The Process So Far:

The Environmental Impact Assessment and Engineering Study for the Bandon Flood Relief Scheme will be delivered in the following Stages:

Environmental Impact Assessment			Engineering Study
Stage I	Part 1	Constraints Study (complete)	Hydrology Study & Hydraulic Modelling and Site Investigations (complete)
	Part 2	Screening for Appropriate Assessment (complete)	Flood Risk Assessments (complete)
Stage II	Part 1	Environmental Assessment of Viable Options (ongoing)	Flood Risk Management Options (complete)
	Part 2	Appropriate Assessment (ongoing)	Defence Asset Condition Survey (complete)
Stage III		Environmental Impact Statement (to be completed)	Property Threshold Survey (complete)
Stage IV		Public Exhibition (to be completed)	Cost Benefit Analysis (ongoing)
			Assessment of Preferred Option (ongoing)
			Flood Risk Management Plan (to be completed)
			Interference Notices (to be completed)
			Public Exhibition (to be completed)

Your Opportunity to Take Part

The Office of Public Works wishes to consider all viewpoints in relation to the Preferred Option being examined. Comment sheets are available at the exhibition reception desk or can be posted to the address below.

The next formal public consultation in relation to the flood relief scheme will take place at the Public Exhibition Stage.

Further Information

Comments in relation to this project can be addressed to:

Contact Name: Corina Colleran
Contact Title: Environmental Team Project Manager

McCarthy Keville O'Sullivan Ltd.
Planning & Environmental Consultants
Block 1, G.F.S.C., Moneenageisha Road,
Galway

Tel: +353 (091) 735611
Fax: +353 (091) 771279
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Bandon Flood Relief Scheme

Public Consultation

October 2011

This is the second public consultation for the Bandon Flood Relief Scheme.

Since the last public information day, a number of baseline surveys have been completed, flood alleviation measures have been screened and a preferred option has been drafted.

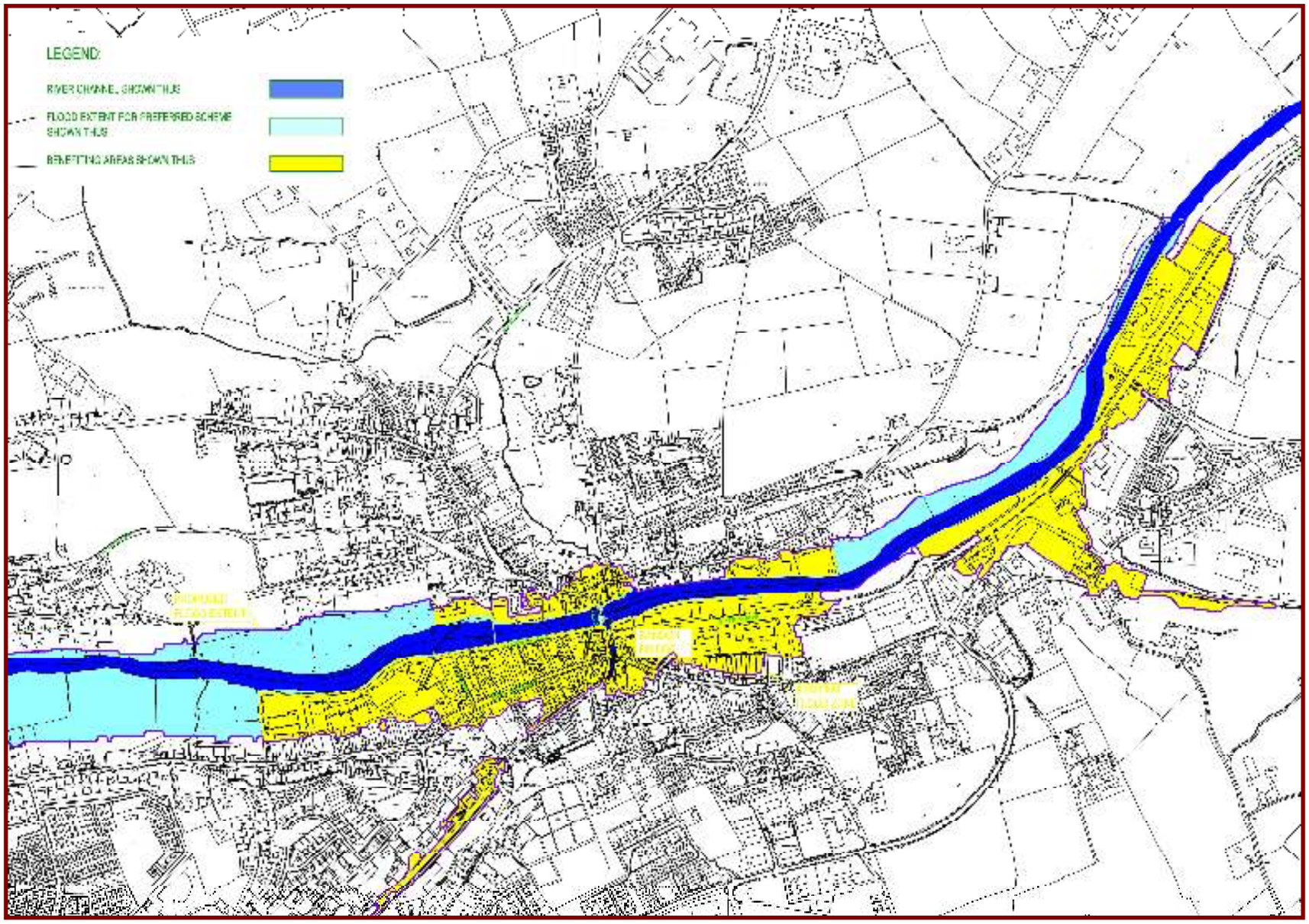
The Work that has been completed includes:

