

KENT FLOOD RISK MANAGEMENT COMMITTEE

Monday, 13th November, 2017

2.00 pm

Council Chamber, Sessions House, County Hall,
Maidstone





AGENDA

KENT FLOOD RISK MANAGEMENT COMMITTEE

Monday, 13th November, 2017, at 2.00 pm Ask for: **Andrew Tait**
Council Chamber, Sessions House, County Hall, Maidstone Telephone **03000 416749**

Tea/Coffee will be available 15 before the start of the meeting in the meeting room

Membership (7)

Conservative (6): Mr A R Hills (Chairman), Mrs C Bell, Mr A H T Bowles,
Mrs S Prendergast, Mr K Pugh and Vacancy

Liberal Democrat (1) Mr I S Chittenden

UNRESTRICTED ITEMS

(During these items the meeting is likely to be open to the public)

Webcasting Notice

Please note: this meeting may be filmed for live or subsequent broadcast via the Council's internet site – at the start of the meeting the Chairman will confirm if all or part of the meeting is being filmed.

By entering the meeting room you are consenting to being filmed and to the possible use of those images and sound recordings for webcasting and/or training purposes. If you do not wish to have your image captured then you should make the Clerk of the meeting aware.

1. Substitutes
2. Declarations of Members' Interest relating to items on today's agenda
3. Minutes of the meeting on 17 July 2017 (Pages 5 - 12)

4. Medway Estuary and Swale Shoreline Management Strategy - Presentation by John Byne, Environment Agency (Pages 13 - 40)
5. Recent Kent Resilience Forum activities - Presentation by Stephen Scully (Senior Resilience Officer at Kent Resilience Team) (Pages 41 - 48)
6. Environment Agency and Met Office Alerts and Warnings and KCC Flood Response activity since the last meeting (Pages 49 - 52)
7. Dates of meetings in 2018
Monday, 5 March 2018
Monday, 16 July 2017
Monday, 12 November 2017
8. Other items which the Chairman decides are Urgent

EXEMPT ITEMS

(At the time of preparing the agenda there were no exempt items. During any such items which may arise the meeting is likely NOT to be open to the public)

John Lynch
Head of Democratic Services
03000 410466

Friday, 3 November 2017

This page is intentionally left blank

KENT COUNTY COUNCIL

KENT FLOOD RISK MANAGEMENT COMMITTEE

MINUTES of a meeting of the Kent Flood Risk Management Committee held in the Council Chamber, Sessions House, County Hall, Maidstone on Monday, 17 July 2017.

PRESENT: Mr A R Hills (Chairman), Mr A H T Bowles, Mr K Gregory, Mr S J G Koowaree (Substitute for Mr I S Chittenden), Mr M D Payne, Mr K Pugh, Cllr Ms R Doyle (Canterbury CC), Mr J Scholey (Sevenoaks DC), Mr L Laws, Mr G Lewin (Swale BC), Mr H Rogers (Tonbridge and Malling BC) and Ms G Brown (KALC)

ALSO PRESENT: Mr M A C Balfour

IN ATTENDANCE: Mr M Tant (Flood Risk Manager), Mr T Harwood (Resilience and Emergencies Manager) and Mr A Tait (Democratic Services Officer)

UNRESTRICTED ITEMS

8. Membership and Terms of Reference
(Item 1)

The Committee noted its Terms of Reference and membership.

9. Minutes of the meeting on 6 March 2017 and 25 May 2017
(Item 4)

(1) Mr Harwood informed the meeting in respect of Minute (3) that a recent permission granted by Maidstone BC for an economic development application had delivered 25 acres of new flood plain woodland within the corridor of the River Beult as part of a section 106 developer contribution. This demonstrated that there were means of delivering rewilding for flood mitigation, landscape and biodiversity other than direct capital funding.

(2) RESOLVED that the Minutes of the meetings held on 6 March 2017 and 25 May 2017 are correctly recorded and that they be signed by the Chairman.

10. Introduction to the work of the Committee
(Item 5)

(1) Mr Tant introduced the report by saying that it was appropriate at the start of the new Council to bring forward suggested topics for future consideration. He referred to paragraph 6 of the report and said that, although Sustainable drainage systems (SuDS) were a very important topic, there had been no significant change

since the previous occasion when it had been discussed. In his view, it would be better to consider a report when once a change either occurred or was proposed.

(2) Mr Bowles commented that the first 5 topics in paragraph 6 of the report were all very important. He made particular reference to “the role and structure of the Environment Agency.”

(3) Mr Pugh said he was particularly keen to consider a report on coastal erosion risk and management.

(4) Mrs Brown said that it was very important to have a firm understanding of the role and structure of the Environment Agency as their work was crucial whenever flooding took place. For this reason, the Committee should aim to monitor this question on a regular basis rather than rely on very occasional reports.

(5) Mrs Doyle commented that reports on the role of the Internal Drainage Boards would encourage them to play a full part in the wider work of the Committee.

(6) Mr Tant explained that the Environment Agency de-maining project Kent pilot related to their identification of a number of hitherto main rivers as posing a low level of risk. They had therefore identified 5 pilot areas in England (including Kent) where they were planning to “de-main” some main rivers in order to return them to the status of ordinary watercourses, allowing them to be maintained by other authorities such as IDBs. One of the pilot areas was within the River Stour IDB, which was expected to finish in the Autumn. A report to one of the next two Committee meetings would be appropriate. Mr Tant clarified that this did not apply to the River Stour itself, which would retain its main river status.

(7) Mr Harwood informed the Committee that the Environment Agency had recently named Duncan McLintock as their Liaison Officer with Kent County Council for resilience and emergency planning matters.

(8) Mr Harwood then said that tidal flooding was identified in Kent’s Emergency Planning local risk register as the top risk in the light of the county’s 326 miles of coastline and 369 square miles of land located within the tidal flood plain. This risk had been the theme of the previous year’s *Exercise Surge*, whose lessons and resultant changes to practice would be reported to the Committee in due course.

(9) Mr Lewin referred to Minute (4) (12) from the previous meeting of the Committee and asked for the topic of the Thames Barrier and also the Medway Estuary and Swale Strategy to be born in mind during agenda planning.

(10) Mr Pugh said that the last flooding surge had been very close indeed to flooding Lower Halstow. Mr Harwood confirmed that on 6 December 2013 there had been inundation of some coastal areas in the Faversham and Isle of Sheppey localities. This had been caused by the coincidence of the high tide and the heavy amounts of water being pushed down the North Sea by a storm event. If these two events had been more closely aligned, the consequences would have been even more serious than had been the case. Emergency Plans had to be constantly updated in the light of lessons learned from this and similar events.

- (11) RESOLVED that the report be noted and that the comments made by Members of the Committee in response to its suggested future activities be taken into account during agenda planning.

11. Local Flood Risk Management Strategy
(Item 6)

(1) Mr Tant introduced the report. He explained that KCC was designated as the Lead Local Flood Authority for Kent. This meant that it was the Lead for *local flooding* as opposed to being the Lead for all flooding locally. One of KCC's duties was to prepare the Local Flood Risk Management Strategy in order to set out how local flooding from surface water, groundwater and ordinary watercourses would be managed.

(2) Mr Tant said that the original Local Flood Risk management Strategy for Kent had been published in 2013. This document was to have a relatively short time frame, acknowledging the fact that the role of Lead Local Flood Authority was new to KCC at the time. The time was now right to develop a more medium term Strategy.

(3) Mr Tant continued by saying that the new Local Strategy in its draft form was differed from its predecessor in terms of its brevity. The first local Strategy had set out the work that would be undertaken to build an understanding of the risk of local flooding in the county. This information was now contained in the *Flood Risk to Communities* documents which covered all the Districts in Kent. All of these were now complete with the exception of Dartford and Gravesham. As a consequence, there was no further need to include it in the Local Strategy. Some of the policy issues had also been removed.

(4) Mr Tant said that the draft Local Strategy document contained a short overview of the flood risks in Kent, information on progress and developments since the publication of the first Local Strategy and an assessment of the challenges which remained, leading to objectives and actions to enable continued delivery of flood risk management in the county together with a description of funding. The Appendices set out the Works Programme and a risk assessment based on the preliminary flood risk assessment.

(5) Mr Tant concluded his introduction by referring to the colour map which he said was an example of the methodology of the Strategy which aimed to present its information in as brief and accessible a manner as possible.

(6) Mr Gregory commented that the different definitions of flooding sources set out in the map, coupled with the responsible Authority illustrated the potential risk of responsibility for an event not being taken up at all. He gave as an example the definitions of *Coastal Flooding* (Environment Agency) and *Main Rivers* (Environment Agency) and *Watercourses* (KCC and IDBs) In Thanet, the flood risk posed by the River Stour arose from tidal influence not letting the water flow rather than the quantity of water flowing in the river itself.

(7) Mr Harwood acknowledged that there could be some confusion over lead responsibilities in relation to different kinds of flood risk, but asked the Committee to bear in mind that flood response activity was always multi-agency. The immediate

response would involve the various rescue services and other partners, whilst the matter of lead responsibilities was addressed through the Kent Resilience Forum (KRF) which enabled all the Category 1 and Category 2 responders to work together under clear and well-defined leadership. The Command and Control element of the KRF was specifically designed to overcome any confusion which might arise. Overall control at the response stage would come from the Gold Commander (Kent Police) who would hand over to KCC for wide area events or the affected District (for local events) when the recovery phase began.

(8) Mr Scholey referred to paragraph 5.6 of the draft Strategy Document (SuDS adoption and maintenance). He said that in Sevenoaks a recent planning decision had aimed to introduce a SuDS scheme, expressing that the water companies would hopefully adopt them. This was extremely unlikely. He asked who would ensure that the system was properly maintained. A condition had been included and that the developer had set up a maintenance company to carry it out. He asked whose responsibility it was to ensure that the job was properly done. The risk was not to the nearby properties, but rather to those properties downstream.

(9) Mr Tant replied that according to the DCLG it was the role of the Planning Authority to both apply such conditions and to make sure that they were delivered. He added that the water companies would not adopt the most beneficial SuDS but that there were parts of SuDS that they would adopt. KCC's position was that it would prefer to see a more robust system in operation and that it was SuDS itself, by for example monitoring the implementation of an aspect of a scheme over a ten year period to ensure that it was delivered according to the agreed development plan.

(10) In response to a question from Mr Pugh, Mr Tant said that KCC had been obliged under the Flood Risk Regulations to carry out a Preliminary Flood Risk Assessment as part of the Strategy in order to identify *Areas of Significant Flood Risk*. Any such areas then had to be mapped and modelled in response, together with an action plan to manage the risk. The criteria for identification of Areas of Significant Flood Risk were set jointly by the Environment Agency and DEFRA. Six such areas had been identified by the Environment Agency in Kent. KCC disagreed with these assessments because it was considered that, even though they did carry a level of risk, these were not "significant" (as defined by the Government) on a national scale. The difference between KCC and the Environment Agency was that KCC had access to more local information and data, whereas the Environment Agency had undertaken an assessment on nationally available data. Many of the areas identified by the Environment Agency had measures planned.

(11) Mr Pugh then said that the growth in housing in Kent would see a significant increase in the risk of sewer flooding if there was insufficient capacity to cater for these developments.

(12) Mr Tant said that combined sewer networks had been identified as a Challenge in Section 5 of the Strategy. He was keen to work closely with Southern Water in respect of flooding as well as the facilitation of growth. Closer working with other Local Authorities was also necessary when planning new developments by taking into account water infrastructure. He added that this would also have implications in terms of water supply. There was a clear link between surface water flooding and sewage capacity. Southern Water had prepared a Drainage Strategy which covered North East Kent (Deal and Thanet) which assessed the issues they

faced up to 2040. These included climate change, development and asset deterioration. They found that in some towns in the area they could only accommodate some 40% of the proposed development with the current infrastructure. Additional work resulting from this Assessment could include surface water separation and implementation of sustainable drainage (including retro-fitting). It might also entail development being phased by planning authorities in order to enable Southern Water to improve its water infrastructure.

(13) Mr Rogers returned to the theme of SuDS. He said that Kent would be seeing the construction of 7 to 8,000 houses each year. He considered that the importance of SuDS had been understated in the Strategy and that there were currently too many opportunities for the water companies, planning authorities and developers to avoid the need to take responsibility for sustainable drainage. He suggested that message of the final sentence of paragraph 5.6 in the draft Strategy should be more aspirational than was conveyed by the phrase “we hope to identify any opportunities to improve the uptake of full SuDS and promote the benefits.”

