



**NAPIER INNER HARBOUR  
and  
LOWER AHURIRI ESTUARY AREA  
POINT SOURCE DISCHARGES**

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## **1.0 Introduction**

The purpose of the report is to identify all discharges into the Napier Inner Harbour and Lower Ahuriri Estuary area, and to assess whether consents are required or already held. The area of study is shown in Figure 1.

## **2.0 Description of Napier Inner Harbour and Lower Ahuriri Estuary**

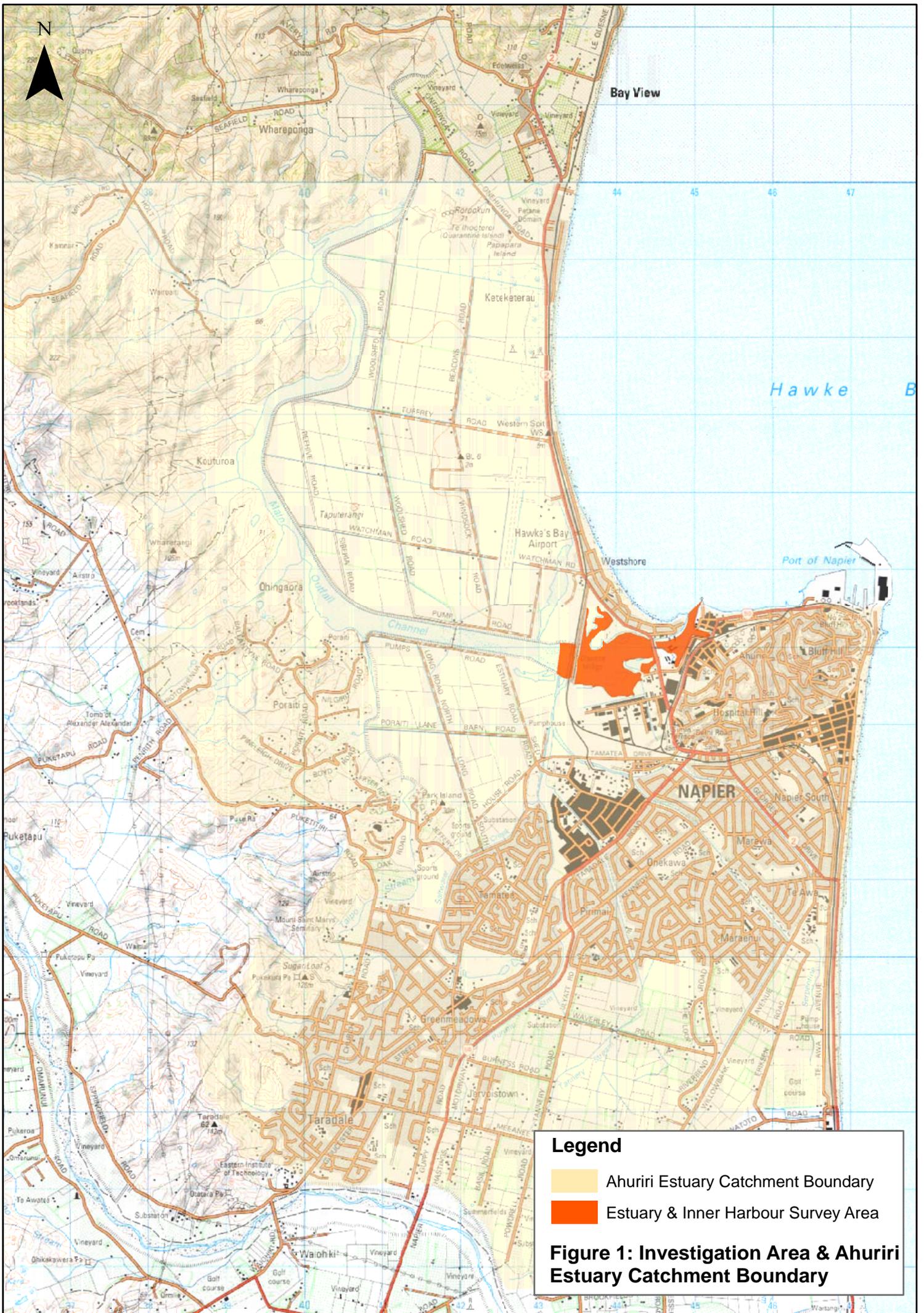
The catchment area, which drains into the Napier Inner Harbour and Lower Ahuriri Estuary area, is shown in Figure 1. It extends up the northwestern slopes of Napier Hill, and includes Tyne and Thames Street drains, Purimu Pumping Station and Westshore stormwater drains.

