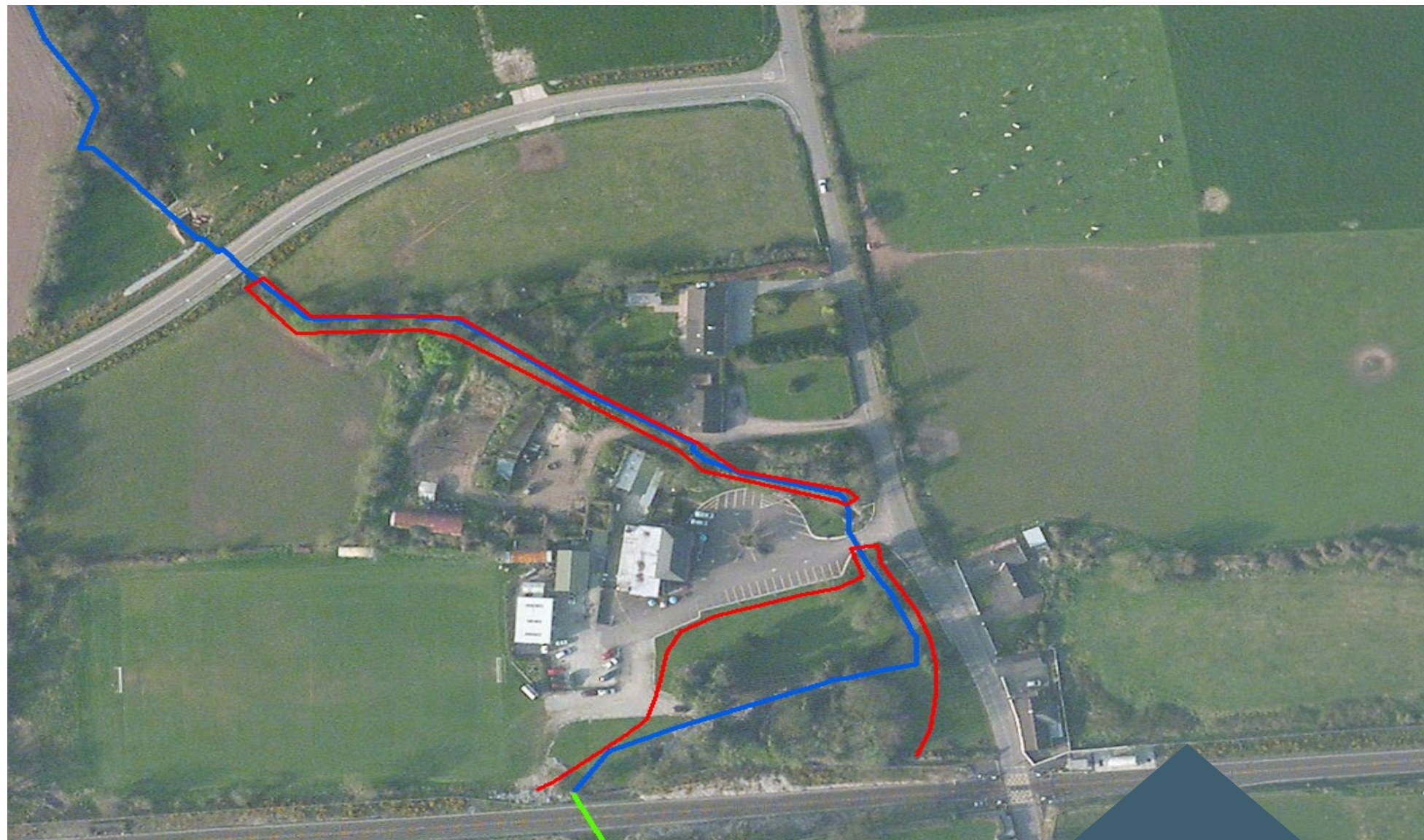


Preliminary Technical Assessment of the Flood Alleviation Engineering Measures 2 of 2



Non Viable Measures (not included in Options Development)

The measures found to be unviable as part of the Preliminary Technical Assessment are detailed below and on sheet 1 of 2.



Direct defences greater than 3.5m for Water Rock Stream at Water Rock House (upstream of cave system)

Not considered viable for following reasons:

- Excessively high defences required and are located adjacent to existing residential properties
- Negative impact on landscape and visual
- Limited scope for climate change adaptability



Dredging

Dredging of the river bed is not technically viable in the tidally dominated reach as the maximum water level of the tide will still be reached regardless of how much the elevation of the bed may be reduced. Dredging in the fluvially dominated reach is deemed viable in combination with other measures and has therefore been brought forward to the optioneering stage.

