other.

### 3.3.5 Infill

Potential to provide for infill as long as the development takes into account the existing service capacity.

## 4 Detailed Findings

### 4.1 Overall

- The level of risk to the community and property needs to be defined, especially in relation to stormwater and flooding considerations.
- The level of service to be provided to the community over the study period will affect the actual opportunities and constraints from the existing and required infrastructure. Also the level of service expected from the community into the future could result in alternative outcomes.
- The current rate of development will mean that capacity will be available from 2015 in existing 'planned' development areas (e.g. many of the Napier development areas (as shown in essential services documentation) will not be fully allocated by 2015). Typically there are the 'more' expensive areas to develop. The lagoon farm development will be ½ completed by 2015, leaving an additional 400 lots within the study period. The Park Island development is with the Office of Treaty Settlements. The Citrus Grove development is complete. (see Figure 43 to Figure 48 for NCC development areas)

### 4.2 Wastewater

#### 4.2.1 Opportunities

- The Hastings District Council Treatment Plant has capacity for growth over the next 50 year period based on 2% growth per year, plus an additional 10% for a factor of error.
- There is spare capacity in the Hastings trunk mains, creating an opportunity for development close to these (see map provided for locations).
- There is some capacity in the trade waste sewer in Pandora for 1 or 2 more trades, long term if trade waste wasn't needed it could be converted to a domestic main to accommodate changing land usage.
- Napier City's western pumping main has available capacity.
- The Havelock North pumping main is to be extended to the south side of Havelock North before 2015, creating an opportunity for development.
- The Hastings Racecourse site is well placed to be serviced.
- Increased densification west of the proposed mission heights development could be possible.

#### 4.2.2 Constraints

- All wastewater on the western side of Hastings needs to be pumped to the eastern side and ultimately the wastewater treatment plant. The hump is in the general location of Omahu Road and Heretaunga Street. Gravity sewers are a preference.
- Potential for leaching from onsite wastewater systems exist at Ocean Beach and Haumoana, (Glasson Potts Fowler Stage 1 & 2 Report)
- Waimarama has been identified as having sensitive receiving surface waters and therefore a potential impact from onsite wastewater solution on surface water bodies. This may limit the growth of the community based on onsite wastewater solutions. (Glasson Potts Fowler Stage 1 & 2 Report)
- Napier has some constraints around wet weather infiltration, however they have an extensive wet weather programme in place over the long term, providing this is carried out the infiltration will not constrain development.
- Napier has applied for a new consent for a biological trickle filter system, however the outcome of this does not constrain development as Napier still holds consent for an advanced primary treatment system.
- Pre-treatment of wastewater is needed if the source is a long way from the main network; an example is the Irongate Industrial development which is close to the limit of distance from the network prior to pre-treatment.
- Areas at Bay View, Jervious Town and Meeanee have been identified for future Greenfields development in the Napier City Council Essential Services Development Plan 2000 however these areas are not currently reticulated for wastewater and are poor draining. The development of these areas would be costly compared with other Greenfields areas previously identified.

- Wastewater systems in the reticulated urban areas of the Heretaunga Plains are generally designed on the basis of 12 lots per hectare. Any denser infill development would need to be planned for so that the appropriate services could be provided

## **4.3 Stormwater**

### **4.3.1 Opportunities**

- The Estuary stopbanks in Napier have been design for both sea level rise and storm surge events, and are up to standard on the southern side.
- Many of the urban areas have the space for onsite disposal, creating an opportunity for onsite solutions.

### **4.3.2 Constraints**

- Climate Change may constrain Napier's ability to cope with stormwater. The comment was made in our meeting with Napier City Council that in 50 – 80 years development may need to be concentrated on the hills.
- The Estuary stopbanks are not up to standard on the northern side, so the airport / Landcorp are still vulnerable.
- 75% of all of Napier's urban stormwater is pumped requiring ongoing energy use. The Taipo Stream is the only stream which is not pumped and it already has some capacity problems. (The Taipo has recently been identified as having some ecological value worth enhancement).
- The proposed Business Park (Technical Park) to the north of Napier will need to address stormwater onsite. If DoC agrees, the option of disposing of stormwater to the Estuary will be considered, otherwise an area under the Hawke's Bay Airport flight path may be chosen.
- Onsite stormwater in Hastings and Flaxmere is generally not constrained; the exception is dirty stormwater discharges over the unconfined aquifer (Figure 5).
- Future growth of the industrial areas at Awatoto has been identified by Napier City Council, however stormwater disposal is difficult in this area. A large pump station would be required to pump stormwater into the Waitangi Estuary. The Waitangi Estuary has been identified as a priority wetland by HBRC (see Figure 5)
- All of the Stormwater from the Hastings, Flaxmere and much of Havelock North flows into the Karamu Stream catchment. This catchment has been designed to cope with the stormwater from the existing urban area, plus those urban areas planned for in the 2005 HUDs study. Growth in excess of these areas will need to address stormwater onsite, as there is no additional capacity in the Karamu system. ( see Figure 5 Stormwater Identified constraints
- Stormwater is not seen as a constraint to intensification in Hastings as long as developments are planned with onsite solutions.
- Sea level rise could result in groundwater rising by up to the same margin, if this becomes an issue it would be expected to only affect areas close to the shore line.
- HB Regional Council noted that the natural detention areas (identified as ponding areas on Figure 5 Stormwater identified constraints) need to be protected (e.g. Paki Paki).
- Napier has identified Greenfield Development areas, there is poor drainage in some of these areas include Jerviostown, South Pirimai and Meeanee.

## **4.4 Water**

### **4.4.1 Opportunities**

- There are opportunities for growth in the Lyndhurst and Omaha Areas of Hastings.
- The Hastings racecourse site is well placed to be serviced.
- Napier has plans to develop a new well field in the Awatoto area.
- Demand management initiatives should bring efficiencies and assist with capacity/supply issues.
- The Aquifer has capacity to cope with additional demands as long as the extraction is from the main flow areas, and outside a 400m buffer from surface water bodies.

#### **4.4.2 Constraints**

- The HBRC Resource Management Plan has a policy that any groundwater take within 400m of a surface water body should be considered as a surface water take. This is a constraint as the majority of the surface water bodies on the Heretaunga Plains are fully allocated.
- The water short areas (shown on Figure 6) show a potential water supply constraint to future growth.
- There are some temporary flow and pressure constraints in Hastings and Havelock North. The solution to these is expected to be at least 15 – 20 years away.
- The current water supply for Havelock North is currently constrained; a new source is being sought and must be in place by 2017.
- There are network constraints in the Arataki Area of Havelock North for water supply once Council retracts from the existing Brookvale bore water source.
- The Mission Heights development area in Napier has a water supply capacity for 500 lots, water could be a constraint in this area if a higher density of development is proposed which could result in up to 900 lots in the area. This could be compounded if additional growth is identified in the vicinity of this development. Additional capacity could be built into the system but does not currently exist.
- HDC only has three hours of reservoir storage, it would be ideal to have 24 hours of storage.

#### **4.5 Gas**

Gas is not seen as a constraint to development. Much of the existing Heretaunga Plains area is not serviced by Gas. Gas suppliers will typically react to the demand of market forces, not before.

#### **4.6 Electricity**

- No significant items noted
- Cost of servicing is less when building alongside existing development, the more isolated a development the more costly to provide power infrastructure
- No issues were noted with the supply capacity into Hawke's Bay, and long term plans (likely outside study period) of Transpower makes provision for an additional power feed from the national grid being installed.

#### **4.7 Telecommunications**

- No reply was received from Telecom NZ. However telecommunications are not seen as a significant constraint to development, with them generally able to react to the demand of market requirements.
- Unison noted their intent to enter into the communications market, by making available fibre optic connectivity, this will be based off surplus capacity in their own fibre optic network. (see Figure 3)

#### **4.8 Transport**

- Napier City Council proposes to maintain their overall network speed as it has been, this assessment is completed on the network as a whole.
- Hastings District Council is currently performing a traffic modelling project, the outcomes from this are not available for Phase 2, but should be available for future stages.
- Hastings DC have an urban sequencing report available which discusses the development order of new capital requirements
- The Hawke's Bay Heretaunga Plains transport model is about to be updated and reassessed, the tender for services for this is only about to occur

##### **4.8.1 Opportunities**

- Much of the existing network has capacity to take additional traffic



- Hastings DC currently review overall approach using placed based planning, with options to provide for some densification of housing and to open up existing linkages being investigated (e.g. Heretaunga Street).

#### **4.8.2 Constraints**

- The existing transportation model did not include the proposed Business Park, there was suggestion from Napier City Council that greater capacity would be required on the expressway to accommodate this development. The existing model predicts that the expressway will need to be 4 lanes by 2026, but this may need accelerating. The model also did not make allowance for a number of other items such as redevelopment of the Hospital site, Mission heights 900 units (modelled at 350), Napier's eastern developments, and large format retail development. These will all need inclusion into the next assessment.
- The current road network (Puketitiri Rd) will constrain the ability to develop in the Poraiti Hills area, this upgrade currently has a BC of 0.9 and a price tag of 2.5 million.
- Future Industrial growth has been identified in the Awatoto Area, however the capacity of the road network was identified as a potential constraint. This would be a significant traffic generator, having a major impact on the State Highway or expressway.
- The northern arterial previously identified as priority has been blocked at the planning approval phase
- Some of the other proposed links previously identified in the transport model are unlikely to occur (i.e. Whakatu link (SH2 to Pakowhai).
- Nelson Park redevelopment is not included in existing regional transportation model
- Level of Service requirements appear to be a point of discussion with different messages coming from the different stakeholders (maintain, reduce, improve).
- Napier City Council has considered the land behind the existing Industrial development at Awatoto for future development; however roading could be a constraint to this.

#### **4.8.3 Walking and Cycling**

- Both Cities are working through the construction and updating of their walking and cycling strategies.
- The Hawke's Bay Regional Council is looking at the combined strategies
- Hastings has a focus on increasing usage of active modes of transport, potential at the expense of delays on major linkages

#### **4.8.4 Public Transport**

- Managed by the Regional Council, relatively low usage and difficulty due to the spread of urban areas and destinations
- Councils have different perspective across the study area, Napier referred to HBRC, and Hastings looking at a number of studies to see how better usage of public transport.
- HBRC looking at the PT plan, looking at options of early start and increased frequency – particularly on inter city express route (see Figure 10).

#### **4.8.5 Trucks**

- New mass limits seen to have limited effects in Napier, but some issues in Hastings, particularly on structures such as Bridges
- Ideally industrial and commercial operations that may utilise vehicles covered by the proposed heavy mass limits should be located close to these routes (yet to be designated, an existing route does exist to the Port of Napier)
- There is ongoing tension from the communities to remove trucks from residential and/or tourism focused areas
- Effects of Trucks not necessarily modelled effectively in previous transportation model.

#### **4.8.6 Rail**

HBRC looked to commission a review of the use of Rail, but did not secure funding so this is unlikely to proceed.

#### **4.8.7 Shipping – Port of Napier**

- Storage at the Port location was seen as the main constraint to development of the Port. There are large infrastructural costs required to reclaim land.
- If reclamation was to occur at the port it would be to the west of the existing port operation.
- The Port manages a lot of land in Pandora.
- Hastings District Council raised the option of an inland Port at Whakatu, but the Port of Napier were clear that this was not a viable option as much of the outbound cargo from the Port of Napier comes from the Hawke's Bay Region, making the inland port idea inefficient. To move Watties goods you would need to truck cargo down the road, unload, then reload and take it to the Port. The only way the port could see this feasibly working was as part of a Business Park where the producers are located in the same location.
- A review has been performed with respect to increased usage of rail to the port, the scenario was rejected due to likely increase in disruption to vehicles in Napier (approx 19 rail crossing points throughout the city).
- Potential for increased usage of the Port.
- Seen as a major linkage by both Councils for local economy.
- Urban development in proximity to the port was seen as a possible constraint to long term growth of the port, they did not want to see further intensification of residential housing to the west of the port as this is the only direction they can grow.

#### **4.8.8 Air**

##### *4.8.8.1 Hawke's Bay Airport*

- The Business Park planned for Napier will partly fall under the approach path to the Hawke's Bay Airport. The area under the identified flight path that cannot be used for buildings will be used to dispose of stormwater.
- The airport has recently been corporatised. This means that it can now borrow money, and opens the opportunity for the Airport to do its own industrial development. A Business park on part of the runway land is currently being considered and would expect to be in place during the study period. Initially this would cover 30ha of land.
- Development in the surrounding area will be constrained by the Airport Fans and Airport Noise boundaries (see Figure 8), these boundaries have already taken account of future growth of the airport.
- The groundwater level at the airport is currently 1 - 3 metres below ground level. The proximity of the airport to the coast and the estuary means that it may be subject to influences from sea level rise.
- Land ownership may constrain further expansion of the airport, a lease is being negotiated with the Maori land claimants who have a claim over the land at the southern end of the runway.
- To the North is the Estuary which is in DoC ownership, the airport does not feel that it can extend in this direction.
- The airport had concerns over the safety of the road access to the airport.

##### *4.8.8.2 Bridge Pa Aerodrome*

- Nearby residential development could constrain the use of the Aerodrome.
- Noise contours have been developed but are not yet included in the District Plan. A 3km radius has been shown on the map in Figure 7 as this is the likely zone of influence for noise.
- The volume of air traffic at the aerodrome is larger than the volume at the Airport.

## 4.9 Solid Waste

- There is another 60 years of life at the Omarunui Landfill site which receives refuse from all of the serviced areas within the Heretaunga Plains. No major constraints were identified within the timeframe of this study.
- Demand management initiatives being implemented to reduce the waste stream to the landfill
- What future infrastructure may be required given the proposed land use pattern in HDC and NCC urban developments

## 5 Potential for shared infrastructure

There is currently joint infrastructure with the provision of water supply in and around the Bayview / Eskdale area. This fits with feedback from Council's which indicated that where development occurs alongside Council boundaries then either side could provide the services.

Consideration has already been given the shared wastewater treatment facilities for the greater Hastings and Napier communities. This concluded that neither of the existing ocean outfalls would have the capacity to provide for both communities, a joint facility was disregarded. (percomms Bill McWatt 14 September 2009).

## 6 Infill

It is clear that infill can be accommodated as long as suitable planning is performed. Existing infrastructure does not provide the capacity needed for infill in all areas. One Council officer did suggest that the areas with a high amount of impervious area would be most suitable for medium density housing as the existing stormwater system is already accounting for 100% runoff, so no additional capacity would need to be built in.

The areas identified for infill in Hastings were Mahora, the CBD, and Heretaunga Street. The areas identified as infill by Napier were Ahuriri (including the 'Humber' yard), with Marewa the area likely to start infilling as Taradale and Greenmeadows fill up.

## 7 Conclusions

There is existing capacity in many of main urban areas for infrastructure. While in many places this is most easily provided for close to the main trunk services and arterials it can be provided for in most locations if investment is made.

The main constraint for the larger urban areas is stormwater. The stormwater from Hastings, Flaxmere and Havelock North is limited by the capacity in the Karamu catchment. Future stormwater solutions for these communities will need to balance the onsite and reticulated stormwater options to ensure that the stormwater development level does not exceed that planned for in the 2005 HUDs study. Stormwater disposal in Napier, Taradale and Greenmeadows is already reliant on pumping with 75% of the urban areas having pumped stormwater. Intensification of development is likely to increase the stormwater runoff rate. This combined with sea level rise and the potential for an increase in groundwater level could limit residential development in some of these areas in the next 100 years. While it is unlikely to have an unresolvable impact in this study period consideration should be given to the longer term outcome.

The smaller rural and coastal communities are largely un-serviced and therefore limited in their ability to expand until further investment is made in infrastructure.

