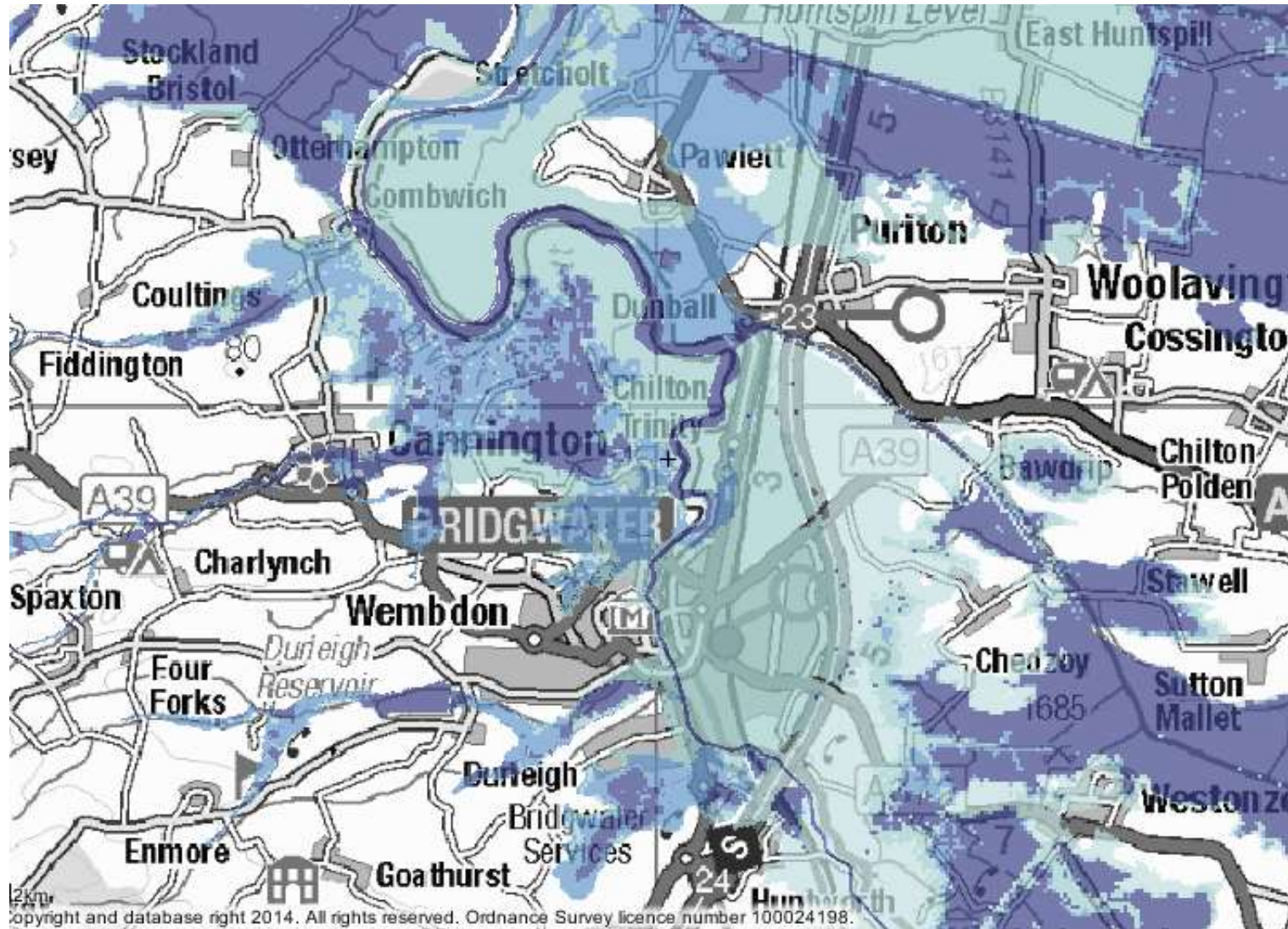


Bridgwater Tidal Barrier Scheme

Andy Hohl – Environment Agency
National Capital Programme Management Service



Bridgwater flood risk



2012/13/14 Events



- January 2014 event within 150mm of overtopping
- 20 Year Flood Action Plan
- Defra Minister support
- Accelerated delivery of the barrier

