



GREATER WELLINGTON REGIONAL COUNCIL

**WELLINGTON HARBOUR SAFETY MANAGEMENT
SYSTEM**

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Greater Wellington Regional Council Wellington Harbour Safety Management System

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Components of the Navigational Safety Management System

Figure 1, below, shows the general structure of the Wellington Harbours Safety Management System, which is designed in three complementary levels. **The shaded box refers to this manual.**

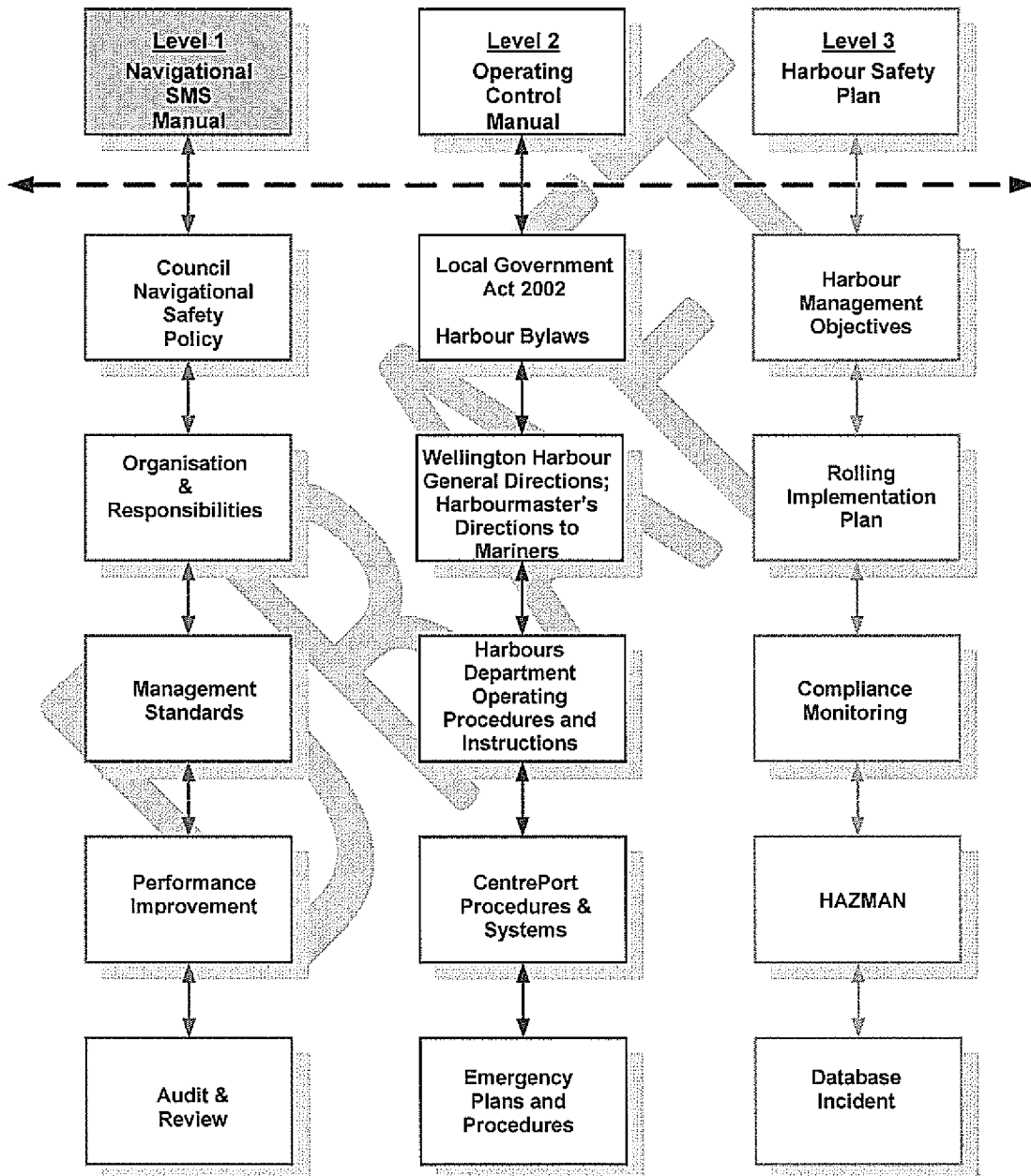


Figure 1: Diagram Showing the Structure and Components of the Wellington Harbours Safety Management System

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1 INTRODUCTION

Under the Local Government Act¹ Greater Wellington Regional Council takes the role of Harbour Authority for Wellington Harbour. Accordingly, it has an obligation under the New Zealand Port and Harbour Marine Safety Code (the Code) to introduce a Navigational Safety Management System (NSMS). The provisions of the Wellington NSMS are set out in this manual.

The purpose of this document is to describe the overall framework for the management and co-ordination of marine activities necessary to facilitate navigational safety. The NSMS arrangements referred to in this manual comply with the New Zealand Port and Harbour Marine Safety Code (2004).

The Harbour Authority and CentrePort will work together to implement the controls and procedures required by this NSMS Manual. CentrePort will maintain its own NSMS Manual in the form of a procedures manual, but the NSMS of GWRC will acknowledge and interface with the NSMS of CentrePort in order to foster a culture of integrated Navigational Safety within the domain of the Harbour Master's responsibility in executing the Council's statutory function as a Harbour Authority.

1.1 NAVIGATIONAL SAFETY MANAGEMENT SYSTEM PRINCIPLES

The Greater Wellington Regional Council (the Harbour Authority) Navigational Safety Management System is designed to deliver the relevant requirements of the NZ Port and Harbour Marine Safety Code.

The Harbour Authority's Navigational Safety Policies define the organisation and arrangements that are planned to monitor, promote and proactively manage the conduct of navigation and associated marine activities so that harbour safety of any navigational activity is enhanced. CentrePort is a key contributor to the navigational safety of Wellington harbour and is to orientate its existing systems to confirm that the principles of the Harbour Authority's Navigational Safety and supporting policies are being followed.

The NSMS is structured into three levels as is indicated in **Figure 1 (page ii)**. This manual represents Level One. The processes of harbour regulatory management and operation form Level Two and the planning and review systems form Level Three.

Figure 2 shows the links between Policy, the organisational structure and the administration of the Navigational Safety Management System.

¹ Section 37S, (e), of the Local Government Act, 2002.

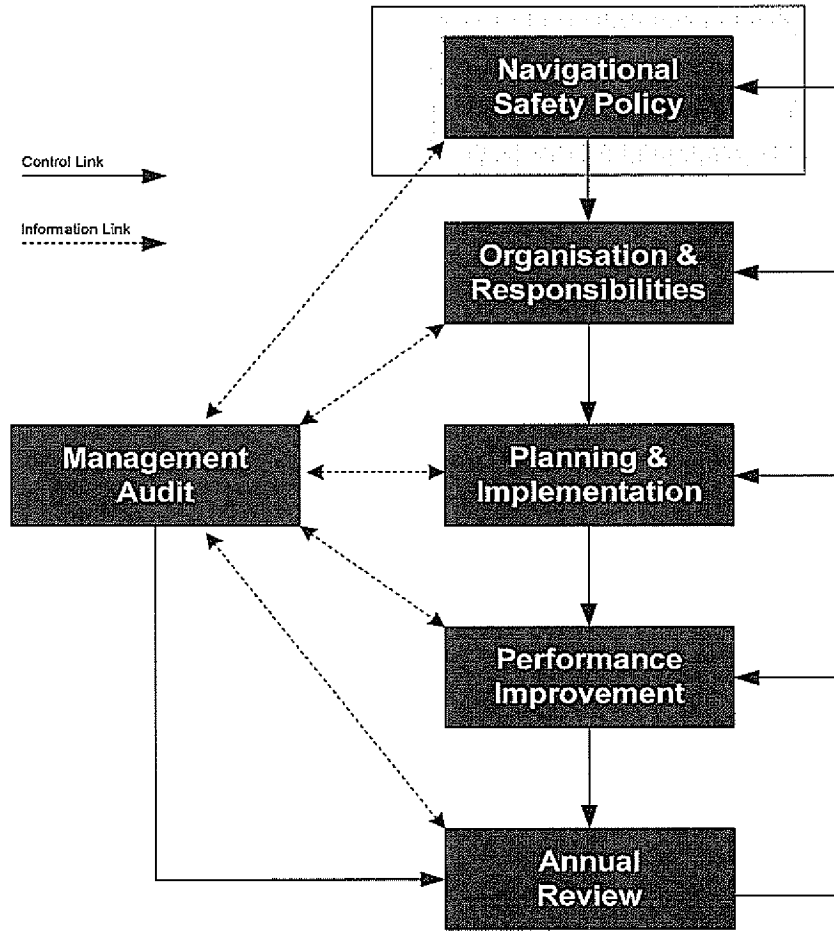


Figure 2: Components of the Navigational Safety Management System

1.2 PORT AND HARBOUR MARINE SAFETY CODE REQUIREMENTS

The NSMS procedures and guidelines fulfil the requirements of the Port & Harbour Marine Safety Code including, but not limited to, the following:

- Making risk control the basis of all marine activities, procedures, Bylaws and Directions.
- Using risk assessment to identify the requirement for navigation aids.
- Applying risk assessment to all proposed harbour developments affecting Navigational Safety.
- Subjecting new and potential hazards to risk assessment.
- Subjecting wrecks and abandoned vessels to risk assessment.
- Periodically reviewing the provision of safe anchorages.
- Maintaining systems to implement the findings of risk assessments.
- Identifying, designating and periodically reviewing safe pilot boarding and landing areas.
- Applying current pilot transfer arrangement standards.
- Reporting deficiencies on visiting vessels.
- Providing procedural advice for giving Directions in relation to dangerous vessels or substances.
- Regulating the use of harbour craft and ensuring powers are sufficient to govern the mooring of vessels.
- Maintaining and developing a competence based training scheme, with continual professional development supporting delivery of all marine functions.
- Maintaining appropriate plans and procedures for emergency response and associated training/exercises.
- Using verification/audit systems.

The Harbours Department will undertake a formal review every three years to ensure it meets the requirements of the Port and Harbour Marine Safety Code.

1.3 SYSTEM COMPONENTS

The NSMS focuses on the operational and administrative output of the Harbour Master's department.

It includes the following components:

- Navigational and Marine Policies
- Navigational Management Team
- Navigational SMS Manual
- Risk Assessment and Risk Control Measures

- Hazard Management Database – HAZMAN
- Incident Database
- Rolling NSMS Action Plan
- Staff Involvement and Consultation
- Wellington Harbour Navigation User Groups (including Pilotage)
- Records and Controls
- Audit and Review

Risk Control Measures will fall into two broad categories. Some measures, particularly some of the physical components are planned for the future and will be introduced and implemented in a progressive manner.

- Documentary - Regulatory Framework
 - Accurate Charts and other Navigational Information
 - Operational Manuals & Guidelines
 - Operating Procedures
 - Emergency Plans and Procedures
 - Harbour Notices to Mariners
 - Formalised Training and Assessment
- Physical -
 - Radars
 - VHF Communication
 - VTS System
 - Tide Gauges
 - Wave measuring equipment
 - Aids to Navigation
 - Anchorage and Emergency Moorings
 - Emergency Anchorages
 - Harbour Patrol Craft

2 COMMITMENT STATEMENTS - NAVIGATIONAL SMS

Greater Wellington Regional Council, as the Harbour Authority, is the body accepting responsibility for setting and monitoring the standards of navigational safety within its harbour jurisdiction and has committed itself to comply with the requirements of the New Zealand Port and Harbour Marine Safety Code (Ref. PHMSC 1.4.3 a-d).

Furthermore, it is committed to ensuring that the appointed Harbour Master is adequately resourced and funded to exercise his or her statutory powers and functions towards navigational safety obligations (Ref. PHMSC 1.4.3 e).

One key purpose of this document is to show a link between:

- this Commitment Statement;
- the policies set by the Harbour Authority, and;
- the Harbour Department's management arrangements, controls and provisions that discharge those policies;
- CentrePort's management arrangements & controls that meet the requirements of these policies.

2.1 CENTREPORT COMMITMENT STATEMENT

CentrePort is committed to meeting its obligations under the New Zealand Port and Harbour Marine Safety Code. As such, it is committed to ensuring that its Navigational Safety related Policies, and subsequent Safety Management System support and do not conflict with those of Greater Wellington Regional Council.

CentrePort recognises that the Regional Council has the statutory responsibility for providing for, and regulating navigational safety in the harbour. CentrePort also recognises the Council's authority and responsibilities under the New Zealand Port and Harbour Safety Code and supports the Council's commitment to comply with the requirements of this Code.

CentrePort and the Greater Wellington Regional Council Harbours Department enjoy a close working relationship and CentrePort is committed to strengthening this through formal recognition of, and so far as is reasonably practical, integration of CentrePort's Navigational Safety Management System within Council's Navigational Safety Management System and Policies.

3 POLICIES

The Navigational Safety Policy and its supporting policies set out the Council's intentions (in its statutory role as Harbour Authority for Wellington Harbour) and its commitment to navigational safety. It also describes the organisational responsibilities and arrangements established to ensure that the Policy is implemented. The Policy, with its supporting policies (VTS, Pilotage, and Enforcement) contributes to operational objectives and state the Harbour Authority's commitment to meet its statutory responsibilities. The fundamental objective of the Navigational SMS is to demonstrate the consistent application of these Policies.

3.1 PURPOSE AND USE OF THE POLICIES

The primary purpose of these Navigational Safety and supporting Policies is to provide an overall standard for marine operations throughout Wellington Harbour. They also provide a reference point for a variety of operational decisions, including the selection of resources and the design and implementation of safe working practices.

3.2 POLICY DEVELOPMENT AND COMMUNICATION

The Navigational Safety and supporting Policies were developed by the Harbours Department in consultation with CentrePort and are approved by Council. The Policies have been communicated to staff, CentrePort, harbour users and interested parties and once these policies are operational they will be posted on the Council's website and Staff Intranet. In addition, the Council is committed to working closely with harbour stakeholders to aid the development of the Navigational SMS, which will enhance compliance with the Port and Harbour Marine Safety Code.

Copies of all Navigational Safety and Marine Policies are freely available to all and there is a continuing process of briefing and updating information with regard to navigational safety.