The approximate surface water area of the Napier Inner harbour is 170,000 m<sup>2</sup>. The shoreline length of Napier Inner Harbour is approximately 2.4km. The corresponding shoreline length for the Lower Ahuriri Estuary between the railway bridge and Pandora road bridge is in the vicinity of 6km. The Lower Ahuriri Estuary surface water area is variable owing to changing mud banks and islets but is approximately 550,000 m<sup>2</sup>.

The adjacent land uses include residential properties at Westshore, commercial boatyard and slipways at Westshore, recreational property at Napier Sailing Club, recreational reserve areas, commercial properties predominantly on the Ahuriri side, and industrial sites in the Tyne, Mersey and Thames Street area.

Maritime related activities include recreational and fishing vessel berthage at West Quay, Iron Pot, Napier Sailing Club, and at Piers 1 & 2. Commercial slipways operated by Charter Boats Ltd, and recreational slipways managed by Napier Sailing Club and Hawkes Bay Sport Fishing Club are also located on the Napier Inner Harbour shoreline. Only non-powered vessels are permitted west of Pandora Bridge, except for rescue operations and instructional purposes (which are permitted).

Typical contaminants discharged accidentally or otherwise during maritime activities may include oil discharge such as waste engine oil, diesel, petrol, or lube oil. Sewage discharge is another possible discharge contaminant but this activity has not been complained of or observed recently. Rubbish such as plastics and foam packing are frequently observed on the water and foreshore. Contaminants from hull cleaning of both recreational and commercial craft may be in the form of antifouling toxins, paint flakes, abrasive debris and unwanted marine species.



**Legend**

- Ahuriri Estuary Catchment Boundary
- Estuary & Inner Harbour Survey Area

**Figure 1: Investigation Area & Ahuriri Estuary Catchment Boundary**

### **3.0 Water Quality of the Ahuriri Estuary and Napier Inner Harbour.**

The Ahuriri Estuary is considered as one of the significant coastal areas in Hawke's Bay. There have been major changes within the estuary environment over time, through the 1931 earthquake, the diversion of the Tutaekuri River and the drainage issues within the area, however the estuary itself is still considered an area with high wildlife and fishery values.

There have been a large number of studies and reports undertaken on the Ahuriri Estuary environment. Previous reports on the estuary have suggested that the water quality and ecology of the estuary environment are affected by the quality of the urban drains that flow into the estuary. The Hawke's Bay Regional Council has monitored the water quality within the estuary and surrounding drains at a number of sites since 1979.

Monitoring of the recreational water quality within the Pandora Pond area of the estuary has shown that the faecal contamination at this site is generally low except after rainfall events when the bacteria numbers exceed the relevant guidelines. The increase in bacteria after rainfall on the water quality would be a result of run-off from the surrounding land and the flushing of drains and streams that flow into the estuary area.

Water quality investigations of the lower estuary and inner harbour areas were undertaken between 1976 and 1978 and again between 1985 and 1988. The effect of the saline wedge was investigated with differences in salinity and other water quality determinants being noted during the changes in tides. These studies both noted the significant influence of the Napier City urban drains on the water quality in the lower estuary and inner harbour areas with the main effects being:

- localised build up of heavy metals in estuary sediments;
- occasional periods of high bacteria numbers;
- nutrient enrichment from frequent contamination of water with high ammonia and phosphorus concentrations.

