

# **Humber Strategy Comprehensive Review**

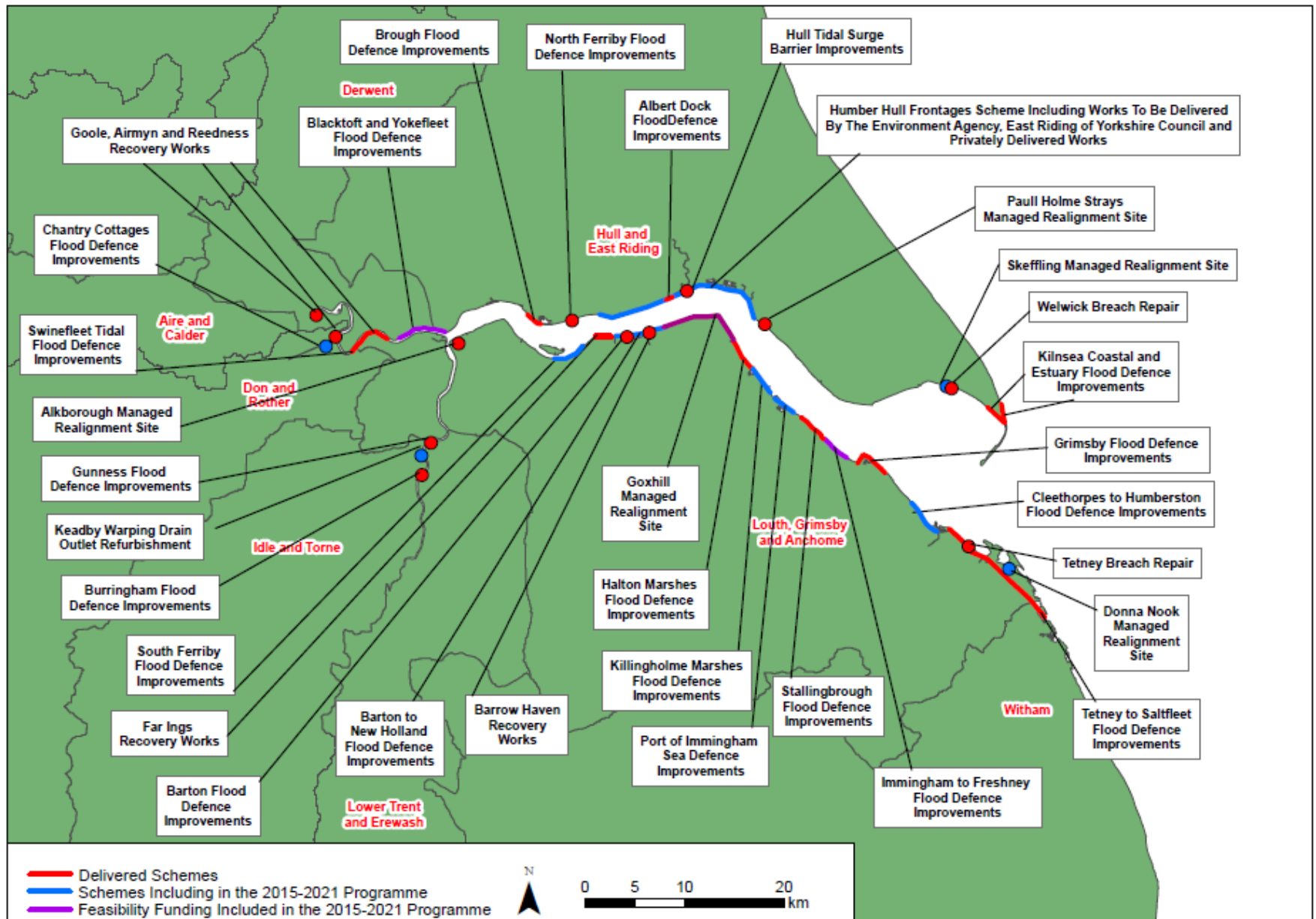
February 2017

Helen Todd – Acting Humber Strategy Manager

# The last 10 years

- The Humber Flood Risk Management Strategy (FRMS) was approved by Defra in 2007
- Strategy update commenced in 2011
  - New legislation & Partnership funding
  - New evidence & understanding
- 2013 Tidal surge
- MPs Business case
- SoS for the Environment response – work together with Local Authorities and the LEP to undertake a “comprehensive review” of the Humber Strategy

# Progress since 2007



# Humber Strategy Comprehensive Review

- ➔ Review of the original 2007 Strategy to redefine the strategic approach to managing flood risk over the next 100 years
- ➔ Manage environmental implications
- ➔ Establish funding and investment opportunities to facilitate delivery.
- ➔ Develop the new 6 year programme of work
- ➔ All this through close partnership with the Local Authorities, LEP, IDBs and Natural England

# Comprehensive Review context

## ➔ Complex estuary

➔ People, Agriculture, flood risk, environmental designations, major industry and infrastructure, need for funding

## ➔ Requirements

➔ Manage risk appropriately

➔ Deliverable

➔ Compliant with legislation

➔ Consider wider impacts on local & UK economy

➔ Takes advantage of wider opportunities


# Comprehensive Review scope

- ➔ Many aspects to the Comprehensive Review
  - ➔ Technical
  - ➔ Economics
  - ➔ Environmental
  - ➔ Funding and Investment
  - ➔ Communications and Engagement
  - ➔ Outputs

