

# Introduction

## Emerging Preferred Option

The purpose of the PPD is to seek feedback from the public and other interested parties in relation to the Emerging Preferred Option for the Bantry Flood Relief Scheme.

The project team is pleased to answer your questions, receive comments and any other information relevant to the presented option.

Feedback from the event will be considered in finalising the preferred option for the Bantry Flood Relief Scheme which will then be brought forward to planning stage.



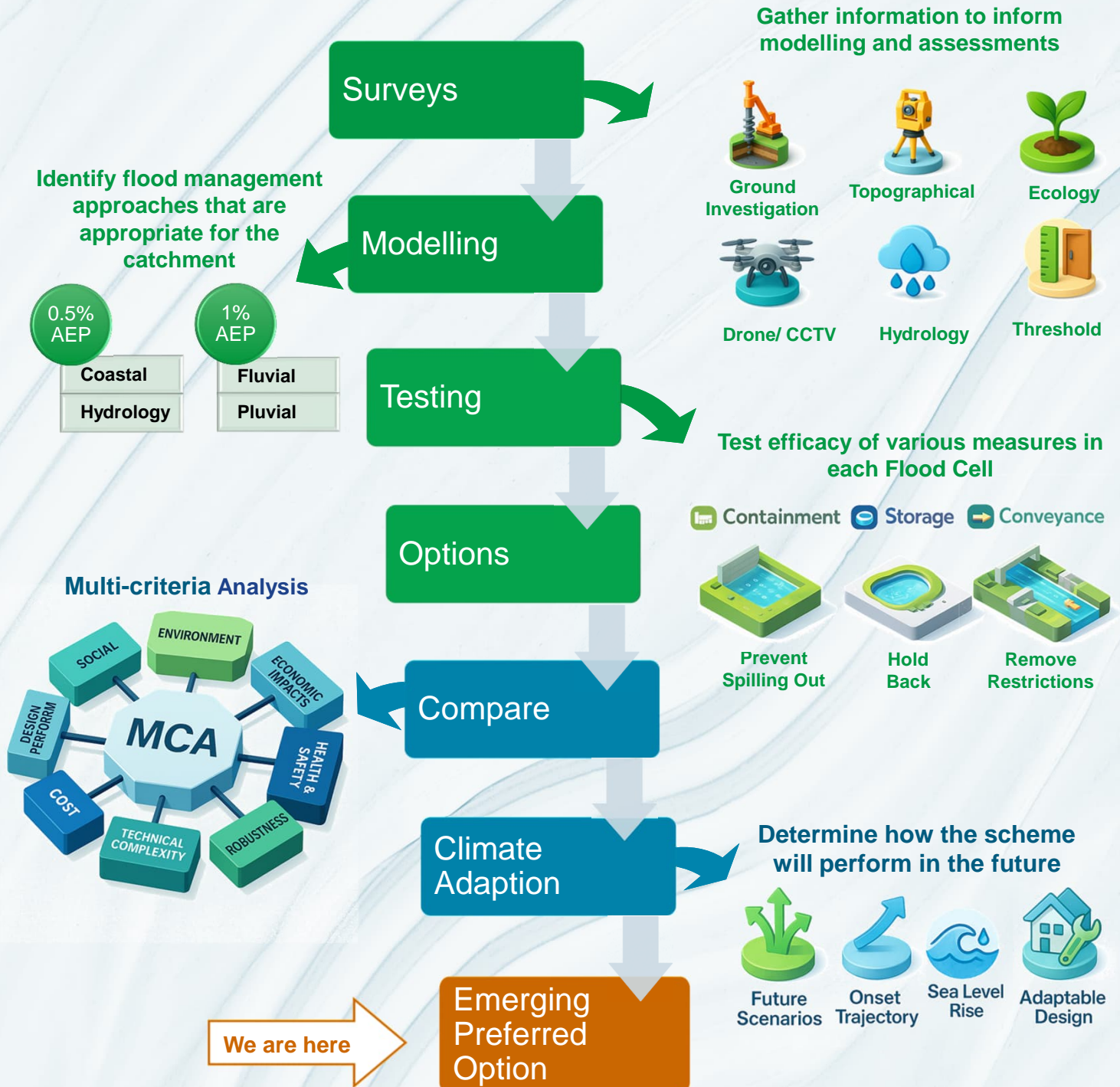
### Feedback

-  Questionnaire
-  [www.bantryfrs.ie](http://www.bantryfrs.ie)
-  [info@bantryfrs.ie](mailto:info@bantryfrs.ie)
-  Bantry FRS  
c/o JBA Consulting,  
Unit 24 Grove Island,  
Corbally,  
Limerick

