Friday, 2 September 2011

HARBOUR COMMITTEE

A meeting of **Harbour Committee** will be held on

Monday, 12 September 2011

commencing at **5.30 pm**

The meeting will be held in the Berry Head Hotel, Brixham

Members of the Committee

Councillor Amil
Councillor Ellery
Councillor Faulkner (J)
Councillor Hytche
Councillor James
Councillor McPhail
Mayor Oliver
Councillor Richards
Councillor Stringer

External Advisors

Mr Butcher, Capt. Curtis, Ms Hayes and Mr Jennings

Our vision is for a cleaner, safer, prosperous Bay

For information relating to this meeting or to request a copy in another format or language please contact:
Sarah Forsyth, Town Hall, Castle Circus, Torquay, TQ1 3DR
01803 207026
Email: democratic.services@torbay.gov.uk

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HARBOUR COMMITTEE
AGENDA

1. Apologies

To receive apologies for absence, including notifications of any changes to the membership of the Committee.

2. Minutes (Pages 1 - 4)

To confirm as a correct record the Minutes of the meeting of the Committee held on 13 June 2011.

3. Declarations of interest

(a) To receive declarations of personal interests in respect of items on this agenda

For reference: Having declared their personal interest members and officers may remain in the meeting and speak (and, in the case of Members, vote on the matter in question). If the Member's interest only arises because they have been appointed to an outside body by the Council (or if the interest is as a member of another public body) then the interest need only be declared if the Member wishes to speak and/or vote on the matter. A completed disclosure of interests form should be returned to the Clerk before the conclusion of the meeting.

(b) To receive declarations of personal prejudicial interests in respect of items on this agenda

For reference: A Member with a personal interest also has a prejudicial interest in that matter if a member of the public (with knowledge of the relevant facts) would reasonably regard the interest as so significant that it is likely to influence their judgement of the public interest. Where a Member has a personal prejudicial interest he/she must leave the meeting during consideration of the item. However, the Member may remain in the meeting to make representations, answer questions or give evidence if the public have a right to do so, but having done so the Member must then immediately leave the meeting, may not vote and must not improperly seek to influence the outcome of the matter. A completed disclosure of interests form should be returned to the Clerk before the conclusion of the meeting.

(**Please Note:** If Members and Officers wish to seek advice on any potential interests they may have, they should contact Democratic Services or Legal Services prior to the meeting.)

4. Urgent items

To consider any other items that the Chairman decides are urgent.

5. Harbour Committee's Appointment of External Advisors (Verbal Report)

To receive a verbal update from the Chairman on the process of appointing External Advisors to the Committee.

6. Torquay/Paignton and Brixham Harbour Liaison Forums (To Follow)

To note the minutes of the Torquay/Paignton and Brixham Harbour Liaison Forums.

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Minutes of the Harbour Committee

13 June 2011

-: Present :-

Councillors Amil, Ellery, Faulkner (J), Hytche, James, McPhail and Richards

External Advisors: Capt. Curtis

(Also in attendance: John Turner)

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70. Election of Chairman/woman

Councillor Ellery was elected Chairman for the 2011/12 Municipal Year.

Councillor Ellery in the Chair.

71. Apologies for absence

Apologies for absence were received from Councillor Stringer and External Advisers Mr Butcher, Ms Hayes and Mr Jennings.

72. Election of Vice-Chairman/woman

Mayor Oliver was elected Vice-Chairman for the 2011/12 Municipal Year.

73. Minutes

The Minutes of the meeting of the Harbour Committee held on 14 March 2011 were confirmed as a correct record and signed by the Chairman.

74. Harbour Committee Terms of Reference

The Committee noted the current Terms of Reference for the Harbour Committee, revised during the previous Municipal Year to reflect the change from Harbour and Marine Services to the Tor Bay Harbour Authority and to correctly encompass the

role of the Mayor in decisions regarding assets, as set out in the Council's Constitution.

75. Harbour Appointments Sub-Committee

The Committee considered appointments to the Harbour Appointments Sub Committee to consider applications for External Advisers to the Harbour Committee and to make recommendations to the Harbour Committee on suitable appointments to those positions. Members were advised that previous Sub-Committees consisted of three Councillors, including the Chair and Vice-Chair.

Resolved: that a Harbour Appointments Sub-Committee be re-appointed to comprise six members of the Harbour Committee (The Chair, Vice-Chair and Councillors Hytche, Richards, McPhail and Faulkner (J)).

76. Harbour Asset Review Working Party

The Committee considered appointments to the Harbour Asset Review Working Pary to provide strategic direction in relation to those assets within Tor Bay Harbour and the harbour estate that were managed by the Tor Bay Harbour Authority.

Resolved: that a Harbour Asset Review Working Party, comprising three members of the Harbour Committee (Councillors Faulkner (J), Richards and McPhail) and two of the External Advisors to the Committee (Captain Bob Curtis and Mr Gordon Jennings), be appointed with the following terms of reference:

a) to review all assets within Tor Bay Harbour and the Harbour Estate;
b) to establish how each asset is performing; and
c) to identify any assets that are surplus.

77. Harbour Budget Review Working Party

The Committee considered appointments to the Harbour Budget Review Working Party to assist the Harbour Committee in the management of all of the Harbour's financial matters in accordance with approved financial procedures and the Council's aspirations for the harbour to be self financings as outlined in the Tor Bay Harbour and Maritime Strategy.

Resolved: that a Harbour Budget Review Working Party, comprising two members of the Harbour Committee (Councillors Stringer and Hytche) and two External Advisors to the Committee (Ms Hayes and Mr Jennings), be appointed to scrutinise the draft Tor Bay Harbour Authority budget prior to presentation to the Harbour

Committee and to review the full range of harbour charges, including commercial customers using the Torquay Harbour Town Dock and other harbour facilities.

78. Harbour Authority - Outturn 2010/11

Members received a report setting out details of the Tor Bay Harbour Authority's final expenditure and income figures against the budget targets for 2010/11.

The Executive Head Tor Bay Harbour Authority explained that the report reflected the best outturn figures for the Harbour for many years, which in Torquay and Paignton was down to increased income and less maintenance costs than predicted, while in Brixham the increase in income due to rising fish prices had made a major contribution.

The Committee noted and congratulated the Executive Head of Tor Bay Harbour Authority, the Brixham Harbour Master and their Team for all the work they had done in turning a small surplus of £6k in Torquay and Paignton and a deficit of £27k in Brixham into a £140k surplus in Torquay and Paignton and a £48k surplus in Brixham.

79. Torquay/Paignton and Brixham Harbour Liaison Forums

The Committee received the minutes of the latest Torquay and Paignton Harbour Liaison Forum and Brixham Harbour Liaison Forum, and discussed the proposals to sink the Ark Royal off Tor Bay, forming a manmade reef and creating a diving site.

The Committee also discussed the move by the Valuation Office to rate the new Fish Market at Brixham Harbour and their decision to charge the Brixham Trawler Agents as the beneficial occupiers. This decision was being appealed and Tor Bay Harbour Authority has offered support to the Trawler Agents in this matter.

The Committee noted the minutes of the Torquay and Paignton Harbour Liaison Forum held on 31 May 2011 and the Brixham Harbour Liaison Forum held on 1 June 2011.

Resolved: to support the principle of the strategic placement of man-made wrecks and/or artificial reefs, in line with the Tor Bay Harbour and Maritime Strategy, and to provide assistance to those proposing to do this.

80. Harbour Authority Budget Monitoring Report

The Committee received a report which provided members with projections of income and expenditure for the year 2011/12 compared with approved budgets.

The Committee noted that the report represented less than a quarter of results, however, it was anticipated that the accounts were expected to show a worse position to the approved budget due to reduced income from Torquay and Brixham marinas, along with additional expenditure resulting from a late invoice relating to the previous moorings contract in Brixham.

The Committee noted the Executive Head's use of delegated powers to waive certain harbour charges, which this financial year amounted to £821.88 (excl VAT) spread across both harbour accounts.

81. Harbour Authority Performance

The Committee noted the report which detailed the year end 2010/11 performance position of the Tor Bay Harbour Authority.

The Committee was pleased with the reduction in the number of accidents and staff absences, and the Executive Head Torbay Harbour Authority confirmed that a Business Continuity Plan would be prepared during the coming year.

82. Audit Plan 2011/12

The Committee received a report setting out a dedicated Audit Plan for the Harbour Authority for the next six years. The first audit would take place in autumn 2011 looking at income. The Committee was asked to review and endorse the rolling plan.

Resolved: that the Rolling Audit Plan for Tor Bay Harbour Authority set out at Appendix 1 to the report be approved.

83. Tor Bay Harbour Enforcement and Prosecution Policy

The Committee received a report setting out an Enforcement and Prosecution Policy which the Committee were requested to review and endorse.

Resolved: that the Enforcement and Prosecution Policy set out at Appendix 1 to the report be approved.

Public Agenda Item: **Yes**

Title: **Review of Tor Bay Harbour Business Risks 2011/12**

Wards Affected: **All Wards in Torbay**

To: **Harbour Committee** On: **12 September 2011**

Contact Officer: **Kevin Mowat**
Telephone: **292429**
E.mail: **Kevin.mowat@torbay.gov.uk**

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1. Key points and Summary

1.1 This report provides Members with the opportunity to consider and review the Tor Bay Harbour Business Risk Register for 2011/12.

1.2 It is accepted that in order for risk management to be truly successful it must be integrated into the culture of an organisation, supported and led by its senior management and communicated effectively at all levels. Consequently it is appropriate that as Tor Bay Harbour's governing body, the Harbour Committee formally reviews its business risks on a regular basis.

1.3 The Committee is asked to note the Tor Bay Harbour Business Risk Register attached as Appendix 1.

2. Introduction

2.1 Risk management is a fundamental part of any harbour's strategic management; the focus of which is the identification, analysis and treatment of risk in order to add maximum sustainable value to all of the harbour's activities. Risk Management increases the probability of success, and reduces both the probability of failure and the uncertainty of achieving the harbour's overall objectives.

2.2 As part of the requirements for corporate governance and internal control an organisation must 'embed' risk management into its culture. This is not simply having an internal audit function reviewing risk management procedures; it means, for the harbour authority, that the Harbour Committee needs to look forward, be dynamic, respond effectively to change and maximise opportunities.

2.3 The benefits gained in managing risk are improved strategic, operational and financial management, continuity of knowledge and information management processes, improved compliance and, most importantly, improved customer service delivery. Sound management of business risks will also promote a positive external image of Tor Bay Harbour for all stakeholders.

2.4 A harbour authority, in common with any commercial undertaking, requires effective strategic direction based on a complete understanding of the direction being taken and its associated opportunities and risks.

2.5 Making informed and transparent decisions which are subject to effective scrutiny and managing risk is a core principle of good governance.

2.6 Risk management is a key contributor to business planning and therefore integral to continuous improvement and sustainability. The Risk Register is used as a management tool to support the Tor Bay Harbour Business Plan.

2.7 The harbour authority understands the importance of risk taking and acknowledges that some amount of risk taking is inevitable if the harbour is to achieve its objectives. As a harbour authority we should aim to take risks which enable improvement and seek to avoid risks which could affect core business.

2.8 Risk registers are living documents and therefore must be regularly reviewed and amended. The reason for monitoring key risks is to create an early warning system for any movement in risk. The Council's risk management strategy requires that registers are monitored every six months. It is anticipated that the Harbour Committee will include a formal review of the Tor Bay Harbour Risk Register within its annual work programme. However, high scoring risks will be monitored more frequently by the Executive Head of Tor Bay Harbour Authority and referred to the Harbour Committee for further review as required. Currently there are no high scoring risks.

2.9 The Tor Bay Harbour Business Risk Register 2011/12 is attached at Appendix 1. Since 2010, with the help of the Council's Corporate Risk Management team, the Risk Register has been consolidated from 39 individual risks to 9 entries linked to the performance objectives of the harbour authority. This revised layout has recently been reviewed with feedback from staff and members/advisors on the Harbour Committee. A number of risks have consequently been updated and the risk register is now contained within the Council's performance management software (SPAR.net).

Kevin Mowat
Executive Head of Tor Bay Harbour Authority
Tor Bay Harbour Master

Appendices

Appendix 1 Tor Bay Harbour Business Risk Register 2011/12

Background Papers:

Torbay Council - Risk Management Strategy 2011

Tor Bay Harbour Authority Risk Register 2011/12

Customer Focused

Risk No	Spar Code	Scorecard Objective	Risk Title	Risk Description, Threat: What could happen to affect this, Cause: How could it happen	Probability and Proximity Description (How likely is it to happen? When is it likely to happen?)	Impact description, what could the impact be?	Control measures (SPAR Projects & PI's)	Current Risk Score: Probability Score	Current Risk Score: Impact Score	Current Risk Score: Risk Score	Current Risk Score: Risk Rating. 1-4-L 6-9=M 12-16=H	Control Owners	Risk Owner	Accountable Body
1	HMS RR 01	1. Encourage local prosperity	Encourage Local Prosperity	If we fail to capitalise on Torbay's maritime setting or implement a robust sustainable maritime industry - Then we will not have the revenue to support the local maritime economy or regenerate our built infrastructure - So this may have a negative impact on tourism revenues, loss of maritime services and damage to our reputation.	Unlikely	Reduced number of maritime events. Significant medium term impact on tourism. Loss of reputation - bad PR. Reduced economic benefit. Poorer built environment. No new infrastructure. Missed investment opportunities. Lower fish toll income. Inability for the harbour account to service prudential borrowing. Premises unsafe/unusable for extended period. Loss of reputation.	1. Produce a schedule of Maritime Events 2. Maintain an Oil Spill Response and Contingency Plan (OPRC) and undertake an oil pollution response exercise - ensure we have suitable trained staff to respond. 3. Provide visitor moorings and maintain a competitive charging regime. 4. Maximise the benefits from the new Brixham Fish Market - Monitor the fish tolls income and the impact of the Common Fisheries Policy.	2	3	6	M	Adam FitzPatrick Kevin Mowat Paul Labistour Dave Bartlett John Turner	Executive Head of Tor Bay Harbour Authority	Harbour Committee
2	HMS RR 02	2. To engage with the community and harbour users	To engage with the community and harbour stakeholders	If we fail to consult and engage appropriately with all relevant harbour users, groups and stakeholders - Then we will be unable to provide accountable and transparent management of the Tor Bay Harbour Authority - So we may be accused of failing to accurately meet the needs of our customers and stakeholders resulting in a loss of revenue streams and damage to our reputation.	Possible	The services provided do not reflect the needs of customers. Wrong activity is delivered, weak outcomes not wanted by partners. Loss of reputation.	1.To hold quarterly meetings with harbour users and stakeholders. 2.Use established user groups and Community Partnerships to consult on specific issues. 3.To continue to work with relevant voluntary and community organisations. 4.To support and engage with the local Coastal Partnership - SeaTorbay. 5.Undertake an Annual Users Survey. Monitor the Visitor Feedback forms.	2	3	6	M	Kevin Mowat Paul Labistour John Turner	Executive Head of Tor Bay Harbour Authority	Harbour Committee
3	HMS RR 03	3. To maintain a stewardship of the harbours built and natural environment	To maintain a stewardship of the harbours built and natural environment	If we fail to implement a sustainable approach to harbour management in respect to present and future climatic, environmental and economic changes - Then we will also be unable to increase public awareness of the maritime environment as a valuable social and economic asset - So the impact of harbour activities may degrade the natural environment resulting in possible prosecution, loss of revenues and damage to our reputation.	Possible/ Likely	Possible environmental, economic and social damage. Unprepared for sea level rise. Potential for serious damage to our infrastructure which would impede our ability to meet budget and may also have capital implications. Insufficient staff to fulfil obligations. Public misunderstanding of the significance of the Bay and Tor Bay Harbour. Loss of reputation. Requirement to reduce or cease commercial fishing in designated areas. Loss of jobs and reduced fish toll income. Increased waste costs if not properly managed. Risk of corporate prosecution. Ineffective strategic direction based on an incomplete understanding of the direction being taken by the Harbour Authority. Inability for the Harbour Committee and Council to respond effectively to change and maximise opportunities. Poor coherence between marine, maritime and terrestrial planning. Loss of reputation.	1.Work closely with the Environment Agency and make reference to the Shoreline Management Plan when taking key decisions. 2.Support and engage with the local Coastal Partnership - SeaTorbay. 3.Assist in the collection of spatial mapping data. 4.To replace chain moorings with pontoon berths in Torquay's inner harbour. 5.Maintain competitive charging regime. 6.Review harbour charges annually and maintain strong rental streams. 7.Maintain a specific and strong Environmental Policy. 8.Produce an Environmental Management Plan. 9.Improve corporate management of environmental risks and the harbour's overall environmental performance. 10.Identify internal and/or external funding to resource the delivery of a Coastal Zone Management Plan. 11. Achieve a high status for the Coastal Zone Management Plan i.e. adopted as a supplementary planning document under the Local Development Framework.	2	3	6	M	Kevin Mowat Paul Labistour	Executive Head of Tor Bay Harbour Authority	Harbour Committee

Monetary Focused

								Current Risk Score						
Risk No	Spar Code	Scorecard Objective	Risk Title	Risk Description, Threat: What could happen to affect this, Cause: How could it happen	Probability and Proximity Description (How likely is it to happen? When is it likely to happen?)	Impact description, what could the impact be?	Control measures (SPAR Projects & PI's)	Probability Score	Impact Score	Risk Score	Risk Rating. 1-4-L 6-9=M 12-16=H	Control Owner	Risk Owner	Accountable Body
4	HMS RR 04	4. To achieve financial strength and effectively manage the Harbour Authorities assets	Effectively manage the Harbour Authority's assets	If we fail to effectively manage all of the Harbour Authority's financial and built assets - Then we may fail to secure competitive rental stream revenue and our built infrastructure will deteriorate - So this So this may leave us with unsafe infrastructure, failing to meet government guidelines on best practice, forced cessation of some discretionary services and damage to our reputation.	Possible	Ineffective strategic direction, cessation of business activities, loss of staff, loss of revenue, damage to reputation and failing to meet best practice guidelines. Inability for the harbour account to service prudential borrowing. Premises unsafe/unusable for extended period.	1.Produce an Asset Management Plan for the Harbour Authority. 2.Harbour Estate lettings occupancy rate. 3.Target 0% variance from budget. 4.To keep existing business and attract new activities. 5.Implement the safety management improvement plan. 6.Maintain a Harbour Emergency Response Plan and Business Continuity Plan. 7.Financial Regulations and audit controls. 8.Review harbour charges annually and maintain strong rental streams. 9.Maintain competitive charging regime. 10.To produce and review a Risk Register for the Harbour Authority.	2	3	6	M	Adam FitzPatrick Kevin Mowat Paul Labistour Dave Bartlett John Turner	Executive Head of Tor Bay Harbour Authority	Harbour Committee

Processed Focused

								Current Risk Score						
Risk No	Spar Code	Scorecard Objective	Risk Title	Risk Description, Threat: What could happen to affect this, Cause: How could it happen	Probability and Proximity Description (How likely is it to happen? When is it likely to happen?)	Impact description, what could the impact be?	Control measures (SPAR Projects & PI's)	Probability Score	Impact Score	Risk Score	Risk Rating. 1-4-L 6-9=M 12-16=H	Control Owner	Risk Owner	Accountable Body
5	HMS RR 05	5. Effective risk management and health and safety in place	Effective risk management and health and safety	If we do not have a robust culture for managing our risks, our projects, as well as our information governance and operational Health and Safety - Then we may suffer failings in the overall management of the Harbour Authority - So this may result in injury to stakeholders, loss of revenue, lost information, legal action and damage to our reputation.	Unlikely	Insufficient staff to fulfil obligations. Staff health & safety compromised. Legal action against the Council. Weak project governance leading to poor delivery & inadequate control measures. Projects run late and/or over budget. Outcomes not achieved. Information or financial loss. Time wasted looking for information. Risk of not meeting FOI/customer requests correctly. Loss of reputation.	1.Help provide appropriate sea and flood defences. 2.Reduce the number of reportable accidents (RIDDOR). 3.Test and review a Business Continuity Plan. 4.Review harbour charges annually and maintain strong rental streams. 5.Ensure staff are properly trained to Prince2. 6.Employ properly trained Project Managers. 7.Monitor project performance using SPAR.net. 8.Data Protection Act - staff given necessary training. 9.Customer database kept updated and backed-up to Council's server. 10.Document and file retention schedule drawn up and observed. 11.Commercial shredding contractor used for document disposal.	2	4	8	M	Adam FitzPatrick Kevin Mowat Paul Labistour Dave Bartlett John Turner	Executive Head of Tor Bay Harbour Authority	Harbour Committee
6	HMS RR 06	6. Ensuring equality and diversity in service delivery - together with equality of opportunity	Ensure quality and diversity of service delivery and provision	If we fail to provide a service that ensures equality and diversity - Then we may unknowingly discriminate against staff and/or stakeholders - So this may result in legal action, insufficient staff levels, drop in service delivery and damage to our reputation.	Unlikely	Discrimination, legal effects. Insufficient staff to fulfil obligations. Legal action against the Council. Loss of reputation.	1.Complete equality impact assessments and produce an improvement action plan.	1	2	2	L	John Turner	Executive Head of Tor Bay Harbour Authority	Harbour Committee
7	HMS RR 07	7. Improve and maintain the customer experience	Maintain or improve the customer experience	If we do not provide a high quality harbour service that accurately meets the needs of our customers - Then we will not be providing a professional and equitable service - So this may result in loss of demand for harbour services, loss of revenue streams and damage to our reputation.	Unlikely	Insufficient staff to fulfil obligations, facilities provided at a loss, income stream lost, unfair allocation of harbour facilities, legal action against the authority, high level of complaints and damage to our reputation.	1.Review visitor feedback forms and Annual Harbour Users Survey. 2.Review harbour charges annually and maintain strong rental streams. 3.Complete equality impact assessments and produce an improvement action plan. 4.Maintain competitive charging regime. 5.Withdraw or do not supply certain discretionary facilities. 6.Retain membership of appropriate Trade and Professional Associations (British Ports Association, UK Harbour Masters Association). 7.Hold, maintain and review our Harbour & Maritime Strategy. 8.Keep and review the Harbour Operational Moorings Policy.	2	2	4	L	Adam FitzPatrick Kevin Mowat Paul Labistour Dave Bartlett John Turner	Executive Head of Tor Bay Harbour Authority	Harbour Committee
8	HMS RR 08	8. Maintain safety	Maintain safety	If we fail to fulfil our obligation to provide a competent Harbour Authority, by not enforcing all applicable statues, byelaws and legislation. Then we will not be providing a safe haven for vessels or a safe Harbour estate for users and visitors, So we may fail to accurately respond to legislative changes resulting in a financial penalty and we may face deterioration of our built infrastructure, a major emergency and severe damage to our reputation.	Unlikely	Statutory duty may not be met. Safety may be prejudiced. Government intervention. Stakeholder dissatisfaction. Insufficient staff to fulfil obligations. Legal action against the Council. Harbour cannot achieve objectives in context of government policy. Premises unsafe/unusable for extended period. Cessation of business activities. Loss of reputation.	1.Renew the bilateral agreement with the UKHO. 2.Annual Audit & Inspection from Trinity House. 3.PANAR - Navigation Lights availability. 4.Implement the safety management improvement plan. 5.Maintain a Harbour Emergency Response Plan and Business Continuity Plan. 6.External contract for the provision of pilotage services. 7.Membership of appropriate Trade and Professional Associations (British Ports Association, UK Harbour Masters Association). 8.Review harbour charges annually and maintain strong rental streams. 9.Periodic review of Harbour legislation.	2	4	8	M	Adam FitzPatrick Kevin Mowat Paul Labistour Dave Bartlett John Turner	Executive Head of Tor Bay Harbour Authority	Harbour Committee

Employee Focused

								Current Risk Score						
Risk No	Spar Code	Scorecard Objective	Risk Title	Risk Description, Threat: What could happen to affect this, Cause: How could it happen	Probability and Proximity Description (How likely is it to happen? When is it likely to happen?)	Impact description, what could the impact be?	Control measures (SPAR Projects & PI's)	Probability Score	Impact Score	Risk Score	Risk Rating. 1-4-L 6-9=M 12-16=H	Control Owner	Risk Owner	Accountable Body
9	HMS RR 09	9. Effective workforce planning	Effective workforce planning	If we lack effective workforce planning - Then we may fail to offer appropriate learning and development to all staff - So this may lead to insufficient staff to fulfil obligations, incompetent staff, deterioration of safety standards which has the potential to lead to personal injury and damage to our reputation.	Possible	Insufficient staff to fulfil obligations. Legal action against the Council. Incompetent staff, deterioration of safety standards. Failure to update skills could lead to a poor service. Unsettled staff. Loss of productivity. Personnel leaving. Insufficient budget to meet the cost of an appropriate grading structure. Staff redundancies or reduced working hours. Loss of reputation.	1.To encourage Harbour Masters to fully complete CPD records. 2.To monitor and support staff through induction and appraisal reviews. 3.To reduce staff absence. 4.Review harbour charges annually and maintain strong rental streams. 5.Take professional advice from Human Resources. 6.Liaise with staff on a regular basis and ensure that information is promulgated.	2	2	4	L	Adam FitzPatrick Kevin Mowat Paul Labistour Dave Bartlett John Turner	Executive Head of Tor Bay Harbour Authority	Harbour Committee

Score	Probability	Description
4	Very Likely	Has occurred in the organisation in recent months OR It is almost certain that it will occur at some time in the future
3	Likely	Has occurred in the organisation in recent years OR There is a strong probability that it will occur at some time in the future
2	Unlikely	Has occurred in the organisation in the past OR There is a possibility it will occur at some time in the future
1	Very Unlikely	Has not occurred in the organisation before OR Will only occur in exceptional circumstances

Impact Scoring Guidance - Risks					
Impact Level	**Financial**	**Reputational**	**Human Welfare**	**Organisational**	**Natural & Built Environment**
4 - Catastrophic (Crisis with potential to lead to severe disruption)	Loss of 50% or more of budget or funding	• Negative national and local media attention for over 6 months • Possible change to the Senior Management Team • Government intervention and investigation • Outrage amongst the local community	• Over 1000 people negatively affected • Multiple fatalities, disabilities or long-term hospitalisation of 10 or more people	• Interruption lasts over 6 months • Negatively affects entire commission and multiple business units • Major impact on strategic objectives • Challenge to accounts • Ombudsman investigation • Legal claims and/or proceedings brought by multiple individuals, groups and/or organisations	• Negative effects last over 1 year • Widespread damage to human infrastructure • Widespread pollution and damage to the natural environment • Multiple wards affected
3 - Major (Critical Event)	Loss of between 25 and 50% of budget or funding	• Negative local media coverage for up to 6 months • Potential for ombudsman investigation • Serious damage to organisation's reputation	• 100 – 1000 people negatively affected • 1 fatality or short term hospitalisation and rehabilitation of up to 10 people	• Service delivery interrupted for between 1 and 6 months • Negatively affects multiple business units • Major impact on business unit objectives • Possible challenge by Ombudsman • Potential for legal proceedings and large claims for multiple individuals/groups	• Negative effects last between 6 months and 1 year • Significant damage to human infrastructure • Significant pollution and damage to natural environment • Single ward affected
2 - Moderate (Event requires a moderate level of resource and input)	Loss of between 10 and 25% of budget or funding	• Negative local media coverage for up to 1 month • Generates a small number of complaints • Local community aware of statutory prosecution of a non-serious nature	• 10 – 100 people negatively affected • Severe injury to several individuals	• Service delivery interrupted for between1 week and 1 month • Negatively affects 1 business unit • Potential for claims from several individuals	• Negative effects last up to 1 month • Minor damage to human infrastructure • Minor pollution and damage to the natural environment
1 - Minor (effect minimal)	Loss of up to 10% of budget or funding	• Negative local media coverage for less than 1 week • Complaint from single individual or small group	• 1 – 10 people negatively affected • Very minor injury or discomfort to an individual	• Service delivery interrupted for up to 1 week • Potential to negatively affect multiple service areas • Very low possibility of litigation	• Negative effects last up to 1 week • Single building or pieces of infrastructure negatively affected • Limited negative effect on natural environment and/or human infrastructure

Impact Scoring Guidance - Risks

Impact Scoring Guidance – Opportunities					
Impact Level	**Financial**	**Reputational**	**Human Welfare**	**Organisational**	**Natural & Built Environment**
4 - Triumph	Gain of 50% or more of budget or funding	• Positive national and local media attention for over 6 months • Possible national commendation for a member of the Senior Management Team • National award or recognition of elevated status by national government	• Improved safety and welfare of over 1000 people • Major improvements in welfare, health and safety of multiple people, groups and organisations	• Positive effects last over 6 months • Positively affects service delivery in entire commission and multiple business units • Excellent performance against corporate / community plan priorities • Potential for national award for excellence • Increase in funding streams due to service innovation and/ or excellence	• Positive effects last over 1 year and is adapted into further improvements • Widespread positive change to natural environment • Widespread positive change to human infrastructure • Multiple wards affected
3 - Major	Gain of between 25 and 50% of budget or funding	• Positive local media coverage for up to 6 months • Potential for promotion of employee • Serious boost to organisation's reputation	• Improved safety and welfare of up to 1000 people • Improved welfare and safety of multiple groups and/or organisations	• Noticeable improvement in service delivery for between 1 and 6 months • Positively affects service delivery in multiple business units • Major step towards achieving priority in corporate / community plan • Potential for regional award or recognition for excellence • Potential for increased regional funding due to service innovation and/or excellence	• Positive effects last between 6 months and 1 year and can be easily capitalised upon • Significant positive change to natural environment • Significant positive change to human infrastructure • Single ward affected
2 - Moderate (Event requires a moderate level of resource and input)	Gain of between10 and 25% of budget or funding	• Positive local media coverage for up to 1 month • Generates a small number of local compliments • Local community aware of a minor improvement in service delivery	• 10 – 1000 people positively affected • Improved safety and welfare of up to 100 people and/or some small groups /organisations	• Noticeable improvement in service delivery for up to 1 month • Potential for service area to be recommended for a professional excellence award • Move towards achieving an objective on time and within budget	• Positive effects last up to 1 month • Minor positive change to natural environment • Minor positive change to human infrastructure
1 - Minor (effect minimal)	Gain of up to 10% of budget or funding	• Positive local media coverage lasts less than 1 week • Compliment on service from single individual or small group	• Improved safety and welfare to an individual • 1 – 10 people positively affected	• Potential for an individual being recommended for a professional acknowledgement of excellence	• Positive effects last up to 1 week • Limited positive effect on natural environment and/or human infrastructure

Impact Scoring Guidance – Opportunities

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Public Agenda Item: **Yes**

Title: **Harbour Assets Review**

Wards Affected: **All Wards in Torbay**

To: **Harbour Committee** On: **12 September 2011**

Contact Officer: **Kevin Mowat**
☏ Telephone: **292429**
E.mail: **Kevin.mowat@torbay.gov.uk**

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1. Key points and Summary

1.1 This report provides Members with the outcome of the work of the Harbour Asset Review Working Party.

1.2 The Harbour Committee's Terms of Reference include the following statement :-

"to provide strategic direction in relation to those assets within Tor Bay Harbour and the harbour estate that are managed by Tor Bay Harbour Authority. (Note: the extent of the harbour estate and asset purchase and disposal over £25,000 is determined by the Mayor.)"

1.3 On the 13 June 2011 the Harbour Committee resolved that a Harbour Asset Review Working Party, comprising three members of the Harbour Committee (Councillors Faulkner (J), Richards and McPhail) and two of the External Advisors to the Committee (Captain Bob Curtis and Mr Gordon Jennings), be appointed with the following terms of reference:

a) to review all assets within Tor Bay Harbour and the Harbour Estate;
b) to establish how each asset is performing; and
c) to identify any assets that are surplus.

1.4 The Committee is asked to note the outcome of the work of the Harbour Asset Review Working Party set out in section 3 below.

2. Introduction

2.1 The Harbour Asset Review Working Party met on the 18 August 2011 to review all assets within Tor Bay Harbour and the Harbour Estate. Officer support to the Working Party was provided by the Harbour Masters with support from the Torbay Development Agency.