3.3 PORT & HARBOUR MARINE SAFETY CODE POLICY

Wellington Regional Council has committed itself to complying with the requirements of the NZ Port and Harbour Marine Safety Code. It will do this by:

- Regulating navigation in a way that safeguards the harbour, its users and stakeholders, the public and the environment;
- Ensuring that relevant assets of the harbour are managed safely and efficiently;
- Ensuring the provision of adequate resources (including staff training) to discharge its navigational safety obligations;
- Making available relevant navigational information to all harbour users;
- Working closely with key Stakeholders to aid the development of a Navigational SMS;
- Working closely with key stakeholders to ensure the ongoing relevance of the Navigational SMS;
- Publishing relevant parts of the Navigational SMS and Annual Harbour Safety Plan on the public website of the Council and the Staff Intranet and employing a continuous process of briefing and updating information with regard to navigational safety.

3.4 NAVIGATIONAL SAFETY POLICY AND SUPPORTING MARINE POLICIES

The Regional Council's Policies to guide the delivery of Navigational Safety Management are recorded below. This manual is updated with current policy as it is approved by Council.

NAVIGATIONAL SAFETY POLICY

The Wellington Harbour Authority has a primary responsibility to facilitate the safety of navigation within the Harbour Jurisdiction. It also has responsibility to assist MNZ manage pilotage standards within compulsory pilotage limits for Wellington.

To this end, it is Regional Council policy for the Harbours Department to:

1. Establish, fund and maintain an effective Navigational Safety Management System, based on a continuing, formalised assessment and mitigation of risk in consultation with navigational users;
2. Review regularly² the effectiveness of and, if necessary, seek amendments to its legal powers, Bylaws and Directions in respect of navigational safety;
3. Maintain a formal Policy towards the provision of Vessel Traffic Services, its interface with both piloted and pilot exempt harbour traffic and periodically review management of the navigation of vessels within the Harbour Jurisdiction;
4. Maintain formal Policy towards Pilotage and periodically review the level, competence and availability of the pilotage service in accordance with Maritime Rule Part 90;
5. Regularly review towage capability to determine that it remains appropriate to the levels of service required in the harbour;
6. Facilitate an appropriate patrol service for Wellington Regional Harbours proportionate to navigational use;
7. Maintain, and regularly review a formal Policy towards Enforcement;
8. Undertake or require such hydrographic surveys as are necessary for safe and efficient navigation within Wellington Harbour to;
 - provide harbour users with up-to-date, timely and accurate hydrographic information;
 - provide, timely and accurate tidal data;
 - maintain an overview of maintenance dredging, as appropriate;
9. Assess and, where necessary, require removal of sunken or derelict or abandoned vessels and other obstructions that are, or may become, an impediment to safe navigation;
10. Remain satisfied that a system of wharf condition inspection and maintenance remains in place for the wharves used for commercial operations as well as inspecting and maintaining Council owned wharves;
11. Provide the necessary aids to navigation and maintain a close liaison with owners of other aids for which the Regional Council does not have maintenance responsibility;
12. Make available relevant navigational information to all harbour users;

² Regularly means three to five years between reviews.

13. Maintain liaison with harbour stakeholders and seek input as required on matters influencing navigational safety;
14. Provide professional advice in the Resource Consent process under the Resource Management Act, 1991, for any form of development affecting navigational safety within Wellington Harbour jurisdiction.

VTS POLICY

In order to provide for safe navigation in Wellington Harbour, the Harbour Authority, in implementing the risk control measures outlined in the Risk Assessment, has a commitment to:

- A. Maintain an effective Vessel Traffic Service (VTS) from Beacon Hill;
- B. Provide a Traffic Information Service and, where required, a Traffic Organisation Service by the VTS to the international standard³.

To this end it is Council policy that the Harbours Department intends, in accordance with the harbour safety plan, to:

- 1. Operate a 24 hour Vessel Traffic Service to support its published Navigational Safety Policy;
- 2. Monitor all commercial movements and maintain VHF communications with such vessels;
- 3. Ensure that the VTS is appropriately equipped to allow a continuation of essential services in the event of failure of either hardware or software;
- 4. Immediately inform all users of any temporary reduction in service and/or coverage.
- 5. Define reporting vessels and review areas where and when reporting should be compulsory within its area of responsibility;
- 6. Regularly review the performance of the system and seek improvements through technical enhancement, staff development, training and effective management, as necessary;
- 7. Provide timely navigational information and advice, as required;
- 8. Assist Police and, where appropriate, RCC NZ in providing effective management and co-ordination in respect of the harbour response to emergency incidents within the harbour jurisdiction;
- 9. Adopt the IALA standard for training and certification of VTS personnel⁴ and facilitate Continued Professional Development;
- 10. Formally authorise all personnel serving in the VTS;
- 11. Record all relevant radar, video, VHF and telephone communications as an aid to enforcement and incident reconstruction and investigation;
- 12. Maintain records of commercial vessel movements in the harbour.

³ The IALA Standards for Training and Certification of Vessel Traffic Service (VTS) personnel (IMO MSC Circ 952).

⁴ Training to the IALA V/103 Standard

PILOTAGE POLICY

Maritime New Zealand is responsible for pilotage and the issuing of certificates. Under delegated authority the Harbourmaster may support this system and examine candidates and administer the local system of pilotage (including PECs).

The Council's policy in respect of pilotage is to:

1. Ensure that the operation of the pilotage service is compliant with national and international regulations and guidelines;
2. Monitor to ensure there is an appropriate level and competence of the pilotage service in accordance with Maritime Rule Part 90;
3. Develop and keep under review a system providing equivalence to Pilotage Directions within the bylaws to ensure that the particular risks associated with Wellington harbour are managed in accordance with the needs of the Navigational Safety Management System;
4. Develop and maintain a formal interface between the Pilotage Service and VTS;
5. Regularly review the boarding areas;
6. Administer the PEC monitoring system to ensure that all PEC applicants and holders fully meet the requirements laid down in Maritime Rule Part 90.
7. Ensure close liaison with CentrePort with regard to the Pilotage Policy of that organisation, to ensure that the Pilotage Policies of the two organisations are mutually supportive;
8. Ensure that an MOU or contract for services is in place to cover the relationship between the Harbour Authority and any third party assisting with the examination of PEC candidates.

ENFORCEMENT POLICY

The Harbour Authority is empowered to prosecute offenders for breaches of Bylaws made under the Local Government Act, and assist MNZ in any investigation under the NZ Maritime Transport Act. In order to ensure compliance with the provisions of such statutes and Bylaws, particularly where navigational safety and protection of the environment are concerned, it is necessary that an effective enforcement regime be maintained and publicised to encourage compliance, to deter non-compliance and to punish offenders.

To this end, it is Council policy that the Harbours Department shall:

1. Develop and maintain effective enforcement based on a continuing review of relevant legislation and the provision of appropriate training for its staff;
2. Facilitate an appropriate patrol service for Wellington Regional Harbours;
3. Maintain an effective surveillance regime to monitor compliance with and detect breaches of, the Bylaws and Directions;
4. Investigate all alleged breaches of the Bylaws and Directions;
5. Maintain records of all investigations;
6. Where appropriate, work with and inform other relevant Authorities of investigations;
7. Respond to breaches of the Bylaws and Directions, as justified by the evidence and other circumstances, by the use of formal warnings, infringement notices and prosecution.

CONSULTATION POLICY

The Port and Harbour Marine Safety Code emphasises the importance of effective consultation by all navigational stakeholders. This includes all those who work in the Wellington Harbour or use the waterway in some form, as well as those that represent them.

It is therefore Council policy that it shall publish matters of relevance to, and encourage comment and contribution from, navigational stakeholders.

In particular, the Harbour Authority shall:

1. Consult as early as is practicable with stakeholders when changes to legislation, Bylaws and policy are being considered;
2. Include appropriate Councillors and Council staff in the consultation process;
3. Maintain an effective consultation mechanism with appropriate stakeholders on navigational safety and other operational issues;
4. Include appropriate Wellington Harbour stakeholders in the ongoing work to identify navigational hazards, assess the risk of such hazards and recommend appropriate control and mitigation measures;
5. Promulgate an Annual Harbour Safety Plan and reference past annual achievements.

3.5 POLICY RELATIONSHIPS

It needs to be recognised that the port company and Regional Council maintain policy to manage navigational safety. The relationship between both organisations is shown in **Figure 3**.

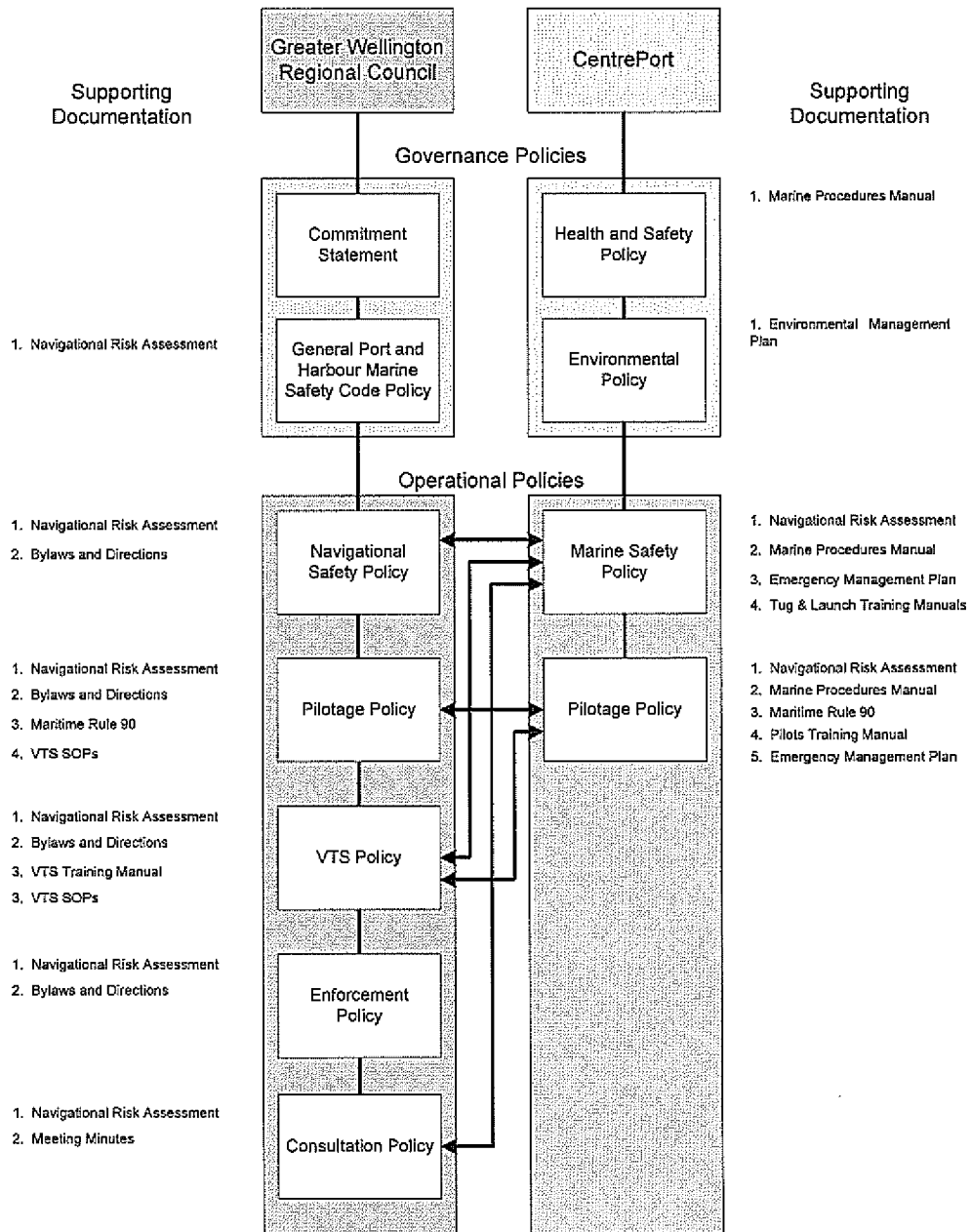


Figure 3: Relationship between GWRC and CentrePort policies.

4 ORGANISATION

4.1 FUNCTIONAL STRUCTURE FOR THE MANAGEMENT OF NAVIGATIONAL SAFETY

The Organisational structure connecting the Council Management System, the Council itself (both the Main Council Assembly and its Environment Committee) is shown in **Figure 4**.

The Harbours department is structured as shown in **Figure 5**.