(14) Mr Gregory noted that the Southern Water Drainage Strategy covered the period up to 2040 whereas District Authorities’ Local Plans went up to 2031. He suggested that these documents should all cover the same period.

(15) Mr Tant said that different bodies had different statutory timeframes to work to. The water companies worked to “Asset Management Periods” of 5 years. They would not be entitled to vary this.

(16) Mr Laws said that it was extremely rare for water companies to object to a proposal on water infrastructure grounds. He expressed the hope that the planning authorities would be forceful whenever the water companies offered to provide a sustainable drainage scheme but failed to deliver.

(17) Mrs Doyle said that her experience on Canterbury CC’s Planning Committee had been that Southern Water had often demanded increased sewer capacity which the developers had been obliged by condition to install.

(18) Mr Tant explained that water companies were not allowed to object to planning applications. They had to provide sewage whenever an application for development was permitted because there was an automatic right to connect to sewers. They were allowed to say that there was no capacity locally and therefore insist that the developers should provide it. If it became clear that the lack of capacity was systemic, it was the Sewerage Undertaker rather than the developer who had to fund the necessary improvements.

(19) RESOLVED that the report and accompanying draft Local Flood Risk Management Strategy be noted together with the comments made by Members of the Committee.

**12. Environment Agency and Met Office Alerts and Warnings and KCC
Flood response activity since the last meeting
(Item 7)**

(1) Mr Harwood said that since publication of the report, the number of yellow Met Office severe weather alerts since the previous meeting had increased from 6 to 8 (7 for heavy rain and 1 for high winds). In most cases, the heavy rain forecast had not materialised in Kent.

(2) Mr Harwood continued by saying that since the winter months, it had been exceptionally dry. This was reflected in the relatively small number of flood alerts issued by the Environment Agency. There had been 32 between March and July in 2016 but only 5 for the corresponding period in 2017. This had consisted of one coastal flood alert arising from a spring tide and four in areas which were known as “rapid response catchments” where surface water could be an issue (Pent Stream, Folkestone and Rivers Shuttle and Cray on the Dartford border with LB Bexley).

(3) Mr Harwood then said that the lengthy dry period had led to the Kent Resilience Forum updating their Drought Plan which was currently out for consultation with stakeholders, including KCC.

(4) Mr Bowles commented that heavy rainfall was now becoming a far more localised event than had ever previously been the case.

(5) Mr Gregory asked whether “Yellow Alerts” were being reviewed for their accuracy. Mr Harwood replied by saying that weather forecasting was not an exact science. A Yellow Alert would always be issued when heavy rainfall was forecast to fall in or near to Kent. Yellow Alerts were also issued in response to highly localised events. The North Downs often constituted a barrier for weather pattern with rain falling on one side whilst the other side remained dry. Nevertheless, it was very important not to issue warnings on too many occasions for events that did not materialise. There was a particular risk in respect of flood alerts that people would not react when they received a warning of a serious event. This risk was being mitigated as far as was possible in the circumstances described by regular discussions with the met Office and Environment Agency.

(6) Mr Payne said that Southern Water were saying that Kent was at a stage of imminent drought but that there would not be a drought unless another dry winter occurred. He was concerned that the water companies had not put any customer restrictions in place. If concern were to be voiced now by the water companies about an imminent drought, people would be better prepared in the event that a drought did occur the following year.

(7) Mr Tant informed the Committee that because of the groundwater conditions in Kent, it would require two consecutive dry winters before it experienced a drought. It was therefore likely that any work on preparation for a drought would not commence until the middle of winter, when the winter rainfall effect on water resources would be understood.

(8) Mrs Brown said that long periods of dry weather tended to bring about a sense of public complacency in relation to flood risk. She suggested that KCC could produce a public document in response to the dry weather and drought whilst reminding everyone not to forget the danger of flooding. She also drew attention to people’s reactions to receiving a flood warning very early in the morning only for nothing significant to materialise. This would result in people losing interest, even though the Parish Councils would attempt to maintain preparedness.

(9) The Chairman commented that as development increased, there would be a growing risk of both drought and flooding. Water management was therefore taking on ever increasing importance both for waste and fresh water. He agreed to raise Mrs Brown's suggestion for a publicity document with the Environment Agency.

(10) Mrs Doyle gave an example of the oscillation between drought and flooding by explaining that when she had first been elected to serve on Canterbury CC she had been told that the River Nailbourne would never flow again because it was so dry. A few years later it had flooded severely.

(11) Mrs Doyle then asked whether the creation of reservoirs for water storage was a matter which the Environment Agency could instruct the water companies to undertake.

(12) Mr Tant replied that the Water Companies would need to identify the need for a reservoir in their Water Resources Plan, which was updated every five years and looked at the resources that would be needed in the next 25 years.

(13) Mr Tant said that water was now used far more efficiently than had been the case thirty years earlier. This was evidenced by the fact that less water was now used in Kent even though its population had increased considerably.

(14) Mr Harwood described the water cycle in Kent as "intimately linked." He said that the rivers relied on groundwater for their headwaters and flow. Whenever the chalk aquifers were denuded of water resource the river flows became much lower so that water could not be extracted to fill the reservoirs. At Bewl Reservoir the question was how to get the river flows high enough to enable water extraction without causing an environmental impact on the dilution of sewage and dissolved oxygen levels in local rivers needed to maintain aquatic wildlife.

(15) Mr Harwood then said that it could not be known whether there would be a drought in 2018 until the level of winter rainfall had been calculated. Summer rain would not be effective in this regard due to evapotranspiration by vegetation. It was essential for steady winter rain to fall in order to replenish the groundwater. Meanwhile, the message that should be given to the public was that water should be used responsibly and conserved.

(16) RESOLVED that the current water resources situation be noted together with the level of alerts and warnings received since the last meeting of the Committee and with the contributions made by Members during the meeting.

13. Kent Resilience Forum Pan Kent Flood Group
(Item 8)

(1) Mr Harwood reported on current activity undertaken by the KRF Pan Kent Flood Group. He referred to the debrief report given to the Committee on the responses to the very serious flooding events of 2013/14. One of the key recommendations had been that partners needed to work more routinely together on flood planning. The Pan Kent Flood Group had consequently been created in 2015. It consisted of professional responders drawn from the Environment Agency, the Fire

Service, Local Authorities and others, meeting on a regular basis, usually quarterly but more often if urgent work needed to be completed. The Group was chaired by Luke Thompson from the Environment Agency. Mr Harwood himself was the Vice-Chair.

(2) Mr Harwood then said that much of the Pan Kent Flood Group's work programme had arisen out of discussions at this Committee. An example of this was the issue of community road closures during flooding events where the Committee had discussed the fact that road closures were often ignored, leading to danger and damage from bow wave impact in places such as Barham, Collier Street and Eynsford. The key theme of East Kent surge preparedness had also arisen in response to discussions by the Committee.

(3) Mr Harwood replied to a question from Mr Gregory by saying that Minutes were not circulated publicly but that the Group was aware of the need to ensure that all of its business that was not exempt could be made available to the public through Freedom of Information requests. He suggested that the best way to ensure that the Committee was kept up-to-date on the Group's progress was for him to report regularly to the Committee on the Group's work and activity. Although some of this activity was very technical, there was much that was of wider public interest. The work undertaken on off-site reservoir inundation planning would be a particularly clear example of such matters.

(4) RESOLVED that:-

- (a) the work programme for the Kent Resilience Forum Pan Kent Flood Group be noted; and
- (b) a report giving and update on the Pan Kent Flood Group's work be submitted to each future meeting of the Committee.

14. Future Visits
(Item)

The Committee considered the possibility of inspecting the Environment Agency's emergency equipment at its Scots Float Office in Rye, with the possibility of holding a future Committee meeting there on the same day.

To: Kent Flood Risk Management Committee
From: Max Tant, Flood and Water Manager, Kent County Council
Subject: Medway Estuary and Swale Strategy
Classification: Unrestricted

- 1 The Medway Estuary and Swale Shoreline Management Plan was published in 2008. It sets out the policy for managing the shoreline of the Medway Estuary and Swale from the risk of flooding and coastal erosion up to 2100. The Medway Estuary and Swale Shoreline Management Plan can be found here: <http://www.se-coastalgroup.org.uk/medway-estuary-and-swale-2008/>
 - 2 The shoreline is divided into units and a policy is applied to each according to the risks and benefits of the standard of protection and other considerations. The policies can be:
 - Hold the Line – By maintaining or changing the standard of protection;
 - Advance the Line – By building new defences on the seaward side of the original defences;
 - Managed Realignment – By allowing the shoreline to move backwards and forwards with management to control or limit movement;
 - No Active Intervention – Where there is no investment in coastal defences or operations.
- More information about Shoreline Management Plans can be found here: <http://www.se-coastalgroup.org.uk/what-is-a-smp/>
- 3 Shoreline management plans are followed by Shoreline Management Strategies that set out how the policies identified in the plans will be implemented. They are also an opportunity to review the original plan policies.
 - 4 The Environment Agency have recently been developing the Medway Estuary and Swale Strategy, which they will be consulting on soon.
 - 5 Someone from the Environment Agency will present to the committee on the Medway Estuary and Swale Strategy.

Contact Officer: Max Tant, Flood and Water Manager, 03000 413466
max.tant@kent.gov.uk

This page is intentionally left blank

Medway Estuary and Swale Flood and Coastal Risk Strategy



Presentation to Kent
County Council
13 November 2017

Meeting Aims

- To provide an understanding of what the Medway Estuary and Swale Strategy is
- Explain progress of the Strategy, and the next steps
- Present the preferred options and describe the public consultation process
- Answer any questions about the Strategy and preferred options you might have

The MEASS area



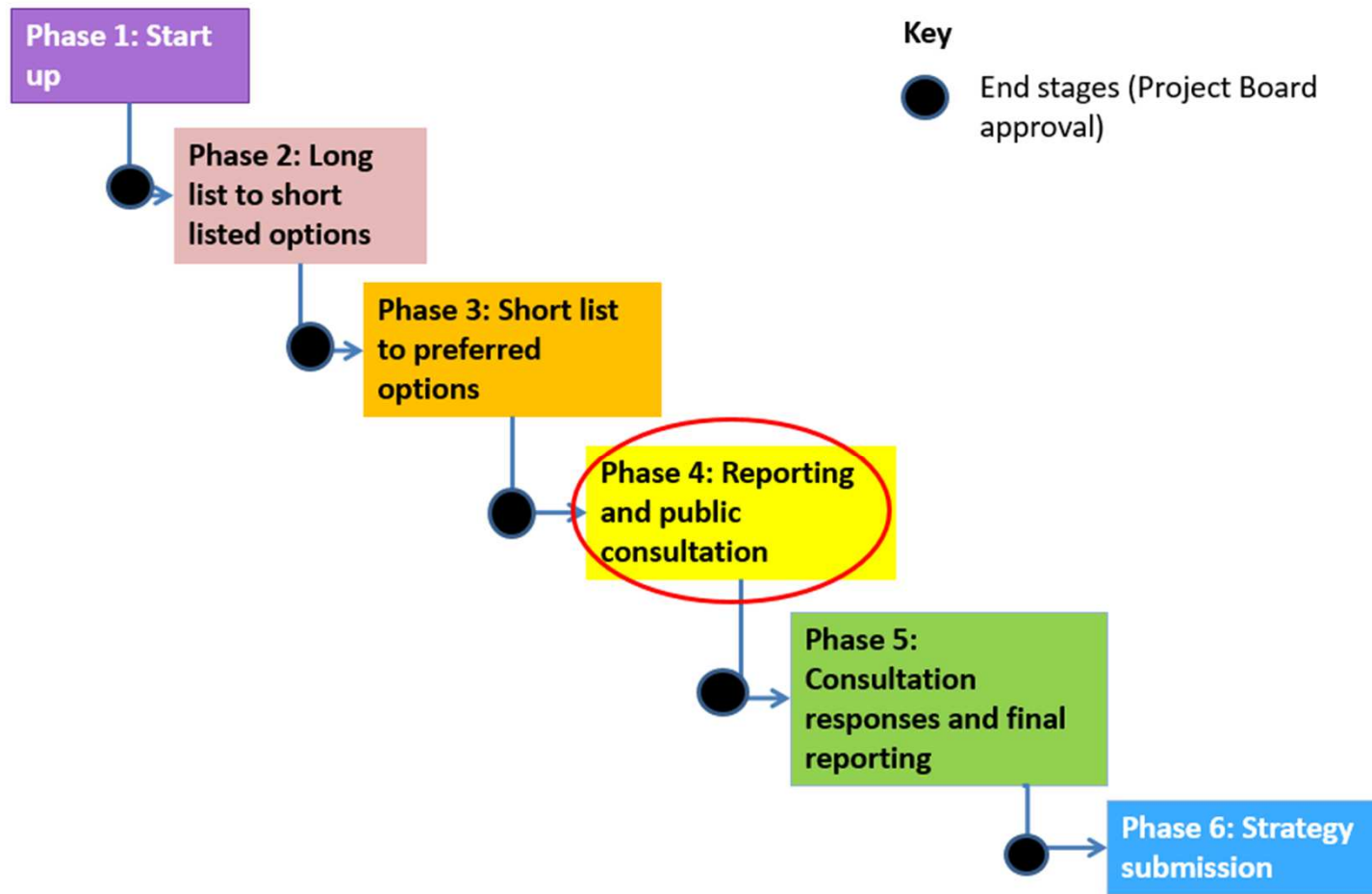
*** The frontage outlined in purple are the areas that have been reviewed as part of MEASS**