Fenton (1997) reported on the water quality monitoring of the Ahuriri Estuary. A summary of the conclusions is:

- dissolved oxygen levels were low in a number of the drains and streams within the catchment area;
- pH levels were declining within the estuary and some of the streams in the catchment;
- the ammonia concentrations within the estuary were elevated;
- the levels of nitrogen and phosphorus in the streams and drains were elevated relative to guideline values;
- high concentrations of metals were present in several drains that flow into the lower estuary, particularly during storm events.

The Hawke's Bay Regional Council currently monitor 14 sites on drains and streams flowing into the Ahuriri Estuary in order to provide further information on changes and trends within the catchment.

## **4.0 Regional Plan Provisions**

The Resource Management Act restricts the discharge of water and contaminants into water (fresh or coastal) unless it is otherwise authorised by a regional rule or resource consent. The HBRC has an operative Regional Coastal Plan (June 1999) which contains the requirements for discharges into the Coastal Marine Area. There are permitted activity rules relating to stormwater discharges from land draining residential premises and some discharges from ships. Other types of discharges and stormwater discharges from land draining commercial or industrial premises generally require to be authorised by a resource consent.

Current resource consents and applications are listed in Table 1.

The Lower Ahuriri Estuary from the Pandora Road Bridge to the upper extent of the Coastal Marine Area being some three kilometres upstream of the Pandora Road bridge is identified as a 'significant area' in the Regional Coastal Plan. Relevant objectives, policies and rules are contained in section 11 of the plan.

## **5.0 Investigation Programme and Methodology.**

The investigation involved:

- A search of the HBRC databases for current resource consents which authorise the discharge of contaminants or water
- A visual inspection of the shoreline from boat and from land
- Discussions with Napier City Council staff, HBRC staff and landowners

The investigations were taken over an 8-week period from May to June 2000.

## **6.0 Findings of the Investigation.**

In addition to the seven discharges, which are authorised by current resource consents, at least 37 unauthorised discharges were identified. The authorised discharges are detailed in Table 1, and unauthorised discharges are shown in Table 2. The locations of the authorised and unauthorised discharges are shown in Figure 2. Photos of unauthorised discharges are contained in Appendix 1.

### **6.1 Authorised Discharges**

All authorised discharges relate to the discharge of stormwater from closed pipes or open drains except for one that relates to discharge of attrition material from boat slipway operations.

### **6.2 Unauthorised Discharges**

Of the unauthorised discharges, two were found in the Napier Inner Harbour area. The discharges are depicted in Photos 1 & 2. The source of these discharges has not yet been identified.

Other unauthorised discharges include potentially contaminated stormwater and roof water from industrial sites in the Pandora Industrial area, and unauthorised wastewater and washdown water from various slipway activities. These slipway activities are depicted in photos 12 & 13.

### **6.2.1 Iron Pot and West Quay Discharges**

All stormwater discharge pipes were identified from the plans provided by NCC. The Consent CD 940014W covers all discharges from the “Burns Road catchment area to Iron Pot and other existing discharges”. It is not clear where the ‘existing stormwater discharges’ catchment extends to, however it is not considered that the unauthorised stormwater discharge into the area north of Blue Water Restaurant is part of this consent.