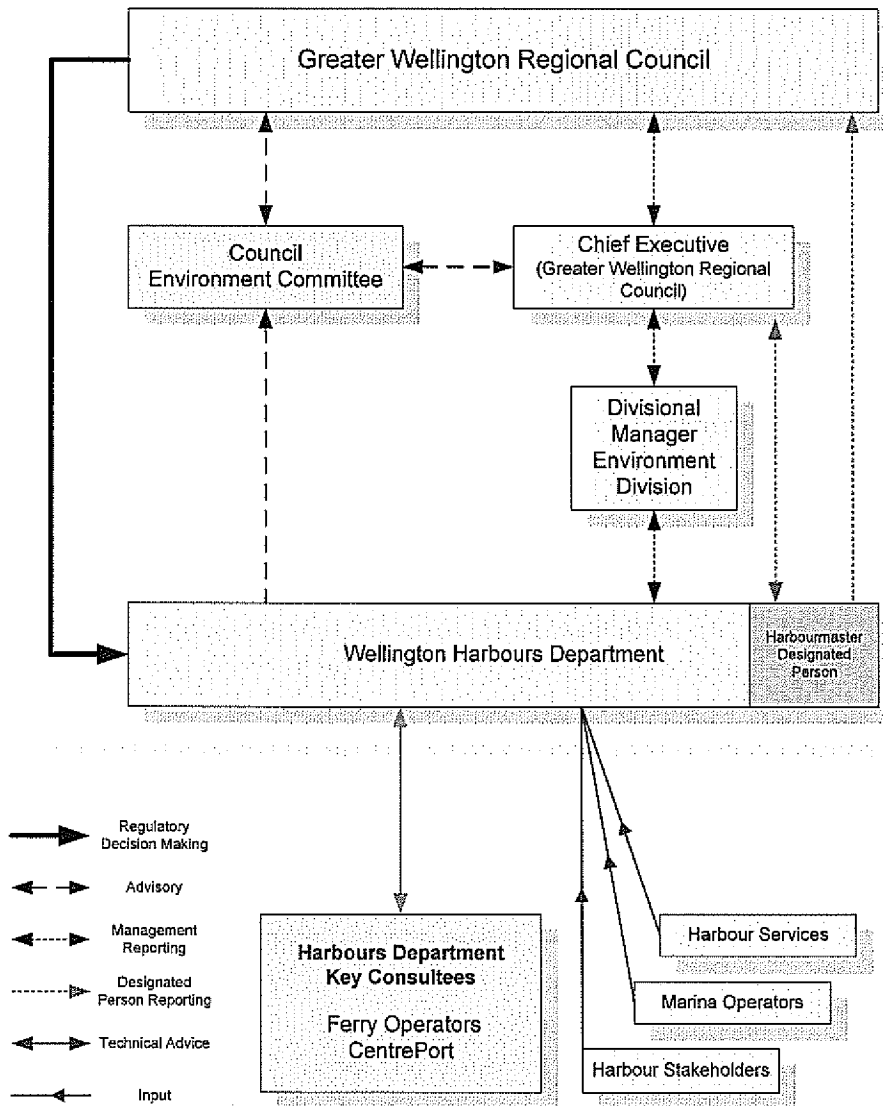


Figure 4: Harbour Regulatory Structure

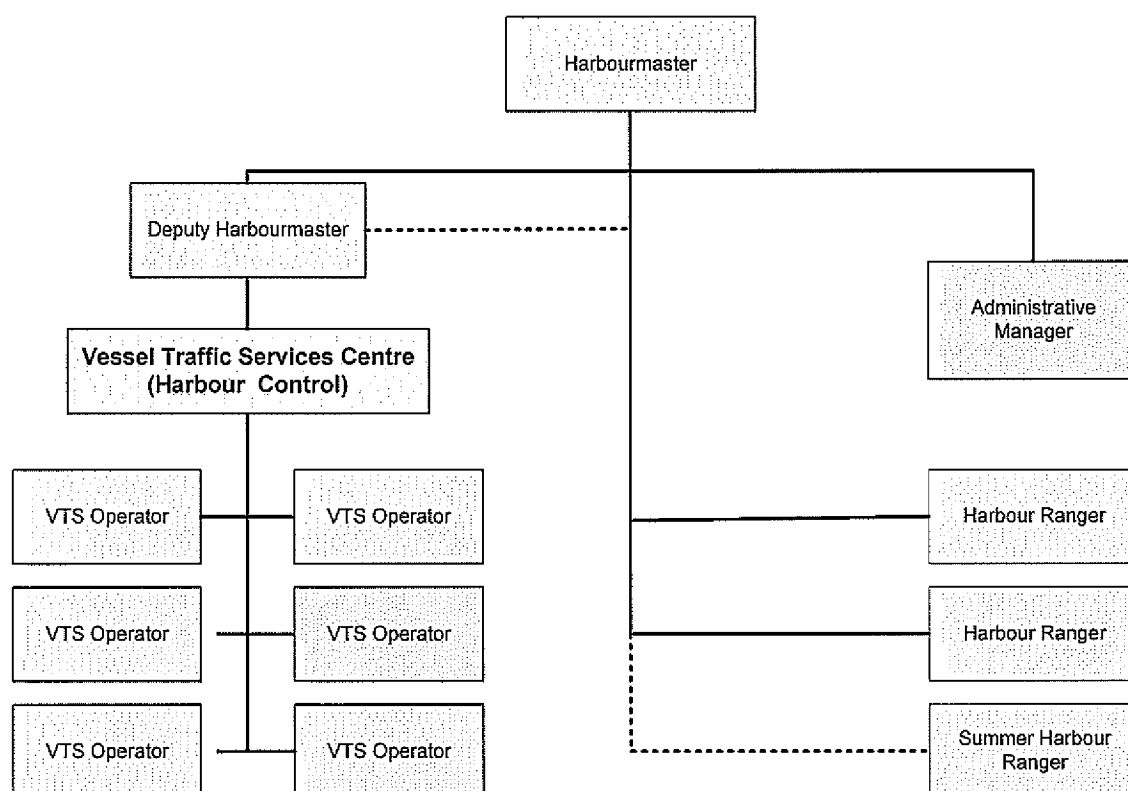


Figure 5: Structure of the Harbours Department

4.2 RESPONSIBILITIES

4.2.1 The Council

In respect of Navigational Safety, the Council:

- Discharges the duties and exercises the powers given to it, both directly and by delegation in accordance with the Local Government Act, 2002;
- Discharges the function of Harbour Authority as defined in the New Zealand Port and Harbour Marine Safety Code (PHMSC) by ensuring compliance with the Code, and the safe management of navigation;
- Approves the strategy, policies, plans and budgets of the Harbours Department, together with its strategic objectives;
- Reviews the performance of the Harbours Department against its strategic and operational objectives, plans and budgets.

4.2.2 Harbour Master

The Harbour Master is appointed by the Council to discharge the statutory role of Harbour Master in accordance with the Local Government Act and the Code. He is responsible for delivering navigational safety policy, keeping the Chief Executive advised and Council informed. This role is key to ensuring that the

NSMS fulfils the marine aspects of the Council's statutory duties and relevant non-statutory obligations.

4.2.3 Designated Person (DP)

In meeting its obligations under the Code, the Council has appointed a 'Designated Person', the Harbour Master, who maintains a right of direct access to the Council and/or the Chief Executive, as appropriate.

The role of the 'Designated Person' is to:

- Provide assurance that the Council has an effective and appropriate Navigational Safety Management System.
- Provide the Council with professional advice regarding the Council's overall compliance with the requirements of the Port and Harbour Marine Safety Code.

4.2.4 Harbour Stakeholders

Harbour stakeholders may provide input about specific issues to the harbours department and will be convened by the Harbour Master where there is an issue to be considered. The make-up of these groups may change from time to time, dependant on the harbour stakeholder experience most able to contribute to the issue under consideration. A harbour stakeholder group may be formed by individual invitation or it may be formed from an existing Harbour Interest group, depending on the issue being considered. For example, an issue involving ferries, a Harbour stakeholder group comprising representatives of ferry operators would be consulted, whereas a recreational issue would involve a harbour stakeholder group represented by either boating clubs or individuals with relevant navigational interest in the harbour.

4.2.5 The Port Company

CentrePort operates the commercial berths extending from Waterloo Quay to the Rail Ferry Terminals, as well as the tanker terminals at Seaview and Burnham. A berth at Miramar is used for laid-up vessels. CentrePort also has a license to berth non-commercial at wharves owned by Wellington Waterfront Limited.

CentrePort provides pilotage and towage and is therefore the entity responsible for the delivery of these services, including training. CentrePort retains responsibility to the NSMS to put in place systems to safely assist vessels and craft making approaches to its terminals. The Harbour Master is responsible for ensuring that Pilotage Procedures remain appropriate and to assist with their interface as a level 2 component of this NSMS. From time to time the Harbour Master or his authorised representative will audit or appoint an independent

auditor to monitor and/or review Pilotage Standards and the delivery of the pilotage and towage service.

The involvement of CentrePort and the avoidance of conflict of interest is vital to the successful delivery of the Wellington Harbour NSMS. The operational relationship between the organisations that have a major influence over the harbour is shown in **Figure 6**. The Designated Person within CentrePort's structure is the Marine Manager.

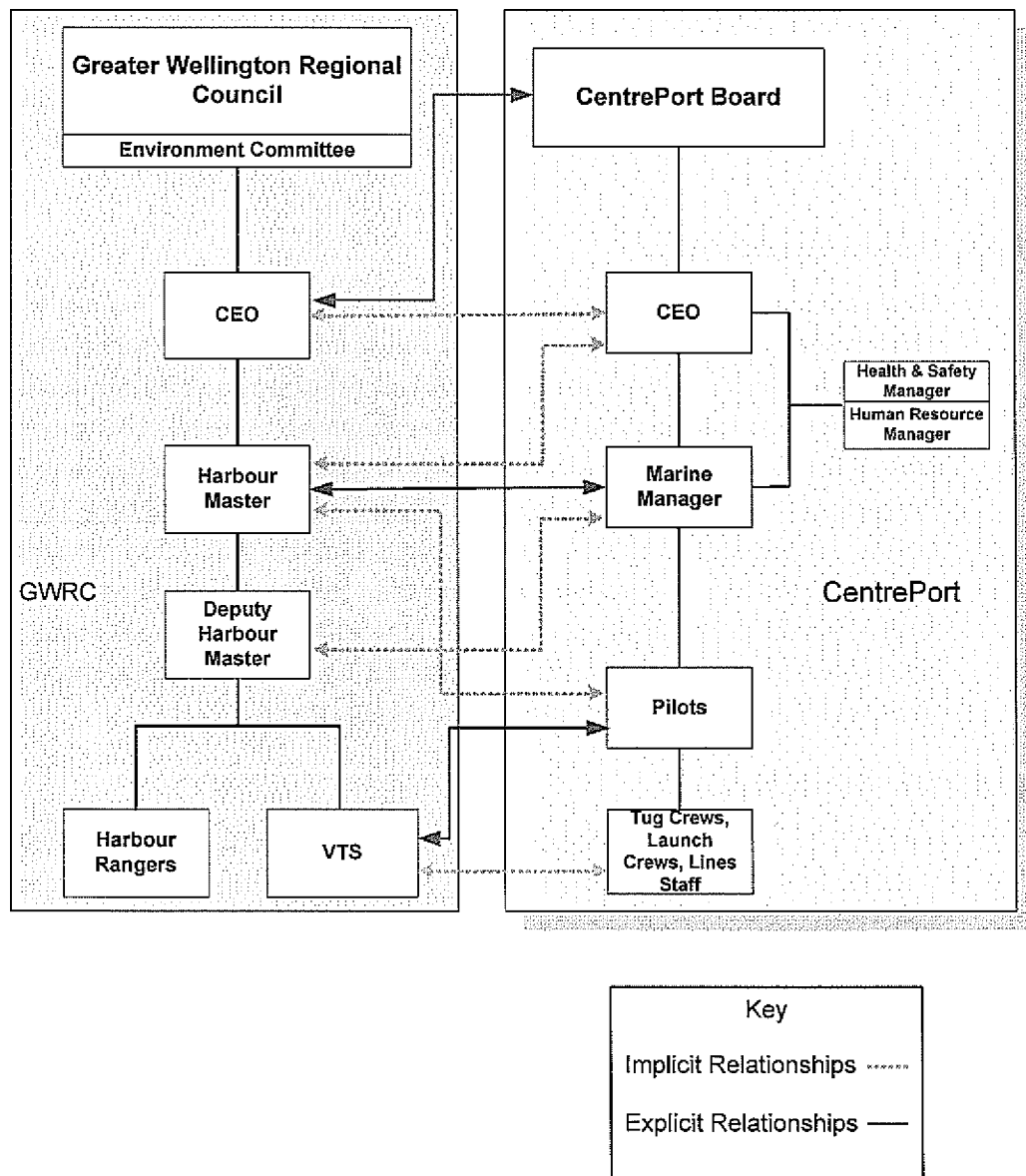


Figure 6: Operational relationships between GWRC Harbours department and CentrePort

5 IMPLEMENTATION

5.1 NAVIGATIONAL SAFETY PLAN

In association with its duties and responsibilities, the Harbours Department has developed a Harbour Navigational Safety Plan. The overall purpose of the plan is to collate all actions requiring to be implemented and to set target completion dates.

A long term plan for implementation of the Wellington Harbour Navigational Safety Management System is available at **Annex A**. This is reviewed annually to produce Strategic Objectives for the forthcoming 12 month period. The Annual Harbour Safety Plan is attached at **Annex B**. These objectives seek to:

- Reduce risks to as low as is reasonably practicable.
- Ensure all reasonably practicable steps are taken to identify the hazards and risks arising from operational activities in the Wellington Harbour.
- Ensure conformance with the navigational safety and marine policies, associated operating controls and applicable port and marine legislation and non-statutory obligations.
- Periodically review data gathered from audits, inspections, incidents and any concerns raised to evaluate and determine where improvements and changes need to be made.
- Implement employee competence training and Navigational SMS awareness programmes.

Facilitate port user involvement in the maintenance of the Navigational SMS and the overall improvement in the provision of navigational safety.

- Communicate the Council's ongoing efforts and achievements in facilitating navigational safety to all stakeholders.
- Review the effectiveness of and continually improve the Navigational SMS.

5.2 OVERALL PLAN REVISION

The Overall Harbour Safety Plan is reviewed periodically, driven by the achievements of the Annual Safety Plan. At minimum, it is reviewed every three years.

5.3 ANNUAL PLAN REVISION

The Annual Safety Plan is reviewed and reissued prior to the commencement of the Council's Financial Year. Its review is undertaken to facilitate financial planning for the forthcoming financial year.

6 NAVIGATIONAL SMS DATA

The NSMS has been informed by a comprehensive navigational risk assessment undertaken in 2005. A summary of the Key Hazards arising from that study are presented at **Annex C**. The full record of the 2005 Risk Assessment should be referred to for a complete hazard list.

6.1 SAFETY MANAGEMENT ARCHIVE - HAZMAN

The Hazman database contains details of *all* identified hazards, together with the associated risk control measures employed to mitigate those hazards. Both hazards and risk control measures have a designated 'owner'. All hazards are maintained within the system in ranked order, based on the outcome of the risk assessment process. This ranking structure will change with time as the hazards and risk controls continue to be reviewed, reassessed and rescored.

The archive also includes a comprehensive audit record, which documents the outcome of the scheduled proactive hazard review process, any incident review and the addition of any new risk and its associated assessment. In each case the outcome of the review is recorded and includes:

- The action taken and recommendations made by or to the Harbour Master;
- The names of those involved and their recommendations; and
- Subsequent recommendations/mitigating actions arising from the review.
- The day to day administration of Hazman is the responsibility of the Harbour Master or a person delegated by the Harbour Master. In particular, the job-holder:
 - Maintains, administers and interprets the Hazman database to ensure effective support to the Harbour Master;
 - Maintains, administers and interprets the Hazman database to ensure the effective recording, availability and archiving of marine incident information;
 - Constructs and presents Hazman information and reports as required in an effective and appropriate format, such that the overall navigational safety performance of the port may be reviewed and assessed.