## Appendix A: Constraint Maps

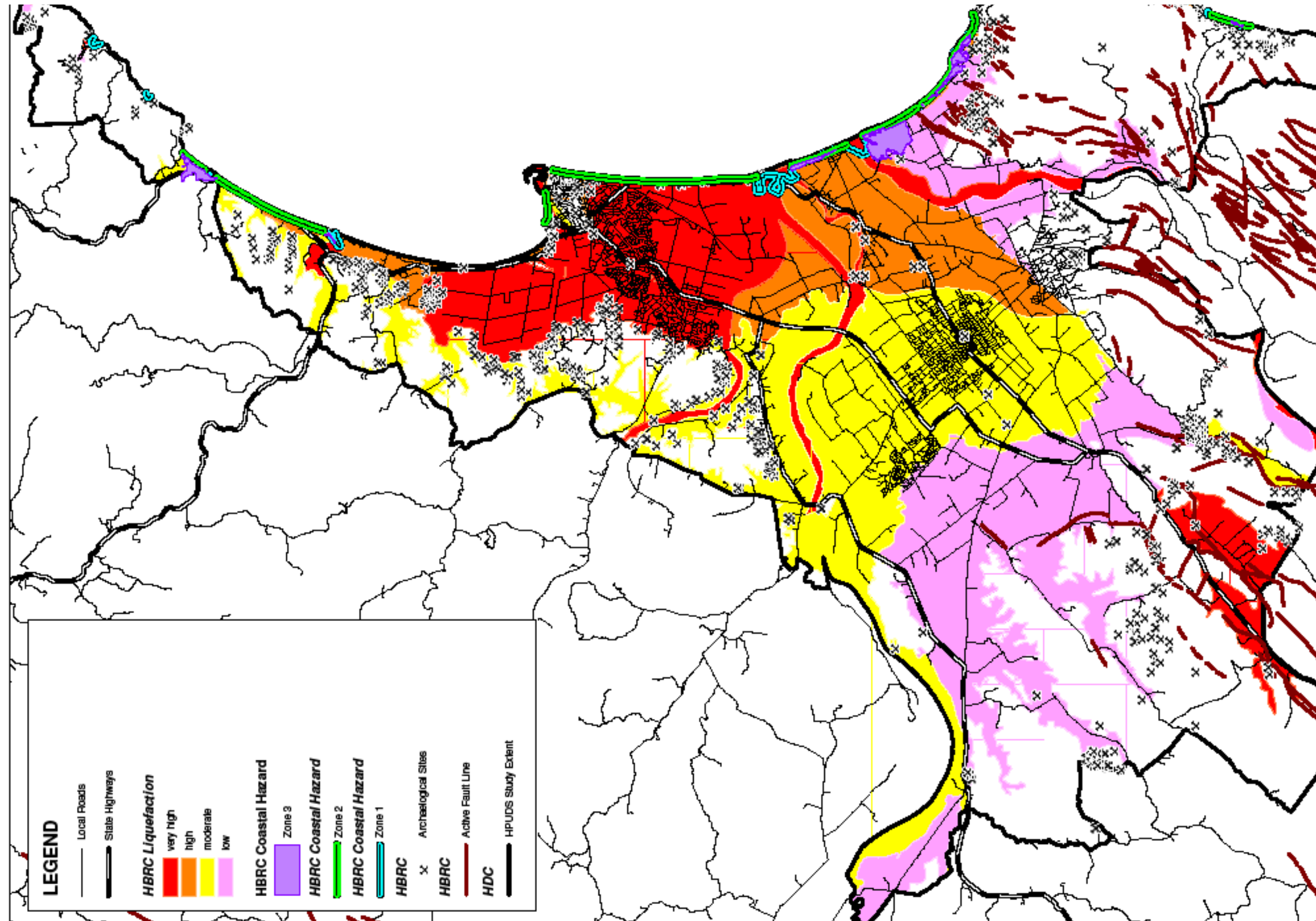


Figure 1 Hazard Map

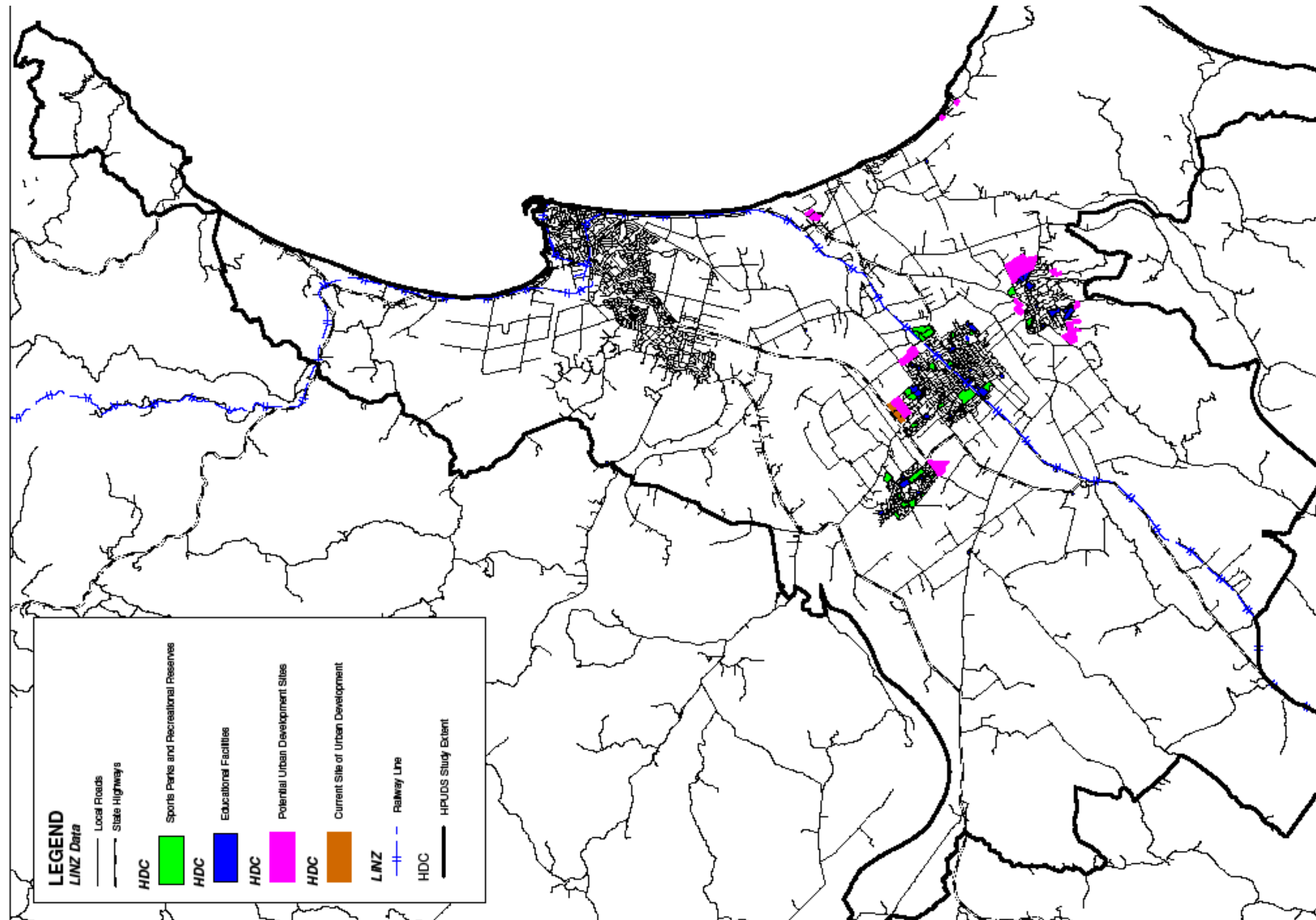


Figure 2 Planning Constraints Map



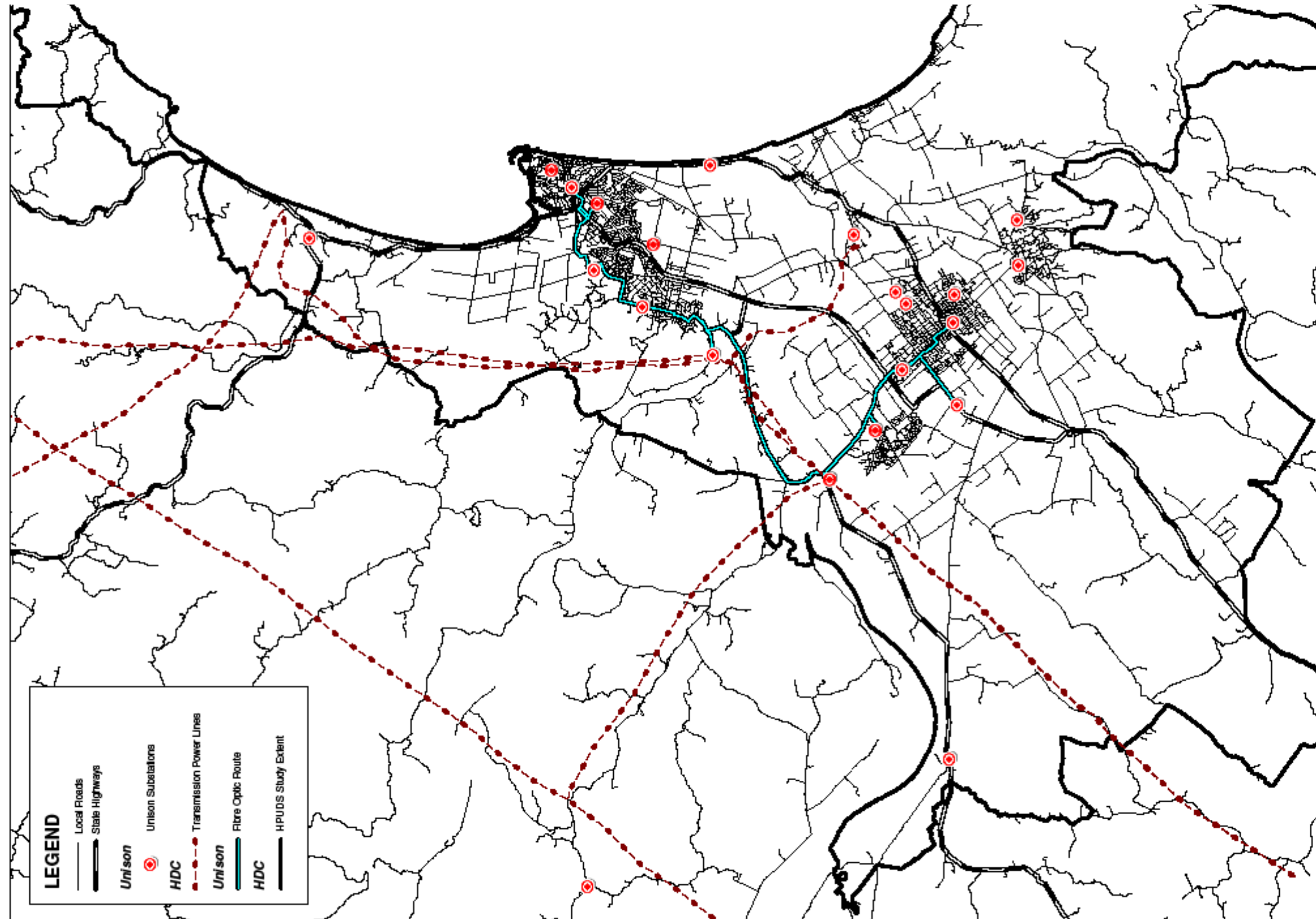


Figure 3 Power Maps

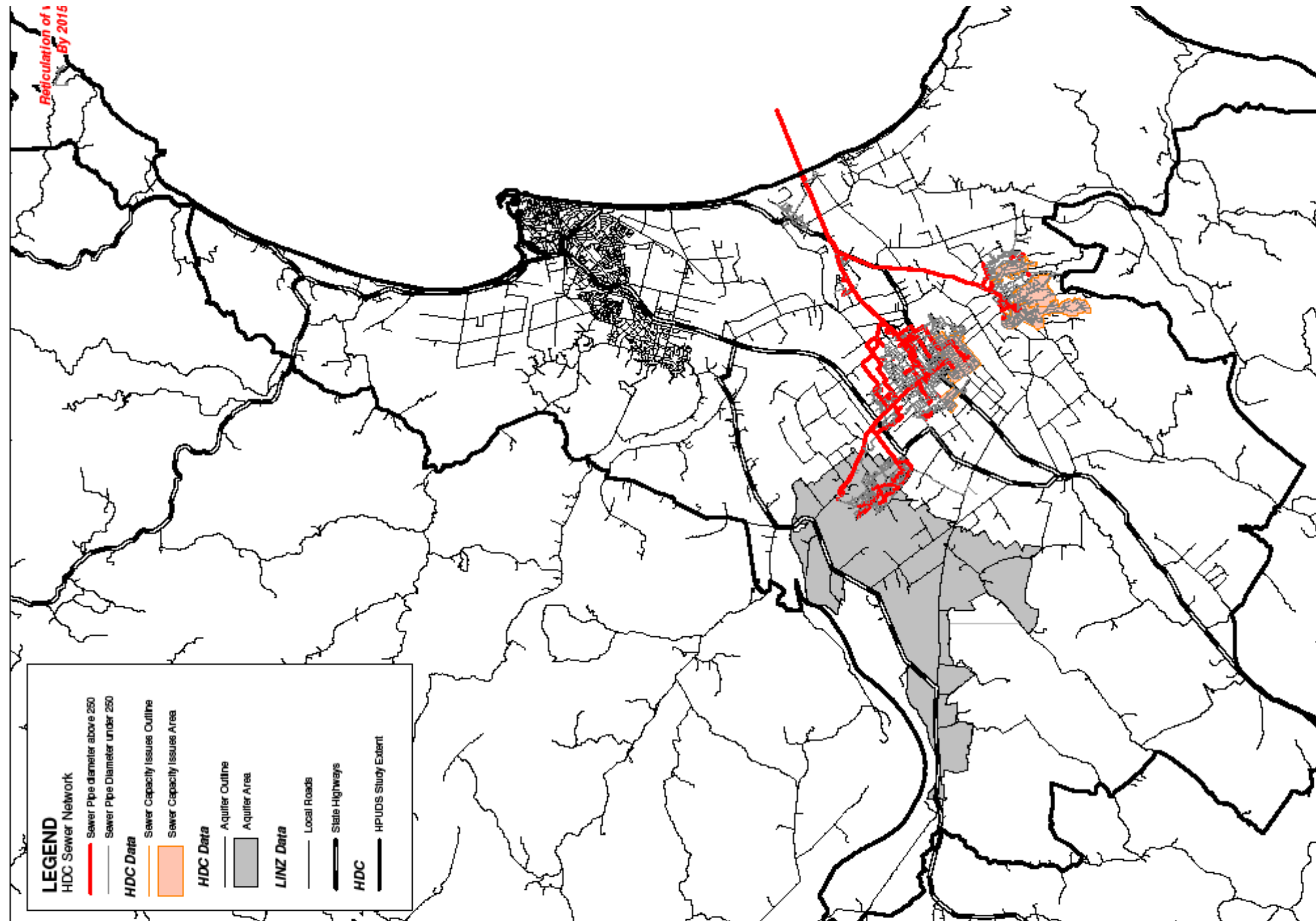


Figure 4 Sewer Map



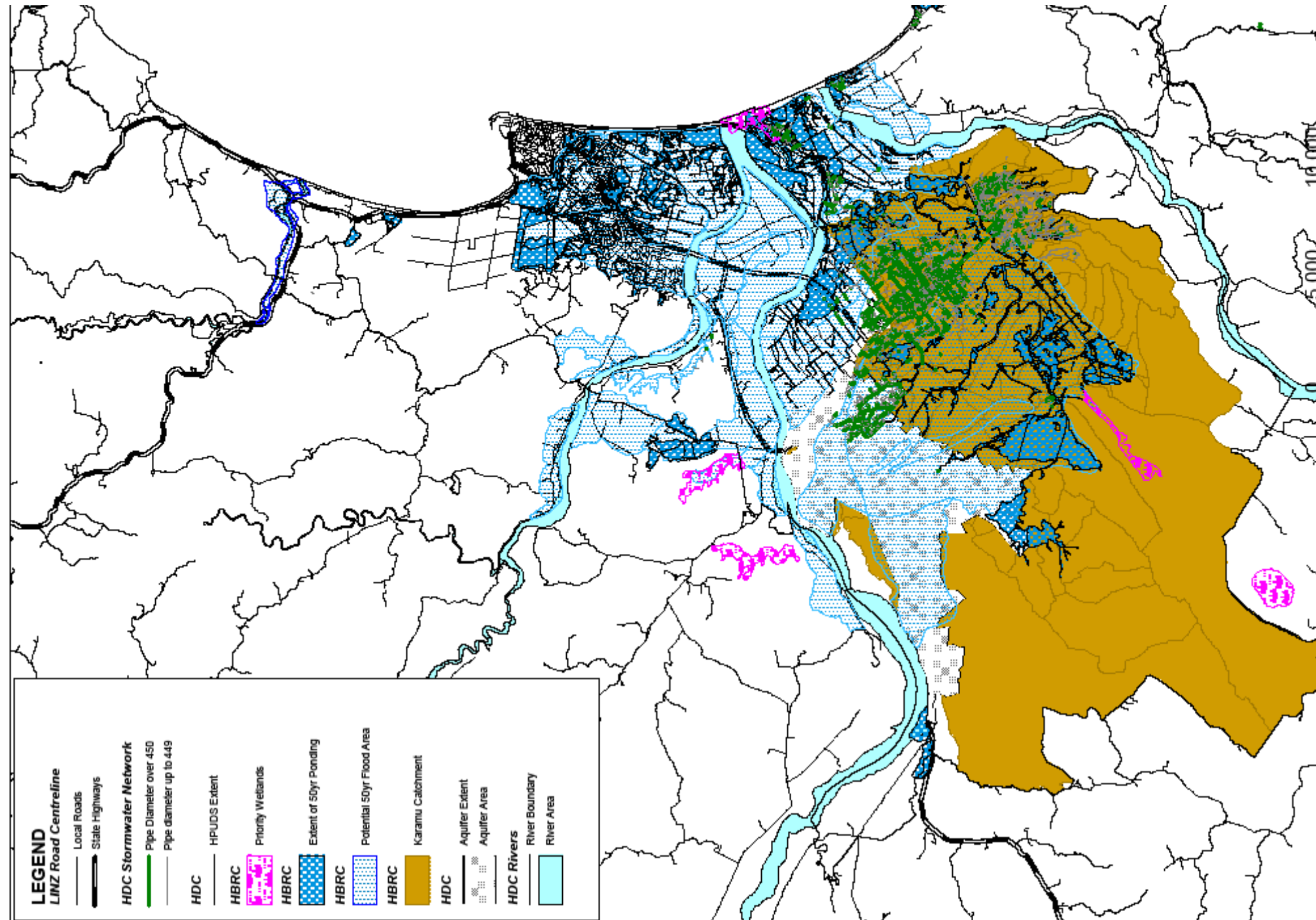


Figure 5 Stormwater Map