Underwater Archaeological Surveys,
Fish Stock and Aquatic Habitat Assessment,
Freshwater Pearl Mussel Survey,
Otter and Bird Surveys,
Property Threshold Surveys,
Defence Asset Condition Surveys,
Hydrology Report,
Hydraulics Report,
Site Investigations and
Optioneering (ongoing)

Ecological Surveys have shown the river provides good habitat for juvenile salmon spawning, and seven fish species were identified including Salmon, Eel, River and Brook Lamprey.

Site investigations show that riverbed material is not contaminated and up to 50% of the dredging required for the preferred option would be in rock.

The hydrological and hydraulic modelling has informed the development of the emerging preferred flood relief option.



Preferred Option – Combination of Dredging and Defences

- Deepen existing riverbed by 1.8m just downstream of Bandon Weir to 9.5mOD and dredge for 3.5km (to O'Driscoll's Bridge) at a gradient of 1/1000
- Average depth of dredge of 1m over 3.5km length
- Approximately 150,000m^3 of material to be dredged
- Creation of new fish pass at weir and Underpinning of Bandon Bridge and Pedestrian Bridge
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- Existing flood embankment at shopping centre to be improved

The diagram above shows the extent of the 100 year flood that would occur with the proposed combination of dredging and defences in place.

The area highlighted in yellow is the area that that will benefit from the proposed scheme.

The area highlighted in pale blue shows the areas where flooding will still occur.