Scheme benefits

- 11,100 homes
- 1,000 businesses
- £2.5bn value of assets protected



Long list of Locations



Detailed assessment

- Both sites provide same standard of tidal flood risk protection
- Cost
 - Site 4 - £20m higher D&B cost
 - Site 4 – Higher O&M cost
- Funding
 - Both sites - £20m external funding
 - Site 4 - additional £11m external funding
- Both sites provide sufficient fluvial storage
- Site 4
 - high erosion and sediment risk
 - Increased maintenance & navigation risk
- Access
 - Site 4 – Chilton Trinity / Peninsula 23
 - Site 5 - NDR / Express Park
- Water Quality
 - Both sites the same



Express Park / Chilton Trinity - Selected

- ✓ Greatest confidence in delivery – cost and legal powers
- ✓ Same standard of tidal flood protection
- ✓ More stable river channel
- ✓ Access options
- ✓ Smaller structure - reduced O&M
- ✓ Aligns with SDC Green Network Plan & Bridgwater Vision
- ✓ Announced March 2017



Gate type assessment

- 11 types assessed
- 2 preferred

Rising sector gate



Thames Barrier



Nakdong, South Korea

Gate type assessment

Vertical Lift Gate



Hull Barrier



Barking Barrier

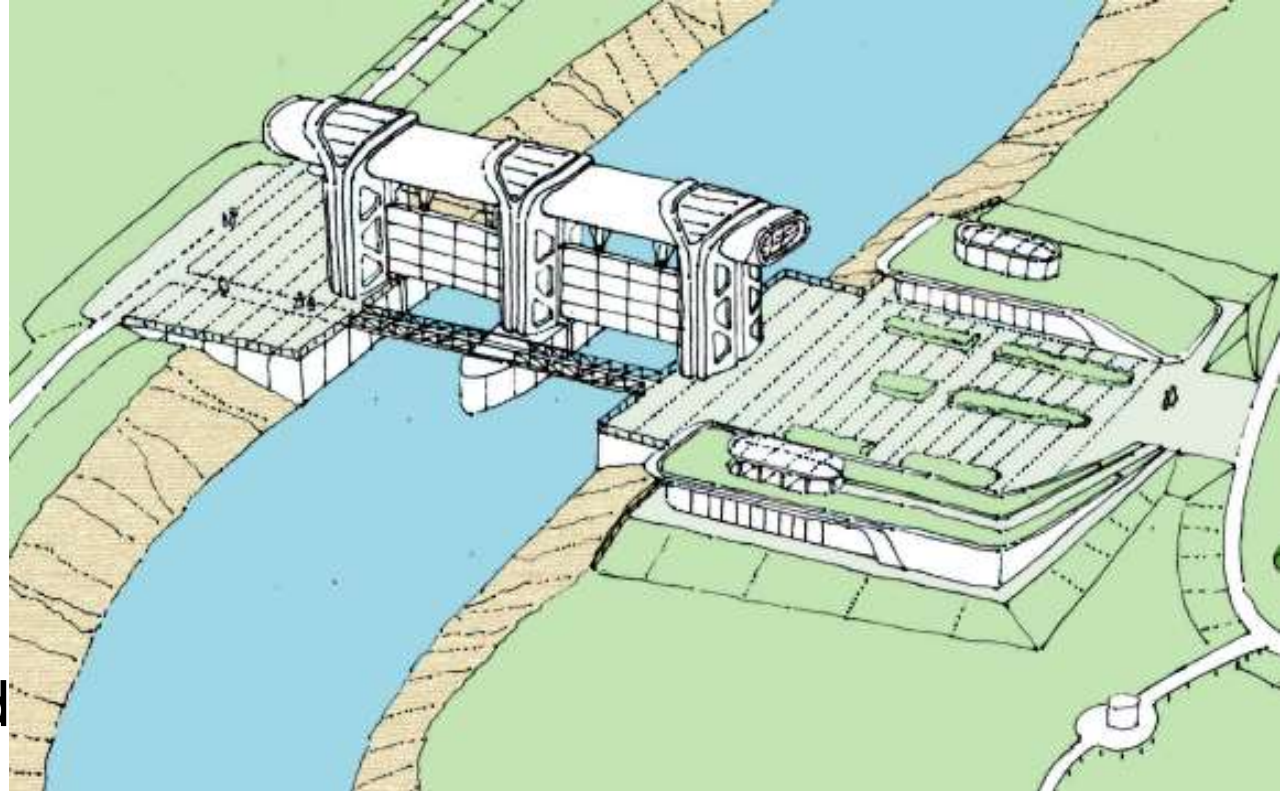
Twin vertical lift gate - Selected

- ✓ Proven reliability in a silty environment
- ✓ Easier to inspect and maintain
- ✓ Lower operation and maintenance cost
- ✓ Similar technology to other major Somerset sluices
- ✓ Announced March 2017



