

FLOOD CONTINGENCY PLAN 2014



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DOCUMENT CONTROL AND REVIEW

<u>Version</u>	<u>Date</u>	<u>Description</u>	<u>Prepared by</u>	<u>Checked by</u>	<u>Approved by</u>
1.0	14/03/2014	First Issue	R Musgrove	G Horton	R Arundale
2.0	16/12/2015	New storm warning & names	L Firman	G Horton	P Brooks

Control & Distribution

This plan will be issued in controlled form on the server location
S:\LFT-Everyone\Flood Contingency Plan\Full Plan

Uncontrolled paper or disc copies will be sent to the following holders:-

Port Director	1
Marine Adviser	1
Port Manager	1
Harbour Master	1*
Deputy Harbour Master	1*
Bridge Control	1*
TOTAL	6

* Hard Copies

Copies may be sent to outside agencies at the discretion of the Port Manager or Harbour Master.

INTRODUCTION, AIMS & PRIORITIES

In certain meteorological conditions a significant increase in predicted tide levels can threaten to cause flooding to the Port and the town of Lowestoft. This is caused by the passage of a severe depression close to the North Coast of Scotland and onwards to Denmark. The resultant surge in the sea water levels is funnelled into the shallow waters of the Southern North Sea and can cause an increase in tide levels of 2 metres or more in extreme examples, if the surge coincides with a spring high tide. Such conditions caused the fatal floods impacting the East coast of England on 31st January 1953 and also more recently flooding of the port and town on 5th December, 2013.

This contingency plan is drawn up to help the Port's staff minimise the effects of tidal flooding and create a structured response to ensure any business disruption can be minimised. Until engineered solutions are installed it will largely be an exercise in reducing risk and preparing to recover business services as quickly as possible.

Main Aim of the Flood Contingency Plan

The aim of this contingency plan is to specify the sources of flooding information, means for raising the alarm and summoning assistance. It will also establish the roles of organisations/people involved in order to co-ordinate the activities necessary in safeguarding life, property and the environment. It will ensure that everyone is aware of the procedures to be adopted in the event of an incident.

Flood Contingency Plan Priorities

The Priorities of this Major Incident Plan are:

Safeguarding of life.

Safeguarding of property and the environment.

Rehabilitation of the area and rapid resumption of normal port activities.

INFORMATION SOURCES

Lowestoft is a UK Hydrographic Office Standard Tide Port providing information to enable tidal calculations for surrounding areas and their tide tables.

Following the 1953 floods a tide gauge network was established to provide early warning of storm surges – a recording tide gauge at Lowestoft was installed in 1965 as part of the UK National Tide Gauge network. This gauge has been updated and transmits data electronically to the British Oceanographic Data Centre. Consequently there are several easily accessed sources of accurate tidal information that can be directly referenced to local conditions.

When a five day FFC warning has been received the duty HM should check other information sources at least twice daily

Storm Tide Warning Service (Email Sent to Bridge Control):-

Variations in tide level predictions for the next 36 hours are produced by the STWS of the Meteorological Office twice daily. These are sent to ABP Lowestoft Bridge Control by email at approximately 0400 and 1600 each day.

National Tidal and Sea Level Facility (Publicly available website) :-

This organisation's website provides comprehensive tidal information including:-

1. High and Low water predictions for the next seven days
<http://www.ntsif.org/tides/tidepred?port=Lowestoft>
2. Predicted surge levels for the next 48 hours updated every 6 hours
<http://www.ntsif.org/numerical-modelling/latest-surge-forecast?port=Lowestoft>
3. Real time/near real time tide levels for the Port are shown on the website.
<http://www.ntsif.org/data/realtime?port=Lowestoft>

Flood Forecasting Centre (Email and Mobile warnings to HM & DHM):-

This service is provided jointly by, the Met. Office and the Environment Agency, to all category 1 & 2 Civil Contingency Act responders.