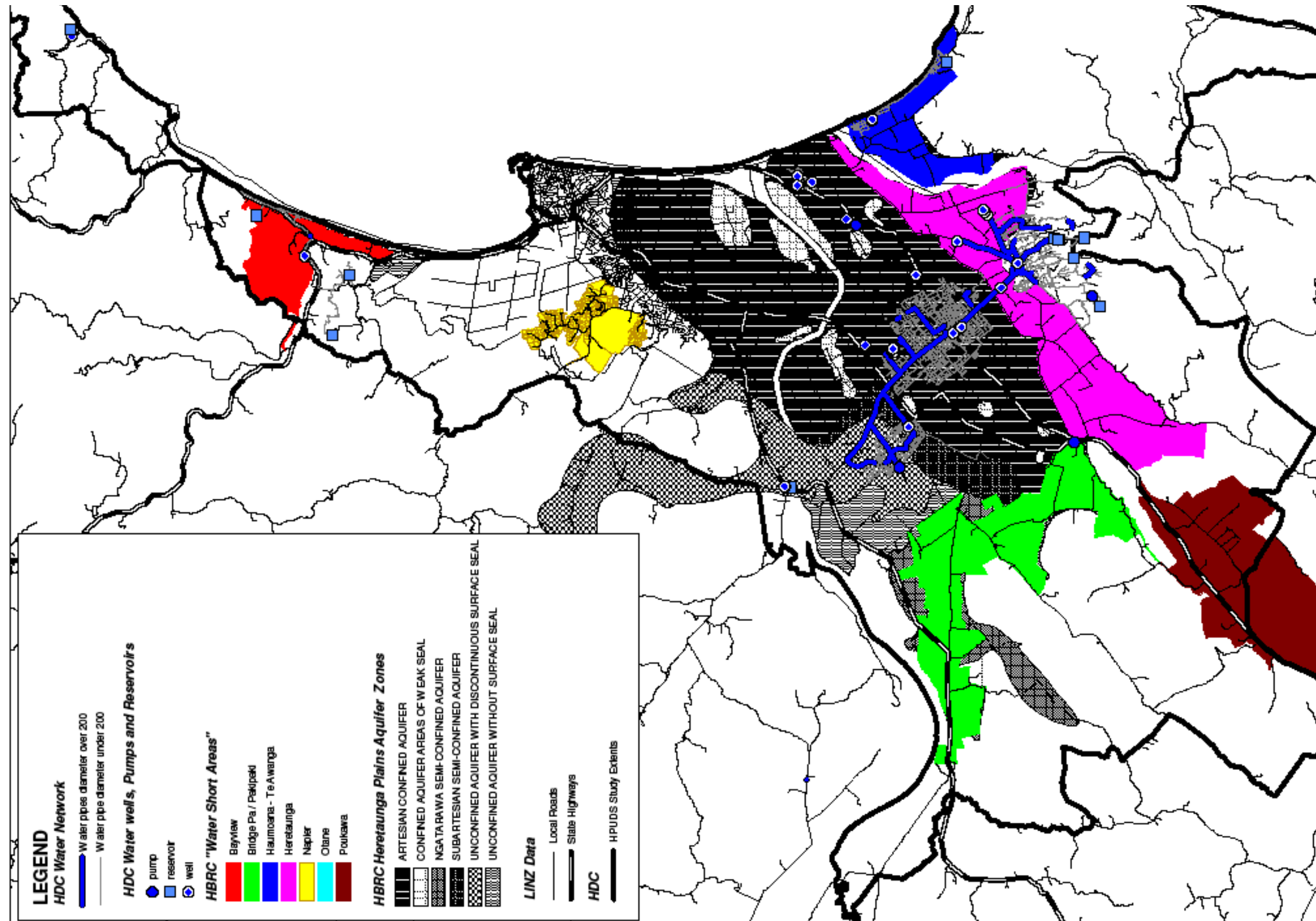


Figure 6 Water Map

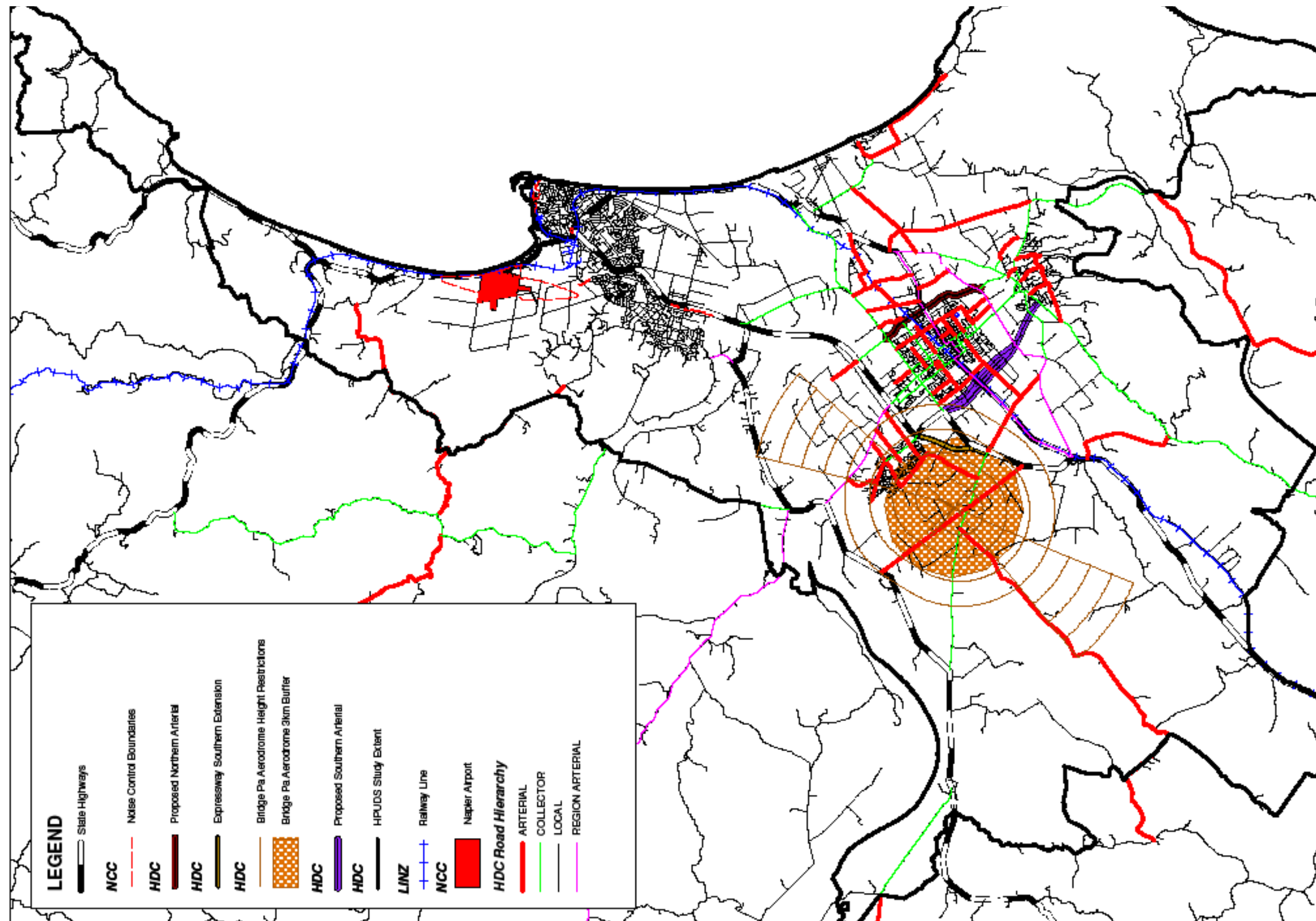


Figure 7 Transportation Map





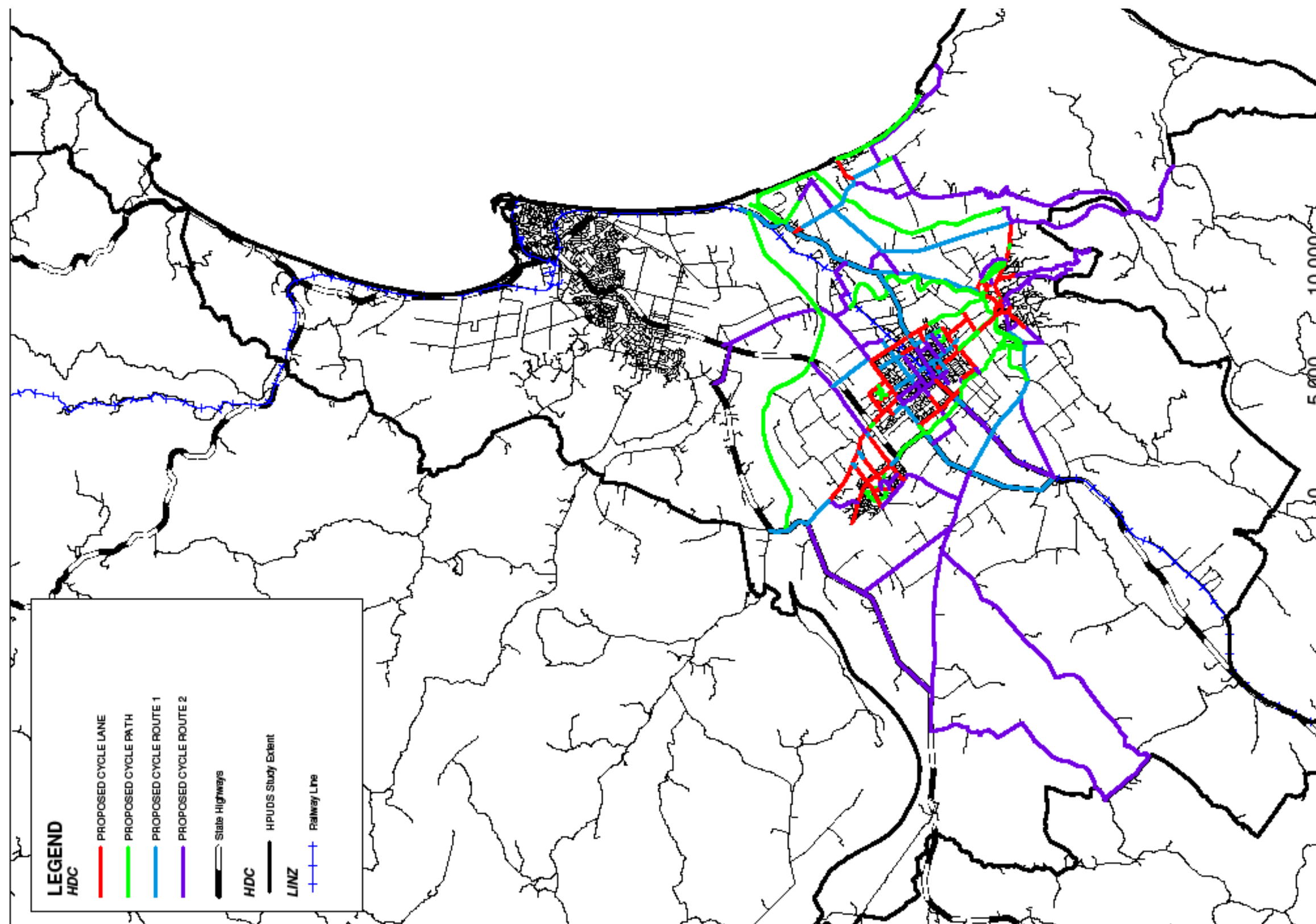


Figure 9 Cycle way Map

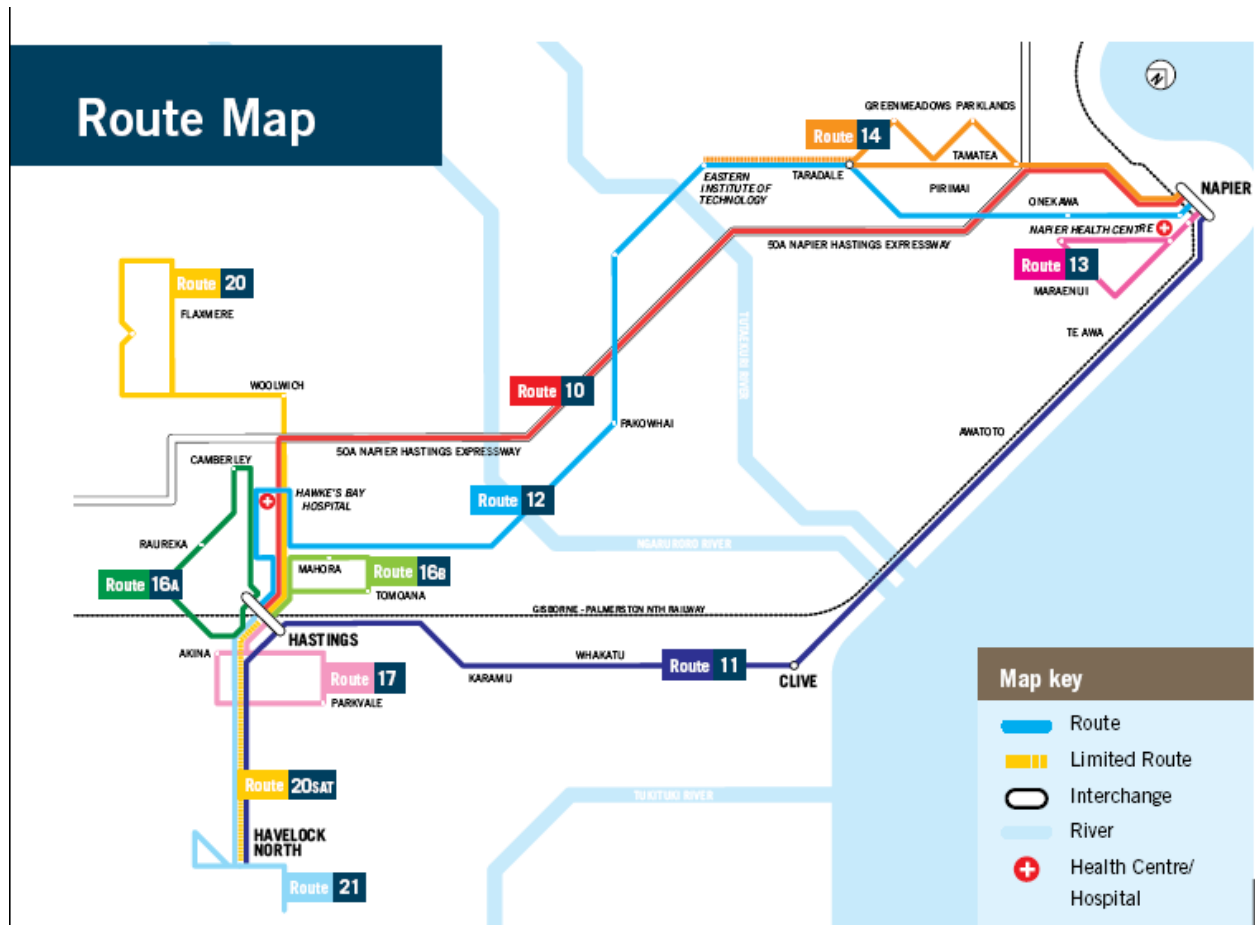


Figure 10 Bus Route schematic

Napier City Maps, (not supplied in format to enable integration into single view)