Contains OS data © Crown Copyright and database right 2017

Tiers of Coastal Defence Planning



Strategy Phases



Developing the preferred options

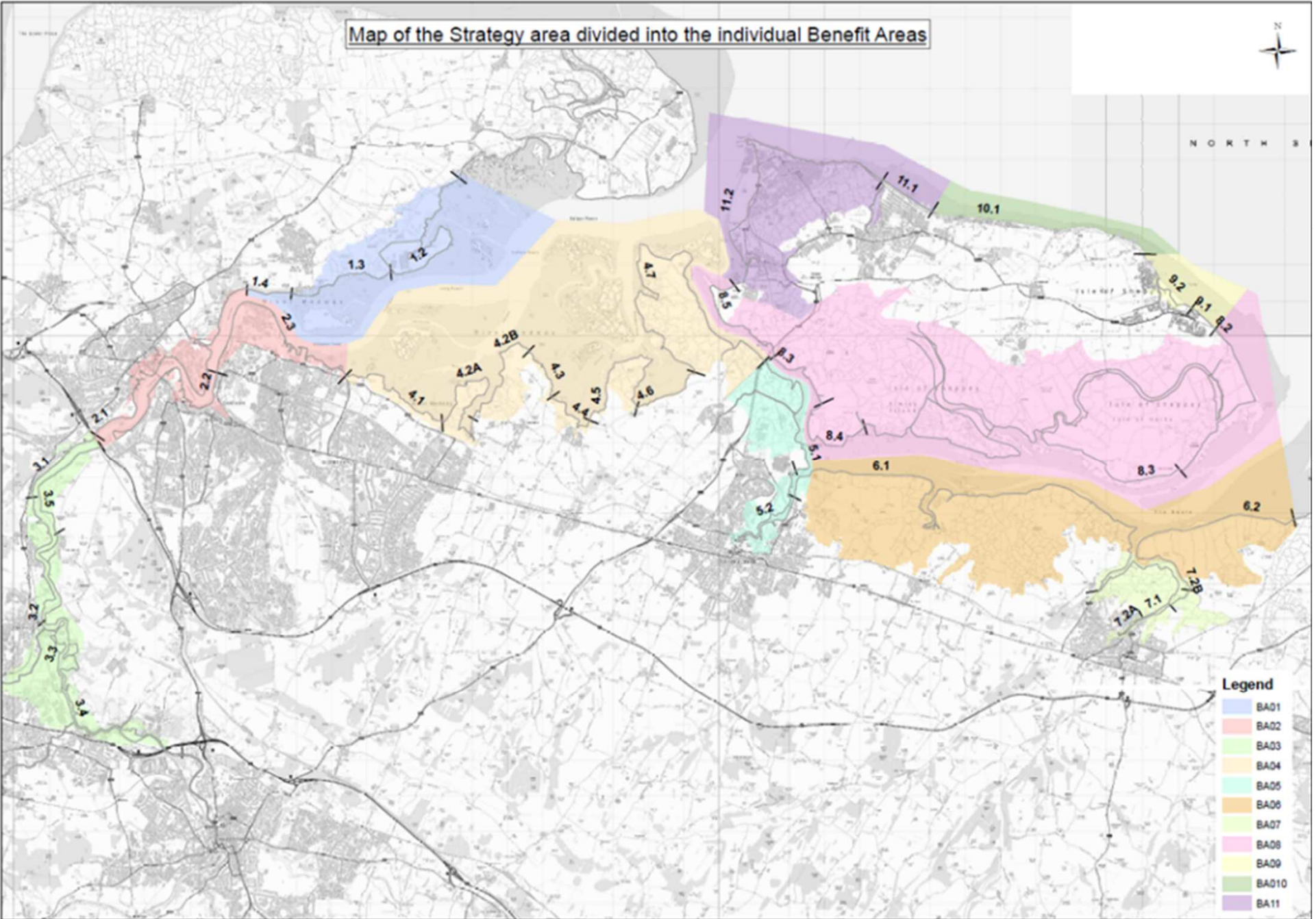
Criteria:

- reduce the threat to people and their property
- deliver the greatest environmental, social and economic benefit
- work with natural processes
- adapt to future risk and changes (e.g. climate change)
- sustainability

Stages of Option Development

- Task 1: Define long list of options
- Task 2: Screen long list to create short list of options
- Task 3: Evaluate the short list
- Task 4: Select the preferred option

Map of the Strategy area divided into the individual Benefit Areas



Preferred options

- **Hold the line** – maintaining or improving existing defences in their current position
- **No active intervention** – ceasing maintenance of defences and allowing natural processes to take place
- **Managed realignment** – creating set back defences inland of their current position

Current project tasks

Stakeholder Engagement

- SEG
- Landowners
- Public
- Statutory (on SEA and HRA)
- Stakeholder Report summarising results (Project Board Sign Off at end of Phase 4)

SEA and HRA

- Reporting
- WFD by EA team
- Internal Team Review
- Statutory Stakeholder Review

Draft Appraisal Reporting

- Options technical report
- Economic report
- Final ASTs
- StAR
- Implementation Plan
- Other Strategy Appendices

Public Consultation

- Now live until 5 February 2018
- Maps and documents available to review online
- Public drop in sessions:
 - 30 November – Eastchurch Village Hall. 3 – 7pm
 - 6 December – Riverside Country Park, Gillingham. 3 – 7pm
 - 12 December – Halling Community Centre. 3:30 – 7:30pm

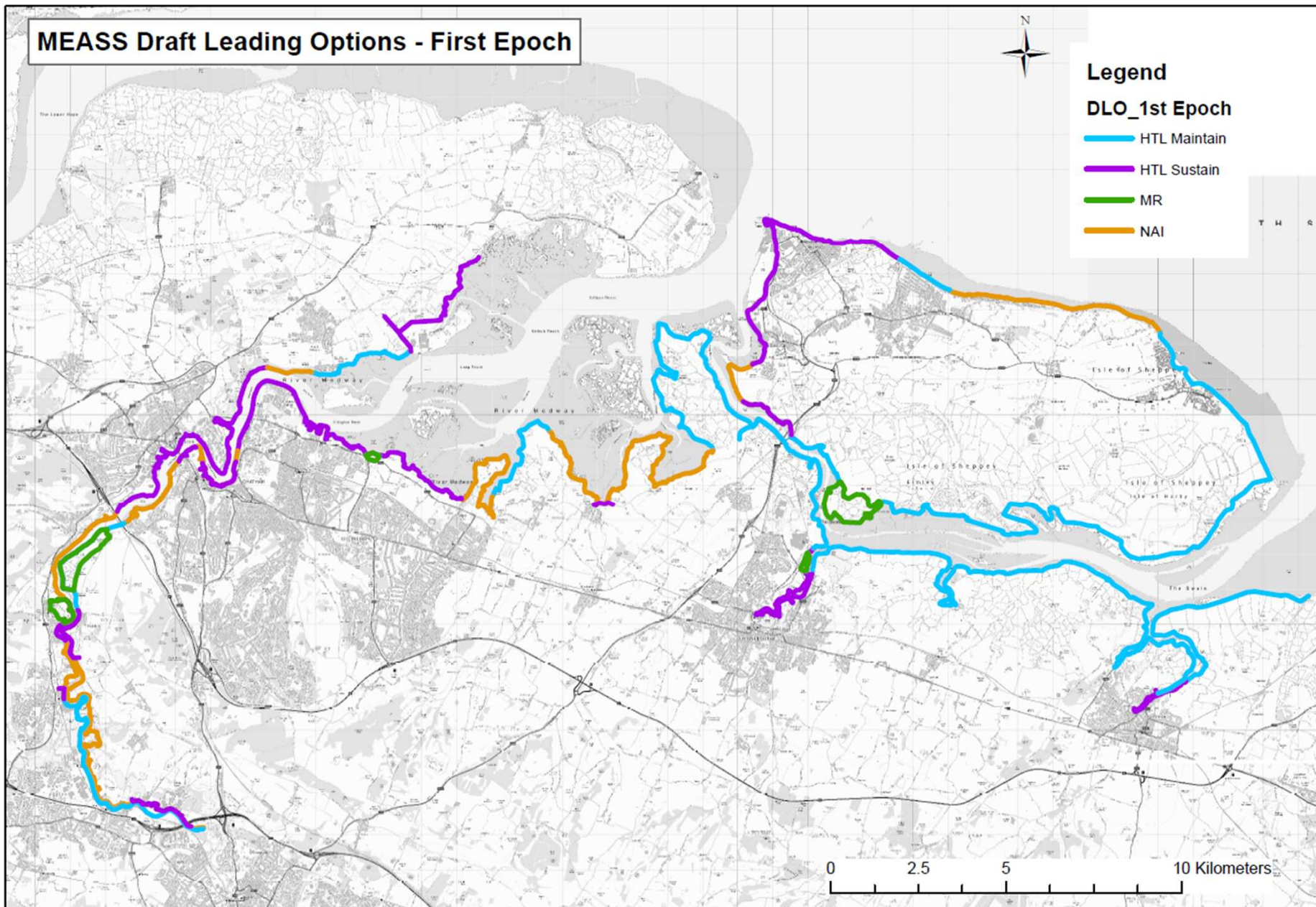
MEASS Draft Leading Options - First Epoch



Legend

DLO_1st Epoch

- HTL Maintain (Blue line)
- HTL Sustain (Purple line)
- MR (Green line)
- NAI (Orange line)