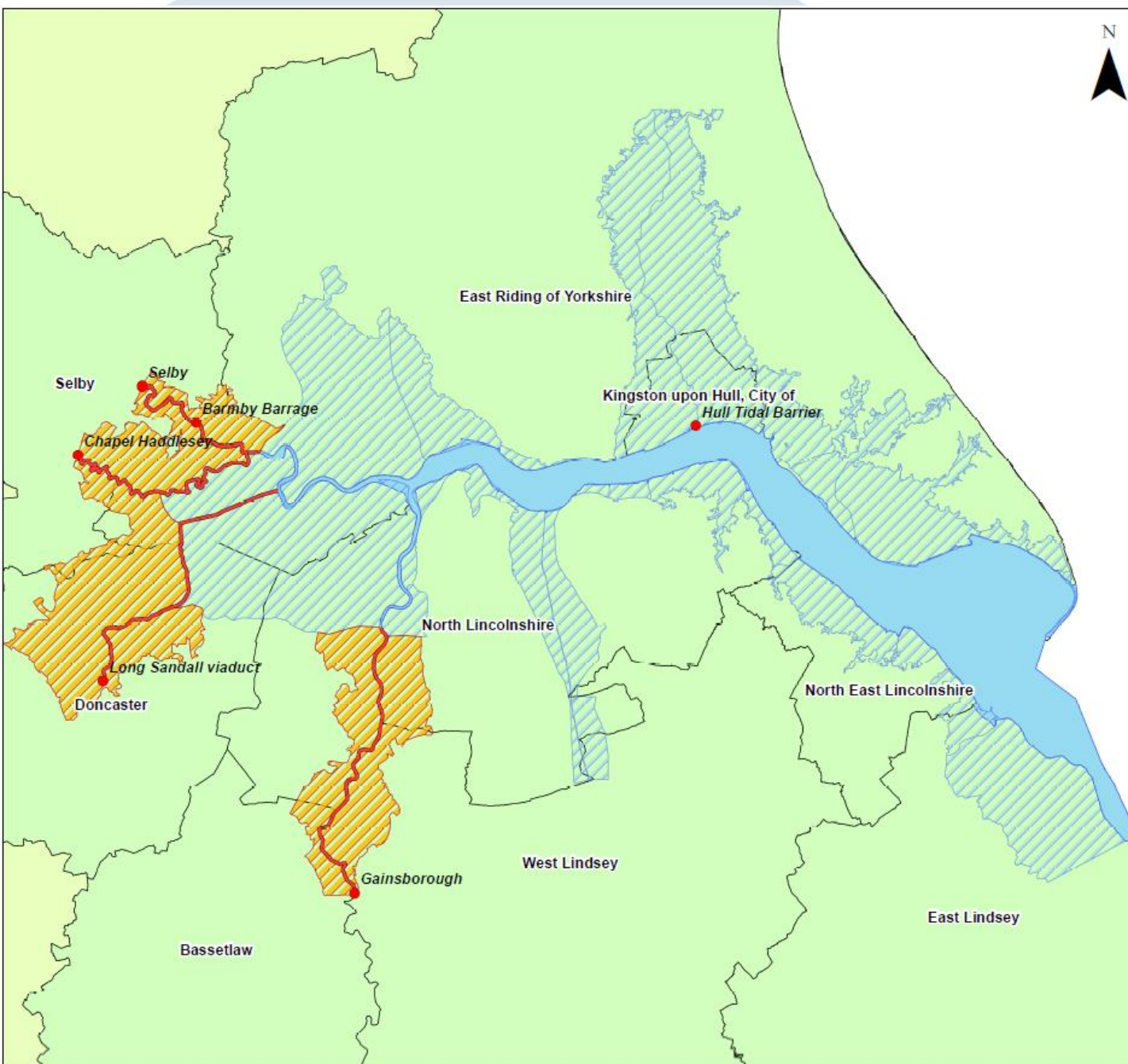
## Humber FRMS Boundary Extension Proposal

### Legend

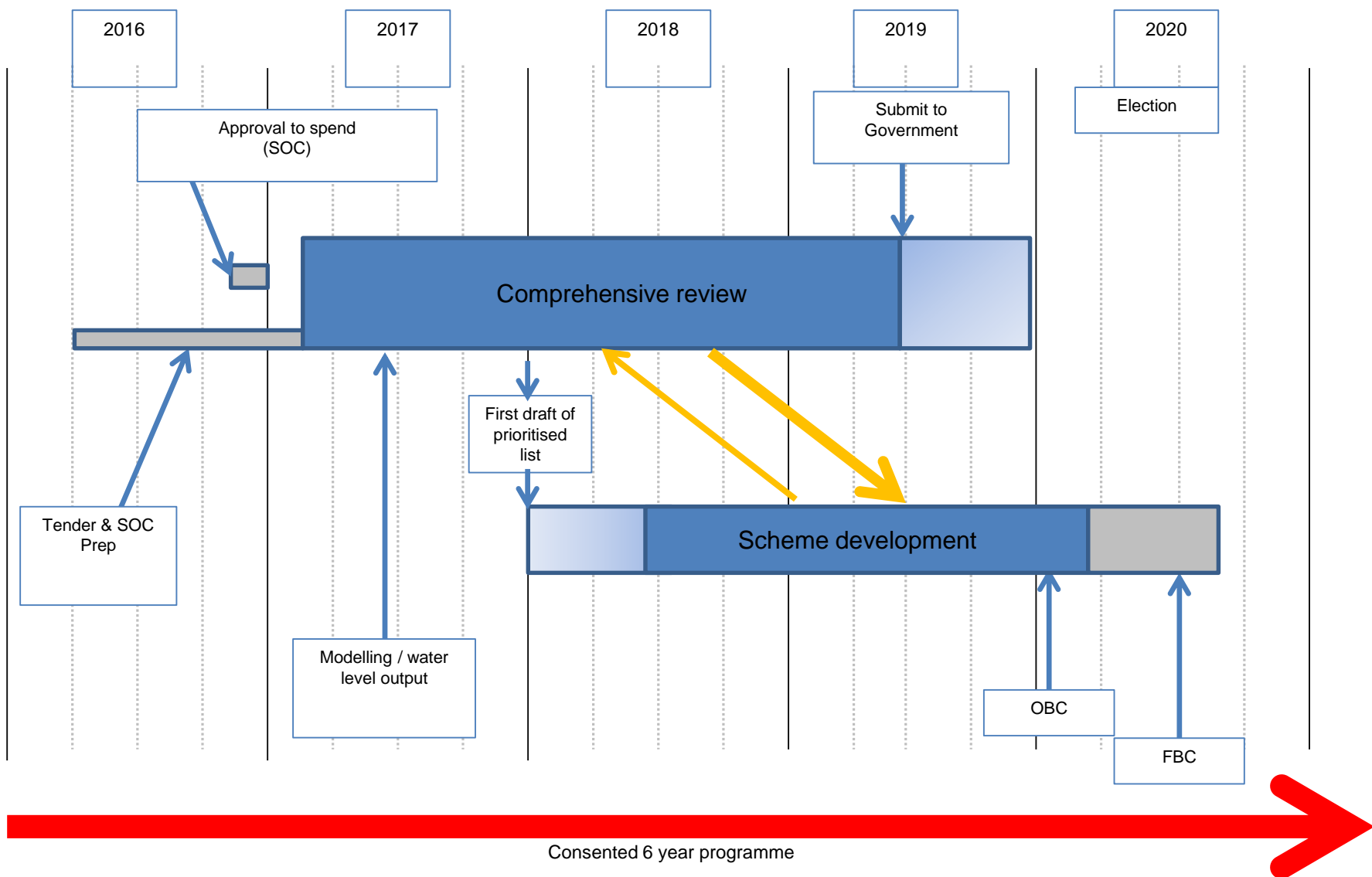
- Proposed extent locations
- Proposed strategy extension
- Humber Estuary Extent
- Indicative Humber FRMS boundary
- Humber FRMS Boundary
- Local Authorities