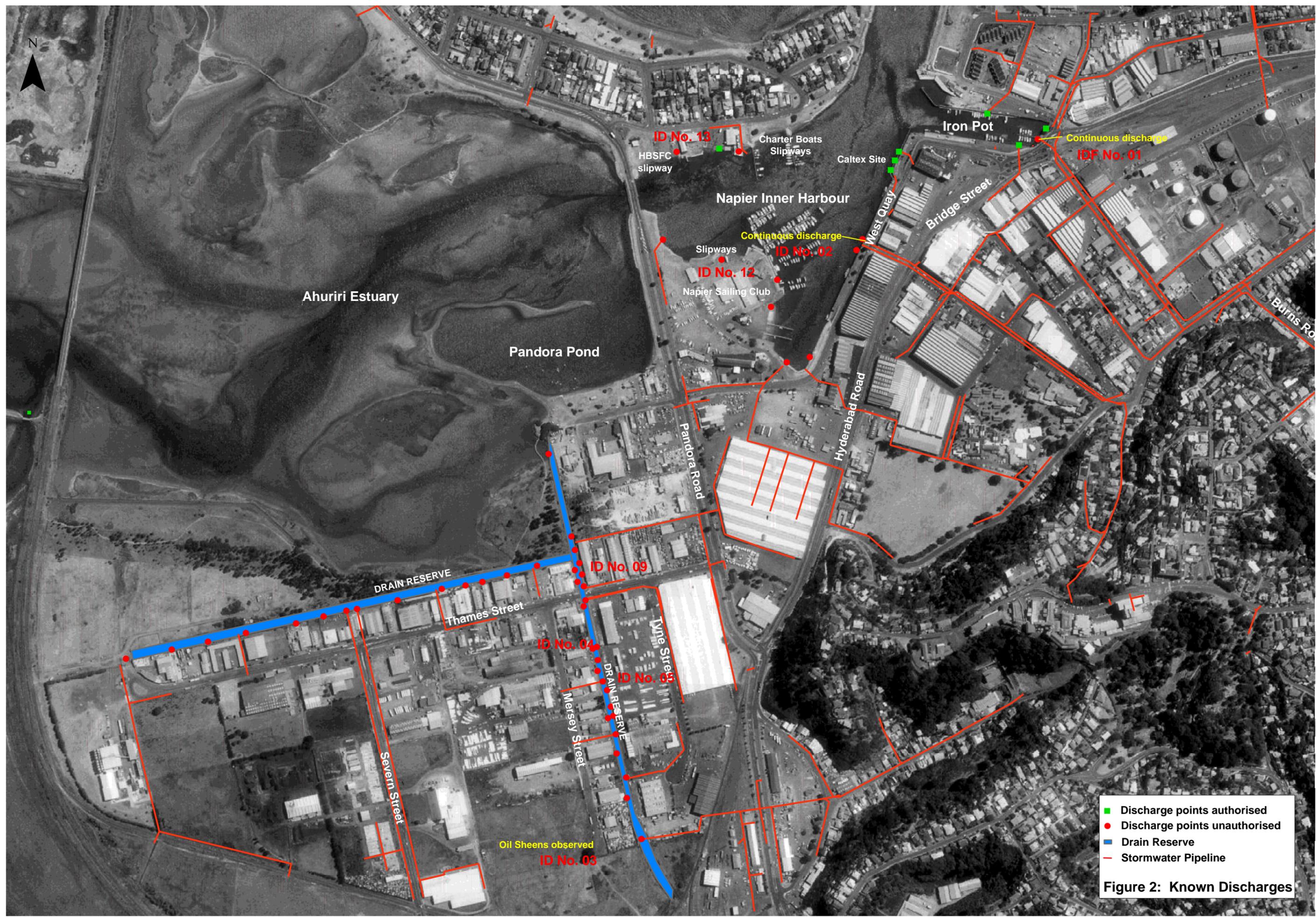
Two stormwater discharge pipes are discharging water continuously – one at the eastern end of Iron Pot (ID No. 01) and the other at West Quay (ID No. 02, approx. 150 metres north of the Maintenance Berth). Both discharges appear to be clear water discharging at rates of < 1 litre/sec and > 5 litres/sec respectively. Investigations indicate that they may be discharging as a result of leaking water mains and reticulation pipes.

**Table 1: Current Consents/Applications to discharge contaminants into the Napier Inner Harbour as at 31 May 2000**

Consent ID	Client Name	Purpose
CD990441W	Caltex Oil (NZ) Ltd	Discharge treated stormwater into CMA
CD950404W	Charter Boats Ltd	Discharge stormwater and wash water containing attrition material from hull cleaning, repair and maintenance, to bunded slipway area.
CD940014W	Napier City Council	Discharge of stormwater collected from the Burns Road catchment area to the Bridge St end of the Iron Pot and existing storm water discharges into the area.
CD990516W (new application in process)	Hawkes Bay Regional Council / Napier City Council	Discharge water from various pumping stations in Napier City to the Main Outfall Channel, Ahuriri Estuary.
DP931222W	Napier City Council	Disposing of floodwater from Meeanee Basin through County Drain via existing pump stations thence into Ahuriri Lagoon
HKB820256	Napier City Council	Discharge from dam into Halliwell drain at reduced rate which discharges to Iron Pot, Inner Harbour