<http://www.ffc-environment-agency.metoffice.gov.uk/>

They issue warnings as described in the [Flood Guidance Statement](#) ABP Lowestoft has registered to use this service for specific flood warnings for Norfolk and Suffolk. – This registration has been approved by FFC – we wait for the first live warning to ensure the system is working correctly.

Environment Agency (Email and Phone messages to Bridge, HM and DHM)

The Environment Agency run the Floodline warning service and provides email and telephone flood warnings for the Suffolk Coast from Lowestoft to Bawdsey.

<http://www.environment-agency.gov.uk/homeandleisure/floods/34681.aspx?area=054WACDV3B&page=1&type=Region&term=Anglian>

They also provide area specific warnings such as for Lowestoft Seafront and Docks etc.

<http://www.environment-agency.gov.uk/homeandleisure/floods/34681.aspx?area=054WACDV3B&page=1&type=Region&term=Anglian>

All their flood warnings are also available through the EA website.

3 Day Flood Risk Forecast

<http://www.environment-agency.gov.uk/homeandleisure/floods/3days/125305.aspx>

Regional list of flood alerts and warnings

<http://www.environment-agency.gov.uk/homeandleisure/floods/34678.aspx?type=Region&term=Anglian&from=fl>

If the internet is not available local information flood risk information is obtainable by calling:-

Call Floodline on 0845 988 1188, select option 1 and enter Quickdial number 114505 to get more information

The Environment Agency also has two not for public circulation numbers which may be used prior to or during and incident

Ipswich Incident Room 01473 270066




Flood warning Duty Officer 0800 9179601

Suffolk Resilience Forum/ District Emergency Planning Officer

These bodies may contact the port with warnings, although past experience may indicate this will not happen and they probably only seek information from us on tide levels

FLOOD WARNINGS

The Environment agency issues flood alerts and flood warnings graded as shown in the table below with the levels for Lowestoft given in heights above Admiralty Chart Datum

			WARNING NO LONGER IN FORCE
FLOOD ALERT	FLOOD WARNING	SEVERE FLOOD WARNING	
3.2m - 3.7m	3.7m- 4.2m	Over 4.2m	Below 3.2m
Flooding is possible	Flooding expected.	Severe flooding. Danger to life	No further flooding expected in this area

The Duty Harbour Master and Duty Engineer must be informed **IMMEDIATELY** if any **SEVERE FLOOD WARNING** messages are received, any time of the day, any day of the week.

As soon as a Floodline or STWS message is received the details **must** be transferred on to a [STORM TIDE WARNING LOG SHEET](#), current logs must be updated as the necessary actions are taken. When the tide has passed, the sheet, and the STWS message, is to be given to the HM for filing. The log sheet is to be made available for scrutiny by Police Officers.

For the FLOOD ALERT, FLOOD WARNING and ALL CLEAR type messages, the Duty Engineer **does not** need to be informed BETWEEN the hours of 2230 and 0730 hours

unless the tide level should reach 3.4m above Chart Datum, and is likely to rise higher. These must always be informed when the tide reaches 3.5m even if they have been notified before.