 Kilometers  
0 10 20

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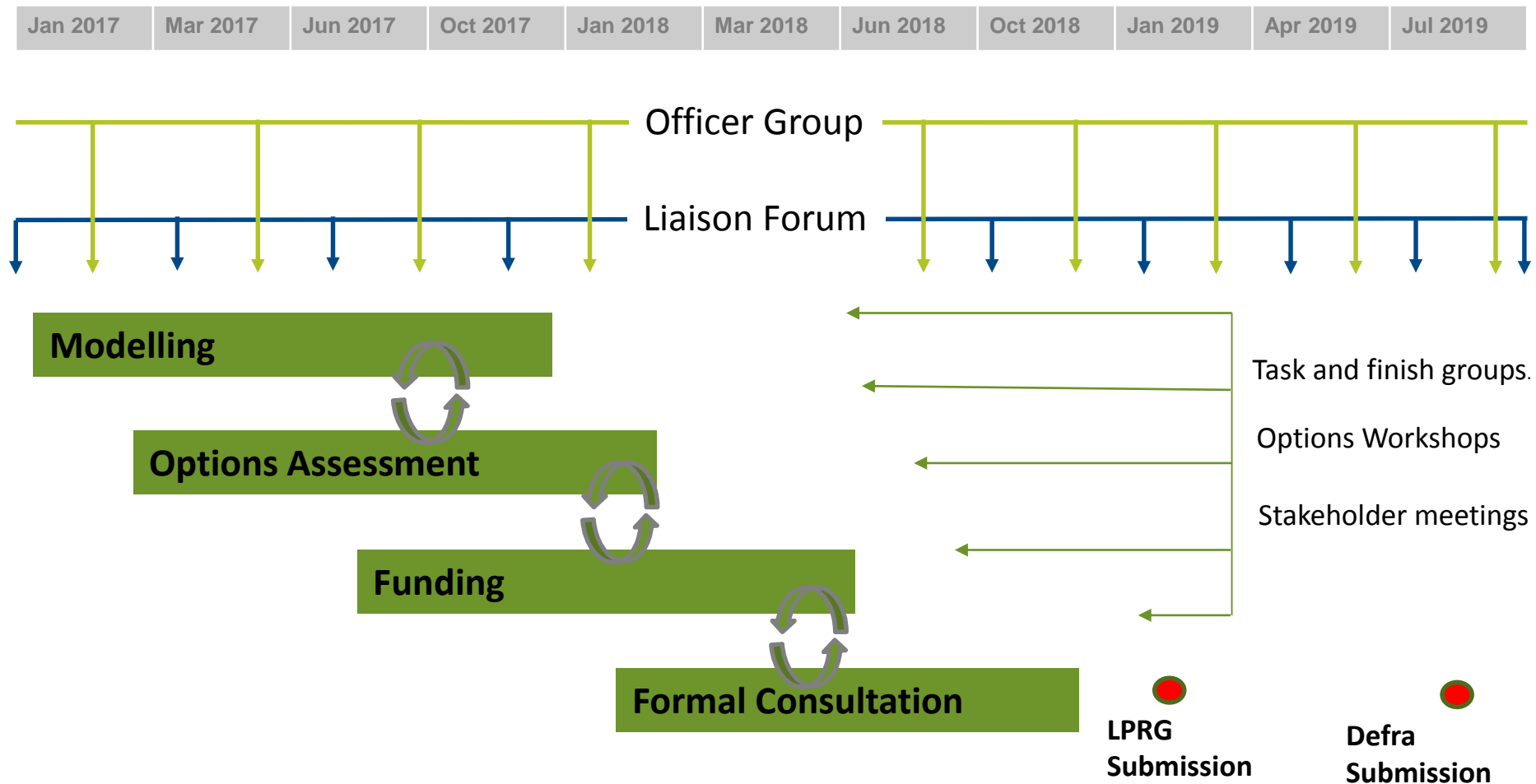




The most important output from the CR will be the new programme to take over from the current 6 year programme after 2021

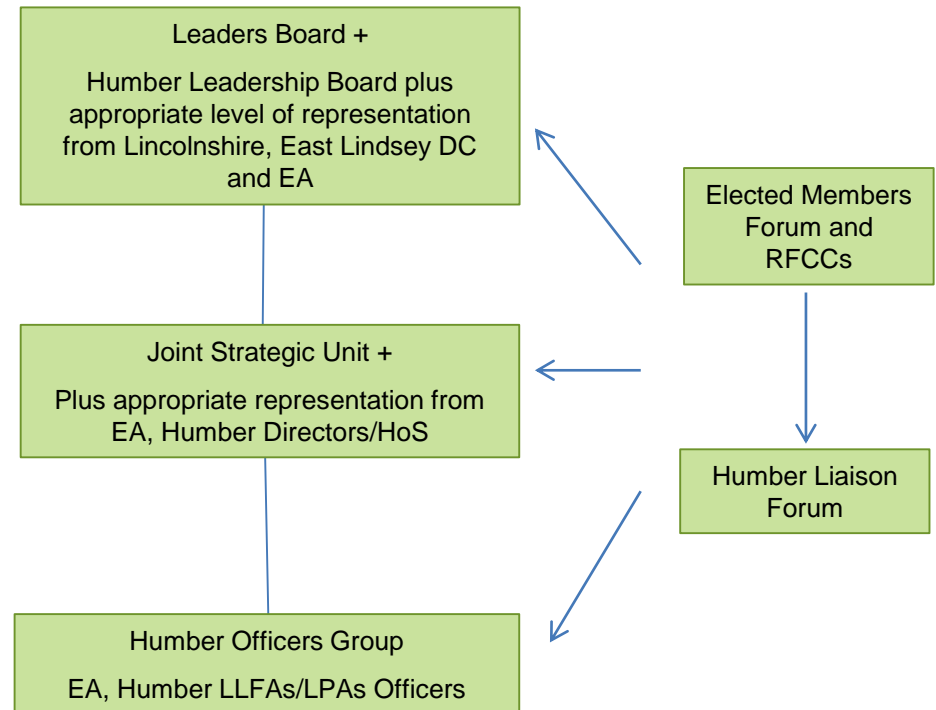


# Engagement



# Major Projects

- ➡ Sought agreement to Major Project status
- ➡ Will impact on current governance structure
- ➡ Humber is more inclusive to partners than other Major Projects

