

Inverurie and Port Elphinstone Flood Study

Public Meeting - 14 February 2019

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Aim of this evening

- This is the first of two public consultations for the Inverurie and Port Elphinstone Study.
 - This is a presentation of the study to date.
 - These are not the final results.
 - The data derived for the study to date is used to appraise flood management options.
 - Your inputs are invaluable into verifying the model results before appraisal of management options is completed.
 - The second consultation will be in the Spring 2019 and will be a presentation of the options appraisal process. So that your opinions and ideas will be used to finalise the appraisal.
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Study objectives

Develop flood risk understanding

Hydraulic modelling

Determine existing flood risk

Improve flood mapping

Develop recommendations for management of flood risk

Develop range of options

Appraise options

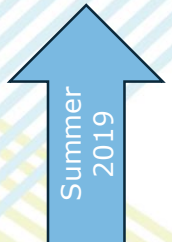
Options for the future management of flood risk

Select preferred option

SEPA will prioritise nationally where funding should be allocated

Report and findings will inform this process

Completed to SEPA's Flood Risk Management (Scotland) Act 2009 (FRM Act). Local Authority flood study checklist. Version 2, June 2017.



What has been done so far?



Flood review



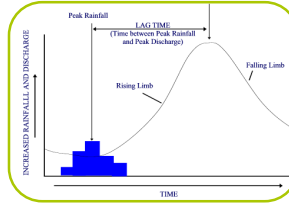
Topographic
survey



Asset
inspections



Environmental
Surveys



Hydrology



Modelling

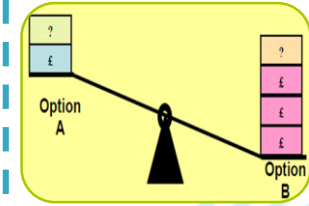


Flood
mapping



Properties
at risk

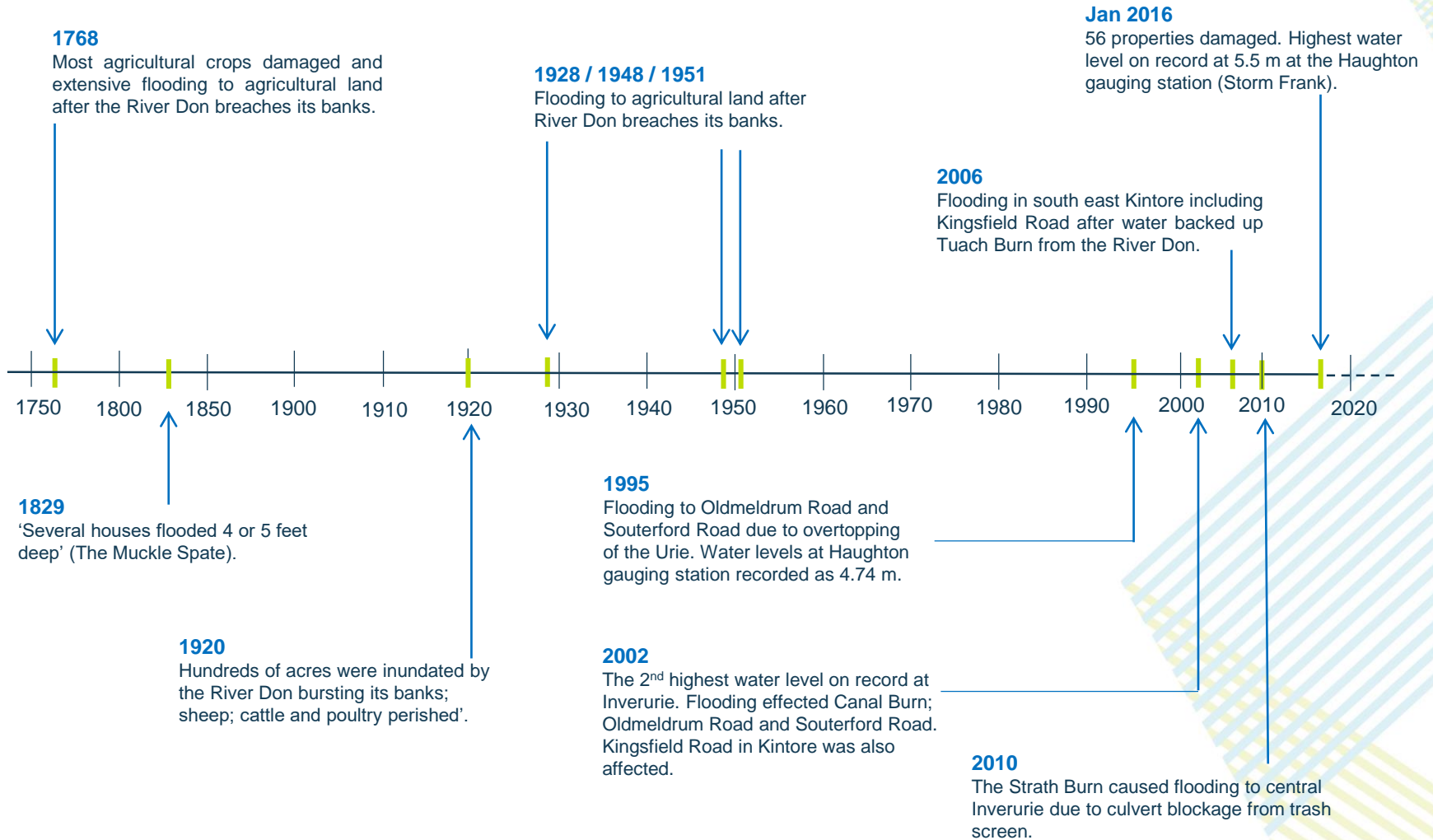
Options
appraisal



Cost-
benefit

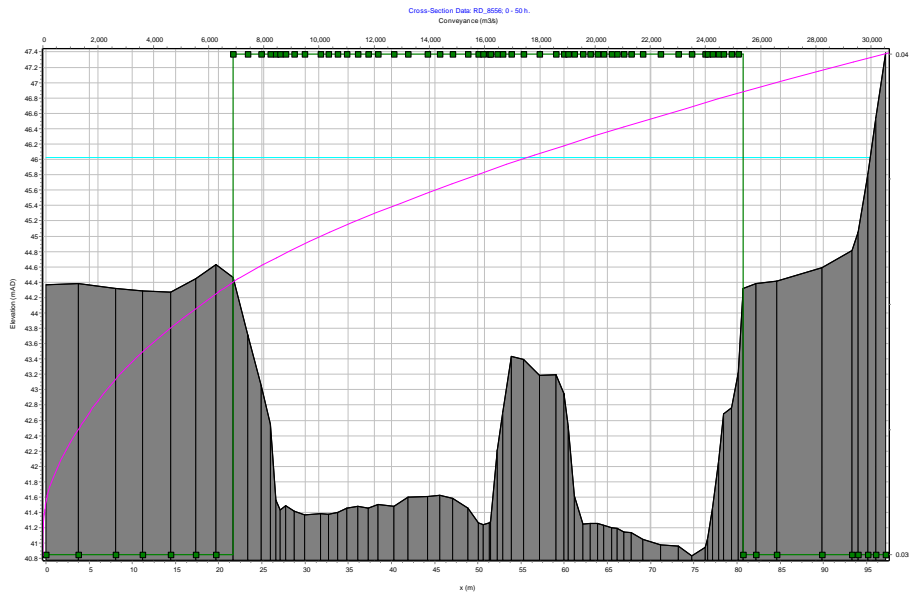
Now underway

Developing understanding of flood risk

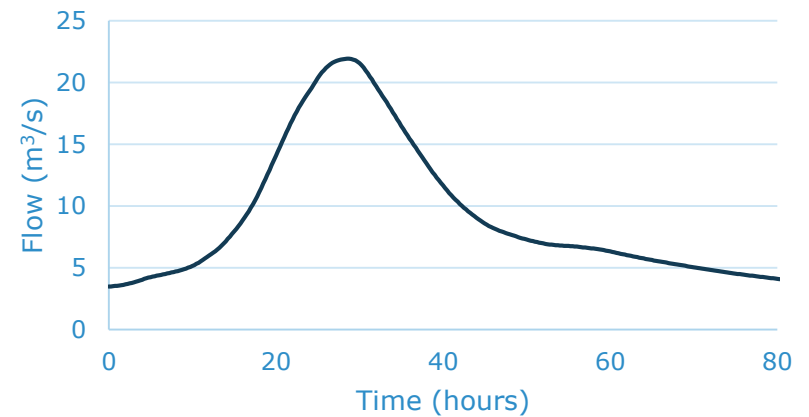


Survey and modelling

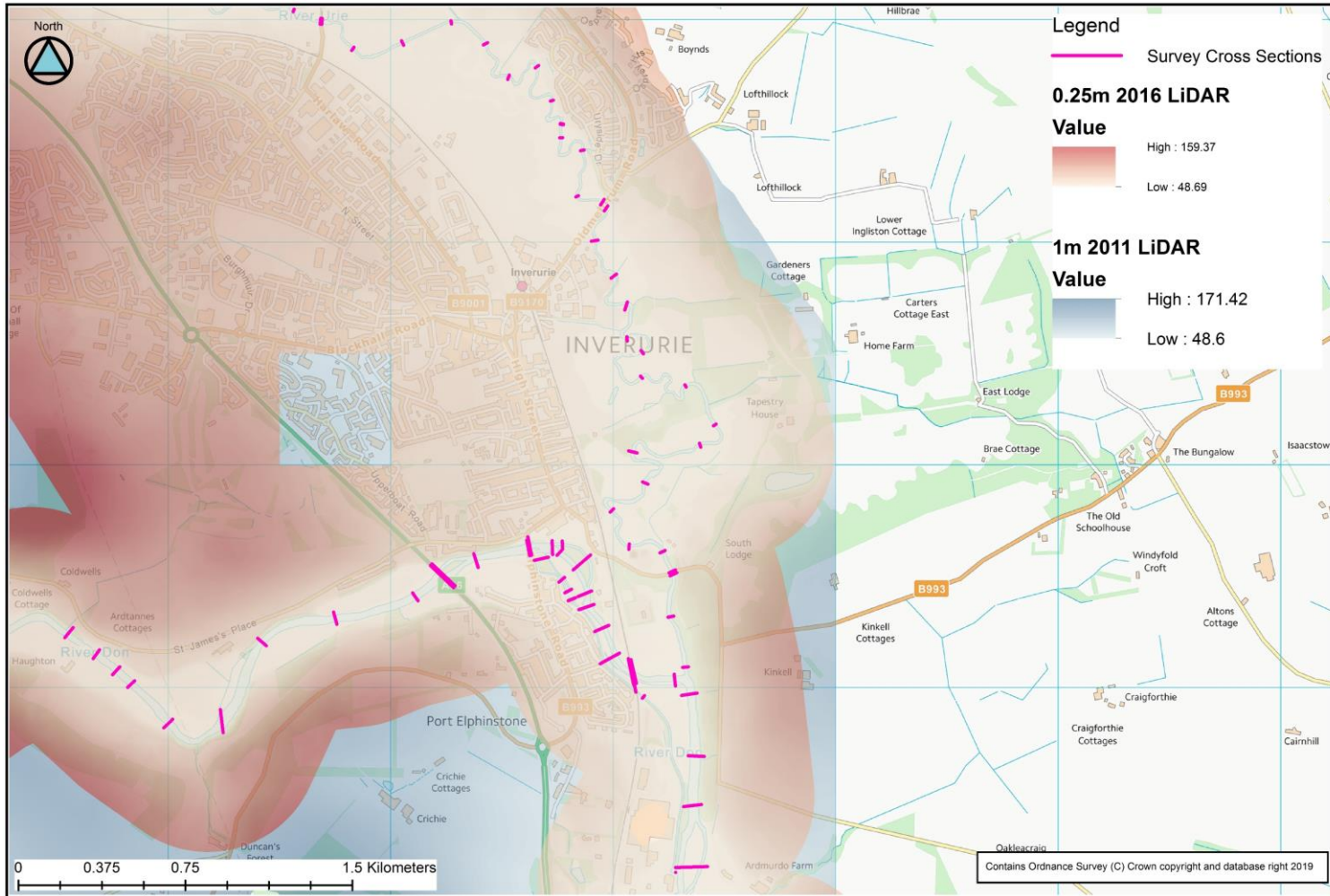
- 218 cross sections surveyed
- Combined with aerial DTM LiDAR