2.2 Harbour estate asset lists were circulated for Brixham, Torquay and Paignton. Where possible each asset was considered against the following performance criteria:

- corporate asset number (Torbay Online Asset Database System (TOADS))
- operational status
- leased or vacant
- tenure of lease & rental income
- size of premises
- expected repair & maintenance costs for the next 5 years
- condition category (A to D)
- date of last condition survey
- repairing priority (urgent to long term)
- asset valuation
- alternative use

3. Outcome of the Harbour Asset Review

3.1 All assets within Tor Bay Harbour and the harbour estate were successfully reviewed.

3.2 The Working Party was satisfied that they could broadly establish how each asset is currently performing.

3.3 No assets were identified as being surplus to the requirements of the Harbour Authority.

Kevin Mowat
Executive Head of Tor Bay Harbour Authority
Tor Bay Harbour Master
On behalf of the Harbour Asset Review Working Party

Background Papers:

Harbour Asset Review Lists
Torbay Online Asset Database System (TOADS)

Public Agenda Item: **Yes**

Title:	**Tor Bay Harbour Authority Budget Monitoring 2011/12**		
Wards Affected:	**All Wards in Torbay**		
To:	**Harbour Committee**	On:	**12 September 2011**

Contact Officer:	**Kevin Mowat**	**Pete Truman**
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1. Key points and Summary

1.1 This report provides Members with projections of income and expenditure for the year 2011/12 compared with approved budgets.

1.2 This report identifies the overall budgetary position for Tor Bay Harbour Authority as at end of July 2011 to enable appropriate action to contain expenditure and maintain reserves at appropriate levels.

1.3 The Committee is asked to note any amended outturn positions of the two harbour accounts and the resulting change in reserve movements.

1.4 The Committee is asked to note the Executive Head of Tor Bay Harbour Authority's use of delegated powers to make decisions in relation to the budget allocated to Tor Bay Harbour.

1.5 Both Harbour accounts are currently expected to show a worse position to the approved budget for a variety of different reasons that are explained further in the "Notes" section of Appendix 1.

1.6 The Committee is asked to note the Harbour Master's use of delegated powers to waive certain harbour charges, which this financial year amounts to £8,061.36 (ex VAT) and which have been spread across both harbour accounts. No additional charges have been levied.

2. Introduction

2.1 The Tor Bay Harbour Authority budget was approved by the Harbour Committee on 6 December 2010.

2.2 This is the second budget monitoring report presented to the Harbour Committee for the financial year 2011/12.

2.3 The projected outturn at Appendix 1 reflects amendments to the budget made within the Executive Head of Tor Bay Harbour Authority's delegated powers. Details of each amendment can be found in the associated note.

2.4 The performance against budget is summarised below:

	Original Budget 2011/12	Current Budget 2011/12	Projected Outturn 2011/12
	£000	£000	
Torquay and Paignton Harbours Surplus/(Deficit)	0	(6)	(8)
Brixham Harbour Surplus/(Deficit)	(50)	(64)	(59)

2.5 The current progress of Harbour capital schemes is detailed below:

	Total Budget	Actual to Date (including prior years)	Projected Outturn	Notes
	£000	£000	£000	
Torquay Harbour – Haldon & Princess Piers	1,200	1,200	1,200	(i)
[General Fund element]	[600]	[600]	[600]	
Brixham Harbour – Various Repairs	640	647	649	(ii)
Brixham Harbour – New Fish Quay Development	4,750	4,683	4,750	(iii)
Brixham Breakwater Repairs	150	0	150	(iv)
Fish Market Roof – PV Panels	48	0	48	(v)

(i) The Phase 1 works are now complete and they have included sprayed concrete on the seaward face, additional rock armouring, some emergency repairs to the inside wall and a trial repair method that included a row of mini-piles. An initial application for external funding from the Environment Agency was successful and the grant of approximately £1.3m will be used for Phase 2 which will commence in the autumn of 2011. Work towards a further bid of approximately £7m of external funding from the Environment Agency is now underway and is expected to be submitted in March 2012.

(ii) Further repair work is required to the ladders and fenders. Funding for this spend has been approved from the Brixham Harbour reserve but is not currently reflected in the Capital Plan.

(iii) Work commenced in February 2008 and the development has now been completed. Borrowing has been approved up to £4.75m and the capital charges used to service this loan can now be seen within the Brixham Harbour revenue account for 2011/12.

(iv) The Environment Agency approved a grant of £40,000 to produce a more detailed structural report of the breakwater. Officers have now evaluated this new report and work has started on a bid for further Environment Agency funding from their 2012/13 capital plan. Additional wave modelling results and an economic appraisal will form part of the bid process and an outcome should be known by February 2012. In the meantime the approved £150k capital work has been postponed.

(v) Approximately £48k has been earmarked from the Brixham Harbour reserve to fund a 10kw Photovoltaic solar energy system on the new Fish Market roof. This capital spend has already been approved by Torbay Council and by using it's reserve fund the Brixham harbour account is expected to receive the full benefit of the feed in tariff over the 25 year life of the scheme. This specific scheme does require further evaluation to determine a clear business case.

2.6 Under the Council's Scheme of Delegation the Harbour Master can vary (by addition or waiver (in full or as to part)) the approved Schedule of Harbour Charges in such manner as shall be considered reasonable. However, the Harbour Master shall maintain a proper written record of all variations approved using the delegated powers and shall, at least twice a year, report to the Harbour Committee the total value of the additional charges levied and the total value of the charges waived (see paragraph 1.6).

Kevin Mowat
Executive Head of Tor Bay Harbour Authority

Pete Truman
Principal Accountant

Appendices

Appendix 1 Harbour Revenue Accounts 2011/12

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HARBOUR REVENUE ACCOUNTS 2011/12

TORQUAY and PAIGNTON HARBOURS

	2011/12 Original Budget £ ,000	2011/12 Current Budget £ ,000	2011/12 Profiled Budget £ ,000	2011/12 Actual to Date £ ,000	2011/12 Projected Outturn £ ,000	Notes
Expenditure						
Operations and Maintenance :-						
Harbour Attendants Salaries	138	138	43	47	138	
Repairs and Maintenance	152	157	25	59	157	1
Rent Concessions	2	2	1	1	2	
Other Operating Costs	108	108	68	46	89	2
Town Dock Costs	23	23	8	2	23	
Management and Administration :-						
Salaries	181	181	64	66	181	3
Internal Support Services	117	117	39	45	117	
Other Administration Costs	45	45	15	18	49	4
Capital Charges	169	169	0	0	169	
Depreciation charge contribution					15	5
Contribution to Bad Debt Provision	5	5	0	0	0	6
Contribution to Patrol Boat Operation	2	2	0	0	2	
	942	**947**	**263**	**284**	**942**	
Income						
Rents and Rights :-						
Property and Other Rents/Rights	246	246	115	115	246	
Marina Rental	228	222	40	40	222	7
Operating Income :-						
Harbour Dues	60	60	47	55	60	
Visitor and Slipway	50	50	28	29	40	8
Mooring fees	59	59	50	60	61	9
Town Dock	240	240	160	225	233	10
Boat and Trailer parking	31	31	29	39	39	11
Other Income	28	28	13	19	28	
Contribution from Reserve	0	5	0	0	5	12
	942	**941**	**482**	**582**	**934**	
Operating Surplus /(Deficit)	**0**	**(6)**	**219**	**298**	**(8)**	

RESERVE FUND	
Opening Balance as at 1st April	617
Interest Receivable	8
Net Surplus / (Deficit) from Revenue Account	(8)
Withdrawal	(5) 12
Expected Closing Balance as at 31st March	**612**

*Note: The current recommended minimum level for the Torquay and Paignton Harbours Reserve fund is **£440,000** based on 20% of budgeted turnover together with a cash figure of £250k*

HARBOUR REVENUE ACCOUNTS 2011/12

NOTES

TORQUAY & PAIGNTON HARBOURS

1 Work on the Torquay Harbour Bridge & Cill, originally planned for 2010/11 has been undertaken this year. Provision was made from the previous years budget with the corresponding funding coming back from the Reserve (see note 12).

2 A decision by the Valuation Office to delete the rateable liability for the Harbour Masters offices at both Torquay and Paignton has resulted in a reduction and rebate totalling £19k with an ongoing budget saving of £4.3k.

3 It is anticipated that there will be a reduction in employee costs due to the waiving of superannuation contributions by some employees. However, this has not been reflected in the projected outturn at present as employees are entitled to join the scheme at any stage.

4 Professional fees have been incurred in achieving the rating reductions identified in note 3.

5 Contribution to the General Fund asset depreciation charges.

6 The current level of bad debt provision is sufficient based on the existing aged debt analysis. A contribution this years is therefore not required.

7 Marina income was down in 2010/11 due to continuing difficult economic conditions. These conditions are expected to remain during the current year and as a prudent measure the projected rental has been reduced.

8 Visitor and slipway income is down compared with 2010/11.

9 Mooring fees show a modest increase over the target level.

10 Town Dock earnings have been reduced to reflect 2010/11 income levels.

11 Income levels have already exceeded the budget.

12 Funding for the Torquay Harbour Bridge & Cill work (see note 1) provided for from the 2010/11 revenue budget.

HARBOUR REVENUE ACCOUNTS 2011/12

BRIXHAM HARBOUR

Expenditure	2011/12 Original Budget £ ,000	2011/12 Current Budget £ ,000	2011/12 Profiled Budget £ ,000	2011/12 Actual to Date £ ,000	2011/12 Projected Outturn £ ,000	Notes
Operations and Maintenance :-						
Harbour Attendants Salaries	250	250	87	62	225	1
Repairs and Maintenance	111	138	39	103	152	2
Rent Concessions	4	4	0	0	4	
Other Operating Costs	224	224	103	120	241	3
Management and Administration :-						
Salaries	156	156	51	45	156	1
Internal Support Services	92	92	30	30	109	4
Other Administration Costs	39	42	14	17	50	5
Capital Charges	268	268	0	0	268	
Depreciation charge contribution					10	6
Contribution to Patrol Boat Operation	2	2	0	0	2	
	1,146	**1,176**	**324**	**377**	**1,217**	
Income						
Rents and Rights :-						
Rents and Rights	189	189	59	68	189	
Marina Income	169	167	40	40	167	7
Operating Income :-						
Harbour Dues	76	76	59	74	76	
Visitor and Slipway	15	15	8	5	10	8
Mooring fees	125	125	113	114	125	
Fish Tolls income	474	474	149	177	525	9
Other Income	49	49	24	25	49	
Contribution from Reserve	0	17	0	0	17	10
	1,097	**1,112**	**452**	**503**	**1,158**	
Operating Surplus /(Deficit)	**(50)**	**(64)**	**128**	**126**	**(59)**	

RESERVE FUND		
Opening Balance as at 1st April	553	
Interest Receivable	6	
Net Surplus / (Deficit) from Revenue Account	(59)	
Withdrawal	(17)	10
Closing Balance as at 31st March	**500**	

Note: The current recommended minimum level for the Brixham Harbour Reserve fund is ***£470,000*** *based on 20% of budgeted turnover together with a cash figure of £250k.*

HARBOUR REVENUE ACCOUNTS 2011/12

NOTES

BRIXHAM HARBOUR

1 It is anticipated that there will be a reduction in employee costs due to the waiving of superannuation contributions by some employees. However, this has not been reflected in the projected outturn at present as employees are entitled to join the scheme at any stage.
The Projected Outturn for Harbour Attendants reflects a vacant Dockmaster post (see also note 3).

2 Work on various schemes, originally planned for 2010/11 have been undertaken this year. Provision was made from the previous year budget with the corresponding funding coming back from the Reserve (see note 10).
However a late invoice for preliminary costs relating to the previous mooring contract in 2010/11 will now be met from the current year revenue budget as an overspend. This overspend has been reduced since the last Report.
£20k has been added to the maintenance budget to meet in year demand.

3 Contract security costs have been incurred but are offset by the savings in salaries - see note 1.
The Valuation Office has determined that the rating liability for the New Fish Market rests with Brixham Trawler Agents and this represents a saving to this Account.

4 Internal Support costs have been adjusted upwards to reflect the likely year end charges.

5 Work originally planned for 2010/11 has been undertaken this year. Provision was made from the previous year budget with the corresponding funding coming back from the Reserve (see note 10).
External legal costs have been incurred to help defend a third party mooring claim and contractual liability. These costs may be recovered.

6 Contribution to General Fund asset depreciation charges.

7 Marina income was down in 2010/11 due to continuing difficult economic conditions. These conditions are expected to remain during the current year and as a prudent measure the projected rental has been reduced.

8 Visitor and slipway income is down compared with 2010/11.

9 Fish Toll income has been adjusted to reflect current levels and the outturn figure for 2010/11.

10 Funding for various work (see notes 2 and 5) provided for from the 2010/11 revenue budget.

PIs/Projects 2011/12

Quarterly report for 2011/12, AY2010/11 and 2011
No headings
Filtered by Service: Tor Bay Harbour Authority
Filtered by Flag:Include: Tor Bay Harbour Authority

Key to Performance Status:

Projects: No Data available | Milestone Missed | On Hold | On Target | Well Behind Target | Behind Target | Ahead of Target | Well Ahead of Target | Completed | Terminated

Performance Indicators: No Data | Well Below Target | Below Target | On Target | Above Target | Well Above Target

Key to +/- Column:

\+ Higher figures are better | - Lower figures are better | OFF Direction cannot be determined

PIs/Projects 2011/12

Performance Indicators

Status	Code	Title	+/-	Prev Year End	Annual Target	Q1 Act	Q2 Act	Q3 Act	Q4 Act	Actual to Date
On Target	TDAMS01	TDAMS01 Harbour estate lettings occupancy	+	95.80%	100.00%	95.80%				95.80% (1/4)
On Target	TDAMS04	TDAMS04 Navigation Lights availability	+	99.35%	100.00%	98.92%				98.92% (1/4)
Well Above Target	TDAMS07	TDAMS07 Brixham Harbour Fish Tolls	+	£556,620.29	£474,000.00	£155,394.39				£155,394.39 (1/4)
Data not due	TDAMS08	TDAMS08 Harbour Users Survey	+	82%	85.0%	n/a	n/a	n/a		n/a
Data not due	TDAMS09	To monitor and support staff through induction and appraisal reviews	+	100%	100%	n/a	n/a	n/a		n/a

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PIs/Projects 2011/12

Performance Indicators

Status	Code	Title	+/-	Prev Year End	Annual Target	Q1 Act	Q2 Act	Q3 Act	Q4 Act	Actual to Date
On Target	THARB02	Help provide appropriate sea and flood defences	+	Yes	Yes	n/a	n/a	n/a	Yes	Yes
On Target	THARB04	To assist in the collection of spatial mapping data	+	Yes	Yes	n/a	n/a	n/a	Yes	Yes
Data not due	THARB08	To Produce and Review a Risk Register for the Business Unit	+	Yes	Yes	n/a	n/a	n/a		n/a
Data not due	THARB09	To produce, promote and reprint the Tor Bay Harbour Guide	+	n/a	Yes	n/a	n/a	n/a		n/a
Well Above Target	THARB11	Reduce the number of reportable accidents including (RIDDOR)	-	3	6	1				1 (1/4)
On Target	THARB13	Maintain the bilateral agreement with the UK Hydrographic Office	+	Yes	Yes	n/a	n/a	n/a	Yes	Yes
On Target	THARB16	To Provide Visitor Moorings	+	Yes	Yes	n/a	n/a	n/a	Yes	Yes
Data not due	THARB17	Implement the safety management improvement plan	+	95%	95%	n/a	n/a	n/a		n/a
Data not due	THARB21	Test and Review a Business Continuity Plan for the Business Unit	+	No	Yes	n/a	n/a	n/a		n/a
Well Above Target	THARB23	To Reduce Staff Absence	-	2.42%	2.50%	1.19%				0.88% (5/12)
Data not due	THARB25	To keep exisiting businesses and attract new activities	+	Yes	Yes	n/a	n/a	n/a		n/a

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PIs/Projects 2011/12

Performance Indicators

Status	Code	Title	+/-	Prev Year End	Annual Target	Q1 Act	Q2 Act	Q3 Act	Q4 Act	Actual to Date
Above Target	THARB26	% Variation on Budgeted Income - Tor Bay Harbour Authority	+	5.10%	0.00%	0.74%	2.60%			2.60% (2/4)
Below Target	THARB27	% Variation on Budgeted Expenditure - Tor Bay Harbour Authority	-	-1.20%	0.00%	1.70%	3.40%			3.40% (2/4)
On Target	THARB28	Undertake routine maintenance of harbour infrastructure	+	n/a	Yes	Yes				Yes (1/4)
On Target	THARB29	Issue local Notices to Mariners and enforce Harbour Byelaws	+	n/a	Yes	Yes				Yes (5/12)
Data not due	THARB31	Safety Management System audit completed and improvement plan agreed	+	n/a	Yes	n/a	n/a	n/a		n/a
Data not due	THARB32	Review and exercise the Tor Bay Harbour Emergency Response Plan	+	n/a	Yes	n/a	n/a	n/a		n/a
Data not due	THARB33	Review the delegated powers of the Executive Head of Tor Bay Harbour Authority	+	n/a	Yes	n/a	n/a	n/a		n/a
Data not due	THARB34	Review of existing harbour powers	+	n/a	Yes	n/a	n/a	n/a		n/a
Below Target	THARB35	Refresh the Tor Bay Harbour Website	+	n/a	Yes	No				No (5/12)
On Target	THARB37	Continue Benchmarking through relevant trade and professional associations	+	n/a	Yes	Yes				Yes (1/4)
Data not	THARB39	Complete Equality Impact Assessments	+	n/a	Yes	n/a	n/a	n/a		n/a

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PIs/Projects 2011/12

Performance Indicators

Status	Code	Title	+/-	Prev Year End	Annual Target	Q1 Act	Q2 Act	Q3 Act	Q4 Act	Actual to Date
due										
Data not due	THARB40	Implement Equality Impact Assessment Improvement Plans	+	n/a	Yes	n/a	n/a	n/a		n/a
Data not due	THARB42	To review the Tor Bay Harbour Operational Moorings Policy	+	n/a	Yes	n/a	n/a	n/a		n/a
Below Target	THARB43	Influence decision making over the management measures of the new SAC in Torbay	+	n/a	Yes	No				No (1/4)
On Target	THARB44	Influence decision making over the location of Marine Conservation Zones	+	n/a	Yes	Yes				Yes (1/4)
On Target	THARB51	Lay seasonal 5-knot buoys & navigational marks	+	n/a	Yes	n/a	n/a	n/a	Yes	Yes
Data not due	THARB59	Agree the Tor Bay Harbour Authority Business Plan	+	n/a	Yes	n/a	n/a	n/a		n/a
Data not due	THARB60	Produce an Asset Management Plan for the Business Unit	+	n/a	Yes	n/a	n/a	n/a		n/a
Data not due	THARB61	Undertake Energy Audits at each enclosed harbour	+	n/a	Yes	n/a	n/a	n/a		n/a
Data not due	THARB62	Set the Tor Bay Harbour Charges and Harbour Budget	+	n/a	Yes	n/a	n/a	n/a		n/a
On Target	THARB64	Set up an appropriate Audit Plan for Tor Bay Harbour Authority	+	n/a	Yes	n/a	n/a	n/a	Yes	Yes

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PIs/Projects 2011/12

Performance Indicators

Status	Code	Title	+/-	Prev Year End	Annual Target	Q1 Act	Q2 Act	Q3 Act	Q4 Act	Actual to Date

Projects

Project Status	Code	Title	Project End	Last Review Date	Achieved	Missed	Arising
On Target	THARB63	Analyse our visitor data and explore marketing opportunities	31/03/2031 (due)	01/07/2011	Electronic cash tills installed at all three harbours to help analyse data		
On Target	THARB15	Annual audit/inspection from Trinity House	31/12/2031 (due)	01/09/2011	Inspected by Trinity House on 29th June 2011		
On Target	THARB41	Business case for future service delivery options for Tor Bay Harbour Authority	30/03/2012 (due)	01/09/2011	Commissioning of Tor Bay Harbour Authority supported by the Mayor & CEO		
On Target	THARB52	Continue to encourage young people to engage in marine activities	31/03/2031 (due)	01/09/2011	50% reduction in harbour charges for young people under 18 years. Foregone rent for youth groups with premises on the harbour estate.		
On Target	THARB56	Contribute to tourism by working to support event organisers	31/03/2031 (due)	01/09/2011	To the end of August - 49 maritime events supported in 2011.		
On Target	THARB54	Deliver a "Port Masterplan" for Tor Bay Harbour	31/03/2013 (due)	01/09/2011	Harbour Committee decision expected in December 2011		
On Target	THARB47	Help to produce a Coastal Zone Management Plan in consultation with stakeholder groups	31/03/2014 (due)	01/09/2011	Work commenced through a partnership with SeaTorbay		
On Target	THARB53	Improve understanding of the work of the Harbour Authority through talks, boat trips, open days, etc	31/03/2031 (due)	01/09/2011	Talk given to the Royal Torbay Yacht Club on 11th March 2011.		
On Target	THARB48	Investigate renewable energy projects for use on the harbour estate	01/04/2013 (due)	01/09/2011	£48k has been earmarked from the Brixham Harbour reserve to fund a 10kw Photovoltaic solar energy		

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PIs/Projects 2011/12

Projects

Project Status	Code	Title	Project End	Last Review Date	Achieved	Missed	Arising
					system on the new fish market roof at Brixham.		
On Target	THARB30	**Manage the seasonal beach/harbour patrol craft**	31/10/2015 (due)	01/09/2011	Achieved under a reduced budget but with reduced hours on the water.		
On Target	THARB18	**Produce schedule of Maritime events**	31/03/2031 (due)	21/02/2011	Draft schedule was not uploaded on time but the final version was published on the 28th January 2011, ahead of schedule.		
On Hold	THARB20	**Replace chain mooring with pontoon berths in Torquays inner harbour**	03/06/2013 (due)	01/09/2011	Project target is now winter 2012/2013		
On Target	THARB31	**Review and improve the Safety Management System software**	29/03/2013 (due)	01/09/2011	Currently investigating bespoke software options		
On Target	THARB24	**Review Equality Impact Assessments for Tor Bay Harbour Authority**	31/12/2011 (due)	31/12/2010			
On Target	THARB14	**Review visitor feed back forms**	31/03/2031 (due)	01/09/2011	Explanation given over "Drinking Water" signage but no other actions required at this time.		
On Target	THARB49	**Submit plans to improve passenger landing facilities at Torquay & Brixham**	29/03/2013 (due)	01/09/2011	Funding bid submitted by Transport Planning colleagues.		
Behind Target	THARB36	**Supply up to date/live weather and tidal data to the Tor Bay Harbour website**	30/03/2012 (due)	30/06/2011		Project delayed due to IT technical issues - end date extended to March 2012.	
On Hold	THARB50	**Support the development of a Maritime Centre of Excellence**	31/03/2012 (due)	01/09/2011		Options explored at Broadsands but the project is on hold due to the lack of available funding.	
On Target	THARB06	**To continue to work with relevant voluntary and/or**	31/03/2031 (due)	01/09/2011	New National Coastwatch station opened in Torquay in August 2011.		

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PIs/Projects 2011/12

Projects

Project Status	Code	Title	Project End	Last Review Date	Achieved	Missed	Arising
		community organisations					
On Target	TDAMS10	To Encourage Harbour Masters to fully complete CPD records	31/03/2031 (due)	01/09/2011	Harbour Masters are members of the UKHMA - CPD soon to be web based.Kevin Mowat working on Expert Panel to deliver National Occupational Standards for UK Harbour Masters.		
On Target	THARB07	To hold quarterly meetings with harbour users and stakeholders	31/03/2012 (due)	31/12/2010	Harbour Liaison Forum meetings held on23rd & 24th November2010		
On Target	THARB12	To support and engage with Coastal Partnership - Sea Torbay	31/03/2031 (due)	01/09/2011	Last Steering Group attended was 1st March 2011. Mayor briefed with SeaTorbay Chairman on 22nd August 2011.		
On Target	THARB57	Work collaboratively with the English Riviera Tourism Company Ltd	31/03/2031 (due)	01/09/2011	Currently engaged with the ERTC on a cruise ship initiative. Harbour Committee Chairman to meet regularly with ERTC CEO.		
On Target	THARB58	Work with the Economic Development Company (TDA) on marine & waterfront projects	31/03/2031 (due)	01/09/2011	The Old Market House development delivered at Brixham. Agreement to lease signed for the new "Crab Quay House" restaurant in the new fish market complex - due to open Easter 2012.		
Behind Target	THARB55	Working with stakeholders to investigate options to improve the manag of the new Fish Market complex	29/03/2013 (due)	01/09/2011		Talks are ongoing with Brixham Trawler Agents but progress delayed while everyone settles into the new development.	

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Public Agenda Item: **Yes**

Title:	**Tor Bay Harbour Authority – Annual Tor Bay Harbour User Survey 2011**
Wards Affected:	**All Wards in Torbay**
To:	**Harbour Committee** On: **12 September 2011**

Contact Officer: **Kevin Mowat**
☏ Telephone: **01803 292429**
E.mail: **Kevin.Mowat@torbay.gov.uk**

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1. Key points and Summary

1.1 This report provides Members with the detailed results of the Tor Bay Harbour Users Survey 2011.

2. Introduction

2.1 Each year Tor Bay Harbour Authority aim to undertake a Customer Survey as part of an ongoing review of the services provided in Tor Bay Harbour.

2.2 The users survey coupled with the complaints and compliments feedback system, gives us a good indication of which of our services are meeting the customers' expectations and which are below the quality expected, and this enables the development of improvement actions.

2.3 A copy of the 2011 Survey Form can be found in Appendix 1 and a summary of the 2011 survey results is shown in Appendix 2.

2.4 Some of the significant results from the 2011 survey are as follows :-

- Those surveyed who think that harbour safety is properly managed by Tor Bay Harbour Authority remains at over 90%. This year 95.9% compared to 93.4% last year.

- 54.7% of users thought Tor Bay harbour charges compared favourably to other harbours compared with 44% last year, and 45% in 2009. 18.7% said that charges did not compare favourably with only 13% last year and 26.7% answered "Don't know".

- Over 84% rated our administration service as 'good' or 'excellent'.

- Most people (82%) would judge the overall quality of service within Tor Bay Harbour as above average with only 2.8% considering it to be poor or very poor.

- Of those that responded, 96.1% were male and 3.9% were female. The majority classified their ethnic origin to be White British (96%) and most reported that they did not consider themselves to be disabled in any way (89.3%).

- Disappointingly 11.1% of our customers considered our website to be poor or very poor. This area has already been highlighted as needing improvement and a growing number of respondents (89.5%) now have access to the internet, with 46% who would like to pay their harbour bills online.

- Interestingly over 67% of people would like to hear from us by email.

- More than 70% of the respondents believed that they can influence some decision making about the management of the harbour, with 53.2% saying it depended on the issue.

- Satisfaction with services is generally high, averaging over 77%. Customer service was well received with 84.2% considering this to be good or excellent, while 77% of respondents said that the provision of events information was good or excellent.

- Nearly 40% of respondents consider the quality of service to have improved over the last 12 months, only 2 respondents feel that serves have declined in that time.

- As in previous years the most popular additional services that people want are more fresh water points and more electricity points, mainly on the Town Dock at Torquay. Also, our customers would like more pontoon berths to be made available.

2.6 The information collected from the survey results will be used to make improvements to the provision of services provide by Tor Bay Harbour Authority.

Kevin Mowat
Executive Head, Tor Bay Harbour Authority

Appendices
Appendix 1 Tor Bay Harbour Users Survey Form – 2011
Appendix 2 Annual Tor Bay Harbour User Survey Results - June 2011

Background Papers:
The following documents/files were used to compile this report:

Tor Bay Harbour Users Survey Results from 2002 to 2010.

3. Future Payment Methods

How would you like to be able to pay for berth fees and services?

Cash ☐ Cheque ☐ Credit/Debit Card ☐
PayPoint ☐ Online Payments ☐ Internet Banking ☐

4. Hearing from us

How would you like us to let you know about events and issues?

Email ☐ By post ☐ Website ☐
Noticeboards ☐ Facebook/Twitter ☐ Other (specify below) ☐

5. About You

Please state your gender: Male ☐ Female ☐

Which of the following age groups apply to you?

0-15 ☐ 16-24 ☐ 25-34 ☐ 25-44 ☐
45-54 ☐ 55-64 ☐ 65-74 ☐ 75+ ☐

What is your ethnic origin?

White ☐ British ☐ Irish ☐ Other
Mixed ☐ White & Black Caribbean ☐ White & Black African ☐ White & Asian
Asian or Asian British ☐ Indian ☐ Pakistani ☐ Bangladeshi
Black or Black British ☐ Caribbean ☐ African
Chinese ☐ Chinese

Any other Ethnic Group

Do you have a disability? Yes ☐ No ☐

If yes how does this affect you?

☐ My hearing ☐ My mobility ☐ My vision ☐ Another way

What is your home post code

Which enclosed harbour is your home port?

☐ Brixham ☐ Torquay
☐ Paignton ☐ Other - Please State

Thank you for taking the time to complete this survey and share your views.

Dear Harbour User

ANNUAL TOR BAY HARBOUR USER SURVEY 2011

This Customer Survey forms part of an ongoing review of the services which we deliver to you. We are keen to hear the views of our users and gain a better understanding of your needs. We are particularly interested in the areas in which you have concerns and any suggestions you may have for improvement.

We would be grateful if you could spare a few minutes to answer the following questions in order to help us develop and improve our services.

We carried out a similar survey in 2010; the information we collected has been used to improve our services. Survey results together with important feedback via our Liaison Forums led to the following improvements being made last year :-

- Improve usability of Oxen Cove Slipway at Brixham
- Enlarged seasonal pontoon at Paignton
- Increased consultation on budget proposals
- More accessable outhaul mooring rings at Paignton
- New Town Dock notice board at Torquay
- Torquay harbour web cam reinstated
- Creation of a boat storage area at Breakwater Slipway

If you have any queries, require this form in large print format please contact the Executive Head of Tor Bay Harbour Authority on (01803) 292429 or email: harbourauthority@torbay.gov.uk

All information you give in this form is confidential it will be kept on computer and will only be used to help improve the services we are providing to you.

Please return the form together with your facility payment to the relevant harbour office.

Thank you very much for taking the time to complete this survey.

Yours faithfully

Capt. Kevin Mowat
Executive Head of Tor Bay Harbour Authority - Tor Bay Harbour Master

for office use only

9325243659

1. Facilities and Infrastructure

Please rate the following facilities and infrastructure:

	Excellent	Good	Average	Poor	Very Poor	Not used/ available
Mooring	☐	☐	☐	☐	☐	☐
Town Dock (Torquay)	☐	☐	☐	☐	☐	☐
Quayside Berth	☐	☐	☐	☐	☐	☐
Visitor's Pontoon	☐	☐	☐	☐	☐	☐
Boat Park	☐	☐	☐	☐	☐	☐
Tender Rack	☐	☐	☐	☐	☐	☐
Courtesy Tenders	☐	☐	☐	☐	☐	☐
Laser Rack	☐	☐	☐	☐	☐	☐
Lockers	☐	☐	☐	☐	☐	☐
Winter Storage	☐	☐	☐	☐	☐	☐
Slipway	☐	☐	☐	☐	☐	☐
Crane	☐	☐	☐	☐	☐	☐
Grid	☐	☐	☐	☐	☐	☐
Electricity	☐	☐	☐	☐	☐	☐
Water	☐	☐	☐	☐	☐	☐
CCTV	☐	☐	☐	☐	☐	☐
Navigation Lights/Marks	☐	☐	☐	☐	☐	☐
Waste Reception Facilities	☐	☐	☐	☐	☐	☐

Do you believe Tor Bay Harbour Authority are properly managing safety in Tor Bay Harbour?

Yes ☐ No ☐

Do you believe you can influence decisions about the management of the harbour?

Yes ☐ No ☐ Depends on the issue ☐

2. General Service Provision

How would you judge the overall quality of service within Tor Bay Harbour?

Excellent ☐ Good ☐ Average ☐ Poor ☐ Very poor ☐

In addition, please rate the following individual services:

	Excellent	Good	Average	Poor	Very poor
Customer service	☐	☐	☐	☐	☐
Publications/Noticeboard	☐	☐	☐	☐	☐
Safety information/signage	☐	☐	☐	☐	☐
Events information	☐	☐	☐	☐	☐
Administration	☐	☐	☐	☐	☐

Do you have access to the internet? Yes ☐ No ☐

Have you used the Tor Bay Harbour website? Yes ☐ No ☐

If so, how would you rate the Tor Bay Harbour website?