Once a record has been initiated, additional information is included in respect of the outcome of the Harbour Master's initial regulatory investigation, and subsequently details of any follow-up disciplinary action and/or prosecution.

6.2 COMPUTERISED INCIDENT DATABASE

Wellington Harbours Department holds an incident database. However a new system will be introduced, compatible with the hazard management system, holding all reported navigational incidents and other occurrences of significance

to navigational safety. The inputs are provided by the Harbour Master as part of the normal filtering of reports to categorise incidents against near misses or items unrelated to safety. It will be the responsibility of the Deputy Harbour Master to ensure that incident data is accurately recorded and the database remains current.

7 RISK CONTROL MEASURES

The generic risk control measures employed by Greater Wellington Regional Council can be categorised as follows:

7.1 DOCUMENTARY RISK CONTROLS

- Regulatory Framework – Includes the Bylaws and Harbour Master's Directions.
- The provision tidal and other navigational information, navigation warnings and advice of conditions at the berth.
- Departmental Operational Manuals & Guidelines (Under Development).
- Process or task specific Operating Procedures
- Emergency Plans and Procedures
- Notices to Mariners – General navigational guidance and advice.
- Formalised Training and Assessment – See **Section 8** and the various departmental operational manuals.

7.2 PHYSICAL RISK CONTROLS

- AIS Receivers.
- Radars – radar coverage is currently available of waters in known risk areas, such as the Harbour entrance, although there are plans to upgrade and expand radar coverage.
- VHF Communication – A marine radio network covering VHF Channel 14 and Channel 16, providing effective Harbour communications for shipping, VTS and all harbour users.
- VTS System – The current Port Control arrangements are in the process of being upgraded to a PC based integrated traffic display system.
- Tide Gauges – A system of tide gauges located within the harbour providing live tidal information.
- Aids to Navigation – Buoys, beacons, marks and lights etc. maintained by GWRC, CentrePort and other owners in the Harbour.

7.2.1 Vessel Traffic Services

Vessel Traffic Services (VTS) are currently provided from Beacon Hill Signal Station, which is in the process of undergoing refurbishment and a formal hardware upgrade. The Signal Station monitors and manages vessel traffic within the area of responsibility. To do this effectively, the Council intends the VTS service to provide a continuous service within the limitations imposed by:-

1. The level of training and qualification achieved by VTS personnel;
2. The level of service to be promulgated;
3. The availability and operability of VTS equipment.

The VTS service will:

- Monitor by radar, AIS, VHF, CCTV and all other available means, all vessel traffic within the harbour limits in known risk areas. The service will include but not be limited to:-
 1. The recording of all known vessel traffic within the harbour;
 2. The recording of person numbers on vessels required to participate in the vessel reporting system;
 3. The recording of equipment deficiencies on vessels transiting the harbour.
- As an Information Service, provide VHF broadcasts of any known hazards to navigation which are temporary in nature and not covered in any local notices to mariners, also broadcasts of weather and tidal information on request. Swell conditions will be monitored and will be broadcast along with meteorological information. VTS will also provide broadcasts of known vessel traffic movements to reporting vessels;
- Provide assistance to the harbour police and RCC NZ in the event of emergencies or SAR events arising within the Harbour Authority's area of jurisdiction and support to the On Scene Commander in the event of a pollution incident within Wellington regional harbours;
- Develop staff to eventually deliver a Traffic Organisation Service (TOS). Appropriate equipment will be installed on a staged basis and training to the international standard⁵ will be implemented.
- General administrative data maintenance to include, but not be limited to, local meteorological data and records of equipment operability, reporting any anomalies or defects to the appropriate authority;
- Compliance with the Harbour Master's Standing Orders, the VTS Manual (to be developed), Standard Operating Procedures and any relevant legislation.

Guidance and instruction for operational and maintenance aspects of VTS and the training and authorisation of VTS staff will be addressed in the 'VTS Manual'. International IALA Guidelines approved by IMO will be used to keep under review the geographical extent in which the delivery of VTS is appropriate.

7.2.1.1 VTS Relationship with CentrePort

Under a standalone contract for the provision of services, the VTS will, as the interface between shipping and CentrePort, provide information and communication services to CentrePort.

⁵ IALA V103

7.2.2 Harbour Patrol Service

The Harbour Master will maintain the ability to carry out harbour patrol services as required and support administrative follow-up to assist in the effective regulation and enforcement of navigational safety policy.

7.2.3 Marine Services – Harbour Master System

The Harbour Master has been designated with responsibility for the provision and maintenance of navigational beacons, buoys and lighthouses.

The Harbour Master has a limited capability to remove wrecks and obstructions that are deemed to be hazards to navigation. Power to undertake this is found in the Local Government Act as well as Navigation Safety Bylaws.

7.2.4 CentrePort Wharves

CentrePort is responsible for the direct access to their wharves and formal arrangements will be in place so that berths are maintained in a condition appropriate to their use and safe access is maintained in order to follow the policies and principles of this NSMS manual.

7.2.5 Pilotage

Pilotage is supplied by CentrePort. The Harbour Authority has policy for CentrePort to provide the responsible interface for the deployment of Authorised Pilots to vessels. Pilots are required to report the movement of any vessel to the VTS.

7.2.6 Towage

Towage is supplied by CentrePort to vessels requesting tugs. A new tug is on order at the time of writing to address the need for greater towage capacity identified in the Wellington Harbour Risk Assessment. CentrePort maintains and regularly reviews an asset management plan to address potential future towage requirements.

7.2.7 Emergency Preparedness and Response

The Council has established emergency response plans and procedures to address marine emergency incidents. Training exercises and seminars are programmed on an annual basis to familiarise and update staff on these emergency procedures and to exercise individual response actions. Appropriate staff training and emergency exercise records are maintained.

7.2.8 Environmental Management

The Council maintains effective procedures and control measures designed to ensure that the potential impact on the environment is fully considered when planning or approving commercial and recreational activities within the port.

8 SYSTEM OPERATION AND CONTROL

8.1 DOCUMENT CONTROL

The document control procedure for the Navigational Safety Management System will be in accordance with the requirements of the Harbour Master. All documents within the Navigational SMS are reviewed and approved, as appropriate, by the Harbour Master prior to issue. A record of changes is to be maintained on the front of the relevant NSMS manual.

8.2 NAVIGATIONAL SMS REVIEW PROCESSES

The identification and assessment of navigational hazards is central to the effective maintenance of the NSMS. Hazman will be used as the basis for the continuing review of both new and existing hazards and their preventative control measures.

Reviewing identified hazards and risk control measures will involve the Council's maritime staff and port stakeholders, as appropriate. It may also, on occasions, involve external specialist consultants.

The review of hazards and control measures are prompted by three circumstances:

1. Planned, periodic, formal review of established hazards and risk controls, initiated by the Hazman software;
2. Review of hazards and associated risk controls following an incident; and
3. The identification and assessment of any potential hazards arising from changes to circumstances including the introduction of a new trade and/or marine operation.

8.2.1 Periodic Reviews - Proactive

The SMS review schedules revision of individual hazards and their associated risk control measures for ongoing review. This is set up electronically within the Hazman software.

This schedule ensures that all currently identified hazards are reviewed over a four year period, some more frequently than others. The individual periodicity of review is dependent upon the ranking of the hazard or the potential consequence of hazard realisation. The highest ranked hazards are reviewed six-monthly, the lowest four-yearly.

All hazards and risk control measures have been allocated an 'Owner', normally the Harbour Master or his Deputy, CentrePort, or a delegated specialist

appointee. A hazard owner may be given a hazard to review but its risk control measures will always be the responsibility of the Harbour Master (as an independent) to review or audit as necessary. The Harbour Master will retain responsibility for allocating any entity undertaking the hazard review, which could be an external organisation. A review will be undertaken in consultation with staff members, CentrePort and port stakeholders as appropriate.

8.2.2 Post-Incident Reviews - Reactive

Following a navigational incident, the Harbour Master decides if investigative action is warranted and, where appropriate, liaises with Maritime New Zealand. He will also establish whether there is a need to review the relevant hazard in the Hazman software package and its associated control measures.

8.2.3 New Risk Assessments

Whenever circumstances change to bring in activities outside the existing scope of the Navigational SMS, the Harbour Master will, in full collaboration with the relevant stakeholders, undertake a risk assessment of the intended operation.

8.3 RISK ASSESSMENT STANDARDS

8.3.1 Methodology

The general risk assessment process used is based on the standards published by Maritime New Zealand. This formal approach involves the following five sequential assessment stages, applied in appropriate depth:

- Data gathering and familiarisation
 - *Review of the existing management structure, risk control arrangements, policies, procedures and operational functions.*
- Hazard Identification
 - *Identification of potential hazards and mapping of existing control measures.*
- Risk Analysis
 - *Consideration of the likelihood of identified hazardous incidents and their associated potential consequences, including prioritising of their risk factors.*
- Risk Assessment
 - *Comparison of risk factors with effectiveness of existing risk control arrangements, and subsequent determination of additional control measures.*
- Risk Control
 - *Judgement and endorsement of specific control measures to be implemented and managed through the Navigational SMS.*

8.3.2 Risk Level Criteria

The resulting risk level from each identified hazard is determined by numerically comparing the potential severity of the consequences (against life, the environment, property and port business) and the likelihood of that hazard occurring.

Hazards are then ranked according to their numerically scored risk level. It is the principle aim of the ongoing hazard review process to actively manage the risk control measures associated with each hazard and attempt to reduce the level of risk, and therefore the ranked score, at each review.

9 TRAINING

9.1 COMPETENCE ASSURANCE

The competence assurance process is linked directly to considered personnel selection and recruitment procedures, relevant job descriptions and appropriate pre-determined recruitment selection criteria.

Typically, the process comprises four stages:

Stage 1: Pre-Job

A person shall not be permitted to undertake work until the entry-level criteria have been satisfied. Entry-level requirements are normally defined within the relevant job description and vacancy notice.

Stage 2: Induction Training

All new staff, including any temporary personnel, will receive appropriate induction training. This will take the form of general induction training common to all new staff, followed by departmental induction training and operational briefings as appropriate. Relevant departmental managers are required to record that induction training has been completed.

Stage 3: Supervision and On the Job Training (OJT)

Once a person has been selected as suitable to fulfil a specific job function, that person will be placed under the supervision of a competent person, who will recommend when the person is considered competent. Alternatively, in certain cases, this period of supervision may take the form of On the Job Training, following which a formal assessment of competence is conducted.

Stage 4: Competence

A person may be considered competent once he/she has completed all necessary induction training and has been assessed either by his/her supervisor, or by formal assessment on completion of OJT.

The principles of competence assurance are followed when recommending authorisation of a Pilot Exemption Certificate.

9.2 MARINE TRAINING

Training is a key element within the NSMS. In order to ensure that personnel are properly trained, the principles of job analysis and training design are followed. In particular, the person responsible for marine training will:

- Identify operational and safety training needs;
- Establish a skills matrix of competency levels required for key tasks;
- Plan how training requirements are to be met and when;

- Establish a process to appraise the effectiveness of training.

9.3 SAFETY MANAGEMENT TRAINING

It is intended that all marine staff shall attend a Navigational Safety Management induction briefing to ensure that they are fully aware of the provisions of the NSMS, and of specific roles and responsibilities assigned to them within this programme. The topics to be covered shall include:

- Overview of relevant Council Bylaws and General or Harbour Master's Directions;
- Review of the Navigational Safety Policy;
- Outline of Management and Operating procedures and their provisions;
- Principles of individual accountability and responsibilities;
- Formal and informal procedural controls in place;
- Outline of response to emergencies and contingencies;
- Health and safety.

9.4 TRAINING AND COMPETENCE RECORDS

All training and instruction provided to Harbours Department Staff will be duly recorded and retained in a secure file.

9.5 PERFORMANCE MEASURES

The Council's performance-monitoring programme is designed to progressively improve navigational safety. By measuring key indicators, which reflect both the performance of the Council and that of port and harbour users, appropriate measures can be adopted and introduced which further navigational safety. The following measures are used to monitor navigational safety and the Harbour Department's performance:

- Facilitating the safety of navigation within Wellington Harbour
 1. Number of safety incidents on a per-movement basis.
 2. Number of formal warnings issued.
 3. Number of HM Infringement Notices issued.
 4. Non-availability of key VTS equipment
- Non-availability of navigation lights, beacons and buoys.
 5. Non-availability of any Council Aids to Navigation.
 6. Non-availability of a suitable patrol vessel.
- Respecting the Environment of Wellington Harbour
 7. Total number of reported pollution incidents.
 8. Number of attributable pollution incidents, including safety incidents.
 9. Number of infringements initiated.

9.6 COMPLIANCE MONITORING

The day-to-day monitoring of navigational safety management controls and provisions is measured and checked through departmental monitoring regimes using the criteria laid out in Section 5.1.

Evaluation of the level of compliance is achieved through:

- Proactive systems that monitor performance in relation to objectives and operating standards.
- Reactive systems, which investigate incidents and unwanted events.

9.6.1 Reactive Monitoring

9.6.1.1 Incident Reporting and Investigation

Greater Wellington Regional Council wishes to create an environment within which all navigational incidents are reported. The Council's Navigation Bylaws require that a master provides reports should his vessel be involved in certain incidents. However, all are encouraged to report other incidents for only by understanding the causes and avoidance measures adopted in all such circumstances can more serious incidents be avoided.

INCIDENT

In relation to the NSMS an Incident is defined as:

'Any unplanned event which causes, or is liable to cause, an undesirable outcome'.

The above definition encompasses:

- a) injury or death to one or more persons;
- b) damage to property (i.e. vessels, port infrastructure or aids to navigation);
- c) damage to the environment;
- d) damage to port business (i.e. financial loss or damage to Greater Wellington Regional Council or the Port of Wellington's reputation);
or
- e) non-compliance with a statute or regulation.