### Project Roadmap

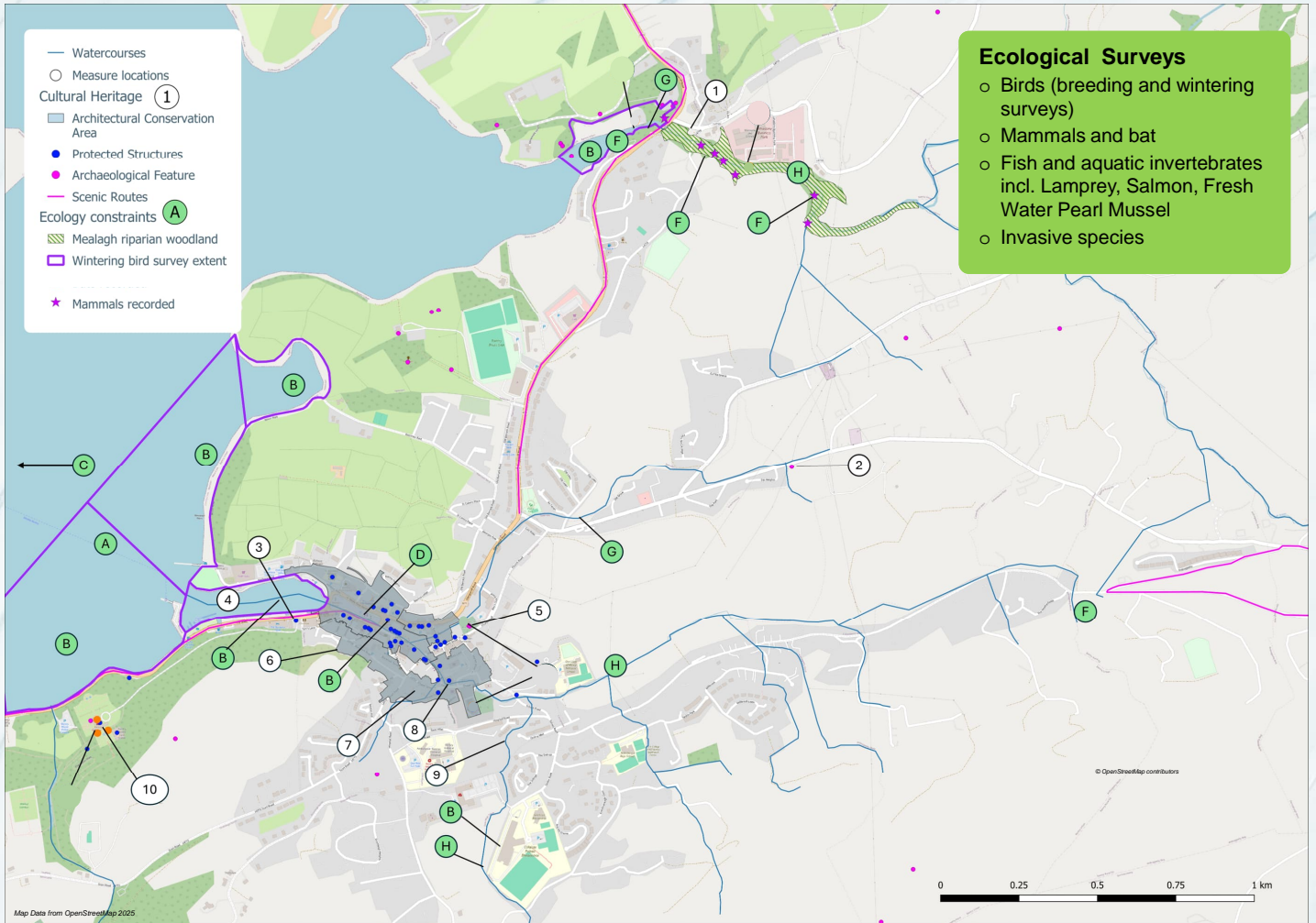


# Scheme Development





# Existing Environment



Map of the study area identifying key constraints for consideration during development of the scheme