Excellent ☐ Good ☐ Average ☐ Poor ☐ Very poor ☐

Would you say that in comparison to last year the quality of service provided in Tor Bay Harbour is:

Much better ☐ Slightly better ☐ The same ☐ Slightly worse ☐ Much worse ☐

Do you believe the charges in Tor Bay Harbour compare favourably with those for other harbours?

Yes ☐ No ☐ Don't know ☐

Please state any extra services you would like us to provide.

Would you be prepared to pay a supplement for additional services?

Yes ☐ No ☐

The Harbour Authority is reviewing the hours covered by its operational staff at Brixham, Torquay and Paignton. In particular we are considering reducing the summer hours at Torquay.

Torquay 0700 ~ 2100 reduced to 0800 ~ 2000 Agree ☐ Disagree ☐

Please comment generally on any hours at any harbour

The Consultation and Research Team

ANNUAL TOR BAY HARBOUR USER SURVEY 2011

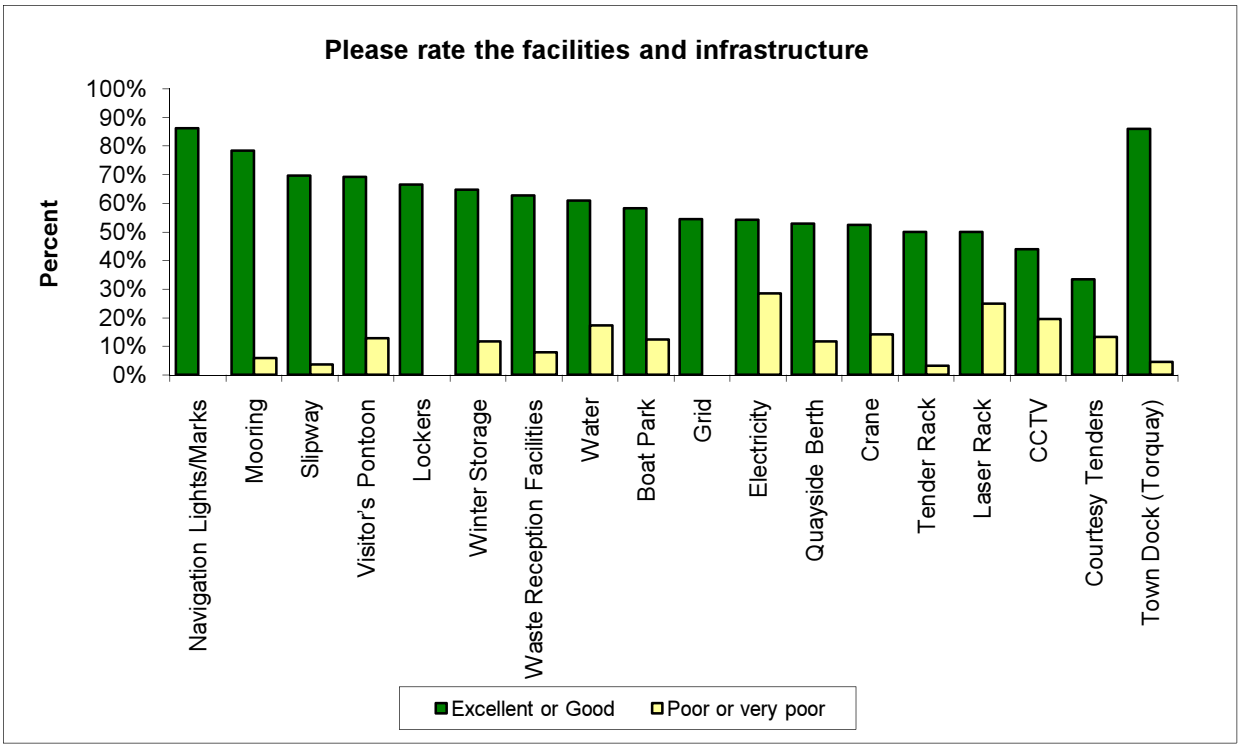
This Customer Survey forms part of an ongoing review of the services which we deliver to you. We are keen to hear the views of our users and gain a better understanding of your needs. We are particularly interested in the areas in which you have concerns and any suggestions you may have for improvement.

TOR BAY HARBOUR

Consutlation and Research Team
01803 208829
consultation@torbay.gov.uk

1. Facilities and Infrastructure

Please rate the following facilities and infrastructure	Excellent or Good	Poor or very poor
	Percent	Percent
Navigation Lights/Marks	86.2%	0.0%
Mooring	78.4%	5.9%
Slipway	69.6%	3.6%
Visitor's Pontoon	69.2%	12.8%
Lockers	66.7%	0.0%
Winter Storage	64.7%	11.8%
Waste Reception Facilities	62.7%	7.8%
Water	60.9%	17.4%
Boat Park	58.3%	12.5%
Grid	54.5%	0.0%
Electricity	54.3%	28.6%
Quayside Berth	52.9%	11.8%
Crane	52.4%	14.3%
Tender Rack	50.0%	3.3%
Laser Rack	50.0%	25.0%
CCTV	43.9%	19.5%
Courtesy Tenders	33.3%	13.3%
Town Dock (Torquay)	86.1%	4.6%

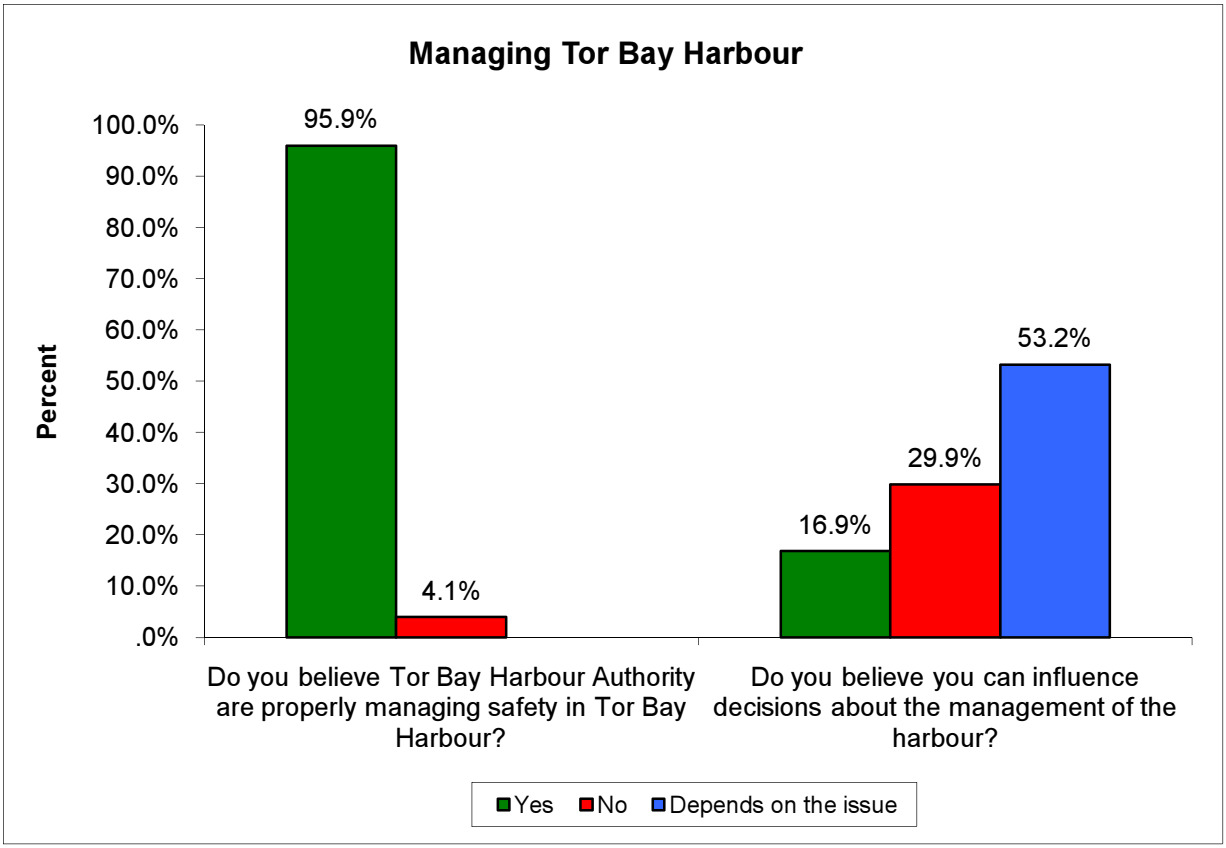


Do you believe Tor Bay Harbour Authority are properly managing safety in Tor Bay Harbour?

	Number	Percent
Yes	71	95.9%
No	3	4.1%
Total	**74**	**100.0%**

Do you believe you can influence decisions about the management of the harbour?

	Number	Percent
Yes	13	16.9%
No	23	29.9%
Depends on the issue	41	53.2%
Total	**77**	**100.0%**



Mooring	Number	Percent
Excellent	15	29.4%
Good	25	49.0%
Average	8	15.7%
Poor	3	5.9%
Very poor	0	.0%
Total	**51**	**100.0%**

Town Dock (Torquay)	Number	Percent
Excellent	19	44.2%
Good	18	41.9%
Average	4	9.3%
Poor	1	2.3%
Very poor	1	2.3%
Total	**43**	**100.0%**

Quayside Berth	Number	Percent
Excellent	2	11.8%
Good	7	41.2%
Average	6	35.3%
Poor	1	5.9%
Very poor	1	5.9%
Total	**17**	**100.0%**

Visitor's Pontoon	Number	Percent
Excellent	7	17.9%
Good	20	51.3%
Average	7	17.9%
Poor	2	5.1%
Very poor	3	7.7%
Total	**39**	**100.0%**

Boat Park	Number	Percent
Excellent	2	8.3%
Good	12	50.0%
Average	7	29.2%
Poor	3	12.5%
Very poor	0	.0%
Total	**24**	**100.0%**

Tender Rack	Number	Percent
Excellent	4	13.3%
Good	11	36.7%
Average	14	46.7%
Poor	0	.0%
Very poor	1	3.3%
Total	**30**	**100.0%**

Courtesy Tenders	Number	Percent
Excellent	1	6.7%
Good	4	26.7%
Average	8	53.3%
Poor	1	6.7%
Very poor	1	6.7%
Total	**15**	**100.0%**

Laser Rack	Number	Percent
Excellent	0	.0%
Good	2	50.0%
Average	1	25.0%
Poor	1	25.0%
Very poor	0	.0%
Total	**4**	**100.0%**

Lockers	Number	Percent
Excellent	1	33.3%
Good	1	33.3%
Average	1	33.3%
Poor	0	.0%
Very poor	0	.0%
Total	**3**	**100.0%**

Winter Storage	Number	Percent
Excellent	2	11.8%
Good	9	52.9%
Average	4	23.5%
Poor	1	5.9%
Very poor	1	5.9%
Total	**17**	**100.0%**

Slipway	Number	Percent
Excellent	12	21.4%
Good	27	48.2%
Average	15	26.8%
Poor	2	3.6%
Very poor	0	.0%
Total	**56**	**100.0%**

Crane	Number	Percent
Excellent	3	14.3%
Good	8	38.1%
Average	7	33.3%
Poor	1	4.8%
Very poor	2	9.5%
Total	**21**	**100.0%**

Grid	Number	Percent
Excellent	1	9.1%
Good	5	45.5%
Average	5	45.5%
Poor	0	.0%
Very poor	0	.0%
Total	**11**	**100.0%**

Electricity	Number	Percent
Excellent	4	11.4%
Good	15	42.9%
Average	6	17.1%
Poor	6	17.1%
Very poor	4	11.4%
Total	**51**	**100.0%**

Water	Number	Percent
Excellent	6	13.0%
Good	22	47.8%
Average	10	21.7%
Poor	4	8.7%
Very poor	4	8.7%
Total	**46**	**100.0%**

CCTV	Number	Percent
Excellent	4	9.8%
Good	14	34.1%
Average	15	36.6%
Poor	5	12.2%
Very poor	3	7.3%
Total	**41**	**100.0%**

Navigation Lights/Marks	Number	Percent
Excellent	18	27.7%
Good	38	58.5%
Average	9	13.8%
Poor	0	.0%
Very poor	0	.0%
Total	**65**	**100.0%**

Waste Reception Facilities	Number	Percent
Excellent	8	15.7%
Good	24	47.1%
Average	15	29.4%
Poor	1	2.0%
Very poor	3	5.9%
Total	**51**	100.0%

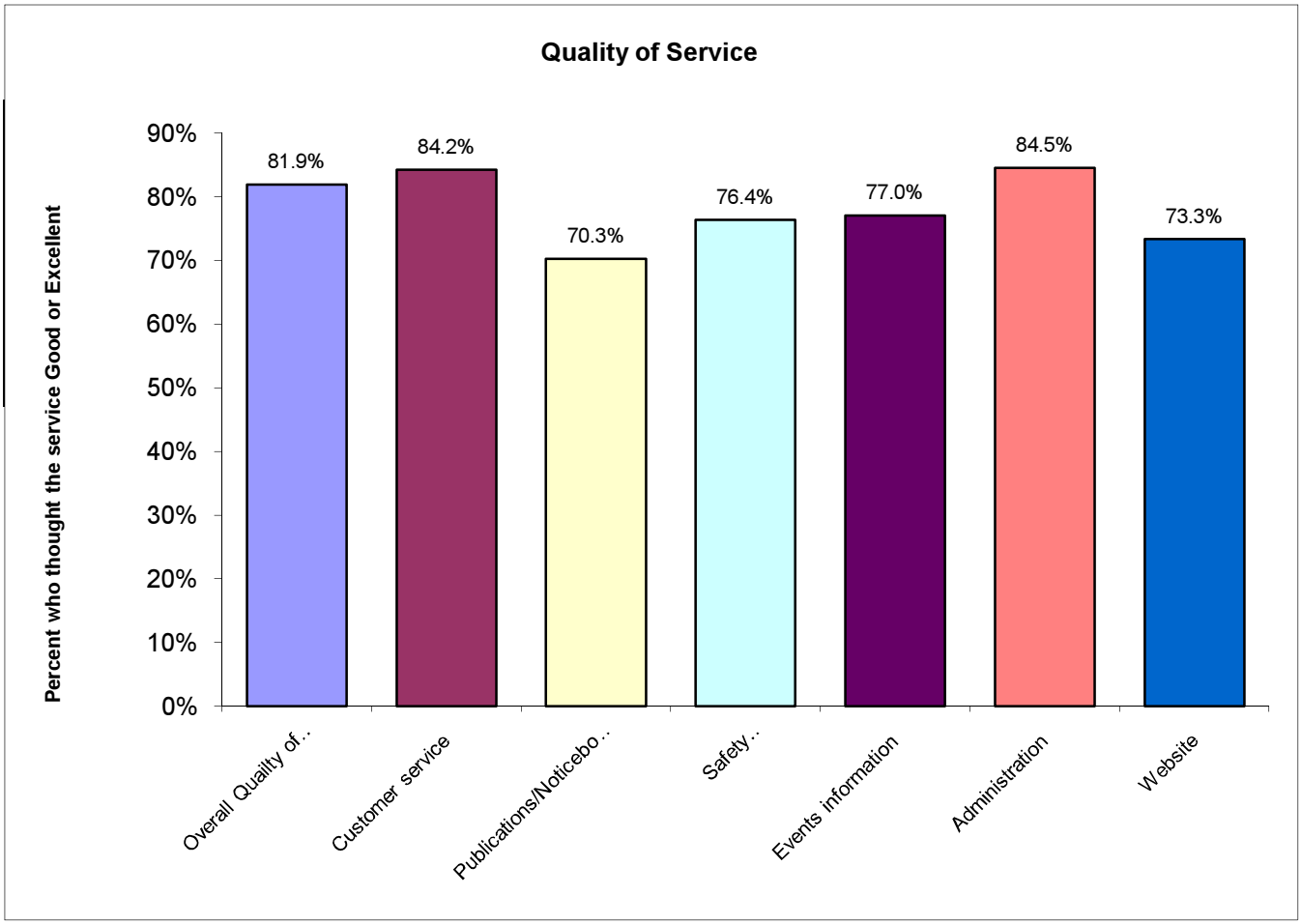
2. General Service Provision

How would you judge the overall quality of service within Tor Bay Harbour?

	Number	Percent
Excellent	20	27.8%
Good	39	54.2%
Average	11	15.3%
Poor	1	1.4%
Very poor	1	1.4%
Total	**72**	**100.0%**

In addition, please rate the following individual services

Please rate the following facilities and infrastructure	Excellent or Good	Poor or very poor
	Percent	Percent
Customer service	84.2%	2.6%
Publications/Noticeboard	70.3%	4.1%
Safety information/signage	76.4%	1.4%
Events information	77.0%	5.4%
Administration	84.5%	1.4%
Website	73.3%	11.1%



Do you have access to the internet?

	Number	Percent
Yes	68	89.5%
No	8	10.5%
Total	**76**	**100.0%**

Have you used the Tor Bay Harbour website?

	Number	Percent
Yes	20	27.8%
No	1	1.4%
Total	**72**	**100.0%**

If so, how would you rate the Tor Bay Harbour website?

	Number	Percent
Excellent	7	15.6%
Good	26	57.8%
Average	7	15.6%
Poor	4	8.9%
Very poor	1	2.2%
Total	**45**	**100.0%**

Would you say that in comparison to last year the quality of service provided in Tor Bay Harbour is:

	Number	Percent
Much better	7	9.6%
Slightly better	22	30.1%
The same	42	57.5%
Slightly worse	2	2.7%
Much worse	0	.0%
Total	**73**	**100.0%**

Do you believe the charges in Tor Bay Harbour compare favourably with those for other harbours?

	Number	Percent
Yes	41	54.7%
No	14	18.7%
Don't know	20	26.7%
Total	**75**	**100.0%**

Please state any extra services you would like us to provide

A space on the events pontoon with short term berthing to pick up and drop off
A webcam which enabled us to see our boat when at home
Better fuel for availability
Better loading and off loading of craft. Town pontoon always chock a block with motored vessels etc.
CCTV to cover all finger pontoons
Could the Brixham Yacht Club tanz be used for any harbour user (with a small charge)

Council crane
Electricity & water on all pontoons no problem paying extra for usage
Electricity and water
Everything seems o.k.
Fine users on punt mooring £50
I would like pontoons in the inner harbour but not managed by MDL as they charge too much & I could not afford to sail
Individual water & electric pontoon berths (town dock)
It would be nice to have electricity on the pontoons but not at a substantial cost
Keep pontoons clear of seagull debris/droppings
More water/electricity parts on pontoons
Northern arm to shelter against winds
Parking permits bought annually and added to mooring fee
Pontoon berths on harbour
Public winter storage or maintenance yard for berth holders
Satisfied thanks
Water & electric on town dock
Water & power to pontoons
Water is essential/electricity would be nice
Water on town dock
Water points & electricity points
Water tap on 2 would be good!!
Water/electricity access on all of town dock Torquay

Would you be prepared to pay a supplement for additional services?

	Number	Percent
Yes	22	35.5%
No	40	64.5%
Total	**62**	**100.0%**

The Harbour Authority is reviewing the hours covered by its operational staff at Brixham, Torquay and Paignton. In particular we are considering reducing the summer hours at Torquay.

Torquay 0700 ~ 2100 reduced to 0800 ~ 2000

	Number	Percent
Agree	42	70.0%
Disagree	18	30.0%
Total	**60**	**100.0%**

Please comment generally on any hours at any harbour

Adequate for my use

Customers want to make the most of the summer evenings and like to stay out until 9 or 10pm. It will be frustrating if the sill is closed at 20.00

Daylight hours in the summer coupled with the parking issues needs greater cover not less

Disappointing to see hours reduced however if cuts have to be made it can't be helped

Don't like reductions in services

Fees too high as constantly asked to move our boat for big boat storage/marquees/events

Good at Paignton

Hours during the summer should be increased!

It won't really affect me so I have not answered. We all appreciate the need to manage cash

My only concern is access to the inner harbour. The service I receive is excellent

Not an issue

Not to do with hours, but just wanted to say how much we enjoy keeping our boat at town dock. Thank you

O.k. for owner use

O.k.

Paignton house fine

PSC summer sailing carries on till 8-9pm same for cabs or seated so hours should not be reduced at Paignton though could start at 8:00

Public usage of the harbours in the high season spans a large part of the day. The harbour authority should be strictly policing the behaviour of the public using the facilities and therefore the operational hours should be maintained at the current level

Very pleased with the support given by john at Paignton.

What is needed is barrier up after hours at Torquay on that basis the hours are not important.

Why reduce hours at the busiest time of the year

With the coming summer it is essential for inner harbour users to have maximum use of their facility & therefore officers able to operate the bridge or better/more holding pontoons in the outer harbour free of charge

Customer service	Number	Percent
Excellent	15	29.4%
Good	25	49.0%
Average	8	15.7%
Poor	3	5.9%
Very poor	0	.0%
Total	**51**	**100.0%**

Publications / Noticeboard	Number	Percent
Excellent	19	44.2%
Good	18	41.9%
Average	4	9.3%
Poor	1	2.3%
Very poor	1	2.3%
Total	**43**	**100.0%**

Safety information / signage	Number	Percent
Excellent	2	11.8%
Good	7	41.2%
Average	6	35.3%
Poor	1	5.9%
Very poor	1	5.9%
Total	**17**	**100.0%**

Events information	Number	Percent
Excellent	7	17.9%
Good	20	51.3%
Average	7	17.9%
Poor	2	5.1%
Very poor	3	7.7%
Total	**39**	**100.0%**

Administration	Number	Percent
Excellent	2	8.3%
Good	12	50.0%
Average	7	29.2%
Poor	3	12.5%
Very poor	0	.0%
Total	**24**	**100.0%**

3. Future Payment Methods

How would you like to be able to pay for berth fees and services?

Multiple choice	Number	Percent
Cheque	38	51.4%
Credit/Debit Card	32	43.2%
Internet Banking	18	24.3%
Online Payments	16	21.6%
Cash	11	14.9%
PayPoint	0	.0%

4. Hearing from us

How would you like us to let you know about events and issues?

Multiple choice	Number	Percent
Email	11	67.6%
By post	38	40.8%
Website	32	18.3%
Noticeboards	0	12.7%
FaceBook / Twitter	0	.0%
Other (Please specify)	0	.0%

Respondent Profile

Gender

	Number	Percent
Male	73	96.1%
Female	3	3.9%
Total	**76**	**100.0%**

Age

	Number	Percent
0-15	0	.0%
16-24	0	.0%
25-34	0	.0%
35-44	7	9.0%
45-54	16	20.5%
55-64	26	33.3%
65-74	25	32.1%
75+	4	5.1%
Total	**78**	**100.0%**

Respondents home address

	Number	Percent
Torquay	34	49.3%
Paignton	14	20.3%
Brixham	9	13.0%
Torbay	***57***	***82.6%***
Devon	**7**	**10.1%**
Outside Devon	**5**	**7.2%**
Total	**69**	**100.0%**

Respondents home port

	Number	Percent
Brixham	14	19.2%
Paignton	15	20.5%
Torquay	44	60.3%
Other	0	.0%
Total	**73**	**100.0%**

Disability

	Number	Percent
Yes	8	10.7%
No	67	89.3%
Total	**76**	**100.0%**

If you have a disaiblity how does it affect you?

(multiple choice)	Number	Percent
My hearing	3	3.8%
My mobility	4	5.1%
My vision	0	.0%
Another way	0	.0%
Total	**7**	**8.9%**

Public Agenda Item: Yes

Title:	**The Northern Arm Breakwater – Brixham Harbour**		
Wards Affected:	**All Wards**		
To:	**Harbour Committee**	On:	**12 September 2011**
Key Decision:	**No**		
Change to Budget:	**Yes**	Change to Policy Framework:	No

Contact Officer: **Kevin Mowat**
☎ Telephone: **01803 292429**
E.mail: **Kevin.Mowat@torbay.gov.uk**

1. What we are trying to achieve and the impact on our customers

1.1 To report to the Harbour Committee the outcomes from the Brixham Harbour Northern Arm Breakwater Concept Design Report (May 2011), produced by Parsons Brinckerhoff.

1.2 To consider the next steps in the potential development of a Northern Arm Breakwater at Brixham harbour. A Northern Arm Breakwater at Brixham would greatly improve the situation for our harbour customers and it is expected that it would make a significant contribution to the local economy.

2. Recommendation for decision

2.1 **That the Torbay Development Agency be asked to prepare a preliminary business case for the Northern Arm Breakwater; to include an economic analysis of the proposed development to assess the project's viability, its value and importance.**

2.2 **That the cost of the preliminary business case be funded from the Brixham harbour reserve and that the Executive Head of Tor Bay Harbour Authority be authorised to amend the revenue budget accordingly.**

3. Key points and reasons for recommendations

3.1 A preliminary business case would be needed as part of any application for future funding.

3.2 If the business case for the new breakwater is proved or accepted then consideration can be given to carry out an over-water site investigation to determine the specific soil properties needed to enable the design to be refined and hence the overall construction costs to be reviewed.

3.3 The Harbour Authority needs to make a decision about what to do next in respect of it's aspirations for the development of this strategically important piece of harbour infrastructure at Brixham.

For more detailed information on this proposal please refer to the supporting information attached.

Kevin Mowat
Executive Head of Tor Bay Harbour Authority
Tor Bay Harbour Master

Supporting information to Report

A1. Introduction and history

A1.1 The specific purpose of the proposed Northern Arm Breakwater is threefold :-

- To enhance the protection of the fish market with the aim of allowing the safe unloading of fish under all weather conditions.

- To provide sheltered water to stimulate a range of waterborne leisure uses but specifically to include the substantial expansion of leisure marina facilities. This could include the increase in the capacity of the existing MDL Marina in front of the current wave screen and along the existing breakwater. Also, the development of new marina facilities adjacent to Freshwater Quarry and Oxen Cove possibly attached to a residential / retail development within that site.

- To respond to the aspiration of the local community to provide a properly enclosed and safe harbour in all weather conditions.

A1.2 As part of the regeneration project's feasibility studies, Hyder Consulting were appointed in 2005 to undertake an outline design of the breakwater. This included the development of a wave model, a review of potential options and the provision of cost estimates. In 2008, as part of another study, consultants Halcrow were asked to carry out an evaluation and cost assessment of a further breakwater option.

A1.3 The South West Regional Development Agency's (SWRDA) £8.4m funding towards the Brixham Regeneration Scheme included £1.16m towards the development of Freshwater Quarry, Oxen Cove and the Northern Arm Breakwater. Due to the closure of all Regional Development Agencies by March 2012, the Torbay Development Agency (TDA) were ,in 2009, being encouraged by SWRDA to look at ways to spend this money. SWRDA required that all or most of this funding had to be spent by April 2011.

A1.4 Aecom were appointed with Savills in autumn 2009 to carry out an options appraisal to examine what activities could be undertaken to improve the viability of any proposed development in the two car park sites and the new breakwater. The activities examined were those that a commercial developer would either evaluate as a risk to viability or feasibility of the ultimate development objectives, i.e. planning, economic, access, environmental and geotechnical, etc.

A1.5 The report, issued in January 2010, assessed the priority to be :-

1. To carry out an economic benefit assessment. This would provide evidence to developers that any ultimate investment of this size would provide adequate return with regard to the sustainability of the economy of Brixham.

2. To determine the cost of the breakwater construction and the undertaking of further surveys and design works.

3. To carry out due diligence surveys and investigations, e.g. site investigation works, cliff stability assessments, services surveys, etc.

4. To commence the planning process to allocate these sites within the LDF. This would improve the marketability and thus the value of the sites.

A1.6 Following meetings between the TDA, the Harbour Authority and SWRDA to review Aecom's recommended priority, the scope of works were agreed to be :-

1. Additional investigations. To include site investigation to Freshwater Quarry, cliff stability assessments, utilities survey and flood risk assessment.

2. The preparation of a Site Development Brief for Freshwater Quarry and Oxen Cove. The brief would :-

    - Clarify relevant planning policies and their application to the Freshwater Quarry and Oxen Cove sites.
    - Promote the development of the sites.
    - Provide design guidance appropriate to the particular attributes of the sites and their surroundings.

3. To carry out a concept design of the proposed breakwater.

A1.7 In July 2010 the tender process commenced to appoint the appropriate consultant to carry out the proposed work to carry out the initial design of the breakwater. Parsons Brinckerhoff with Royal Haskoning were appointed in October 2010.

A1.8 The scope of works included the following :-

- To take the 2D model produced by Hyder Consulting in 2005, review and update the parameters and develop an agreed and accepted final model.

- Using the final accepted 2D model, to test and optimise a number of alternative layouts. To determine that which offers the best protection for existing and new marina facilities and the new fish market / quay within the harbour taking into account the ownership of harbour fundus.

- To review possible construction methods (reviewing issues such as cost and time affects, benefits and impacts) and agree that which is appropriate for the preferred layout and wave environment and which offers the best value to the community. To review the engineering issues in relation to the construction of the new breakwater. The breakwater should have a design life of at least 50 years.

- To carry out a cost assessment of the final agreed layout and preferred construction method.

- To identify possible financial mechanisms to provide funding for the works.

A1.9 Their final report was issued in May 2011. In partnership with the TDA, officers from Tor Bay Harbour Authority formed a central part of the report's consultation process along with a number of key stakeholder organisations including the RNLI, Brixham Yacht Club, Brixham 21 and Brixham Town Council.

A1.10 The agreed baseline option was a single rock armour breakwater extending some 360m north east from the slipway adjacent to AstraZeneca towards the disused fuel jetty on Victoria Breakwater. The estimated cost was between £25m and £38m which included construction, design and site supervision costs with a 20% contingency / risk allowance.

A1.11 The main reason for this large estimated cost is due to the design being based on limited site investigation / information. The available site investigation did not include specific tests to determine the settlement / consolidation properties of the lower level silt material within the harbour. Further site investigation was not carried out as part of this study as it could not have been procured, mobilised and carried out prior to the SWRDA's April 2011 spend deadline. Consequently, the consultant had to make conservative assumptions as to the settlement / consolidation properties of the harbour bed material. It is considered that with accurate soil property information, savings could be made to the overall cost of the breakwater through innovative design and construction.

A1.12 Section 7 of the Parsons Brinckerhoff final concept design report identifies a list of "next steps". These are noted as being :-

(1) Preliminary business case.
(2) Geotechnical investigation.
(3) Select development partner.
(4) Detailed business case.
(5) Outline planning application.
(6) Detailed planning application.
(7) Procurement of breakwater.
(8) Final business case.
(9) Let contract to construct breakwater.

A1.13 In more detail, the initial steps, (1) and (2), are :-

(1) To carry out an economic analysis of the proposed development to assess the project's viability, its value and importance. It will need to consider the project not only in the general Torbay and Brixham context but also to the wider south west regional view. The business case will need to assess issues such as strategic fit, objectives, options, commercial aspects, affordability and achievability. This document would be used as part of any application for funding. If the business case for the new breakwater is proved or accepted then consideration could be given to progress to step (2).

(2) To carry out an over-water site investigation to determine the specific soil properties needed to enable the design to be refined and hence the overall construction costs to be reviewed.

A2. Risk Assessment

A2.1 Outline of significant key risks

A2.1.1 The £35,000 costs associated with delivering the preliminary business case would be abortive if the project did not proceed. However, approximately £230,000 has been spent to date to get to the current position in the design of this structure.

A2.1.2 Failure to develop a business case will jeopardise and/or delay any future external funding bids or any related investment opportunities.

A2.2 **Remaining risks**

A2.2.1 It should be noted that there is the potential for the actual ground conditions to be worse than that assumed in the Parsons Brinckerhoff report. This will have implications for both the update of the report and the current estimated capital costs of the project.

A3. Other Options

A3.1 The Harbour Authority could decide not to take any further action until a clear funding opportunity becomes available for this significant capital project.

A4. Summary of resource implications

A4.1 The initial estimate of costs for the above steps is :-

1. To carry out a preliminary business case - £35,000.
   This work could be carried out by the TDA though some work may be externally sourced.

2. To carry out the required site investigation - £137,500.
   This includes;
   (a) £112,900 for site works;
   - Mobilisation of barge and rig.
   - Drilling of 6 no. boreholes and the necessary sampling and in-situ testing.
   - Laboratory testing.
   - Demobilisation.
   - 15% contingency to take account of the fact that the work is weather dependant.