Architectural and landscape design vision

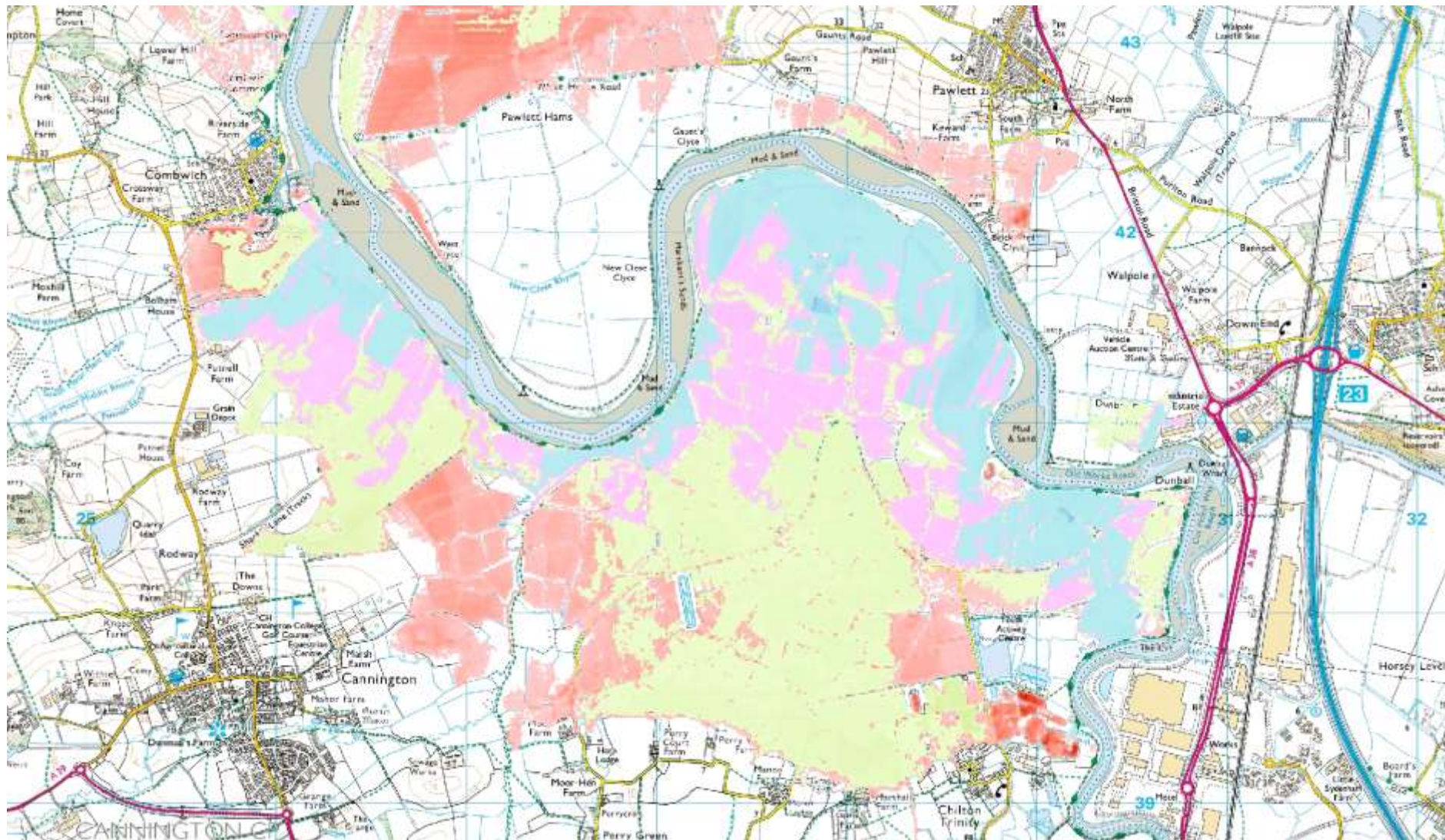
- High quality modern and innovative design
- Celebrate the structure and engineering
- Draw attention to functionality
- Opportunities and enhancement