## Map Legend

### Cultural Heritage

1. Old Donemark Bridge (NIAH)
2. Fulacht fiadh (Record of Monuments and Places)
3. Sand Quays gate lodge (Protected Structure)
4. Bantry Harbour Marina and Pier
5. Garryvurcha Church and Graveyard (Record of Monuments and Places)
6. Architectural Conservation Area
7. Rock House (NIAH)
8. Bantry Library (Protected Structure)
9. Sheskin Aqueduct (undesignated)
10. Bantry House (Protected Structure)

### Ecology

- A. Bantry Bay marine mammals: Harbour Seal, Cetacean present.
- B. Wintering & sea birds: Listed/ Annex birds including Great Northern Diver, Little Egret, Bar-tailed Godwit, Sandwich Tern
- C. Whiddy Island pNHA
- D. Annex I habitat Mudflats [1140] possibly present in Bantry Bay.
- E. Bats: Lesser Horseshoe. Pipistrelle. Daubenton's.
- F. Mammals: Otter (Mealagh River). Otter (Donemark bay). Mink and Fox.
- G. Breeding birds: Kingfisher (Mealagh), Grey wagtail (Mill stream), Swifts (Bantry town).
- H. Fisheries and Aquatic Invertebrates: Salmon, Brown Trout, Eel (Mealagh). Brown Trout, Eel.
- I. Invasive species- Many locations across scheme. 3rd schedule plant species include Japanese knotweed, Rhododendron ponticum, Gunnera tinctoria, Himalayan balsam. Treatment by Cork CC ongoing.

## Existing Flood Risk

Baseline Flood Extents

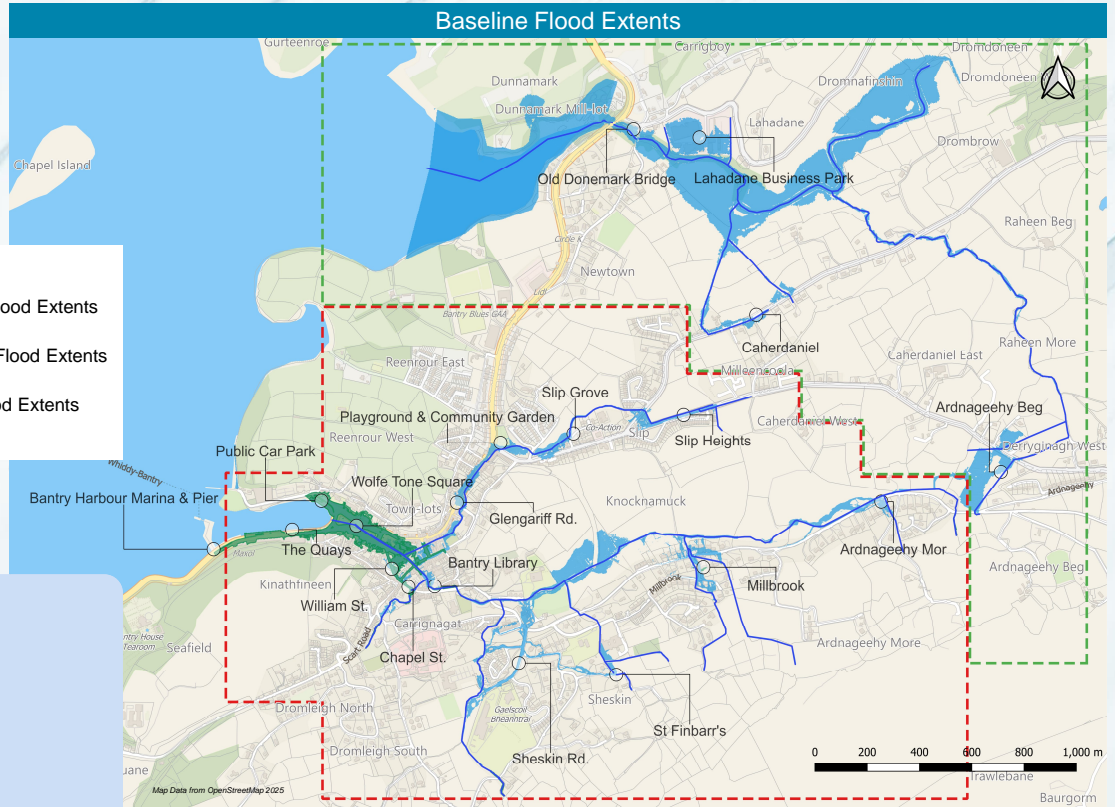
### Legend

- Predicted Baseline Fluvial Flood Extents 1% AEP
- Predicted Baseline Coastal Flood Extents 0.5% AEP
- Predicted Post-Scheme Flood Extents 1% AEP