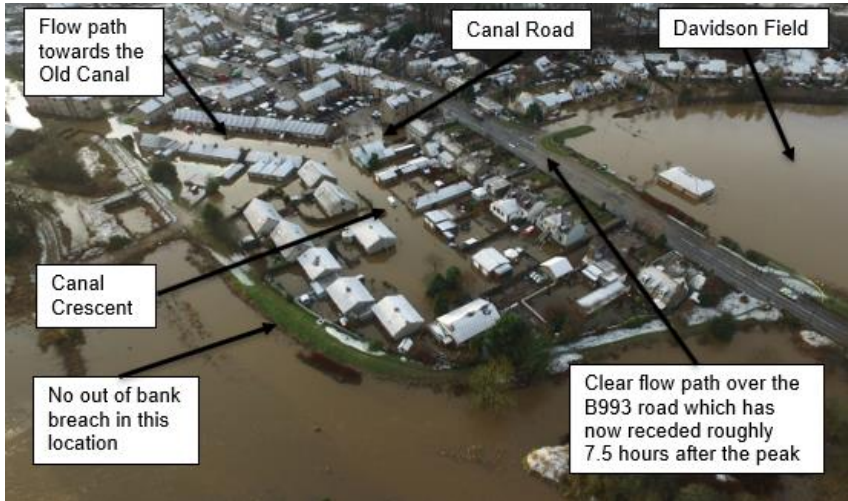
2016 Event River Urie Inflow Hydrograph



Scheme limits

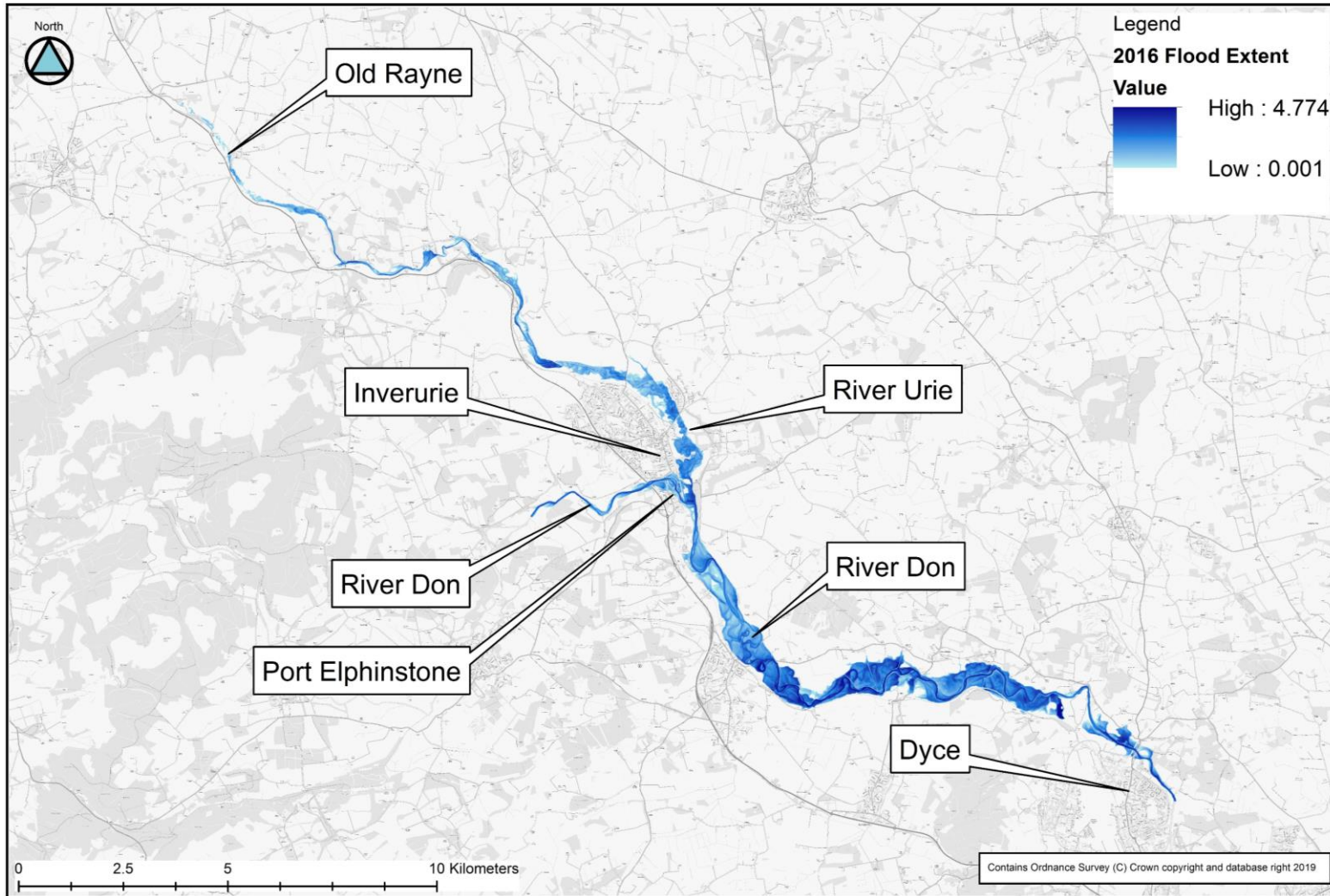


Storm Frank flood photos