DATE	TIME OF H.W.	PREDICTED HEIGHT OF TIDE			m
		FLOOD ALERT	FLOOD WARNING	SEVERE FLOOD WARNING	
Range of warning levels to Chart Datum		3.2 - 3.7m	3.7 - 4.2m	OVER 4.2 METRES	
1	Time at which FAX or EMAIL message was received from Environment Agency				
2	ESTIMATED LEVEL in metres ABOVE Ordnance Datum				
3	To convert to Chart Datum ADD	1.5m	1.5m	1.5m	
4	ESTIMATED LEVEL in metres ABOVE Chart Datum				
5	TIME ABP SECURITY INFORMED				
6	TIME DUTY HARBOUR MASTER INFORMED See standing orders				
7	TIME OGN COMMERCIAL ROAD GATE INFORMED 52097				
8	TIME SLP HAMILTON YARD GATE INFORMED 54800 or 54202				
9	TIME LOWESTOFT CRUISING CLUB INFORMED Stuart Mack 07800 504739 Alan Ramsdon 0743881726 / 531977 John Cooper 511156	Anytime tide expected to reach 3.0m			
10	TIME LOWESTOFT HAVEN MARINA INFORMED Office 580300 Bob Beare - 519703 or 07810 806283	Anytime tide expected to reach 3.2m			
11	TIME LOWESTOFT YACHT SERVICES INFORMED P. Shaver 07534 036290 & 562585 Yard 585535, T. Kingston 07889 545331	Anytime tide expected to reach 3.2m			
12	TIME SILO (Dudman's) INFORMED Silo Office 572622 D Saunders - 07787 088250 or 588632	Anytime tide expected to reach 3.3m			
13	INTERNATIONAL BOATBUILDING TRAINING CENTRE David Savill - 569663 or 07973 911376	Anytime tide expected to reach 3.3m			
14	TIME NQCT INFORMED S Edmonds - 516804/519430 or 07734 072078 R Beare - 516804/519703 or 07810 806283	Anytime tide expected to reach 3.4m			
15	TIME SMALL & CO (M&E) LTD INFORMED P Harper - 519562 or 07799 662820 P Kirby - 531582 or 07799 662821 Tony Daley - 07799 662822	Anytime tide expected to reach 3.4m			
16	TIME BRANDYT INFORMED Duty Supervisor 581119 (B.4.30) Sadie Long 07786 544121 or Iuan Mingay 07734874142	Anytime tide expected to reach 3.4m			
17	TIME GOOWIL INFORMED Ops Room 524001 / 524002 Darrell Moore 07500 912869 Steve Hodger 524021	Anytime tide expected to reach 3.7m			
18	TIME RHODSF INFORMED Tim Jenkins 07963 478895	Anytime tide expected to reach 3.7m			
19	TIME WINDCATS INFORMED Richard Clark - 07789 331641	Anytime tide expected to reach 3.7m			

When receiving tidal predictions of 3.0 metres above ACD the duty operator should inform DUDMANS at the Grain Silo and Lowestoft Cruising Club. Dock Security should also be informed of any possible flooding, so that a message can be passed to the inshore fishing vessel owners to check their moorings.

COMMUNICATION PLAN

FFC - Five Day Storm Surge Warning (< 120 Hours)

Warnings received from this service should be relayed by the duty Harbour Master to all concerned if the levels expected are at Flood Warning Level or Severe Flood Warning Level. For Severe level warnings these messages should be tagged High Priority

Email Early Warning List

Duty Bridge Engineer	Port Manager EA
Deputy Port Manager EA	HM Lowestoft
DHM Lowestoft	Lowestoft Port Control
HM Ipswich/ONS	HM King's Lynn
Assistant Port Manager EA	Operations Manager Lowestoft
LHM	Port Engineer
Engineering Resources Manager	Safety Manager Lowestoft

Smalls Engineering	NOV Brandt
OGN	Dudmans
AFS	Safe STS
Fleet 96	BPOS
Fendercare	Sembmarine SLP

EA Flood Warning Service (< 36 Hours)

Warnings and Alerts from this service are dealt with in a structured manner as detailed in the Flood Warnings section of this document, using the [Storm Tide Warning Sheet](#). These actions will be undertaken by the duty Bridge Operator.

This procedure will be supplemented by email warnings, phone calls and personal visits to all relevant parties for Severe Flood Warnings when it appears quays are likely to be overtopped.

[Email List Link Click Here](#)

COMMAND AND CONTROL

The Harbour Master or Deputy must be advised of any significant flood warning or severe flood warning event which would lead to the implementation of the

Flood Contingency Plan. This must be done as soon as possible by quickest means available.

To activate an emergency response as precisely and quickly as possible remember these 5 W's in your initial request for assistance from the Duty Harbour Master:

W = Who is calling

W = What has happened

W = When did the incident occur

W = Where are you calling from

W = Weather at the location of incident

Lowestoft Port Control (LPC) must record the start of any such event in an emergency log and continue to maintain a log of significant events and important messages and instructions.

Upon receipt of a Severe Flood Warning the Duty HM should proceed to LPC and fully assess the risks of the forecast tide levels in relation to the port's assets.