### Work Areas

Poster No. Location of Works

- Mealagh**
- 1 Donemark
  - 1 Lahadane Business Park
  - 2 Caherdaniel (Substation)
  - 2 Ardnageehy Beg
- Mill**
- 3 Scart (Chapel Street / William Street)
  - 3 Library
  - 4 Glengarriff Road
  - 4 Boys Club Carpark
  - 5 Cois Riase
  - 5 Playground & Community Garden
  - 6 Slip Grove
  - 7 Slip Heights
  - 8 Sheskin
  - 8 Saint Finbar's
  - 9 Millbrook (West and East)
  - 10 Ardnageehy More



Defended Flood Extents

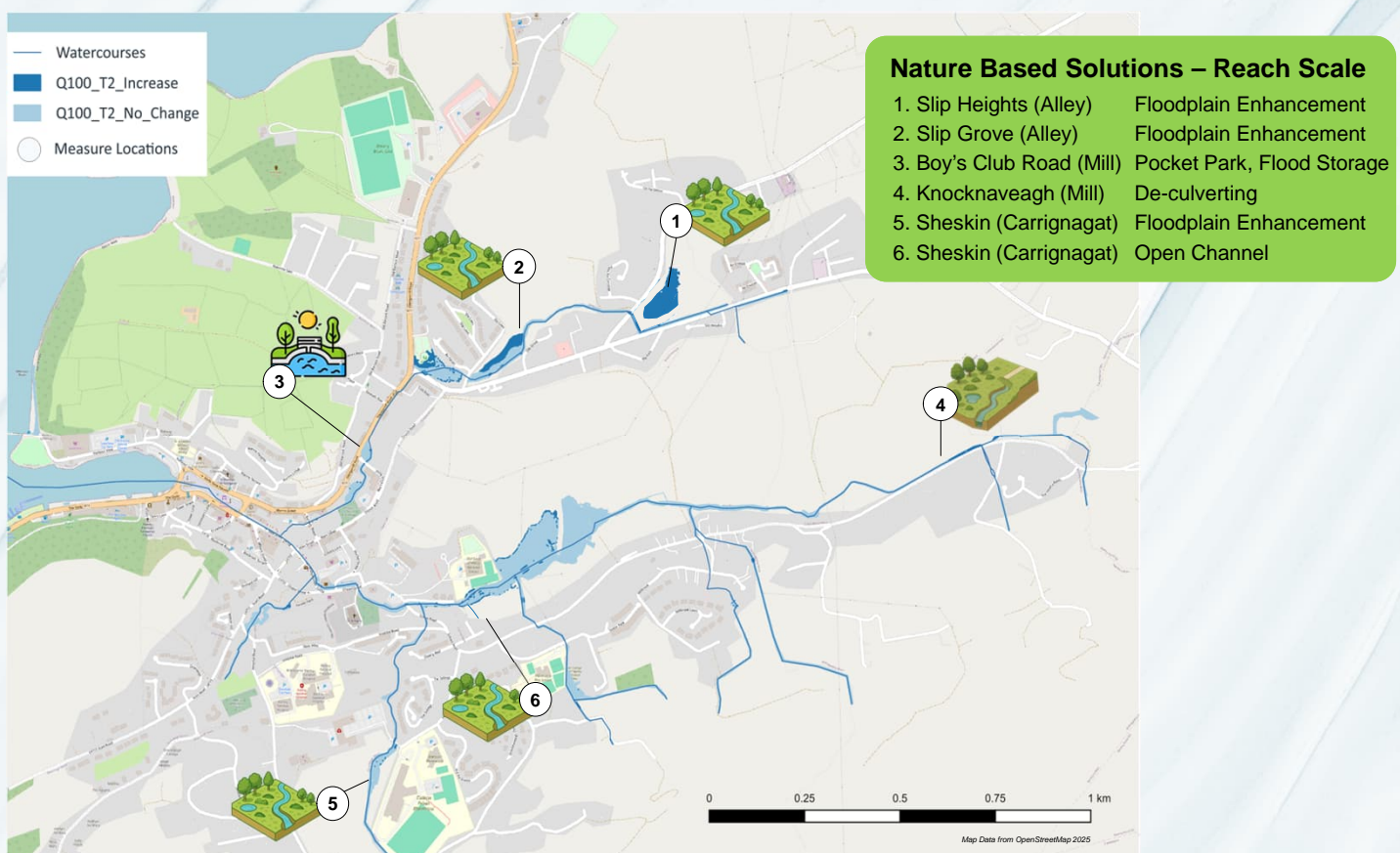




# Nature Based Solutions

## What are they?

Nature Based Solutions (NBS) use natural features and processes to address issues such as flood risk. Nature based solutions in the context of Bantry FRS aim to mimic or restore riverine processes, with a particular emphasis on floodplain connectivity. In contrast to heavily engineered solutions, NBS measures bring a large number of co-benefits in terms of river health and catchment biodiversity improvements. They can also appreciate over time as the natural riverine processes result in a maturing and enhancement of the existing habitat. These NBS measures are defined at both a local reach scale and wider catchment scale.



## What else?

- In addition to the above “Reach” scale assessment, the Scheme has undertaken an appraisal of the wider catchment and where NBS measures could be undertaken through a whole catchment approach.
- This assessment appraised the catchment of the Mill and Mealagh to identify the most beneficial locations for:
  - **Intercepting and slowing** surface runoff – Buffer strips, cross-slope hedgerows, swales
  - **Increasing storage** capacity within the catchment – Peatland rewetting, floodplain planting
  - **Peak flow delay** – Afforestation, urban green infrastructure, leaky dams
- There is an opportunity for the NBS measures identified to be pursued as complimentary measures to the flood relief scheme. These are not included in the flood relief scheme due to the significant time lag for benefits (e.g. afforestation) and/or complexity of intervention (e.g. leaky dams, buffer strips).
- Thus, they can be progressed outside the scheme through relevant state and semi-state bodies, landowners and community initiatives.

# Climate Change Adaptation

## What is climate change adaptation?

Climate change adaptation is ensuring that the flood risk management interventions designed to address present-day flood risk are also planned with consideration of the potential increase in flood risk that could arise in the future due to climate change. It is to also ensure that the proposed interventions are flexible and adaptable to a range of climate change scenarios.