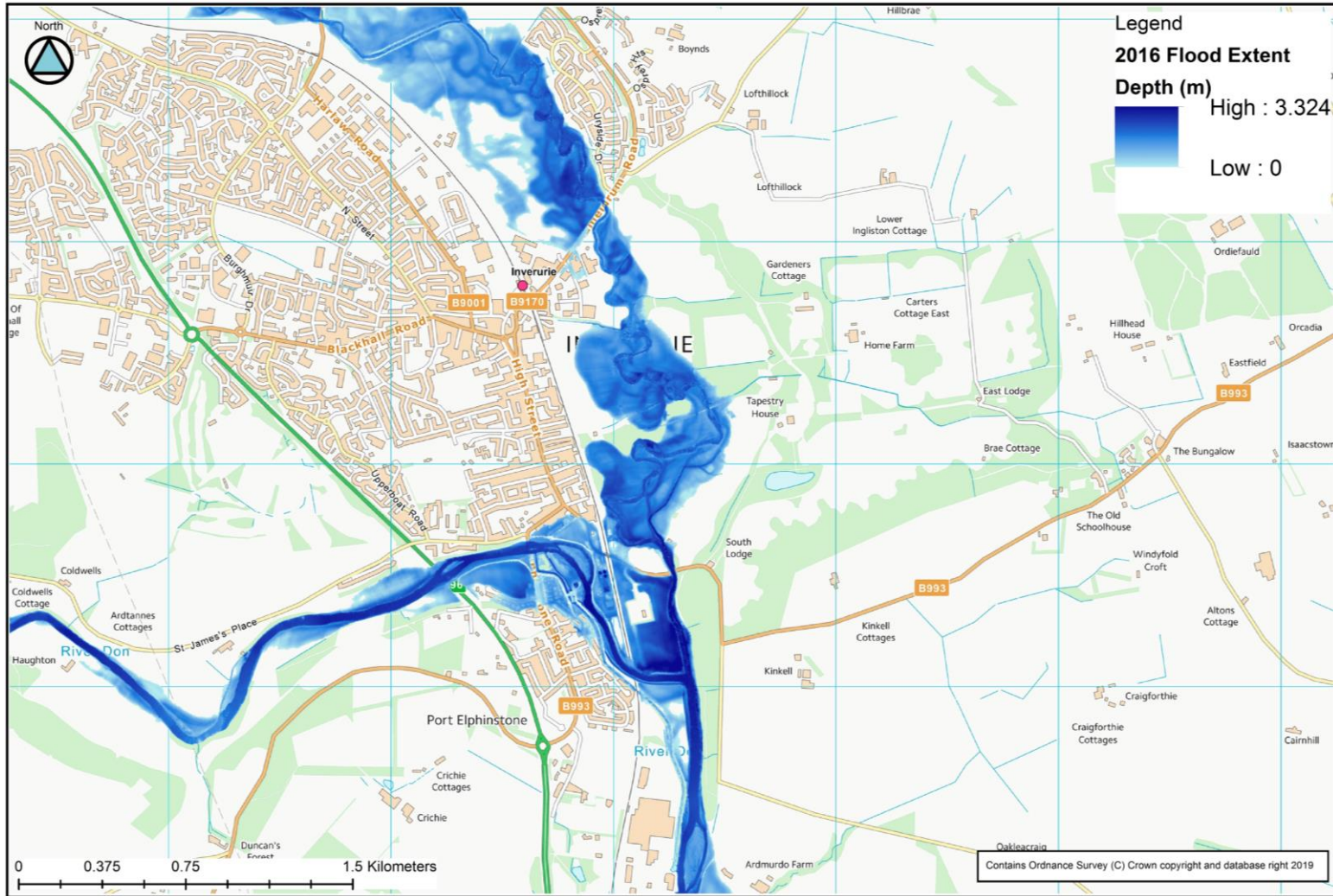


Source: Aberdeenshire Council

Modelled Storm Frank (January 2016)



Modelled Storm Frank (January 2016)