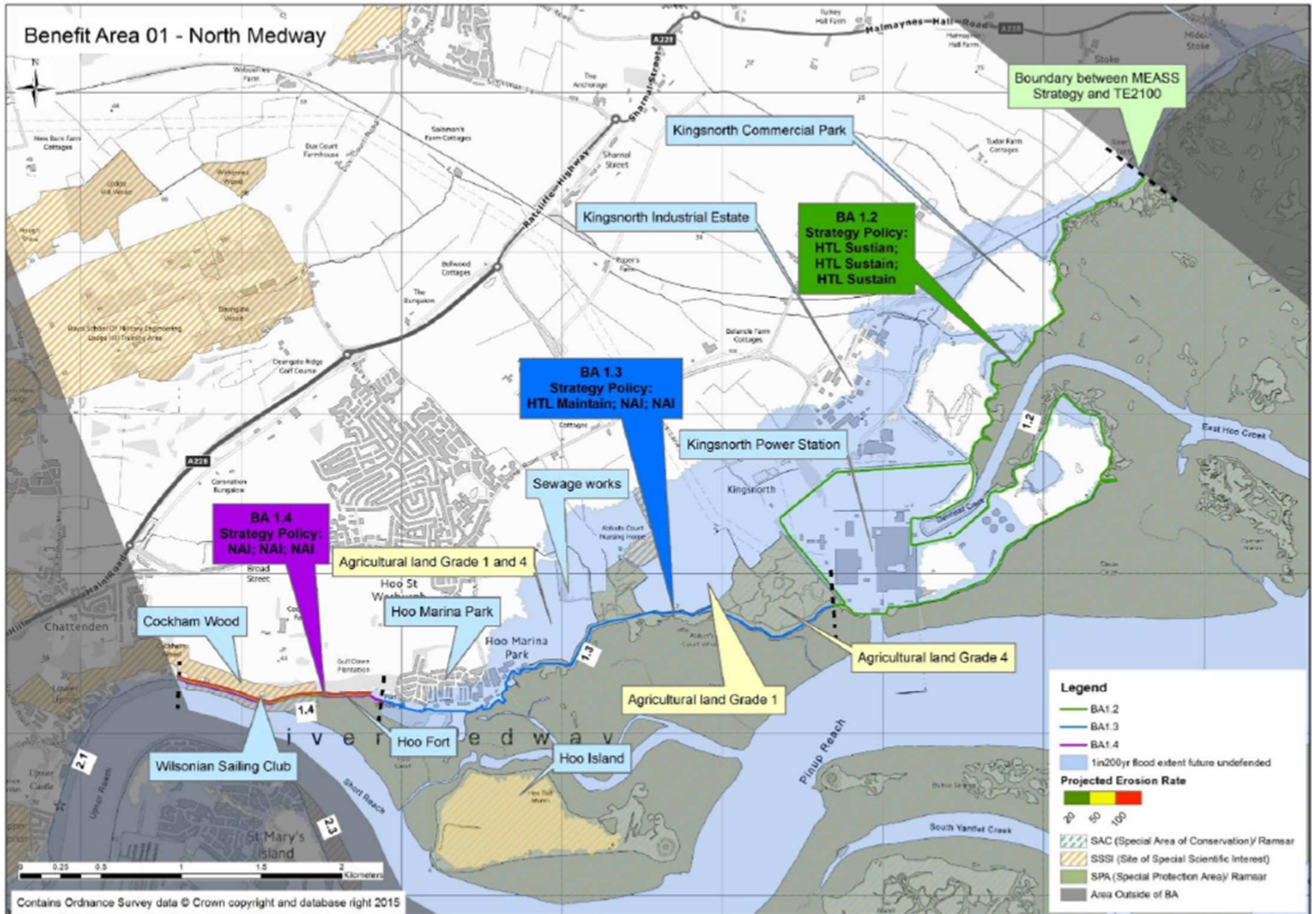
Page 26

Thank you

Further questions or comments, please don't hesitate to contact
Jon Byne

Email MEASS@environment-agency.gov.uk

Phone 03708 506 506



Benefit Area 01 - North Medway

Boundary between MEASS Strategy and TE2100

Kingsnorth Commercial Park

Kingsnorth Industrial Estate

BA 1.2 Strategy Policy: HTL Sustain; HTL Sustain; HTL Sustain

BA 1.3 Strategy Policy: HTL Maintain; NAI; NAI

Kingsnorth Power Station

Sewage works

Agricultural land Grade 1 and 4

BA 1.4 Strategy Policy: NAI; NAI; NAI

Cockham Wood

Hoo Marina Park

Agricultural land Grade 1

Agricultural land Grade 4

Wilsonian Sailing Club

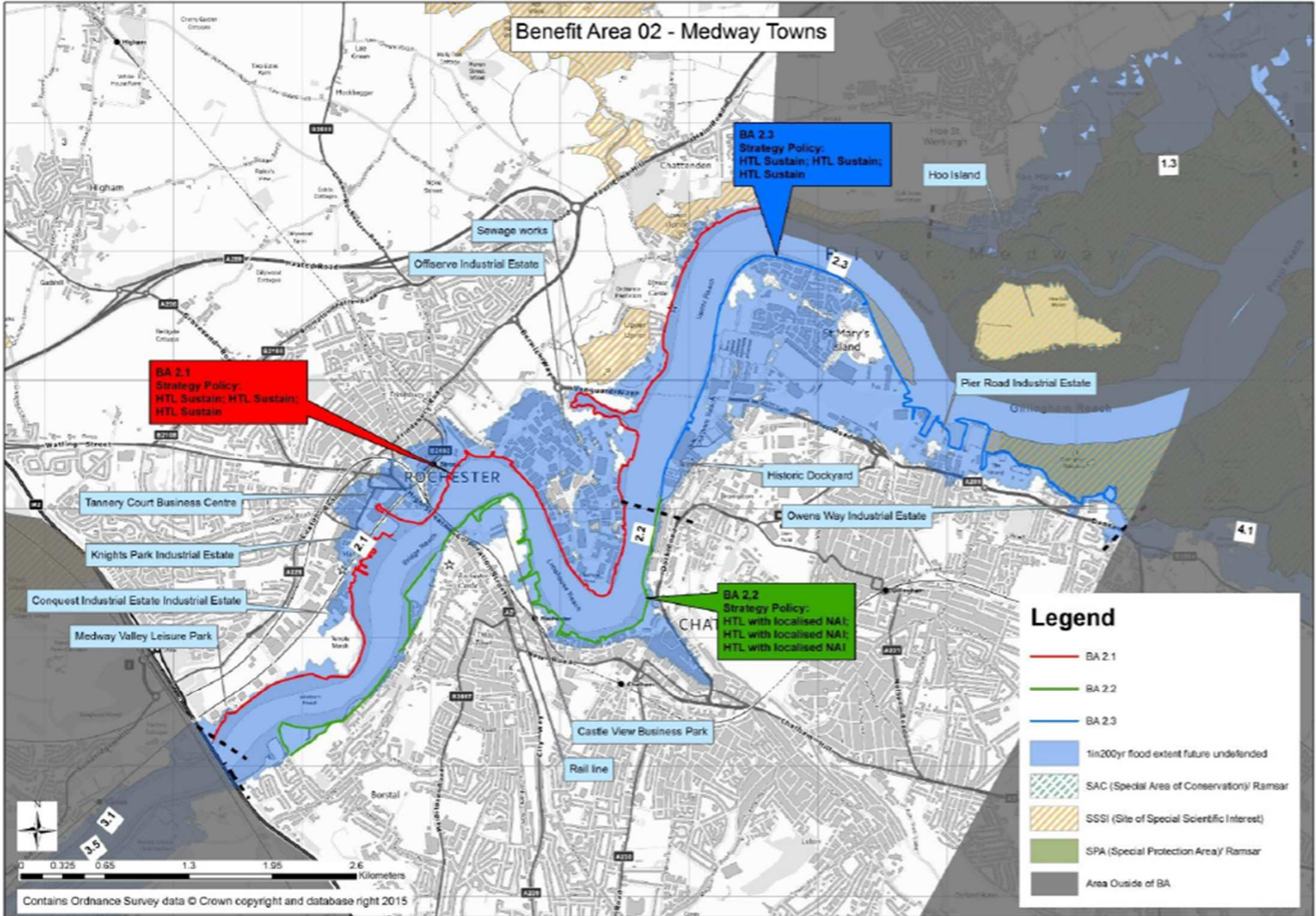
Hoo Fort

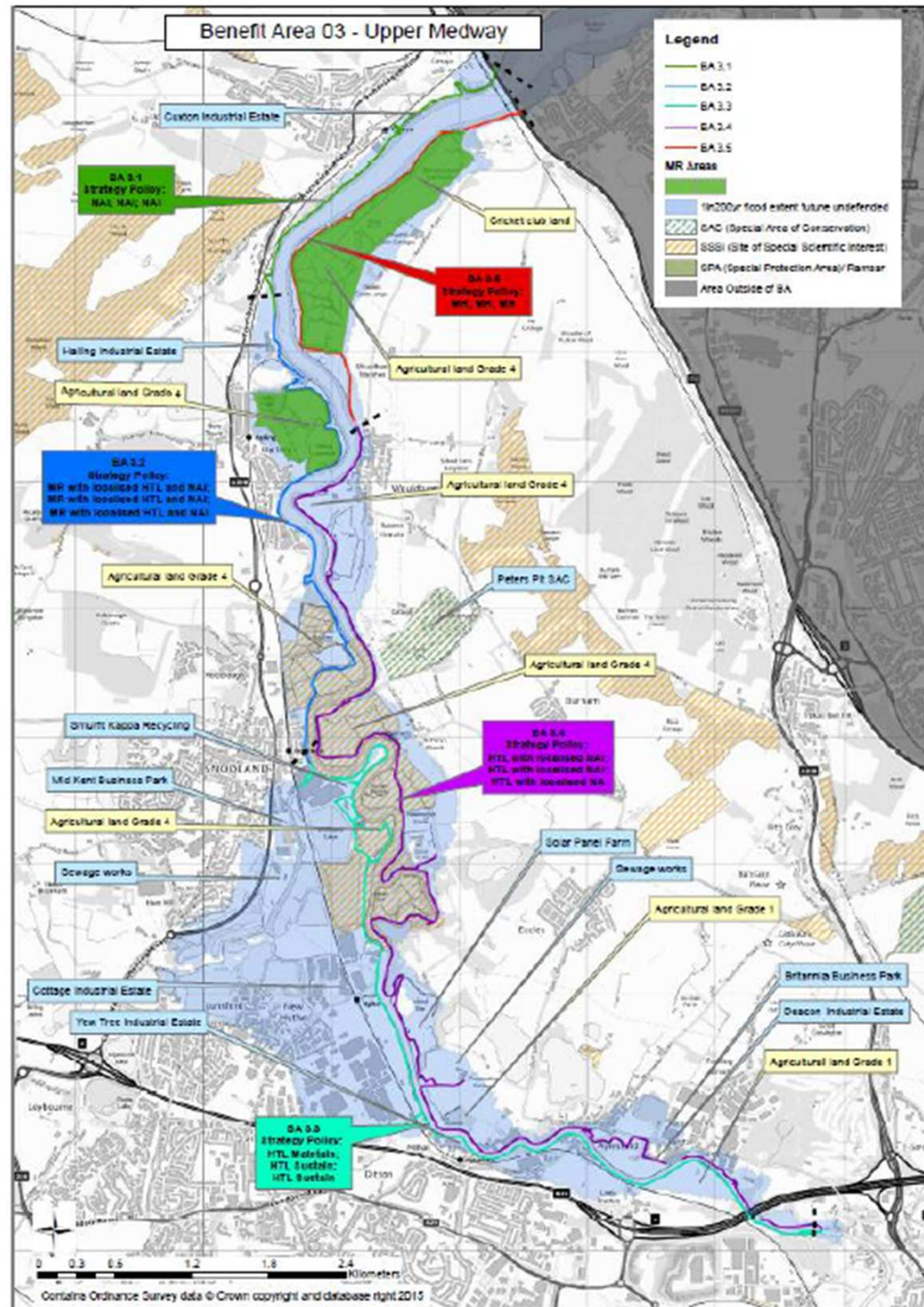
Hoo Island

Legend

- BA 1.2
- BA 1.3
- BA 1.4
- 1in200yr flood extent future undefended
- Projected Erosion Rate**
- SAC (Special Area of Conservation) Ramsar
- SSSI (Site of Special Scientific Interest)
- SPA (Special Protection Area) Ramsar
- Area Outside of BA