Once the details of the incident have been understood it must be promptly established if the incident can continue to be managed via the LPC as a Minor incident or if it is to be declared a Major incident. This shall be determined by the duty HM as Incident Commander, in conjunction with the Deputy Port Manger or the Port Manager.

The Duty HM will assume the role of Incident Commander and will implement the communications plan. If necessary the off duty HM will also be notified and can assist as Site Incident Officer.

For a Major Incident the Deputy Port Manger or the Port Manager will assume the role of Incident Manager and liaise with Gold or Silver commands of the Main Emergency Services as necessary.

PRE-SURGE EVENT PREPARATIONS

Action level 1: forecast surge height of 3.2m – 3.7m – EA Flood Alert

1. Lowestoft Port Control will undertake warning calls as per the [ABP Lowestoft Storm Surge warning sheet](#).
2. Monitor tidal surge warning information to ensure the predicted surge level is not going to be exceeded.

Action level 2: forecast surge height of 3.7m- 4.2m – EA Flood Warning

1. Complete all level 1 actions.
2. Advise Port Managers, Safety Manager and Engineers of potential risks
3. Duty Bridge Engineer and Electrician assess risks and prepare to isolate Bascule Bridge electrical components. Isolate as soon as it becomes apparent flood risk is probable
4. Consider warning agents and ship owners that bascule bridge operations and hence shipping movements may be affected.
5. Only key personnel should be on site, upstairs in the bridge control and their vehicles left on high ground away from the port at a pre selected location.
6. Advise Port Security & RNMDSF to warn all fishing vessel owners, wind farm vessel operators, and fish merchants in Hamilton Dock and Waveney dock of possible flooding of the dock road and vessels becoming close to quay landings. Consider reallocating berths to vessels at risk on lower landings.
7. Advise port tenants of potential for surge to overtop the quay edges if there is significant wave/swell action.
8. Ensure Adequate PPE available for duty Staff

Action level 3: forecast surge height of over 4.2 metres – EA Severe Flood Warning

1. Complete all level 1 and 2 actions.

2. Ensure adequate fuel supplies in Bridge Emergency generator tank.
3. Consider declaring a Major Incident if Suffolk Resilience Forum haven't already done so. Advise Managers on BCP implementation
4. Operations Manager to commence dialogue with WDC rep. at Silver command
5. Issue relevant instructions/advice to tenants / port users
6. Advise port tenants of potential for surge to overtop the flood defences, particularly at the dry-dock if it is at risk of uncontrolled flooding.
7. Move ABP vessels to pontoon berths and ensure vessels fully fuelled.
8. Issue N to M and prepare to suspend Bascule Bridge operations.
9. Isolate electrical supply to Marina pontoons.
10. Isolate electrical power at NQCT Office before tide reaches 4.0 metres and it seems certain the quays will become overtopped. Ensure electrical conduits are sealed and flood boards in place at switchboard room.
11. Advise Burglar Alarm contractors of the potential loss of power.
12. Consider the need to move or elevate temporary emergency generators, if in use.
13. Move/Secure any ABP property likely to float away – timber, pallets, drums, oil tanks, including hazardous or other polluting materials etc.
14. Ensure ABP Vehicles moved to higher ground and fully fuelled.
15. Create MIP management team at Bridge control – Deputy Port Manager and/or Operations Manager to liaise with Suffolk Resilience Forum to give and receive information.
16. Prepare torches etc. in case of power failure
17. Assess evacuation needs and reduce numbers at LPC if necessary
18. Assess the need for flood protection measures at ABP buildings – flood boards, plastic sheeting, sand bags etc.
19. Ensure interceptors are emptied prior to a forecasted flood event to minimise potential pollution should these overflow.