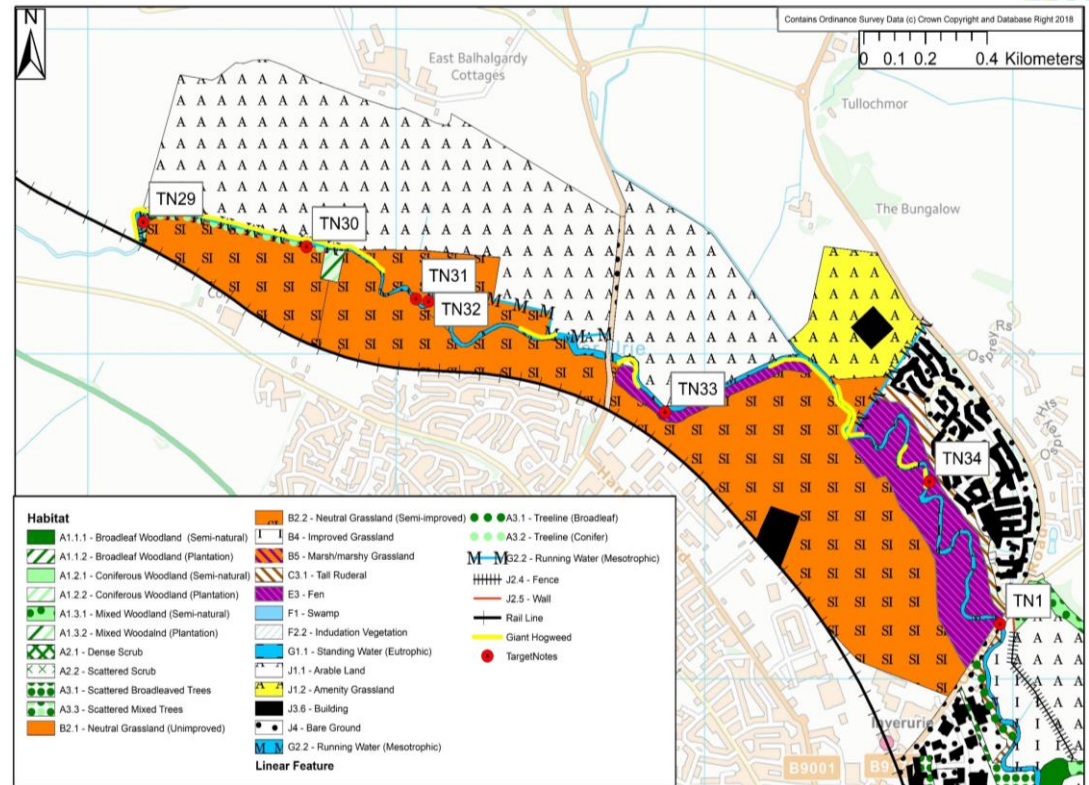
Asset inspections

- Condition
- Blockage risk
- Quick wins



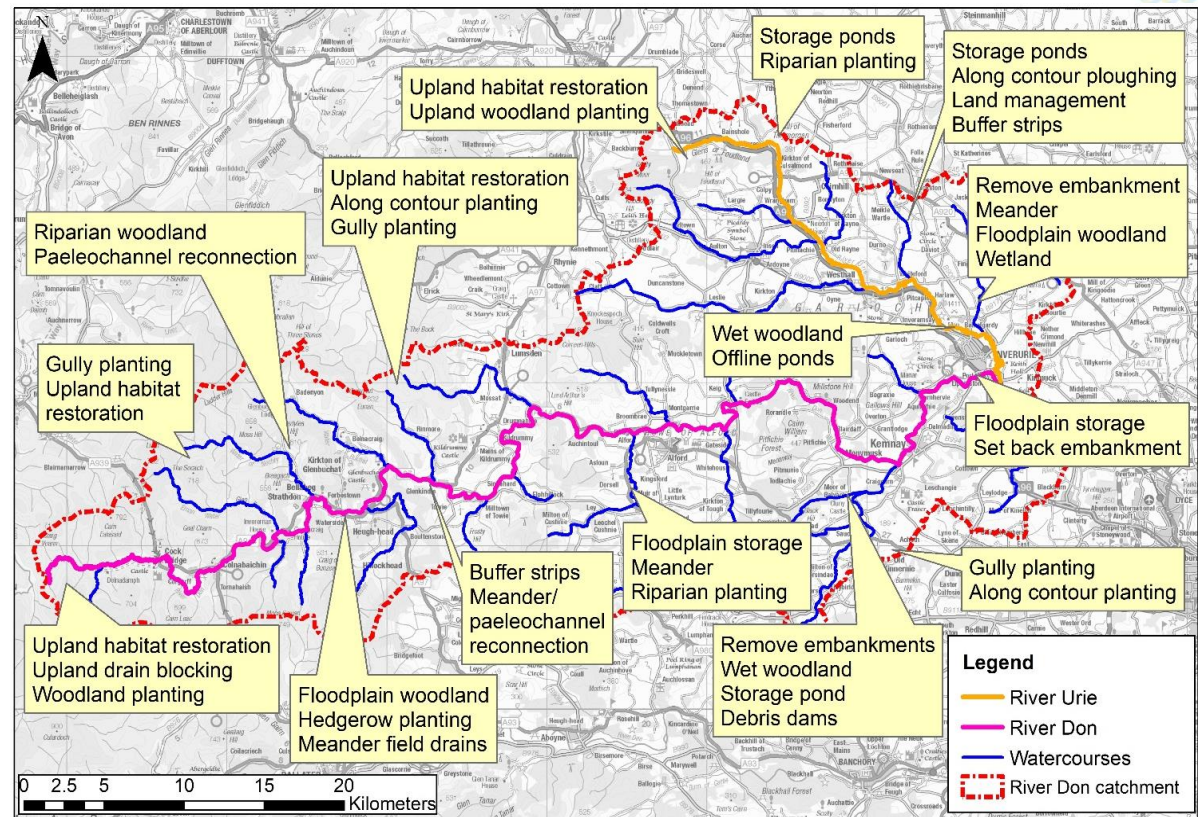
Environmental surveys: ecology

- evidence of: Badger setts; a Water Vole burrow on River Urie; Otter holts, spraints, footprints and couches; trees with Bat Roost Potential (BRP)
- avoid the need for land-take in semi-natural habitats
- avoid tree and scrub removal (particularly for bats, birds, Red Squirrels)
- minimise in-channel works (Otters, Water Voles, fish)
- no in-channel works between October and March (fish, particularly Salmon)
- avoid night-working in the main active bat season (April - September)