Benefit Area 02 - Medway Towns

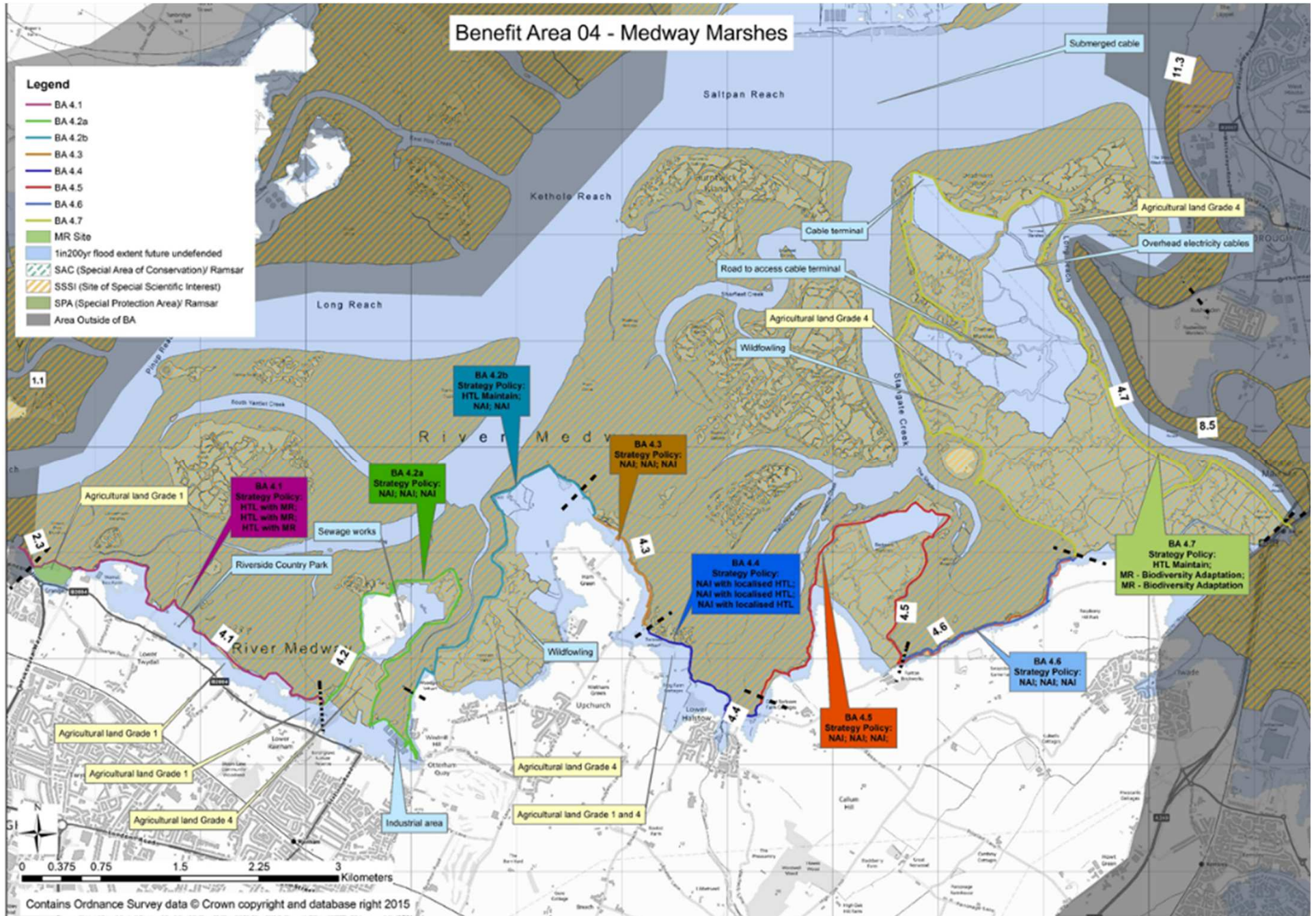




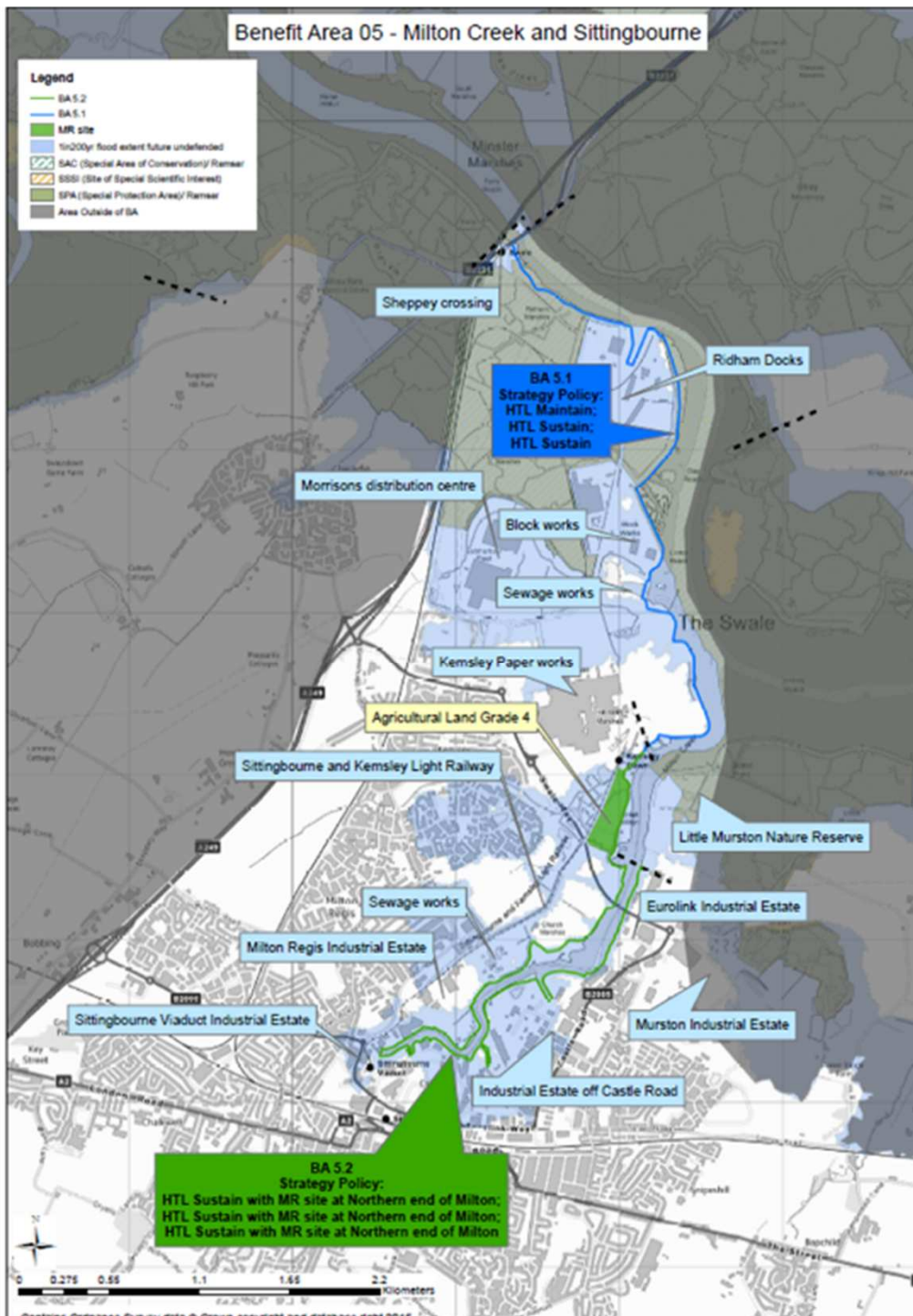
Benefit Area 04 - Medway Marshes

Legend

- BA 4.1
- BA 4.2a
- BA 4.2b
- BA 4.3
- BA 4.4
- BA 4.5
- BA 4.6
- BA 4.7
- MR Site
- 1in200yr flood extent future undefended
- SAC (Special Area of Conservation) Ramsar
- SSSI (Site of Special Scientific Interest)
- SPA (Special Protection Area) Ramsar
- Area Outside of BA



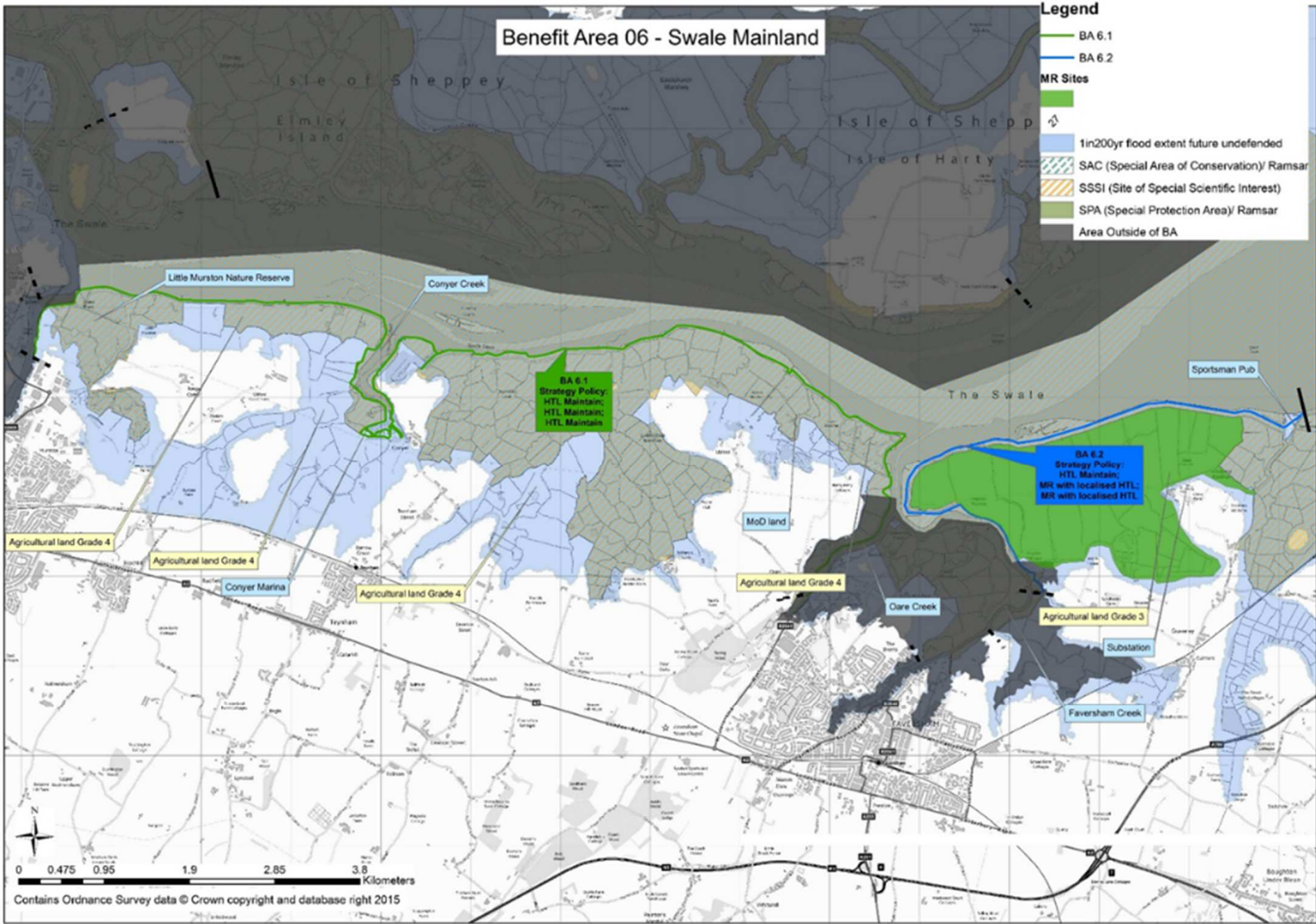
Benefit Area 05 - Milton Creek and Sittingbourne