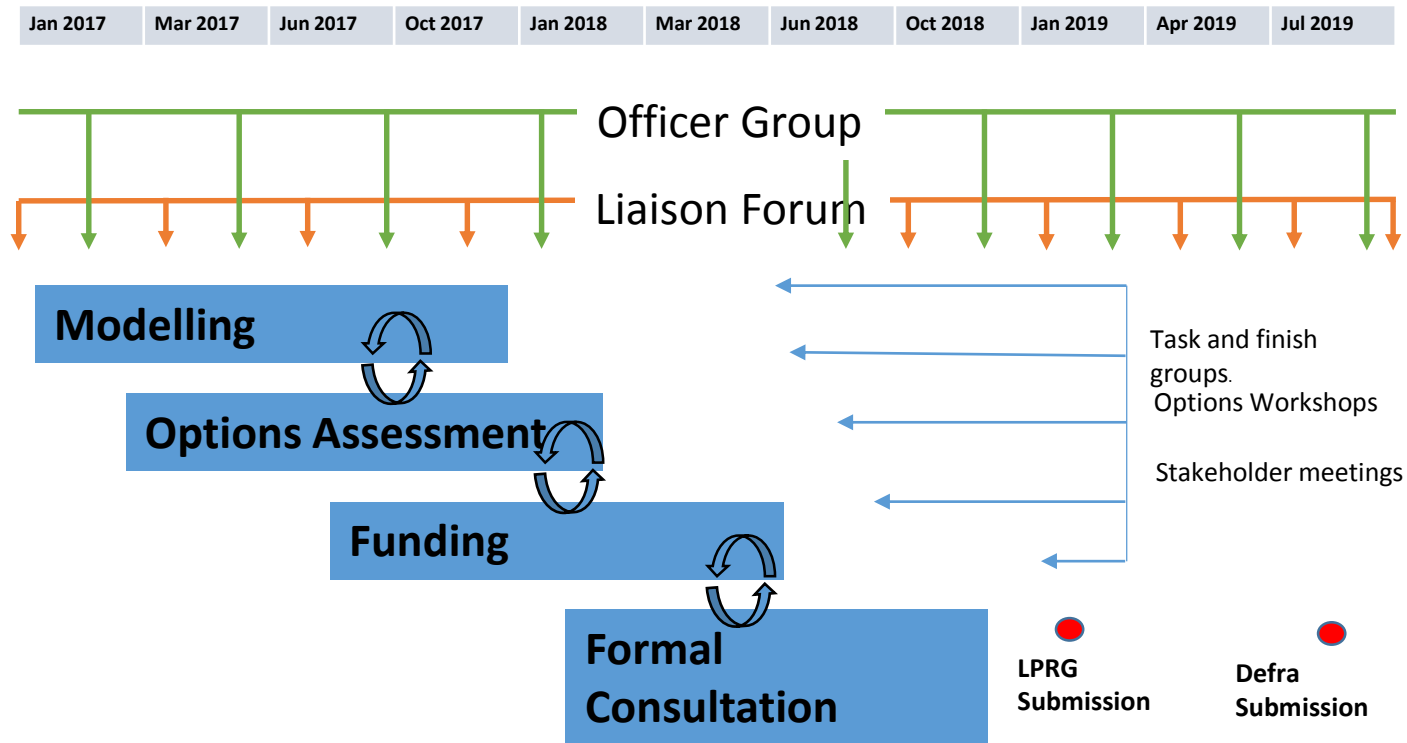


# Questions

# Engagement through the Comprehensive Review

February 2017  
Claire Brown – Senior Advisor,  
Humber Strategy

# Engagement



# Initial Ideas of Task / Theme Groups to support the Comprehensive Review

Modelling

Environmental

Agricultural

Economic

Funding

Wider  
Strategies &  
Strategic  
Planning

Comms &  
Engagement

## Questions to Consider:

- Do you have other suggestions for groups and/or subject areas in addition to those above
- Your suggestions for membership of these groups – individuals and/or organisations that should be represented
- Existing networks that we should link with or could feed into as part of the themes of work
- Existing channels of wider communication that could support the Review

# Humber Strategy Schemes



# Water for Farmers and Wildlife

- A joint RSBP and EA project.
- Considers how water management can have benefits for flood risk, farming and wildlife.
- Assesses a number of techniques used in the Netherlands and the US.
- Phase 1 now complete- assesses the technical feasibility of the techniques and the economic benefits of delivering these. A summary and technical report is now available.
- Phase 2 looks at the application of these techniques on specific landholdings around the Humber.

# Phase 3 Trials

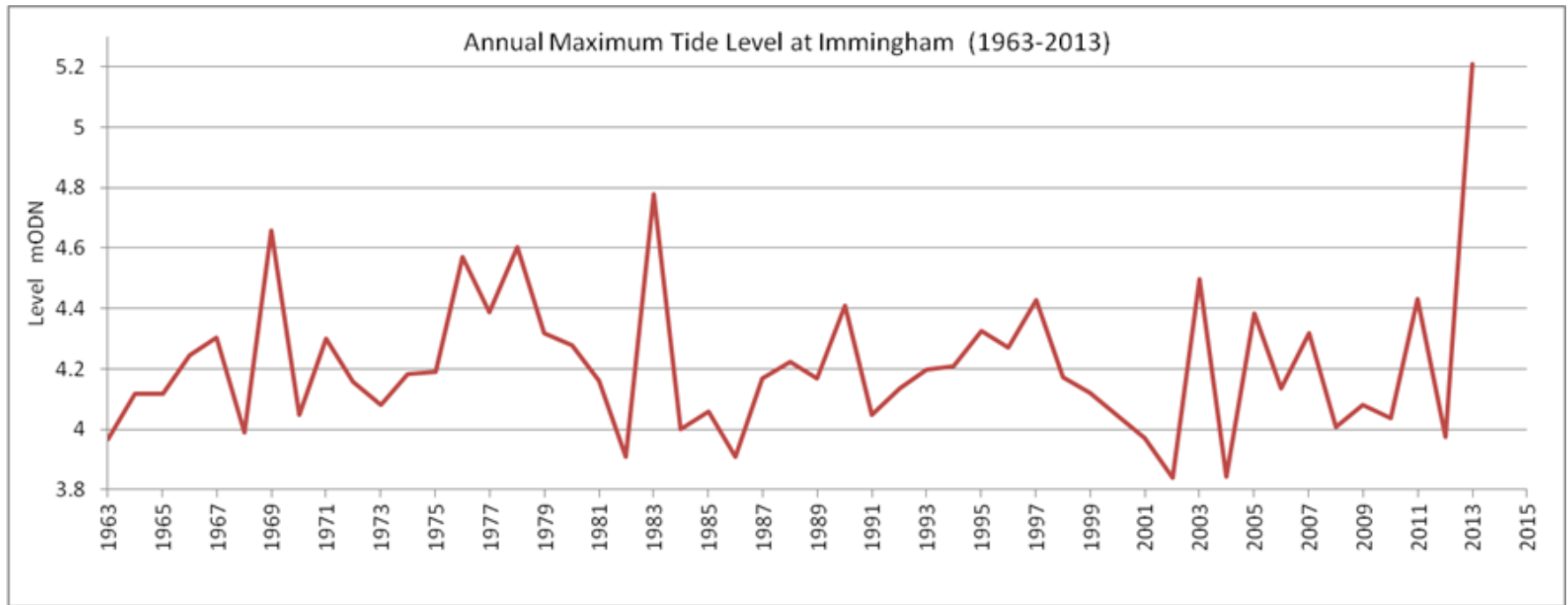
- ➔ We are working on an application for funding to undertake small-scale trials of these techniques.
- ➔ Tests will include impacts on soil salinity, compaction, organic matter, weed control and water quality.
- ➔ We hope to begin phase 3 this summer, and in total the series of trials are expected to last 3-4 years.