NEAR MISS

Note that the inclusion of 'liable to cause' brings Near Misses into the definition of incident for the purposes of the SMS.

Examples of those to be considered include:

- a) Situations where a vessel or craft needs to take unconventional avoiding action.

-
- b) A vessel passing another so close as to create a risk of collision or interaction.
 - c) A vessel passing so close to shoal water as to create a risk of grounding.
 - d) A vessel or craft passing so close to a structure as to create a risk of contact.

The Harbour Master is responsible for the investigation of navigational incidents, both from the NSMS perspective (i.e. the cause/circumstance of the incident) and in the regulatory sense (whether there has been a breach of Council or other regulations).

Where circumstances warrant, Maritime New Zealand may become the lead investigation agency. In such cases, the Harbours Department will take a provisional view of any failings of the NSMS and act upon them. A full appraisal of the final outcome of any external investigation (following the publication of any reports or the conclusion of any investigation, inquiry or prosecution) will subsequently be undertaken and any remaining issues considered at that time.

ANNEX A

Key Hazards

An additional hazard has been identified since the original Risk Assessment was completed in 2005. The hazard list and safety plans within this SMS document now reflect this hazard, ranked at 22 with a reference number of 79.

Rank No.	Hazard Reference	Hazard Description	Risk Overall	Risk By Consequence Category							
				M L				W C			
				People	Property	Environment	Stakeholders	People	Property	Environment	Stakeholders
1	5	Ferry grounding at the harbour entrance	6.81	6	0	0	9	7	7	7	7
2	21	Two ferries in developing collision situation during an overtaking or passing manoeuvre near alter-course waypoints.	5.75	0	0	0	7	7	7	6	7
3	18	Passenger ferry and large vessel in developing collision situation, wider angle of approach.	5.75	0	0	0	7	7	7	6	7
4	20	Inbound passenger ferry in developing collision situation with outbound container or large vessel (or tanker departing Evans Bay by night).	5.68	0	0	0	7	7	6	6	7
5	54	A vessel with high windage breaks mooring lines in high offshore winds (other than a vessel berthed at a finger berth).	5.61	0	6	0	0	7	8	3	7
6	46	Ferry berthing without tug assistance in adverse weather in heavy contact with berth or adjacent vessel.	5.59	0	6	0	6	6	7	3	7
7	27	Yacht engaged in racing and ferry or large vessel in developing collision situation.	5.29	0	0	0	6	8	6	0	7
8	1	Inbound large vessel (> 500GT) in grounding situation in adverse southerly conditions through operational failure.	5.28	0	0	0	6	6	7	7	7
9	44	Ferry berthing at Rail Ferry Terminal (RFT) in heavy contact with berth or adjacent vessel.	5.28	0	6	0	6	6	6	0	7
10	59	Leisure craft founders in the harbour.	5.22	6	0	0	6	7	3	0	7
11	15	Ferry and deep draught ship in developing collision situation between the Pinnacles and Falcon Shoals.	5.05	0	0	0	6	6	6	4	7

Rank No.	Hazard Reference	Hazard Description	Risk Overall	Risk By Consequence Category							
				M L				W C			
				People	Property	Environment	Stakeholders	People	Property	Environment	Stakeholders
12	63	Lines crew injured due to a mooring line accident.	4.85	0	6	0	0	7	3	0	7
13	76	Deep draught vessel (e.g. Tanker) in potential grounding situation while transiting harbour entrance	4.81	0	2	0	6	3	6	6	6
14	28	Inbound vessel or ferry in developing collision situation with tanker outbound from Seaview.	4.68	0	0	0	4	6	6	6	7
15	70	RoRo ferry has shipboard fire while transiting the approaches or entrance.	4.65	3	0	0	3	7	7	4	7
16	74	Leisure craft in potential collision situation with commercial vessel swinging or transiting Lambton Harbour.	4.63	0	0	0	6	7	0	0	7
17	47	Large vessel such cruise vessel, car carrier, container or general cargo ship in contact berthing with wharf or container cranes in restricted visibility, strong onshore winds, berthing in very strong wind conditions.	4.63	0	6	0	0	4	6	4	6
18	67	Fire on board a harbour ferry or passenger carrying charter vessel.	4.61	3	3	0	3	7	6	2	6
19	16	Ferry and leisure craft in developing collision situation.	4.56	0	0	0	6	7	2	0	6
20	45	A vessel manoeuvring in the vicinity of a Tanker working cargo (discharging or backloading gas oil) or a vessel bunkering, contacts or interacts with the vessel alongside. This includes the same event involving a large cruise liner at Aotea Quay.	4.52	0	0	0	3	6	6	6	7
21	52	Laid up fishing vessel parts mooring lines in heavy northerly gale.	4.51	0	6	0	0	6	3	3	6
22	79	Deep draught vessel (e.g. Tanker, Container ship or Bulk Carrier) in potential bounce grounding on isolated rock danger on or near line of leads, whilst transiting harbour entrance.	4.49	0	3	0	7	0	3	3	5

Rank No.	Hazard Reference	Hazard Description	Risk Overall	Risk By Consequence Category							
				M L				W C			
				People	Property	Environment	Stakeholders	People	Property	Environment	Stakeholders
23	53	Vessel or ferry breaks lines or is unable to berth at no.3 berth, due to strong offshore southwesterly or broad northwesterly wind.	4.43	0	3	0	3	7	3	3	6
24	61	Rowing skiff or dragon boat swamped or capsizes in Lambton Harbour. Hazard relates to organised events and associated practice activities.	4.38	3	0	0	3	8	0	0	7
25	2	Foreign flagged fishing vessel of less than 500GT in grounding situation in the harbour approaches.	4.3	0	0	0	3	7	6	4	6
26	78	Tanker in contact berthing situation at Seaview Wharf	4.3	0	3	0	0	4	7	6	6
27	9	Charter fishing vessel in grounding situation e.g. Chaffers Passage.	4.3	3	3	0	0	7	4	2	6
28	17	Ferry or large vessel and fishing vessel in developing collision situation on approach to or within harbour.	4.3	0	0	0	3	7	6	4	6
29	49	Harbour ferry in contact berthing situation at any berth.	4.29	0	6	0	0	6	3	0	6
30	48	Vessel at container berth in contact berthing with container cranes during departure.	4.24	0	3	0	0	6	7	2	7
31	60	Recreational fishing craft swamped or capsized by wash of passing large vessel.	4.22	6	0	0	0	6	2	0	6
32	57	Fishing vessel founders at harbour entrance in adverse southerly conditions.	4.17	3	0	0	0	7	6	2	6

ANNEX B

Harbour Safety Plan – Long Term

Risk Control Measure	Objective	Key Hazards Mitigated			Milestone Tasks Required	Target Start Date	Target Completion Date	Dependencies
		Rank	Short Title	Ref				
RCM 1	Obtain support and buy in from key stakeholders for the development of modified harbour management and control processes.	1-79	This Control measure is pivotal in the mitigation of all risks for this plan. The support of key local Government, commercial and recreational stakeholders is imperative in order for effective measures to be established.	1-79	a) Obtain approval from Council for the new Navigational Safety Management System and policies.	March 2007	June 2007	To be effective all RCMs will require engagement with Harbour stakeholders at some level.
					b) Develop implementation plan with CentrePort in areas related to commercial operations or for any other significant areas of the plan.	March 2007	June 2007	
					c) Obtain written commitment from CentrePort to support critical SMS initiatives in which they have a role.	May 2007	May 2007	
					d) Inform and advise other stakeholders of significant planned actions and their time frame .	May 2007	ongoing	
RCM 1a	Have in place sufficient, sustained revenue to deliver the Risk Control Measures.	1-79	Adequacy of finance directly effects all of the intended RCMs and as such is integral in the mitigation of all risks.	1-79	a) Have sufficient capital funding to purchase, install and maintain the required equipment and technology.	March 2007	Ongoing	All RCMs in some way influenced by the adequacy and sustainability of funding.
					b) Access sufficient sustained operational funding so as to allow high quality harbour co-ordination and management services to be maintained.	April 2007	Ongoing	
					c) Establish modified budgets and financial plan to cover five year period.	April 2007	Ongoing	
RCM 1b	Maintain a Bylaws structure within the Greater Wellington Regional Council that facilitates ongoing safety management under the Port and Harbour Marine Safety Code.	1-79	Directions and Bylaws have the ability to impact on all of the RCMs and as such are integral in the mitigation of all risks.	1-79	a) Review the ability of the Bylaw process to introduce a schedule of formal general directions to manage detail of navigational safety requirements, with reference to the national generic bylaw currently under draft.	Ongoing	Ongoing	All RCMs in some way influenced by the ability to implement directions to users.
RCM 2	Institute changes to specific Aids to Navigation in order to provide greater visibility, improve vessel management or reduce confusion or conflict with other lights.	1	Ferry in grounding at the harbour entrance.	5	a) Evaluate the necessity of realigning the green sector of the Rear Lead so that vessels pass no closer than 3 cables off Point Halswell, Kau Point and Point Gordon.	December 2006	February 2007	
		2	Two ferries in developing collision situation during an overtaking or passing manoeuvre near alter-course waypoints.	21	b) Conduct a cost/benefit analysis of improving the profile of the Front Lead Light by installing a Racon, AIS transmitter or other suitable aid to navigation.	September 2007	December 2007	
		3	Passenger ferry and large vessel in developing collision situation, wider angle of approach.	18				
		4	Inbound passenger ferry in developing collision situation with outbound container or large vessel (or tanker departing Evans Bay by night).	20				

Risk Control Measure	Objective	Key Hazards Mitigated			Milestone Tasks Required	Target Start Date	Target Completion Date	Dependencies
		Rank	Short Title	Ref				
		7	Ferry or large vessel and fishing vessel in developing collision situation on approach to or within harbour.	17				
		12	Ferry and deep draught ship in developing collision situation between the Pinnacles and Falcon Shoals.	15				
		14	Deep draught vessel (e.g. Tanker) in potential grounding situation while transiting harbour entrance.	76				
		26	Foreign flagged fishing vessel of less than 500GT in grounding situation in the harbour approaches.	2				
		32	Outbound ferry or other large vessel in developing collision situation with inbound fishing vessel on rounding Kau Point or other headland.	22				
		34	Harbour ferry in developing collision situation with another larger ferry or other larger vessel transiting harbour.	23				
		70	Fishing vessel in contact with navigational beacon.	38				
		71	Small commercial, fishing or passenger vessel in collision situation with similar vessel navigating in opposite direction.	30				
RCM 3	Make specific changes to information, symbols and routes shown currently on local charts in order to clarify permitted activity in specific areas.	1	Ferry in grounding at the harbour entrance.	5	a) Identify areas requiring limitations to be put in place, particularly areas currently showing as being allowed for anchoring, such as the explosives anchorage, where anchored vessels may impinge safe movement of other vessels (or vice versa).	May 2007	Ongoing	
		14	Deep draught vessel (e.g. Tanker) in potential grounding situation while transiting harbour entrance.	76				
		26	Foreign flagged fishing vessel of less than 500GT in grounding situation in the harbour approaches.	2	b) Have reference information for vessel transit tracks and waypoints recorded in the notes section of local charts.	May 2008	December 2008	
		28	Charter fishing vessel in grounding situation eg. Chaffers Passage.	9	c) Work with LINZ, UKHO and harbour users to see information promulgated.	May 2008	December 2008	
		41	Tanker with high freeboard in grounding situation in Evans Bay.	11				
		49	Tug under 500GT with large tow and no local assistance grounds tow during transit (inwards or outwards).	6				

Risk Control Measure	Objective	Key Hazards Mitigated			Milestone Tasks Required	Target Start Date	Target Completion Date	Dependencies
		Rank	Short Title	Ref				
		74	Leisure craft in grounding situation along the south coast for example at Island Bay, Barrett Reef, West Ledge or Chaffers Passage. Leisure craft grounds within an inner harbour area.	4				
		75		13				
RCM 3a	Maintain up to date bathymetric and hydrographic information on maritime areas within the region.	1-79	Same as RCM 3.	1-79	a) Ensure that CentrePort has a preferred Hydrographic Surveyor who undertakes surveys in accordance with LINZ, IHO and Code procedures and records soundings in a format capable of being used by LINZ.	March 2007	Ongoing	
					b) Ensure that any soundings undertaken by GWRC are taken by a Hydrographic Surveyor who undertakes surveys in accordance with LINZ, IHO and Code procedures and records soundings in a format capable of being used by LINZ.	March 2007	December 2008	
					c) Ensure that the results of any hydrographic survey are promulgated to port users and LINZ.	March 2007	Ongoing	
					d) Ensure that CentrePort has a strategy in place that determines the timing and frequency of soundings.	May 2007	May 2008	
RCM 4	Further develop the harbours existing vessel monitoring and information services to provide a sustained quality of service consistent with IALA VTS standards.	1	Ferry in grounding at the harbour entrance.	5	a) Align Beacon Hill VTS operating procedures so that they reflect CentrePort SOPs particularly those related to pilotage.	March 2008	June 2008	
		2	Two ferries in developing collision situation during an overtaking or passing manoeuvre near alter-course waypoints.	21	b) Identify the specific current and projected responsibilities and skills required by Beacon Hill VTS staff in order for them to provide appropriate vessel traffic information.	September 2007	June 2008	
		3	Passenger ferry and large vessel in developing collision situation, wider angle of approach.	18	c) Establish a sustained competency assessment and training process to ensure staff meet the required standards.	March 2008	June 2008	
		4	Inbound passenger ferry in developing collision situation with outbound container or large vessel (or tanker departing Evans Bay by night).	20	d) Provide sufficient competent staffing to maintain a 24/7 service, including cover for sickness and leave.	June 2007	Ongoing	
		7	Ferry or large vessel and fishing vessel in developing collision situation on approach to or within harbour.	17	e) Complete an analysis and technical plan of the RADAR, CCTV and supporting infrastructure required to maintain constant 24/7 monitoring of the Main Harbour and Lambton Harbour from the VTS centre at Beacon Hill Signal Station.	March 2007	September 2007	