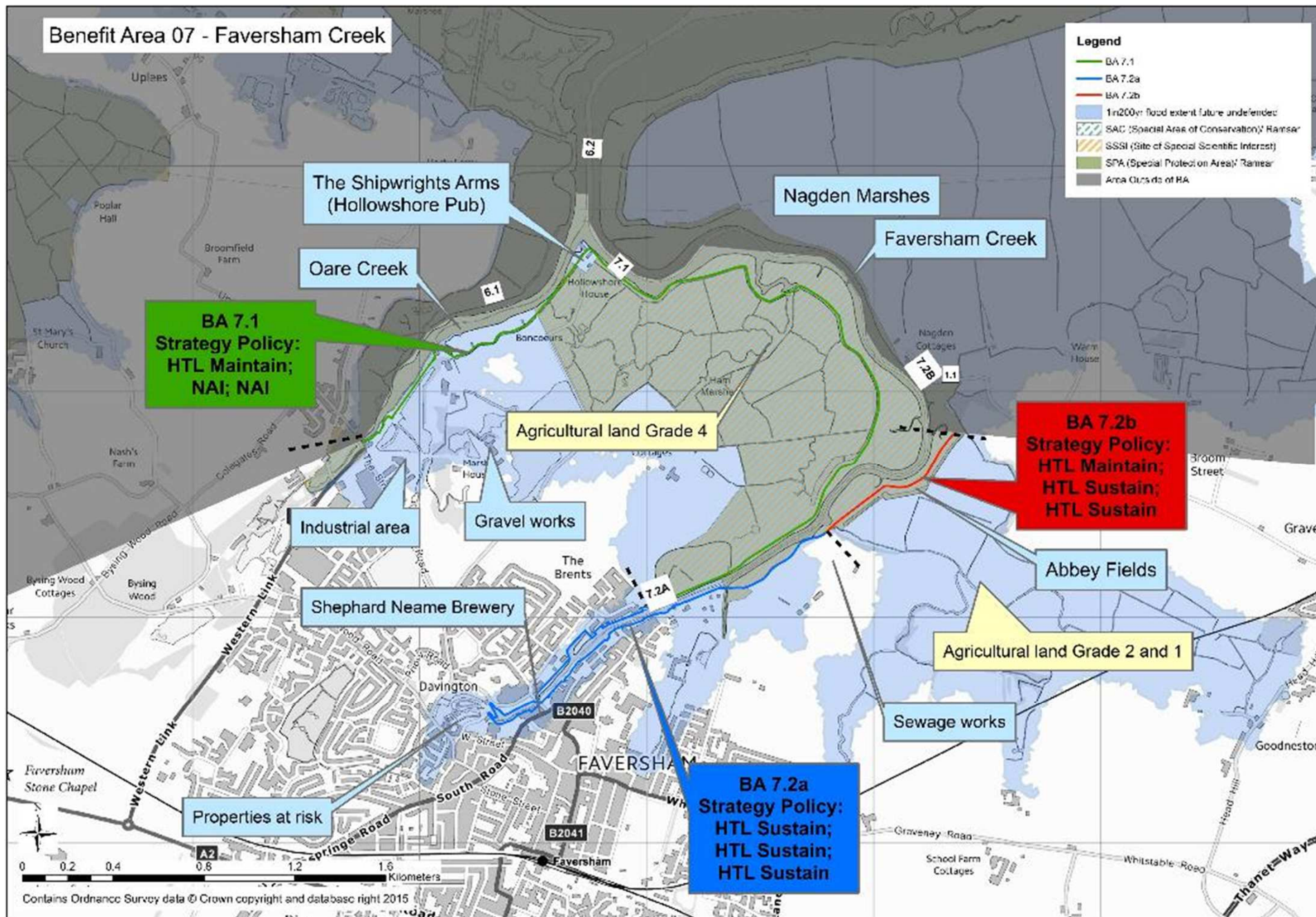
Benefit Area 06 - Swale Mainland

Legend

- BA 6.1
- BA 6.2
- MR Sites**
- 1in200yr flood extent future undefended
- SAC (Special Area of Conservation)/ Ramsar
- SSSI (Site of Special Scientific Interest)
- SPA (Special Protection Area)/ Ramsar
- Area Outside of BA



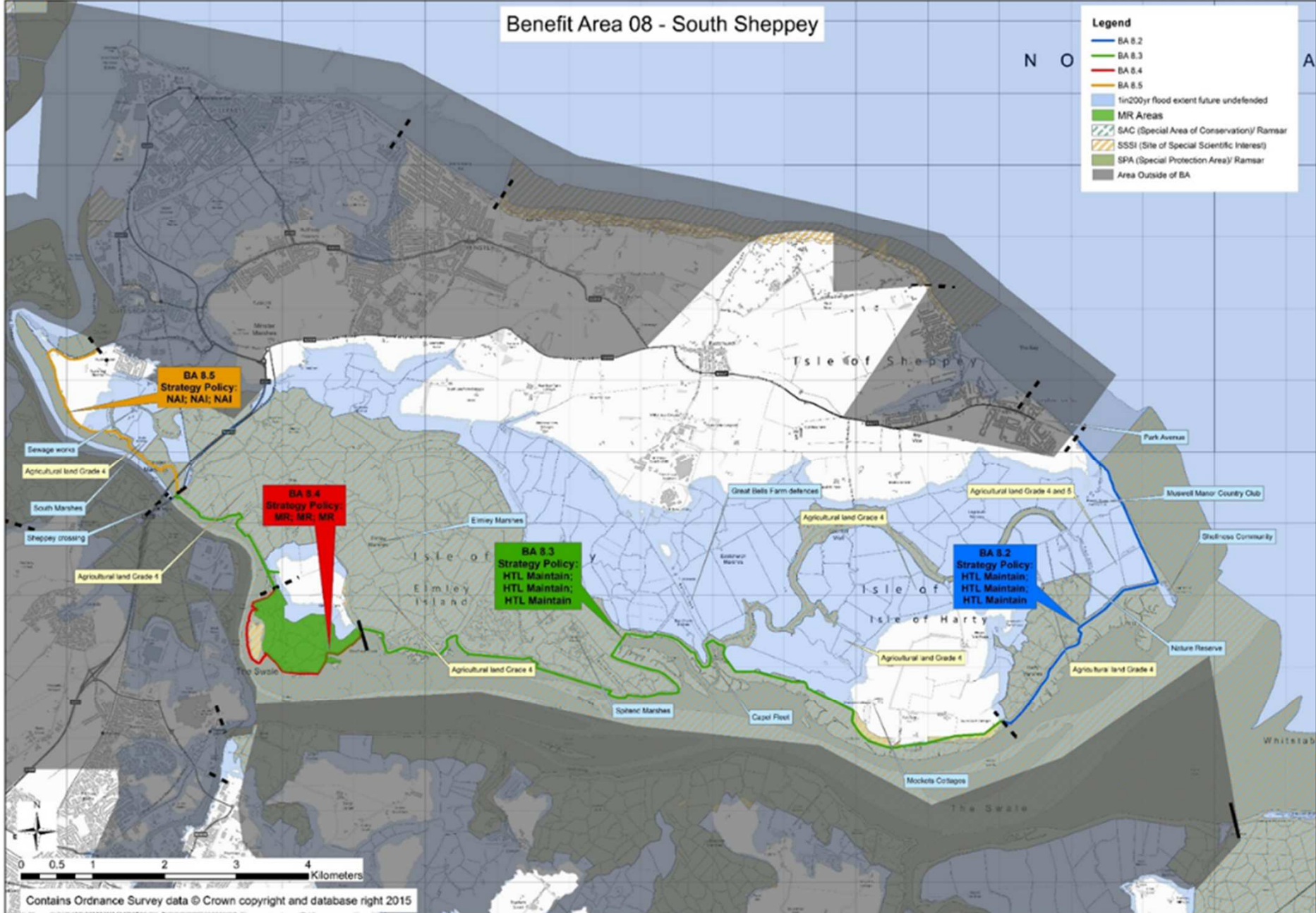
Contains Ordnance Survey data © Crown copyright and database right 2015



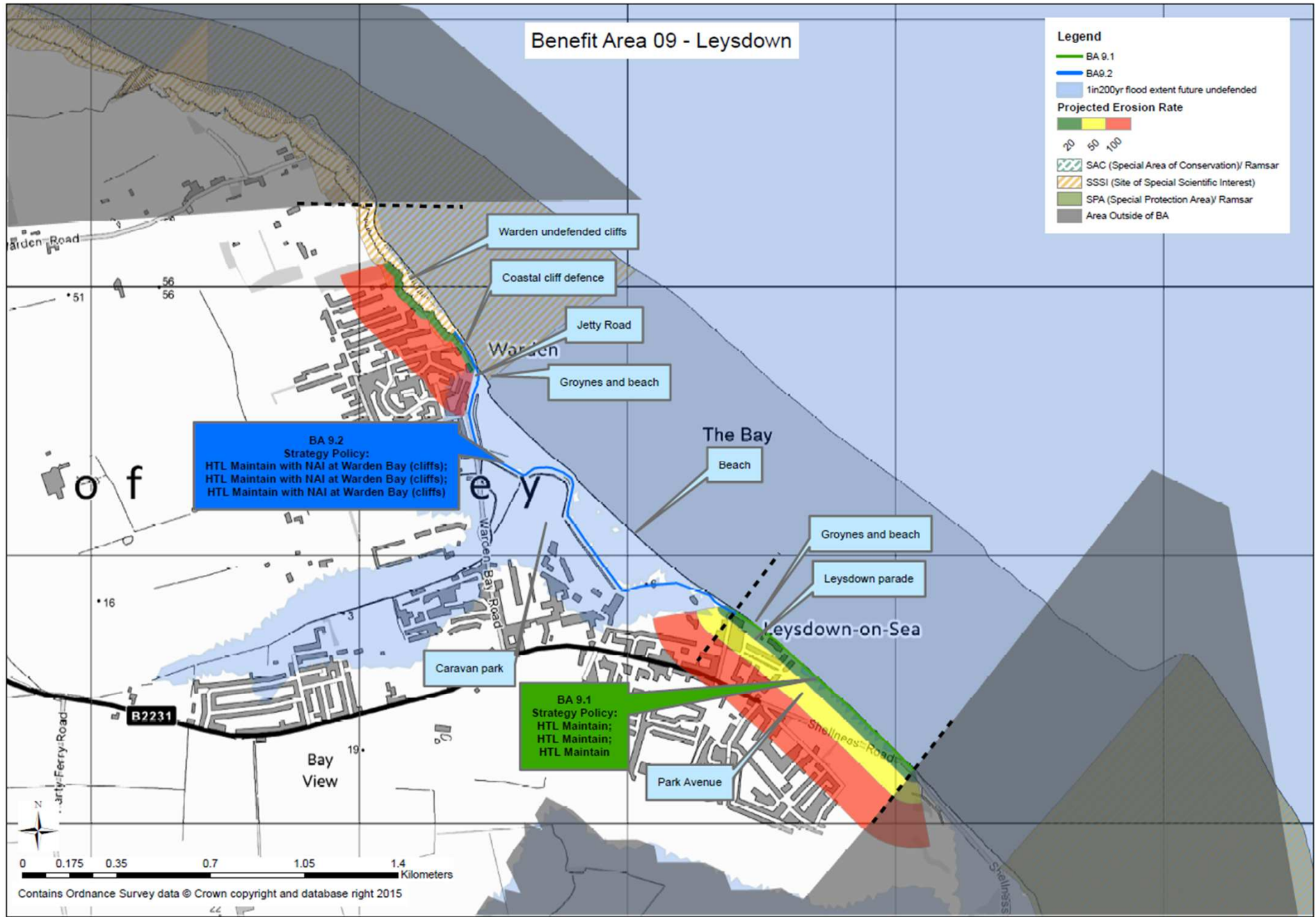
Benefit Area 08 - South Sheppey

Legend

- BA 8.2
- BA 8.3
- BA 8.4
- BA 8.5
- 1in200yr flood extent future undefended
- MR Areas
- SAC (Special Area of Conservation)/ Ramsar
- SSSI (Site of Special Scientific Interest)
- SPA (Special Protection Area)/ Ramsar
- Area Outside of BA