# Defence Integrity

- A cost-effective assessment of the integrity of the flood embankments.
- Identifies anomalies and further issues for investigation.
- A third-phase of survey has recently been undertaken on the Humber, Don and Aire.
- Ground Investigations as a result of this work are continuing.
- Ongoing work with the Environment Agency Geomatics Group looking at identifying historic features e.g. abandoned channels

# Water Level Project



- The water level profile determines the level which we build defences to.
- The flooding on 5<sup>th</sup> December changed our understanding of risk around the estuary.

# Water Level Project

- An interim water level was published in Summer 2014.
- A more comprehensive assessment is now ongoing, the objective of this work is to provide a robust and defensible water level profile for the estuary and its tidal tributaries.
- The work is complex, there is a large element of R&D and there are challenges associated with the quality of data available to us.
- A key decision has been made to account for overtopping in the modelling, rather than taking a glass-walling approach.
- The project will inform significant amounts of future capital investment.

# Dynamic Humber

- ➔ A collaborative project with Hull University.
- ➔ Models the impact of flood risk management works on in-channel water levels.
- ➔ Assesses the impact of flood storage solutions and the delivery of defence raising.
- ➔ Will inform the Comprehensive Review.

# Skeffling Managed Realignment Scheme

- Provides the necessary compensatory habitat to deliver the Humber Hull Frontages flood defence improvements.
- Will provide improved flood defences for the local community.
- A joint EA/ABP scheme.



# Humber Hull Frontages

- ➔ A scheme to raise the standard of protection along the Hull frontage.
- ➔ Will lower the risk to around 113,000 properties.
- ➔ Scheme design is current progressing.
- ➔ Site investigations are ongoing and are due to be completed soon

# South Ferriby

- ➔ A scheme to improve the standard of protection to the village of South Ferriby, Cemex, and the surrounding area.
- ➔ NLC and Cemex are on the Project Board.
- ➔ Completed site investigation, topographical and ecological surveys.
- ➔ Currently assessing design options.
- ➔ Community events and engagement held during November/December.
- ➔ Funding bid for additional government money announced after the 2015/16 flooding.

# Barton to New Holland

- ➔ A scheme to improve the standard of protection to the village of Barton and the surrounding area.
- ➔ Completed site investigation, topographical and ecological surveys.
- ➔ Community engagement ongoing.
- ➔ There are funding challenges for this scheme.
- ➔ We have bid for ERDF, together with LGF from LEPs to support this scheme.

# Partner-Led Schemes

➡ Paull and Hessele

➡ Port of Immingham

➡ East Halton

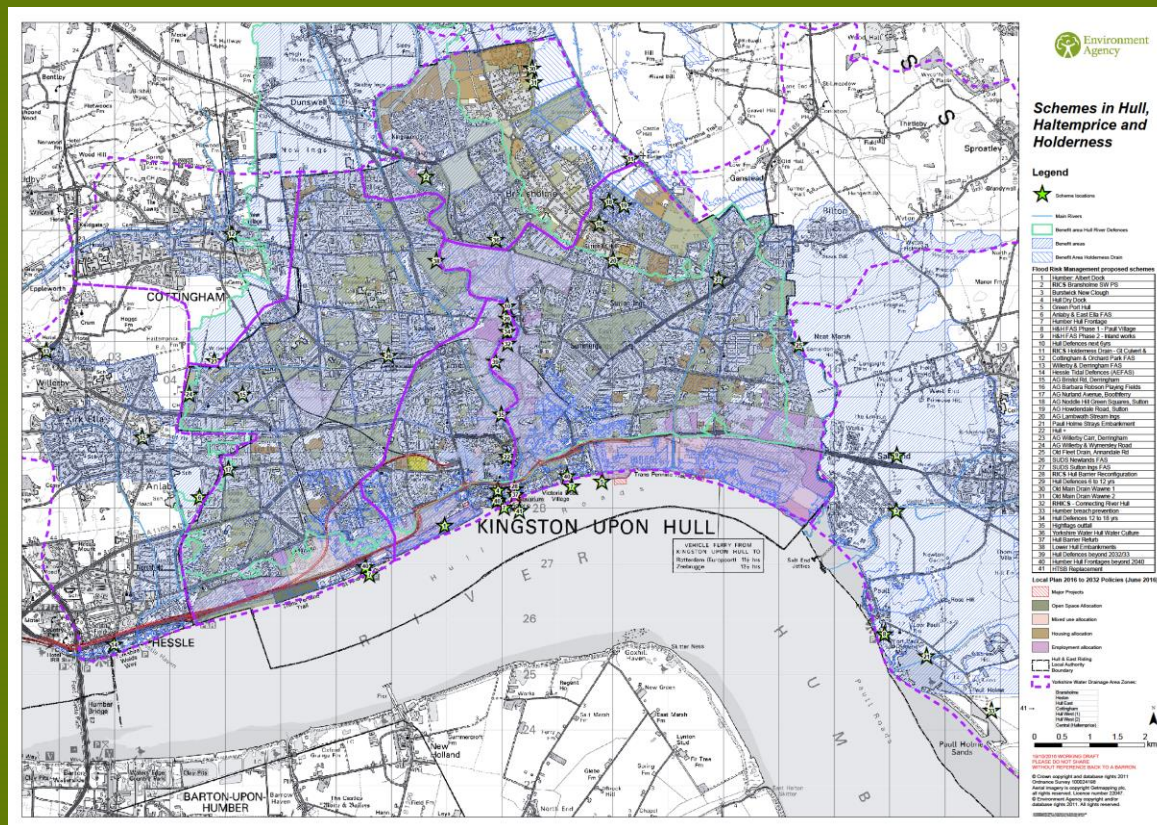
# Questions?

