



SHANNON TOWN & ENVIRONS FLOOD RELIEF SCHEME
Public Consultation Event
Emerging Options
25 October 2023

Shannon Chamber Observations
November 2023

Background and Context to Shannon & Environs Flood Relief Scheme

Shannon Chamber has made multiple submissions in recent years to public consultations on subjects such as:

- Shannon Town Master Plan
- N19 Shannon Airport Access Road Improvement Scheme
- Clare County Development Plan
- Shannon and Environs Local Area Plan
- ...

A common theme across all submissions is that development, assessment, design and delivery of these essential activities must recognise and build on the opportunity to connect and reinforce Shannon's three key components (airport, industrial zones, living town) and its linkage with and influence on the wider region and corridor.

This theme also applies to the Shannon Town and Environs Flood Relief Scheme. We welcome the fact that the terms of reference cover the area stretching from the golf club through the airport, industrial zone, town and amenity areas. This, by definition, links the three key components. It is essential that there is constant sharing of information, insights and solutions between the teams involved in each and every planning and development project currently underway.

We have reviewed the slide deck provided after the public consultation event held at the Oakwood Arms Hotel on 23 October 2023. Observations on the presentation material are provided on the following pages. These are made as constructive and general inputs into the consultation process. We have not conducted a detailed technical review of the various options and proposals.



Overall Comment: Accelerate Timescale from Design to Delivery

The original embankments were most recently enhanced in the 1940s and 1950s to provide protection to Shannon Airport and the then emerging plans for development of the Shannon Free Zone and the new town of Shannon.

New research at [Maynooth University's ICARUS Climate Research Centre](#) highlights the need for climate adaptation measures particularly in flood protection. The outcome of this research highlights that the risk is increasing day by day of a breach or over-topping of the embankments currently protecting Shannon. The devastating impact of storm surges and heavy rainfall has been directly experienced in recent weeks by communities and businesses in the coastal stretch from Kinvara to Galway and in the town of Midleton in Cork.

Shannon Chamber welcomes the fact that work on the Shannon Flood Relief scheme is underway but urges acceleration in timescale from design to implementation.



On average, rainfall intensity in Ireland is increasing at a rate of 8.2% per degree of global warming.

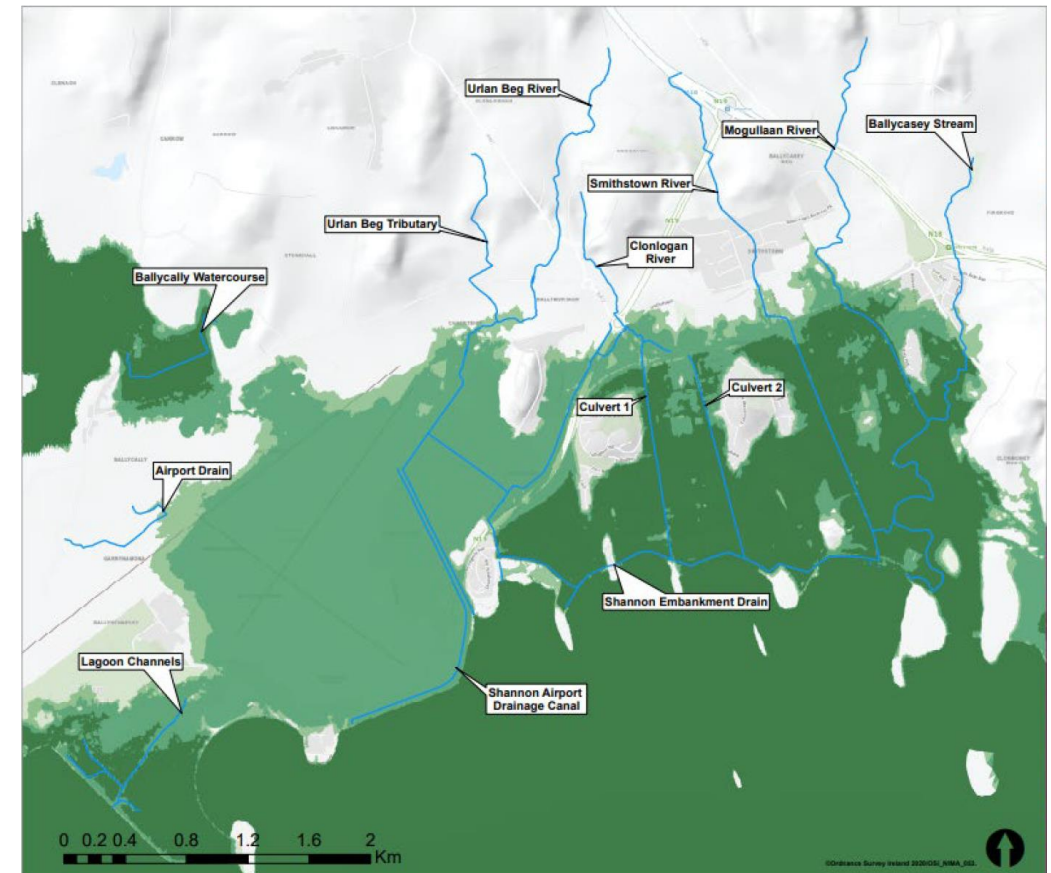
Source (data and image): ICARUS Climate Research Centre, Maynooth University, 20 October, 2023

A Breach in the Embankments will Immediately Impact Shannon Airport, Industrial Parks and Town

Flood maps in the consultation documents clearly illustrate that the airport, industrial, and living areas of Shannon will be inundated following a breach.