Existing Defences



Modelled flooding – with existing defences



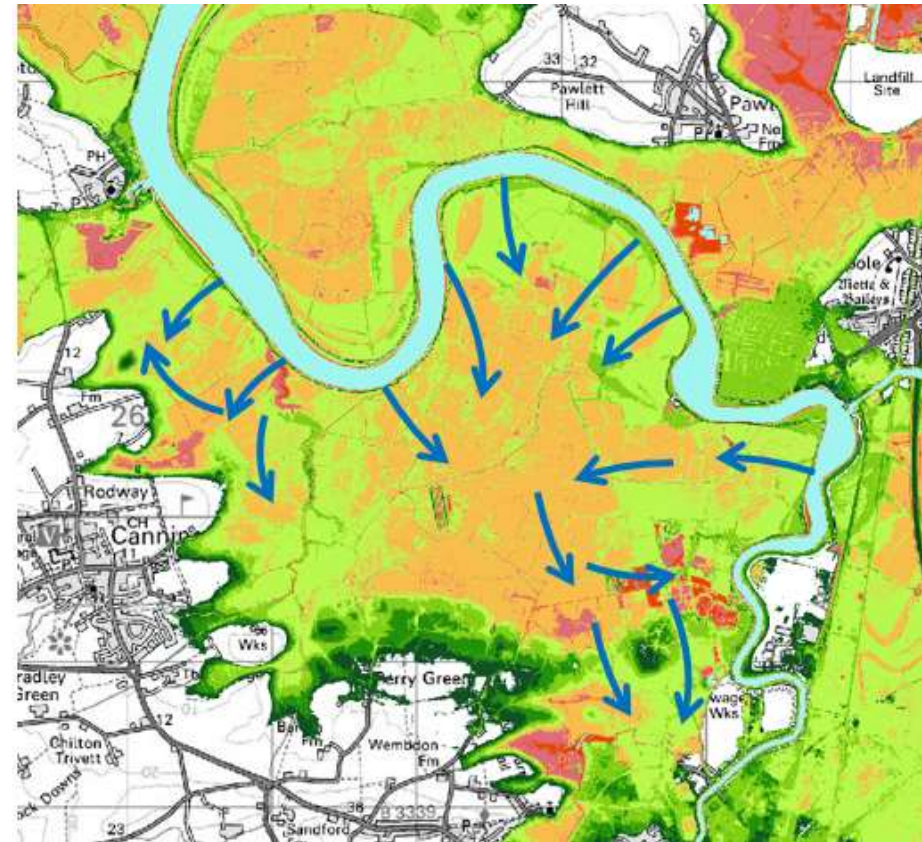
Downstream defences improvements

Objectives

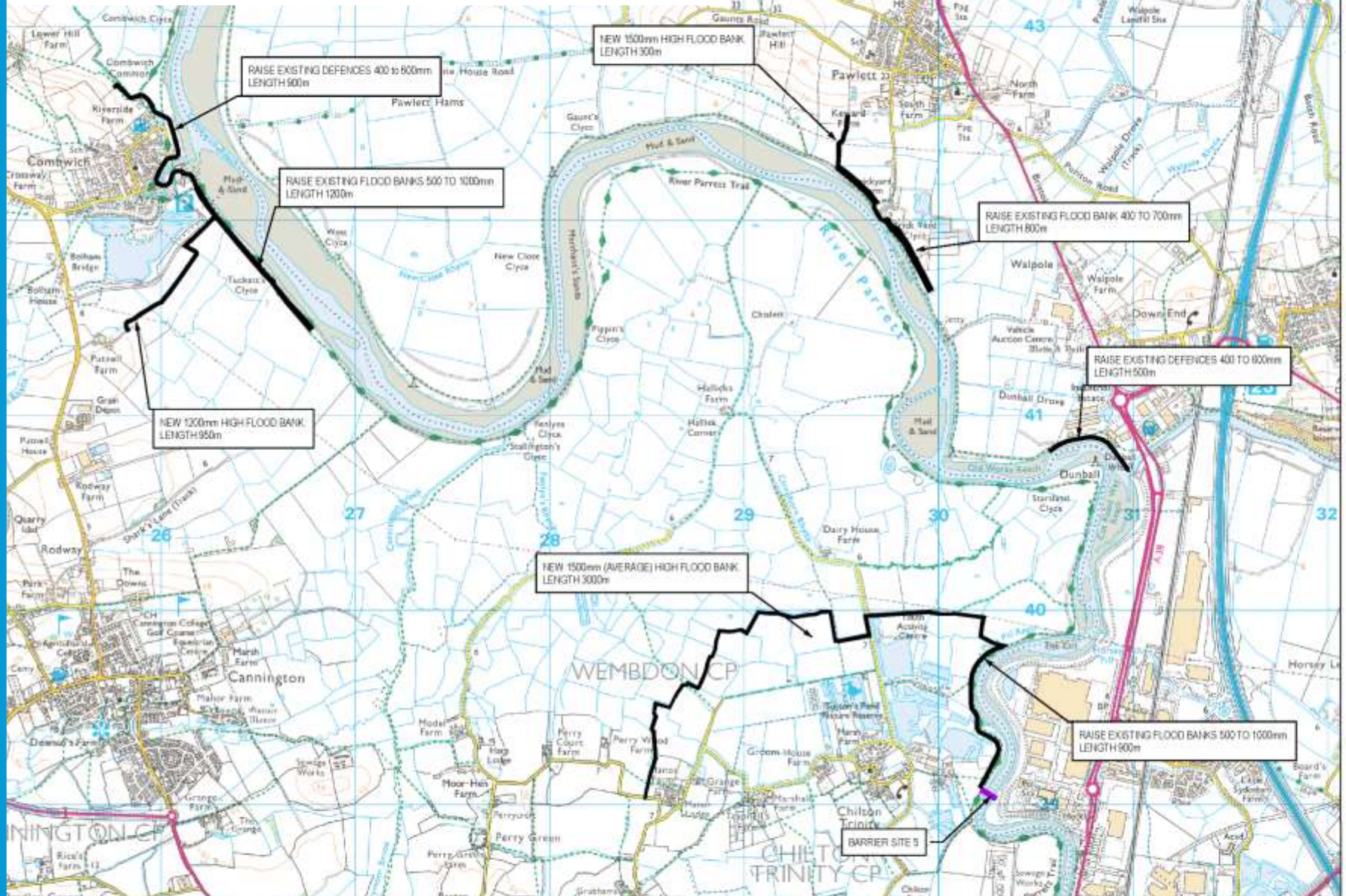
- Prevent outflanking of barrier
- Protect Chilton Trinity, Combwich, south of Pawlett
- Continue to protect land between the estuary and villages
- Don't make flooding worse elsewhere
- Maintain navigation to Dunball Wharf

Options investigated

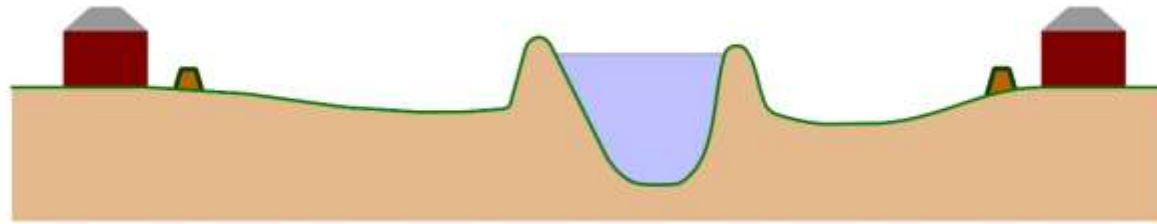
- Raise full length of existing banks
- Raise some lengths of existing banks and provide secondary banks
- Continue to maintain the existing banks