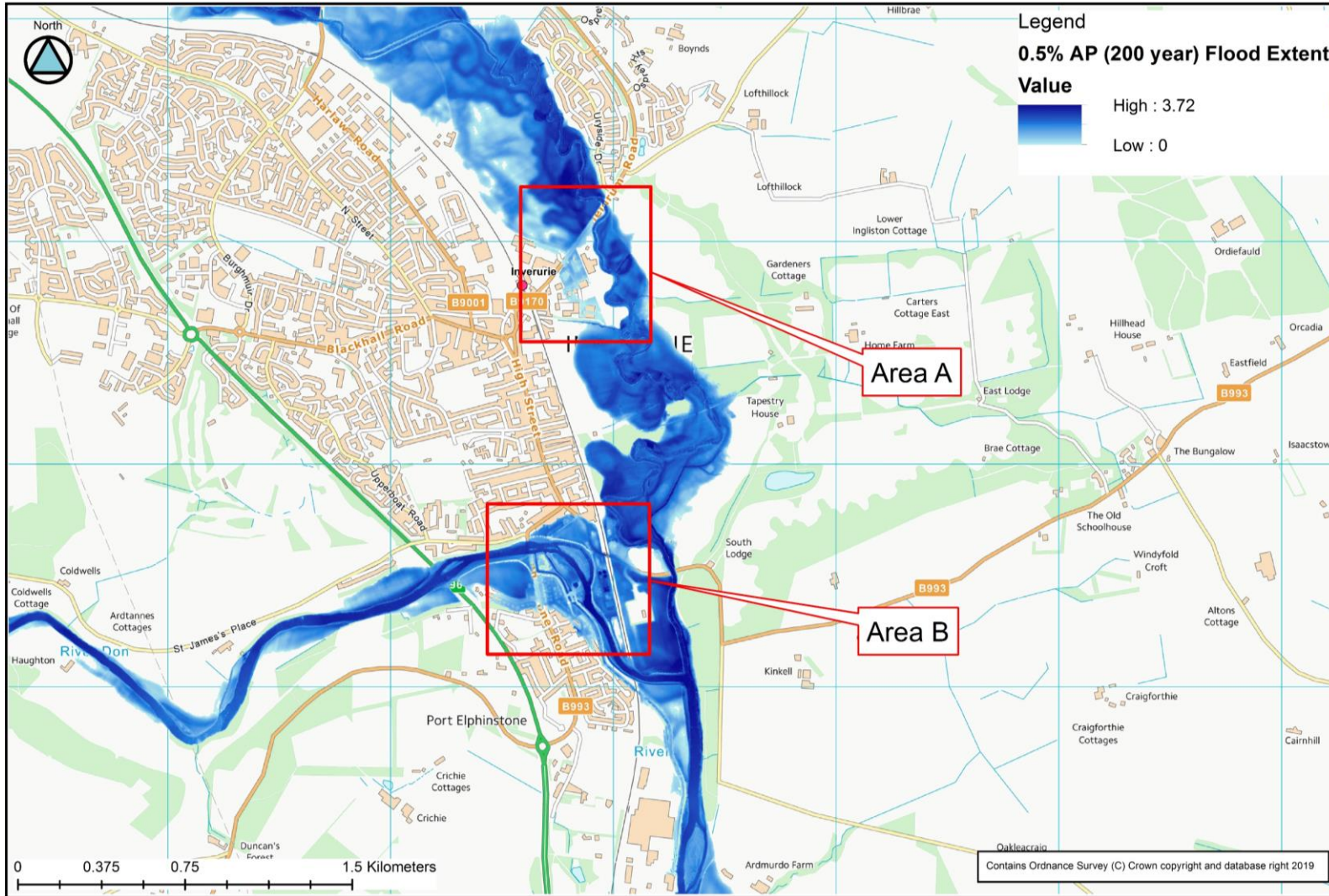
Environmental surveys: Natural flood management

- Increased vegetation cover
- Working within and on the banks of the channel
- Land management
- Runoff management



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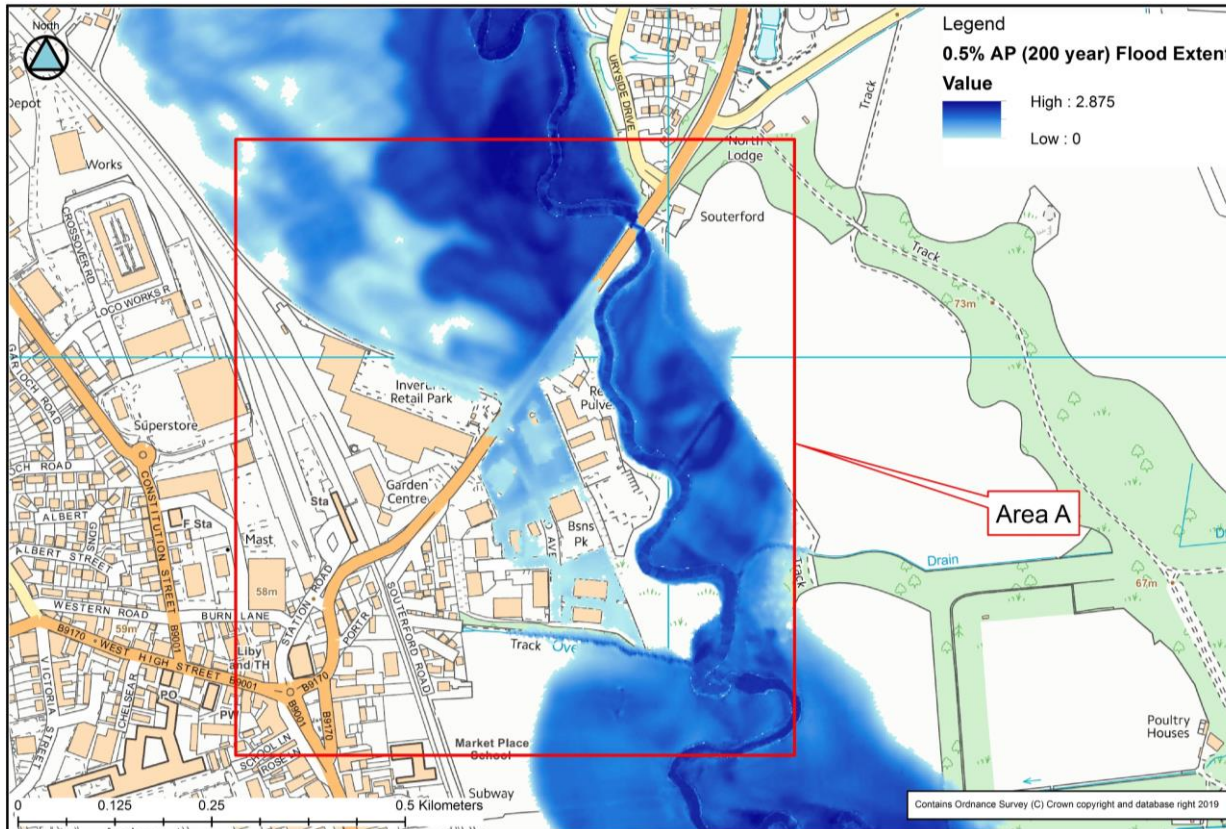
Flood risk mapping