Contains Ordnance Survey data © Crown copyright and database right 2015

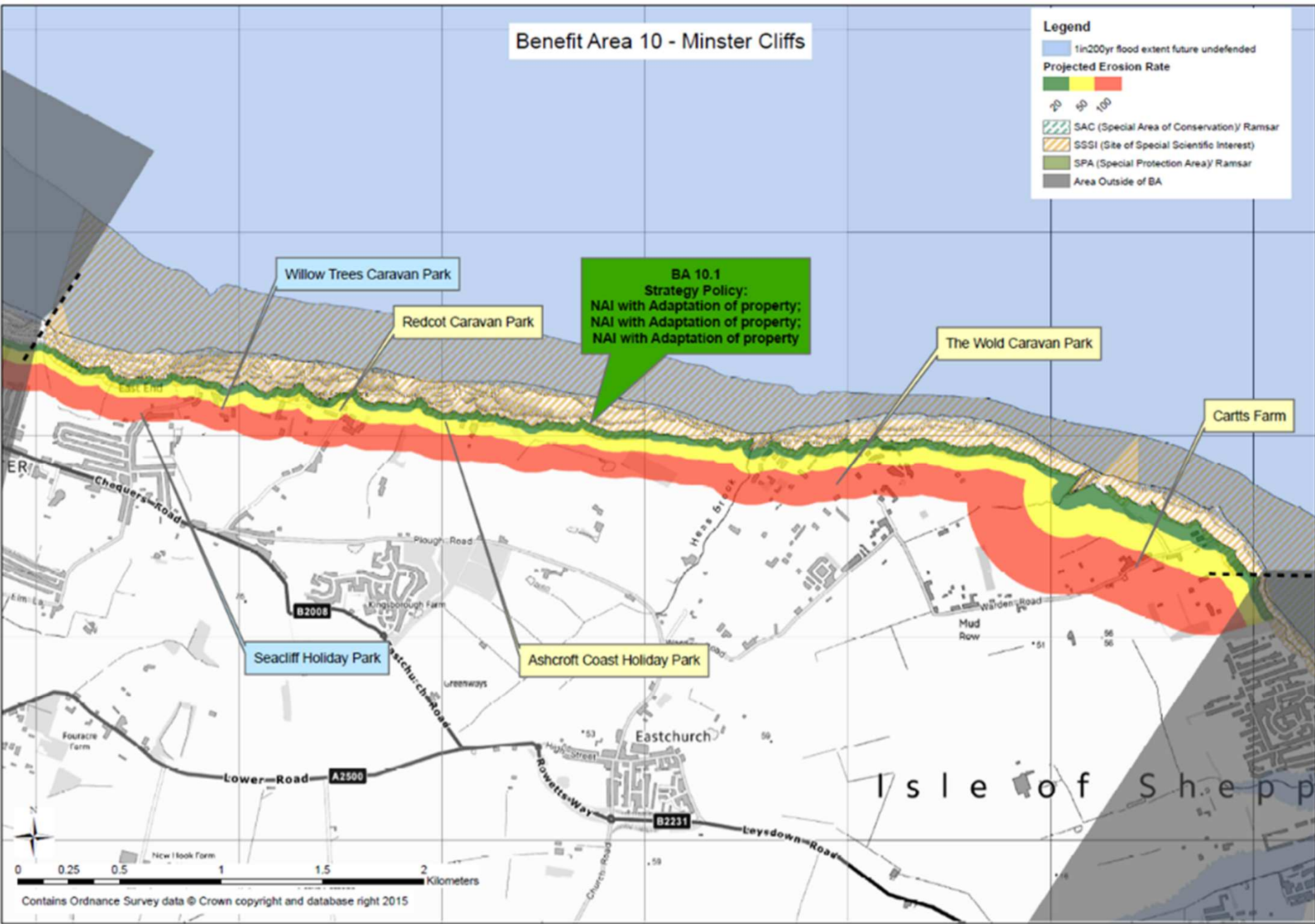


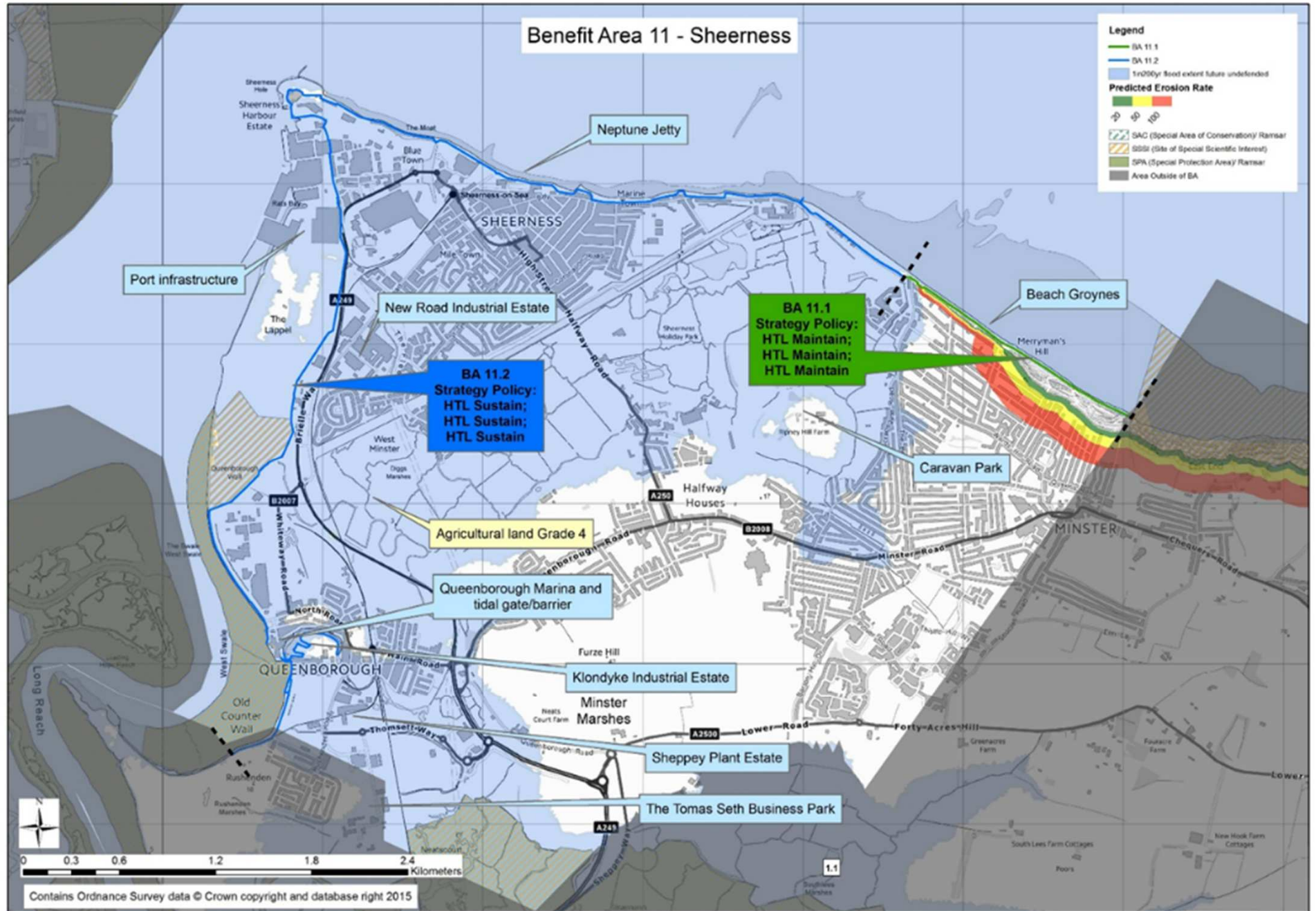
Benefit Area 10 - Minster Cliffs

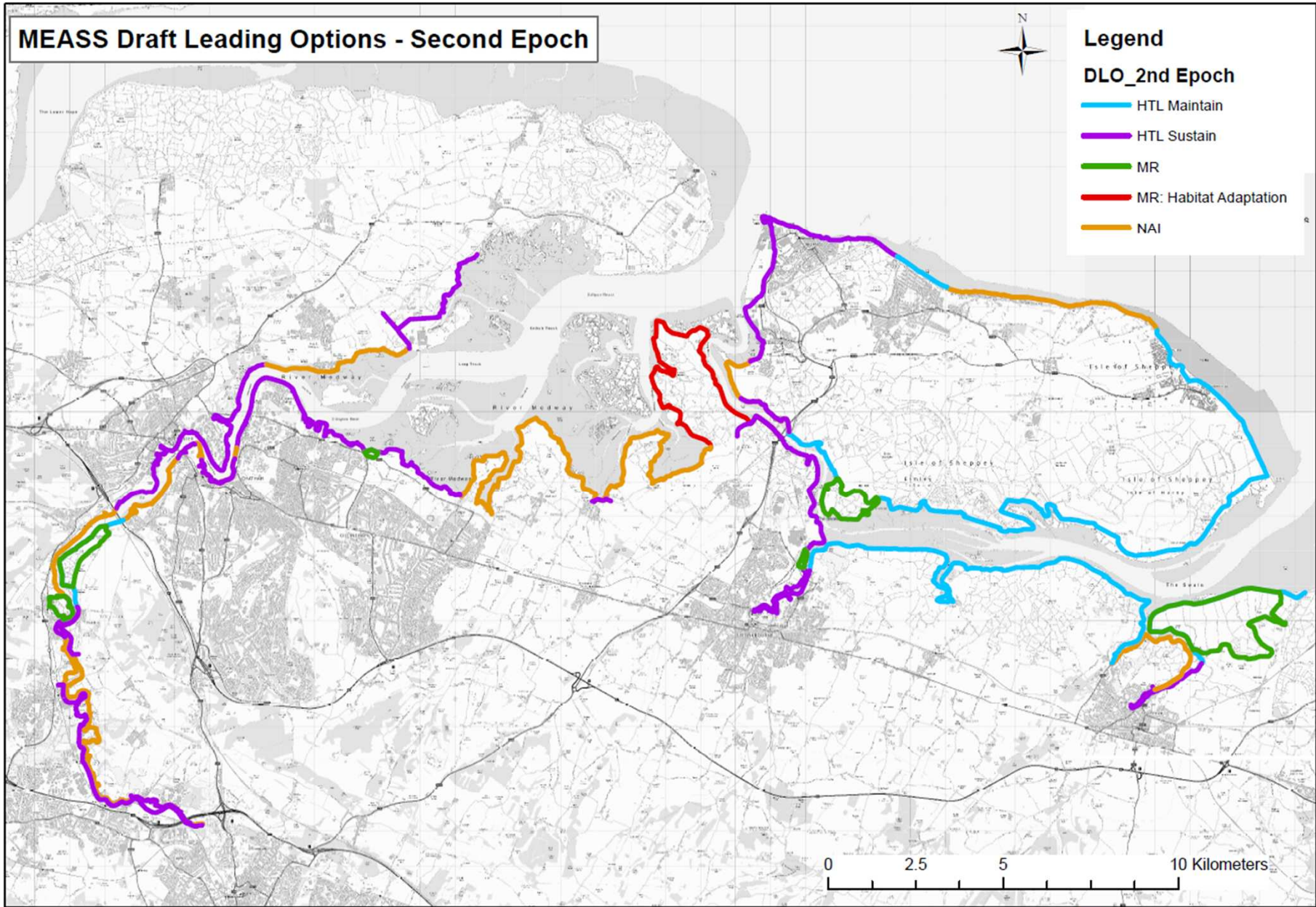
Legend

- 1 in 200yr flood extent future undefended
- Projected Erosion Rate**
 - 20
 - 50
 - 100
- SAC (Special Area of Conservation) / Ramsar
- SSSI (Site of Special Scientific Interest)
- SPA (Special Protection Area) / Ramsar
- Area Outside of BA

BA 10.1
Strategy Policy:
NAI with Adaptation of property;
NAI with Adaptation of property;
NAI with Adaptation of property







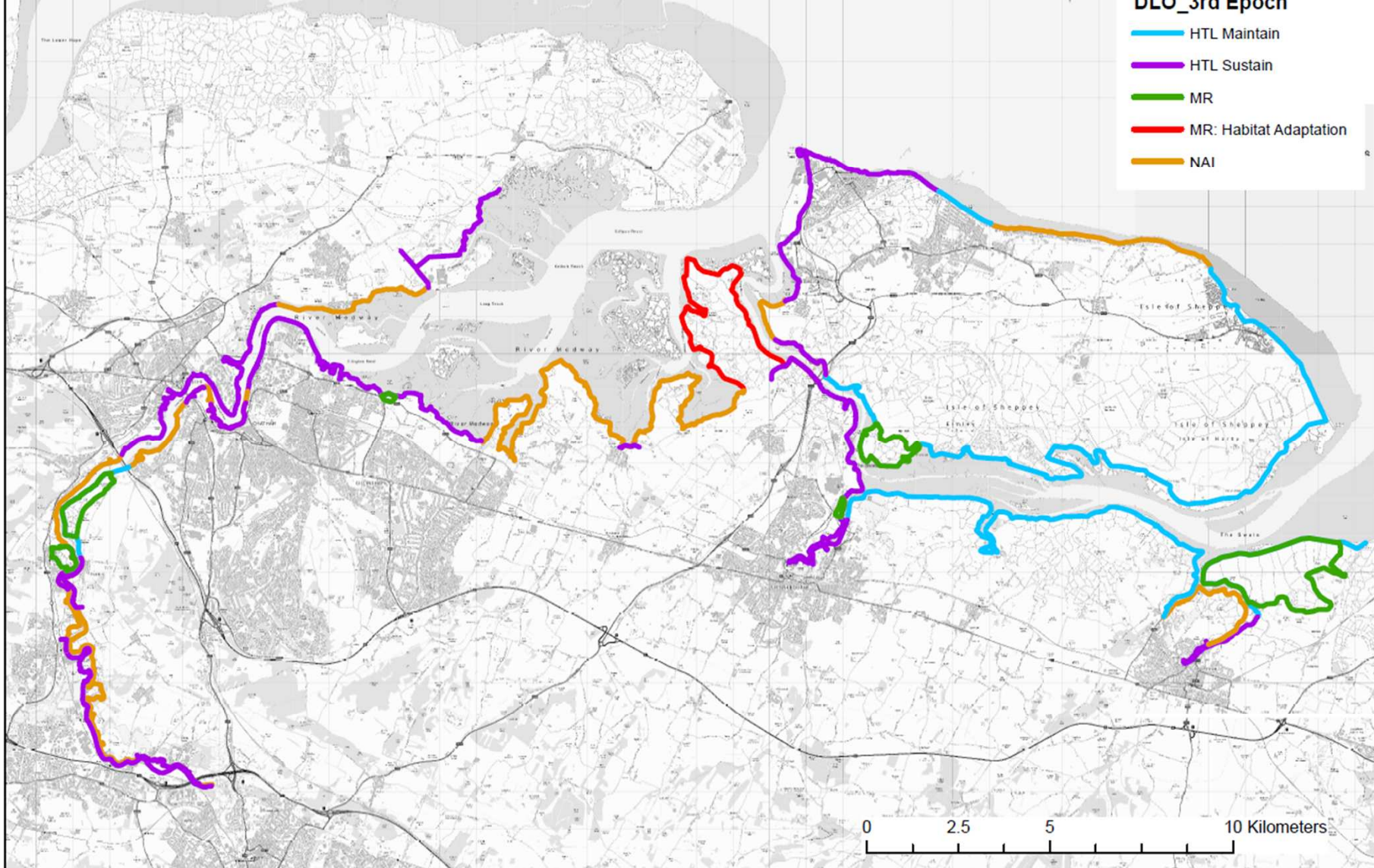
MEASS Draft Leading Options - Third Epoch



Legend

DLO_3rd Epoch

- HTL Maintain (light blue line)
- HTL Sustain (purple line)
- MR (green line)
- MR: Habitat Adaptation (red line)
- NAI (orange line)



To: Kent Flood Risk Management Committee

From: Katie Stewart, Director of Environment Planning and Enforcement

Subject: Recent Kent Resilience Forum Activity

Classification: Unrestricted

Summary: To update Kent Flood Risk Management Committee on recent activity by Kent Resilience Forum.