Figure 11 NCC Water – Pumping stations

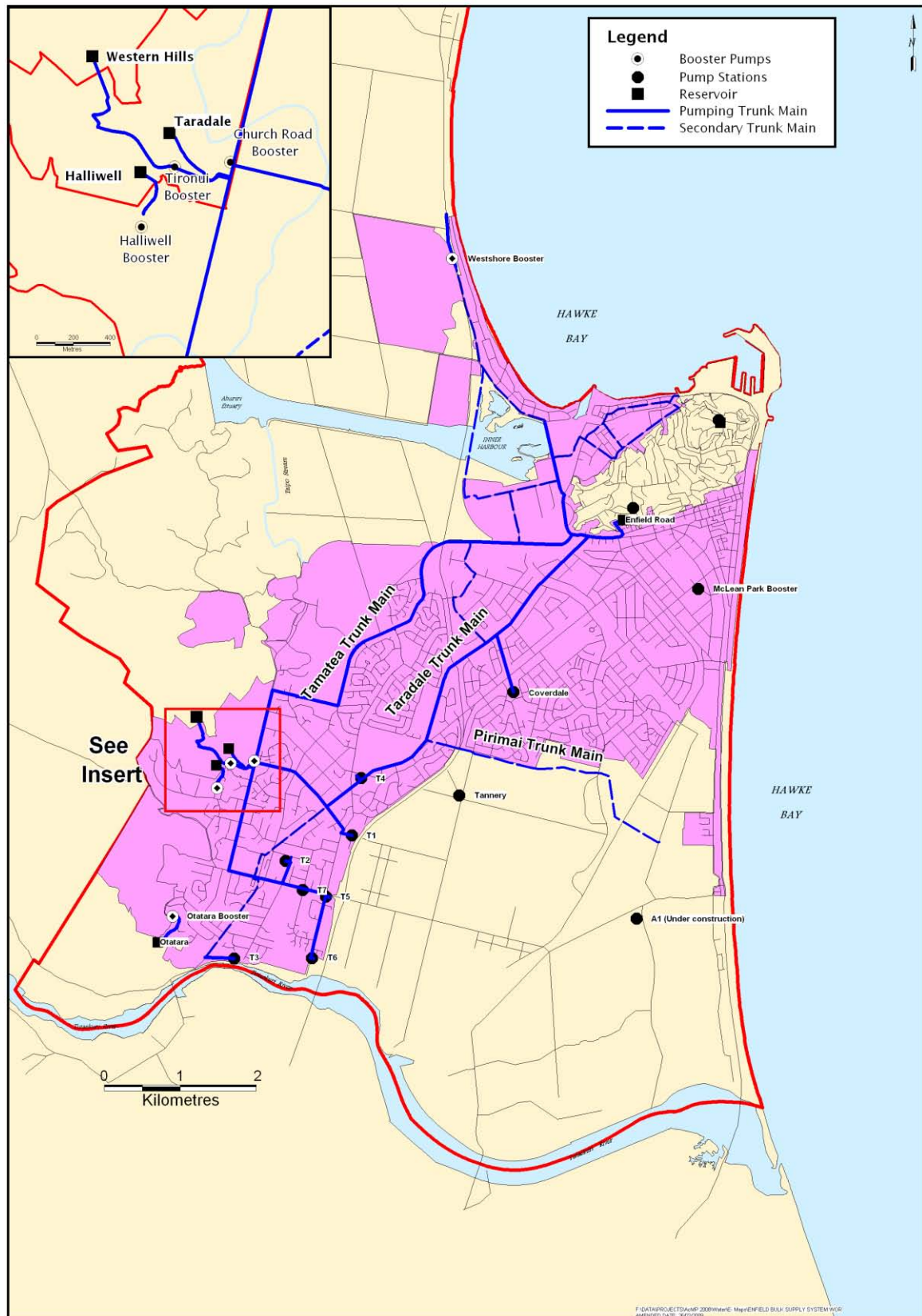




**Figure 12 NCC Water – Critical reticulation**





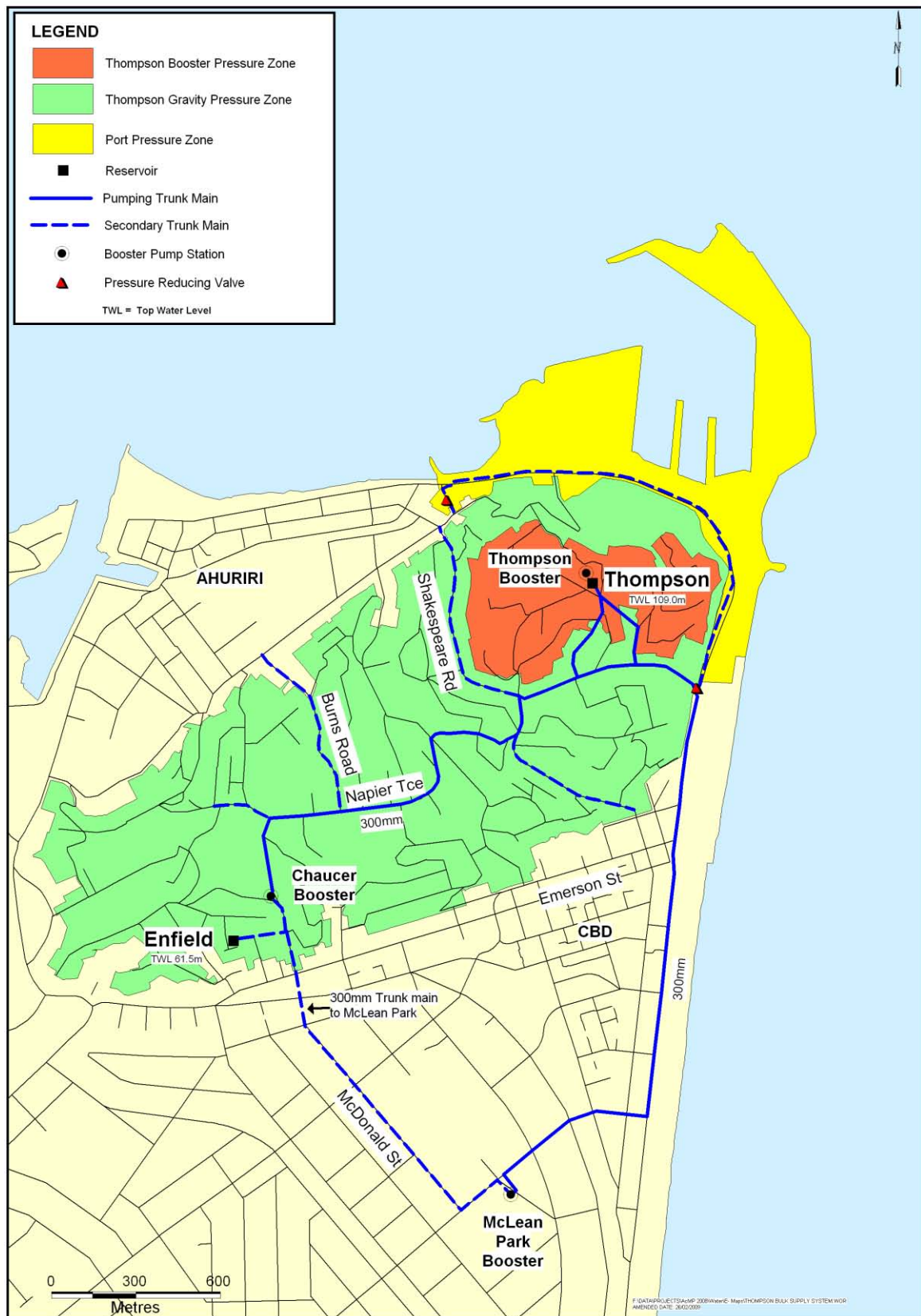


**Figure 14 NCC Water – Mains reticulation**

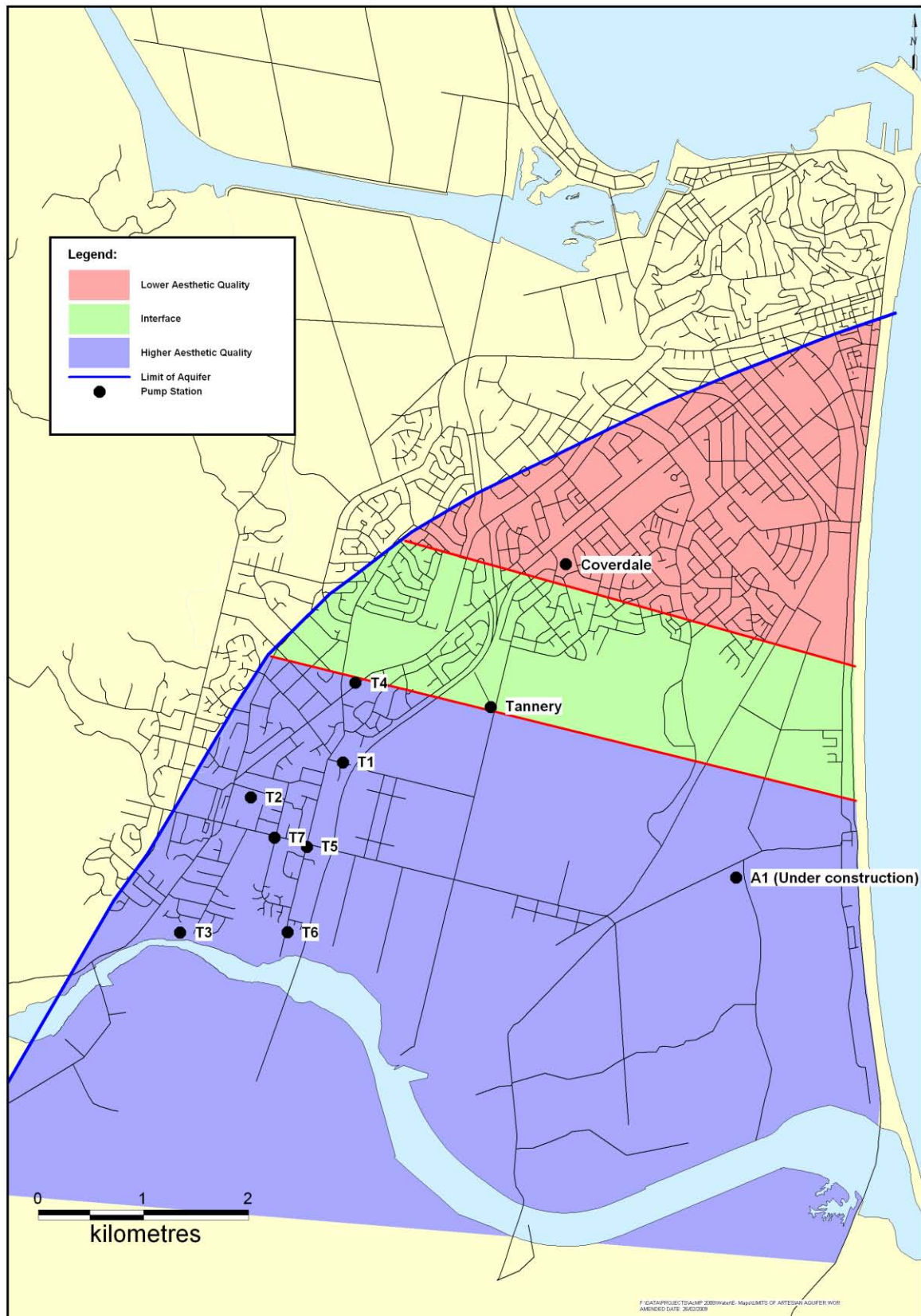


**Figure 15 NCC Water – Bayview reticulation**



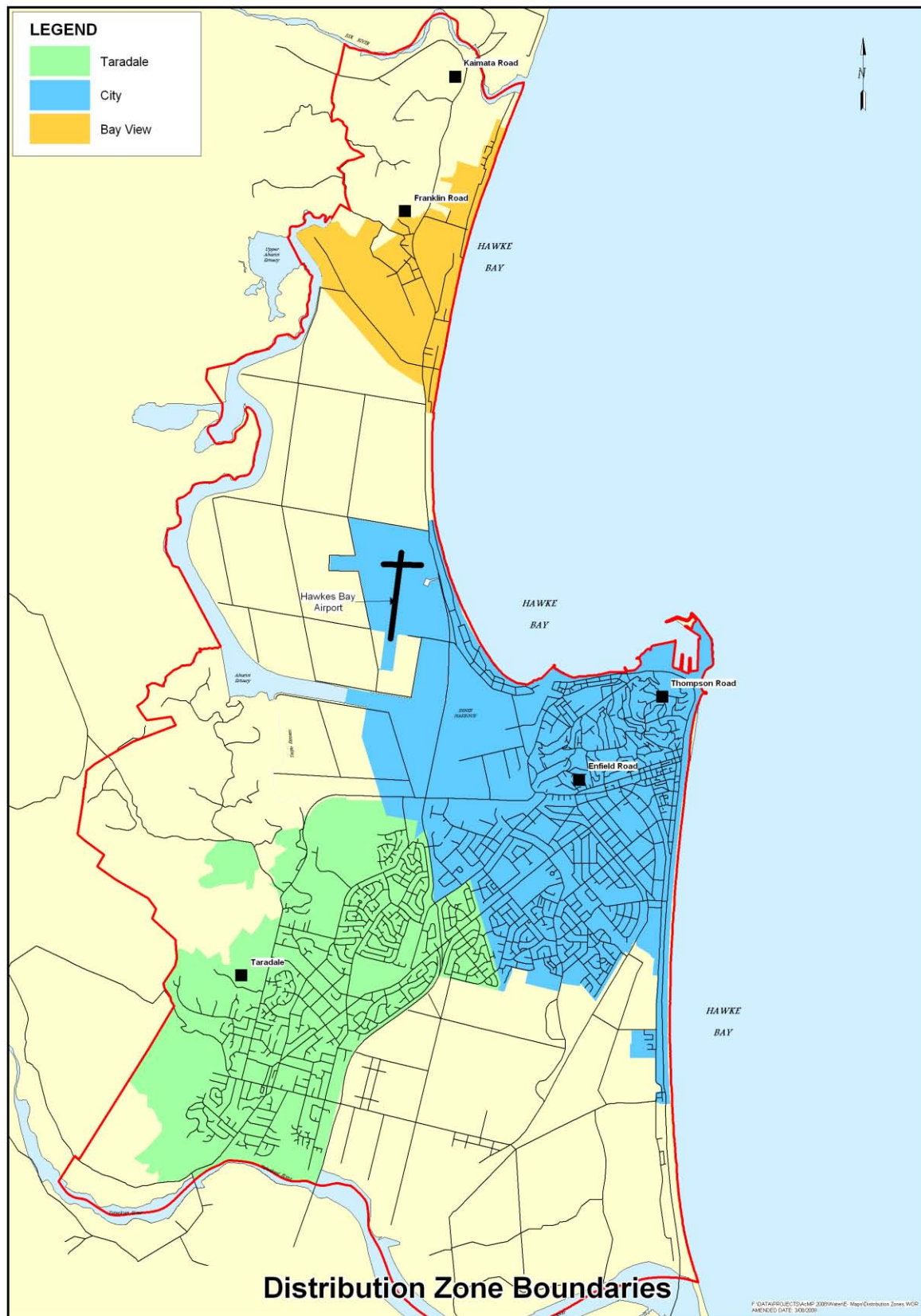


**Figure 16 NCC Water – Booster Zones (Napier Hill)**

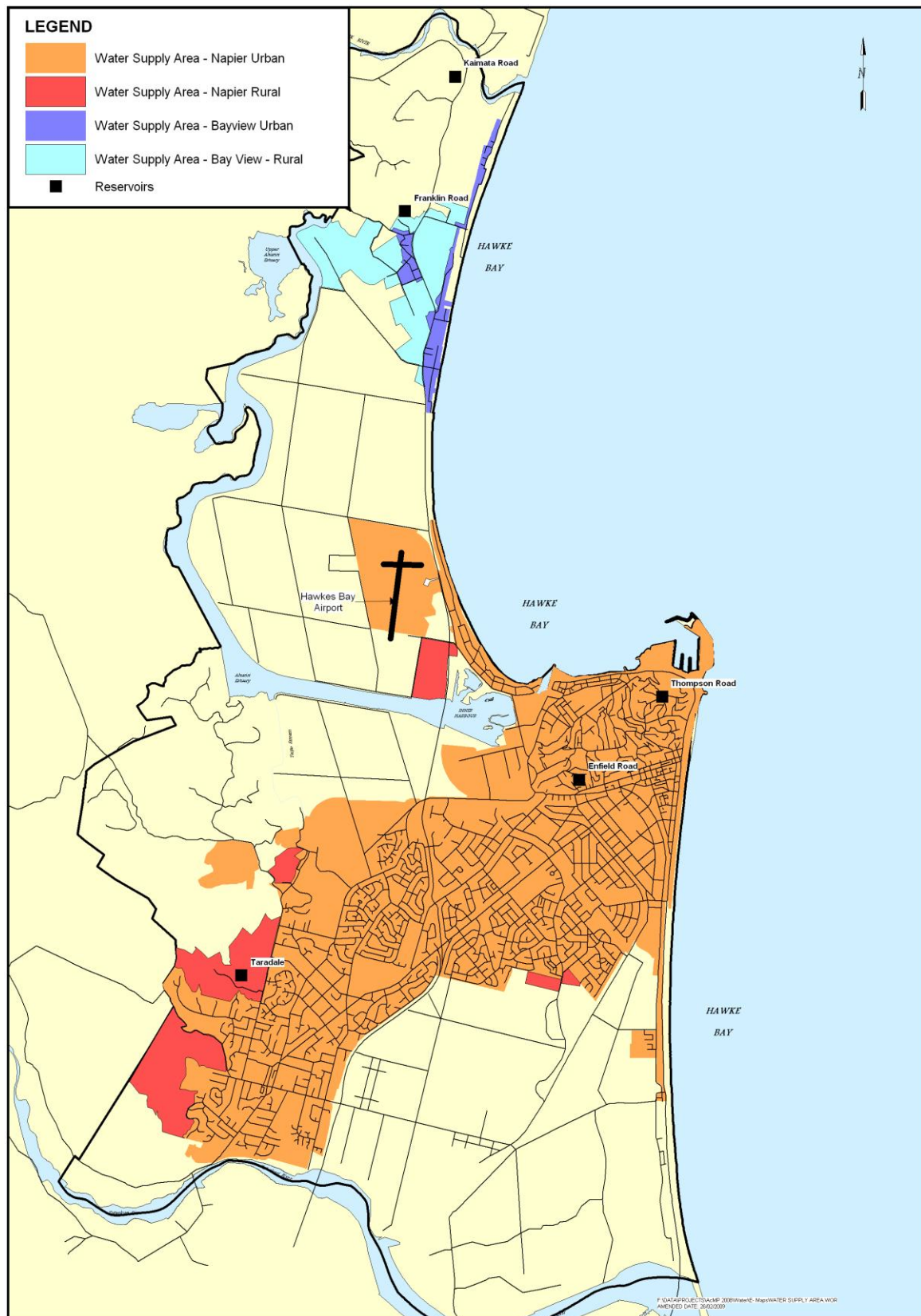


**Figure 17 NCC Water Aquifer Quality**



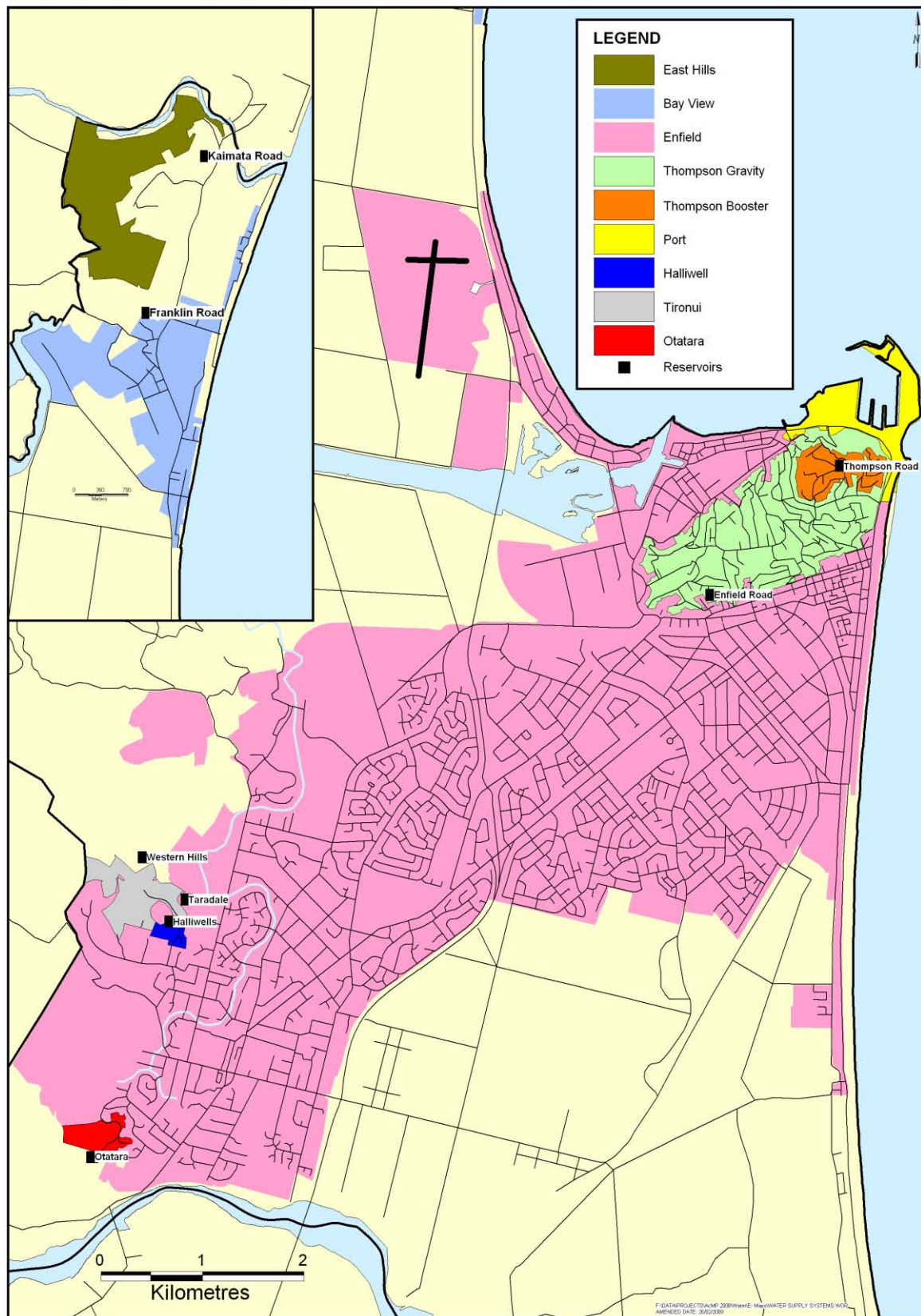


**Figure 18 NCC Water – Distribution zones**



**Figure 19 NCC Water - Supply areas**

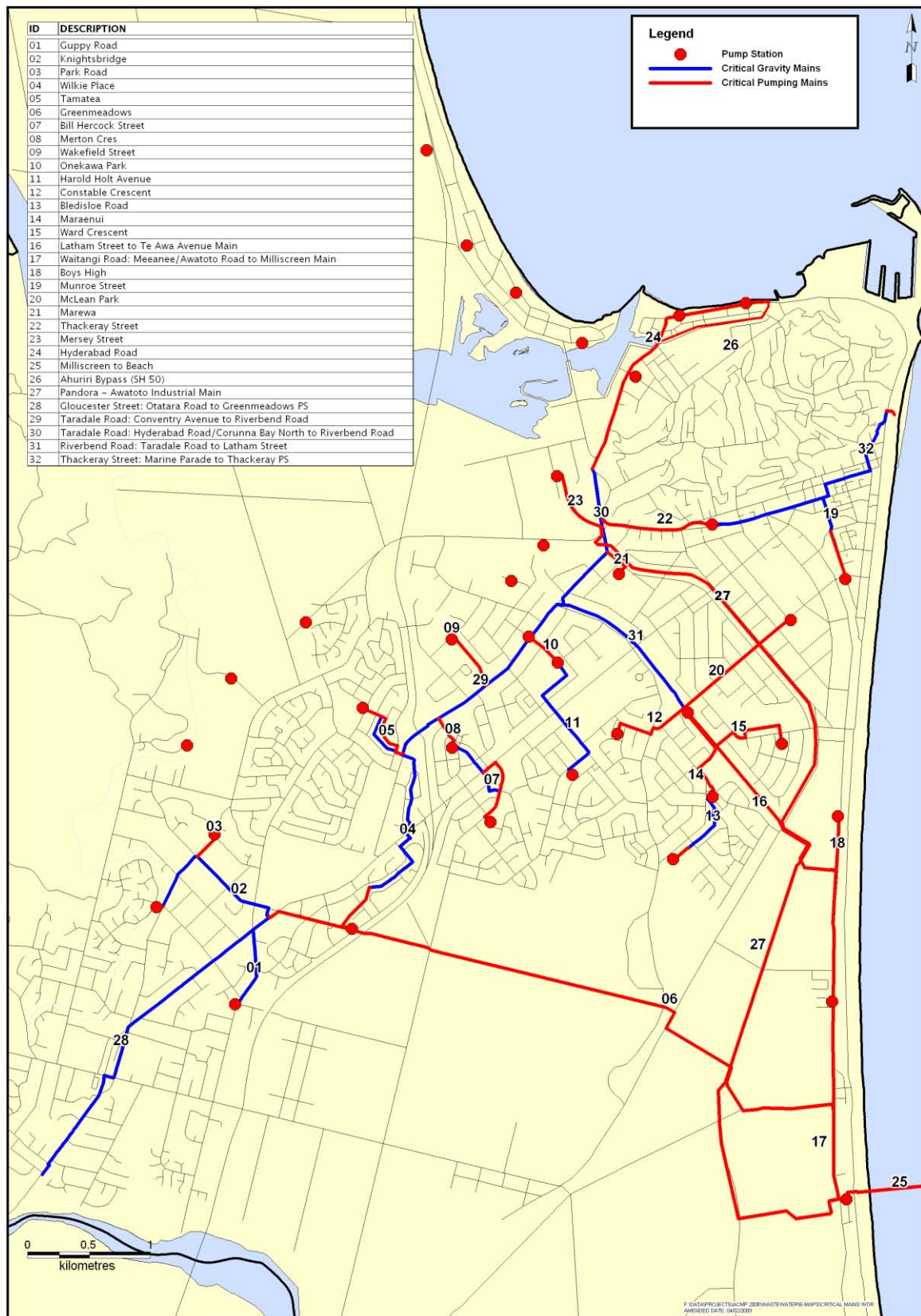