# Humber Liaison Forum

## Flood Risk Management Infrastructure investment in Hull

Andrew Barron  
PSO Senior Advisor  
February 2017

# Investment in flood infrastructure in and around Hull





# Investment in flood infrastructure in and around Hull

Total investment in current 6 year programme	£191 million*
Funding split	<b>FDGIA</b> £158 m (83%)
	<b>LEP</b> £22 m
	(12%)
	<b>EU</b> £11 m
	(5%)

\*Other projects take the actual overall forecast spend to well over £200 million

# Investment in flood infrastructure in and around Hull

**ERYC lead**  
Derringham FAS

£13.6 m Willerby and

£22 m Anlaby & East Ella

£22 m Cottingham and

Orchard Park FAS

£ 5 m Hull & Holderness

Phase 1 (Paull)

£25m Hull & Holderness

Phase 2 (Inland)

£ 8 m Hessle Tidal defences

**Hull Lead**

Aquagreens (and SUDS)

**Yorkshire Water PR19**

**Environment Agency lead**

£ 6 m Albert Dock

£36.5 m River Hull defences

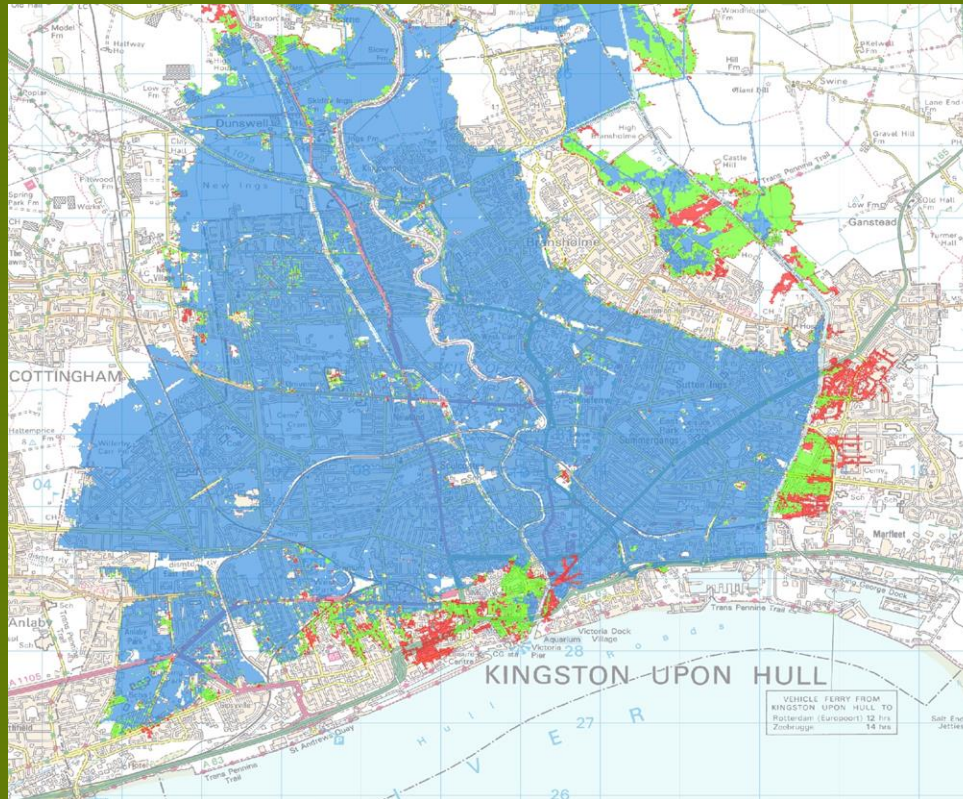
£ 3.5 m Hull + (PA5 £2.8, PA6

£0.7)



Environment  
Agency

# River Hull Defences Package

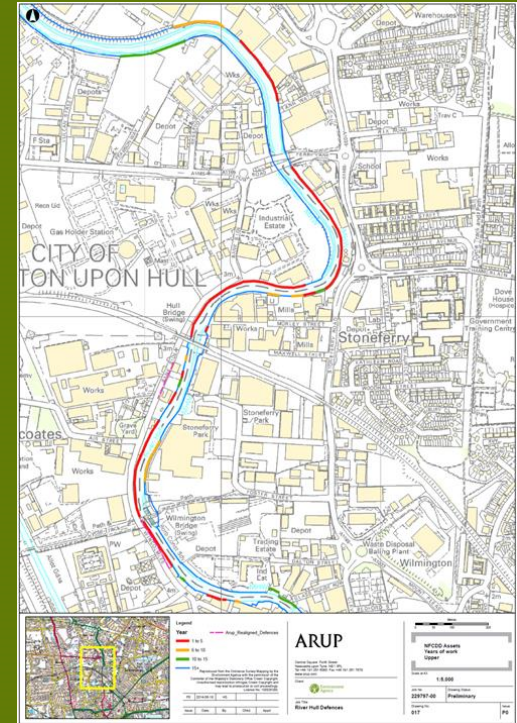
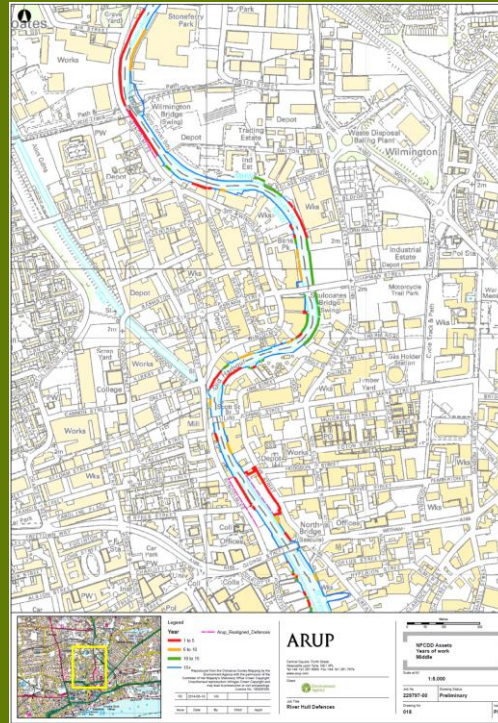
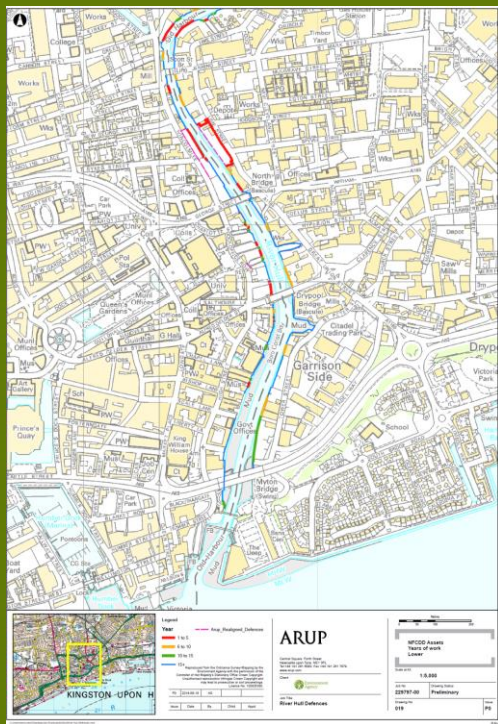