ACTIONS DURING SURGE EVENT

- **Monitor all radio and phone communications and maintain log of all events.**
- **Record tide heights and weather conditions at regular intervals.**
- **Take photographs at regular intervals to help with post-flood analysis of impacts.**
- **Liaise with Police Site Incident Officer to ensure bridge closed to road traffic when necessary.**
- **Update Incident Manager and Silver/Gold command of significant incidents and events.**
- **Assist where possible with any lifesaving/rescue operations.**
- **Remain on upper floor of LPC until safe to return to ground level.**
- **Assume all flood water is contaminated with sewage and unsafe.**
- **Remain at LPC and only walk on clear pathways which are not covered with flood water.**
- **Do not drive or walk through flood waters – you cannot see if manholes or other objects have been moved.**
- **Only move around to assess damage and pollution impacts once flood waters have receded.**

RECOVERY PLAN

- Ensure any staff injuries are assessed and treated by First Aider and sent for Medical assessment if required.
- Only resume movement around the port estate when it is certain manhole covers haven't been dislodged.
- Notify Emergency Services of any known hazards to public safety or shipping.
- Check to ensure other flood events aren't expected before undertaking recovery work.
- Ensure staff have adequate welfare and rest before assigning further tasks.
- Treat any flooded buildings as potentially contaminated with sewage and ensure rigorous hygiene measures in place.
- Assess any damages to ABP property and equipment and formulate plans to restore normal activities.
- Inform Port Manager and SSP Director of any serious impacts and support needed in recovery phase.
- Respond to any information requests from Suffolk Resilience Forum and Dept. for Transport
- Assess any support or information needed to support the Port's customers and the wider community.
- Record all hours worked, actions taken, with reasons and photograph everything possible – all to support any insurance claims.
- Advise UK Power Networks, LEC and Smalls of any support needed to restore utilities and equipment operation.
- Prepare brief report of what happened for Press Dept. in London.

- Notify the EA (incident response team) if any pollution or contamination of flood waters is known to have occurred e.g. from bulk cargoes, fuels, oils, chemicals or sewage – activate the Pollution incident response plan if necessary and take steps to isolate polluted flood waters where possible.
- Seek further advice from Group departments such as SD, Marine Advisor and Engineering on any areas of concern outside of our immediate experience range.

USEFUL CONTACTS

Type	Company Name	Telephone Number
Floodline	Environment Agency	0845 988 118
Ipswich Incident Room	Environment Agency	01473 2770066
Electricity supplier	UK Power Networks	0800 783 8838
Water supplier	Essex & Suffolk Water	0800 526 337
Telephone provider	Contact through IT Service Desk	01469 567080
Broadband provider	Contact through IT Service Desk	01469 567080
Local authority emergency services	Suffolk JEPU	01473 265321
Insurers 24 hour number	Contact through ABP Ipswich	01473 231 010
Loss Adjusters	Charles Taylor Adjusting	020 3320 8888
Local Radio station for alerts and weather updates	BBC Radio Suffolk 95.5 Mhz BBC Radio Norfolk 95.1 Mhz Beach Radio 103.4 Mhz	
Companies that may be able to help after a flood		
Electricians	LEC Marine	01502 516 971
Plumbers	GYH	01493 857 167
Engineering Services	Smalls Eng.	01502 585 709
Building/Civils	MJB Contractors	01473 461 423
Security Services	Dardan	01603 447000
Water Pumping Services	Waveney Norse	01502 527100
Emergency Power Suppliers	Stuart Power	01953 454 540

APPENDICES

1. MAJOR INCIDENT LOG SHEET
2. STORM TIDE WARNING CHECKLIST SHEET
3. BASCULE BRIDGE PRE - FLOOD PRECAUTIONS
4. LOWESTOFT TIDE STAFF DIAGRAM
5. QUAY HEIGHT DIAGRAM
6. PLANS OF FLOODED AREAS 05/12/2013

Major Incident Log Sheet



Incident: _____

Date : _____

Page No
: _____

Location
: _____

Name of person
maintaining the log:

Time	Request Information	From	Action

DATE		TIME OF H.W.	PREDICTED HEIGHT OF TIDE			m
		PRELIMINARY SITUATION REPORT	FLOOD ALERT	FLOOD WARNING	SEVERE FLOOD WARNING	
Range of warning levels to Chart Datum			3.2 - 3.7m	3.7 - 4.2m	OVER 4.2 METRES	
1	TIME at which FAX or EMAIL message was received from Environment Agency					
2	ESTIMATED LEVEL in metres ABOVE Ordnance Datum					
3	To convert to Chart Datum ADD		1.5m	1.5m	1.5m	
4	ESTIMATED LEVEL in metres ABOVE Chart Datum					

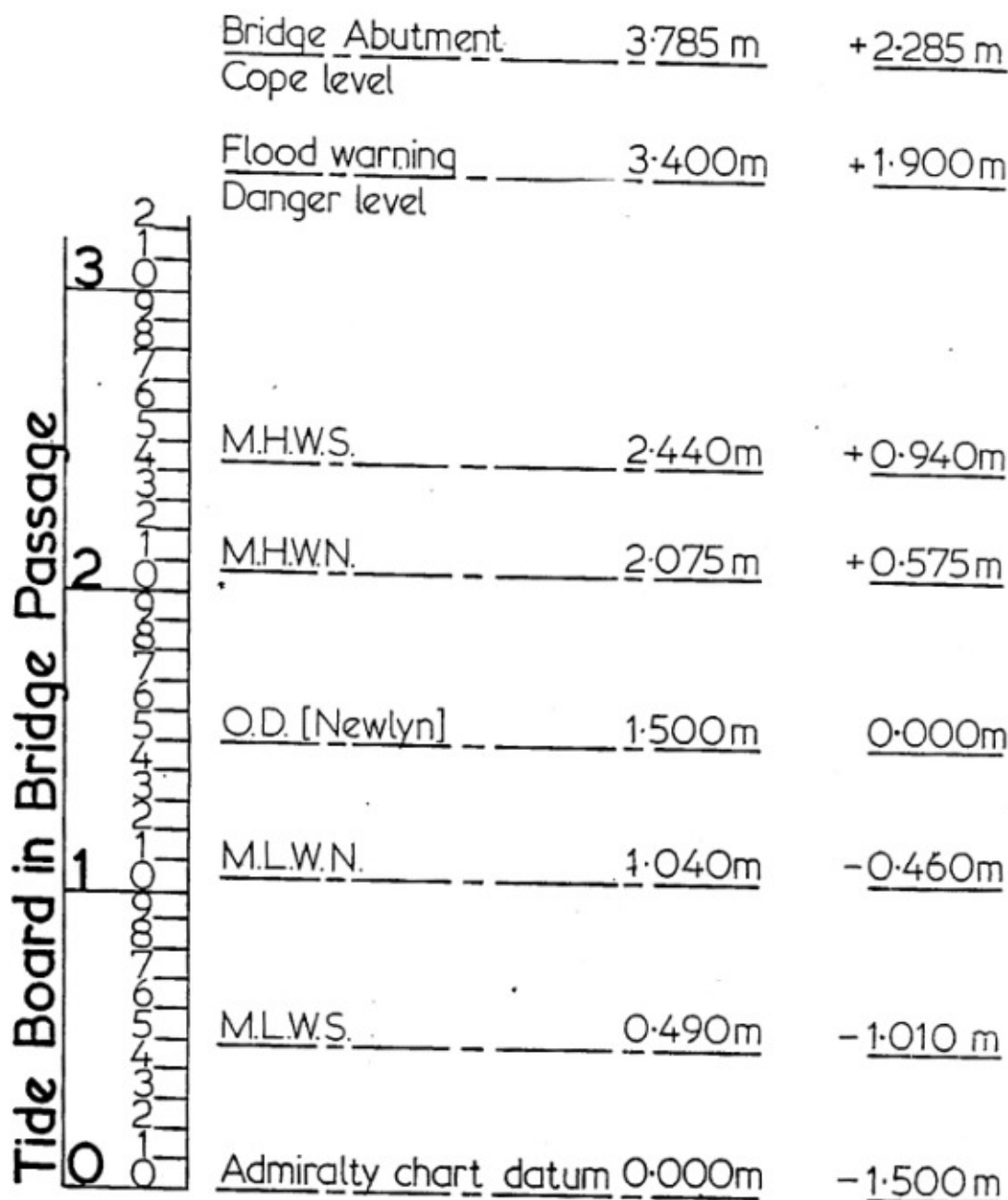
5	TIME ABP SECURITY INFORMED.				
6	TIME DUTY HARBOUR MASTER INFORMED See standing orders.				
7	TIME OGN COMMERCIAL ROAD GATE INFORMED 532097				
8	TIME SLP HAMILTON YARD GATE INFORMED 548000 or 542002				
9	TIME LOWESTOFT CRUISING CLUB INFORMED Stuart Mack 07980 504739 Alan Ramsdon 07749817226 / 531977 John Cooper 511156		Anytime tide expected to reach 3.0m		
10	TIME LOWESTOFT HAVEN MARINA INFORMED Office 580300 Bob Beare - 519703 or 07810 806283		Anytime tide expected to reach 3.2m		
11	TIME LOWESTOFT YACHT SERVICES INFORMED P. Sheader: 07534 036200 & 562685 Yard: 585535 , T.Kingston: 07889 545331		Anytime tide expected to reach 3.2 m		
12	TIME SILO (Dudman's) INFORMED Silo Office: 572622 D Saunders – 07787 088250 or 588632		Anytime tide expected to reach 3.3m		
13	INTERNATIONAL BOATBUILDING TRAINING CENTRE David Savill - 569663 or 07973 911376		Anytime tide expected to reach 3.3m		
14	TIME NQCT INFORMED S Edmonds - 516804/519430 or 07734 072078 R Beare - 516804/519703 or 07810 806283		Anytime tide expected to reach 3.4m		
15	TIME SMALL& CO (M&E) LTD INFORMED P Harper - 515662 or 07799 662820 P Kirby - 531582 or 07799 662821 Tony Belsey - 07799 662822		Anytime tide expected to reach 3.4m		
16	TIME BRANDT INFORMED Duty Supervisor 581119 (8-4.30) Sadie Long 07786 544121 or Ivan Mingay 07734874742		Anytiime tide expected to reach 3.4m		
17	TIME GGOWL INFORMED Ops Room 524001 / 524002 Darrell Moore, 07500 912869 Steve Hodger 524021		Anytime tide expected to reach 3.7 m		
18	TIME RNMSDF INFORMED Tim Jenkins 07963 478895		Anytime tide expected to reach 3.7 m		
19	TIME WINDCATS INFORMED Richard Clark - 07789 331641		Anytime tide expected to reach 3.7m		