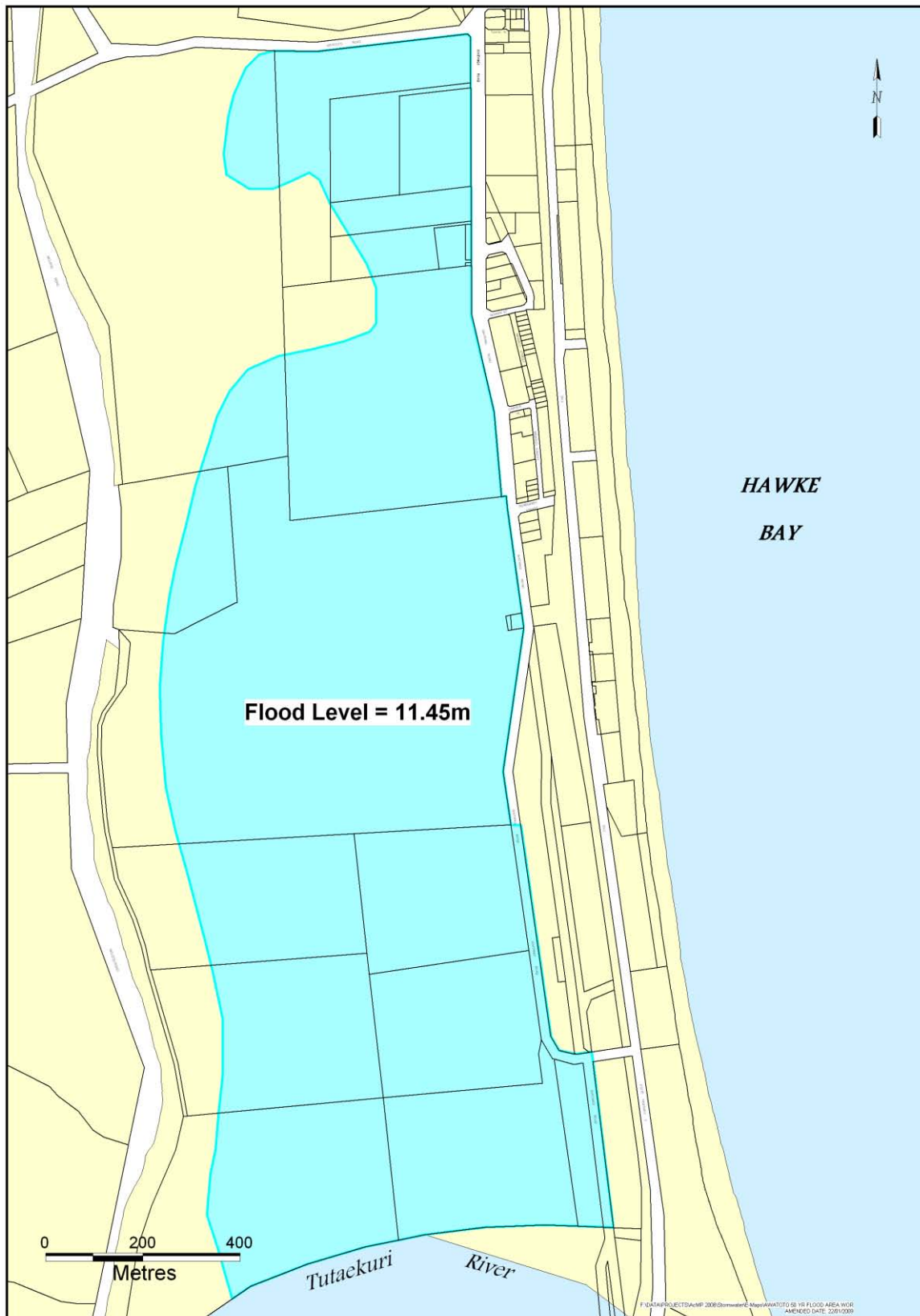


**Figure 21 NCC Sewer – Primary reticulation**



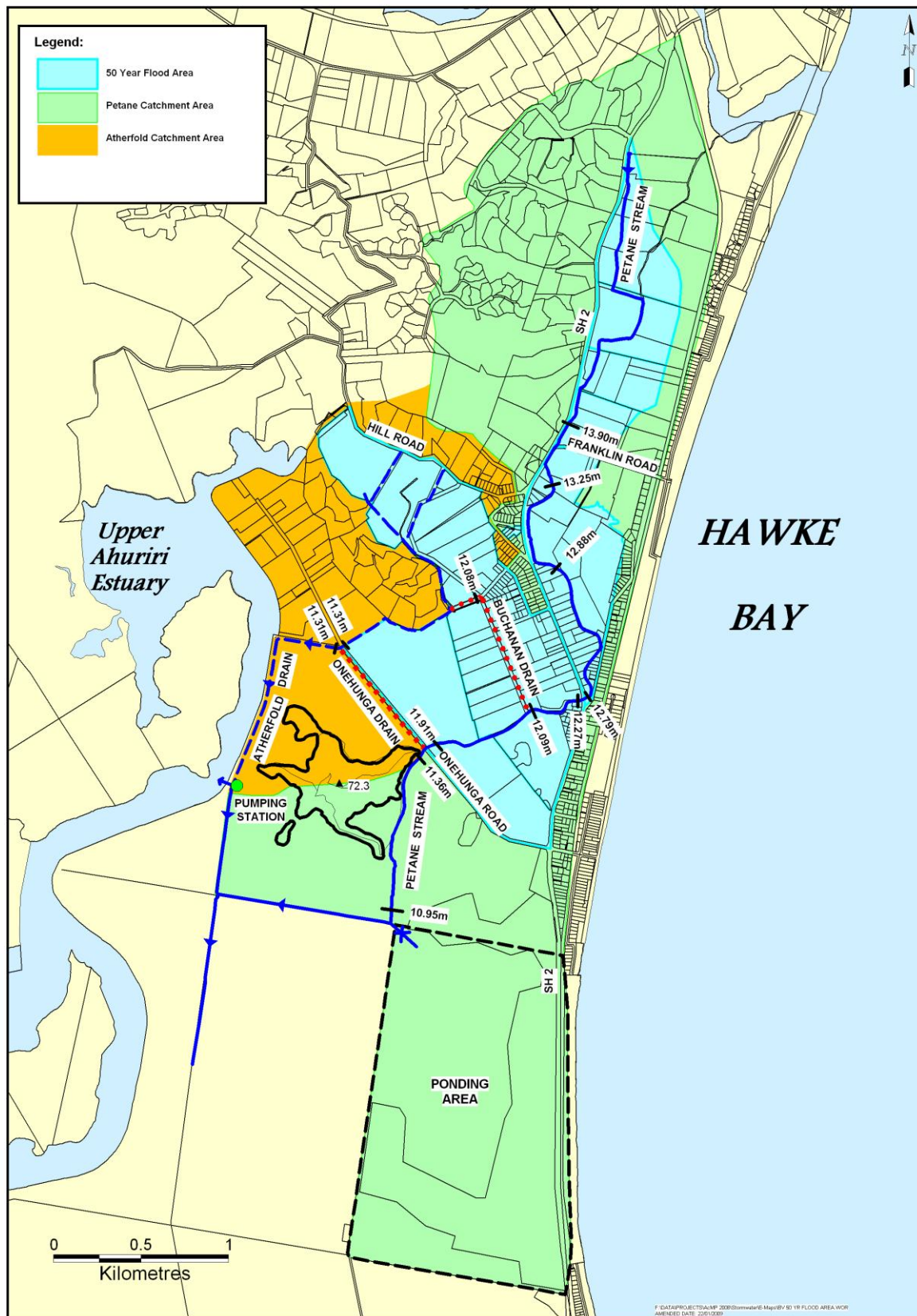


**Figure 22 NCC Sewer – Critical reticulation**

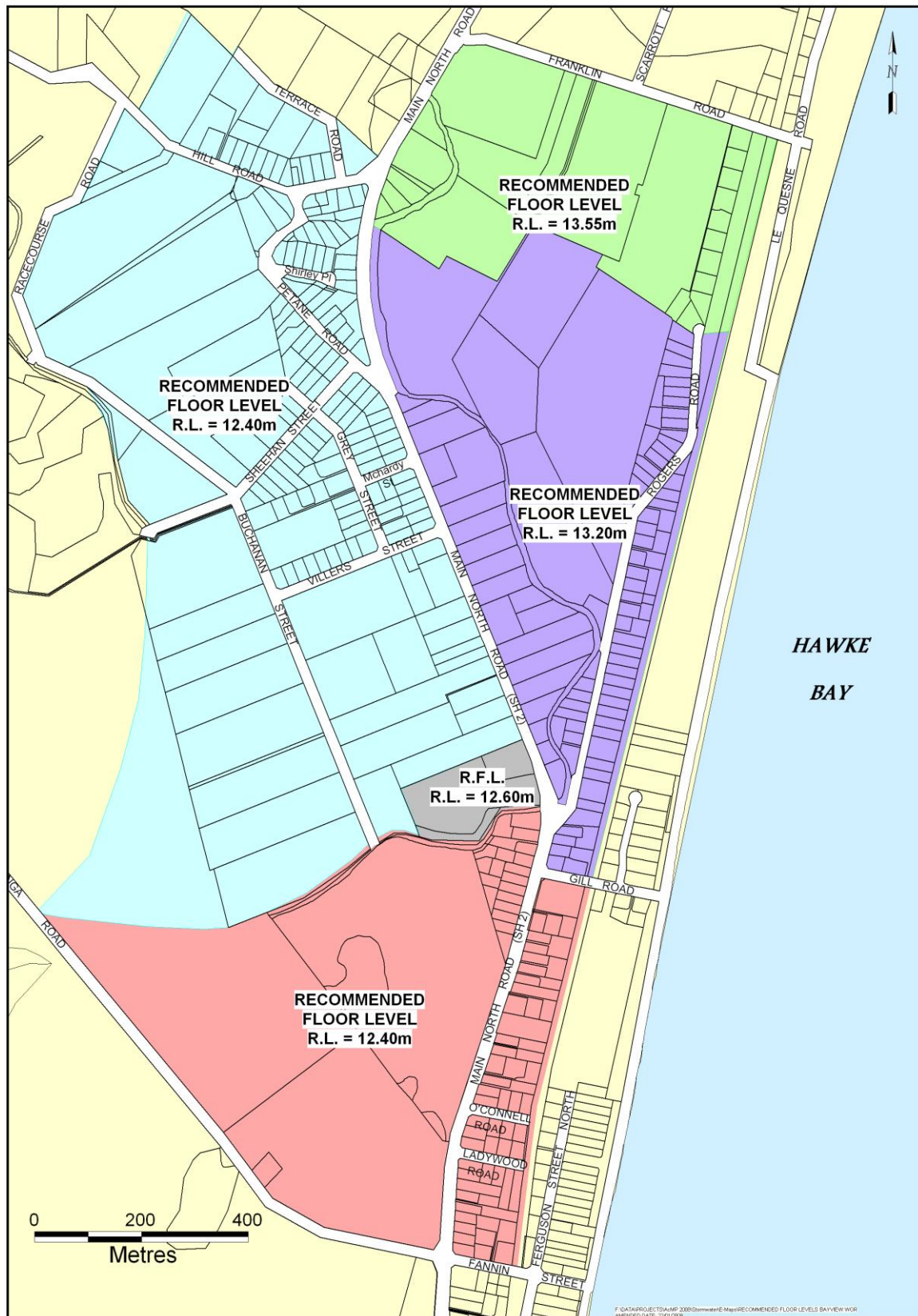


**Figure 23 NCC Stormwater - 50 year ponding Awatoto**





**Figure 24 NCC Stormwater - Bay View 50 year flood level**



**Figure 25 NCC Stormwater - Recommended floor levels Bay View**



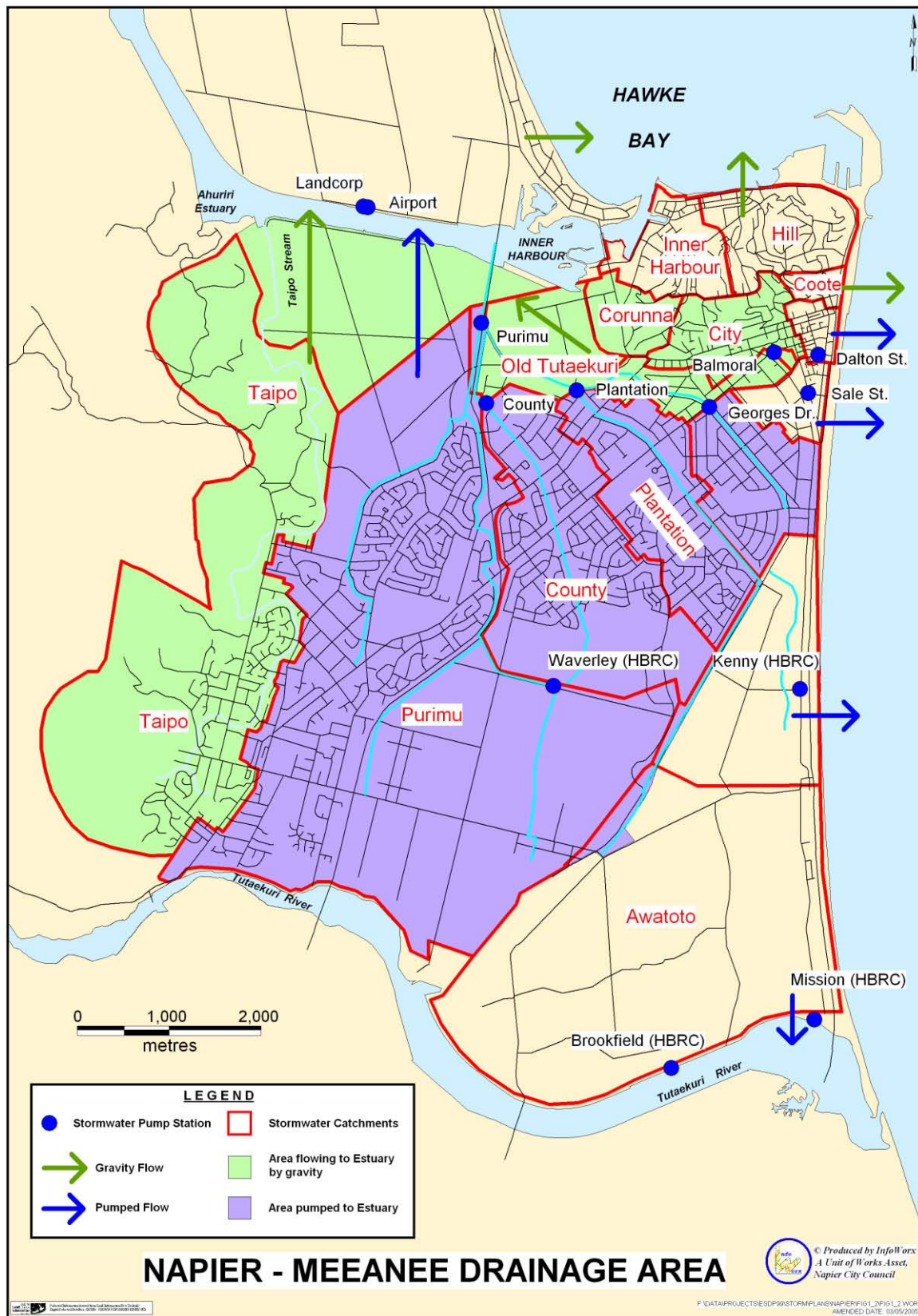
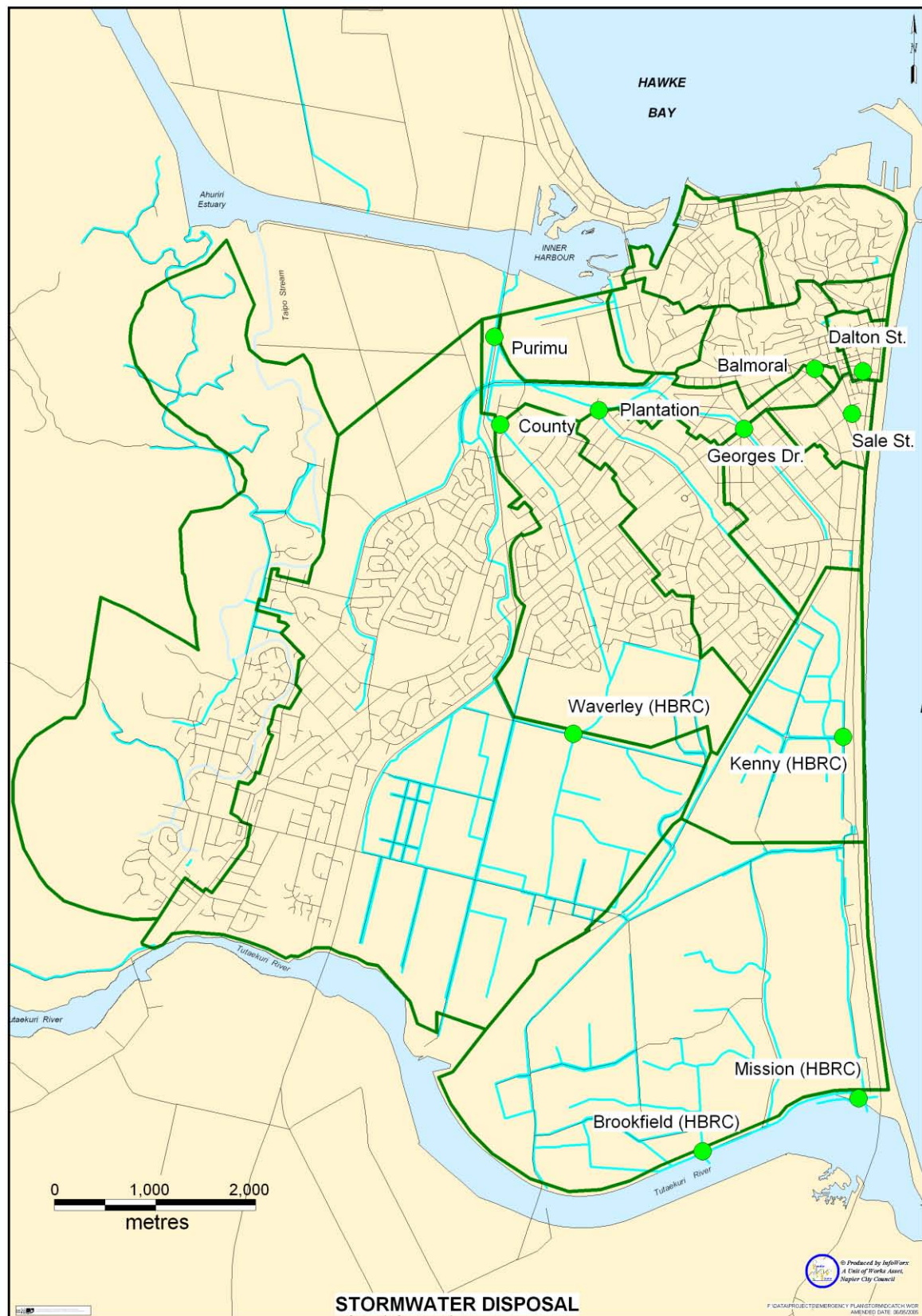


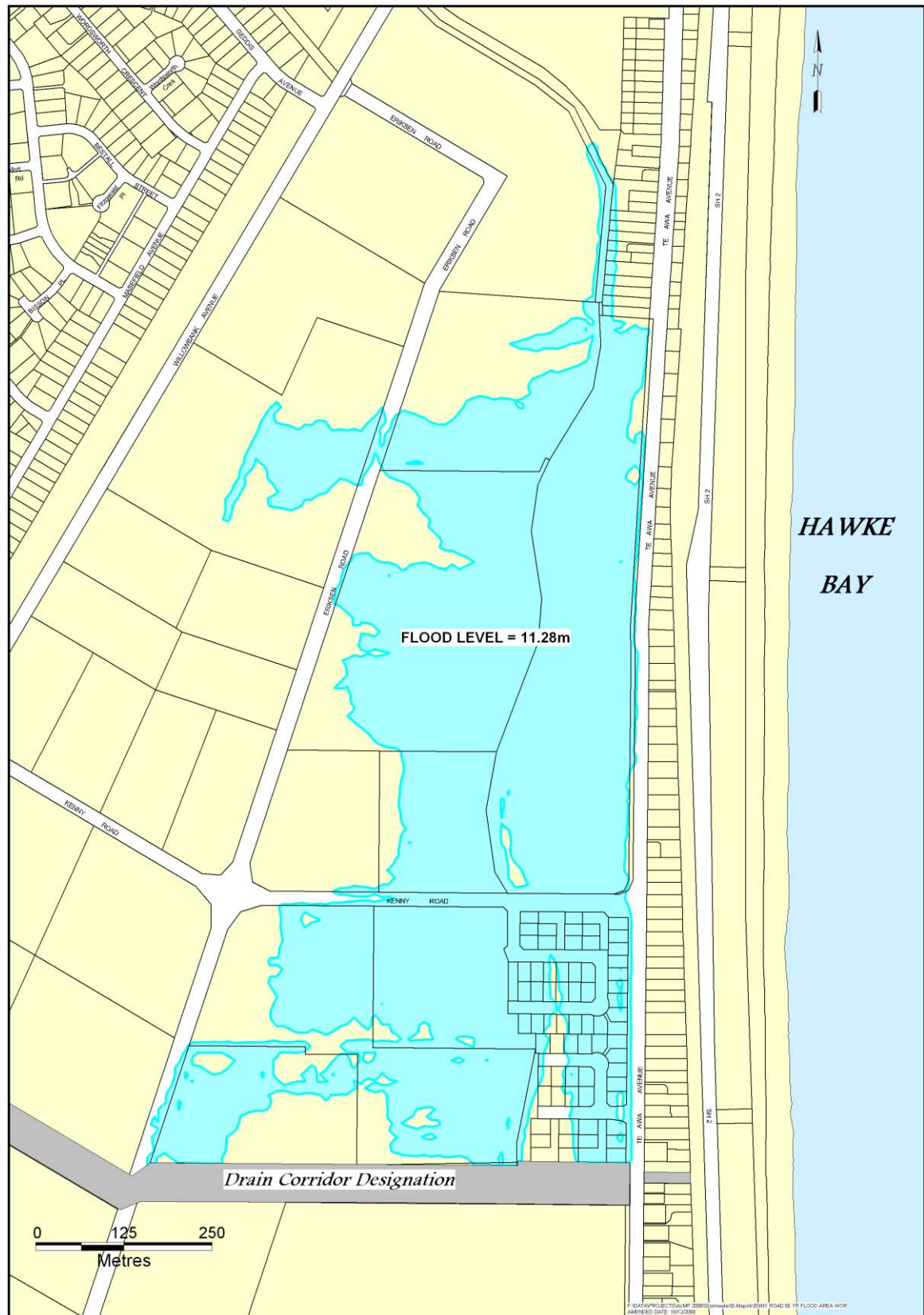
Figure 26 NCC Stormwater – Napier/Meeanee Drainage areas