Options appraisal – long list

- Natural Flood Management
 - Storage (engineering)
 - Conveyance
 - Control structures
 - Direct defences
 - Demountable defences
 - Watercourse maintenance
 - Property level protection (resistance and resilience measures)
 - Relocation
 - Flood forecasting and warning
 - Structure modification
-

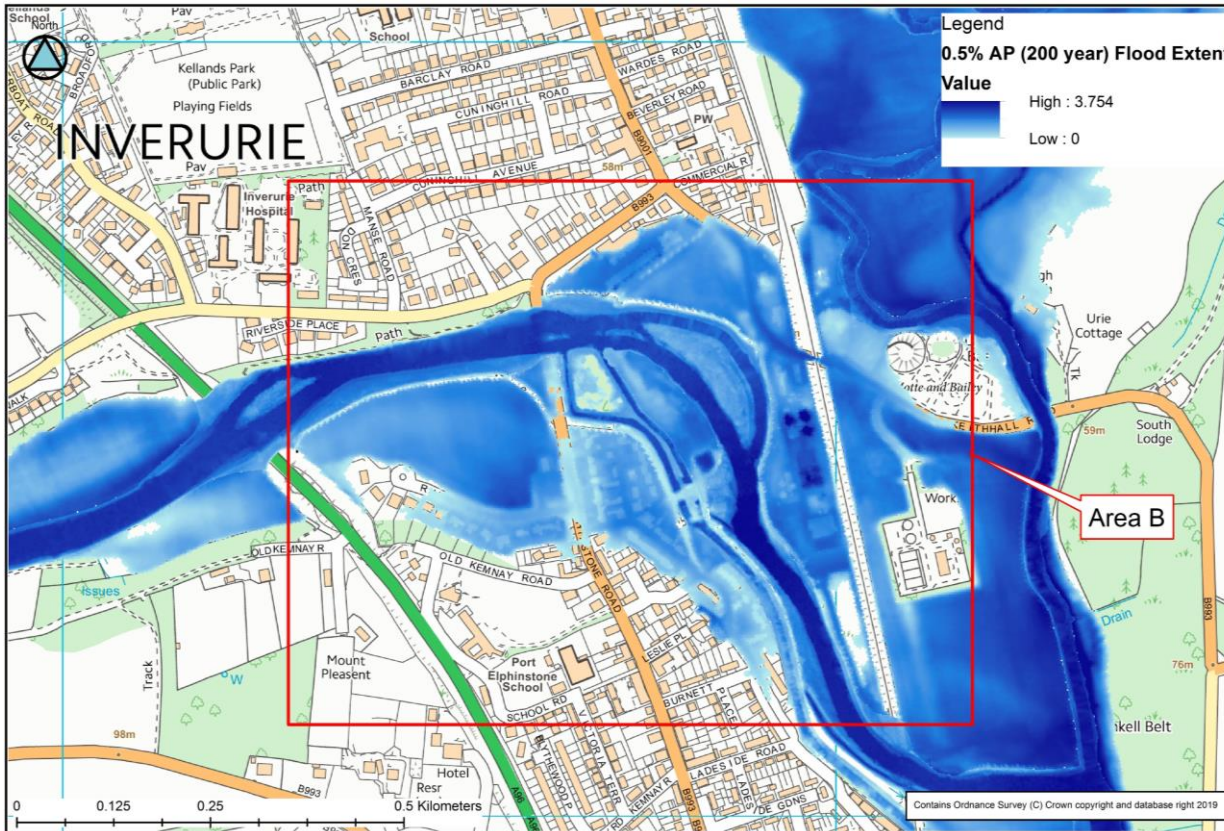
Area A: Souterford



- **Natural Flood Management**
- **Storage (engineering)**
- **Conveyance**
- **Control structures**
- **Direct defences**
- **Demountable defences**
- **Watercourse maintenance**
- **Property level protection (resistance and resilience measures)**
- **Relocation**
- **Flood forecasting and warning**
- **Structure modification**

6 properties at risk during 200 year event

Area B: Port Elphinstone



- **Natural Flood Management**
- **Storage (engineering)**
- **Conveyance**
- **Control structures**
- **Direct defences**
- **Demountable defences**
- **Watercourse maintenance**
- **Property level protection (resistance and resilience measures)**
- **Relocation**
- **Flood forecasting and warning**
- **Structure modification**

67 properties at risk during 200 year event

Next stages

- **Options appraisal**
 - Long list
 - Short list
 - Model short listed options
 - Cost-benefit analysis
 - **Stakeholder engagement**
 - **Council to agree preferred option**
 - **Preferred option to be presented to the public**
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