   (b) £11,300 for professional fees
   (c) £13,300 contingency i.e. towing charges for the barge etc

3. To carry out the refinement of the design - £15,000.
   This includes for;
   - Re-design based on the new soils information.
   - To carry out new model runs of the wave impacts on the assumption that the footprint and slope angles of the breakwater are substantially changed.
   - To update the environmental scoping report with the new information regarding the site.
   - To up-date the previously issued report to include the findings of the new marine site investigation, the modelling and the re-design. Re-costing would be carried out and the conclusions / recommendations revised.

A4.2 The total cost would be in the order of £187,500.

A5. What impact will there be on equalities, environmental sustainability and crime and disorder?

A5.1 It is not considered that the proposal will have an impact on equalities, environmental sustainability or crime and disorder.

A6. Consultation and Customer Focus

A6.1 As indicated in A1.9 a number of key stakeholders were consulted as part of the development of the Northern Arm Breakwater Concept Design Report.

A6.2 The content of the consultants report and this report were discussed at the meeting of the Brixham Harbour Liaison Forum.

A7. Are there any implications for other Business Units?

A7.1 Yes – the Torbay Development Agency will be asked to produce the preliminary business case.

Appendices

Appendix 1 Brixham Harbour Northern Arm Breakwater – Concept Design Report (May 2011)

Appendix 2 Brixham Harbour Northern Arm Breakwater – Option Costs (May 2011)

Appendix 3 Brixham Harbour Northern Arm Breakwater – Figures/Drawings (May 2011)

Background Papers:

Victoria Breakwater, Brixham, Geotechnical Investigation Report, 2011, Yeandle Geotechnical / Case Consultants

Brixham Regeneration – Northern Arm Breakwater, Design Evaluation and Cost Assessment of Option C, 2008, Halcrow

Brixham Northern Arm Breakwater, Outline Design Report, 2006, Hyder

Brixham Environmental Statement, 2006, Hyder

Brixham Harbour Regeneration, Numerical Modelling, Breakwater Design Applications, 2005, Hyder

Brixham Harbour Regeneration, Brixham Harbour Numerical Model Set Up Report, 2005, Hyder

Brixham Harbour Regeneration Strategy, Site Investigation Factual Report, 2000, Scott Wilson

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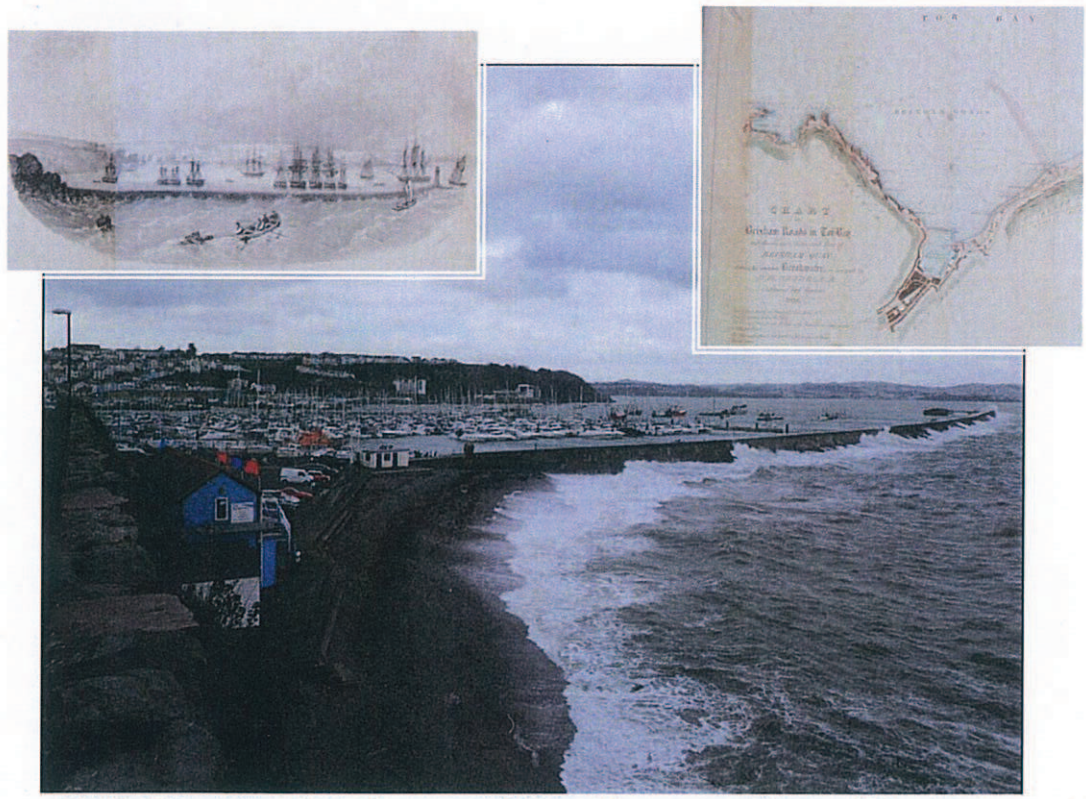

Brixham Harbour Northern Arm Breakwater

Concept Design Report

Torbay Development Agency

May 2011
Final Report
9W2488

A COMPANY OF
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Date	May 2011
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Project number	9W2488
Client	Torbay Development Agency Keith Humphreys

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Date/initials approval	…….	Date/initials approval

EXECUTIVE SUMMARY

Torbay Development Agency is investigating the construction of a Northern Arm Breakwater to enclose the open water area of the outer harbour at Brixham. The proposed breakwater's purpose is to provide:

i) calmer wave conditions in the harbour to protect existing commercial and leisure activities (e.g. fish unloading, mooring);
ii) to facilitate development of leisure uses, specifically to include the substantial expansion of marina facilities; and
iii) to respond to the aspirations of the local community to provide a properly enclosed and safe harbour in all weather conditions.

The purpose of this report is to present the investigations and work undertaken to prepare outline designs for this structure. The work included:

- Numerical modelling of wave conditions in the harbour before and after construction of the proposed breakwater
- Consultation with harbour users
- Environmental Impact Assessment (an Environmental Scoping Report)
- Selection of a baseline option (alignment / layout for the breakwater and method of construction)
- Cost estimates
- An assessment of potential funding opportunities

The selected baseline option is for a single rock armour breakwater, extending north east from the slipway adjacent to AstraZeneca towards the disused fuel jetty on Victoria Breakwater.

Numerical modelling of the wave conditions after construction of the baseline option has shown that wave conditions within the proposed enclosed harbour are slightly higher than the target conditions. However, wave conditions are within the range that enables the proposed expansion of marina facilities and provides protection to existing recreational and commercial vessels.

The estimated capital and design costs for the baseline option range from £25 million to £38 million. The high uncertainty in the cost estimate is primarily due to the design being based on limited site investigation. A marine site investigation would provide additional data on which to refine the designs and costs. The estimated costs for this investigation are £100k - £160k.

CONTENTS

Appendices

Appendix A – Figures / Drawings
Appendix B – Minutes of Consultation Meetings
Appendix C – Consultees Responses to Wave Modelling
Appendix D – Breakwater Design
Appendix E – Geotechnical
Appendix F – Health and Safety
Appendix G – Wave Modelling
Appendix H – Environmental Scoping Report
Appendix I – Option Costs

1 AIMS AND OBJECTIVES

1.1 Torbay Council is considering the construction of a Northern Arm Breakwater within Brixham Harbour to enclose the open water area of the outer harbour (see Figure 1.1).

Figure 1.1 Aerial Photo of Brixham Harbour showing the Location of the Northern Arm Breakwater

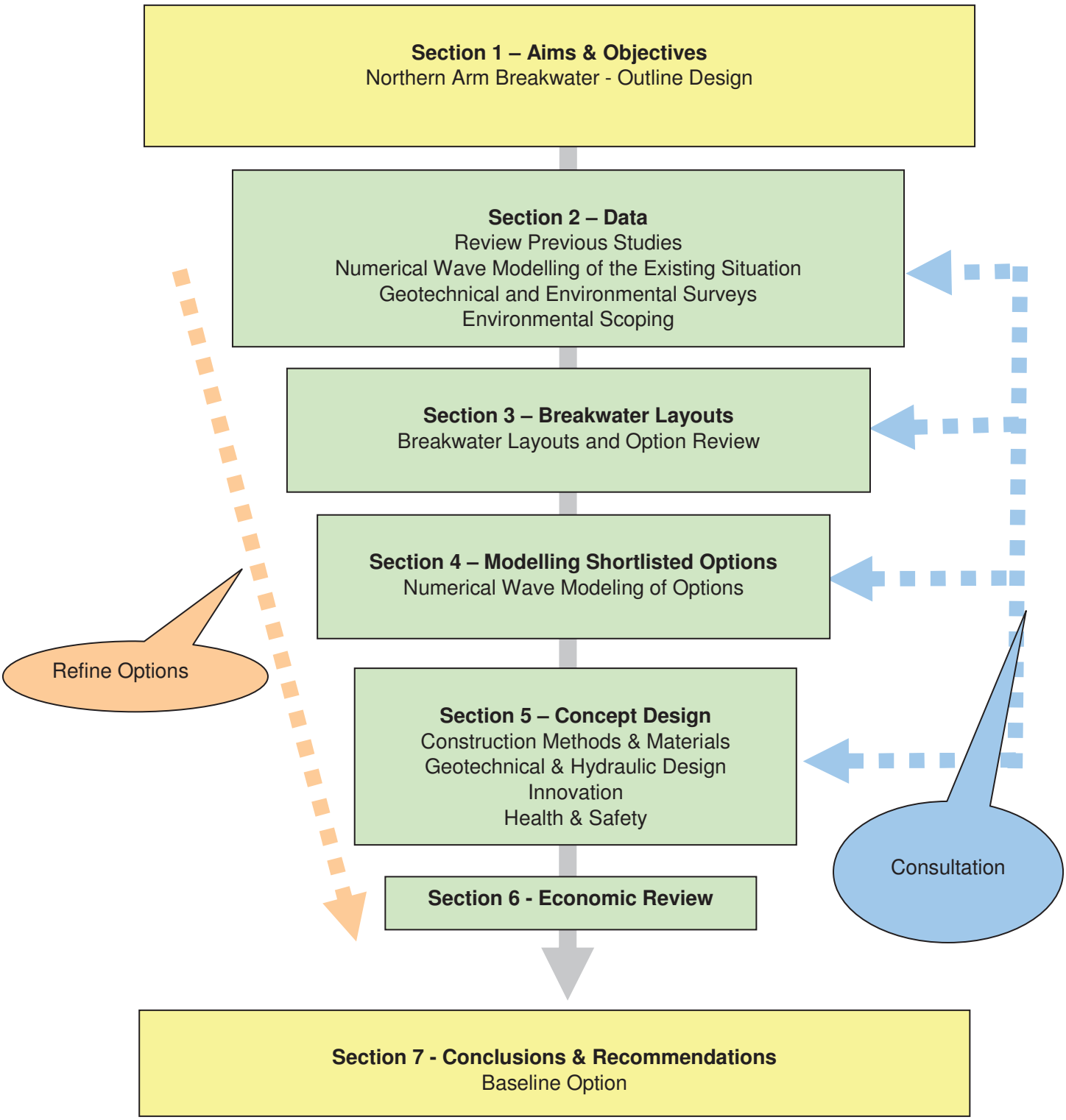
1.2 The proposed breakwater's purpose is to provide:

i) calmer wave conditions in the harbour to protect existing commercial and leisure activities (e.g. fish unloading, mooring);
ii) to facilitate development of leisure uses, specifically to include the substantial expansion of marina facilities; and
iii) to respond to the aspirations of the local community to provide a properly enclosed and safe harbour in all weather conditions.

1.3 This report presents the process (refer Figure 1.2) of selecting a baseline option for the breakwater in relation to layout, design, environmental impact and cost. Sources of potential funding are also explored.

1.4 The outline design was an iterative process with a number of feedback loops between data collection, modelling, consultation, environmental assessment and outline design and refining the options

Figure 1.2 Outline Design Flowchart



2 DATA

2.1 Previous Studies

A number of previous studies have been carried out relating to the Northern Arm Breakwater, the key documents are listed below:

- Victoria Breakwater, Brixham, Geotechnical Investigation Report, 2011, Yeandle Geotechnical / Case Consultants
- Brixham Regeneration – Northern Arm Breakwater, Design Evaluation and Cost Assessment of Option C, 2008, Halcrow
- Brixham Northern Arm Breakwater, Outline Design Report, 2006, Hyder
- Brixham Environmental Statement, 2006, Hyder
- Brixham Harbour Regeneration, Numerical Modelling, Breakwater Design Applications, 2005, Hyder
- Brixham Harbour Regeneration, Brixham Harbour Numerical Model Set Up Report, 2005, Hyder
- Brixham Harbour Regeneration Strategy, Site Investigation Factual Report, 2000, Scott Wilson

2.2 Design Criteria

2.2.1 The key design criteria for the breakwater relate to improving wave climate conditions inside Brixham Harbour with the breakwater in place. The target criteria for wave conditions have been established from the Yacht Harbour Association document, A Code of Practice for the Design, Construction and Operation of Coastal and Inland Marinas and Yacht Harbours, 2007. The desired wave heights are 0.3m (annual significant wave height (Hs)) and 0.4m (50 year Hs).

2.2.2 For comparison, an alternative standard is the Australian Standard (AS3962) Guidelines for design of marinas. This is not as stringent and gives a range of values dependant on the orientation of berthed vessels. The 50 year Hs is 0.75m for head seas, 0.50m for oblique seas and 0.31 for beam seas (for moderate conditions).

2.2.3 In addition, the breakwater design has to allow safe navigational access and egress for vessels using the harbour, maximise the water area available inside the harbour for subsequent use and development (e.g. marina expansion).

2.2.4 Other design considerations include durability, a minimum design life of 50 years, the degree to which the structure will settle and the breakwater's potential use for vessel berthing and cargo handling (i.e. on its lee side and crest).

2.2.5 It is proposed that the width of the fairway / entrance channel matches the existing marked fairway, this is approximately 70m. The entrance has been modelled as 80m wide at MHWS, this will reduce at low tide due to the slope of the breakwater. There are a number of different details that could be investigated for the roundhead at the entrance to the breakwater including steeper slopes, use of concrete units, installation of a short length of vertical wall etc to minimise the entrance width while providing acceptable entrance conditions.

2.2.6 The breakwater's cost is a key design consideration. The breakwater itself is anticipated to generate little direct revenue to support its construction and maintenance. It would, though generate substantial economic benefit and revenue generation within the Harbour and Torbay

2.2.7 In addition, the breakwater's design has taken into account a number of environmental criteria such as:

i) the presence of designated sites, for example the Lyme Bay and Tor Bay Candidate Special Area of Conservation (cSAC) and Brixham Battery Scheduled Monument
ii) features such as the Harbour Holes (sea caves) and AstraZeneca's outfall discharge
iii) the need to maintain sufficient water circulation and flushing such that hydrodynamic conditions, sediment transport patterns and water quality are not adversely affected (see Section 2.6 and 2.7).

2.3 Historic Data

2.3.1 To inform outline design of the Northern Arm Breakwater we have undertaken a search of historic documents and plans of the Victoria Breakwater. The Breakwater appears to have been constructed in three phases, the first 1400 feet started in 1843, a further 600 feet in 1909 and the final 1000 feet in 1912.

2.3.2 We have obtained additional information from local sources and from the Devon Record Office, the 1837 plan is included in Figure 2.1:

- Brixham Roads in Torbay and Brixham Quay with Intended Breakwater. QS/DP/133 1837 (Figure 2.1)
- Torbay and Brixham Deep Sea Harbour of Refuge and Docks QS/DP/208 1846

Figure 2.1 Brixham Roads in Torbay and Brixham Quay with Intended Breakwater, 1837

2.4 Consultation

2.4.1 Consultation was an essential part of the outline design process. TDA were aware that there were a number of local views regarding the possible effects of the proposed breakwater and wished to take into account local knowledge pertinent to both the outline design and operating conditions in the harbour.

2.4.2 In addition, it was important to gather Stakeholder knowledge on the local wave climate and establish a broad consensus on the suitability of the different wave conditions tested and subsequently establish confidence in the models ability to replicate existing conditions, prior to its being used to test alternative proposed breakwater options and layouts. Local observers have a wealth of tacit knowledge of the local marine climate and wave conditions within the existing breakwater and as such it was very important to learn from the local marine professionals and the broader community.

2.4.3 The following is a list of the Stakeholders who were consulted. Their attendance at meetings and the contributions that they made to assist the design process, were much appreciated :-

Keith Humphreys	Torbay Development Agency
Paul Labistour	Brixham Harbour Master
Kevin Mowat	Executive Head of Tor Bay Harbour Authority and Tor Bay Harbour Master
Peter Brown	Vigilance Sailing Trawler
Jerry Carter	Marine and Towage Services Group Ltd
Paul Churchill	RNLI “Vigilance”
David Ham	RNLI
Mark Criddle	RNLI
Bob Curtis	Brixham 21, advisor to Harbour Committee and former Pilot
Dave Hodgetts	Brixham 21
Tom Savage	Brixham Yacht Club
Nick Henderson	Brixham 21 and Chair of Regeneration Committee, Brixham Town Council
Cllr Robert Horne	Torbay Council and Chair of Harbour Committee

2.4.4 Below is a schedule of the Stakeholder Meetings that were all held in the Brixham Harbour Master’s Office (Appendix B includes the Minutes of Consultation Meetings):-

First Stakeholders’ Meeting	26th November 2010
Second Stakeholders’ Meeting	6th January 2011
Third Stakeholders’ Meeting	4th February 2011
Fourth Stakeholders’ Meeting	17th March 2011

2.4.5 Further meetings were also held with representatives of Astrazenica’s Brixham Environmental Laboratory which is located at the southern end of Freshwater Quarry. As well as discussing the possible impact of the breakwater, the locations of the seawater intakes and outfalls were confirmed.

2.5 Still Water Levels

2.5.1 Design Still Water Levels, used for outline design of the geometry of the breakwater were obtained from the Hyder (2006) and are provided in Table 2.1.

Table 2.1 Still Water Levels

Tide Levels	Level (m CD)
Highest Astronomical Tide (HAT)	5.4
Mean High Water Springs (MHWS)	5.0
Mean Sea Level (MSL)	3.0
Mean Low Water Springs (WLWS)	0.9
Lowest Astronomical Tide (LAT)	0.1
Design Water Levels	
Extreme Water Level (1 in 1 Year)	5.74
Extreme Water Level + Sea Level Rise (1 in 1 year)	5.99
Extreme Water Level (1 in 100 Year)	6.53
Extreme Water Level + Sea Level Rise (1 in 100y year)	6.78

2.5.2 Hyder (2006) used 5mm per year for sea level rise due to climate change. This equates to approximately 250mm over the next 50 years. This has been adopted for this preliminary design stage. It is noted that this is lower than the current Department for Environment Food and Rural Affairs (DEFRA) guidance used for the appraisal of flood and coastal defence schemes of 360mm. However the more recently published UK Climate Projections (UKCP09) provides a range of projections based on different climate change scenarios.

2.5.3 During the course of this study the Environment Agency have made available revised predictions for sea levels around the coast, *Coastal flood boundary conditions for UK mainland and islands Environment Agency, February 2011*. We understand that the revised predictions will be slightly lower (approximately 400mm) than the 1 in 100 year water level quoted above, however, confidence levels are also associated with the results to illustrate the uncertainty in the predictions at various locations around the coast.

2.5.4 It is considered that the changes to predicted extreme still water levels and allowances for climate change are not significant in terms of development of an outline design. The values quoted in Hyder (2006) have been used. The sensitivity of the design to these parameters should be reviewed again at detailed design.

2.6 Existing Wave Conditions

2.6.1 As part of this commission Royal Haskoning have developed a numerical model of Brixham Harbour using MIKE21-SW (Spectral Wave Model).

2.6.2 Originally the intention had been to develop the model prepared by Hyder Consulting in 2005 (using MIKE21-BW (Boussinesq Wave Module)), however there were problems in using this model:

- Harbour users had commented that they did not feel that the wave model was representative of the existing condition (predicted wave heights were too low).

- Upon re-running the model we could not replicate the conditions presented by Hyder. It was discovered that during Hyder's commission it was agreed to increase the input wave conditions at the Victoria Breakwater to make the wave heights more representative. Subsequently the wave heights from the model had been factored up (by a value of approximately 2.0) to prepare the plots and results.

2.6.3 The project team agreed that to have confidence in the model results (both internally and externally) a new model should be prepared. This was enabled by developing Royal Haskoning's existing model of Tor Bay in MIKE21-SW.

2.6.4 New estimates of offshore wave conditions were also prepared, as these were not available from the Hyder model. The offshore wave conditions used as an input to the model are provided in Appendix G.

2.6.5 A key aspect of the consultation with harbour users was their agreement that the existing wave conditions were representative before proceeding with modelling of options. A 1 in 1 year wave condition was modelled from a number of different directions, these conditions were circulated by email and discussed at the consultation meeting on 4th February 2011. A comparison of all the 1 in 1 year wave conditions is provided in Figure 2.2 and Table 2.2.

2.6.6 Specific Questions raised by stakeholders at the meetings are summarised in Appendix C.

2.6.7 Two critical wave conditions were identified (Plots for the existing situation are included in Figure 2.3 and Figure 2.4):

i) Wind waves from 300^0
ii) Swell waves from 120^0

Figure 2.2 Location of model output points

Table 2.2 Summary of modelled 1 in 1 year wave conditions

Output Points	Wave Direction and Wave Height (m)					
	330˚	30˚	60˚	90˚	**120˚	150˚
1	0.57	1.72	1.76	0.58	0.79	0.88
2	0.48	0.90	0.88	0.46	0.63	0.68
3	0.54	1.21	1.19	0.49	0.71	0.76
4	0.47	0.65	0.61	0.36	0.48	0.52
5	0.58	0.92	0.93	0.48	0.70	0.73
6	0.57	0.89	0.92	0.46	0.70	0.73
7	0.44	0.53	0.51	0.30	0.40	0.45
8	0.31	0.42	0.41	0.20	0.29	0.32
9	0.54	0.83	0.84	0.44	0.63	0.65

** Although the results are marginally less than the results from 150^0 this is reversed for the 1 in 100 year event where the 120^0 condition is higher.

Figure 2.3 Existing Condition, Swell, 120 Deg (1in 1yr)

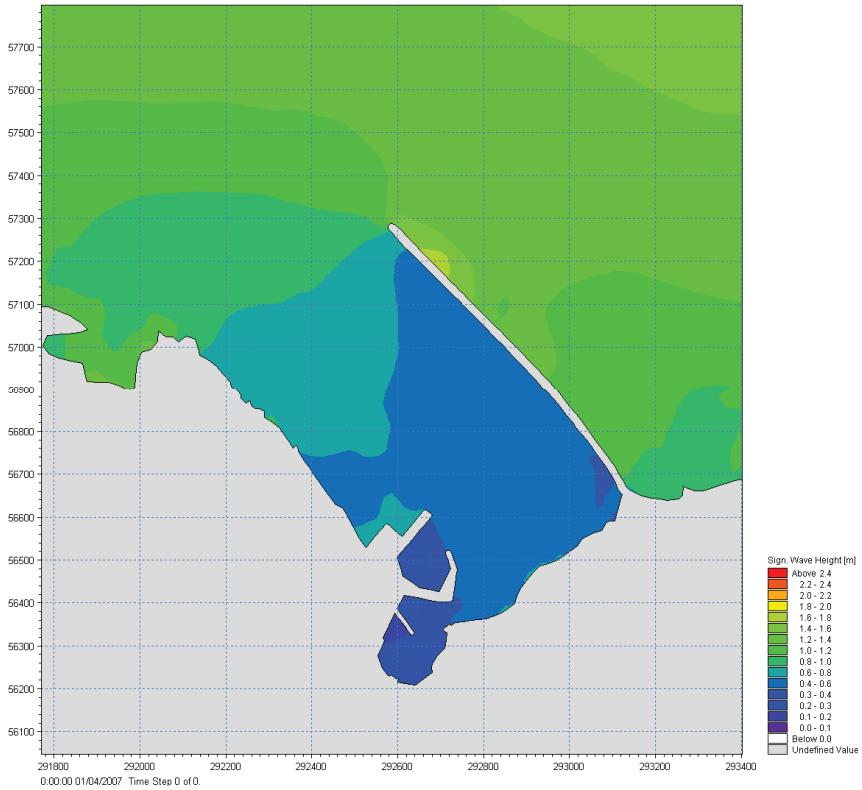
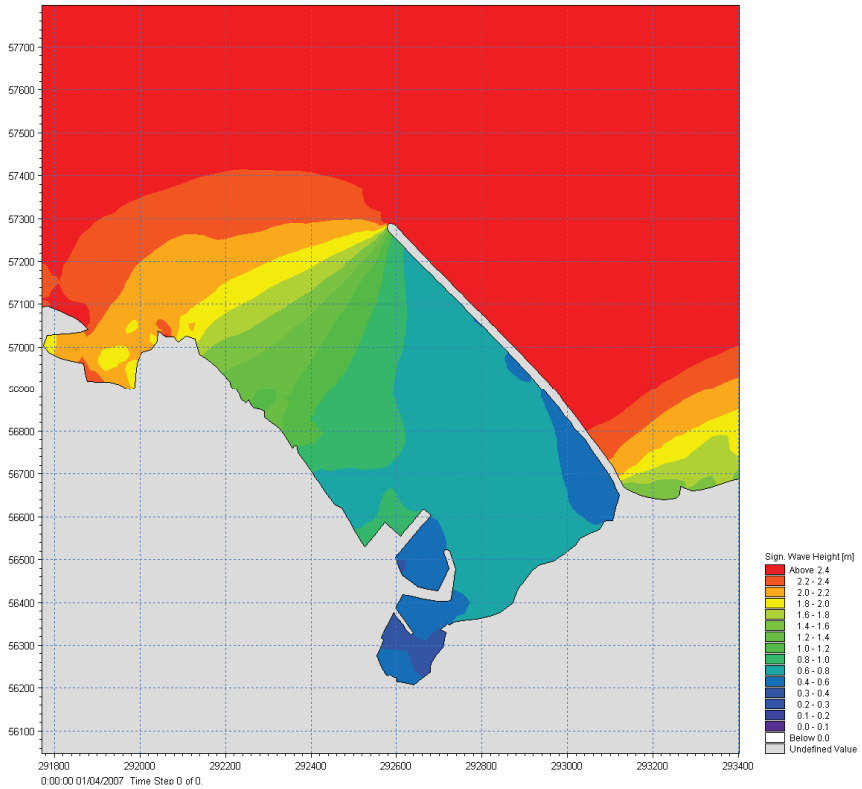


Figure 2.4 Existing Condition, Wind, 30 Deg (1in 1yr)



2.7 Tidal Currents and Water Quality

2.7.1 Tidal circulation in Tor Bay was established by South West Water Services Ltd, Torbay Marine Scheme, Oceanographic Overview, 1994 which collated available data at the time.

2.7.2 Hyder undertook an assessment of tidal currents and water quality as part of the Environmental Statement prepared in 2006. A hydrodynamic (MIKE21-HD) model of Brixham was prepared and calibrated using water level and current data collected by AstraZeneca in 1987, supplemented by data from South West Water Services in 1992. The model of the proposed situation included an extension to Victoria Breakwater and a piled wave screen, along a similar alignment to the options considered for this study.

2.7.3 The conclusion of the hydrodynamic modelling was that the effects on local hydrodynamics of the proposed breakwater were considered to be for the most part largely insignificant:

- Although the orientation of the flowfields within the harbour are rotated by 45º the existing flow speeds are very low and the post-construction flow speeds are not significantly higher.
- The constriction posed by the presence of the breakwater at the entrance to the harbour increased maximum flow speeds from an existing 0.03m/s on the flood tide and 0.05m/s on the ebb tide to post-construction values of 0.1m/s and 0.2m/s, respectively. However, this is not expected to adversely affect navigation or mooring of vessels.
- Further south towards the Fish Quay and the MDL's existing floating wave screen, there is no significant difference between the existing and post-construction flowfields.
- No change in water levels in the harbour is predicted.

2.7.4 Although the baseline option identified by this report has a slightly different layout and orientation to that proposed by Hyder and there are differences in the wave model, this does not affect conclusions drawn by the hydrodynamic model discussed above.

2.8 Sediment Transport

2.8.1 Hyder undertook an assessment of sediment transport as part of the Environmental Statement prepared in 2006. Their calibrated hydrodynamic (MIKE21-HD) model was used in conjunction with particle size analysis to determine the potential for changes in sediment transport due to construction of the proposed Northern Arm Breakwater. The conclusions of this assessment were:

- The increase in flow speed at the new, narrower harbour entrance may cause local resuspension of bed sediments depending on the structure of the bed. However, it is considered unlikely that significant erosion will occur in the harbour entrance.
- Except for an initial adjustment of the seabed at the new harbour entrance, it is considered unlikely that any significant change in the sediment transport regime of Brixham Harbour will occur as a result of the proposed works.
- The proposed works do not increase the flow speeds in the harbour sufficiently at any location to cause resuspension of bed sediment.

- The reduction of flow speeds at some locations within the harbour could cause a local increase in deposition of suspended sediment. However, as the suspended sediment concentration is low, there is very little material that could fall out of suspension and therefore this reduction in flow rate should not lead to significant siltation.
- The predicted post-construction reduction in wave heights in the harbour means that the near-bed orbital velocities due to waves will be reduced, thus reducing the likelihood of resuspension of bed sediment by waves. Passage of marine vehicles may induce near bed velocities sufficient to cause resuspension of bed sediment as with the present layout.

2.8.2 Although the baseline option identified by this report has a slightly different layout and orientation to that proposed by Hyder and there are differences in the wave model, this does not affect conclusions drawn by the hydrodynamic model discussed above.

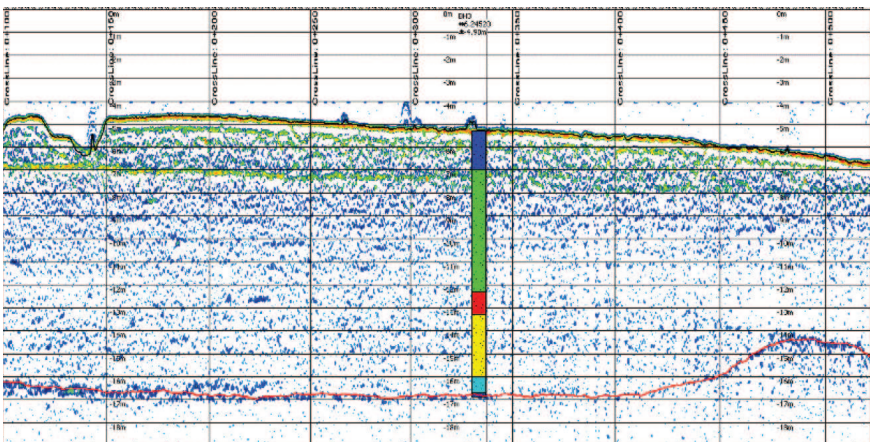
2.9 Geotechnical

2.9.1 Site investigation has been carried out previously as part of earlier studies for Torbay Council/ Torbay Development Agency, the following geotechnical reports have been received and reviewed:

- Victoria Breakwater, Brixham, Devon Geotechnical Investigation Report, Case Consultants (Yeandle Geotechnical), January 2011.
- Brixham Regeneration Scheme, Freshwater Quarry, Site Investigation Report, Frederick Sherrell, November 2010
- Brixham Northern Arm Breakwater, Outline Design Report, Hyder Consulting Ltd, February 2006
- Brixham Harbour Regeneration Strategy, Site Investigation Factual Report, Scott Wilson, April 2000

2.9.2 As part of this study a geophysical survey has been carried out to confirm the depth of rock head across the site. The results of the geophysics survey are included in Appendix E, this shows the sediment thickness (between bed level and rock head) across the site, refer Figure 2.5 (also refer Figure 5.1).

Figure 2.5 Extract from Geophysics Report (showing approx 12m thickness of sediment nr proposed breakwater roundhead



2.10 Environmental

2.10.1 A number of consents will be required prior to construction and operation of the Northern Arm Breakwater, including marine licences and planning permission. In order to support the consents applications processes, Environmental Impact Assessment (EIA) is required under the Marine Works (Environmental Impact Assessment) Regulations 2007 (as amended from April 2011) and, potentially, the Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 1999 (as amended).