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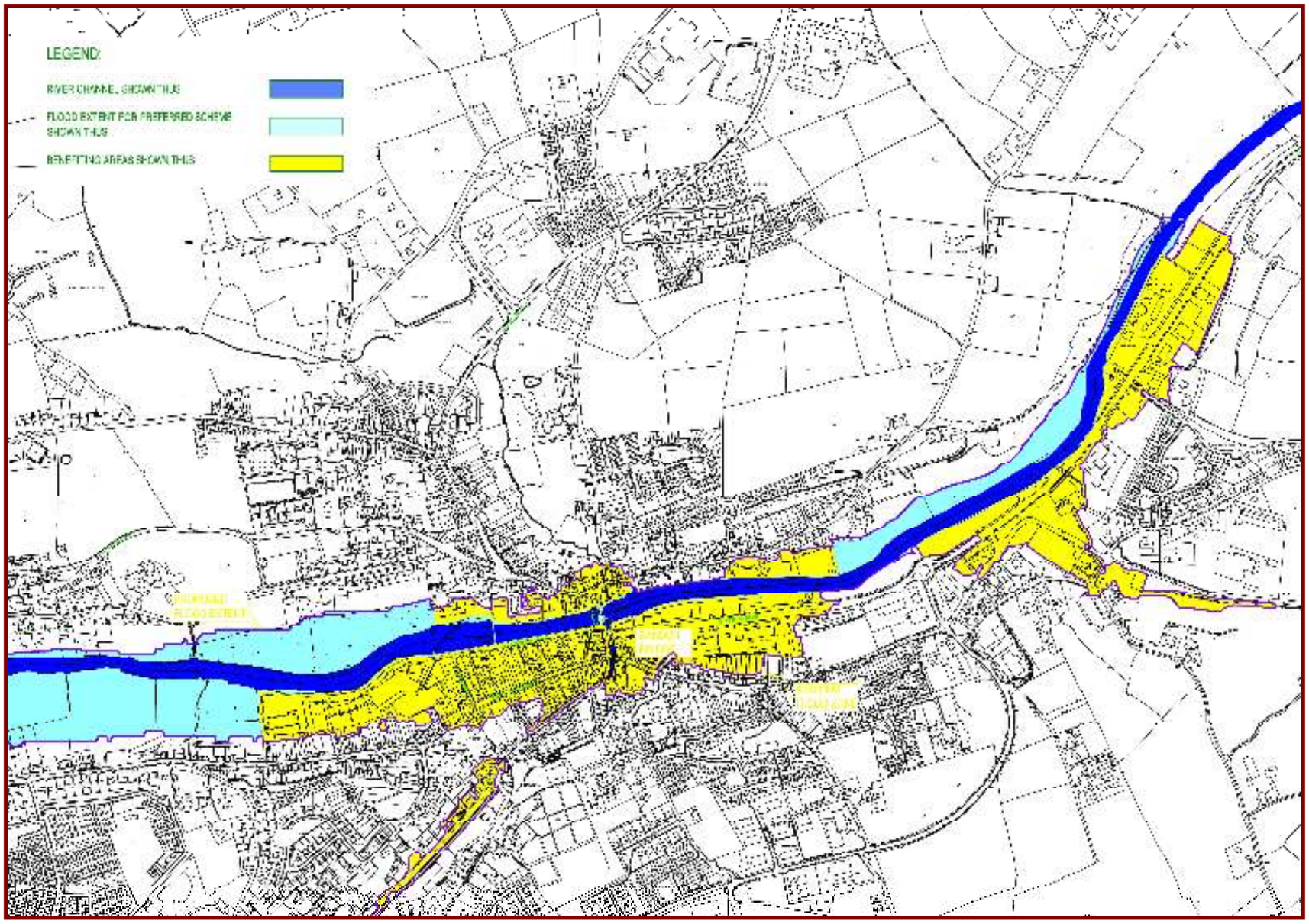

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Bandon Flood Relief Scheme

Progress to Date

- Constraints Study Complete
- Appropriate Assessment Screening Complete
- Defence Asset Condition Survey Complete
- Property Threshold Survey Complete
- Hydrology Study Complete
- Hydraulic Modelling Complete
- Site Investigation Complete
- Flood Risk Assessments Complete
- Baseline Ecology Surveys Complete
- Baseline Archaeological Surveys Complete
- Assessment of Preferred Option *(Currently Ongoing)*
- Cost Benefit Analysis *(Currently Ongoing)*

Next Steps

- Environmental Assessment
- Environmental Impact Statement
- Finalise Preferred Scheme
- Complete Cost Benefit Analysis
- Flood Risk Management Plan
- Interference Notices
- Public Exhibition

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Consulting Engineers

Bandon Flood Relief Scheme

Public Consultation No.1, 25 Jan 2011
Questionnaire Results

- 52 people responded to the questionnaire
- All respondents live or work in the Study Area
- 50% of respondents have put their own flood alleviation measures in place since Nov 2009, including flood barriers on doors, non-return valves on sewers and other measures relating to fixtures and fittings
- 64% of respondents selected dredging of the Bandon River as their first preference flood alleviation method
- The second preference flood alleviation method of the majority was channel widening (49%)
- The third preference for most respondents was the construction of walls and embankments (45%)
- A number of additional suggestions were made including pipework upgrades and removal of in-stream vegetation
- Water Quality was considered the most important of the environmental constraints; 48% indicated it as “very important”. Architectural/Cultural Heritage and Landscape were considered “important” by the majority of respondents

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Bandon Flood Relief Scheme

Surveys Completed & Main Findings

➢ Ecology Surveys

✓	Freshwater Pearl Mussel	*None Found*
✓	Fish Stock	*Atlantic salmon, River lamprey, Brook lamprey, Brown trout, European eel, Minnow, Three-spined stickleback, Stone loach, Flounder*
✓	Otter	*Suitable Habitat & Evidence of Activity*
✓	Bats	*Suitable Habitat & Evidence of Activity*
✓	Birds	*Little Egret & Kingfisher Observed*
✓	Bankside Vegetation	*Various habitats typical of lowland river valley*
✓	Aquatic Features	*Good diversity of features typical of natural channel eg. riffles, glides, pools*