**Figure 27 NCC Stormwater – Disposal**

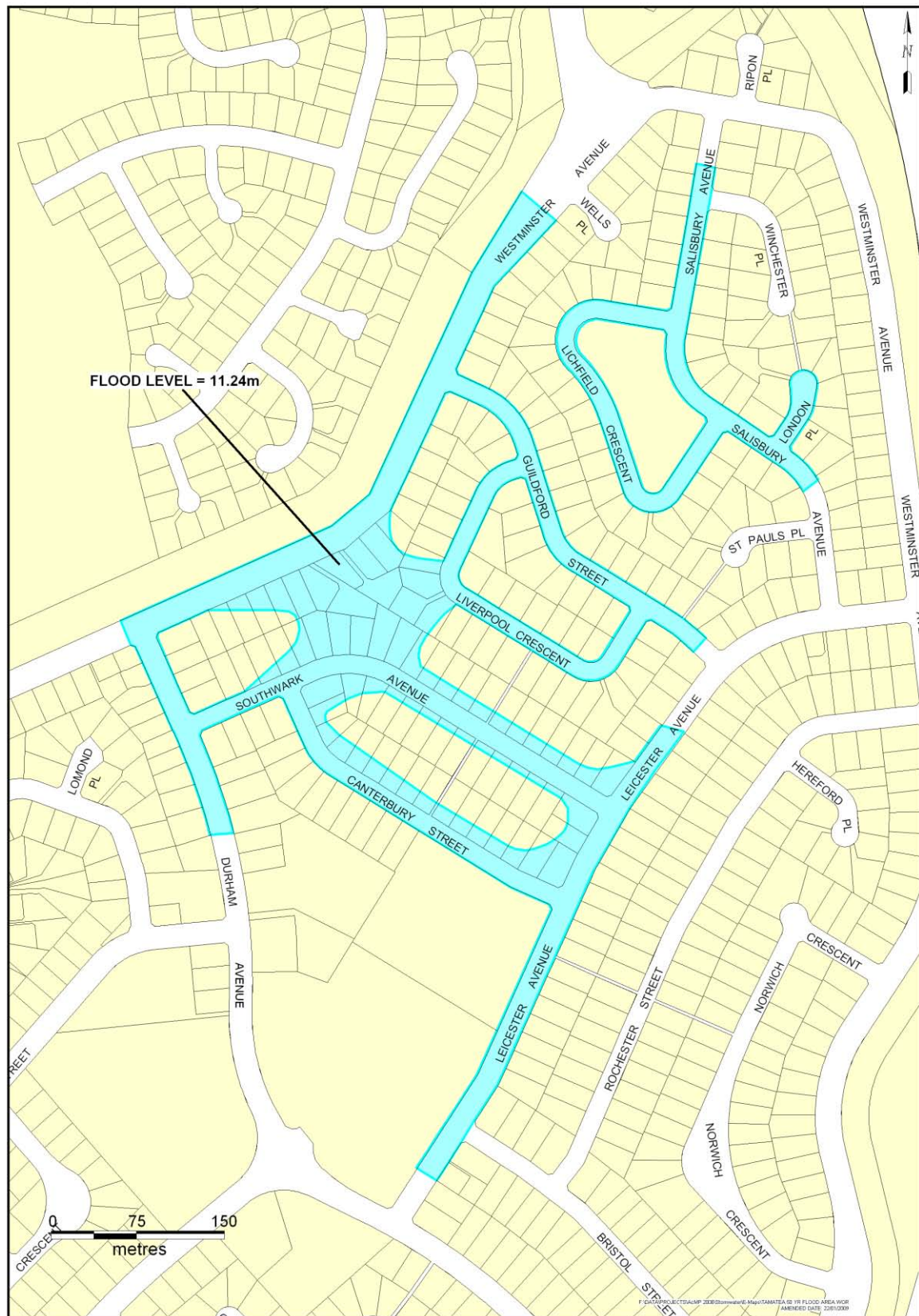






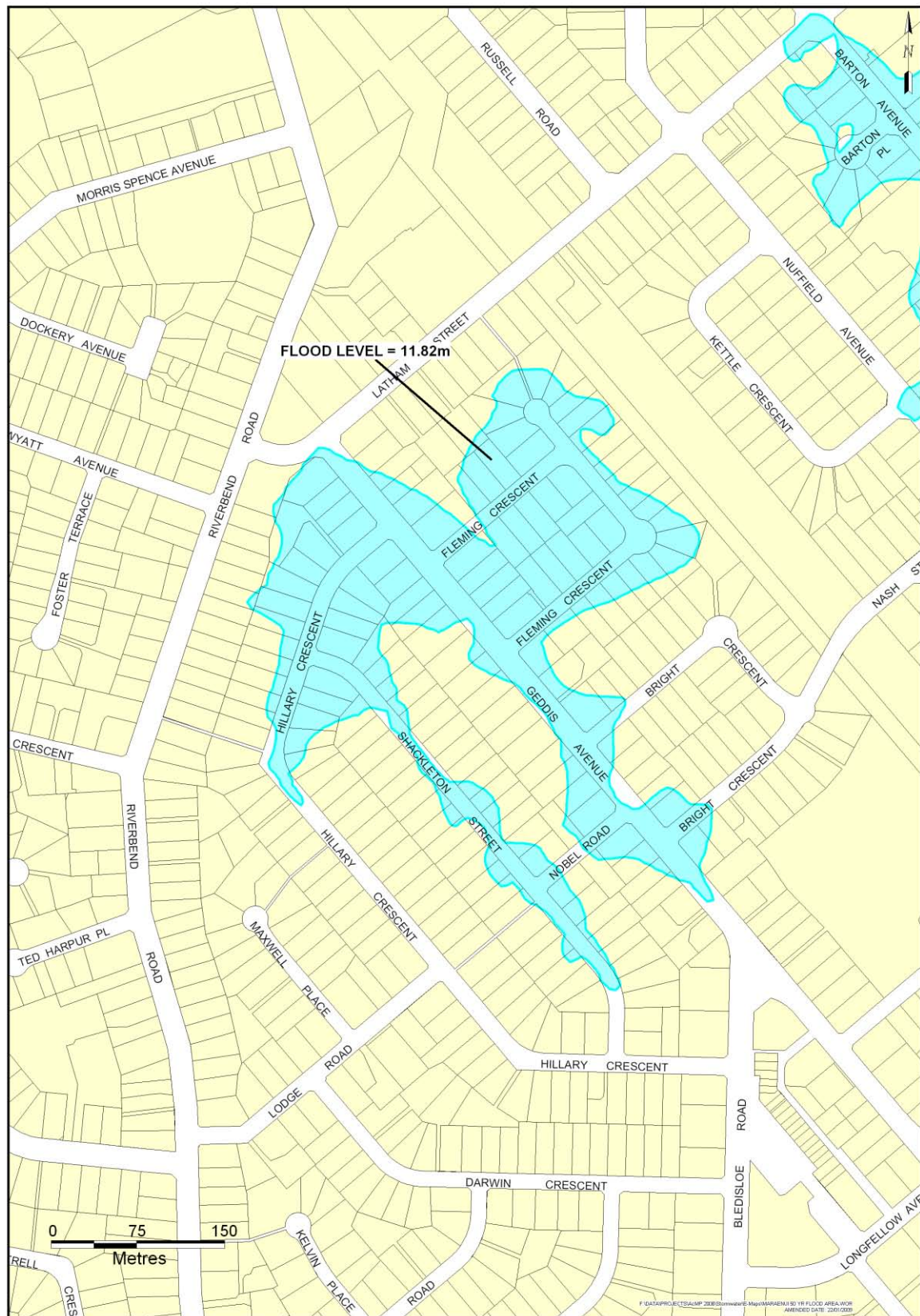
**Figure 29 NCC Stormwater - Kenny Road 50 year flood area**





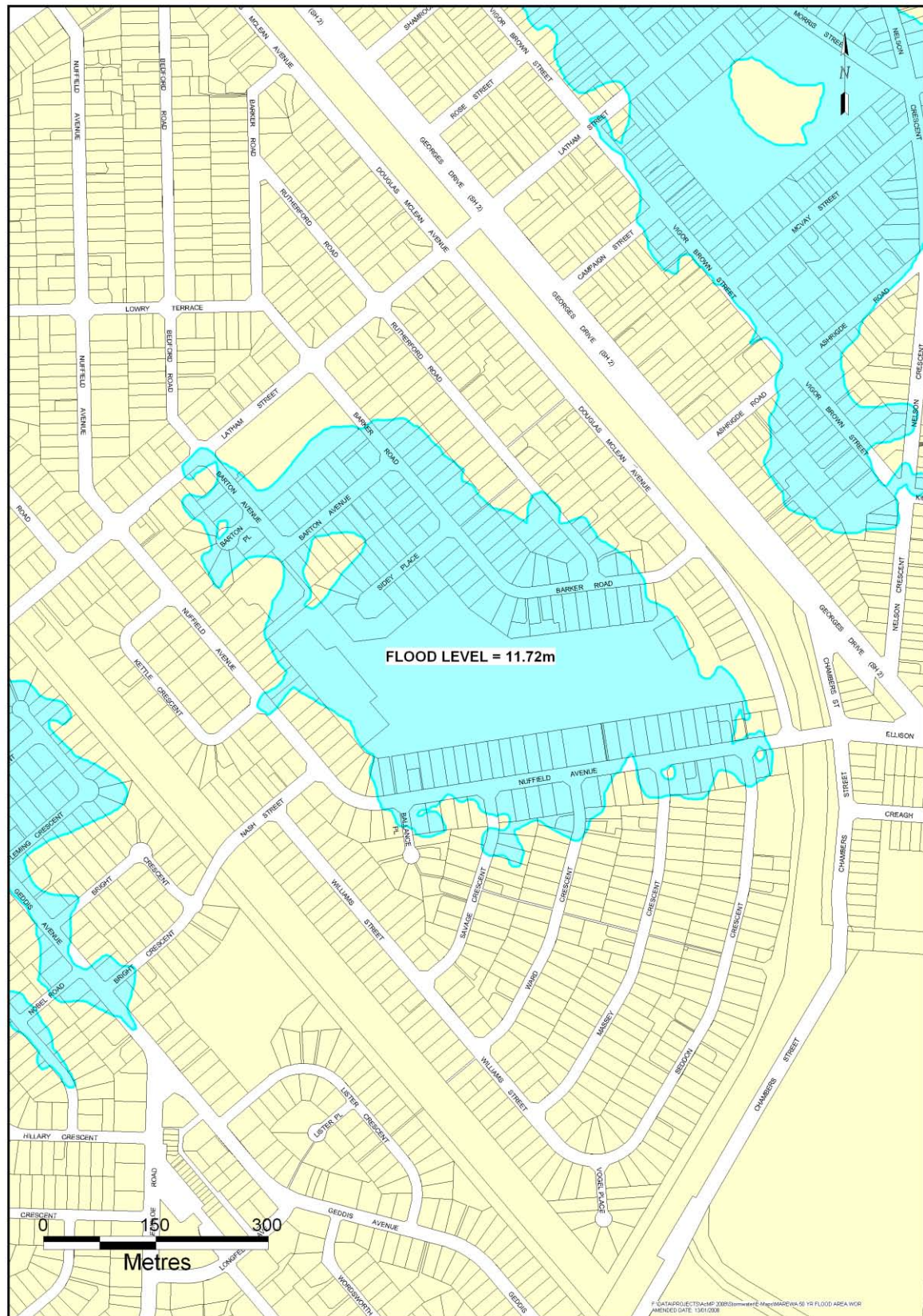
**Figure 30 NCC Stormwater - Tamatea 50 year flood area**





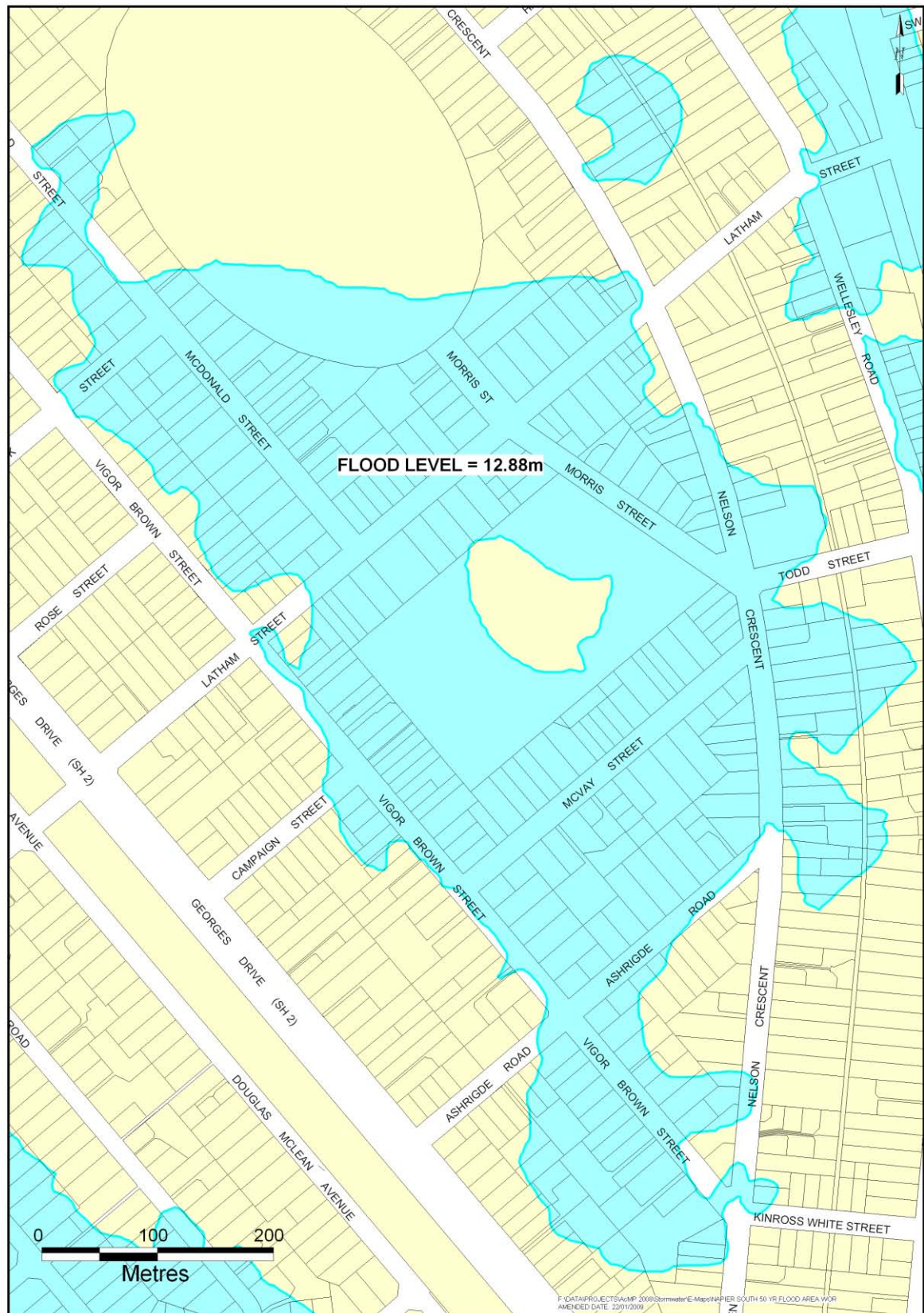
**Figure 31 NCC Stormwater - Maraenui 50 year flood area**





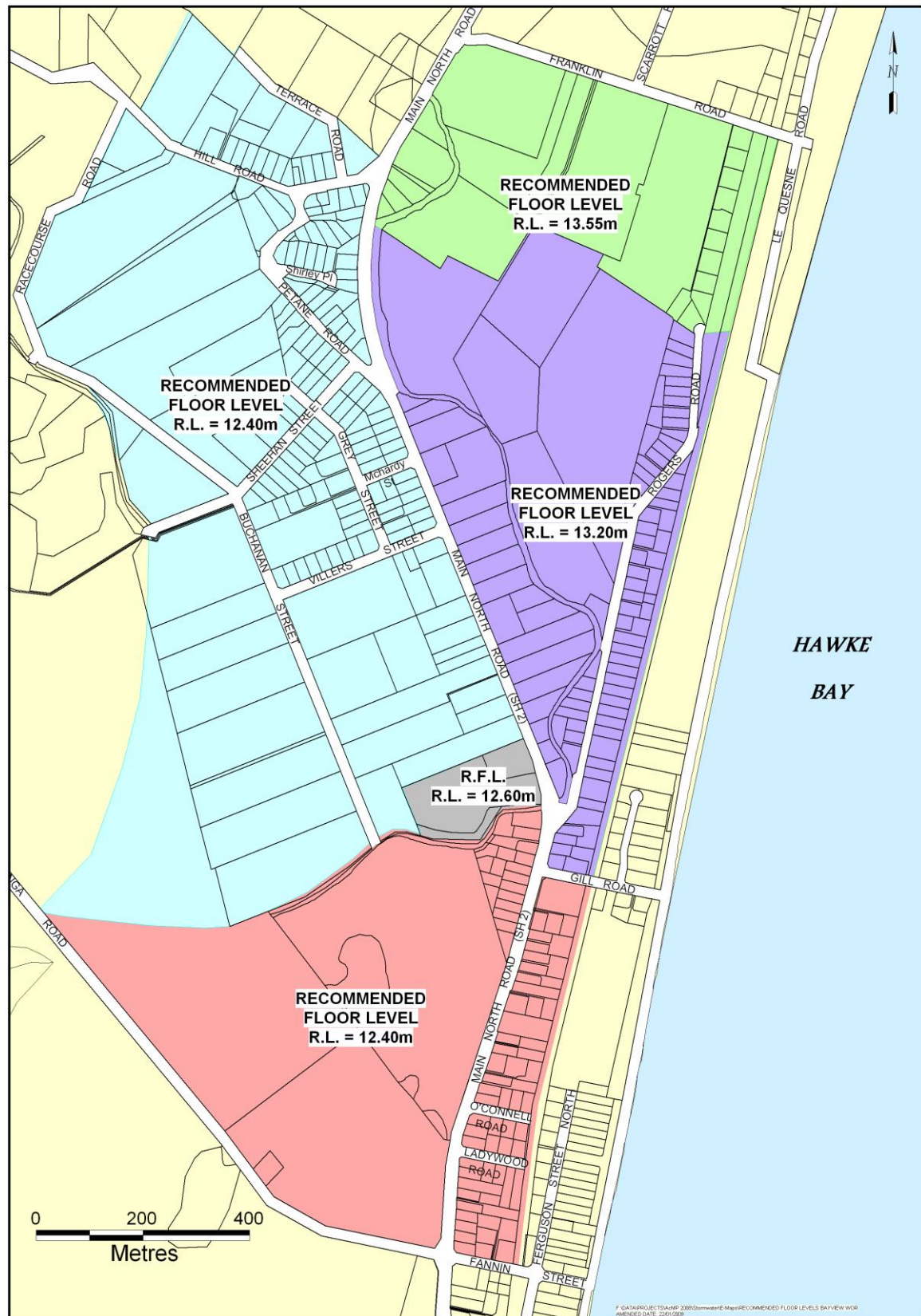
**Figure 32 NCC Stormwater - Marewa 50 year flood area**