Risk Control Measure	Objective	Key Hazards Mitigated			Milestone Tasks Required	Target Start Date	Target Completion Date	Dependencies
		Rank	Short Title	Ref				
		8	Yacht engaged in racing and ferry or large vessel in developing collision situation.	27	f) Establish sufficient technical infrastructure to allow remote monitoring equipment to be linked to the VTS centre at Beacon Hill Signal Station.	February 2008	June 2008	
		9	Inbound large vessel (> 500GT) in grounding situation in adverse southerly conditions through operational failure.	1	g) Set up sufficient RADAR equipment allow Beacon Hill Signal Station to maintain a sustained RADAR picture of all activity within the Main Harbour, Lambton Harbour and Evans Bay.	March 2008	June 2008	
		11	Leisure craft founders in the harbour.	59	h) Install CCTV that is linked to monitoring equipment at Beacon Hill Signal Station and will provide visual cover of vessel activity within the Lambton Harbour area.	March 2008	June 2008	
		12	Ferry and deep draught ship in developing collision situation between the Pinnacles and Falcon Shoals.	15	i) Install CCTV that is linked to monitoring equipment at Beacon Hill Signal Station and will provide visual cover of vessel activity within the Main Harbour area.	March 2008	June 2008	
		14	Deep draught vessel (e.g. Tanker) in potential grounding situation while transiting harbour entrance.	76	j) Complete a technology plan for the provision of infrastructure and software to allow Beacon Hill VTS Signal Station to install chart and monitoring software, with sufficient capability to interface with AIS and RADAR equipment while allowing VTS operators to monitor vessel movements within the region.	February 2007	June 2007	
		15	Inbound vessel or ferry in developing collision situation with tanker outbound from Seaview.	28	k) Install VTS monitoring software and technology that integrates with AIS equipment and allows data integration onto the charts.	March 2008	June 2008	
		17	Leisure craft in potential collision situation with commercial vessel swinging or transiting Lambton Harbour.	74	l) Install VTS monitoring software and technology that integrates with RADAR equipment and allows data integration onto the charts.	March 2008	June 2008	
		20	Ferry and leisure craft in developing collision situation.	16	m) Set up and activate guard alarm rings for anchored vessels.	June 2008	June 2008	
		26	Foreign flagged fishing vessel of less than 500GT in grounding situation in the harbour approaches.	2	n) Implement SOPs for Beacon Hill VTS related to the management of vessels boarding or disembarking pilots at the chartered boarding stations.	January 2008	June 2008	
		28	Charter fishing vessel in grounding situation eg. Chaffers Passage.	9	o) Establish criteria and schedule of review for VTS so as to monitor standard of service on continuing basis.	June 2007	January 2008	
		32	Outbound ferry or other large vessel in developing collision situation with inbound fishing vessel on rounding Kau Point or other headland.	22	p) Ensure that there is an ongoing review of VTS processes to maintain continuity of high quality service.	June 2007	June 2008	

Risk Control Measure	Objective	Key Hazards Mitigated			Milestone Tasks Required	Target Start Date	Target Completion Date	Dependencies
		Rank	Short Title	Ref				
		33	Fishing vessel founders at harbour entrance in adverse southerly conditions.	57	q) Establish the skill sets required for VTS operators to assist a pilot to guide a vessel to boarding area Delta and establish appropriate training.	June 2007	June 2008	
		34	Harbour ferry in developing collision situation with another larger ferry or other larger vessel transiting harbour.	23	r) Define criteria and SOPs for VTS operators to be able to assist the pilot to guide vessels to Delta boarding area.	March 2007	June 2007	
		35	Rowing skiff in potential collision situation with power driven vessel in Lambton Harbour.	34	s) Establish procedures for Beacon Hill VTS to record and monitor PEC currency.	March 2007	June 2007	
		39	A vessel makes contact with a vessel either at the explosives anchorage or in the inner anchorage.	41	t) Ensure that CentrePort, as pilotage provider, has specific SOP(s) relating to the transit of vessels constrained by their draft, such SOP(s) are to include the requirement for the pilot to inform the VTS when it is so constrained.	September 2007	June 2008	
		41	Tanker with high freeboard in grounding situation in Evans Bay.	11	u) Have a procedure in place which requires the VTS to apply specific management processes to vessels constrained by their draft, including informing harbour users of the vessel's course and position.	June 2007	June 2008	
		42	Container ship or other vessel in grounding situation through dragging anchor.	14				
		43	Ferry or other larger vessel in developing collision situation with naval vessel (especially on rounding Kau Point).	24				
		44	Inshore fishing vessel in grounding situation in harbour approaches (including Island Bay and Chaffers Passage).	3				
		45	Small commercial, fishing or passenger vessel in collision situation with ferry or other large vessel sailing or approaching the berth.	33				
		46	Pilot vessel in potential capsize situation in heavy seas at the harbour entrance.	58				
		48	Leisure craft and small commercial vessel in developing collision situation in any harbour area.	77				
		49	Tug under 500GT with large tow and no local assistance grounds tow during transit (inwards or outwards).	6				
		50	Leisure craft and large ship in developing collision situation (over 500GT).	26				

Risk Control Measure	Objective	Key Hazards Mitigated			Milestone Tasks Required	Target Start Date	Target Completion Date	Dependencies
		Rank	Short Title	Ref				
		51	Leisure craft in conflict in high leisure use area.	31				
		52	Light draught or high windage vessel is overwhelmed by conditions just after leaving port (and within port limits).	7				
		59	Small harbour ferry or other commercial vessel in potential collision situation with leisure craft in approaches to Days Bay wharf.	73				
		60	Kayak in collision with vessel sailing from a commercial wharf area.	32				
		61	Power driven leisure craft and kayaker in developing collision other than Lambton Harbour.	25				
		62	Windsurfer and other vessel or craft in developing collision situation in Evans Bay.	37				
		64	Leisure craft and water-skier or Personal Water Craft in developing collision situation, i.e. in Oriental Bay or Kau Bay, near or in the water-ski lane.	35				
		65	Large vessel transiting area between the Pinnacles and Falcon Shoals.	72				
		66	Pilot launch in collision with large vessel while approaching to embark disembark pilot.	19				
		67	Light draught or high windage vessel is unable to safely manoeuvre.	10				
		68	Waka and leisure craft in developing collision situation.	36				
		70	Fishing vessel in contact with navigational beacon.	38				
		71	Harbour passenger vessel in grounding situation on passage or near berth.	12				
		72	Tug has contact and a collision with a vessel being assisted to berth or sail.	29				
		73	Small commercial, fishing or passenger vessel in collision situation with similar vessel navigating in opposite direction.	30				
		74	Leisure craft in grounding situation along the south coast for example at Island Bay, Barrett Reef, West Ledge or Chaffers Passage.	4				

Risk Control Measure	Objective	Key Hazards Mitigated			Milestone Tasks Required	Target Start Date	Target Completion Date	Dependencies
		Rank	Short Title	Ref				
		75	Leisure craft grounds within an inner harbour area.	13				
RCM 5	Remodel pilotage processes and practice so as to maintain a high standard of safe passage for vessels transiting to and from the harbour while protecting all individuals and resources connected with the process.	1	Ferry in grounding at the harbour entrance.	5	a) Review the criteria for a vessel to accept compulsory pilotage. Specifically look at length being used as a significant criterion in defining the need for pilotage /PEC. Identify changes required to Bylaws and Maritime Rules in order to implement new policy.	September 2007	December 2007	
		3	Passenger ferry and large vessel in developing collision situation, wider angle of approach.	18	b) Define the changes and criteria for compulsory pilotage and formalise, if necessary, a submission to MNZ for any new requirements.	September 2007	December 2007	
		4	Inbound passenger ferry in developing collision situation with outbound container or large vessel (or tanker departing Evans Bay by night).	20	c) Define the point at which the combined GT or length overall of tugs and tows requires them to be subject to pilotage requirements.	September 2007	December 2007	
		9	Inbound large vessel (> 500GT) in grounding situation in adverse southerly conditions through operational failure.	1	d) Work with MNZ to redefine Maritime Rule Part 90, such redefinition will include supporting changes to compulsory pilotage if this is identified as a need.	September 2007	December 2007	
		12	Ferry and deep draught ship in developing collision situation between the Pinnacles and Falcon Shoals.	15	e) Relocate the present compulsory Pilotage Limit to the present Harbour Limit.	September 2007	December 2007	
		14	Deep draught vessel (e.g. Tanker) in potential grounding situation while transiting harbour entrance.	76	f) Ensure that CentrePort, as pilotage provider, has considered critical hazards and possible effects of wind, sea and swell when developing SOP's in relation to the embarking and disembarking of pilots – both in respect to the position and the process (refer CP SOP 4.601, 4.651, 4.66).	March 2007	June 2007	
		15	Inbound vessel or ferry in developing collision situation with tanker outbound from Seaview.	28	g) Identify and document pilotage and VTS functions and processes and promulgate these as SOPs, linking where appropriate, to CentrePort's SOPs.	March 2008	June 2008	
		26	Foreign flagged fishing vessel of less than 500GT in grounding situation in the harbour approaches.	2	h) Establish in consultation with CentrePort limiting environmental criteria for vessels to be able to safely proceed to Delta area for pilot boarding (refer CP SOP 4.651)	March 2007	June 2007	
				28	Charter fishing vessel in grounding situation eg. Chaffers Passage.	9	i) Ensure that CentrePort as pilotage provider, and Beacon Hill VTS have a common understanding of the minimum communication requirements expected between pilot and VTS during a ship movement. These requirements will reflect those written or expected by existing SOP's.	March 2007

Risk Control Measure	Objective	Key Hazards Mitigated			Milestone Tasks Required	Target Start Date	Target Completion Date	Dependencies
		Rank	Short Title	Ref				
		32	Outbound ferry or other large vessel in developing collision situation with inbound fishing vessel on rounding Kau Point or other headland.	22	j) Ensure in co-operation with CentrePort that Class B AIS transponders are fitted to pilot vessels and other significant harbour support vessels in order to facilitate their easy identification and monitoring by transmitting vessels and Beacon Hill VTS.	June 2007	June 2008	
		34	Harbour ferry in developing collision situation with another larger ferry or other larger vessel transiting harbour.	23				
		35	Rowing skiff in potential collision situation with power driven vessel in Lambton Harbour.	34				
		41	Tanker with high freeboard in grounding situation in Evans Bay.	11				
		42	Container ship or other vessel in grounding situation through dragging anchor.	14				
		43	Ferry or other larger vessel in developing collision situation with naval vessel (especially on rounding Kau Point).	24				
		44	Inshore fishing vessel in grounding situation in harbour approaches (including Island Bay and Chaffers Passage).	3				
		45	Small commercial, fishing or passenger vessel in collision situation with ferry or other large vessel sailing or approaching the berth.	33				
		46	Pilot vessel in potential capsized situation in heavy seas at the harbour entrance.	58				
		48	Leisure craft and small commercial vessel in developing collision situation in any harbour area.	77				
		49	Tug under 500GT with large tow and no local assistance grounds tow during transit (inwards or outwards).	6				
		50	Leisure craft and large ship in developing collision situation (over 500GT).	26				
		52	Light draught or high windage vessel is overwhelmed by conditions just after leaving port (and within port limits).	7				

Risk Control Measure	Objective	Key Hazards Mitigated			Milestone Tasks Required	Target Start Date	Target Completion Date	Dependencies
		Rank	Short Title	Ref				
		67	Light draught or high windage vessel is unable to safely manoeuvre.	10				
RCM 6	Ensure that adequate tugs are available to enable the safe movement and management of vessels entering the harbour area.	1	Ferry in grounding at the harbour entrance.	5	a) Ensure that CentrePort has an asset plan in place for the replacement or purchase of new tugs with a bollard pull, determined by Risk Assessment or simulation, appropriate for current or expected shipping requirements.	February 2007	ongoing	
		3	Passenger ferry and large vessel in developing collision situation, wider angle of approach.	18	b) Ensure that CentrePort has a training plan and training manuals for tug crews.	December 2007	February 2008	
		4	Inbound passenger ferry in developing collision situation with outbound container or large vessel (or tanker departing Evans Bay by night).	20	c) Ensure that CentrePort reviews and updates where necessary, the tug use guidelines (CP SOP 4.45) whenever there is a change in tug configuration.	February 2008	Ongoing	
		5	A vessel with high windage breaks mooring lines in high off shore winds	54	d) In consultation with CentrePort, keep under review the need for an escort tug for tanker movements within the harbour.	June 2007	Ongoing	
		9	Inbound large vessel (> 500GT) in grounding situation in adverse southerly conditions through operational failure.	1	e) In consultation with CentrePort, keep under review the need for the provision of a tug with fire fighting capabilities to be available at short notice when a tanker carrying volatile product is in port.	June 2007	Ongoing	
		12	Ferry and deep draught ship in developing collision situation between the Pinnacles and Falcon Shoals.	15				
		13	Deep draught vessel (e.g. Tanker) in potential grounding situation while transiting harbour entrance.	63				
		14	Inbound vessel or ferry in developing collision situation with tanker outbound from Seaview.	76				
		18	Fire on board a harbour ferry or passenger carrying charter vessel	47				
		25	Foreign flagged fishing vessel of less than 500GT in grounding situation in the harbour approaches.	2				
		26	Tanker in contact berthing situation at Seaview Wharf	2				
		30	Vessel at Container berth in contact berthing with container cranes during departure or berthing	48				
		36	Fire on tanker alongside or at anchor	69				