Dredging as an isolated measure in the fluvially dominated reach is not considered viable for the following reasons:

- Significant negative environmental impact
- Extensive underpinning of the existing bridges would be required which would be technically very challenging



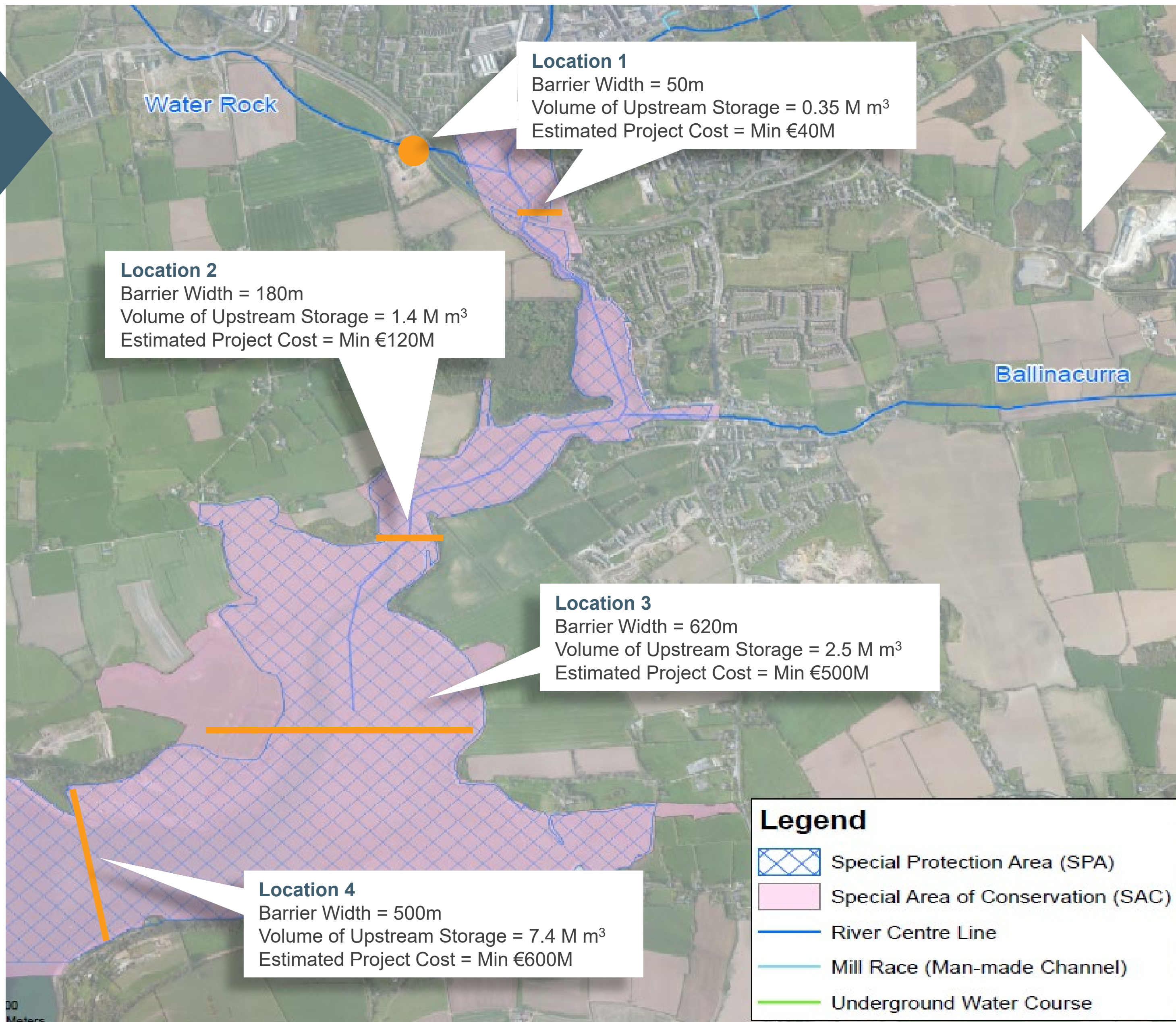
Tidal Barrier

A tidal (or storm surge) barrier is a fully or partly moveable barrier structure which is located across a river or estuary. It can be closed temporarily to prevent the ingress of a tidal surge upstream of the barrier in order to reduce the frequency and severity of tidal flooding. During normal conditions, the barrier is kept open to allow for tidal exchange and navigation.

A key technical consideration of implementing a barrier is to ensure there is a sufficient volume upstream of the barrier for storing water from the Owenacurra and Dungourney rivers when the barrier is closed to prevent fluvial flooding.

Circa 2.6M m³ of storage for water from the rivers is required for a 1 in 100 year fluvial flood event. Four tidal barrier locations were investigated as shown.

The available storage volume upstream of each barrier location assumes water can be stored to a level of 2.5mOD (existing threshold of flooding at Bailick Road).



Viability of a Tidal Barrier

Not considered viable for a number of reasons:

1. Direct defences still required to protect the areas of the town that are at risk from both fluvial flooding and tidal flooding i.e. Lower Main St and Baby Walk area.
2. Tidal barrier project cost estimates are significantly greater than the total economic benefit of the scheme.
3. Owenacurra estuary is a European designated site - Special Area of Protection (SPA) and Special Area of Conservation (SAC). Construction of a tidal barrier would result in significant environmental impacts.

However, due to the increasing tidal risk associated with rising sea levels in an extreme future climate scenario, a tidal surge barrier or tidal barrage located within the East and West Passage of Cork Harbour will be considered as part of the Climate Change Adaptation strategy of the scheme.