2.10.2 An EIA Scoping Report has been prepared and is included in Appendix H. The EIA Scoping Report presents the results of a study to determine the issues on which the EIA should focus and the information to be included within the resulting Environmental Statement (ES). Torbay Development Agency will submit this to the Marine Management Organisation (MMO) and, potentially, Torbay Council as part of the TDA's requests for Scoping Opinions.

2.10.3 Scoping comprised a series of tasks to identify the potential environmental issues associated with the proposed Northern Arm Breakwater development:

- site visit to gain an overview of the development's location and the study area's principal environmental features;
- collation of existing environmental information by searching of relevant databases and literature;
- liaison and iterative feedback between the concept design team and the environment team;
- small-scale studies and surveys including a towed video seabed survey to identify habitats and macro-fauna and flora, Phase 1 terrestrial habitat survey, and a desk-based archaeological assessment;
- identification of the potential environmental issues arising as a result of the proposed development;
- consultation with key consultees; and
- preparation of this *EIA Scoping Report*.

2.10.4 Environmental factors have been incorporated into the design process and the selection of the preferred option in relation to the alternatives (see Section 3).

2.10.5 The existing environmental conditions, potential impacts and key activities to be carried out during the EIA stage are set out for each environmental parameter:

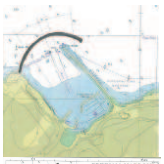
- Coastal Processes
- Water and Sediment Quality
- Marine Ecology
- Terrestrial Ecology and Ornithology
- Fisheries
- Geological Environment
- Archaeology and Heritage
- Landscape and Visual Amenity
- Transport
- Noise and Vibration
- Air Quality
- Navigation and Moorings
- Recreation and Amenity
- Human Environment

3 BREAKWATER LAYOUTS

3.1 Long list of options

3.1.1 A long list of options were developed by the project team during a design workshop on 2nd December 2010. Harbour stakeholders were consulted on these options through a series of workshops and their views have been fed into the concept design process.

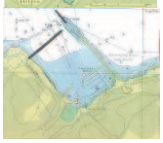
3.1.2 The long list of options was discussed during the second consultation meeting with harbour users on 6th January 2011. Nine options for the Northern Arm Breakwater's position were initially identified and considered during the process of determining a concept design. These options are summarised below:



Option A: Curved breakwater running north-east from Battery Point and wrapping around Victoria Breakwater

Option B: Straight breakwater running north-east from Battery Point and terminating to the north of Victoria Breakwater

Option C: Straight detached breakwater running north-east from AstraZeneca's laboratories and terminating approx 70m from the disused fuel jetty



Option D: Straight breakwater running north-east from AstraZeneca's laboratories and terminating approx 70m from the disused fuel jetty, also an extension to the Victoria breakwater running north-west

Option E: Straight breakwater running north-east from AstraZeneca's laboratories and terminating approx 70m from the disused fuel jetty, also an extension to the Victoria breakwater running west-south-west

Option F: Straight breakwater running north-east from AstraZeneca's laboratories and terminating approx 70m from the disused fuel jetty

Option G1: Straight breakwater running north-east from AstraZeneca's laboratories to the middle of the harbour also an extension to the Victoria breakwater running west-south-west (entrance channel located between the two breakwaters)

Option G2: Similar to option G1 but with an overlapping breakwater to improve wave climate

Option H: Straight breakwater running south-west from the end of Victoria Breakwater terminating approx 100m from AstraZeneca's laboratories

3.1.3 The stakeholders and TDA's concept design team considered a number of criteria for refining viable options for the Northern Arm Breakwater's position. These criteria are identified in Section 2 and summarised in Table 3.1. The initial constraints map is shown in Figure 3.1.

Table 3.1 Key Criteria Considered for the Breakwater Location

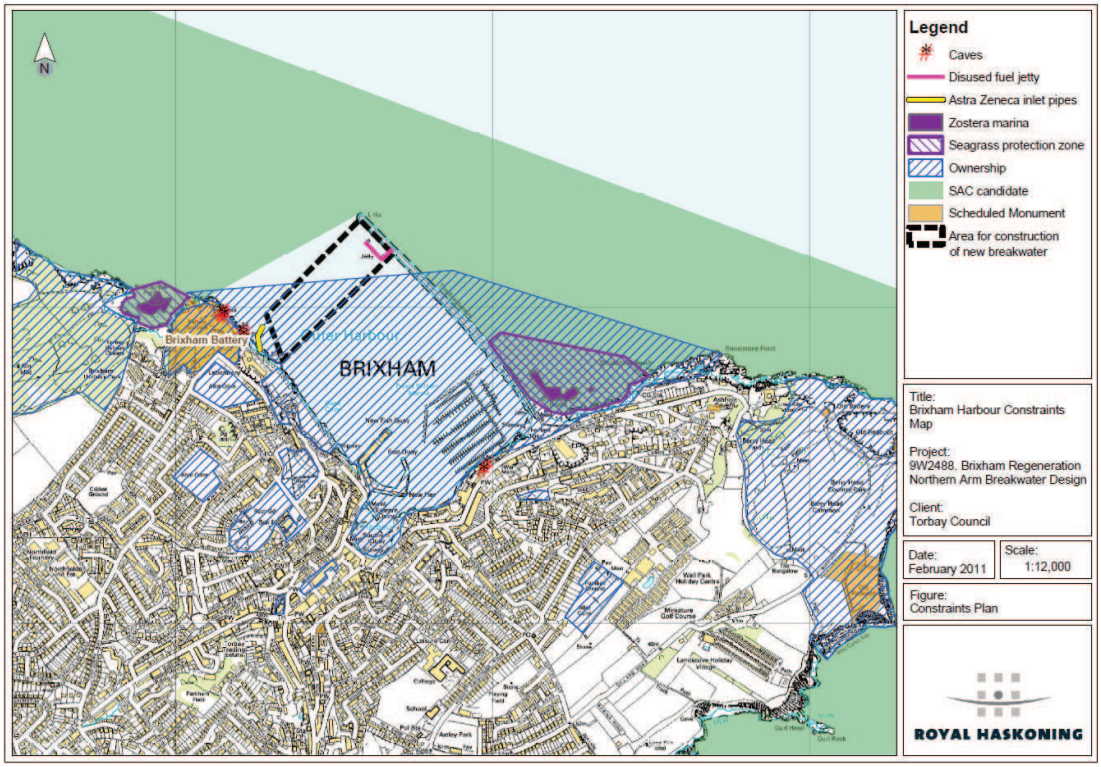
Engineering / Design Criteria	Environmental Criteria
▪ Wave climate in Brixham Harbour ▪ Maximisation of enclosed harbour area ▪ Safe navigation at harbour entrance ▪ Useable harbour area ▪ Presence of disused jetty towards the seaward end of the Victoria Breakwater ▪ AstraZeneca sea water inlet and outfall ▪ Access for maintenance works ▪ Cost	▪ Brixham Battery Scheduled Monument ▪ Lyme Bay and Torbay cSAC boundary ▪ Sea caves in Brixham Harbour (i.e. Harbour Holes) ▪ Water circulation and flushing in Brixham Harbour to maintain water quality and sediment transport patterns ▪ Access for the public (pedestrians)

3.1.4 The findings of the workshop and subsequent design team work (including further consideration of environmental issues) lead to the refining of the options for the breakwater's concept design, the key advantages and disadvantages of each option are summarised in Table 3.2.

Table 3.2 Summary of Breakwater Location Shortlisting

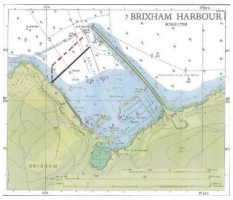
	Layout Option								
Key Advantage / Disadvantage	A	B	C	D	E	F	G1	G2	H
Maximises enclosed harbour area	Y	Y	N	N	N	N	N	Y	N
Good Wave Protection	Y	Y	N	Y	Y	Y	N	Y	N
Good Navigation	N	Y	Y	Y	N	Y	Y	N	N
Within limit of Brixham Harbour	N	N	Y	N	Y	Y	Y	Y	Y
Outside footprint of Lyme Bay and Torbay cSAC	N	N	Y	N	Y	Y	Y	Y	Y
Does not require new land connection around the Brixham Battery Scheduled Monument	N	N	Y	Y	Y	Y	Y	Y	Y
Does not enclose AstraZeneca's inlets and outlets	N	N	Y	Y	Y	Y	Y	Y	Y
Good water quality	N	N	Y	N	N	N	N	N	N
Lower Cost	N	N	Y	N	N	Y	Y	N	N
Shortlisted	N	N	N	N	Y	Y	N	Y	N

Figure 3.1 Initial Constraints Maps showing the Key Criteria Considered for the Breakwater Position

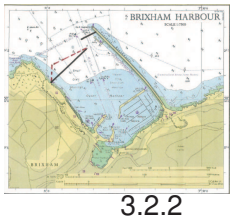


3.2 Shortlisted Options

3.2.1 The nine options were shortlisted into three, Option E, Option F and Option G2. These were further rationalised into two layouts, Option 1 and Option 2:



Option 1 – Is close to Option F from the initial options, a straight breakwater with its root adjacent to the AstraZeneca Laboratory



Option 2 – Is a combination of Option E and Option G2, an overlapping breakwater, the main breakwater located as Option 1 but with an extension to Victoria Pier creating an overlap.

3.2.2

3.2.3 Variations of these options were also considered with a cranked (or dog-leg in the breakwater to maximise the enclosed area of harbour.

3.2.4 The two options were modelled using the numerical wave model to predict the impact on wave conditions after construction (refer Section 4). The numerical model showed that after construction Option 2 achieves the target wave climate. The wave climate for Option 1 is slightly higher than the target wave climate.

3.2.5 During the consultation meeting on 4th February 2011 it was agreed to use Option 1 as the baseline option as it provides better navigational conditions at the entrance of the harbour and it is lower cost than Option 2.

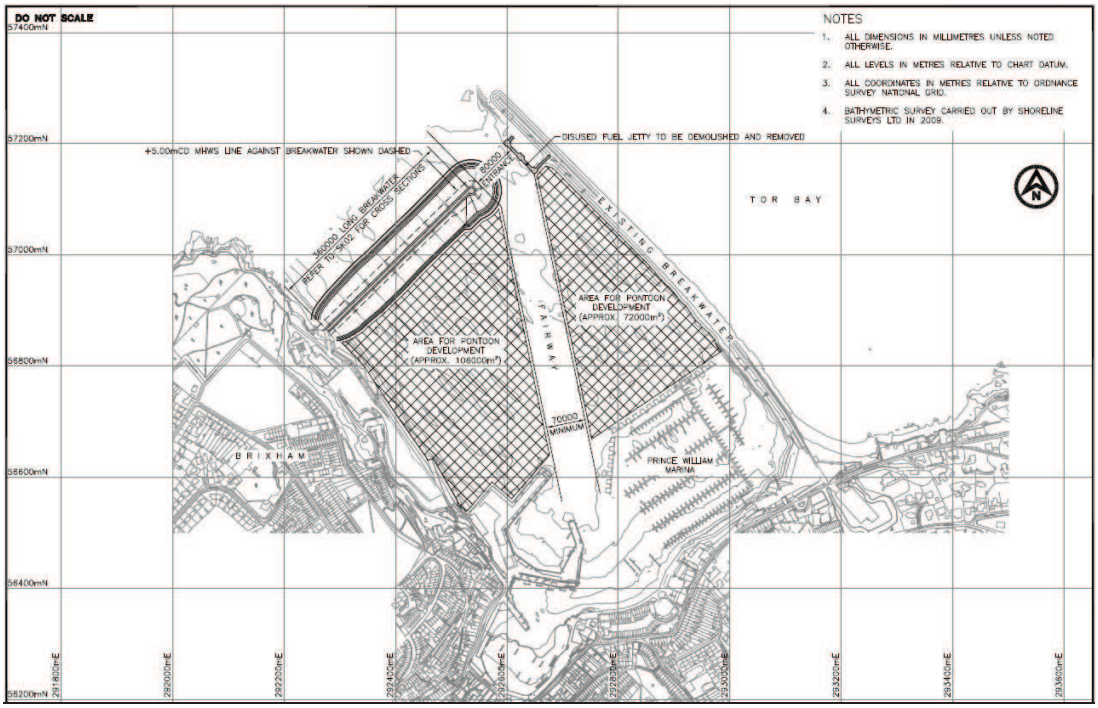
3.2.6 The decision as to whether the breakwater is straight or cranked will be determined based on the benefit that the additional area of enclosed harbour provides, compared to the additional cost for a longer breakwater in deeper water. It was noted, however that the cranked breakwater changes the entrance conditions and allows more wave energy to enter the harbour resulting in a higher wave climate than a straight breakwater that terminates opposite the disused fuel jetty.

3.2.7 The possibility of using the new breakwater in conjunction with the Victoria Breakwater to provide protection from sea level rise was raised by the consultees. This could possibly be achieved by installing a lock gate between the two breakwaters at some point in the future. This is not considered to be feasible because the Victoria Breakwater itself is a permeable (rock) structure. The cost of creating an impermeable barrier around the whole of Brixham Harbour would be extremely high.

3.2.8 During discussions with the harbour master at the Stakeholder meetings it was decided that should an option similar to Option 1 be progressed, demolition of the disused fuel jetty should be a requirement of the works. This would minimise the navigation hazard posed by having the entrance channel / fairway running alongside this jetty. If the fuel jetty was left in place an additional clearance would be required so that the fairway does not run along a vertical structure (this would in turn mean that the entrance would need to be wider allowing more wave energy into the harbour).

3.2.9 Option 1 has been been selected as the baseline option based on the results of the work undertaken for this study. Selection of this option does not preclude selection of an alternative option by the Council or a Developer at a later stage if another option is deemed to be the best solution in the prevailing circumstances.

Figure 3.2 Breakwater Layout - Baseline Option



3.2.10 The area of enclosed harbour that would be suitable for pontoon development is as follows (refer Figure 3.2):

- Oxen Cove and Freshwater Quarry 10.6 ha
- North of Prince William Marina 7.2 ha

3.2.11 The increased area that would be made available if the breakwater was cranked is approx 1 ha (at Oxen Cove and Freshwater Quarry).

3.2.12 This needs to be balanced with the existing swing moorings that would be displaced. Based on the 2011 mooring plan provided by the harbour master Table 3.3 provides a vessel size distribution.

3.2.13 There are a total of 234 vessels on existing moorings within the harbour (refer Table 3.3). Approx 30 of these are within the footprint of the proposed breakwater and would need to be re-allocated elsewhere within the harbour. Dependant on the scale and location of any pontoon development some or all of the remaining 204 vessels would need to be allocated space within the new marinas. For comparison the Prince William Marina has 500 berths. It was also noted that there is currently a waiting list for moorings at Brixham.

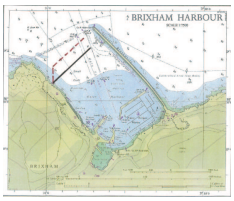
Table 3.3 Vessel Size Distribution, vessels currently on swing moorings

Vessel Length (ft)	Vessel Length (m)	No	%
< 20	< 6	41	18
20 - 30	6 - 9	106	45
30 - 40	9 - 12	55	24
40 - 50	12 - 15	12	5
50 - 70	15 - 21	17	7
100	21-30	3	1
	Total	**234**	**100**

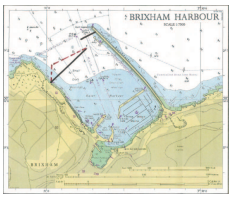
4 NUMERICAL WAVE MODELLING OF SHORTLISTED OPTIONS

4.1 Shortlisted Options

4.1.1 Once there was agreement that the wave conditions were a reasonable representation of the existing situation, the model was run for a number of different breakwater options:



- Option 1A - Straight breakwater (solid black line), rock both sides
- Option 1C - Straight breakwater (solid black line), (sensitivity run) rock seaward side, vertical wall harbour side
- Option 1D - Cranked breakwater, (dashed red line), rock both sides



- Option 2 - Overlapping breakwaters (solid black line), rock both sides

4.1.2 The target wave conditions have been adopted from the Yacht Harbour Association Code of Practice. This specifies that:

- The significant wave height (Hs) for normal annual conditions must not exceed 0.3m and the maximum period of 2 seconds
- For designers using conditions created by storms of an occurrence of 1 in 50 years – the waves should not exceed Hs of 0.4m and a period of 2.5 seconds.

4.1.3 The predicted wave conditions for Option 1 slightly exceed the target wave conditions for waves from 30^0 for both the 1 in 1 year and 1 in 50 year events (refer Table 4.1). The majority of the harbour is below 0.4m criteria for waves from 120^0. For waves from 30^0 the majority of the harbour is within the 0.4m to 0.6m band.

4.1.4 The predicted wave conditions for Option 2 are below the target wave conditions throughout the enclosed harbour (due to the overlapping breakwaters which prevent a larger amount of wave energy from entering the harbour). The results are summarised in Table 2.3. (The sensitivity run 1C is not included in the table below but the results are included in the full set of model outputs in Appendix G).

Table 4.1 – Model Output Summary (1 in 50 year return period)

	Option and Wave Height (m)			
Output Point & Wave Direction	Existing Hs (m)	1A Hs (m)	1D Hs (m)	2 Hs (m)
2 (120^0)	0.75	0.42	0.53	0.14
3 (120^0)	0.82	0.13	0.25	0.04
4 (120^0)	0.58	0.29	0.31	0.12
9 (120^0)	0.69	0.22	0.37	0.07
2 (30^0)	0.93	0.73	0.72	0.20
3 (30^0)	1.24	0.24	0.53	0.15
4 (30^0)	0.67	0.43	0.4	0.21
9 (30^0)	0.87	0.49	0.58	0.23

Red shading denotes exceedance of preferred standard

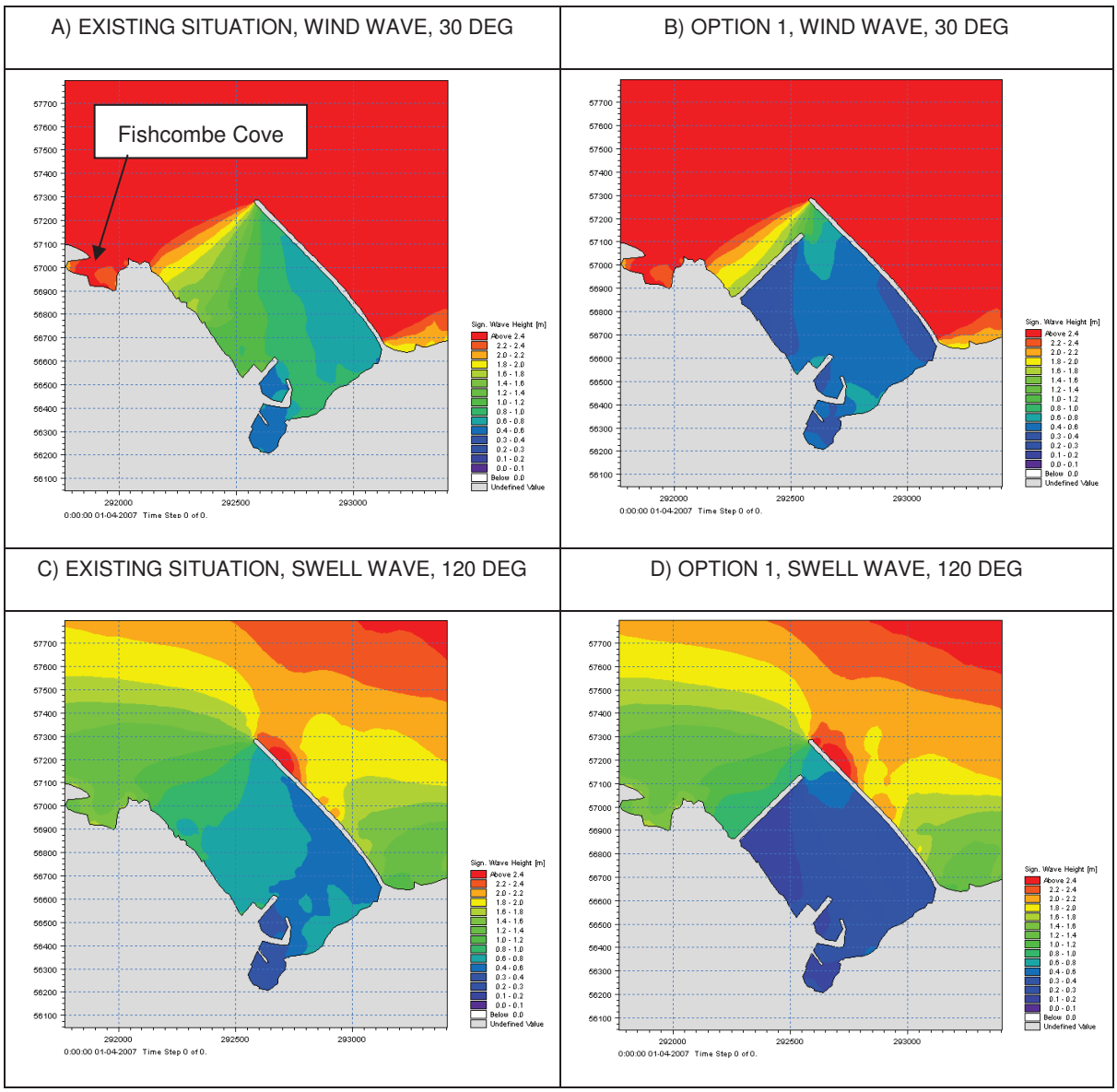
4.1.5 Although the wave climate for Option 1 is slightly higher than the target conditions, the exceedence is relatively small. It may be possible to reduce the wave climate further by installing floating breakwaters (upgraded pontoons), however, floating breakwaters are generally most suitable for wave periods of 4 seconds or less, the wave periods at Brixham are 7 seconds or greater.

4.1.6 The Yacht Harbour Association guidelines are more stringent than other international guidance in relation to acceptable extreme wave heights. For example the Australian Standard, gives a Hs of 0.75m is permissible (for head seas, moderate conditions) as discussed in Section 2.2. It is considered that although the wave climate exceeds the target conditions for Option 1, this is acceptable for and the safe operation of a marina.

4.1.7 There is no evidence that the proposed breakwater significantly increases / worsens the wave climate at the entrance to the harbour via reflection between the Northern Arm and Victoria Breakwater (refer Figure 4.1 and Appendix G).

4.1.8 There is no significant reflection towards the cSAC and Fishcombe Cove, (refer Figure 4.1, A and B).

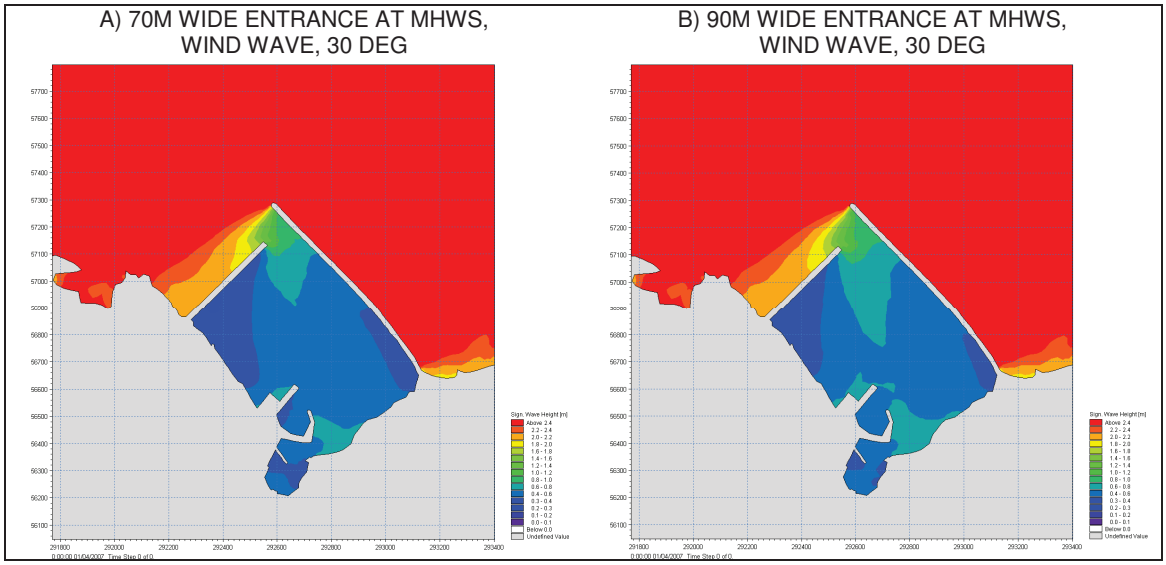
Figure 4.1 – Existing and Proposed Situation 1 in 50 year return period



4.2 Sensitivity of Harbour Entrance Width

4.2.1 Sensitivity of the width of the harbour entrance was undertaken by running two scenarios, one with a 70m width and one 20m wider, the results are shown in Figure 4.2 (for a 1 in 100 year return period event). There is a slight increase in wave heights within the enclosed harbour, although this is mainly concentrated to the fairway / entrance channel.

Figure 4.2 – Sensitivity of entrance width 100 year return period



5 CONCEPT DESIGN

5.1 Introduction

5.1.1 Breakwater design is determined by a number of factors. For the purpose of this outline design the design philosophy has been divided into separate criteria:

- Construction methods / materials
- Geotechnical stability
- Hydraulic stability

5.2 Construction methods / Materials

5.2.1 Three construction methods have been considered for the proposed breakwater:

i) rock armoured breakwater, with concrete crest.

ii) steel sheet piled cofferdam (with rock scour protection on the exposed face)

iii) (concrete caissons / blocks with rock scour protection on the exposed face)

5.2.2 A piled wave screen (one of the options proposed by Hyder) was not taken forward for the following reasons:

- the slatted timber infill panels between piles would allow a proportion of the wave energy to pass through and it is very unlikely that a sufficient reduction in wave height would be achieved. (the options above would provide better wave conditions within the harbour)
- high reflection from vertical structure towards navigation channel, cSAC and Fishcombe Cove resulting in less safe conditions for access
- potential for scour at base of wave screen structure
- long term maintenance / durability issues associated with steel structures in the marine environment

5.2.3 The advantages and disadvantages of each option are summarised in Table 3.1

Table 5.1 Advantages and Disadvantages of different Construction Methods

Advantages	Disadvantages
Rock Breakwater	
~ Lower cost ~ Flexible, layout can be changed, extended, rock reused ~ Durability / Longevity ~ settlement can be accommodated as flexible structure ~ Good hydraulic performance (absorbs wave energy) ~ Berthing facilities are possible with floating pontoons or offset structures	~ Large Footprint ~ Settlement may occur ~ Longer construction period ~ Incremental construction possible, abortive work if damaged by storms.
Steel Sheet Piling	
~ Small Footprint ~ Designed to minimise settlement ~ Berthing against inner (vertical) face possible ~ Construction of facilities on deck possible ~ Shorter construction period	~ Durability / Longevity ~ Risk of damage during construction ~ Noise / vibration impact ~ Cost ~ Reflected Waves in Harbour ~ Visual Appearance

Caisson / Concrete Block	
~ Small Footprint ~ Shorter timeframe for construction ~ Berthing against inner (vertical) face possible ~ Construction of facilities on deck possible ~ Shorter construction period	~ Durability / Longevity ~ Possible differential settlement ~ Cost

5.3 Comparative Costs

5.3.1 Comparative costs were estimated for each option early on in the project, to narrow down the potential options. The costs considered standard breakwater construction as the assessment of ground conditions had not been carried out at this stage. The comparative options costs were are given in Table 5.2.

Table 5.2 Construction Methods, Comparative Costs

Option	Cost/m run
i) Rock Breakwater	£30k - £45k
ii) Steel Sheet Piling	£58k - £65k
iii) Caisson / Concrete Block	£62k - £70k

5.3.2 As the costs are for comparison, they cover material supply and placement only, rather than total project costs. The following items are excluded: design and supervision, dredging (e.g. for caisson option), pre-drilling piles into bedrock, piling under caissons, contingency etc.

5.3.3 It was agreed at the consultation workshop on 6th January 2011 that the baseline option in terms of initial cost, longevity, flexibility and impacts would be a rock breakwater.

5.4 Geotechnical Design

5.4.1 The Outline Design Report, Hyder 2006 summarises the ground conditions as silty sand and sand, this is also shown on Figures 4 and 5 from the Scott Wilson Report (included as Appendix B of the Hyder Report). However, having reviewed the full Scott Wilson report, the borehole logs and lab tests indicate that the material consists largely of soft clayey silts overlying limestone bedrock and the silts are up to 10metres thick in places. The parameters used for outline design are summarised in Table 5.3. The parameters are then used to determine settlement (amount and duration) and ground stability.

Table 5.3 Outline Design Parameters

Soil description	Initial Design Parameters	Description
Quarry run for breakwater	Ø' = 36˚	This is the angle of shearing resistance of the quarry run material and is a measure of the shear strength of this material proposed for the breakwater.
	γb = 20kN/m3	This is a measure of the bulk density of the fill above water level and defines the load applied to the top of the soft silty CLAY/clayey SILT from fill material placed above water that will cause the clay/silt to settle due to additional loading from the breakwater.
	γs = 22kN/m3	This is a measure of the saturated density of the fill below the water level and is higher as granular material desnifies slightly under water. It defines the load applied to the soft silty CLAY/clayey SILT from fill material placed below the water level that will cause the clay/silt to settle due to additional loading from the breakwater.
Soft silty CLAY/clayey SILT	Cu = 5kPat top of layer	This is the value of undrained shear strength of the saturated clay at the top level of the soil layer. This is a measure of how resistant the clay is to shear failure due to the applied load from the breakwater. Used in assessing the slope stability of the breakwater during and post construction.
	Cu= 15kPa bottom of layer	This is the value of undrained shear strength of the saturated clay at the bottom level of the soil layer and indicates that the soil gains in strength with depth. This is a measure of how resistant the clay is to shear failure.
	γb = 17kN/m3	This is a measure of the bulk density of the clay/silt above water level and clays have the same value below the water level hence no saturated density given. It defines the load applied to the soft silty CLAY/clayey SILT in addition to the fill material, with the load increasing with depth. This load does not cause settlement as the clay/silt has already settled over time due to this self load.
	mv = 1MN/m2	This is the Coefficient of Compressibility and defines the total consolidation settlement that will occur in the clay/silt layer due to the applied loading from the breakwater.
	Cv = 1m2/yr	This is the Coefficient of Consolidation and defines the time that the settlement, defined by **mv,** will take to occur due to the breakwater loading.
Limestone	Ø' = 35˚ γb = 20kN/m3	Again this is the angle of shearing resistance Again this is the bulk density.

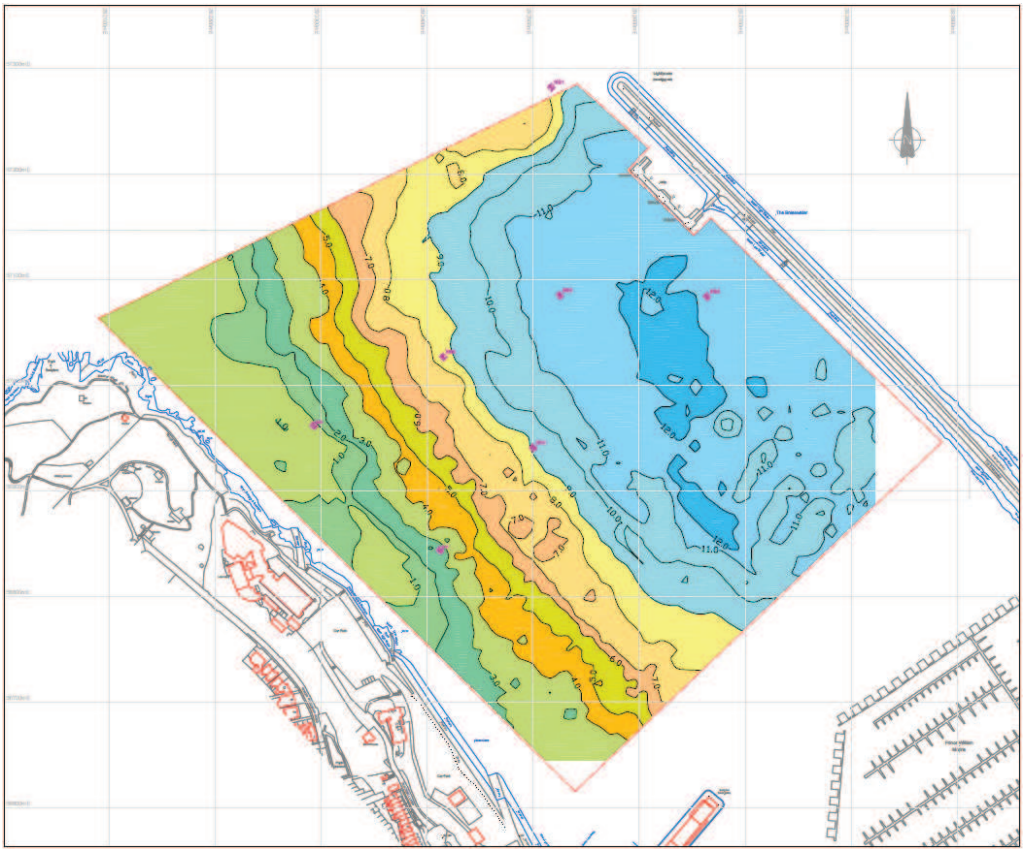
5.4.2 Based on the soil parameters derived from the limited Scott Wilson report, the breakwater would be unstable if constructed under a normal construction programme with no ground improvement methodology or staged construction (i.e all the breakwater fill placed in a single deposition). It should be noted that there has been no direct testing to determine consolidation parameters (only three undrained triaxial tests were carried out) and therefore we have made our best estimates of what these would be, based on the type of material.