# River Hull Defences – Examples of defence condition





# River Hull Defences – life expectancy



# Hull River Defences - summary

Poor condition of Hull River defences breaks work down into:

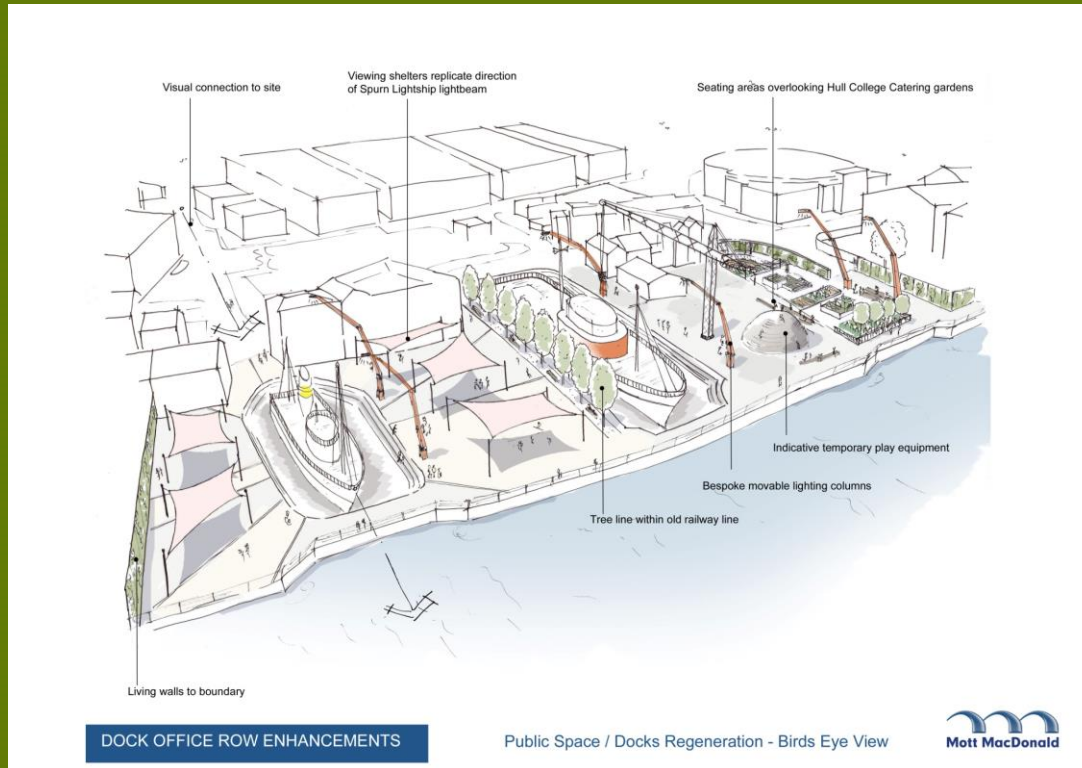
- ➔ Years 1 to 5 (39 sections) - (current project)
- ➔ Years 6 to 10 (25 sections)
- ➔ Years 11-15 (41 section)
- ➔ Year 15 +
- ➔ Project aims to sustain the current 1-in-200 year standard of protection
- ➔ 76,000 properties at risk in Hull (river flooding)
- ➔ Not addressing risk from tidal flooding
- ➔ Business case cost £36.5M
- ➔ Design& Build contract awarded to BMM

# Hull +

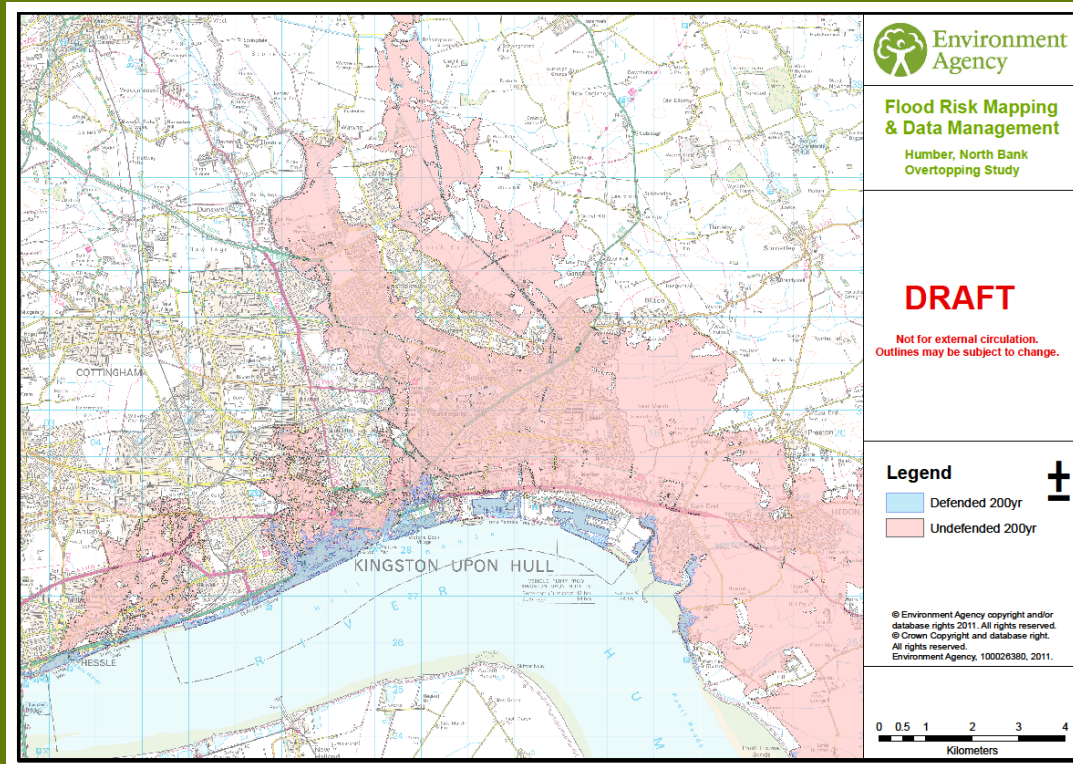
- ➔ European Structural Investment Funding
  - ➔ PA5 £2.5 million and
  - ➔ PA6 £0.7 million
- ➔ Providing additional enhancement to the main scheme- paying for activities which would not be supported by FDGiA
- ➔ Match funding for sections of flood defence scheme
- ➔ Accelerating work on some sections identified as future years