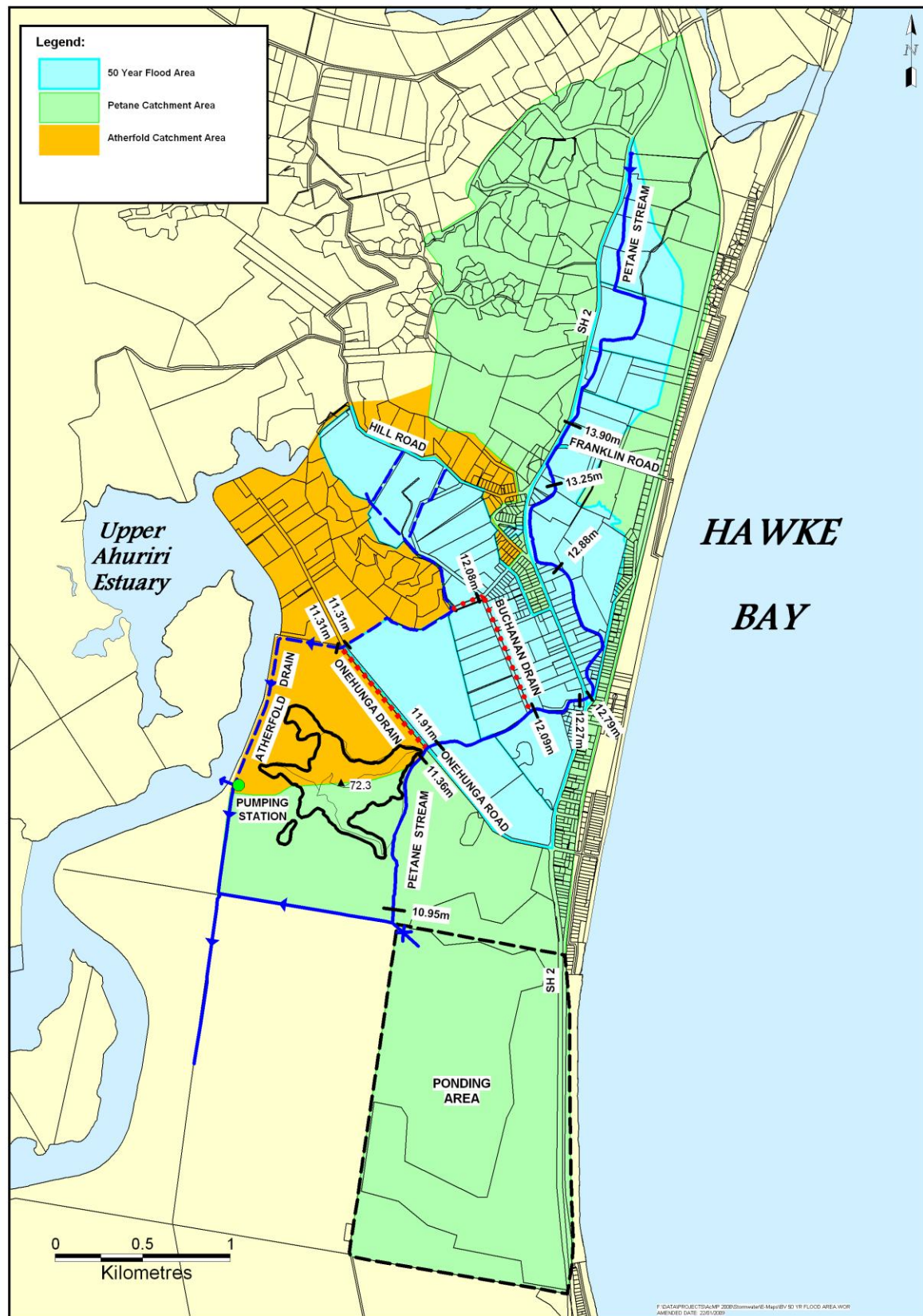


**Figure 33 NCC Stormwater - Napier South 50 year flood area**





**Figure 34 NCC Stormwater - Recommended 50 year flood levels Bay View**



**Figure 35 NCC Stormwater - Bay View 50 year flood levels**



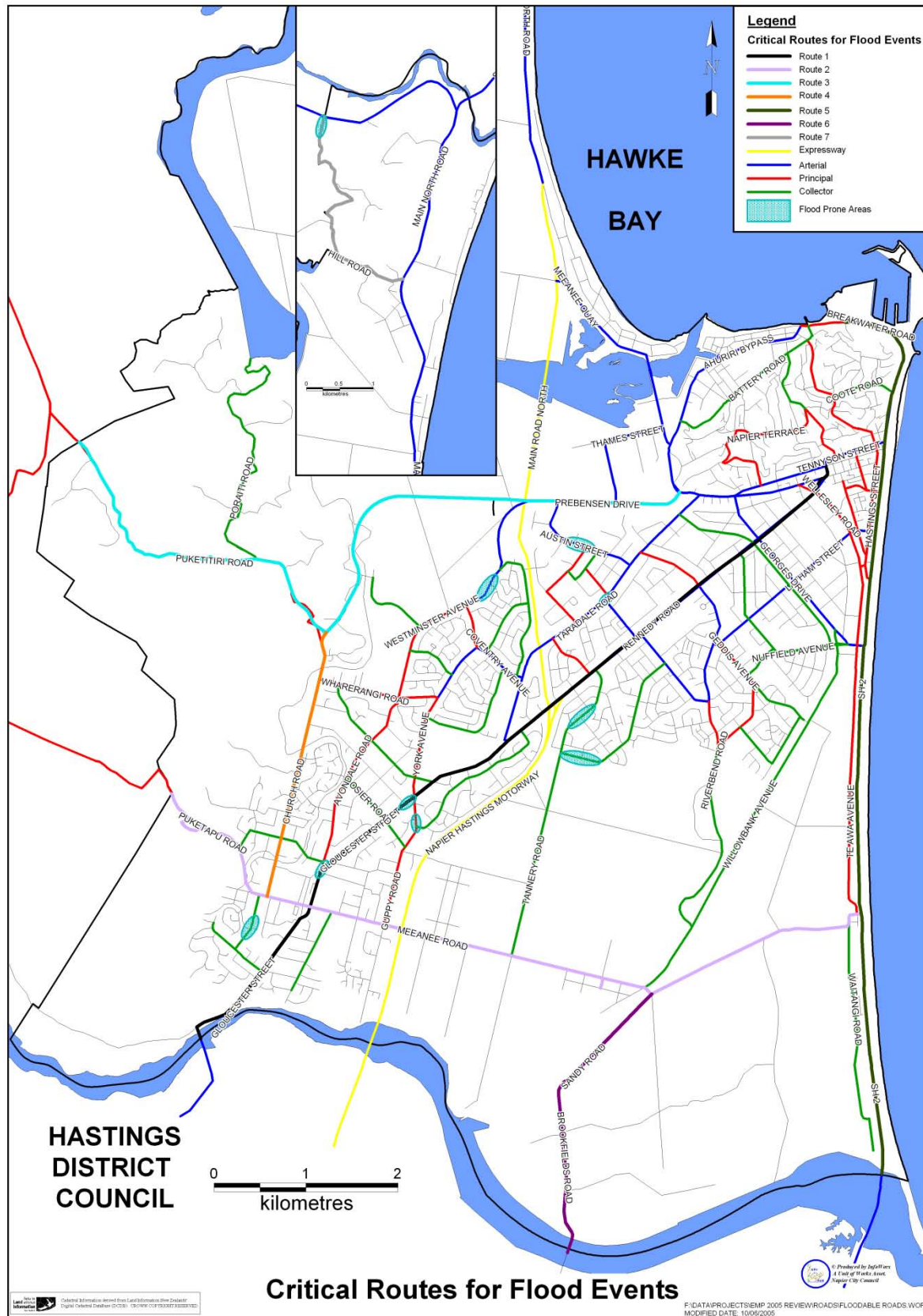
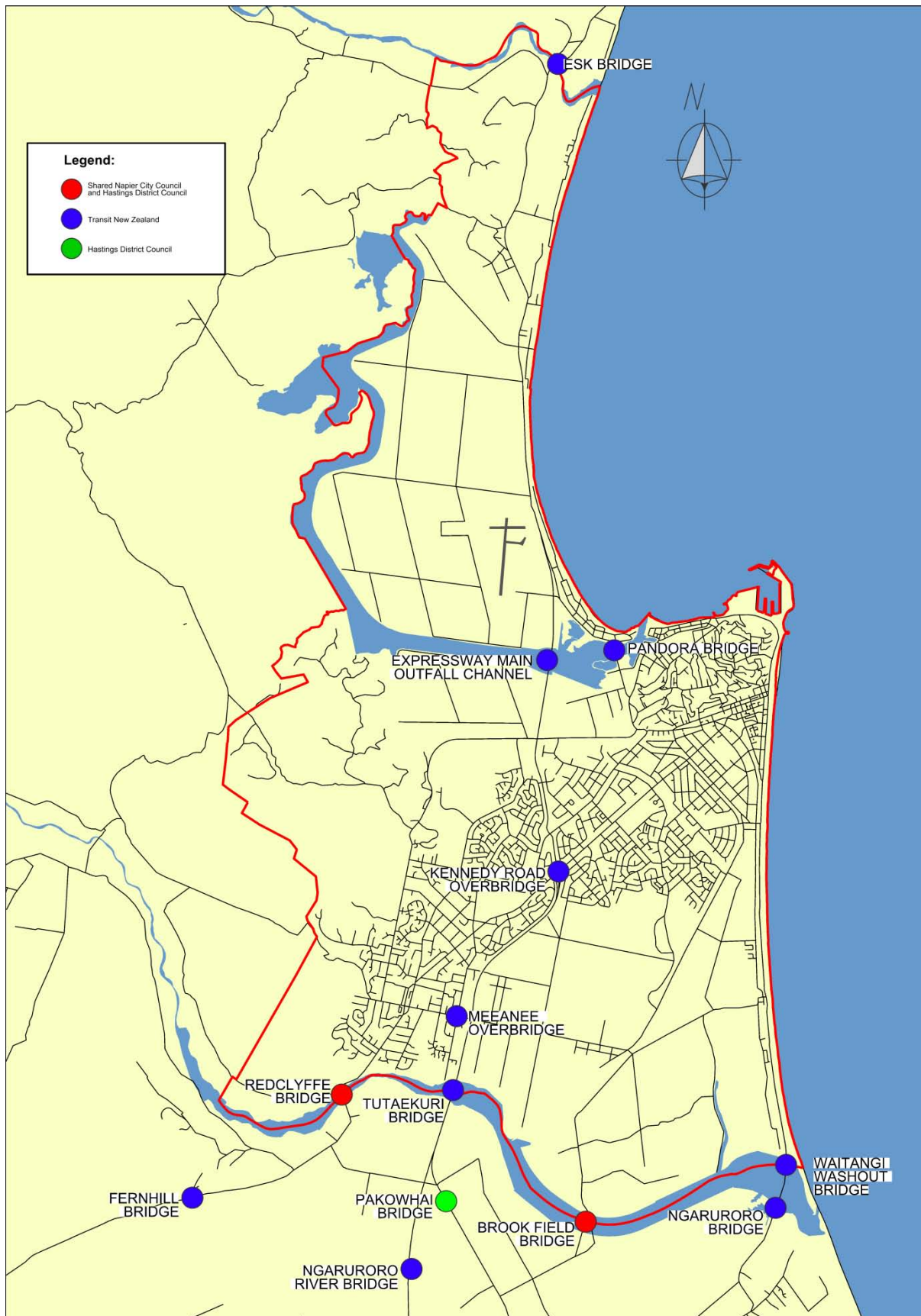
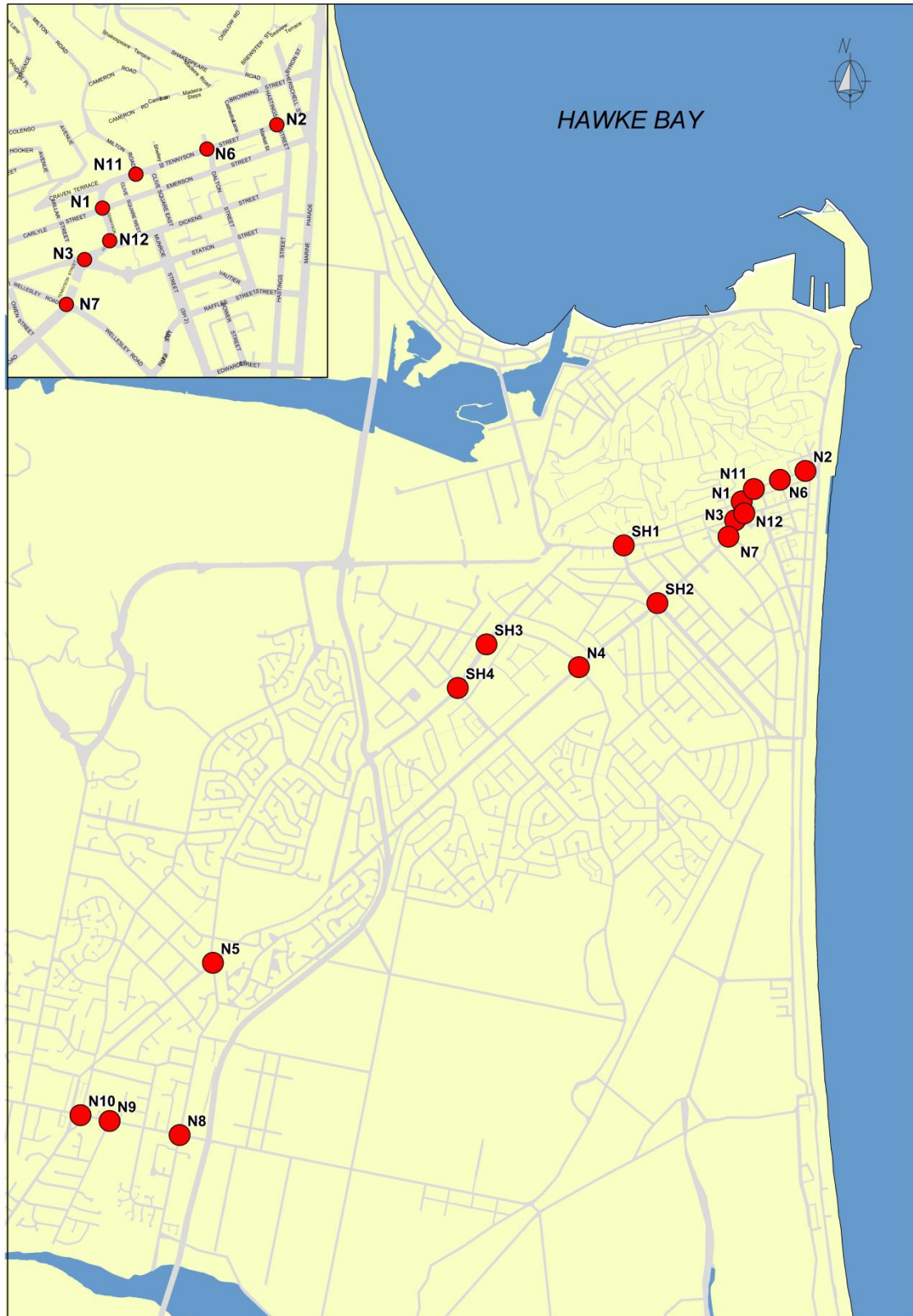


Figure 36 NCC Stormwater –Critical routes for flood events

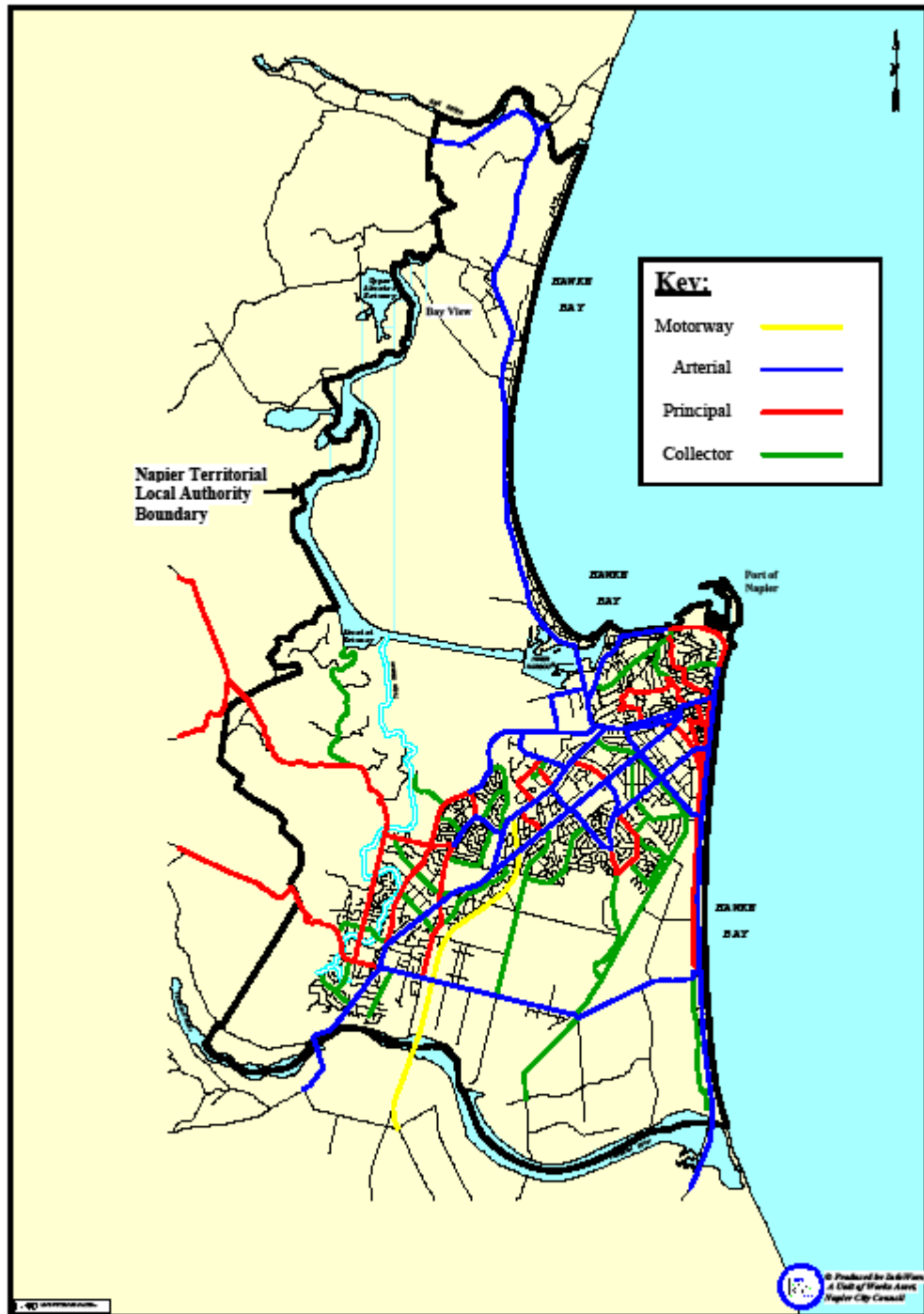


**Figure 37 NCC Transport - Bridges**





**Figure 38 NCC Transport - Traffic signals**



**FIGURE 2.5**  
**ROAD NETWORK HIERARCHY**

SCALE 1:100,000

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a Unit of Work Area  
Napier City Council

**Figure 39 NCC Transport Hierarchy**

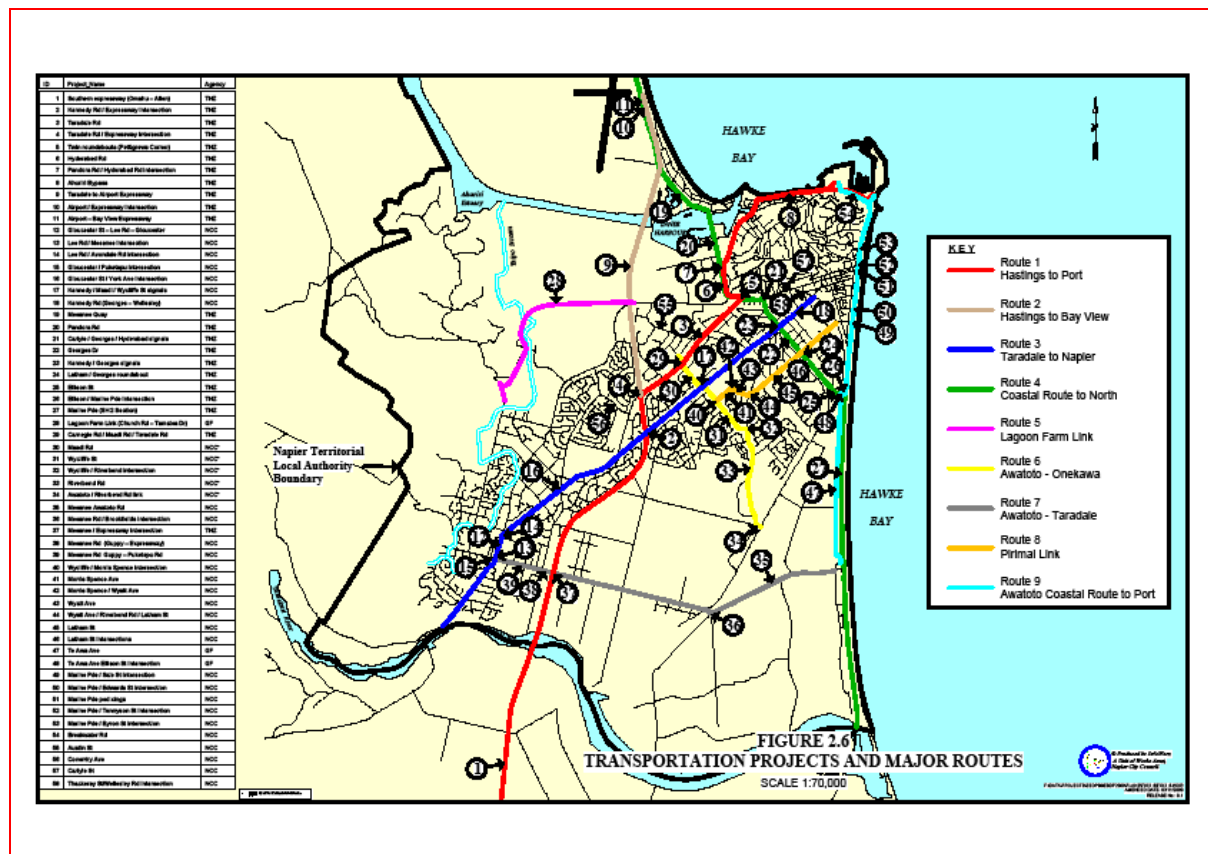


Figure 40 NCC Transport – Priority projects

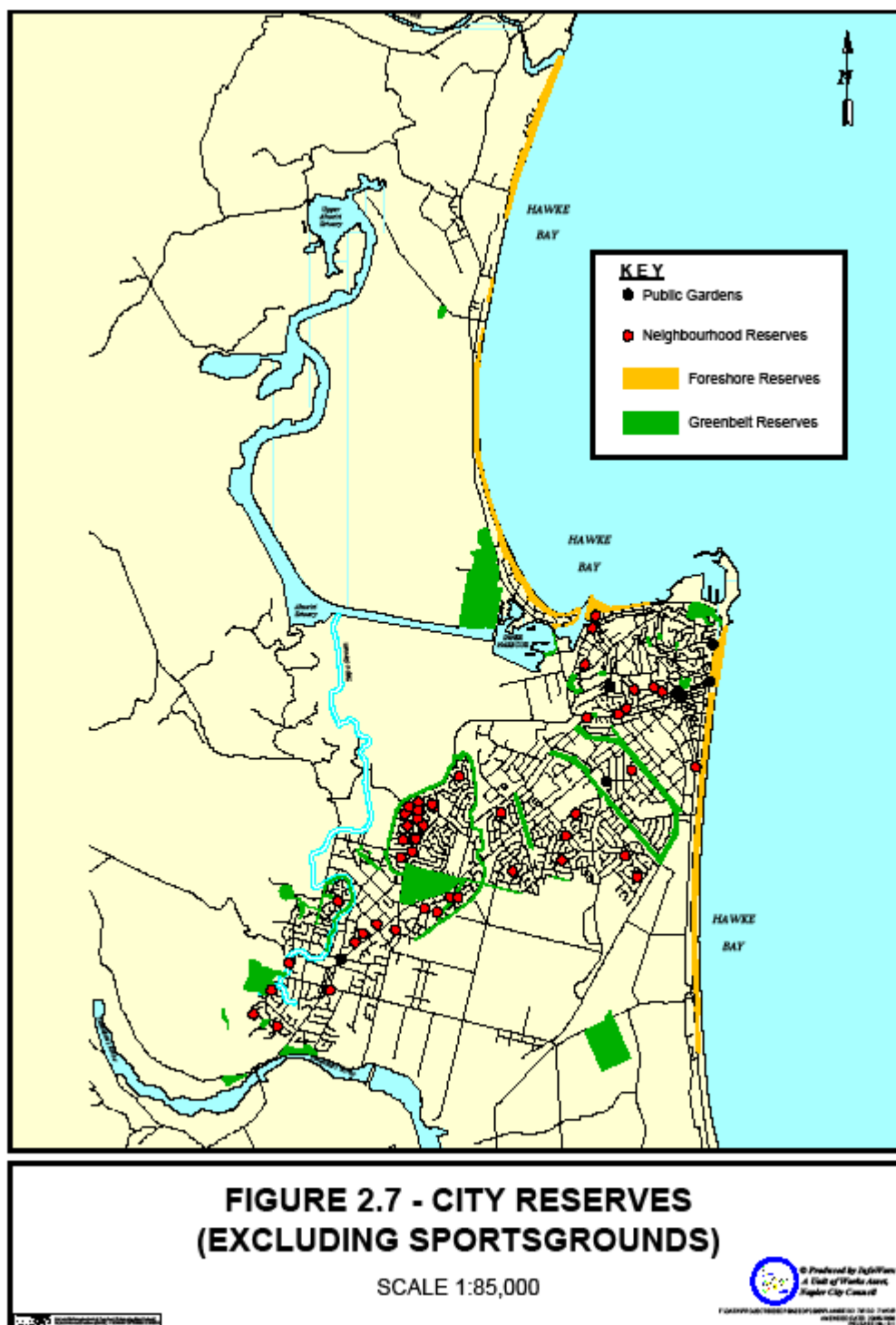


Figure 41 NCC Reserves (excluding sportsgrounds)