Risk Control Measure	Objective	Key Hazards Mitigated			Milestone Tasks Required	Target Start Date	Target Completion Date	Dependencies
		Rank	Short Title	Ref				
		40	Tanker in contact berthing at Burnham Wharf	43				
		41	Tanker with high freeboard in grounding situation in Evans Bay.	11				
		42	Container ship or other vessel in grounding situation through dragging anchor.	14				
		49	Tug under 500GT with large tow and no local assistance grounds tow during transit (inwards or outwards).	6				
		50	Leisure craft and large ship in developing collision situation (over 500GT).	26				
		52	Light draught or high windage vessel is overwhelmed by conditions just after leaving port (and within port limits).	7				
		53	Tanker Contact Berthing - Aotea Quay	51				
		55	Fire aboard vessel alongside wharf carrying out maintenance involving hot work	68				
		56	Container ship with all gear swung outboard and crane/s over vessel, contacted by vessel manoeuvring in vicinity.	42				
		67	Light draught or high windage vessel is unable to safely manoeuvre.	10				
RCM 7	Maintain visibility of berthing procedures and practise to ensure that they are appropriate to maintain safe management of all berthing vessels and protect all people and assets involved.	6	Ferry berthing without tug assistance in adverse weather in heavy contact with berth or adjacent vessel.	46	a) Ensure that CentrePort has a plan to identify the displacement capacity of all commercial wharves.	June 2007	ongoing	
		10	Ferry berthing at Rail Ferry Terminal (RFT) in heavy contact with berth or adjacent vessel.	44	b) Ensure that CentrePort maintains a record of the displacement capacity and when required, the maximum length of vessel, approved to berth at each of the commercial wharves.	June 2007	ongoing	
		29	Harbour ferry in contact berthing situation at any berth.	49	c) Ensure that CentrePort has prescribed the management of the berthing process for commercial berths as determined by vessel size, berth limitation, vessel configuration or any known constraint.	May 2007	July 2007	
		40	Tanker in contact berthing at Burnham Wharf.	43	d) Ensure that CentrePort provides operational fendering at CentrePort's commercial berths which is appropriate to the expected loadings.	June 2007	ongoing	

Risk Control Measure	Objective	Key Hazards Mitigated			Milestone Tasks Required	Target Start Date	Target Completion Date	Dependencies
		Rank	Short Title	Ref				
		47	Low freeboard container vessel gets caught under berth fenders as tide rises at TCW1. Vessel suddenly comes free, causing sudden rolling of vessel. List resulting if loading had continued on one side whilst vessel trapped. Damage to container crane/s likely.	50	e) Review long-term harbour development planning and identify probable constraints on current and future safe harbour operations created by the need to have in place safe berthing parameters.	June 2007	Ongoing	
		52	Tanker in contact berthing at Aotea Quay.	51				
RCM 8	Have in place instrumentation to monitor environmental factors in areas where there is a significant hazard due to the frequency and type of maritime use it receives.	1	Ferry in grounding at the harbour entrance.	5	a) Ensure that monitoring equipment is established at key points in the harbour which will provide an overview of the wind climate and direction at these points. Such information is to be made available to Beacon Hill VTS, and by later development, to the public domain, by the most appropriate means.	December 2007	June 2008	
		5	A vessel with high windage breaks mooring lines in high offshore winds (other than a vessel berthed at a finger berth).	54	b) Establish a monitoring station at the Front Lead which will record wave/swell/tide heights and sea level barometric pressure. Link the information collected to Beacon Hill VTS.	January 2007	September 2007	
		6	Ferry berthing without tug assistance in adverse weather in heavy contact with berth or adjacent vessel.	46	c) In co-operation with CentrePort, undertake an exercise which will correlate wave and swell information from monitoring sites at the Front Lead and Baring Head wave rider buoy under different wind conditions to determine wave and swell conditions likely to be expected at the entrance; to enable subjective estimates of the wave/swell conditions in this area during the hours of darkness, or poor visibility.	January 2008	June 2008	
		9	Inbound large vessel (> 500GT) in grounding situation in adverse southerly conditions through operational failure.	1				
		10	Ferry berthing at Rail Ferry Terminal (RFT) in heavy contact with berth or adjacent vessel.	44				
		14	Deep draught vessel (e.g. Tanker) in potential grounding situation while transiting harbour entrance.	76				
		22	Deep draft vessel bounce grounds on isolated 12.8m rock shoal on the leads at the harbour entrance in heavy swell conditions.	79				

Risk Control Measure	Objective	Key Hazards Mitigated			Milestone Tasks Required	Target Start Date	Target Completion Date	Dependencies
		Rank	Short Title	Ref				
		18	Large vessel such cruise vessel, car carrier, container or general cargo ship in contact berthing with wharf or container cranes in restricted visibility, strong onshore winds, berthing in very strong wind conditions.	47				
		21	A vessel manoeuvring in the vicinity of a Tanker working cargo (discharging or back loading gas oil), or a vessel bunkering, contacts or interacts with the vessel alongside. This includes the same event involving a large cruise liner at Aotea Quay.	45				
		23	Laid up fishing vessel parts mooring lines in heavy northerly gale.	52				
		24	Vessel or ferry breaks lines or is unable to berth at no.3 berth, due to strong offshore south-westerly or broad north-westerly wind.	53				
		26	Foreign flagged fishing vessel of less than 500GT in grounding situation in the harbour approaches.	2				
		27	Tanker in contact berthing situation at Seaview Wharf.	78				
		28	Charter fishing vessel in grounding situation eg. Chaffers Passage.	9				
		29	Harbour ferry in contact berthing situation at any berth.	49				
		30	Vessel at container berth in contact berthing with container cranes during departure.	48				
		33	Fishing vessel founders at harbour entrance in adverse southerly conditions.	57				
		40	Tanker in contact berthing at Burnham Wharf.	43				
		41	Tanker with high freeboard in grounding situation in Evans Bay.	11				
		42	Container ship or other vessel in grounding situation through dragging anchor.	14				
		44	Inshore fishing vessel in grounding situation in harbour approaches (including Island Bay and Chaffers Passage).	3				

Risk Control Measure	Objective	Key Hazards Mitigated			Milestone Tasks Required	Target Start Date	Target Completion Date	Dependencies
		Rank	Short Title	Ref				
		46	Pilot vessel in potential capsize situation in heavy seas at the harbour entrance.	58				
		49	Tug under 500GT with large tow and no local assistance grounds tow during transit (inwards or outwards).	6				
		52	Light draught or high windage vessel is overwhelmed by conditions just after leaving port (and within port limits).	7				
		53	Tanker in contact berthing at Aotea Quay.	51				
		56	Container ship with all gear swung outboard and crane/s over vessel, contacted by vessel manoeuvring in vicinity.	42				
		67	Light draught or high windage vessel is unable to safely manoeuvre.	10				
		71	Harbour passenger vessel in grounding situation on passage or near berth.	12				
RCM 9	Formalise specific SOPs that currently may create risk due to their ambiguity or lack of specific definition.	1	Ferry in grounding at the harbour entrance.	5	a) Establish formal guidelines on the passage of ferries and other vessels through the harbour entrance when waves are greater than a specific height or displaying particular characteristics.	May 2007	December 2007	
		14	Deep draught vessel (e.g. Tanker) in potential grounding situation while transiting harbour entrance.	76	b) Establish maximum continuous wind speed parameters for tankers berthing at Burnham Wharf.	February 2007	March 2007	
		41	Tanker with high freeboard in grounding situation in Evans Bay.	11				
		52	Light draught or high windage vessel is overwhelmed by conditions just after leaving port (and within port limits).	7				
		67	Light draught or high windage vessel is unable to safely manoeuvre.	10				
RCM 10	Establish specific vessel transit tracks which are clearly identified and known and that are enforced within local operating directions and Bylaws.	1	Ferry in grounding at the harbour entrance.	5	a) Define and document recommended transit tracks for vessels shifting berth, entering and leaving the harbour.	January 2007	January 2007	
		2	Two ferries in developing collision situation during an overtaking or passing manoeuvre near alter-course waypoints.	21	b) Identify and prepare Bylaws and directions required to establish and enforce transit tracks.	April 2007	September 2008	
		3	Passenger ferry and large vessel in developing collision situation, wider angle of approach.	18	c) Enact appropriate supporting directions and Bylaws.	September 2008	September 2008	

Risk Control Measure	Objective	Key Hazards Mitigated			Milestone Tasks Required	Target Start Date	Target Completion Date	Dependencies
		Rank	Short Title	Ref				
		4	Inbound passenger ferry in developing collision situation with outbound container or large vessel (or tanker departing Evans Bay by night).	20	d) Publish and promulgate tracks to all harbour users, LINZ, UKHO and other appropriate maritime publication bodies.	March 2007	ongoing	
		7	Ferry or large vessel and fishing vessel in developing collision situation on approach to or within harbour.	17				
		8	Yacht engaged in racing and ferry or large vessel in developing collision situation.	27				
		9	Inbound large vessel (> 500GT) in grounding situation in adverse southerly conditions through operational failure.	1				
		12	Ferry and deep draught ship in developing collision situation between the Pinnacles and Falcon Shoals.	15				
		14	Deep draught vessel (e.g. Tanker) in potential grounding situation while transiting harbour entrance.	76				
		15	Inbound vessel or ferry in developing collision situation with tanker outbound from Seaview.	28				
		20	Ferry and leisure craft in developing collision situation.	16				
		26	Foreign flagged fishing vessel of less than 500GT in grounding situation in the harbour approaches.	2				
		32	Outbound ferry or other large vessel in developing collision situation with inbound fishing vessel on rounding Kau Point or other headland.	22				
		34	Harbour ferry in developing collision situation with another larger ferry or other larger vessel transiting harbour.	23				
		43	Ferry or other larger vessel in developing collision situation with naval vessel (especially on rounding Kau Point).	24				
		45	Small commercial, fishing or passenger vessel in collision situation with ferry or other large vessel sailing or approaching the berth.	33				

Risk Control Measure	Objective	Key Hazards Mitigated			Milestone Tasks Required	Target Start Date	Target Completion Date	Dependencies
		Rank	Short Title	Ref				
		48	Leisure craft and small commercial vessel in developing collision situation in any harbour area.	77				
		49	Tug under 500GT with large tow and no local assistance grounds tow during transit (inwards or outwards).	6				
		50	Leisure craft and large ship in developing collision situation (over 500GT).	26				
		70	Fishing vessel in contact with navigational beacon.	38				
RCM11	Develop and establish a process to monitor those skipping commercial vessels under 500 GT and assess that they have in place the competency, skills and local knowledge to operate their vessels safely within the harbour area.	7	Ferry or large vessel and fishing vessel in developing collision situation on approach to or within harbour.	17	a) Define the skills and local knowledge requirements expected of a safe skipper operating within the Wellington Harbour area.	February 2008	December 2008	
		8	Yacht engaged in racing and ferry or large vessel in developing collision situation.	27	b) Establish appropriate training processes and published material in order to support the education of harbour users wishing to reach the required standard.	January 2009	June 2009	
		15	Inbound vessel or ferry in developing collision situation with tanker outbound from Seaview.	28	c) Review processes and make changes as required.	June 2009	ongoing	
		28	Charter fishing vessel in grounding situation eg. Chaffers Passage.	9				
		32	Outbound ferry or other large vessel in developing collision situation with inbound fishing vessel on rounding Kau Point or other headland.	22				
		44	Inshore fishing vessel in grounding situation in harbour approaches (including Island Bay and Chaffers Passage).	3				
				45	Small commercial, fishing or passenger vessel in collision situation with ferry or other large vessel sailing or approaching the berth.	33		
		48	Leisure craft and small commercial vessel in developing collision situation in any harbour area.	77				
		52	Light draught or high windage vessel is overwhelmed by conditions just after leaving port (and within port limits).	7				
		59	Small harbour ferry or other commercial vessel in potential collision situation with leisure craft in approaches to Days Bay wharf.	73				

Risk Control Measure	Objective	Key Hazards Mitigated			Milestone Tasks Required	Target Start Date	Target Completion Date	Dependencies
		Rank	Short Title	Ref				
		70	Fishing vessel in contact with navigational beacon.	38				
		71	Harbour passenger vessel in grounding situation on passage or near berth.	12				
		73	Small commercial, fishing or passenger vessel in collision situation with similar vessel navigating in opposite direction.	30				
		79	A vessel makes contact with pile beacons off Container Terminal or Kings Wharf.	40				
RCM12	Establish and enforce radio reporting procedures for vessels entering and transiting the area that require full disclosure of passage expectations and risks, defects or limitations that may effect their transit.	1	Ferry in grounding at the harbour entrance.	5	a) Identify best practise for reports from vessels transiting the harbour area. Document and implement reporting procedures and draft associated Bylaws.	June 2008	January 2009	
		2	Two ferries in developing collision situation during an overtaking or passing manoeuvre near alter-course waypoints.	21	b) Ratify Bylaws through the Council, promulgate these to all harbour users.	June 2008	January 2009	
		4	Inbound passenger ferry in developing collision situation with outbound container or large vessel (or tanker departing Evans Bay by night).	20	c) Establish procedures within Beacon Hill VTS to manage and control vessel reports and document resultant actions.	January 2008	June 2008	
		7	Ferry or large vessel and fishing vessel in developing collision situation on approach to or within harbour.	17	d) Have in place protocols for responding to probable and potential defect reports from vessels that may be limited in their ability to negotiate the harbour have defects that may be a potential risk to their safe transit.	September 2007	June 2008	
		9	Inbound large vessel (> 500GT) in grounding situation in adverse southerly conditions through operational failure.	1				
		12	Ferry and deep draught ship in developing collision situation between the Pinnacles and Falcon Shoals.	15				
		14	Deep draught vessel (e.g. Tanker) in potential grounding situation while transiting harbour entrance.	76				
		15	Inbound vessel or ferry in developing collision situation with tanker outbound from Seaview.	28				
		26	Foreign flagged fishing vessel of less than 500GT in grounding situation in the harbour approaches.	2				
		42	Container ship or other vessel in grounding situation through dragging anchor.	14				

Risk Control Measure	Objective	Key Hazards Mitigated			Milestone Tasks Required	Target Start Date	Target Completion Date	Dependencies
		Rank	Short Title	Ref				
RCM 13	Set parameters for deep draft vessels to safely operate around new isolated danger, submerged on the line of the Outer Leads.	22	Deep draft vessel bounce grounds on isolated 12.8m rock shoal on the leads at the harbour entrance in heavy swell conditions.	79	<ul style="list-style-type: none"> a) Assess potential risk created from rocks dropped in Outer Leads. b) Set parameters for deep draft vessels transiting in proximity to the danger. c) Promulgate parameters to harbour users. 	<ul style="list-style-type: none"> May 2007 May 2007 May 2007 	<ul style="list-style-type: none"> May 2007 May 2007 Ongoing 	