**Table 2: Known Unauthorised Discharges as at 31 May 2000**

ID No.	Site Name	Location and Description
01	Napier City Council - Iron Pot	Iron Pot, continuous discharge of water to harbour
02	Napier City Council- West Quay	West Quay, continuous discharge of water to harbour
03	Napier City Council -top end of Tyne St Drain	Stormwater discharges to Napier Inner Harbour other than CD940014W discharges
04 - 08	Tyne St properties	Various pipes discharging into Tyne Street drain from sites including Napier Abattoirs Ltd, AFFCO Allied Products Ltd, Mc Millan Craig Ltd, SPCA, Thames Holdings Ltd, Classic Décor Ltd
09-11	Thames St properties	Various roof down pipe discharges into Thames Street drains from sites including Classic Décor Ltd, Efficient Carrying Co Ltd, Bristows
12	Napier Sailing Club, slipways	Discharge stormwater and wash water containing attrition material from hull cleaning, repair and maintenance, to slipway area. Various roof down pipe discharges into Napier Inner Harbour
13	Hawkes Bay Sport Fishing Club, slipway	Discharge stormwater and wash water containing attrition material from hull cleaning, repair and maintenance, to slipway area.



- Discharge points authorised
- Discharge points unauthorised
- Drain Reserve
- Stormwater Pipeline

**Figure 2: Known Discharges**

### **6.2.2 Discharges into Tyne / Mersey Street Drain**

This drain is intertidal and is effectively part of the Ahuriri Estuary habitat. The change of tide flushes this area twice daily and would carry any discharge into the estuary.

Many industrial sites back onto this drain thus increasing the risks of pollution to the estuary through improper discharge of stormwater or other contaminated discharges. Inspection of this drain revealed many discharges. Most of the discharges are roof water down piping discharges and surface water drainage. There are other pipes observed that are a priority to follow up to confirm that they are stormwater pipes as opposed to wastewater discharge pipes. The stormwater discharge pipe at the southern end of Tyne Street drain was discharging a small amount of oil sheen, which has since been contained by deploying a sorbent boom immediately downstream. The source of these sheens remains to be determined but is most likely to originate from road surface water runoff.

The stormwater discharge from the Tyne / Mersey Street drain into the Lower Ahuriri Estuary is not consented. This means that all discharges into the Tyne Street drain are potentially unauthorised. Initial discussions have been held with Napier City Council over the need to apply for a resource consent to authorise the discharge from the drain into the coastal marine area. This would involve an assessment of the discharges entering the drainage system.

This drain is littered with used tyres, redundant pipes and rubbish, which should be removed.

### **6.2.3 Discharges into Thames Street Drain**

This intertidal drain is also part of the Ahuriri Estuary habitat and discharges into the Tyne Street Drain. Several roof water discharges were observed at various sites into this drain (see photo on page 15).

This drain is also littered with used tyres, redundant pipes and rubbish, which should be removed.

### **6.2.4 Napier Inner Harbour - Slipway and Boat Haulout Area Discharges**

Boat slipways provide the means to support and haul a boat from the harbour to an area for maintenance and repair, and also for launching new boats. During the haul out process it is common to commence waterblasting the hull immediately while the hull growth is still wet. This activity causes the discharge of marine growth, which may be unwanted in NZ and probably some antifouling paint. The hull may then be sanded, scraped or sandblasted which also causes a discharge of contaminants to the environment. The hull is then repainted by applying various primers and undercoats before applying the final antifouling paint. During the painting process some paint may be discharged to the shore and air.

The environmental concerns associated with these discharges are:

- The accumulation of toxic material in the ground around the slipway. While the metals in the antifouling paint are not highly mobile (unless under acid conditions), a contaminated site is created and requires careful management;
- The accumulation of toxic material in the sediments in the coastal marine area adjacent to the slipway and the increase in areal extent of this accumulation over time. The toxicity of anti-fouling paint chips can adversely affect the marine organisms in the immediate area.