# Scheme Enhancements



# Humber Hull Frontages Flood Alleviation Scheme



# December 2013 tidal surge

Hessle Road  
looking from East to West from  
Boulevard



19:31



20:17

# Humber Hull Defences – Victoria Dock Village





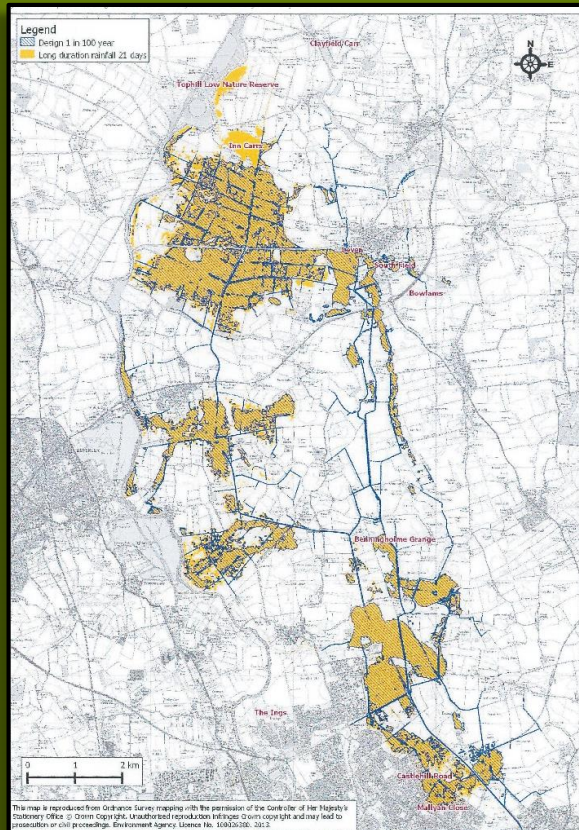
# Humber Hull Frontages – Proposed areas of work



# Humber Hull Frontages Flood Alleviation Scheme

- 1 in 200 Standard of Protection, adaptable for climate change
- Key work areas: St Andrew's Quay, St Andrew's Dock, William Wright Dock, Albert Dock, Island Wharf, Victoria Pier and Victoria Dock Village
- Reduce the risk of flooding to 66,000 properties in the area
  - OM2 24,797
- Cost: £38.6 million
- We plan to start works in 2018.
- The expectation is that construction will take 3 years to complete.

# Holderness Drain Flood Alleviation Scheme



## Key achievements in 2016/17

- Partnership group established including; Environment Agency, Hull City Council, East Yorkshire Council, Yorkshire Wildlife Trust, Yorkshire Water, Natural England
- Agreed vision for potential Castle Hill Farm flood storage site
- Cabinet and EA Director approvals obtained for Castle Hill Farm purchase
- Consultants appointed – CH2M currently concluding Appraisal
- Humber Local Enterprise Partnership funding
- Rationalisation of shortlisted options
- Review of RHICS hydraulic model
- Completion of cultural heritage, ecological and landscape initial assessments.



# Holderness Drain – Options downstream of Great Culvert Pumping Station

1. Maintain current situation
2. 2 km embankments at Castle Hill Farm + using upgraded 1972 East Hull PS
3. 2 km embankments at Castle Hill Farm + using new East Hull PS
4. Solely use East Hull PS (Upgrade 1972 station)
5. Solely use new East Hull PS

All options are being initially being assessed using current pumping capacity of Great Culvert. Benefit of changing Great Culvert Pumping capacity will be assessed separately.

**Environment Agency**

### Castle Hill Farm opportunities and constraints map

**Legend**

- Roads of interest
- Water course
- Flood zone
- Flood hazard
- Planning applications
- Public Access Route
- Access Road
- Local Footpath
- Transportation Trail
- Existing Public Right of Way
- Pasture, Meadow (existing structures to archaeological interest)
- Wildlife Corridor
- Protected Hedgerow
- Nature Landscapes

**Land Height  
(m AOD)**

< 0
0-0.5
0.5 - 1.0
1.0 - 1.5
1.5 - 2.0
2.0 - 2.5
2.5 - 3.0
3.0 - 4.0
4.0 - 6.0
6.0 - 8.0
> 8.0

**General Issues**

**Public safety:**  
Hollerness drains - maintenance need least access  
Contact for Primary Schools - Education handling  
Bleasness - RoadWorks/capexing  
Yorkshire water to be brought into the town  
Turf sites as transporters  
Water level management plan for Hall  
Smart technology  
Energy creation

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Meters

Long 48  
Planning Maps

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# Indicative programme

Hydraulic modelling		Nov - Feb 2017
Options appraisal		Dec - Feb 2017
Preferred option agreed		Apr 2017
Outline Business Case	- submit - approval	Jun 2017 Sep 2017
Detailed design & planning		Jun – Oct 2017
Tender construction		Sep – Nov 2017
Full Business Case	- submit - approval	Dec 2017 Mar 2018
Construction start		Apr 2018
Construction finish		Mar 2020

**Thank you - any questions?**