5.4.3 Further geotechnical analysis could potentially show that consolidation periods are shorter that allowed for in this report hence reducing construction time, risk and cost. However, equally the investigation and analysis could confirm the concept design assumptions or find that the ground conditions are worse than assumed.

5.4.4 A geophysical survey was undertaken in March 2011 to obtain further information on the depth of marine sediments overlaying rock level, refer Figure 5.1. The Isopachyte plan generally confirms the depths to rock head assumed from the Scott Wilson Report. There are some discrepancies and these are probably due to the difficulty in distinguishing the weathered layer of rock that can be identified as soil in both boreholes and geophysics.

5.4.5 The geophysics indicates that rock head is relatively shallow over the first 150m but increases to approx 11.5m at the end of the breakwater. Moving the roundhead north (e.g. Option 2, cranked breakwater) would reduce the layer of sediment by approx 2m, therefore during detailed design it may be advantageous to orientate the breakwater to take advantage of the slightly higher rock levels (if the alignment of the entrance is changed, the effect on wave climate should be checked).

Figure 5.1 Isopachyte – Total Sediment Thickness



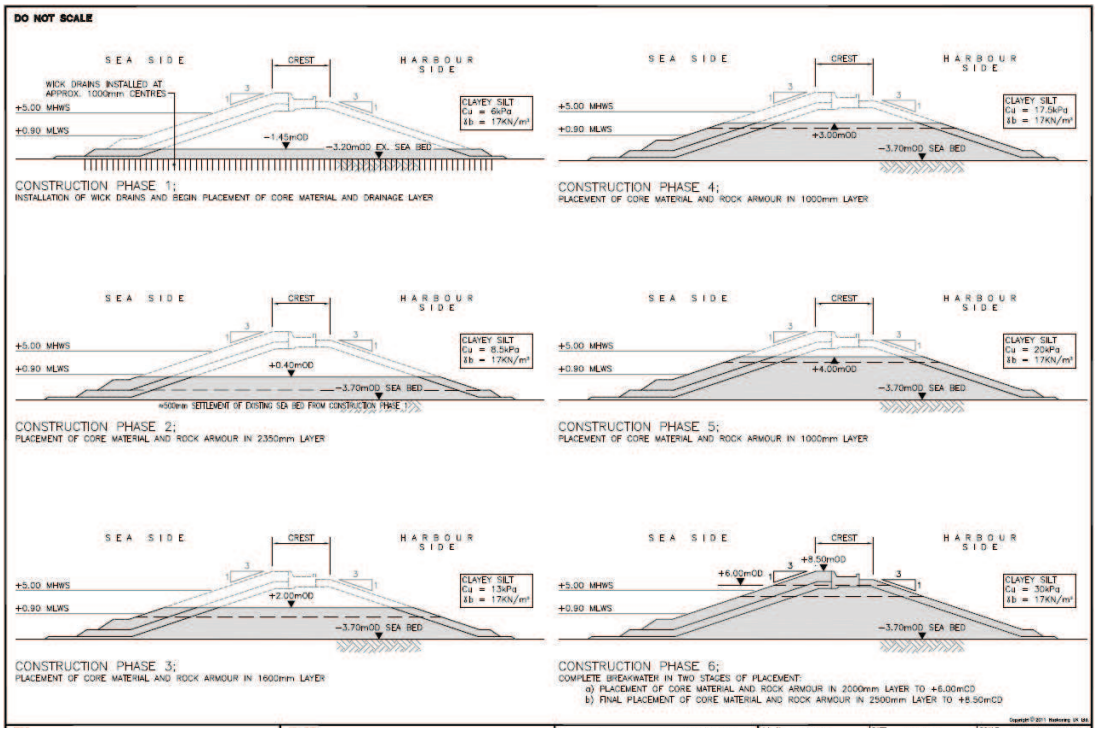
5.4.6 To achieve a stable breakwater it is necessary to construct the breakwater at a relatively shallow slope (1 in 3) refer Appendix A 9W2488_SK02_RevP1. This is shallower than required for hydraulic stability where the slopes could be 1 in 1.5 or 1 in 2, refer Appendix A 9W2488_SK01_RevP1.

5.4.7 It will also be necessary to undertake ground improvements (such as installing wick drains to speed consolidation, which increases strength) and construct the breakwater in a staged manner, refer Figure 5.2). The options for ground improvement are as follows (in increasing order of cost):

- installation of wick / band drains,
- stone columns
- in-situ soil mixing

5.4.8 As it is lower cost and generally a quicker method of construction we have investigated installation of wick drains. Wick drains are artificial vertical drainage paths where pore water can flow, reducing the time for consolidation. Typically they are approximately 100mm wide x 15mm thick with a plastic core (which acts as a free draining channel), surrounded by a geotextile filter. The drains would be installed at approximately 1m centres. Where wick drains are installed it is also necessary to undertake construction in layers and monitor consolidation prior to placing further layers.

Figure 5.2 Staged Construction



5.4.9 Long term settlement of the breakwater is expected to be between 2.5 and 3 metres due to the presence of the thick layer of soft marine sediments.

5.4.10 A staged construction method is obviously slower than a standard construction programme for a breakwater on good quality soils and will therefore add to the overall cost of the works. This can be mitigated by optimising the construction programme and plant utilisation during the works to minimise mobilisation / demobilisation costs and the amount on plant on site at any given time.

5.4.11 As detailed above and in the discussion of project costs and funding opportunities (Section 6), the cost of the proposed breakwater is highly dependant on the ground conditions. It is recommended that before undertaking any further studies or detailed designs a more detailed marine site investigation is carried out. This should include the following (as a minimum):

- 15 No Cone penetration tests - 15m deep
- 6 No Cable percussion boreholes (15m deep) with rotary follow on (5m deep)
- Carry out permeability testing in the superficial deposits and rock.
- Sample collection (soils and rock) and laboratory testing

5.4.12 The costs for the marine site investigation are likely to be between £130,000 and £160,000.

5.5 Hydraulic Design

5.5.1 The following standards and technical guidelines are used in the design of the breakwaters:

- BS 6349 – British standards for Maritime Structures, 1991
- CIRIA C683 – The Rock Manual – The use of Rock in Hydraulic Engineering (2nd Edition), 2007

- CEM – Coastal Engineering Manual, US Army Corps of Engineers, 2002
- EurOtop – Wave Overtopping of Sea Defences and Related Structures, Assessment Manual, 2007

5.5.2 The design life for the breakwater is 50 years (from the brief). The structure is designed to withstand a 100 year return period wave and water level event in combination with the expected sea level rise after 50 years.

5.5.3 The operational requirements for the breakwater structure may be summarised as follows:

- Pedestrian access along the crest (except storm condition)
- Maintenance road along crest
- Potential for boat mooring immediately behind the crest during summer months
- Service lighting to the roundhead

5.5.4 Based on the use of 1:3 side slopes, dictated by geotechnical stability issues, the size of the armour rock has been determined using both Hudson and Van der Meer equations. The proposed armour rock sizes are presented in Table 5.4.

Table 5.4 Rock Armour Sizes

Location	Slope (V:H)	Hudson	Van der Meer
Trunk	1:3	0.5t	0.46t
Roundhead	1:3	2.1t	1.15t

5.5.5 At this preliminary stage the following armour sizes are proposed:

- 1-3t on roundhead and seaside of outer trunk
- 0.3-1t on leeside of breakwater

5.5.6 As discussed in Section 5.4 the breakwater will be constructed in a series of layers over a period of potentially 3 years, to allow the strength of the ground to improve. The rock forming these layers will be placed by barge dumping rather than with a land based operation. However, land based operations will be possible from the crest once the structure is above the water line.

5.5.7 The core mound is made up of quarry run material which will be at risk of re-shaping during storms (to form an equilibrium profile). There is a risk that the lighter rock in the core mound will be washed away during extreme storms. It will, therefore, be necessary to place temporary protection (larger armour rock) on the front slope and crest of the core mound during the ground improvement process.

5.5.8 Alternatives to the temporary rock protection, which would reduce the extent of reworking of the mound are (refer Appendix A 9W2488_SK03_RevP1):

i) Place 0.3-1t rock armour on the front section of the core mound. This will provide additional protection to the front slope and crest of the core mound over the longer construction period. The disadvantage is that the core of the structure would be more permeable and potentially allow the transmission of waves through the upper part of the structure creating problems for boat mooring in the lee. If this is the case it may be necessary to replace rock armour near the crest with quarry run, before completing the wave wall.

ii) Place sand filled geocontainers to form the core. These geocontainers could be prepared and placed from a barge. A geotextile filter would be placed between the core and the final rock armour. These geocontainers forming the shape of the core mound would be more stable (than quarry run) during storm conditions and, therefore less susceptible to damage. The advantage of geocontainers is that the slope profile with 1 in 3 can be easily achieved and wave transmission would not be an issue.

5.5.9 Construction of the breakwater will be complicated by the requirement to install band drains and to construct the structure in a series of layers. This raises issues for the stability of the mound which will be at greater risk of damage over the extended construction period. This is likely to require temporary armour to protect the mound or alternatively consideration could be given to partly constructing the mound with armour rock or using sand filled geocontainers.

5.5.10 It is recommended that during the detailed design of the structure, physical model tests are undertaken to refine the designs and confirm:

- Stability of the primary armour
- Wave overtopping and transmission characteristics
- Sizing of the mass concrete wave wall

5.6 Possible Innovative Design and Construction Options

5.6.1 It is possible, and in some areas probable, that with additional geotechnical data and contractual and commercial incentives in any procurement Contractors will be willing to take design and construction risks that reduce the estimated construction costs considerably.

5.6.2 This sub-section looks at innovative design and construction methods that could be employed to reduce construction overheads, material costs and programme.

5.6.3 As discussed in this section the main constraints are the existing geotechnical conditions which require a staged construction process to avoid overloading the weak sediment layer. Therefore design and construction options that reduce the final loading of the permanent works on the weak sediment will speed up construction and allow greater height gain and/ or allowable load.

5.6.4 Options that reduce fill loading are:

- Lightweight core material (tyre bales, precast concrete, hollow concrete sections)
- Use of recycled aggregates for core material

5.6.5 A more radical approach would be to consider the use of bespoke cellular units (e.g. RC or fibre reinforced concrete or composites) that provide void space that is not filled. The units would have to be stepped to match the profile necessary for the rock armour to be placed.

5.6.6 Simply trying to reduce the unit cost of the fill materials by:

- Strategic procurement (linking with other schemes on the south coast to share mobilisation / demobilisation costs and rock supply costs.
- Sourcing recycled aggregates from a specific marine or near shore construction scheme in the UK or on the near European coast

5.7 Health and Safety

5.7.1 A designers CDM hazard log has been prepared during the outline design process, this is contained in Appendix F. The hazard log outlines how certain hazards have been designed out and where residual hazards exist, how these should be addressed during detailed design, construction and operation. A summary of the main hazards is provided in Table 5.5.

Table 5.5 Summary of H&S Hazards

General	Construction	Post Construction
▪ Construction Traffic	▪ Mobilisation of Plant at Oxen Cove and Freshwater Quarry	▪ Public access onto new structure (overtopping, handrailing)
▪ Navigation	▪ Working over & under water	▪ Settlement of roadway / footpath
▪ Unexploded Ordnance	▪ Staged construction	▪ Lighting (ambient, navigational)
▪ Services strike	▪ Failure of Ground	
▪ Demolition		

6 PROJECT COSTS

6.1 Project Costs

Costs have been previously estimated for the Northern Arm Breakwater by Hyder (2006) and Halcrow (2008). The last estimate was £17M (Q3 2008) for a similar configuration to the baseline option.

6.1.1 During this study project costs have been estimated with advice from two contractors, Cofra (a specialist geotechnical contractor) and Dean and Dyball (the principal contractor for the recent works at Brixham Fish Quay and with recent experience of breakwater works in the south west).

6.1.2 The costs are based on a number of assumptions but include:

- Prelims
- Mobilisation / demobilisation
- Marine SI
- Allowance for settlement
- Construction of the breakwater (including installation of wick drains)
- Allowance for services
- Allowance for demolition of fuel jetty
- Professional Fees (e.g. detailed design, Environmental Statement, Consents and Site Supervision)
- 20% for contingency and risk

6.1.3 The range of project costs is presented in Table 6.2. The uncertainty is due to the unknown ground conditions. The Conservative Estimate is the best estimate of costs if the ground conditions are as interpreted from the available information. The Optimistic Assessment is provided to demonstrate the difference on costs if ground conditions are better than can be reasonable assumed currently. Cost Case 3 illustrates the potential impact of reducing the cost of core material by reusing recycled aggregates as core material.

Table 6.2 Cost estimates

	Cost Case 1 Contractor 1 Construction Cost £M	Cost Case 2 Contractor 2 Construction Cost £M	Cost Case 3 Contractor 2 Construction Cost £M
Conservative Assessment (based on current geotechnical design parameters)	38	31	25
Optimistic Assessment (based on reduction in rock volume and construction stages)	31	25	21

6.1.4 The main difference between the current cost estimates and those prepared previously is due to the change in construction method (staged construction due to poor ground conditions) and the volume of rock required.

6.1.5 To provide a comparison, the costs for a number of recent projects are listed in Table 6.3. This table illustrates the high costs associated with constructing marine structures but it should be noted that none of these projects required ground improvement. The quantity of rock and fill material required for the Northern Arm Breakwater is approximately 340,000m^3 (including an allowance for settlement).

Table 6.3 Comparative Project Costs

Borth Coastal defences, 2011
Project Cost £12M 70,000m^3 rock 2 offshore breakwaters, 4 rock groynes shingle nourishment
Port of Workington Revetment Repairs, 2011
Project Cost £1.6M 150m long revetment (placed & delivered from land) 16,000m^3
Torquay Haldon Pier Rock Repairs, 2010
Project Cost £1M 6,500m3 rock placed by barge
Weymouth & Portland Sailing Academy, 2008
Project Cost £7M 200m long breakwater, 4,000m^3 revetment 45,000m^3 reclamation Also slipways & ramps
Portland Marina, 2007
Project Cost £27M 860m long breakwater 160,000m^3 rock Also slipways, boat hoists and marina

6.2 Funding Mechanisms - Introduction

6.2.1 The brief for this study stated that the consultant should report on possible financial mechanisms to provide funding for the breakwater in advance of the development in Freshwater Quarry and Oxen Cove.

6.2.2 Capital funding for the construction of the Northern Arm Breakwater (NAB) is not currently available from public sector funding sources in the form of grant funding from central or local government, although contributions from public sector bodies to part fund the scheme may be available.

6.2.3 To facilitate development of the harbour on both landside and waterside the Northern Arm Breakwater is required to:

- Provide Flood defence to tidal flooding from overtopping during storm events.
- Create calm water within the harbour to allow marine development to the west of Fish Market and improve the existing wave climate within the Harbour for all users.

6.2.4 The physical breakwater itself may or may not be developed and provide a source of revenue.

6.3 Baseline Conditions

6.3.1 The current harbour generates revenue (income) for the public and private sector. In general the public sector maintains the existing physical infrastructure that allows the harbour to operate. Where the private sector do maintain infrastructure, it is for their own benefit, and no other third party harbour user is reliant on private business to maintain harbour infrastructure to sustain their own activities within the harbour.

6.3.2 There is no facility or provision within the existing operation of the harbour to either keep a proportion of the revenue, or to levy extra over charges on users to create a fund to provide capital for new infrastructure or pay back borrowed capital.

Funding Baseline

6.3.3 From the baseline conditions; in the first instance assessing realistic sources of funding for the NAB will need to be based on a business case that considers the wider economic value of its presence to Brixham, Torbay and any wider area of economic influence.

6.3.4 It is considered that whether the breakwater is funded by the public or private sector a business case is a prerequisite for a decision to invest.

6.3.5 It may be possible that some funding for the NAB can be derived from the existing operation of the harbour, but this will require significant consultation with the current users to instigate.

6.4 Business Case (Required For)

6.4.1 The economic appraisal necessary for investment will differ depending on whether funding is sought from the Public Sector (prudential borrowing for example), the Private Sector or combination of the two (which would require an overarching model and appraisal and separate business cases for each party).

Public Sector Grant Funding

6.4.2 Traditional public sector investment considers the wider economic and societal benefit (socio-economic) and satisfies itself that the overall cost to the public purse will be recouped over a defined period (in many cases 50 years) in terms of both of benefits to the economy and for social policy objectives.

6.4.3 Financial models for public sector investment in Marine infrastructure are not prescribed by the DfT in the way that that the commonly used models for Road and Rail investment are; (derived benefit cost ratio BCR). Therefore any public sector investment model would need to be agreed with the funding authority be it Central Government, Torbay Council or any other body.

Public Sector Prudential Borrowing

6.4.4 Public sector prudential borrowing is different in that is requires a full economic benefit to be realised to pay back the borrowed capital. It is not however the same as a private sector model, as it allows other (generally future) Local Authority revenue streams to be capitalised to partially or fully justify the investment. An example of this would be the reduction in both revenue and capital maintenance costs of the existing Harbour's physical infrastructure as a result of the NAB, which can be capitalised annually to pay back the prudential borrowing.

6.4.5 In the case of the NAB a proportion of the capital cost, say 10% could be covered by prudential borrowing in the manner described above over a defined return period e.g. 25 years.

Private Sector – Capital Loan

6.4.6 Borrowed capital repaid to a lender over a fixed period of time. In this instance the private sector lenders would simply look at the risk of default of repayment over the loan period, and the asset value of the breakwater in terms of tangible revenue generation as collateral. This would require a very minimal business case for the lender, but would still obviously require a more detailed model for the Local Authority to indentify revenue sources for repayment.

6.4.7 If the public sector was the loan guarantor/underwriter, lenders would probably not be particularly concerned regarding the asset value/revenue to the private sector. In addition interest rates could be less than prudential borrowing rates as the public sector are considered to be the least risk debtor.

6.4.8 This source of funding could also be obtained through a design, build and finance (DBF) arrangement with a private sector Contractor who supplies the finance to fund the construction.

Private Sector Development of Real Estate and Harbour Services

6.4.9 This would require a detailed business case to consider the real estate value of any linked developments within or adjacent to the harbour in addition to any other revenue streams from services, access charges and levies that could in part or whole be directed to the developer. In this case the developer would finance the cost of the NAB themselves and have to provide investors with a business case and guarantees of repayment.

6.5 Asset Value – Direct and Indirect

6.5.1 To further develop specific options for funding and delivery of the NAB it is necessary to consider what the asset value of the NAB could be to Brixham, Torbay and it's wider economic area of influence.

6.5.2 This is necessary to monetise and aggregate the benefits for any business case where borrowed capital is required to fund the delivery of the NAB

6.5.3 Note that the capital cost of the NAB is called its 'asset replacement value' rather than is 'asset value' as the two are very rarely the same.

6.5.4 The presence of the NAB will create direct and indirect economic benefit over an area with a generally diminishing proportional benefit when moving away in simple geographical distance from Brixham. This is something of a simplification as clearly the ownership of Private Businesses, and hence the receipt of revenue and profit, is not necessarily realised in Brixham. However it is a reasonable assumption that the collection of a proportion of any benefit can be levied and collected locally from any private sector business wherever they are based.

6.5.5 Direct Benefit (Primary Effects) can be defined as:

- Development potential of the physical asset (developments on the NAB)
- An increase in adjacent land and development values that would not occur without the presence of the NAB.
- Marine development potential of certain areas of the harbour that could otherwise not be realised without the presence of the NAB
- Direct revenue generation (user/access charges) on/from the asset
- An increase in turnover and revenue of local business that has occurred due solely due the presence of the NAB
- Reduction in cost or risk exposure for existing public services or public sector bodies due to the presence of the NAB.

6.5.6 Indirect Benefit (Secondary Effects) can be defined as:

- An increase in adjacent land and marine development values on land or water that could have been developed without the presence of the NAB, but have increased in value due to its presence
- Increase in trade in existing businesses that has occurred as a secondary effect of the presence of the NAB; leisure tourism and commerce increasing due to additional trips to Brixham
- Reduction in cost for existing businesses in maintaining or replacing their existing assets by the presence of the NAB.

6.5.7 The above are not exhaustive lists, and arguments can be made that some benefits could be in either category. A simple guide is that direct benefits are benefits that could not occur without the presence of the asset, and indirect benefits are benefits that could have occurred, but were unlikely to have occurred in the short or medium term with the presence of the asset.

6.5.8 Direct and indirect benefits as listed also have the distinction that part of the monetised benefit could in theory be collected to finance the capital cost of the creation asset over time.

6.5.9 There is a third category of benefits (Tertiary Benefits) that are the ripple effects on area of development/regeneration. These are so called as the benefit is generally smaller

and it is difficult to charge the beneficiary to pay the asset owner or to finance the capital cost of the asset. However they are worth stating to inform public consultations and political decisions:

- Increase in business activity in Brixham and Torbay
- Increase in number of people employed in Brixham
- Probable net reduction in unemployment in Brixham (although this is less certain)
- Increase in property prices outside the immediate area of the Harbour
- Increase in amenity benefit
- Improvement in public realm in adjacent areas of Brixham through S106 developer contributions.

6.5.10 Any business case for either public or the private sector investment will need to consider what the asset value is in terms of benefits and how the monetised benefit can be captured to finance the creation of the asset.

6.5.11 As demonstrated above the economic benefit of the NAB could be widespread and complex. The complexity involved in creating mechanisms to obtain financial contributions from beneficiaries provides a significant risk to the scheme promotee and funder.

6.5.12 It is desirable that those deriving the greatest financial benefit should be required to contribute the greatest share. The complexity of collecting the financial benefit to third parties generally increases in proportion to the diminishing level of direct and indirect benefits accrued by the third parties.

6.6 Risk – Planning, Delivery and Development

6.6.1 The options for funding the NAB are directly linked to the mechanism of planning, delivery and development. In simple terms if the risks to a developer are too great or the process of delivery too complex they will not invest. Notwithstanding the Harbour Authority has permitted development rights as a consequence of pre-existing statutory consents the Local Authority may need to take some risks, highlighted in this section, to facilitate development. However it is appreciated that Torbay Council may neither have the mandate nor the appetite to take on such risks.

6.6.2 Assuming that the business case (theoretical costs and financing of the NAB) is positive for both the scheme promoter and the funder, (it is assumed that the scheme wouldn't progress without this being the case) the commercial risks of delivery will need to be understood, mitigated and costed, by the delivery organisation and will provide the greatest barrier to realising the delivery of the NAB.

6.6.3 As the physical asset itself does not appear to have significant development value, or revenue generating capacity to the asset owner, financial contributions from other sources will need to be garnered to provide revenue to pay back capital funding.

6.6.4 The simplest model for funding and delivery is if the asset owner/deliverer[1] stands to benefit sufficient financial gain from one or more of the direct benefits listed in Section 5. In this instance they could finance the NAB themselves and limit the delivery and financing risks to planning and development of land, marine areas and other assets under their control.

6.6.5 If the business case shows that some of the indirect beneficiaries listed in Section 6.5.6 are required to contribute; this in general will require the Local Authority to provide a

[1] Asset owner is defined by who has undertaken to pay for the asset as deliverer, rather than who legally owns and maintains the asset as Harbour Authority for example.

mechanism for a proportion of the financial benefit to be collected and channelled to the asset owner/deliverer e.g. Planning gain, Community Infrastructure Levy (CIL).

6.6.6 Note that it is possible for private sector beneficiaries to contribute directly to the asset owner/deliverer but this presents a risk in collection. In addition charges paid to the Local Authority can be more easily accounted for as business expenses and recovered against Tax.

6.6.7 Table 6.4 shows how the options for delivery affect the funding sources and capital repayment. This is clearly simplified and variations can easily be derived to match the prevailing direct/indirect development potential.

Table 6.4 - Options for Delivery which assume that some degree gap funding will be required to deliver the breakwater

Deliverer	Planning	Funding Source (for Gap Funding)	Capital Repayment to lender
Local Authority Delivery	*Detailed Planning Application for NAB	Prudential borrowing, private capital, (from banks or other institutions). Funding delivered by Contractor (Infrastructure provider)	CIL Developer contributions, (Marine and Land based). Harbour levies and duties.
Private Sector Delivery	*Outline Planning Application for Development Area including NAB followed by DPA for NAB	Private Capital	Sales from land and marine development and going revenue from development(s)
Joint Development Agreement (SPV)	*Masterplan followed Outline Planning Application for Wider Development Area	Any combination of: Prudential borrowing, private capital, (banks or other institutions). Funding delivered by Contractor (Infrastructure provider). Shares in SPV	CIL Developer contributions, Marina and Land based. Harbour levies and duties. Sales from land and marine development and going revenue from development(s).

*Note: The Northern Arm Breakwater has been included in the Local Plan for many years and has permitted development rights

6.6.8 This section demonstrates that careful thought needs to given to how the planning and delivery of the NAB relates to the development and economic growth within Brixham and Torbay that it could stimulate. It also demonstrates that an outline business/investment case and financial model is necessary to define what the options in risk mitigation for planning, delivery and development are.

6.7 Capital Sources and Repayment Mechanisms

Table 6.5 - Potential Sources of Funding Capital

Type	Source	Comments
LA Grant	Torbay Council	Annual Government Capital Allocations to Torbay
Council Capital	Torbay Council	
Prudential Borrowing	Public Works Loan Board	
Flood Defence	Environment Agency	
Private Capital	Banks	
Private Capital	Private Capital Funds	Channelled through a third party
Private Capital	Institutional Investors	Pensions Funds
Private Capital	Developer	Capital receipts to the Council from the sale of Council owned development land.
Private Capital	Marine Developer	Capital receipts to the Harbour Authority for right to develop with the Harbour

Table 6.6 - Potential Sources of revenue for repayment of capital

Type	Mechanism	Debtor
Planning Gain	Section 106	Private Sector Developers
Planning Gain	CIL	
Tax Incremental Funding	% of Future Business Rates	Private Sector Businesses
Enterprise Zones	Reduction in business rates to encourage more business to locate/relocate	Private Sector Businesses
New Homes Bonus	Direct grant paid to Local Authorities for delivery of new homes.	Central Government (CLG)
Local Authority Maintenance Capital Revenue	Annual maintenance budgets amortised against capital asset.	Public Works Loan Board if borrowed through prudential borrowing.
Harbour Revenues	Annual contributions paid to Harbour Authority from Marine Developers	Private Sector Marine Operators
Harbour Revenues	Collection of Harbour duties and levies (e.g. from boat owners and harbour users)	Harbour Users

6.7.1 The tables above are not exhaustive but illustrate where capital funding is available from and potential sources of revenue that could used to fund repayment of any gap funding required.

6.8 Options for possible funding and delivery models

6.8.1 Until a business case is undertaken for the NAB a recommended or preferred model for funding and repayment cannot be identified. This section therefore describes a number

of models that are predicated on either the wider economic benefits of the NAB and or the risks in planning and procurement.

Table 6.7 – Summary of Funding Models

Model	Key Features	Comments
Local Authority led deliver	• Majority of funding coming from public sector grant • Large proportion of economic benefit from indirect benefits requiring LA to provide the mechanism to capture	All risk with Public Sector
Private Sector led delivery	• Majority (over 75%) of funding coming from land and marine developments • Risk of planning notwithstanding that the NAB has been included in the Local Plan for many years and has permitted development rights • Risk that NAB costs and procurement passed to private sector	All risk with private sector, considered to be unlikely without either a Masterplan or Outline Planning Application (OPA) in place.
Joint LA/Private Sector delivery	• Approximately equally split between direct and indirect benefits or indeterminate split of benefits at the point of NAB construction • Facilitates risk distribution between parties best positioned to take it (Joint masterplan and OPA) followed by individual public and private sector detailed applications. • Allows development profits to be shared between public and private sector to benefit local residents outside immediate development areas.	Shared risk, preferred model when planning and funding risks are not clear.
Breakwater Trust	• Not for profit trust holding with multiple shareholders. • Repayment through public and private sector mechanisms the same as other options. • Tax efficient	Probably not practical as capital repayment sources vary and can't be levied directly as a toll.

Composite Model of Funding to Illustrate Options

6.8.2 The funding model in Table 6.8 shows median values of possible sources of capital income against an initial capital cost. The capital cost of £20m assumes that through a combination of design innovation and contractor risk, the construction cost at award of contract would be in the order of £20m.

Table 6.8 – Example Funding Model

Capital Cost	£*	Description
Cost of Breakwater	£20m	Asset Cost
Capital Funding		
Value of council owned Development Land	£6m	Based on the valuation given by Savills
Contribution from Marina Developments Ltd (MDL)	£4.55m	Contributions from Private Marina Developers to the Harbour Authority.
Flood Defence contribution from EA	£0.75m	Contribution to improved tidal flood defence generated by NAB.
Contribution from existing private sector harbour users	£1m	Contribution in lieu of improvements or replacement of existing privately owned marine assets.
Local Authority Capital	£500k	Possible contribution from Torbay Council
Total	£12.8m	
Capital Funding (Gap Funding)		
Prudential Borrowing	£2m	Borrowed against the future revenue and capital maintenance of the Harbour.
Contractor Funding	£5.2m	Capital borrowed or brought by the Contractor
Total	£7.2m	
Revenue for Capital Repayment		
Planning Gain	£3m	Over 25 years at net present value
Harbour Revenues	£3m	Over 25 years at net present value
Council Maintenance Revenue	£1.2m	Over 25 years at net present value
Total	£7.2m	

*Note: Figures are illustrative only

6.8.3 As shown by table 6.8 sources of capital funding and the repayment of gap funding are potentially available if the planning structure and repayment mechanisms can be put in place. To achieve this though will require considerable intellectual capacity and effort on behalf of Torbay Council and it is understood that there are a number of other similar potential schemes across the authority that may mean that the NAB is not an immediate priority scheme to invest this level of resources in.

7 CONCLUSIONS & RECOMMENDATIONS

7.1 Conclusions

7.1.1 This report summarises the work that has been undertaken to investigate options for Northern Arm Breakwater at Brixham. A breakwater can be constructed to provide an adequate level of protection to the enclosed harbour to enable enhanced marina development.

7.1.2 The capital cost of the breakwater is likely to be between £25 million and £38 million, the range of costs is due to the uncertainty in ground conditions.

7.1.3 The costs are very high because the ground is poor, which means the breakwater is a very expensive wave reduction feature. Additional site investigation will result in improved information and understanding of the ground conditions and may result in the possibility of refinements to the outline design

7.1.4 The scoping report has not identified any likely significant environmental effects that would provide a barrier to the project. A number of mitigation measures and controls would be required by consenting bodies.

7.2 Recommendations

7.2.1 A business case / wider economic study should be undertaken to estimate the benefits to Brixham, Torbay and the wider region.

7.2.2 It is recommended that a marine site investigation is carried to confirm project costs should the project be taken forward.

7.2.3 Some further numerical modelling is recommended to determine the optimum layout and entrance alignment during detailed design, this will also ensure that construction costs are minimised. The model should also be updated to include any additional wave measurements that are available for calibration purposes.

7.2.4 A physical model is also recommended when a preferred option is identified, to refine the geometry of the breakwater in order to reduce construction costs.