It is therefore important to contain and dispose of as far as practically possible, any contaminants released to the environment during and after the hull cleaning and boat maintenance processes.

Initial discussions have been held with the owners of the slipways where discharges are currently occurring without consent.

### **6.2.5 Charter Boats Ltd slipway discharges**

#### Inspection of Charter Boats Ltd boat haul out areas

##### Boatshed slipway

Solid and liquid contaminants from scraping, sanding, and water blasting etc drain from the concrete sealed surface into a non-consented sump situated between the slipway cradle rails. The sump is also located in an intertidal area and is flooded every high tide (see photo on page 16). Sediments would be contained in the sump effectively but soluble toxins (mainly antifouling) would be released into the CMA at high water.

The boatshed slipway is hosed down at periods of low tide into a sump. A submersible pump is used to pump out any material from the sump into the sewer. This is carried out at low tide to avoid material from being discharged into the Coastal Marine Area.

##### Main slipway

The slipway haul out bunded area and sump was inspected visually and found to be clear of debris. The sump effectively traps sediments but like the boatshed slipway sump is intertidal and would release soluble toxins into the CMA (see photo page 15). The haul out area is surfaced with loose metal. Charter Boats Ltd have taken a number of steps to restrict the contamination of the Napier Inner Harbour but are required to comply with the consent conditions of consent CD950404W.

##### Charter Boats Ltd 'Northey' slipway

This slipway, located immediately west of the main slip, is also owned and managed by Charter Boats Ltd. The haul out area for this slip is sealed and is bunded in common with the main slipway (see photo on page 16).

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### **6.2.6 Napier Sailing Club slipway discharges**

Napier Sailing Club operates three slipways, which are used for recreational boat maintenance. The wash down area for all three slips is covered with loose metal. There is no bunding or sump provided. The slipway structures are permitted but no consent to discharge into the CMA has been granted (See photo ID No. 12)

### **6.2.7 Hawkes Bay Sport Fishing Club slipway discharges**

Hawkes Bay Sport Fishing Club operates one slipway west of the Sea Scout shed. This area is sealed but is not bunded or provided with a sump. The slipway structure is permitted but no consent to discharge to water has been given (See photo ID No. 13).

## **7.0 Summary**

The investigation identified numerous unauthorised discharges into the Napier Inner Harbour and Lower Ahuriri Estuary. Of these discharges the majority are of stormwater origin as urban and industrial surface run-off including roof downpipe discharge. A few discharges into the Tyne Street Drain appeared to be other than stormwater discharge and are a priority to investigate in more detail. Any discharge other than stormwater should be discharged to Napier City Council sewers.

Hydrocarbon sheens are observed in the Napier Inner Harbour occasionally and may originate from:

- Road surface-water run-off, which may contain dropped oil from vehicle engine sumps etc or vehicle engine washing.
- Maritime activities such as bilge water discharge or fuel/waste oil transfer spillage.

Of the three boat slipways only one has discharge consent. All slipways are a potential source of heavy metal and soluble toxin discharge to the CMA.

Discussions have been held with relevant parties regarding the unauthorised discharges and consent requirements prior to finalising this report.

## **8.0 Recommendations**

The recommendations from this report are that:

- Persons responsible for the unauthorised discharges to the Lower Ahuriri Estuary Area and Napier Inner Harbour should be required to apply for resource consent.
- Discharge of hydrocarbons or contaminants into the Napier Inner Harbour and Lower Ahuriri Estuary Area should be avoided through appropriate on-site management.

## 9.0 References

Fenton, J. A. 1997. *Ahuriri Estuary water quality: review of water quality in the estuary and catchment area*. Hawke's Bay Regional Council Technical Report EMT, 97/2, Napier.