ANNEX C

Harbour Safety Plan - Annual

Risk Control Measure	Aims	May 2007- June 2008 (FY) Specific Objectives	Planned completion date	Risks to achievement	Achieved Yes/No
RCM 1	Obtain support and buy in from key stakeholders for the development of modified harbour management and control processes.	a) Obtain approval from Council for the Safety Management Systems and policies.	June 2007		
		b) Develop a RCM implementation plan with CentrePort in respect to areas related to both commercial operations and for other areas of the harbour in which CentrePort is involved.	June 2007		
		c) Obtain a written commitment from CentrePort to support the Safety Management System and SMS initiatives.	May 2007		Yes
		d) Inform and advise other stakeholders of significant planned actions and the implementation time frame.	Ongoing		
		e) Report progress on all actions to appropriate GWRC Committees and individuals on a quarterly basis.	Every Quarter		Yes
		f) Review the Annual Harbour Safety Plan at the end of the fourth quarter and identify actions and plan for the following twelve months, rolling over if necessary those matters which have not been completed.	4 th Quarter		
RCM 1a	Have in place sufficient, sustained revenue to deliver the Risk Control Measures	a) Have sufficient capital funding to purchase, install and maintain the required equipment and technology.	Ongoing	GWRC budget constraints	Yes
		b) Access sufficient sustained operational funding so as to allow high quality harbour co-ordination and management services to be maintained.	Ongoing	GWRC budget constraints	Yes
		c) Establish modified budgets and financial plan to cover five year period.	Ongoing		
RCM 1b	Maintain a bylaws structure within the Greater Wellington Regional Council that facilitates ongoing safety management under the Port and Harbour Marine Safety Code	a) Review the ability of the Bylaw process to introduce a schedule of formal general directions to manage detail of navigational safety requirements, with reference to the national generic Bylaw currently under draft.	Ongoing	MNZ consensus Speed of general legislative process	
RCM 2	Institute changes to specific Aids to Navigation in order to provide greater visibility, improve vessel management or reduce confusion or conflict with other lights	a) Evaluate the necessity of realigning the green sector of the Rear Lead so that vessels pass no closer than 3 cables off Point Halswell, Kau Point and Point Gordon.	February 2007		Yes
		b) Conduct a cost/benefit analysis of Improving the profile of the Front Lead Light by installing a Racon, AIS transmitter or other suitable aid to navigation.	December 2007		
RCM 3	Make specific changes to information, symbols and routes shown currently on local charts in order to clarify permitted activity in specific areas	a) Identify areas possibly requiring limitations to be put in place, particularly areas currently showing as being allowed for anchoring, such as the explosives anchorage, where anchored vessels may impinge safe movement of other vessels, and consider the need for further mitigating action.	Ongoing		
		b) Have reference information for vessel transit tracks and waypoints recorded in the notes section of local charts.	December 2008	Lack of co-operation from LINZ	
		c) Work with LINZ, UKHO and harbour users to see information promulgated.	Ongoing	Lack of co-operation from LINZ/UKHO	
RCM 3a	Maintain up to date bathymetric and hydrographic information on maritime areas within the region	a) Ensure that CentrePort has a preferred Hydrographic Surveyor who undertakes surveys in accordance with LINZ, IHO and Code procedures and records soundings in a format capable of being used by LINZ.	Ongoing	CentrePort budget constraints	

Risk Control Measure	Aims	May 2007- June 2008 (FY) Specific Objectives	Planned completion date	Risks to achievement	Achieved Yes/No
		b) Ensure that any soundings undertaken by GWRC are taken by a Hydrographic Surveyor who undertakes surveys in accordance with LINZ, IHO and Code procedures and records soundings in a format capable of being used by LINZ.	Ongoing		
		c) Ensure that the results of any hydrographic survey are promulgated to port users and LINZ.	Ongoing		
		d) Ensure that CentrePort has a strategy in place that determines the timing and frequency of soundings.	May 2008		
RCM 4	Further develop the harbours existing vessel monitoring and information services to provide a sustained quality of service consistent with IALA VTS standards	a) Align Beacon Hill VTS operating procedures so that they align with CentrePort SOPs particularly those related to pilotage.	June 2008		
		b) Identify the specific current and projected responsibilities and skills required by Beacon Hill VTS staff in order for them to provide appropriate vessel traffic information.	June 2008		
		c) Establish a sustained competency assessment and training process to ensure staff meet the required standards.	June 2008		
		d) Provide sufficient competent staffing to maintain a 24/7 service, including cover for sickness and leave.	Ongoing	Lack of suitable candidates for posts	Yes
		e) Complete an analysis and technical plan of the radar, CCTV and supporting infrastructure required to maintain constant 24/7 monitoring of the Main Harbour and Lambton Harbour from Beacon Hill Signal Station	September 2007		Yes
		f) Establish sufficient technical infrastructure to allow remote monitoring equipment to be linked to Beacon Hill Signal Station	June 2008		
		g) Set up sufficient radar equipment allow Beacon Hill Signal Station to maintain a sustained RADAR picture of all activity within the Main Harbour, Lambton Harbour and Evans Bay.	June 2008	GWRC Beacon Hill upgrade budget constraints	
		h) Install CCTV that is linked to monitoring equipment at Beacon Hill Signal Station and will provide visual cover of vessel activity within the Lambton Harbour area.	June 2008	GWRC Beacon Hill upgrade budget constraints	
		i) Install CCTV that is linked to monitoring equipment at Beacon Hill Signal Station and will provide visual cover of vessel activity within the Main Harbour area.	June 2008	GWRC Beacon Hill upgrade budget constraints	
		j) Complete a technology plan for the provision of infrastructure and software to allow Beacon Hill Signal Station to install chart and monitoring software, with sufficient capability to interface with AIS and radar equipment while allowing VTS operators to monitor vessel movements within the region.	June 2007		Yes
		k) Install VTS monitoring software and technology that integrates with AIS equipment and allows data integration onto the charts.	June 2008	Delays to Beacon Hill building project	
		l) Install VTS monitoring software and technology that integrates with radar equipment and allows data integration onto the charts.	June 2008	Delays to Beacon Hill building project	
		m) Set up and activate guard alarm rings for anchored vessels	June 2008		

Risk Control Measure	Aims	May 2007- June 2008 (FY) Specific Objectives	Planned completion date	Risks to achievement	Achieved Yes/No
		n) Implement SOPs for Beacon Hill VTS operators related to the management of vessels boarding or disembarking pilots at chartered boarding stations.	June 2008		
		o) Establish criteria and schedule of review for VTS so as to monitor standard of service on continuing basis.	Ongoing		
		p) Ensure that there is an ongoing review of VTS processes to maintain a continuity of high quality service.	Ongoing		
		q) Establish the skill sets required for VTS operators to assist a pilot guide a vessel to boarding area Delta and establish appropriate training.	June 2008		
		r) Define criteria and SOPs for Beacon Hill VTS to be able to assist the pilot to guide vessels to Delta boarding area.	June 2007		Yes
		s) Establish procedures for Beacon Hill VTS operators to record and monitor PEC currency.	June 2007		Yes
		t) Ensure that CentrePort, as pilotage provider, has specific SOP(s) relating to the transit of vessels constrained by their draft, such SOP(s) are to include the requirement for the pilot to inform the VTS when it is so constrained.	June 2008		
		u) (u) Have a procedure in place which requires the VTS to apply specific management of vessels constrained by their draft (including where necessary, the informing of harbour users of the vessel's course and position).	June 2008		
RCM 5	Remodel pilotage processes and practice so as to maintain a high standard of safe passage for vessels transiting to and from the harbour while protecting all individuals and resources connected with the process.	a) Review the criteria for a vessel to have compulsory pilotage. Specifically look at length being used as a significant criterion in defining the need for a pilot/PEC. Identify changes required to Bylaws and Maritime Rules in order to implement policy.	December 2007	Lack of acceptance by MNZ of the use of length as a criterion.	
		b) Define the changes and criteria for compulsory pilotage and if necessary, formalise a submission to MNZ for any new requirements.	December 2007	Lack of acceptance by MNZ	
		c) Define the point at which the combined GT or length overall of tugs and tows requires them to be subject to pilotage requirements.	December 2007		
		d) Work with MNZ to redefine Maritime Rule Part 90, such redefinition will include supporting changes to compulsory pilotage if this has been identified as a need during the RA process.	Ongoing	Delay in review of Maritime Rule part 90 by MNZ	
		e) Relocate the present Compulsory Pilotage Limit to the existing Harbour Limit.	December 2007	Delay in review of Maritime Rule part 90 by MNZ	
		f) Ensure that CentrePort, as pilotage provider, has considered critical hazards and possible effects of wind, sea and swell when developing SOPs in relation to the embarking and disembarking of pilots – both in respect to the position and the process (refer CP SOP 4.601, 4.651, 4.66).	June 2007		Yes
		g) Identify and document all pilotage and VTS functions and promulgate these as SOPs, linking these where appropriate into CentrePort's pilotage SOPs.	June 2008		
		h) Establish in consultation with CentrePort limiting environmental criteria for vessels to be able to safely proceed to Delta area for pilot boarding (refer CPL SOP 4.651).	June 2007		Yes

Risk Control Measure	Aims	May 2007- June 2008 (FY) Specific Objectives	Planned completion date	Risks to achievement	Achieved Yes/No
		i) Ensure that CentrePort as pilotage provider, and Beacon Hill VTS have a common understanding of the minimum communication requirements expected between pilot and VTS during a ship movement. These requirements will reflect those written or expected by existing SOPs.	August 2007		Yes
		j) Ensure in co-operation with CentrePort that Class B AIS transponders are fitted to pilot vessels and other significant harbour support vessels in order to facilitate their easy identification and monitoring by transmitting vessels and Beacon Hill VTS station.	June 2008	CentrePort Budget constraints	
RCM 6	Ensure that adequate tugs are available to enable the safe movement and management of vessels entering the harbour area	a) Ensure that CentrePort has an asset plan in place for the replacement or purchase of new tugs with a bollard pull, determined by Risk Assessment or simulation, appropriate for current or expected shipping requirements.	Ongoing		Yes
		b) Ensure that CentrePort has a training plan and training manuals for tug crews.	February 2008		
		c) Ensure that CentrePort reviews and updates where necessary, the tug use guidelines (CPL SOP 4.45) whenever there is a change in tug configuration.	Ongoing		
		d) In consultation with CentrePort, keep under review the need for the use of escort tugs for tanker movements within the harbour.	Ongoing		
		e) In consultation with CentrePort, keep under review the need for the provision of a tug with fire fighting capabilities to be available at short notice when a tanker carrying volatile product is in port.	Ongoing		
RCM 7	Maintain visibility of berthing procedures and practise to ensure that they are appropriate to maintain safe management of all berthing vessels and protect all people and assets involved	a) Ensure that CentrePort has a plan to identify the displacement capacity of all commercial wharves.	Ongoing		
		b) Ensure that CentrePort maintains a record of the displacement capacity and when required, the maximum length of vessel, approved to berth at each of the commercial wharves.	Ongoing		
		c) Ensure that CentrePort has prescribed the management of the berthing process for commercial berths as determined by vessel size, berth limitation, vessel configuration or any known constraint.	July 2007		Yes
		d) Ensure that CentrePort provides operational fendering at CentrePort's commercial berths that is appropriate to the expected loadings.	Ongoing		
		e) Review long-term harbour development planning and identify probable constraints on current and future safe harbour operations created by the need to have in place safe berthing parameters.	Ongoing		
RCM 8	Have in place instrumentation to monitor environmental factors in areas where there is a significant hazard due to the frequency and type of maritime use it receives	a) Ensure that monitoring equipment is established at key points in the harbour which will provide an overview of the wind climate and direction at these points. Such information is to be made available to Beacon Hill VTS, and by later development, to the public domain, by the most appropriate means.	June 2008	CentrePort Budget constraints	
		b) Establish a monitoring station at the Front Lead that will record wave/swell/tide heights and sea level barometric pressure. Link information collected to Beacon Hill VTS.	September 2007	CentrePort Budget constraints	

Risk Control Measure	Aims	May 2007- June 2008 (FY) Specific Objectives	Planned completion date	Risks to achievement	Achieved Yes/No
		c) In co-operation with CentrePort, undertake an exercise which will correlate wave and swell information from monitoring sites at the Front Lead and Baring Head wave rider buoy under different wind conditions to determine wave and swell conditions likely to be expected at the entrance; to enable subjective estimates of the wave/swell conditions in this area during the hours of darkness, or poor visibility.	June 2008	CentrePort Budget constraints	
RCM 9	Formalise specific SOPs that currently may create risk due to their ambiguity or lack of specific definition	a) Establish formal limiting guidelines on the passage of ferries and other vessels through the harbour entrance when waves are greater than a specific height or displaying particular characteristics.	December 2007	Lack of co-operation from ferry operators	
		b) Establish maximum continuous wind speed parameters for tankers berthing at Burnham Wharf.	March 2007		Yes
RCM 10	Establish specific vessel transit tracks which are clearly identified and known and that are enforced within local operating directions and bylaws	a) Define and document recommended transit tracks for vessels entering and leaving the harbour.	January 2007		Yes
		b) Identify and prepare Bylaws and directions required to establish and enforce transit tracks.	September 2008		
		c) Enact appropriate supporting directions and Bylaws.	September 2008		
		d) Publish and promulgate tracks to all harbour users, LINZ, UKHO and other appropriate maritime publication bodies.	Ongoing		
RCM11	Develop and establish a process to monitor those skippering commercial vessels under 500 GT and assess that they have in place the competency, skills and local knowledge to operate their vessels safely within the harbour area	a) Define the skills and local knowledge requirements expected of a safe skipper operating within the Wellington Harbour area.	December 2008		
		b) Establish appropriate training processes and published material in order to support the education of harbour users wishing to reach the required standard.	December 2008		
		c) Review processes and make changes as required.	Ongoing		
RCM12	Establish and enforce radio reporting procedures for vessels entering and transiting the area that require full disclosure of passage expectations and risks, defects or limitations that may effect their transit	a) Identify best practise for reports from vessels transiting the harbour area and draft reporting procedures and Bylaws.	June 2007		Yes
		b) Ratify Bylaws through the Council, promulgate these to all harbour users.	June 2007		Yes
		c) Establish procedures within Beacon Hill VTS to manage and control vessel reports and document resultant actions.	September 2008		
		d) Have in place protocols for responding to probable and potential defect reports from vessels that may be limited in their ability to negotiate the harbour or have defects that may be a potential risk to their safe transit.	September 2008		Yes