1. Background

1.1 The Kent Resilience Forum (KRF) Business Plan 2017-19 includes core activities such as local risk assessments, emergency plan reviews, training and multi-agency exercises, all of which improve the county's capability to respond to severe weather events, including flooding.

1.2 As outlined in this Business Plan, KRF's current priorities include activities which respond to the lessons identified during Exercise Surge in September 2016, which have previously been reported to the Flood Risk Management Committee.

1.3 This activity continues to respond to the threat of East Coast flooding, which remains the highest risk on the Kent Community Risk Register following a review of the Register in 2017 in line with the publication of the National Risk Register.

2. Key KRF activities since July 2017

2.1 Since July 2017, there have been several activities either undertaken or planned which specifically respond to the risk of flooding.

2.2 The local risk assessments for coastal, fluvial and surface water flooding have been reviewed and updated by KRF Partners, and the capabilities to respond to such events have been identified as being in place. This includes the review and update of the KRF Pan- Kent Flood Plans and Local Multi-Agency Flood Plans.

2.3 The KRF Human Aspects in an Emergency Group has been established and is chaired by KCC. This group will further develop Welfare Centre Guidelines and the KRF Evacuation and Shelter Plan, as recommended during Exercise Surge.

2.4 The KRF Business Continuity Group has developed a range of tools and templates to support KRF organisations and Kent businesses in preparing for and recovering from flood events.

2.5 The KRF Media and Communications Group met in October to share key winter resilience messages to ensure that organisations are directing customers to the best available advice to increase community resilience to severe weather events.

2.6 There will be a KRF Recovery Table Top Exercise on 27 November, which will focus on the long-term consequences to communities that must be managed following a catastrophic event. Whilst the scenario tested by the exercise has shifted from

flooding to a high rise residential fire following the fire at Grenfell Tower in London, it will test the capabilities that are required to support communities in the recovery phase regardless of the cause of a large scale incident, including flooding.

2.7 In terms of longer term planning for the impacts of flooding, the KRF Strategic Group will receive a report on 15 November that will look at the long term risks that are likely to impact on the County and highlight future areas of focus to continue to improve organisational and community resilience. This work used baseline data from the Kent & Medway Growth and Infrastructure Framework, and identifies the impact of climate change on the County, its economy and emergency responders. This long term risk assessment will be used to enable more effective planning and response to incidents in future.

2.8 The threat of an East Coast Surge was considered by partners on the 4th 5th October this year during the recent series of Alerts providing an opportunity to refer to the recently updated Severe Weather Advisory Group Framework. Although the triggers for Flood Warnings were not reached partners communicated and collaborated in the anticipation of the Surge breaching existing defences in key areas and plans were put into place to deploy the EA Rapid Flood Defence Barrier. This included a limited/focused PWI campaign for affected residents and businesses.

2.9 Finally, the KRF Pan-Kent Flood Group continues to meet 3 times a year and Kent Resilience Team is represented at the national East Coast Flooding Group.

3. Key engagement activity since July 2017

3.1 KRF has continued to deliver a full training programme this year including:

- Flood Warden Workshop – Saturday 7th October
- Met Office Responder Training day – 11th October
- Duty Officer Development Day (Winter Preparedness workshop) - 21st September
- KRF Seminar (KRT Stand on Winter Preparedness) – 19th October

3.2 Elected Members will continue to be regularly updated on the KRF activity to support communities in preparing for, responding to and recovering from severe weather events.

4. Recommendations

4.1 That Members:

- Note the reported KRF activity since the last meeting of the Committee; and
- Contribute any additional matters arising from debate by the Committee.

Fiona Gaffney, Head of Resilience & Emergency Planning, Growth Environment and Transport tel. 03000 419 465 e-mail fiona.gaffney@kent.gov.uk

Background documents: None



Kent Resilience Forum Activity 2017

Steve Scully

KCC Senior Resilience Officer

Kent Resilience Team



2017

Westminster – March 2017



Grenfell Tower Fire – June 2017



East Coast Tidal Surge – January 2017



Manchester – May 2017



London Bridge – June 2017



NHS Cyber Attack – May 2017



Finsbury Park – June 2017



Key Developments



- Flood risk assessment review
- Local Multi Agency Flood Plan Updates
- KRF Human Aspects in an Emergency Group
- Winter Preparedness Communications
- Advice to businesses
- Long Term Risk Assessment – Climate Change



Key Activity

Kent Resilience Forum



PREPARING FOR EMERGENCIES IN KENT AND MEDWAY

- Multi-agency duty officer winter preparedness workshop
- Flood Warden Workshop
- Met Office training
- East Coast Flood Group
- KRF Seminar
- Recovery Exercise



Severe Weather Events



- East Coast Flood – 4 & 5 October
- Surface Water Flooding – Tunbridge Wells





Questions?

Steve Scully

KCC Senior Resilience Officer

Kent Resilience Team

Stephen.scully@kent.gov.uk

To: Kent Flood Risk Management Committee

From: Katie Stewart, Director of Environment, Planning and Enforcement

Subject: Environment Agency and Met Office Alerts and Warnings and KCC flood response activity since last meeting.

Classification: Unrestricted

Summary: To update Kent Flood Risk Management Committee on the water resources situation, Environment Agency and Met Office Alerts and Warnings, and flood response activity since the last meeting of the Committee on 17th July 2017. Members are requested to note this report.

1. Background

1.1 KCC Resilience and Emergency Planning Service and Contact Point receive Environment Agency and Met Office alerts and warnings by e-mail on a 24 hour basis. Potential impacts upon communities, infrastructure and the wider environment are then assessed and a response mobilised as required.

1.2 Some 70,000 properties in Kent are located within areas identified as potentially at risk from fluvial (river) or tidal flooding. Where practically possible, these properties are offered a Flood Warning Service by the Environment Agency. However, other parts of the County are also vulnerable to surface and ground water flooding. Early warning of flood risk to communities (including areas outside of floodplains) is delivered through flood guidance statements, severe weather warnings and mobilisation of Kent Resilience Forum Severe Weather Advisory Group (SWAG).

2. Latest situation

2.1 A drier than average 2016 has extended into 2017. Rivers and streams predominantly fed by rainfall are flowing at notably or exceptionally low levels (including the Rivers Medway, Beult, Teise, Upper Stour, Rother). While those watercourses supported by groundwater from chalk aquifers are faring little better and are below normal or notably low (including the Rivers Darent, Great Stour, Dour).

2.2 Groundwater levels are also exceptionally low for this time of year.

2.3 The same general synopsis is reflected across the County's reservoirs, with their levels largely dependent upon a sustained recovery of river flows, as only when such conditions are met are water companies permitted to abstract and fill. In most areas, water resources are generally resilient to a single dry year, but the observed deficiencies increase the potential for future water resource pressures. Water companies have not yet put any customer restrictions in place, but are advising people and businesses to use water efficiently.

2.4 The Environment Agency will continue to monitor the water resources situation, and provide timely updates as conditions dictate. In addition, they will continue to work

with the water companies and other abstractors, as well as partner organisations, so as to ensure that any response is proportionate to the prevailing conditions.

2.5 A total of 16 flood alerts (2 fluvial and 14 coastal) have been issued by the Environment Agency since the last meeting of the Committee¹. Spring tides associated with the autumnal equinox and residual surge impacts of named storm Brian explain this relatively high number of coastal flood alerts. This contrasts with 4 flood alerts (3 fluvial and 1 coastal) during the corresponding period in 2016.

2.6 A total of 6 yellow Met Office severe weather warnings have also been issued (1 for fog, 3 for rain and 2 for high winds)². Notably, these include residual impacts arising from named storms Aileen (10th September) and Brian (21st October). This contrasts with 11 alerts and warnings (5 for rain, 4 for fog and 2 for high winds) issued during the same period in 2016.

2.7 The Thames Barrier has been closed on 5 occasions (for test and operational purposes) since the last meeting of the Committee. The figure for the same period in 2016 was 3 (all for test purposes).

3. Next Steps

3.1 Prevailing dry conditions will continue to be closely monitored by KCC and the wider resilience community in Kent, informing water resource planning and effective emergency planning contingencies for drought, pollution and wildfire planning and response. The Kent Resilience Forum Drought Plan has recently been reviewed, updated and re-issued.

3.2 Elected Members will continue to be regularly updated on the prevailing water resources situation flood alerts, severe weather warnings, operational response and significant flood events across Kent.

4. Recommendations

4.1 That Members:

- Note the current water resources situation and the level of alerts and warnings received since the last meeting of the Committee; and
- Contribute any additional matters arising from debate by the Committee.

Tony Harwood, Principal Resilience Officer, Growth Environment and Transport
tel. 03000 413 386 e-mail tony.harwood@kent.gov.uk

Background documents: None

¹ Please see appendix 1

² Please see appendix 2

Appendix 1: Environment Agency Flood Alerts issued since 17/07/2017		
Flood Zone	Date issued	Status
River Darent catchment (from Westerham to Dartford)	09/08/2017	Alert
Rivers Eden & Eden Brook Area	09/08/2017	Alert
Isle of Sheppey and Coast from Kemsley to Seasalter	04/10/2017	Alert
Coast from Dartford to Allhallows	04/10/2017	Alert
Tidal Medway, Medway Estuary and Isle of Grain	04/10/2017	Alert
Coast from Whitstable to Margate	04/10/2017	Alert
Coast from Dartford to Allhallows	05/10/2017	Alert
Coast from Pegwell Bay to Deal including the Tidal Stour	05/10/2017	Alert
Coast from Fairlight to Dungeness including the Tidal Rother	05/10/2017	Alert
Tidal Medway, Medway Estuary and Isle of Grain	05/10/2017	Alert
Isle of Sheppey and Coast from Kemsley to Seasalter	06/10/2017	Alert
Coast from Dartford to Allhallows	06/10/2017	Alert
Tidal Medway, Medway Estuary and Isle of Grain	06/10/2017	Alert
Coast from Whitstable to Margate	06/10/2017	Alert
Coast from Sandgate to Dungeness	21/10/2017	Alert
Coast from Fairlight to Dungeness including Tidal Rother	21/10/2017	Alert

Appendix 2: Met Office Severe Weather Warnings issued since 17/07/2017		
Met Office Warnings	Duration	Status
Yellow Warning of Rain for London & South East England	18/07/2017 - 19/07/2017	Warning
Yellow Warning of Rain for London & South East England	30/07/2017	Warning
Yellow Warning of Rain for London & South East England	08/08/2017 – 09/07/2017	Warning
Yellow Warning of Wind for London & South East England	10/09/2017	Warning
Yellow Warning of Wind for London & South East England	21/10/2017	Warning
Yellow Warning of Fog for London & South East England	03/11/2017	Warning

This page is intentionally left blank