➢ Underwater Archaeological Survey

17 Features identified including 19th c. weir structure (Bandon weir), 19th c. quay structure (McSweeney quay), Bandon Bridge & associated features, 19th c. Single-arched bridge within culvert, Section of river revetment walls, Partially collapsed masonry pier protruding in the river, Possible location of fish weir, Masonry wall once forming part of the railway line to Bandon, Masonry platform protruding into river, possible fording point

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Bandon Flood Relief Scheme

Surveys Completed & Main Findings (cont'd)

- **Defence Asset Condition Survey**
  - ✓ Existing defences not adequate without improvements.
- **Property Threshold Survey**
  - ✓ 151 Residential Properties at risk from 1% AEP Flood Event.
  - ✓ 201 Commercial Properties at risk from 1% AEP Flood Event.
- **Hydrology Report**
  - ✓ 1% AEP (1/100) Flood Flow = 339m^3
  - ✓ November 2009 Event = 410m^3 ~ 0.5% AEP (1/200)
- **Hydraulics Report**
  - ✓ 19 Options modelled
  - ✓ Flood Extent Maps produced
- **Site Investigations**
  - ✓ River bed material not contaminated
  - ✓ Excavation ~ 50% in rock for preferred option

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Bandon Flood Relief Scheme

Optioneering

➢ Initial Screening

✓ Many possible flood relief options assessed including:

Do nothing, Minimal Measures, Non-Structural Measures, Structural Measures eg Storage, Flow Diversion, Increased Conveyance, Flood Defences, Improve Existing Defences, Re-location of Properties

➢ Viable Options

✓ Increased Conveyance

eg. Increase width of channel over full depth or part of depth, increase depth of channel, removal of local constrictions (bridges, weirs, local narrow points) and combination of all

✓ New Flood Defences

eg. walls, embankments

✓ Rehabilitation/improvement of existing defences

✓ Combination of Dredging and Defences

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Bandon Flood Relief Scheme

Assessment of Potentially Viable Options

Preliminary Impact Assessment of Viable Options								
Potentially Viable Option	**Description**	**Environmental Impact**				**Other Impacts**		**Total Impact Score**
		Human Beings	**Ecology**	**Arch & Cultural Heritage**	**Land scape**	**Safety**	**Cost**	
Defence only	- *Defences of up to 2.0m high on McSweeney Quay* - *Defences of up to 2.7m on left bank upstream of Bandon Bridge*	**3**	**1**	**1**	**3**	**3**	**3**	**14**
Dredging Only	- *Deepen riverbed by 3.2m at Bandon Weir & continue for distance of 5.2km*	**1**	**3**	**3**	**2**	**1**	**2**	**12**
Combination of Defence & Dredging	- *Deepen riverbed by approx 1.8m at Bandon Weir and for 3.5km downstream* - *Defences on left bank upstream of bridge* - *Defences on both banks downstream of bridge*	**2**	**2**	**2**	**1**	**2**	**1**	**10**

Note: Assessment is of a preliminary nature only and is subject to change following detailed impact assessment

Level of Impact 3 = Highest Impact; 2 = Medium Impact; 1 = Least Impact

➢ **Combination of Defences & Dredging is the Emerging Preferred Option**

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Bandon Flood Relief Scheme

Emerging Preferred Option

- **Combination of Dredging and Defences**
  - ✓ **Deepen existing riverbed by 1.8m just downstream of Bandon Weir to 9.5mOD and dredge for 3.5km (O'Driscoll's Bridge) at a gradient of 1/1000**
  - ✓ **Average depth of dredge of 1m over length**
  - ✓ **Approximately 150,000m^3 of material to be dredged**
  - ✓ **New fish pass at weir**
  - ✓ **Underpinning of Bandon Bridge and Pedestrian Bridge**
  - ✓ **New 2.0 m high local flood defence wall on left bank upstream of Bandon Bridge**
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  - ✓ **New flood defence walls up to 1.1m high and flood defence embankments up to 1.8m high on right bank from Bandon Bridge to the wastewater treatment plant**
  - ✓ **Existing flood defence walls along Bridewell River to be improved**
  - ✓ **Existing flood embankment at shopping centre to be improved**
  - ✓ **New culvert to Mill Stream**

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