7.2.5 Alternative methods of construction could be investigated. Possible options include using geocontainers, precast concrete, hollow concrete sections, immersed caissons, and use of recycled material for the breakwater core. A staged tender process could be considered to identify a shortlist of contractors and then develop these ideas further.

7.3 Next Steps

The table below summarises a suggested staged approach to delivery of the NAB and associated development

Table 7.1 – Summary of next steps

Stage	Description	Commentary
1	Preliminary Business Case	An economic analysis of the proposed development of Brixham Harbour and Brixham Town based on existing Masterplan and Torbay Council Local Plan and emerging LDF. The work could be carried out by officers with a small piece of consultancy work for development/investment analysis and some soft market testing with developers. If the case was positive consideration could be given to move to the next stage
2	Geotechnical Investigation	Output to refine cost of NAB. If the capital cost of the Breakwater is the same or reduced from current budget estimate consideration could be given to progress to stage 3.
3	Select Development Partner(s)	A simple procurement exercise, including engagement with Local Enterprise Partnerships to select a private sector development partner or consortium, to take forward the necessary development to fund the NAB
4	Detailed Business Case	This would need to be comprehensive piece of work undertaken by TBC and the Development Partner that builds on the preliminary business case. The work would determine in more detail what development should be put forward for planning permission and ensure that it could generate the funding necessary to pay for the NAB. It would also determine which parties take forward detailed planning application and NAB procurement and set timescales and commit parties to paying funding into the project at defined points. If the case was positive consideration could be given to move to the next stage
5	Outline Planning Application	This would be a joint submission to cover all of the development. If successful a development agreement could be agreed to formally commit parties to the development.
6	Detailed Planning Applications	Detailed planning applications for; NAB and other commercial and residential developments, recognising that the Northern Arm Breakwater is in the Local Plan and has permitted development rights.
7	Procurement of Breakwater	Procurement of D&B Contractor for detailed design and construction the Breakwater. This would indentify an actual cost for the NAB.
8	Final Business Case	Formal sign off development agreement between TBC
9	Let contract to construct breakwater	Let contract to design and build NAB.

Stages 2 and 3 are interchangeable if the preliminary business case for stage shows considerable economic benefit rather than a marginal benefit.

7.4 Project Risk Log

7.4.1 The project team have developed a project risk log that should to be reviewed as the project progresses.

Table 7.2 Project Risk Log

No.	Risk	Mitigation
1	Negative / marginal cost benefit analysis	This report was commissioned by the Torbay Development Agency to identify the risks to inform Council and/or a developer when preparing a Business Case. A number of recommendations have been made within this report to further define these risks.
2	Ground conditions differ from currently known	We have made a reasonable assessment of the ground conditions (based on the limited information available). Additional site investigation is recommended before proceeding further
3	Staged Construction, storm event during construction	There is always the risk that a storm event could occur during construction, in this case the risk is compounded by construction over 2 / 3 winter seasons and that the breakwater will be left 'exposed' until it is complete. Two alternatives have been identified to minimise chance of scour / washout: i) protecting the front of the mound with 300 – 1000kg rock or ii) using geocontainers as core material. Also mitigate during procurement by appropriately setting the contractor / client weather risk.
4	Construction duration, impact on funding	Staged construction means that the breakwater could take approx 3 years to construct, this may have implications on the timing of funding as the breakwater would need to be constructed before development of Oxen Cove and Freshwater Quarry.
5	Wave conditions within the enclosed harbour not adequate	Numerical modelling has shown that wave conditions are slightly higher than that recommended by the YHA, however the wave conditions are considered to be adequate to allow development of marinas.
6	Insufficient control & monitoring during construction, failure of structure	Monitoring and timing is critical for staged construction of an embankment / breakwater. Experienced contractors should be sought and supervision must be tightly controlled

7	Programme, changes to legislation / design criteria	Awareness that conclusions and recommendations contained within this report and the Environmental scoping report are relevant today. There may be changes in legislation or design criteria in the interim
8	Material costs fluctuation	Awareness that material costs can fluctuate significantly above or below the rate of inflation due to supply and demand

Appendix I – Option Costs

Cost Case 1 - Contractor 1

	Description	Unit	Quantity	Rate	Total
1	Prelims				1,500,000
2	Staged Construction	sum			4,000,000
3	Marine SI Phase 1	sum			160,000
4	Marine SI Phase 2	sum			340,000
5	Band Drains	no	40000	83	3,320,000
6	Quarry Run	m3	165000	65	10,725,000
7	300-1000kg rock	m3	40000	65	2,600,000
8	1 - 3t rock	m3	30000	80	2,400,000
9	Settlement allowance	m3	75000	65	4,875,000
10	Concrete wall	m3	5000	200	1,000,000
11	Services	sum			100,000
12	Demolition of existing jetty	sum			250,000
	Sub Total				**31,270,000**
13	ES & Consents				100,000
14	Design				150,000
15	Supervision				400,000
16	Physical Moodel Testing				50,000
17	Contingency & Risk (20% of Construction Cost)				6,254,000
	Total				**38,224,000**

	Optimistic Estimate	**30,562,000**
	Assuming better ground conditions allowing steeper profile and lower quantities	

Cost Case 2 - Contractor 2

	Description	Unit	Quantity	Rate	Total
1	Prelims				2,203,000
2	Staged Construction	sum			1,894,000
3	Marine SI Phase 1	sum			160,000
4	Marine SI Phase 2	sum			340,000
5	Band Drains	no	40000	42.95	1,718,000
6	Quarry Run	m3	165000	42	6,930,000
7	300-1000kg rock	m3	40000	90.34	3,613,600
8	1 - 3t rock	m3	30000	108.41	3,252,300
9	Settlement allowance	m3	75000	42	3,150,000
10	Concrete wall	sum			1,564,000
11	Services	sum			100,000
12	Demolition of existing jetty	sum			250,000
	Sub Total				**25,174,900**
13	ES & Consents				100,000
14	Design				250,000
15	Supervision				400,000
16	Physical Moodel Testing				50,000
17	Contingency & Risk (20% of Construction Cost)				5,034,980
	Total				**31,009,880**

	Optimistic Estimate	**25,487,032**
	Assuming better ground conditions allowing steeper profile and lower quantities	

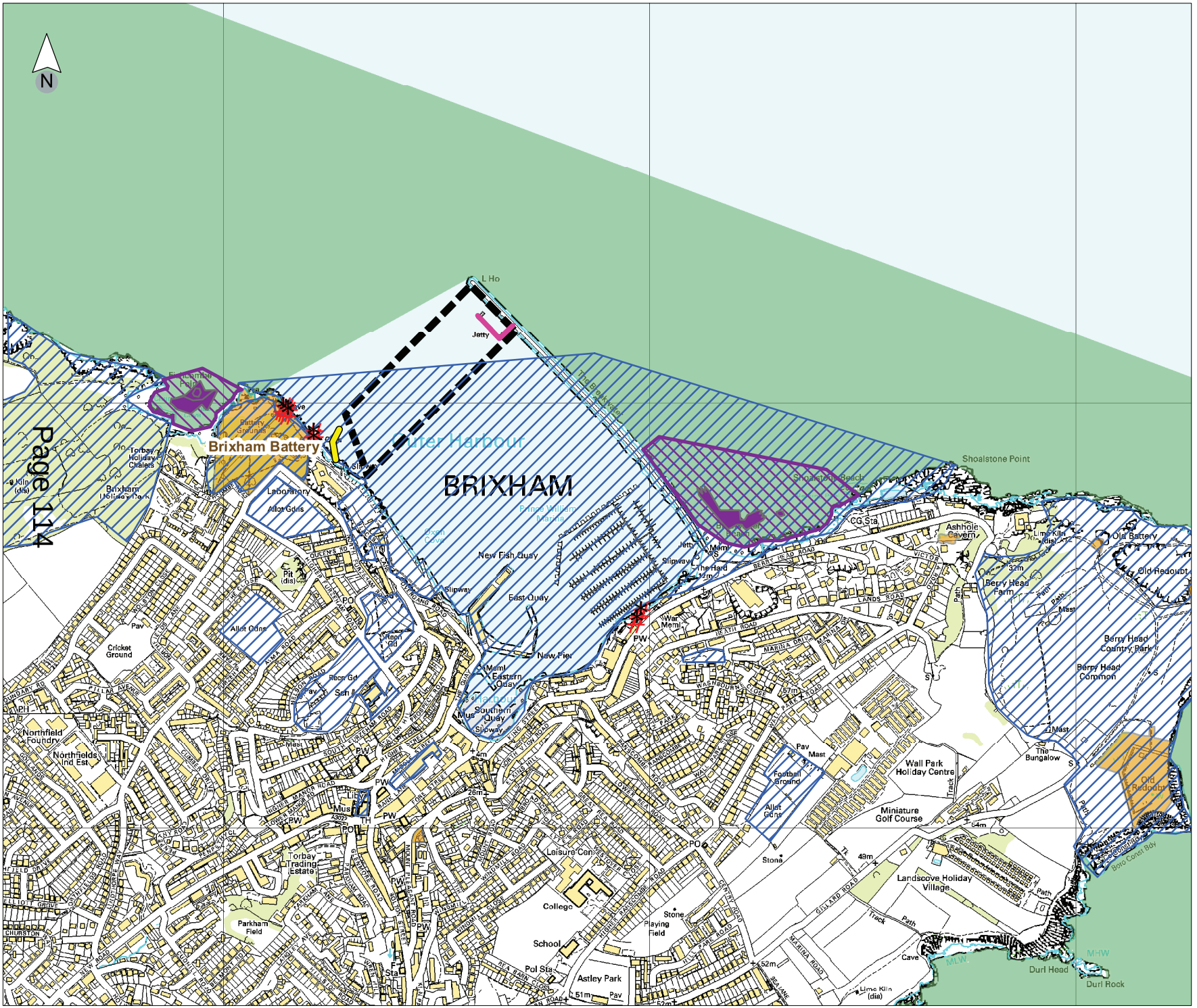
Cost Case 3 - Contractor 2 (Recycled Fill)

	Description	Unit	Quantity	Rate	Total
1	Prelims				2,203,000
2	Staged Construction	sum			1,894,000
3	Marine SI Phase 1	sum			160,000
4	Marine SI Phase 2	sum			340,000
5	Band Drains	no	40000	42.95	1,718,000
6	Quarry Run	m3	165000	21	3,465,000
7	300-1000kg rock	m3	40000	90.34	3,613,600
8	1 - 3t rock	m3	30000	108.41	3,252,300
9	Settlement allowance	m3	75000	21	1,575,000
10	Concrete wall	sum			1,564,000
11	Services	sum			100,000
12	Demolition of existing jetty	sum			250,000
	Sub Total				**20,134,900**
13	ES & Consents				100,000
14	Design				250,000
15	Supervision				400,000
16	Physical Moodel Testing				50,000
17	Contingency & Risk (20% of Construction Cost)				4,026,980
	Total				**24,961,880**

Optimistic Estimate **21,329,032**

Assuming better ground conditions allowing steeper profile and lower quantities

Appendix A – Figures / Drawings



Legend

- Caves
- Disused fuel jetty
- Astra Zeneca inlet pipes
- Zostera marina
- Seagrass protection zone
- Ownership
- SAC candidate
- Scheduled Monument
- Area for construction of new breakwater

Title:
Brixham Harbour Constraints Map

Project:
9W2488. Brixham Regeneration Northern Arm Breakwater Design

Client:
Torbay Council

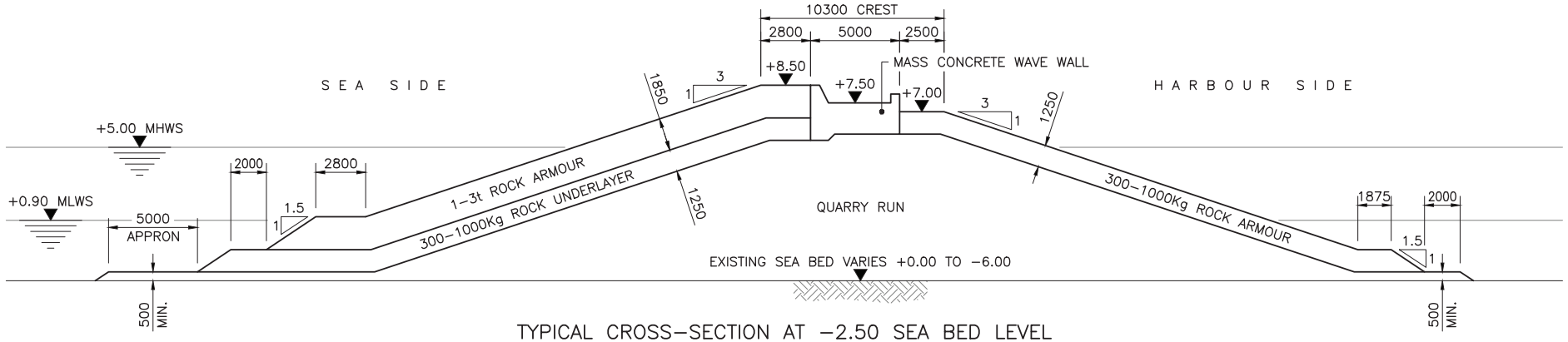
Date:
February 2011

Scale:
1:12,000

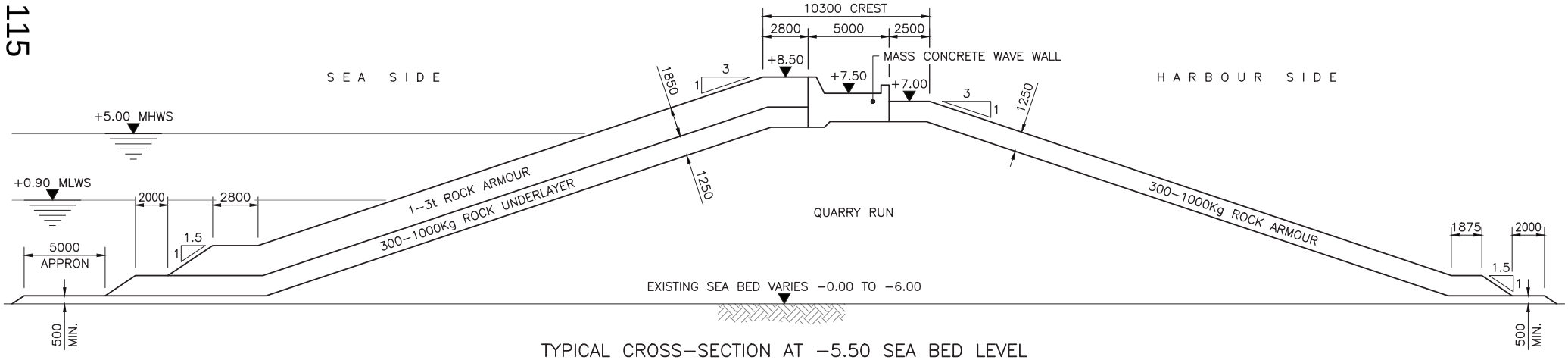
Figure:
Constraints Plan

ROYAL HASKONING

DO NOT SCALE



TYPICAL CROSS-SECTION AT -2.50 SEA BED LEVEL
SCALE 1:250



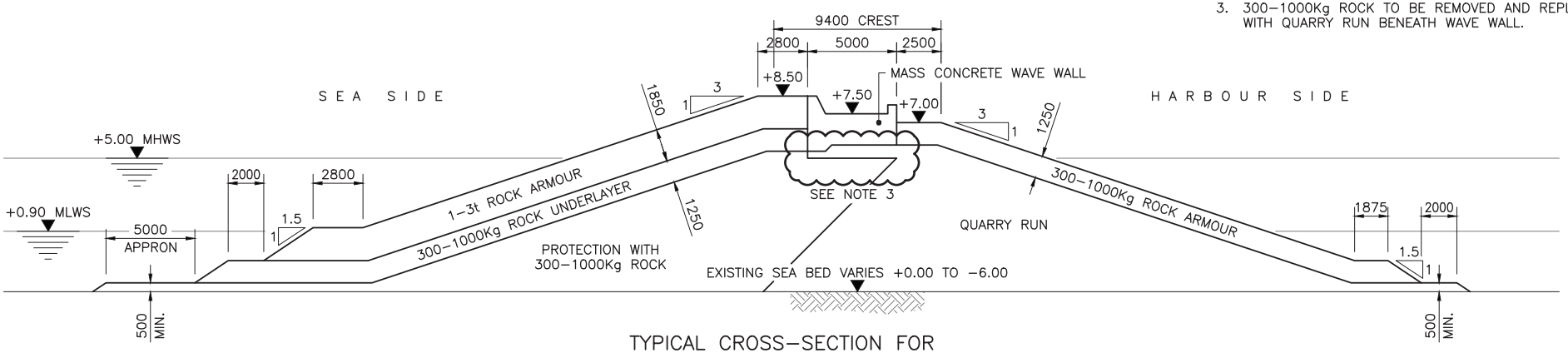
TYPICAL CROSS-SECTION AT -5.50 SEA BED LEVEL
SCALE 1:250

TITLE: TYPICAL CROSS SECTIONS	PROJECT: BRIXHAM HARBOUR BREAKWATER DESIGN	ROYAL HASKONING	HASKONING UK LTD COASTAL AND RIVERS DIVISION Rightwell House Bretton Peterborough PE3 8DW +44 (0)1733 334455 Telephone +44 (0)1733 262243 Fax info@peterborough.royalhaskoning.com E-mail www.royalhaskoning.com Internet	Job No. 9W2488 ACAD Ref. 9W2488_SK02.dwg DRAWN AW	DATE 29.03.11 CHECKED TS DRG No. 9W2488/SK02
					SCALE 1:250 @ A3 PASSED AJS REV P2

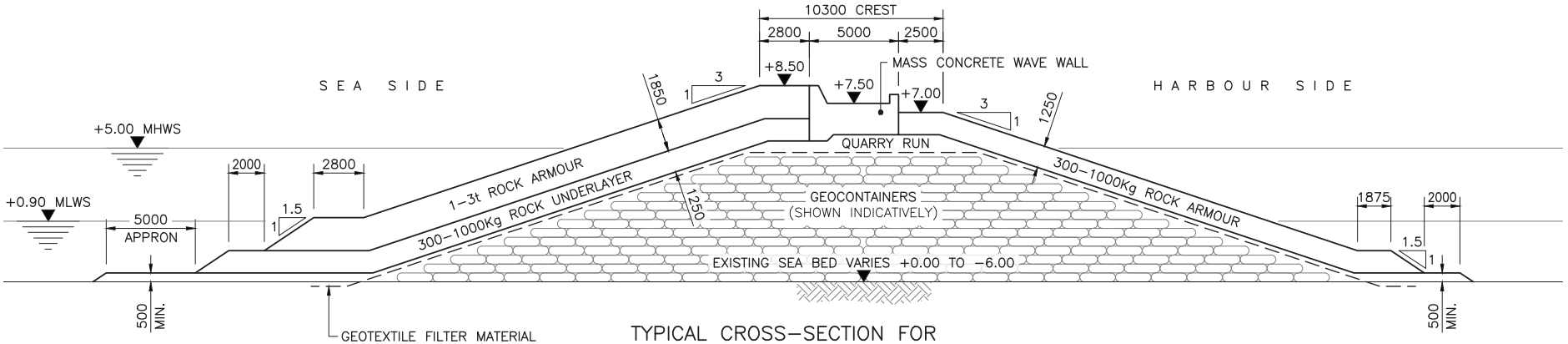
DO NOT SCALE

NOTES

1. ALL DIMENSIONS IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. ALL LEVELS IN METRES RELATIVE TO CHART DATUM.
3. 300–1000Kg ROCK TO BE REMOVED AND REPLACED WITH QUARRY RUN BENEATH WAVE WALL.



TYPICAL CROSS–SECTION FOR
OPTION A: USE OF ROCK ARMOUR
SCALE 1:250



TYPICAL CROSS–SECTION FOR
OPTION B: USE OF GEOCONTAINERS
SCALE 1:250

TITLE: TYPICAL CROSS SECTIONS FOR CORE MOUND OPTIONS	PROJECT: BRIXHAM HARBOUR BREAKWATER DESIGN	HASKONING UK LTD COASTAL AND RIVERS DIVISION Rightwell House Bretton Peterborough PE3 8DW +44 (0)1733 334455 Telephone +44 (0)1733 262243 Fax info@peterborough.royalhaskoning.com E-mail www.royalhaskoning.com Internet	Job No. 9W2488 / DATE 29.03.11 / SCALE 1:250 @ A3 ACAD Ref. 9W2488_SK03.dwg / CHECKED TS / PASSED AJS DRAWN AW / DRG No. 9W2488/SK03 / REV P2

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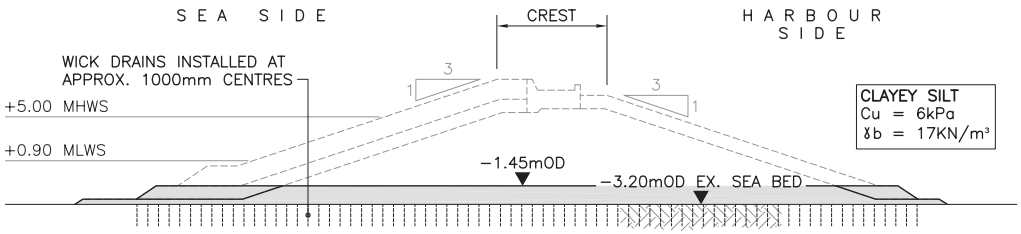
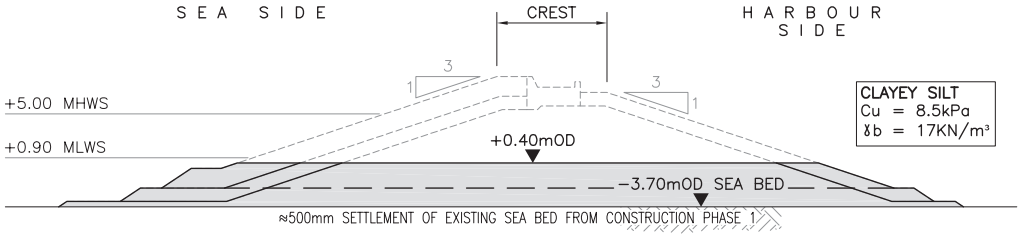


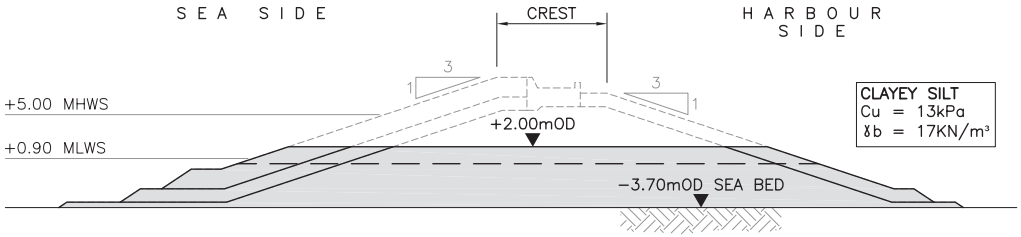
CONSTRUCTION PHASE 1;

INSTALLATION OF WICK DRAINS AND BEGIN PLACEMENT OF CORE MATERIAL AND DRAINAGE LAYER



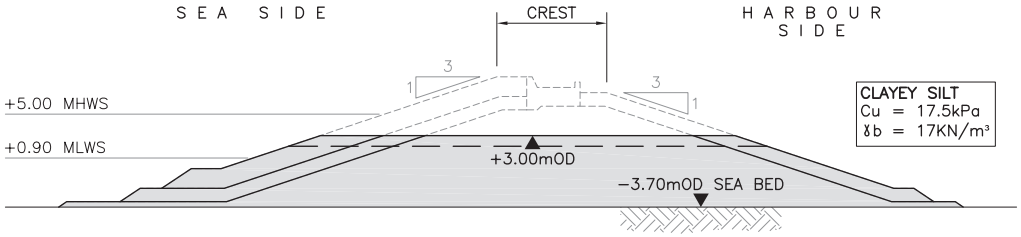
CONSTRUCTION PHASE 2;

PLACEMENT OF CORE MATERIAL AND ROCK ARMOUR IN 2350mm LAYER



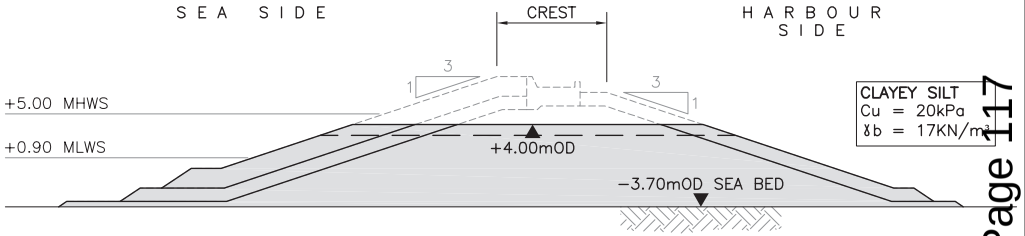
CONSTRUCTION PHASE 3;

PLACEMENT OF CORE MATERIAL AND ROCK ARMOUR IN 1600mm LAYER



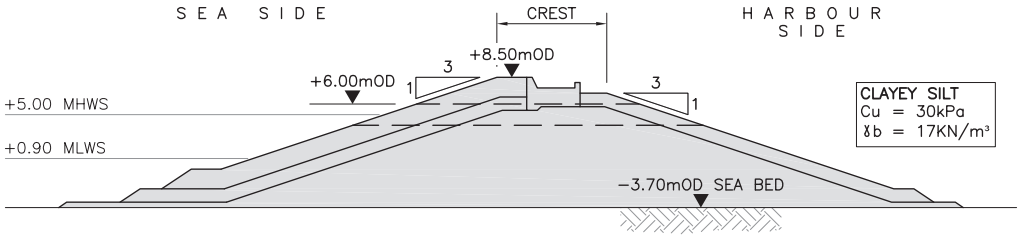
CONSTRUCTION PHASE 4;

PLACEMENT OF CORE MATERIAL AND ROCK ARMOUR IN 1000mm LAYER



CONSTRUCTION PHASE 5;

PLACEMENT OF CORE MATERIAL AND ROCK ARMOUR IN 1000mm LAYER



CONSTRUCTION PHASE 6;

COMPLETE BREAKWATER IN TWO STAGES OF PLACEMENT:

a) PLACEMENT OF CORE MATERIAL AND ROCK ARMOUR IN 2000mm LAYER TO +6.00mCD

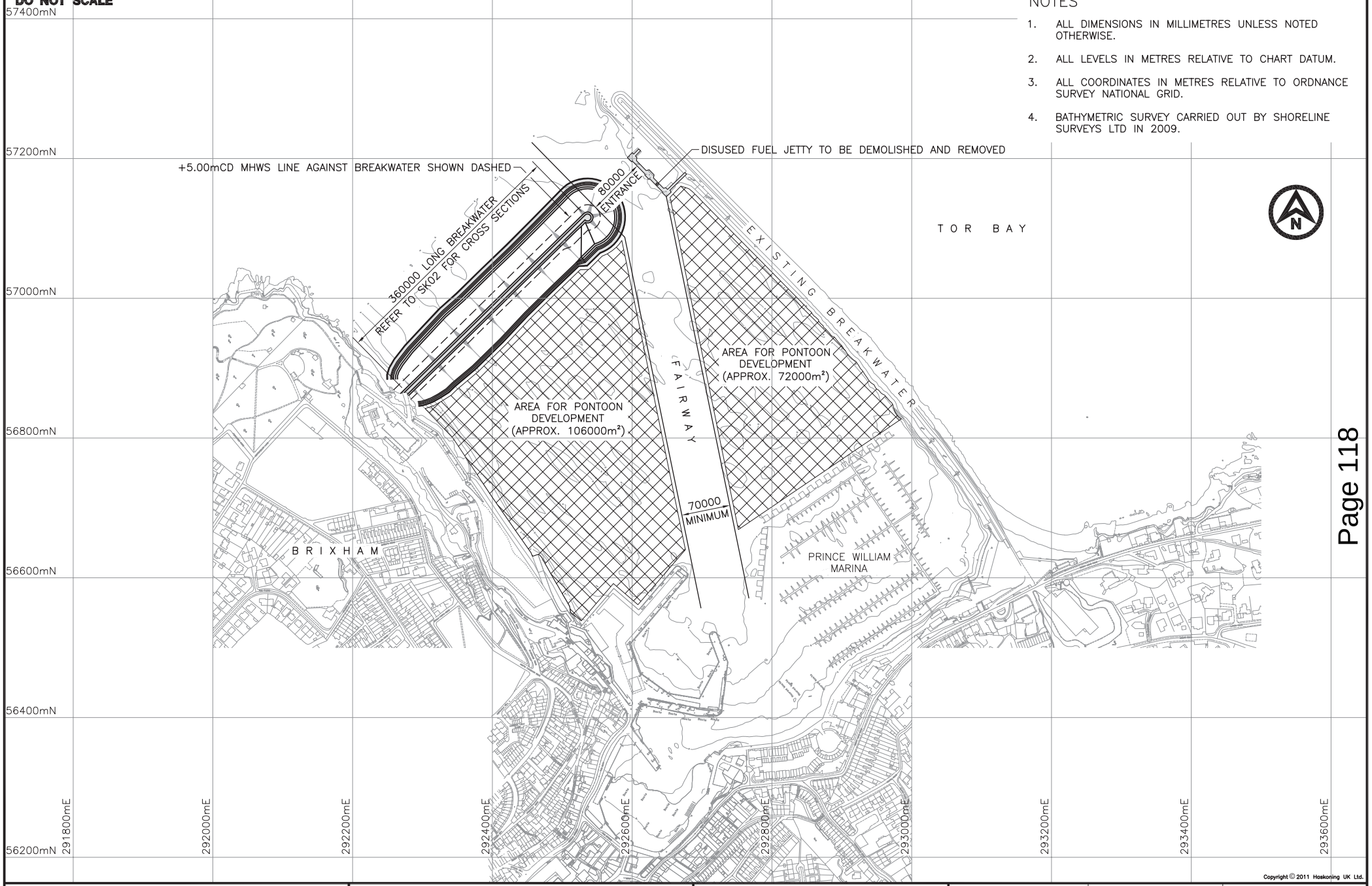
b) FINAL PLACEMENT OF CORE MATERIAL AND ROCK ARMOUR IN 2500mm LAYER TO +8.50mCD

TITLE: BREAKWATER STAGED CONSTRUCTION	PROJECT: BRIXHAM HARBOUR BREAKWATER DESIGN	ROYAL HASKONING — HASKONING UK LTD, COASTAL AND RIVERS DIVISION, Rightwell House, Bretton, Peterborough PE3 8DW, +44 (0)1733 334455 Telephone, +44 (0)1733 262243 Fax, info@peterborough.royalhaskoning.com E-mail, www.royalhaskoning.com Internet	Job No. 9W2488	DATE 29.03.11	SCALE NOT TO SCALE
			ACAD Ref. 9W2488_SK04.dwg	CHECKED HDR	PASSED –
			DRAWN AW	DRG No. 9W2488/SK04	REV P1

DO NOT SCALE

NOTES

1. ALL DIMENSIONS IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. ALL LEVELS IN METRES RELATIVE TO CHART DATUM.
3. ALL COORDINATES IN METRES RELATIVE TO ORDNANCE SURVEY NATIONAL GRID.
4. BATHYMETRIC SURVEY CARRIED OUT BY SHORELINE SURVEYS LTD IN 2009.



TITLE: BREAKWATER GENERAL ARRANGEMENT	PROJECT: BRIXHAM HARBOUR BREAKWATER DESIGN	HASKONING UK LTD COASTAL AND RIVERS DIVISION, Nightingale House, Bretton, Peterborough PE3 8DW, +44 (0)1733 334455 Telephone, +44 (0)1733 262243 Fax, info@peterborough.royalhaskoning.com E-mail, www.royalhaskoning.com Internet, ROYAL HASKONING	
Job No. 9W2488	DATE 29.03.11	SCALE 1:5000	
ACAD Ref. 9W2488_SK05.dwg	CHECKED HDR	PASSED –	
DRAWN AW	DRG No. 9W2488/SK05	REV P1	

Public Agenda Item: Yes

Title:	**The Creation of an Artificial Reef off Torbay**		
Wards Affected:	**All Wards**		
To:	**Harbour Committee**	On:	**12 September 2011**
Key Decision:	**No**		
Change to Budget:	**No**	Change to Policy Framework:	No

Contact Officers: **Chris Bouchard, Asset Management or Kevin Mowat**
☏ Telephone: **01803 207920 or 01803 292429**
E.mail: **Chris.Bouchard@tedcltd.com or Kevin.mowat@torbay.gov.uk**

1. What we are trying to achieve and the impact on our customers

1.1 To help facilitate the creation of an artificial reef, by the sinking of a vessel either within the jurisdiction of, or off, Tor Bay Harbour limits, involving agreeing to take a lease of the seabed from the Crown Estate and then granting a sublease to a charitable organisation. This is expected to lead to economic benefits particularly in the Tourism sector.