Hawkes Bay Regional Council *Regional Coastal Plan* (June 1997)

Hooper, Glenda W., Water Quality Scientist, *Ahuriri Estuary Water Quality Study*, October 1989

## 10.0 Acknowledgments

Acknowledgments to Napier City Council for assistance with stormwater piping plans and consultations and Hawkes Bay Regional Council staff from Environmental Regulation, Environmental Scientists and Corporate Support.

## Appendix 1



**ID No. 01** Iron Pot, Discharge Pipe – stormwater discharge with continuous discharge from an unidentified source



**ID No. 02** West Quay, Discharge Pipe – stormwater discharge with continuous discharge from an unconfirmed source

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**ID No. 03** Tyne Street, s/w discharge from Corunna Bay. Note: oil sheens on water surface



**ID No.04** Unsourced discharges from Mersey St. abattoir into Tyne St. Drain



**ID No.05** Tyne St.- unsourced discharges from industrial site



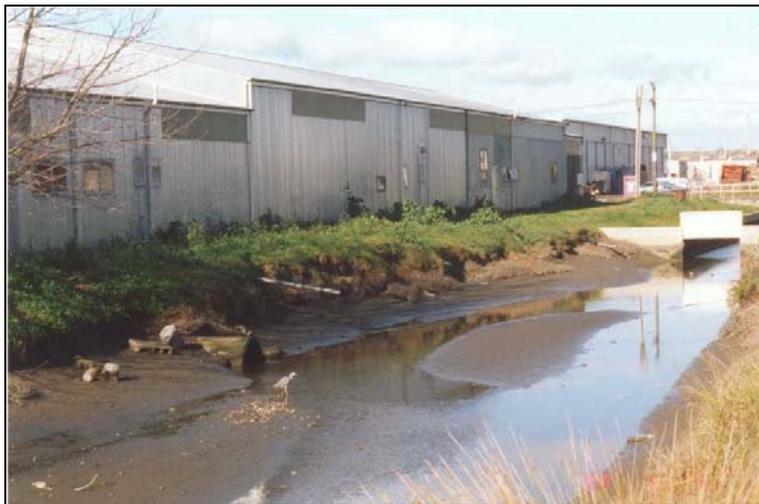
**ID No.05** Tyne Street, stormwater discharge, (one of two similar discharges).



Downpipe discharge into Tyne St drain (from Mersey St site)



Thames Street, downpipe discharge



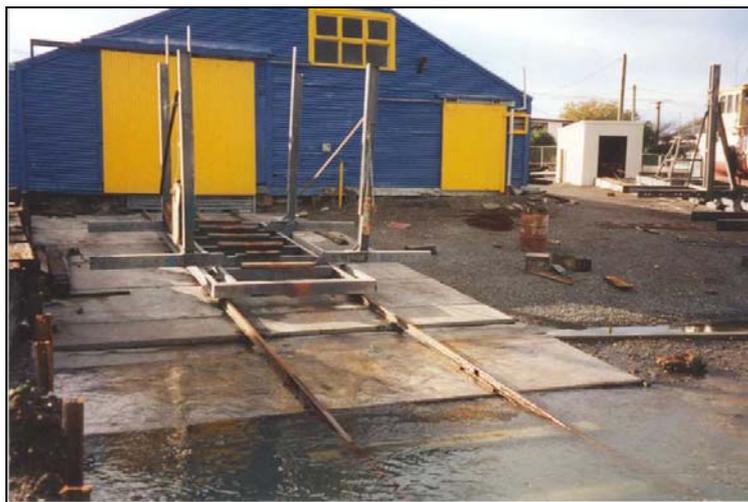
**ID No.09** Northern end of Tyne Street drain. Note two roof downpipe discharges



Charter Boats, Main Slip. Note bunding awash at waterline (high water).



Charter Boats, Boatshed slip. Note sump (behind propeller blade) awash at high water



Charter Boats, "Northey" slipway. Note sealed haulout area and bunding at waterline

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**ID No.12** Napier Sailing Club slipways.

Note that area is unsealed, not bunded, nor provided with a collecting sump.



**ID No. 13** Hawkes Bay Sport Fishing Club slipway

Note that area is sealed but is not bunded or provided with a collecting sump.