## What scale of climate change is planned for?

The Intergovernmental Panel on Climate Change (IPCC) has reported that it is virtually certain that global mean sea level will continue to rise over the 21<sup>st</sup> Century. For context, recent EPA research has identified that the sea level around Ireland has risen by approximately 2-3mm per year since the early 1990s.

Rainfall has and will continue to increase in intensity. Annual average rainfall was 7% higher in the period 1990-2019 compared with the 30-year period 1961-1990.

In order to plan for this anticipated change, the flood relief scheme defines two future scenarios.

- Mid-range Future Scenario (MRFS)
- High-end Future Scenario (HEFS).

For each of these, an estimated increase in climate conditions is applied. These are shown in the table to the right.

## What adaptation is planned?

There are four approaches on this scheme to climate change adaptation. They involve:

- Making allowance now in design for adaptation in future or
- Designing/building elements now based on predicted future conditions (Assumptive approach).

## When is it planned for?

Climate change is both certain and unpredictable.

The rate of climate change onset matching the parameters of the MRFS and HEFS varies depending on levels of carbon reduction efforts nationally and globally.

To manage this, the flood relief scheme has developed pathways which set out when climate change adaptation measures need to be considered. These will have decision points set out, based on flow monitoring, as to when adaptation may be required.

## Determine how the scheme will perform in the future



| Parameter               | Medium Range Future Scenario MRFS | High End Future Scenario HEFS |
|-------------------------|-----------------------------------|-------------------------------|
| Extreme Rainfall Depths | +20%                              | +30%                          |
| Peak Flood Flows        | +20%                              | +30%                          |
| Mean Sea Level Rise     | +500mm                            | +1000mm                       |
| Land movement           | - 0.5mm/year                      | -0.5mm/year                   |
| Forestation             | - 1/6 Tp                          | - 1/3 Tp<br>+ 10% SPR         |

Allowance for replacement and upgrade of pumping stations

Assumptive 250mm climate change increase to coastal wall

All defence foundations designed with allowance for height increases

Assumptive allowance for all proposed culverts