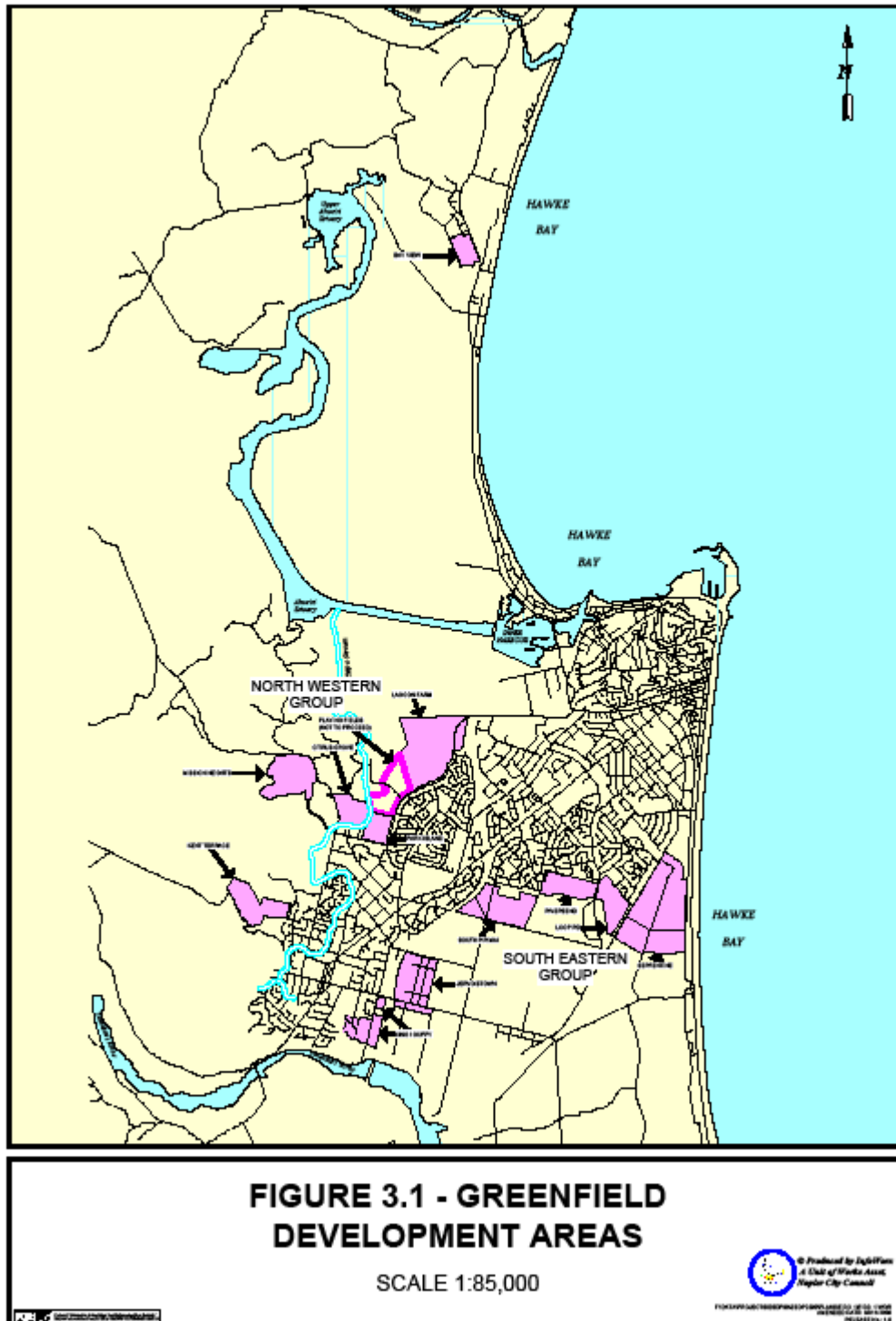


**FIGURE 2.8**  
**DISTRIBUTION OF SPORTSGROUNDS**

SCALE 1:50,000

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**Figure 42 NCC Sportsgrounds**



**Figure 43 NCC Development Areas – Overview**



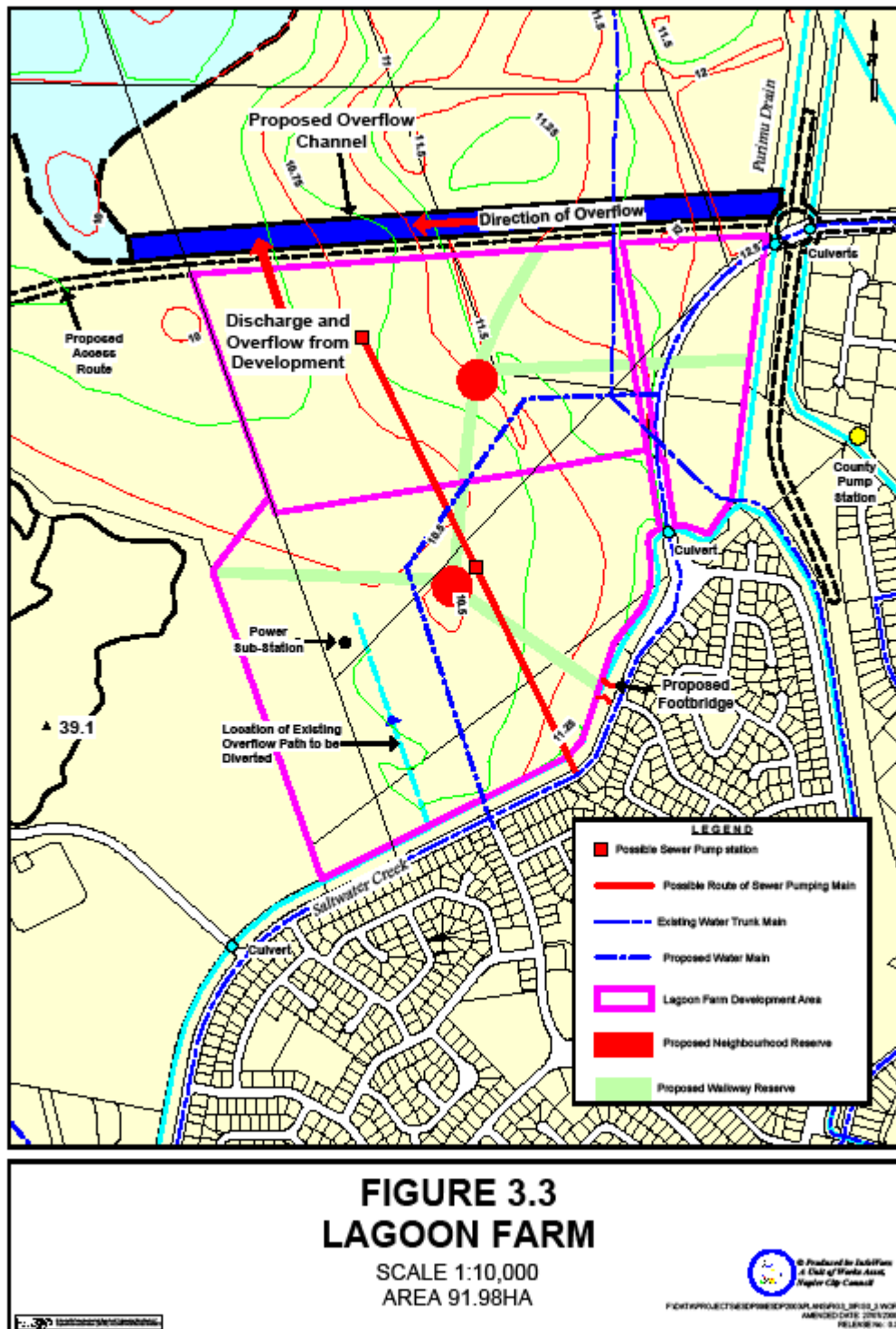


Figure 45 NCC Development Areas – Lagoon Farm





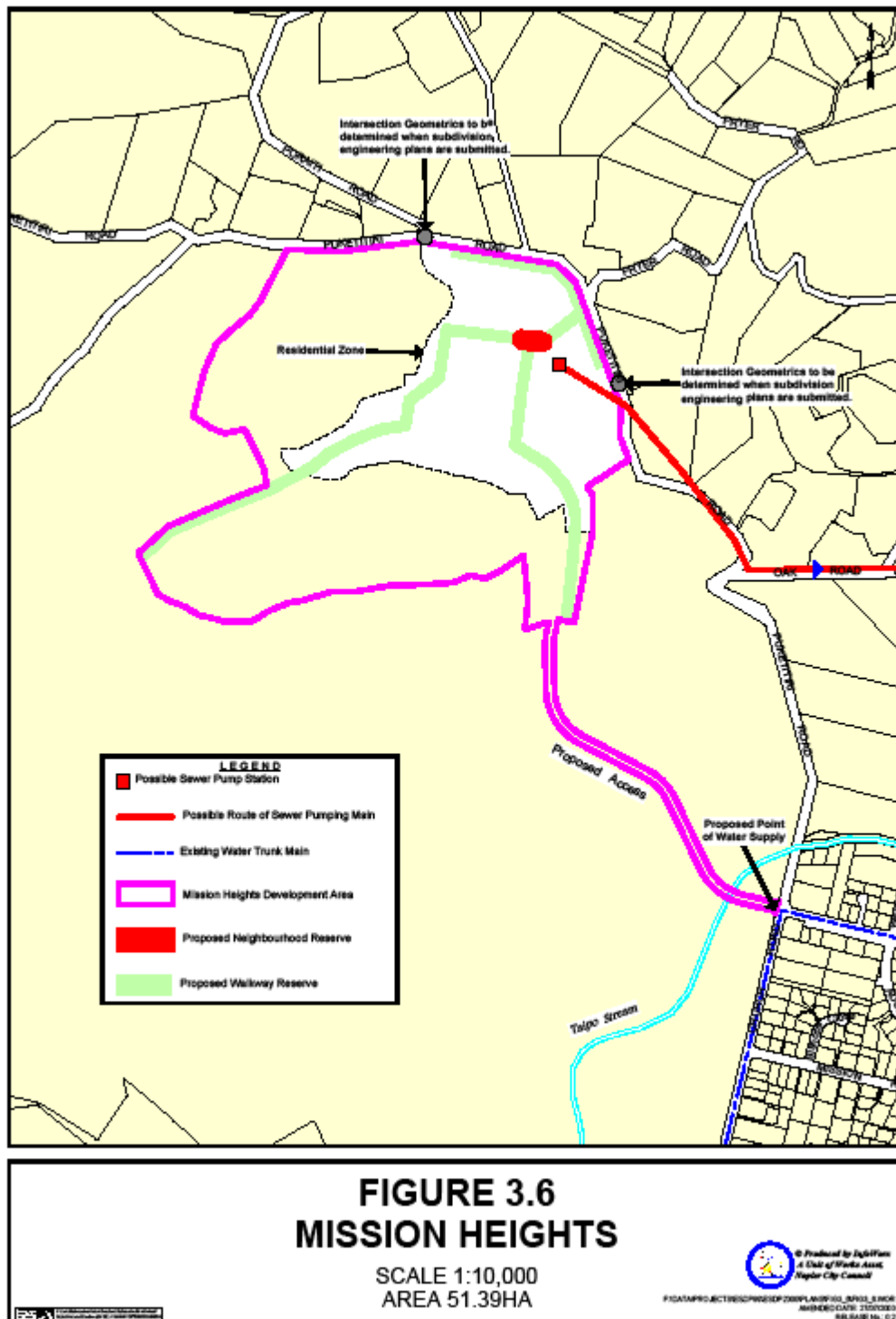


Figure 47 NCC Development Areas – Mission Heights



**FIGURE 3.7**  
**PROPOSED INFILL ZONES**

**Figure 48 NCC Development Areas – Proposed Infill zones**





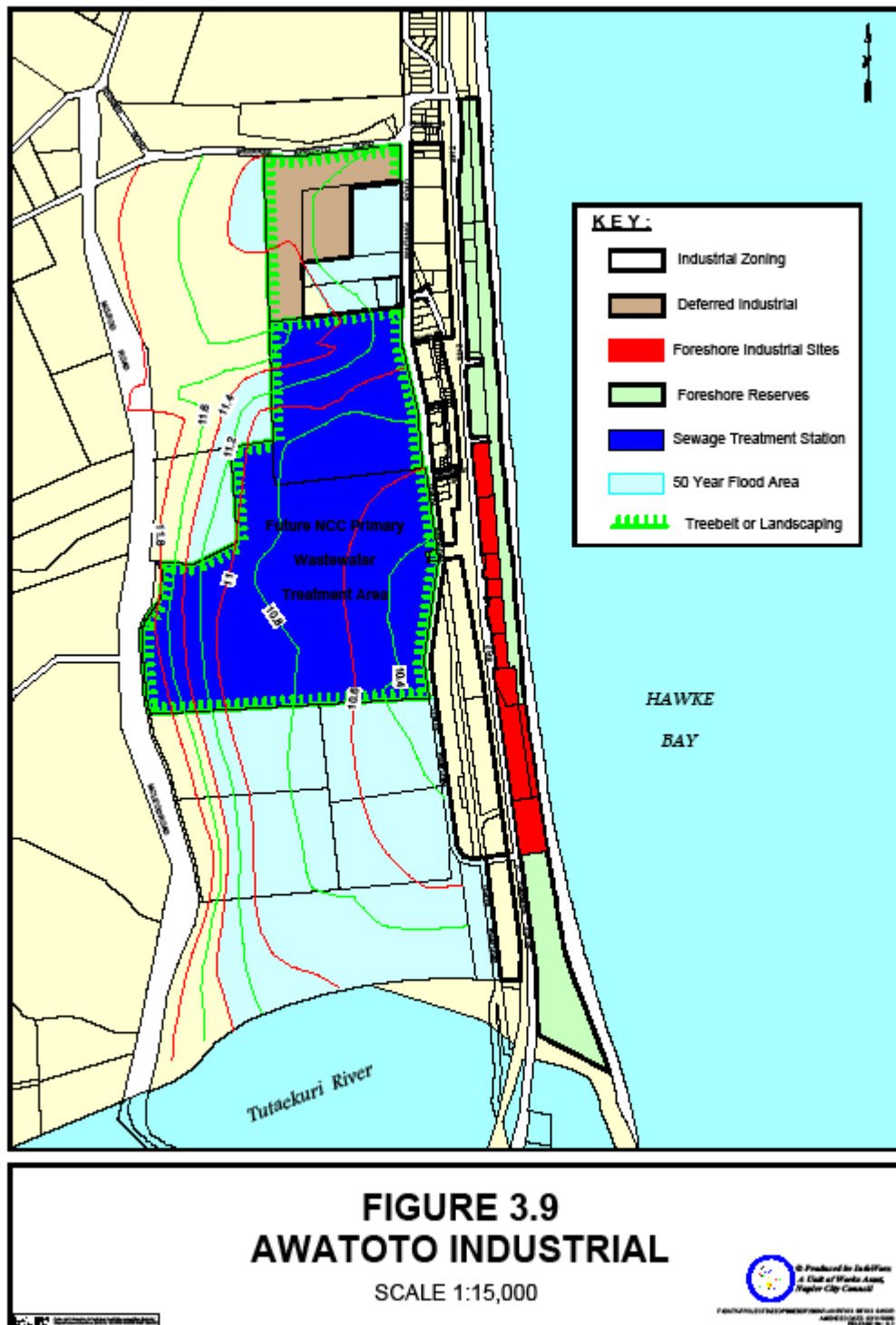
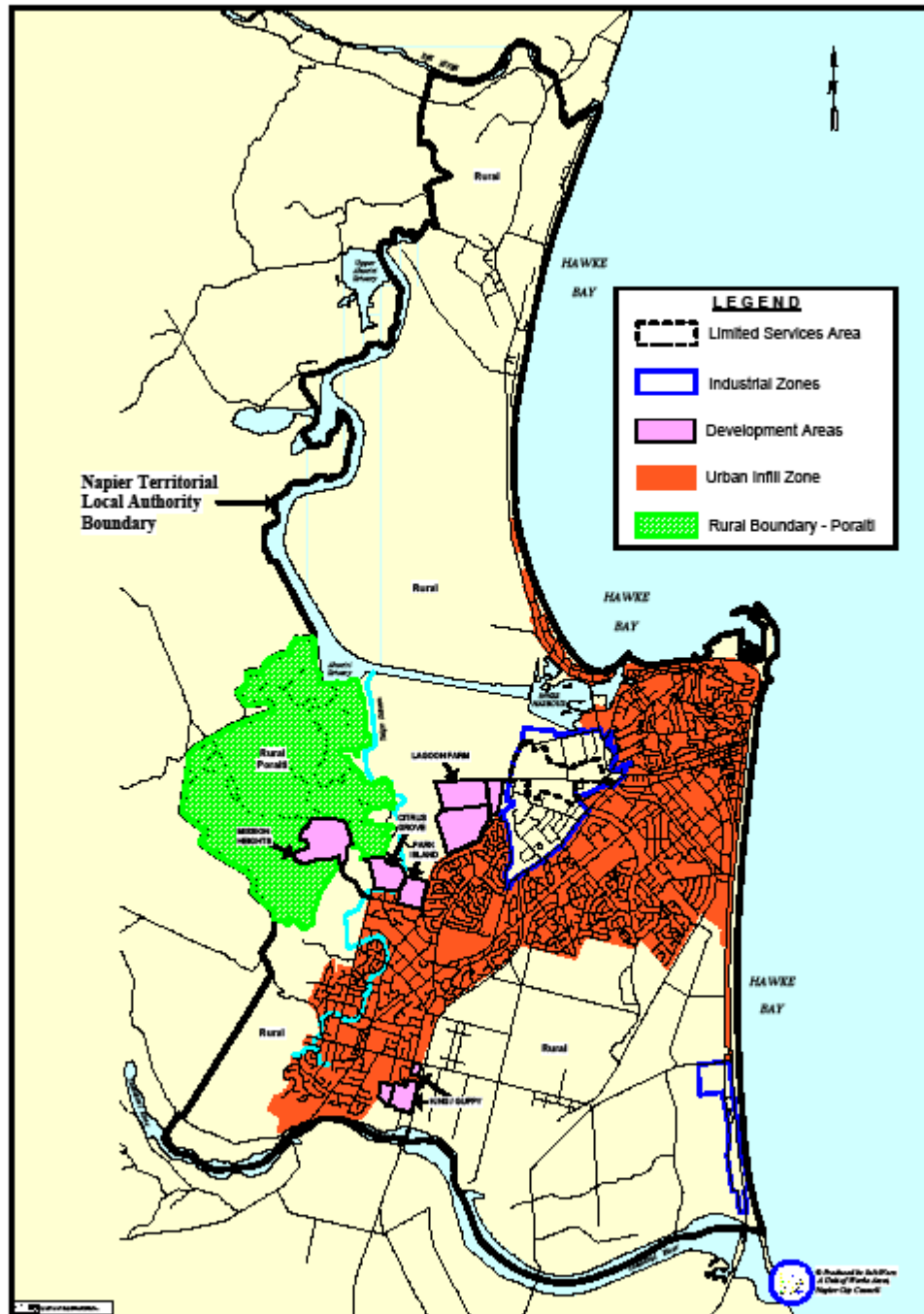


Figure 50 NCC Awatoto Industrial



**FIGURE 5.1**  
**FINANCIAL CONTRIBUTION AREAS**

SCALE 1:90,000

FIGURE 5.1 FINANCIAL CONTRIBUTION AREAS  
HAWKE'S BAY REGIONAL COUNCIL  
NAPIER CITY COUNCIL  
HASTINGS DISTRICT COUNCIL  
2009

**Figure 51 NCC Financial contribution areas**



## Appendix B: Correspondence and Supporting Reports

### Meetings

The following people were present at the meetings held and have provides a large amount of the information in this report.

#### Hawke's Bay Regional Council

Murray Buchanan  
Gary Clode

A separate discussion was held with Helen Codlin

#### Napier City Council

Bill  
Johan Ehlers  
John

#### Hastings District Council

Raoul Oosterkamp  
Mark Clews  
Jag Pannu  
Matthew Rodwell  
Brett Chapman  
Dylan Stuijt  
David McBryde

#### Port of Napier

Keith Rodwell

#### Unison Networks

Jason Larkin

#### Napier Airport

Nigel Sutton

#### Bridge Pa Aerodrome

Bruce Governlock

### Written references

The following are a list of the documents that we were directly referred to as part of the study. There are numerous other documents that were provided to us which have been included electronically of the enclosed CD.

- Beca Cater Hollings and Ferner Ltd. 2005:Hastings Urban Development Strategy Study
- Glasson Potts Folwer; Hawke's Bay Regional Council. 2003: Onsite Wastewater Treatment Risk Assessment Framework Stages 1 and 2 Framework Development and Testing
- Hawke's Bay Regional Council. 2006: Hawke's Bay Regional Resource Management Plan.
- Napier City Council. 2007: Napier City Council Plan
- Hastings District Council. 2003: Hastings District Plan
- Napier City Council. 2000: Essential Services development Plan



## **Appendix C: CDROM of Project File**

Enclosed.