BASCULE BRIDGE PRE- FLOOD PRECAUTIONS

- Duty Bridge Engineer advised of potential flood as per Bridge Control Storm Tide Warning Sheet
- Two engineers will be required on site one hour before flood level reaches 3.7mts – the level at which water ingress can occur,
- Ensure South Annex Watertight Door is secure, (Can be carried out in advance)
- Ensure South Annex drain flap in South Abutment is closed and secured. (Can be carried out in advance)
- **AT THIS POINT THE ABUTMENT CHAMBERS ARE CLASSED AS A CONFINED SPACE.**
- Engineers to monitor situation regarding water ingress, if ingress becomes too great for the Salvage Pumps to cope, then Electrical power should be isolated, (Separate Isolation Plan to Follow)
- When flood levels recede power can be restored and Abutment chambers pumped out.
- Depending on the level of severity of flooding further engineering and /or cleaning works may be required.
- Undertake test lift/lifts as necessary to prove equipment and controls
- Report status update to Harbour Master, Highways Agency.

Levels related
to Admiralty
Chart Datum.

Levels
related to
O.D. Newlyn



Relationship between levels on Bridge Passage Tide Board/Admiralty Chart Datum and O.D. Newlyn at Lowestoft.	Drawn	ET
	Approved	
	Date	3.11.83
ASSOCIATED BRITISH PORTS - LOWESTOFT		Drg. No. 83/LT/166