2. Recommendation for decision

2.1 **Subject to item 2.2. below that the Committee considers whether the Mayor be recommended to authorise the Head of Commercial Services, in consultation with the Chief Executive of the Torbay Development Agency and the Executive Head of Tor Bay Harbour Authority, to accept a 125-year lease for part of the seabed from the Crown Estate on acceptable terms, and that, in determining the acceptable terms, the Mayor is recommended to seek further legal advice as to the level of the Council's risk exposure.**

2.2 **That, the Committee considers whether the Mayor be recommended to authorise the Head of Commercial Services, in consultation with the Chief Executive of the Torbay Development Agency and the Executive Head of Tor Bay Harbour Authority, to grant a sub-lease (and if considered appropriate an agreement for that lease) for part of the seabed to a local charitable organisation on acceptable terms.**

2.3 **That, the Committee considers whether the Mayor be recommended to authorise the Head of Commercial Services, in consultation with the Executive Head of Tor Bay Harbour Authority and the Chief Executive of Torbay Development Agency, to enter into such other legal documentation on acceptable terms as deemed necessary.**

2.4 **That the exact position of the sinking of any vessel within Tor Bay Harbour limits will be determined by the Executive Head of Tor Bay Harbour Authority in his capacity as Harbour Master, following consultation with harbour users and the Harbour Committee.**

3. Key points and reasons for recommendations

3.1 The Council received a request in July of this year from a local charitable organisation for assistance to help create an artificial reef somewhere off Torbay. The Crown Estate will need to grant a lease of part of the seabed and they have indicated that they will only do so to a Local Authority.

3.2 The local charitable organisation has therefore asked that the Council take a lease from the Crown Estate with the Council then granting a sub-lease to the organisation.

3.3 The organisation has submitted its own bid to purchase “Ark Royal”, a decommissioned aircraft carrier, from the Ministry of Defence. It is too big to sink within the Bay and its final location is expected to be at least 5 to 6 miles off Tor Bay Harbour limits. If the organisation are unsuccessful with their “Ark Royal” bid then they are still keen to sink another smaller vessel to create an artificial reef, which could be on the edge of the Bay and therefore within Tor Bay Harbour limits. The location of the wreck has therefore not been specified in the recommendation.

3.4 The organisation will also need to obtain a marine licence from the Marine Management Organisation (MMO). Depending upon their requirements the Local Authority may also need to be party to these agreements.

For more detailed information on this proposal please refer to the supporting information attached.

Steve Parrock
Chief Executive, Torbay Development Agency

Kevin Mowat
Executive Head of Tor Bay Harbour Authority
Tor Bay Harbour Master

Supporting information to Report

A1. Introduction and history

A1.1 In March 2004 HMS Scylla was sunk in Whitsand Bay off Plymouth and this generated a boost to the local economy of Plymouth and the surrounding area.

A1.2 A local charitable organisation has submitted a bid for the purchase of the "Ark Royal", which was once one of the Royal Navy's main aircraft carriers. It is 211 metres (693 ft) in length and has a maximum beam of 35 metres (115 ft), with a displacement of 20,235 tonnes. They believe that, since it was such an iconic vessel, it will attract huge interest from both divers and non-divers bringing in an estimated £10 million into the local economy of South Devon.

A1.3 Appendix 1 shows the Appraisal submitted by the organisation setting out their Economic Impact Assessment. Officers are of the view that some work needs to be done to this appraisal. The main benefits they have outlined are as follows :-

a) Economic benefit – this has been assessed at £10m+ per annum to the Bay's economy using Riviera International Conference Centre numbers, which have been adjusted downwards to be pessimistic.

b) Social benefit - through charitable status at £1.5m - £5m over 5 years.

A1.4 Notwithstanding the down grade of the benefits by the organisation, the benefits set out in the appraisal appear optimistic. However, there is strong evidence that there will be new and appreciable economic benefits that can be achieved through this project, particularly if the required infrastructure to support this is in place. e.g. improved access to the water, a dive centre, collaboration from boat charters and accommodation providers, etc. There is the potential that Torbay might not gain the most benefit from the project with divers leaving from other locations in the South Devon area. If they are unsuccessful in their bid then they will wish to purchase another smaller vessel. This may not have such an appeal as the "Ark Royal", especially to non-divers but it is still considered by the organisation that it will generate a similar level of interest as HMS Scylla.

A1.5 In the Council's policy document ***A Tor Bay Harbour and Maritime Strategy (2007 – 2017) ~ 'Catching the Wave'*** it states "we will consider the possibilities of developing facilities for recreational diving to ensure that Tor Bay has the widest offer for all water based recreation. Options could include the strategic placement of man-made wrecks and/or artificial reefs". This proposal fits in with this aspiration and with the other approved strategies which seek to improve the breadth of experiences that Torbay offers to visitors.

A1.6 The Council has the power to acquire land outside its area by virtue of s120 of the Local Government Act 1972. This states that, for any of their functions under this or any other enactment or for the benefit, improvement or development of their area, a Council may acquire by agreement any land, whether situated inside or outside their area.

A2. Risk Assessment

A2.1 Outline of significant key risks

A2.1.1 The Crown Estate wishes to grant the main (head) lease of the seabed to the Local Authority so that, if the charitable organisation ceased to operate, then there is an accountable body that will be liable under the terms of that lease. i.e. the Council.

A2.1.2 The Council should also be aware that, even with the sub-lease in place, if there is an accident / incident / fatality, then the Council could have a claim made against it especially if the claimant considers that the organisation or any visitor to the site has insufficient financial resources to settle the claim. To be successful the claimant would need to show that the Council had been negligent. Whilst the sub-lease is in place this risk is considered to be manageable but, should the sub-lease come to an end and the Council became fully liable, then the Council would need to put in place such measures / procedures to minimise this risk and such would have cost implications.

A2.1.3 The Council could also be exposed to a claim if the organisation's insurance arrangements fail for some reason or the limit of indemnity for any one event is exhausted.

A2.1.4 Due to the nature of diving there is always an element of risk that an accident could happen. The organisation itself is to take certain measures to ensure that this risk is minimised. Such measures include :-

i) Drilling over 100 new holes into the vessel to create extra escape routes, this will also mean that divers should be able to see light from virtually every room.
ii) Having reflective triangles on ropes running on every deck leading to exit points.
iii) Having signage on each deck indicating safety information and shot lines from the surface. These will be a visual reference for the divers who will also be able to use them as a guide rope if the current is too strong. The shot lines will act as a mooring point for the pick up / drop off for the divers.

A2.1.5 The organisation is of the view that there is a minimal chance of a claim being made against them or the Council. We are advised that all divers are expected to comply with guidance and rules issued by the Professional Association of Diving Instructors (PADI) or the British Sub-Aqua Club (BSAC) and diving schools would be members of these organisations. All individual divers, outside those who go with a chartered company, are responsible themselves when they enter a wreck. Provided that the organisation can demonstrate that they have taken appropriate safety measures (as per above) then the organisation anticipate that a claim for negligence is minimised.

If the public use a chartered company to dive with then any liability would rest with this company, who should be PADI or BSAC registered and should have their own liability insurance.

A2.1.6 The location of the wreck is likely to present a risk to navigation and this matter will be dealt with via the consent process associated with the marine licence issued by MMO. As part of the licence application process the MMO will need to consult with a number of bodies (see A6.2 below) and organisations such as the Maritime and Coastguard Agency, Trinity House and the local Harbour Authority will provide significant input into the decision making process. If consent is granted for the wreck it is expected that it will need to be properly marked on the surface and any such navigational marks will need to be adequately maintained throughout the life of the wreck, all the time it presents a hazard to shipping.

A2.1.7 The Council can minimise its risk by checking on a regular basis that the terms of the sub-lease are being adhered to with the process documented but clearly relevant (additional) resources would need to be put in place for this to happen.

A2.1.8 The Crown Estate have requested that it is indemnified against all costs, claims, or demands, actions, proceedings or liabilities which may arise as a result, or in connection with the placing and retention of the vessel on the seabed with the liability being limited to £5 million, linked to RPI. If, for whatever reason, the Council does become liable then its policy is currently for £50 million for any one incident. The Council's liability insurance policy will respond to negligent acts or errors where legal liability exists on the part of the Council.

It is considered that Torbay Council should be more limited than this and only indemnify the Crown in respect of sums which the Council may become legally liable to pay as damages, costs and expenses.

If, however, the Crown insist on the broader wording as they have requested, if the organisation fails then any costs/damages etc, that arise and which are not as a result of the Council's legal liability, will not be funded by an insurance policy but would directly fall on the Council's budget.

A2.1.9 The group behind the charitable organisation have set up the charity for the "Ark Royal" project. It is therefore possible that the charity itself may have limited financial resources and, as with any new business, if their income and expenditure is different than their business plan, the venture may fail.

The sub-lease will be to the charitable organisation. It is currently unclear whether this is an incorporated company. If so, then the Council could require the Directors to act as guarantors. If not, then the sub-lease would be granted to the Trustees of that organisation with them being personally liable. However, it is entirely possible that being a charity the Trustees would prefer not to accept this liability and even if they did then the Council's recourse would be limited to the financial status of those individuals. This type of scenario is not unusual and is often met by asking for a security deposit but the difficulty faced here is ascertaining the level at which this could be set. However, the concept is considered worthy of further investigation.

A2.1.10 The Crown Estate has issued heads of the terms for the lease to the Council. Whilst it is intended that these will be replicated in the sub-lease to the organisation, if the Council become liable, as well as the insurance issues mentioned above, there are a number of other key risks.

Likewise, there are a number of risks if the Council becomes liable under the terms of any marine licence :-

a) Rent – This would be a peppercorn for the first five years with a review to market value. Whilst not an immediate risk, if the rent were increased after five years then the Council would need to identify a budget to fund this payment. Whilst the rent review mechanism has yet to be agreed the Crown Estate has indicated that it may possibly be linked to a percentage of the gross turnover (possibly 10%). Unless resources are identified to manage the 'operation' with the Council then receiving the income, there is a risk that the Council may become liable to pay a rent with the result that the Council would need to identify a financial resource to pay it.

b) Annual maintenance of buoys and signage – It is understood that the cost may be the region of £4,500 per annum.

c) Environmental monitoring – It is likely that the Marine Management Organisation will require a ten-year environmental monitoring programme, which could cost in the region of £45,000 over this period.

d) Any other licences and inspections which may be required.

A.2.1.11 It will be necessary for the organisation to undertake various surveys and procure reports before they are granted permission to sink the vessel which will involve them in the risk of incurring significant expenditure before any documentation is in place and which might cause risks to the Council if it subsequently decided not to enter into the relevant agreements.

This risk could be reduced by a process known as an 'agreement for lease' with the grant of the lease being contingent upon all relevant permissions and consents being obtained. Such a process may also ensure that such permissions are in place before the lease with the Crown is completed. Clearly this process would need to be acceptable to both the Crown and the organisation but nevertheless is considered to be worth investigating and pursuing further.

A2.2 **Remaining risks**

A2.2.1 It was thought that there was a possibility that the Crown Estate may have wanted the vessel to be removed from the seabed at some point in the future. They have, however, confirmed that it is not their intention for it ever to be raised with the lease being in place to enable it to become a permanent structure on the seabed.

A2.2.2 There is the risk that the wreck could sit on an existing environmentally important feature or habitat, or it might be sited in a conservation area. In reality there is zero risk of this happening because of the MMO's licensing process. In any event it is anticipated that after 6-12 months corals, fauna and flora will have adhered to the vessel. It is the organisation's view that eventually the vessel will have become a reef and therefore be protected in its own right.

A2.2.3 There could be a perception that the vessel will be a danger to the environment. However, before it can be sunk it needs to go through a process of cleaning and de-polluting. The work will take place at Devonport and be commissioned with Babcock International Ltd. They will adhere to a licence from the Marine Management Organisation who will only allow the vessel to be sunk once this work has been signed off by them. The vessel will therefore be clean and free from contaminates when it is sunk.

A2.2.4 In the event of a diving or wreck related fatality it could result in a long drawn out court battle related either to cause of death or negligence. Such exposure to negative publicity could damage the Council's reputation.

A3. Other Options

A3.1 The Council could decide not to support this initiative.

A4. Summary of resource implications

A4.1 Asset Management of the Torbay Development Agency, the Executive Head of Tor Bay Harbour Authority and Commercial Services would be involved with the negotiation and preparation of the legal documentation.

A4.2 The Council will also be required to monitor the sub-lease to ensure that the sub-tenant is complying with the terms. No budget currently exists for this work.

A4.3 If the sub-lease were to come to an end then the Council will become fully liable and we will need to put in place such measures / procedures to minimise the risk of diving related incidents/accidents and such would have cost implications with no budget currently available.

A4.4 The costs identified in A2.1.10 above will fall to the Council if the sub-lease were to come to an end and no budget currently exists for this work.

A5. What impact will there be on equalities, environmental sustainability and crime and disorder?

A5.1 It is not considered that the proposal will have an impact on equalities or crime and disorder.

A5.2 Before the vessel can be sunk all possible contaminants will need to be removed. Over time the vessel will deteriorate but a reef should start to form on it, thus enhancing the marine ecology through the creation of a new habitat and ecosystem (see A2.2.2 above).

A6. Consultation and Customer Focus

A6.1 The organisation has presented the proposals for the "Ark Royal" at a public meeting. Since this is not a land-based initiative it does not affect one particular Ward and therefore it is not considered appropriate for formal public consultation via the Community Partnerships. However, the project has been discussed at the two Harbour Liaison Forums.

A6.2 The MMO strongly advise that any proposal is, as far as is practical, the subject of extensive consultation locally. Furthermore the MMO suggest that applicants for a marine licence consult with the MMO's standard consultees prior to making the application. The consultees at present are :-

- Natural England
- Environment Agency
- The Crown Estate
- English Heritage
- Maritime and Coastguard Agency
- Trinity House
- Department for Transport
- Centre for Environment, Fisheries and Aquaculture Science (Cefas)
- Highways Agency
- Network Rail
- Local Authorities
- Neighbouring Harbour Authorities

A6.3 The MMO will consult with the bodies listed in A6.2 above, in any event, before considering the granting of a marine licence.

A6.4 The organisation has also consulted with a number of other relevant local businesses, together with the Royal Torbay Yacht Club.

A6.7 The Torbay Coast & Countryside Trust has also been consulted. It supports marine conservation projects that restore and enhance the Bay's marine environment and which aim to engage and inspire people with the Bay's marine environment. The Trust is of the view that, if artificial reefs are done in an appropriate manner then they can provide both biodiversity enhancement and also be a dive attraction. Their initial view is that, unless more detailed impact assessments are carried out then the current proposal is inappropriate for Tor Bay considering the nature conservation designations and the Bay's marine biodiversity.

A7. Are there any implications for other Business Units?

A7.1 No

Appendices Appendix 1 – Appraisal Submitted by Charitable Organisation

Documents available in members' rooms None

Background Papers:

The following documents/files were used to compile this report: Misc380

2011

THE ARK ROYAL

Produced by "Wreck The World"

[APPRAISAL FOR TORBAY COUNCIL]

BACKGROUND; INTENTION; COSTINGS; REVENUE; RISK AND REWARDS

Table of contents

Executive summary

1.1 In "Turning the Tide Strategy" the newly formed ERTC was given the remit to stop the decline of tourism and increase occupancy and revenue.

1.2 Tourism is the central industry under-pinning the Torbay economy.

1.3 This project mirrors that already achieved in Plymouth, through the sinking of the "Scylla" and production of the UKs first artificial reef (2004).

1.4 Whilst Plymouth Council, South West Regional Development Agency ("SWRDA"), University of Plymouth's South West Economy Centre ("SWEC") and Caradon Area Tourism Forum ("CATF) had to work on simply theory, with no track record for such an enterprise in the UK, we are in a fortunate position to have some statistical track record and evidence for this project.

1.5 As part of the work from SWEC to access funding from SWRDA, they predicted increase of £0.17m (pessimistic scenario) and £0.67m (optimistic scenario) in GDP pa (Gross Domestic Product) within the South West economy from the Scylla.

1.6 **Actual calculations** have produced by Plymouth to calculate revenue to their economy through their investment into the Scylla. Some **£25-30 million** over 5 years with initial purchase / investment recouped in 14 months.

1.7 Whilst Plymouth gained the Scylla, Torbay has the chance to gain the Navy's flagship; HMS Ark Royal.

1.8 It is our belief that Torbay can benefit by similar, if not more, through the Ark Royal. Estimated economic benefit using similar data calculations by the Riviera International Conference Centre when showing their benefit to the wider economy and justification of council support amounts to in excess of £11 million per annum.

1.9 This is effectively a new "revenue source" for our Bay economy will minimal infrastructure costs for the council. Certainly "turn the tide"! Through working in conjunction with the ERTC, Torbay could become the Dive Centre of the UK.

1.10 The project will be set up under a charity structure in order for operating profits to be reinvested into community projects, rather than "tax man revenue".

1.11 Due to the type of business, the running costs for the charity are significantly low (estimated at £30,000), whilst the income stream, high. Through "diver charges"; TV documentaries; merchandising etc – estimates in excess of £350,000pa.

1.12 It is the heart of the charity to look at schemes within the Bay and be able to pass finance over using "social enterprise"; following a similar model proposed by our Mayor with his offer of 50% reduction in salary. Over the course of 5 years estimates range from £1,500,000 (low side using similar data to Scylla on diver numbers) to £5,035,000 (optimistic with increase number of divers and length of season).

1.13 Support from the council at this stage centres on "provision of a lease" via the Crown Estate. The council will have no responsibility for either the purchase; preparation, cleansing or indeed sinking. No sinking will occur unless preparation and cleansing are signed off by the MOD.

1.14 This level of support is different to the Scylla where they asked for funding on top for to cover part of the purchase and cleaning stages.

1.15 We understand that initially there had been mis-understandings about the project such as the following:

i) Placement of the Ark Royal

ii) Risks to council

iii) Risks to environment; other shipping

iv) On-going financial viability

1.16 We are very much appreciative of the support and help that has recently been received from the TDA, Council, Harbour Master and Various members of the Bay's business community; which, through them, can help to dispel some of the myths and mis-understandings and ultimately reassure the Council and Mayor that, not only does this project have potentially huge financial and social benefits to the Bay, but also limited to negligible risks to the Council

1.17 Over the next few years the UK economy is expected to face extremely trying financial conditions. This project provides, in almost one fell swoop, a new "tourism" project, which can easily supplement the "Turning the Tide" strategy, helping our accommodation providers, restaurants, and shops.

Mis-understandings / Fears

2.1 This is a new concept for Torbay and therefore, can, like anything else that is new, have mis-understandings.

2.2 Over recent times there has been confusion on:

i) Placing of the Ark Royal
ii) Council liability on the lease
iii) Verbalising "hair brained idea"
iv) Danger to other ships
v) Danger to the environment
vi) Ongoing financial viability of the project
vii) Council open to being sued if their is a death

2.3 **Placing of the Ark Royal** has been discussed with the Harbour Authority, and in particular the Harbour Master, Mr K Mowatt.

i) Not in the harbour
ii) Not in a shipping lane
iii) Placement will have no effect if the Mayor would like to bring "cruise ships" into the Torbay

2.4 **Council Liability on Lease** - Because the project comes within a charity to benefit our local community, it requires the Council to obtain a lease from the Crown Estate, and the charity to become the "sub-leasor". This is a similar arrangement followed by the Scylla team and its heads of terms have been received and elements will be adhered to by the charity. In particular:

i) Archaeological Survey
ii) Environmental impact assessment
iii) On-going financial statement for charities viability as the tenant
iv) Insurance

2.5 Verbalising "hair brained idea" – as time has gone by, with more councillors, officers and business people hearing the concept and out workings of an actual case down the road in Plymouth, so these have been captured by the potential. Why not Torbay? It has been done in Plymouth and other places around the world.

2.6 Danger to other ships – discussions on the Ark Royal's resting place took place with the Harbour Master. For some reason certain people thought, and then spoke out, that it would be sunk in Torbay harbour. That would cause a danger, not least because some of the ship would be out of the water! In fact the site has been chosen away from shipping lanes. It will be required to fit buoys and sonar. Set at a depth below large boat drafts.

2.7 Danger to environment

a) Before the Ark Royal can be sunk, it needs to go through a process of cleaning and de-polluting. This work will take place at Devonport and be commissioned with Babcock International Ltd. They are ship builders, de-commissioners and "artificial reef project" supporters. They will adhere to a licence from the MMO; and not until that work has been achieved with the MMO sign off and allow the Ark Royal to be sunk.
b) The whole purpose of the project is to produce an artificial reef in line with conservation and therefore it is paramount that it is clean.
c) Over time, following the Scylla model, it will actually become a thriving reef, not only available for diving, but also conservation work and marine biology.

2.8 On-going Financial Viability of the Sub-leasor & danger that council left carrying the baby

The charity is in the enviable position of having little on-going costs, whilst an excellent income stream; combined together to forming a very profiting organisation, to the betterment of social concerns in the Bay.

Estimated on-going costs amount to less than £30,000 with 50% due to administration costs. On the other hand, income stream just from divers (payment of £2 per dive), would amount to £200,000. This doesn't include income from marine biology; TV documentaries; merchandise; memorabilia etc.

2.9 **Council open to being sued from death of a diver** – since the Scylla was sunk, there have been two deaths. It is not possible for the tenants of the actual boat to be held responsible. The liability either lies with the company who was used to provide the dive, where they have to hold their own public liability insurance as with any company; or the individual who has broken their PADI rules. All individual divers, outside those who go with a chartered company, are responsible themselves when they enter a wreck. However what is unknown to the layman relates to who the liability stands with. There are three types of diver.

Company Description and Management

Registered name:	Wreck The World
Charity number:	7671930
Registered address of charity:	22 Tamar Avenue, Shiphay, Torquay, Devon, TQ2 7LP.
Directors:	Mr James Doddrell, Mr Jason Zaple,
Members:	Mr Michael Byfield, (Mr Martin Brook, Mrs Susie Colley, Mr Andrew Baldry, all to be joining the charity very soon)
Bankers	NatWest Bank, Union Street, Torquay, Devon.

Background to Artificial Reefs and The Ark Royal

The Artificial Reef Society of Colombia describes an artificial reef as: "By definition, an artificial reef is any structure placed by man in the marine environment. Properly prepared and strategically located they attract marine life of all kinds and provide easily accessible and safe locations for divers to enjoy".

3.1 Modern artificial reefs serve a variety of purposes including promoting marine life, commercial and sport fishing, diving, education and research.

3.2 The use of reefs for recreational diving is a relatively modern development that has occurred since World War Two as a consequence of the development of reliable scuba-diving equipment.

3.3 Whilst artificial reefs can be constructed in a variety of ways, there has been an increasing trend to utilising decommissioned warships. This type of artificial reef has been developed in a number of countries including the USA, Japan, Canada, Australia, New Zealand and the Cayman Islands.

3.4 There are a number of significant advantages to utilising ships as the basis for artificial reefs. These include:

- Divers place a high value on exploring wrecks that "look like ships" but many historical wrecks have deteriorated over time.
- The ships can be prepared with safety considerations in mind.
- The ships can be prepared for novice/disabled divers.
- The location of the site can be chosen to promote local industry and tourism and minimise any adverse ecological impacts.
- Reefs can provide a breeding ground for fish and other marine life.
- Artificial reefs are often viewed as a relatively cost effective way of disposing of surplus vessels.

3.5 In 2004, the first was introduced into the UK. Purchasing, cleaning and sinking of HMS Scylla in Whitsand Bay off the coast of South East Cornwall, close to Plymouth; a Leander class frigate.

3.6 HMS Scylla is a decommissioned Royal Navy frigate that was properly prepared and cleansed prior to being scuttled on the 20m contour in Whitsand Bay. Placed on the sandy bottom, the new structure of an artificial reef has provided a permanent structure for invertebrates to attach where there was none before. The artificial reef also provided a solid surface for filter feeders to attach, and an environment similar to natural reefs where entire self-sustaining food chains are created. [i]

([1]Atlantic Consultants. 2001. S E Cornwall Tourism Strategy 2001 – 2006. Caradon District Council, Liskeard)

3.7 Whilst estimates were created for projected economic and social benefits to the region from the Scylla; the reality has been much greater.

3.8 The pioneers behind the Ark Royal live in Torbay. Understanding the Ark Royal was up for tender, they believed the same benefits and more could be achieved for Torbay. With a prototype in place from the Scylla, the embarked on a journey, assessing the costs, responsibilities and potential from such a project; thereby placing a tender bid, which is currently with the MOD.

3.9 Taking the model of the Scylla, they have removed some of the risks for any supporting council and are looking at support in the form of a lease that needs to be granted from the Crown Estate in order for the project to materialise (a lease if required since the crown estate will only provide to a council or private company; not a charity, the structure they want to achieve “social economic” benefits).

Outline Time Line

4.1 There are seven stages to this project:

i) Tender

ii) Preliminary legal requirements

iii) Awarding of tender

iv) Purchase;

v) Cleaning, de-polluting;

vi) Sinking;

vii) On-going formation of reef.

4.2 During the tender phase investigations where made into:

i) Scrap Value

ii) Cleaning & De-polluting

iii) Proposed Site for final resting place

iv) Charity Status

v) Economic Impact on the Bay Economy

4.3 Through discussions with Babcock International Ltd; Scrap Merchants and MOD; it was clear that "Purchase; Cleaning, De-polluting; & Sinking" could be achieved through the scrap value of the vessel, leaving an amount over for the "charity". As such a tender price of £3.5 million was submitted.

4.4 In order to sink the Ark Royal the Crown Estate requires a lease. As a charity we are unable to receive such a lease, and therefore require the Council to apply, with the charity becoming "sub-lease holders".

4.5 We very much appreciate involvement by various people including TDA, Councillors, Officers, Harbour and Business in helping pull the strands together to get us to this point and hope receiving the required "lease"

Startup Expenses; On-going Financial plan (expenditure & income)

4.1 There are three financial phases to the Ark Royal Project:

i) Pre-tender
ii) Acceptance of Tender up to Sinking
    (a) purchase;
    (b) preparation, de-polluting
iii) Post Sinking

4.2 Pre-tender has been financed by the members of the charity.

Prior to actual lease, and as part of expected heads of terms arrangements will be need in place:

i) Marine Licence
ii) Archaeological Assessment
iii) Environmental Assessment
iv) Insurance ready for time of sinking

All four are in the process of being obtained and will be in place for the granting of the lease.

4.3 "Purchase to Sinking" has been planned through the scrap value of the Ark Royal, with letters from scrap companies confirming. Specific elements:

i) Purchase
ii) Cleaning; de-polluting by Babcocks Ltd in Devon Port
iii) Escape Ropes and Signage

Jim Allan | Senior Estimator - Marine and Technology Division
Babcock International Group
Devonport Royal Dockyard | Plymouth | Devon | PL1 4SG
Tel: 01752323676 |
Mob: 07799 261352 |
Email: Jim.Allan@babcock.co.uk

4.4 On-going **pa**:

i)	Buoy and Maintenance	£4,500
ii)	Company Name	£1,000
iii)	DEFRA 10 year environmental	£4,500*
iv)	Insurance for lease	£self funded (insurance paid by bond at out set providing annuity)
v)	Ongoing Environmental Impact	£self funded (obtaining licence and qualification to complete ourselves)

vi) Administration £15,000

£25,000

4.7 Income Stream

1) The main income stream would be generated by “diver users”. 300 divers per day; doing 3 dives a day over a 28 week period would generate £352,800 pa assuming a 28 week period (in line with Scylla ref. Diver numbers).

2) We would expect the Ark Royal to generate a greater number of divers; and, with benign climate in the bay, increase the open period.

    i) 28 weeks; 300 divers £352,800

    ii) 28 weeks; 500 divers £588,000

    iii) 52 weeks; 300 divers £657,000

    iv) 52 weeks; 500 divers £1,095,000

3) TV Documentaries - We have also been approached by the BBC for a history documentary and Lion TV for another documentary on the full de-pollution and sinking of the vessel all prices are still in the negotiation stage and will have definite prices after tender win

4) Ships memorabilia items

5) Selling of merchandise

6) Charity boxes

7) Charity and fund raising events

8) Etc...

4.8 Buoys & Maintenance - Includes fitting to vessel and 2 other buoys all with navigation lights and main A.I.S have GPS included, also has a 100m radius with up to 4 marker points

4.9 DEFRA 10 Year Environmental -We expected there will be a need for a 10 year report which, generally, can cost up to £45,000; however we can hopefully do the report studies over the 10 year period to satisfy Defra’s requirements working alongside B.S.A.C producing all the photographic and video evidence along with written and detailed reports.

We believe we can lower these costs by carrying out most of the required work ourselves, as we are in the process of signing up for a archaeological surveying and sonar ocean

mapping course, we have marine conservation and project awareness as part of our portfolio.

4.10 Archaeological Impact Assessment - Our verdict we will not need a archaeological impact report due to the fact that we believe that this was referred to in heads of terms for the wreck to reef project in Weymouth, as they are on the Jurassic coast although we will be finding out the costs of having this report should it be needed. Details of one company we have found that are competent of this task is:

ADA (UK) archaeological diving association
www.**underwater-archaeology.org**.uk

4.11 Insurance for lease - Initially obtaining quotations for unlimited liability, however this has changed due to confirmation from (), going to £5Million indemnity insurance so this will substantially lower our costs. We are currently awaiting quotes from 20+ insurance companies through the following brokers:

RMK Insurance Consultants Ltd
c/o Stuart Wicks
Suite 11
351 London Road
Hadleigh
Essex SS7 2BT
Direct Dial Number 01702 426355
Tel 01702 555560
Fax 01702 555528

Economic & Social Impact Assessment

Benefits to the Bay

Financial Example

5.1 The Riviera International Conference Centre used an average £215 per delegate when they calculated its benefit to the bay. Using the same for a diver and assuming similar number of divers recorded with the Scylla we can extrapolate to £11.8 million:

280 persons per day

28 weeks

@ £215

= £11 million 799 thousand 200

5.3 In our option the £215 is on the high side; however if we assume £160 (dives £80; accommodation £40; food and misc £40) we still arrive at £8.78million.

5.3 Divers do not always travel alone, bringing partners. Assuming 1/3 bringing partners, but reducing spend from £80 (accommodation; food and misc); produces a further £1,097,600 (280 divers at 25% partners = 70; at £80; over 28 weeks).

5.4 Combining 5.3 and 5.4 provides £9.88 million per annum.

5.5 It is our belief that the Ark Royal will attract both more divers per day, as well as over a longer period of time. If numbers and period by 25%, that would increase amount by nearly £2.5 million.

5.5 These figures simply show the huge potential for the bay; for local businesses, new businesses and the wider community.

5.6 History has shown that the amount achieved depends to a lesser or greater degree with various organisations working together. Businesses/Marketing/Hoteliers etc. We have in place, within the Bay, already the infrastructure. The Ark Royal name will give the catalyst. But surely we can do better than Plymouth.

Educational Example

5.6 We have contacted Silvia Allen who is a governor of the schools in Torbay. She has agreed to help us by writing out a report for and behalf of the educational board on how this project will have a massive impact on the education. From a conversation with Silvia Allen she has informed us that of all the schools she has spoken to have had a positive outcome towards the project, and as such have been asked to make a presentation for all the schools.

Examples of Social Benefits through Charity Structure

5.7 In our hearts, we want this project to benefit Torbay Society and as such have set up the project under a charity structure.

i) Coast Guards - For example one of our main beneficiaries would be the coast guard. Now they are on verge of being closed down it is imperative that we get the Ark Royal so profits from the project could then help our charity to then fund the coast guard as we feel many lives will be lost from this closure.

ii) Youth Projects

iii) Community Projects

iv) Community Partnerships

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