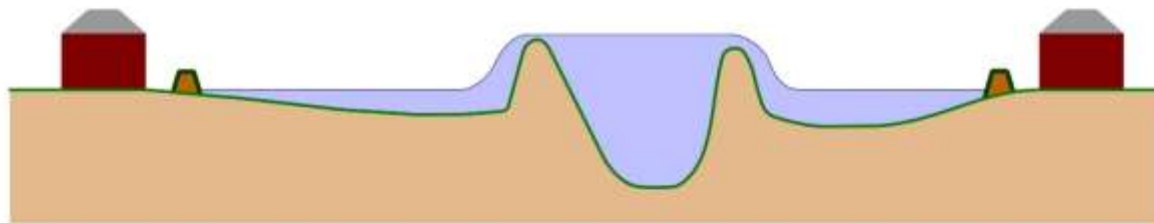
Downstream Defences



Existing river banks and secondary defences

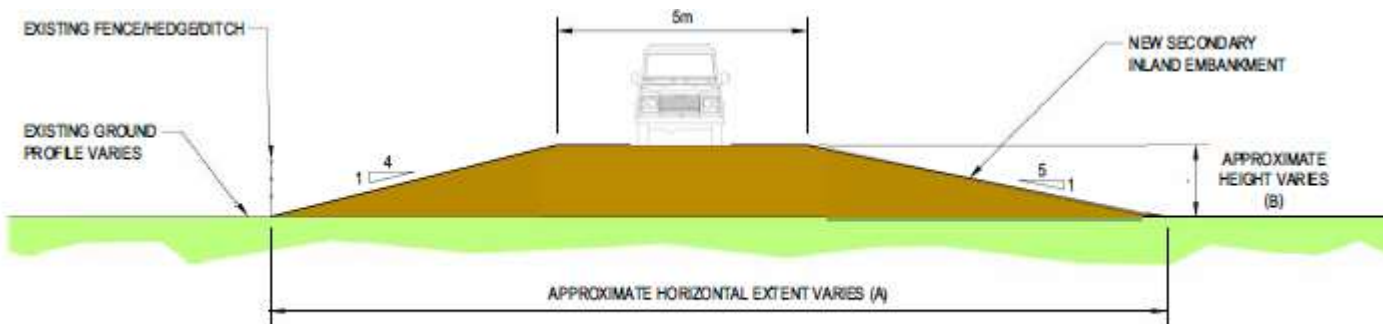


High spring tide

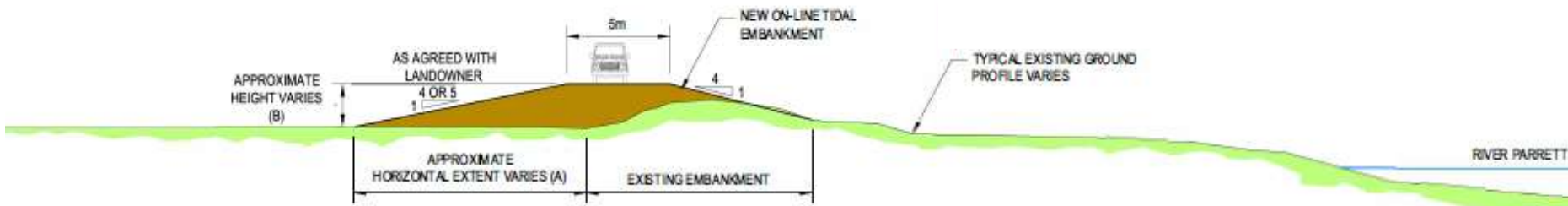


High spring tide combined with storm surge

Flood Defences



TYPICAL FLOOD EMBANKMENT CROSS SECTION



TYPICAL TIDAL BANK CROSS SECTION : COMBWICH

Transport Works Act Order

- Statutory instrument giving powers to construct the scheme
- Signed by Secretary of State for DEFRA
- Statutory authorisation for works:
 - compulsorily land purchase / rights
 - interference with highways / PROW
 - interference with navigation
 - variation of local / general legislation
- 18 months to prepare
- 18 months for SoS approval

Programme & next steps

Stage	Date
Long list options assessment Consultation	Spring 2016 March 2016
Short list options assessment Consultation	Summer / Autumn 2016 September 2016
Outline & landscape design Consultation	Spring / Summer 2017 Summer / Autumn 2017
Business case assurance - TWAO Preparation Consultation	Autumn / Winter 2017 Summer / Autumn 2018
Business case assurance - TWAO Submission	Autumn / Winter 2018
TWAO & outline business case assurance	Summer 2020
Design & build tender / full business case	Summer 2021
Design & build	2021 to 2025

Questions

Opportunities and enhancements



Potential Opportunities and Enhancements

Further develop the existing network of footpaths

Provide a pedestrian and cycle footbridge

Preserve and enhance the dock area and make it a visitor attraction (Dock Renaissance Project)

Create a landscaped riverside public space, e.g including seating and interpretation boards

Provide a visitors centre/cafe

Enhance the existing natural environment, e.g. by planting and creating wet habitat features such as ponds or scrapes

Create a parking area for use by walkers

Create floating gardens at the docks (Sedgemoor District Council project)