This is an area with a living population of 10,000 which rises to almost 20,000 on a daily basis as people come to work in the airport and businesses located in Shannon's industrial and business parks.

Shannon Free Zone has the highest concentration of foreign direct investment in any one location in Ireland. 120 companies, employing 8,000 people, with exports of €4bn (at 2023), operate in diverse sectors on the Zone.



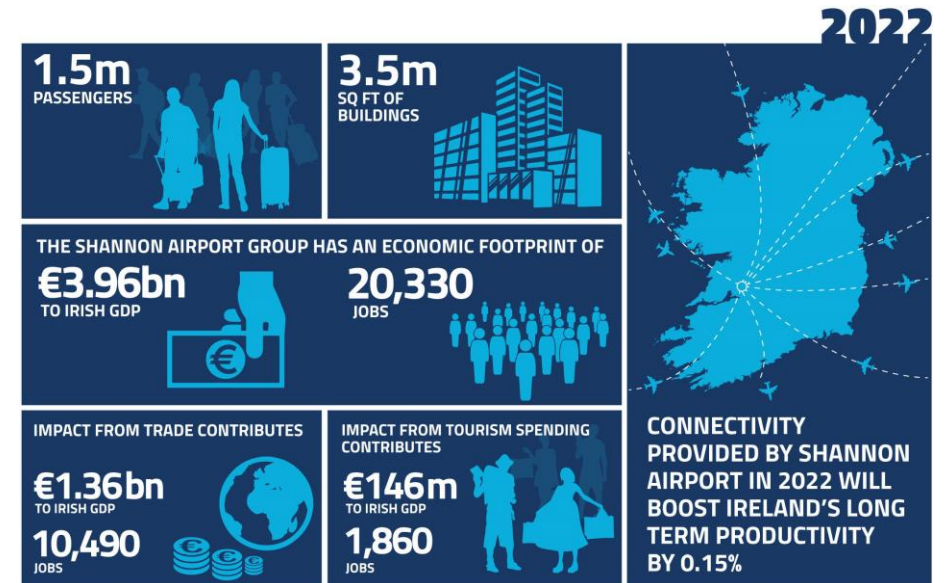
A Breach in the Embankments will have Local, Regional and National Economic Impact

Analysis published by Oxford Economics in September 2023 on behalf of Shannon Airport Group highlights the economic impact of Shannon.

In addition to the core economic footprint, the flights that Shannon Airport provides boost Ireland's long-term economic potential. The contribution of Shannon-facilitated tourism to Irish GDP in 2022 was €146m / 1,900 jobs.

Flights to and from Shannon Airport brought approximately 17,200 tonnes of imports and exports to and from Ireland in 2022, with an estimated combined worth of approximately €13.3 billion.

The impact of a breach on Shannon would have a catastrophic impact, not just on Shannon and its hinterland, but on the wider Atlantic Economic Corridor and national economies.



Source (data and image): [‘The economic impact of The Shannon Airport Group’; Oxford Economics](#)

Shannon Chamber Supports Emerging Option 3

Three options are outlined in the consultation documentation.

Comparison of the three options shows that the preferred Option 3 includes the greatest level of mitigating actions.

Given the risks and impacts outlined in the previous pages, Shannon Chamber supports the preferred Option 3.

The following pages outline some general observations on Option 3.

Some information, informed by local knowledge, is also provided.

Figure 1: Summary of Options considered for Shannon Town and Environs FRS

Risk Area	Option 1	Option 2	Option 3 (Preferred)
Coastal Defences	<ul style="list-style-type: none"> Flood Walls and Embankments Restore breakwater 	<ul style="list-style-type: none"> Flood walls and embankments Restore Breakwater 	<ul style="list-style-type: none"> Flood walls and embankments Restore Breakwater
Urlan Beg	<ul style="list-style-type: none"> Flood Walls and Embankments Manhole Sealing 	<ul style="list-style-type: none"> Flood Walls Diversion Culvert to the Airport Drainage Canal Culvert Maintenance 	<ul style="list-style-type: none"> Flood walls Diversion Culvert to the Airport Drainage Canal Culvert Maintenance
Clonloghan	<ul style="list-style-type: none"> Flood Walls and Embankments 	<ul style="list-style-type: none"> Flood walls and embankments 	<ul style="list-style-type: none"> Flood walls and embankments Pumping Station Upgrade
Culleen	<ul style="list-style-type: none"> Flood Walls Culvert Upgrade 	<ul style="list-style-type: none"> Flood Walls Culvert Upgrade 	<ul style="list-style-type: none"> Flood walls Culvert Upgrade
Mogullaan	<ul style="list-style-type: none"> Flood embankments 	<ul style="list-style-type: none"> Flood embankments 	<ul style="list-style-type: none"> Flood embankments
Culvert 1	<ul style="list-style-type: none"> Diversion Culvert to Culvert 2 	<ul style="list-style-type: none"> Diversion Culvert to Culvert 2 	<ul style="list-style-type: none"> Diversion Culvert to Culvert 2
Culvert 2	<ul style="list-style-type: none"> Storage Tank Culvert upgrade 	<ul style="list-style-type: none"> Storage Tank Culvert upgrade 	<ul style="list-style-type: none"> Storage Tank Culvert Upgrade
Embankment Back Drain	<ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> Culvert Maintenance (Outfall) 	<ul style="list-style-type: none"> Culvert Maintenance (Outfall)

Shannon Chamber Supports the Proposal to Follow the Line of Existing Embankments

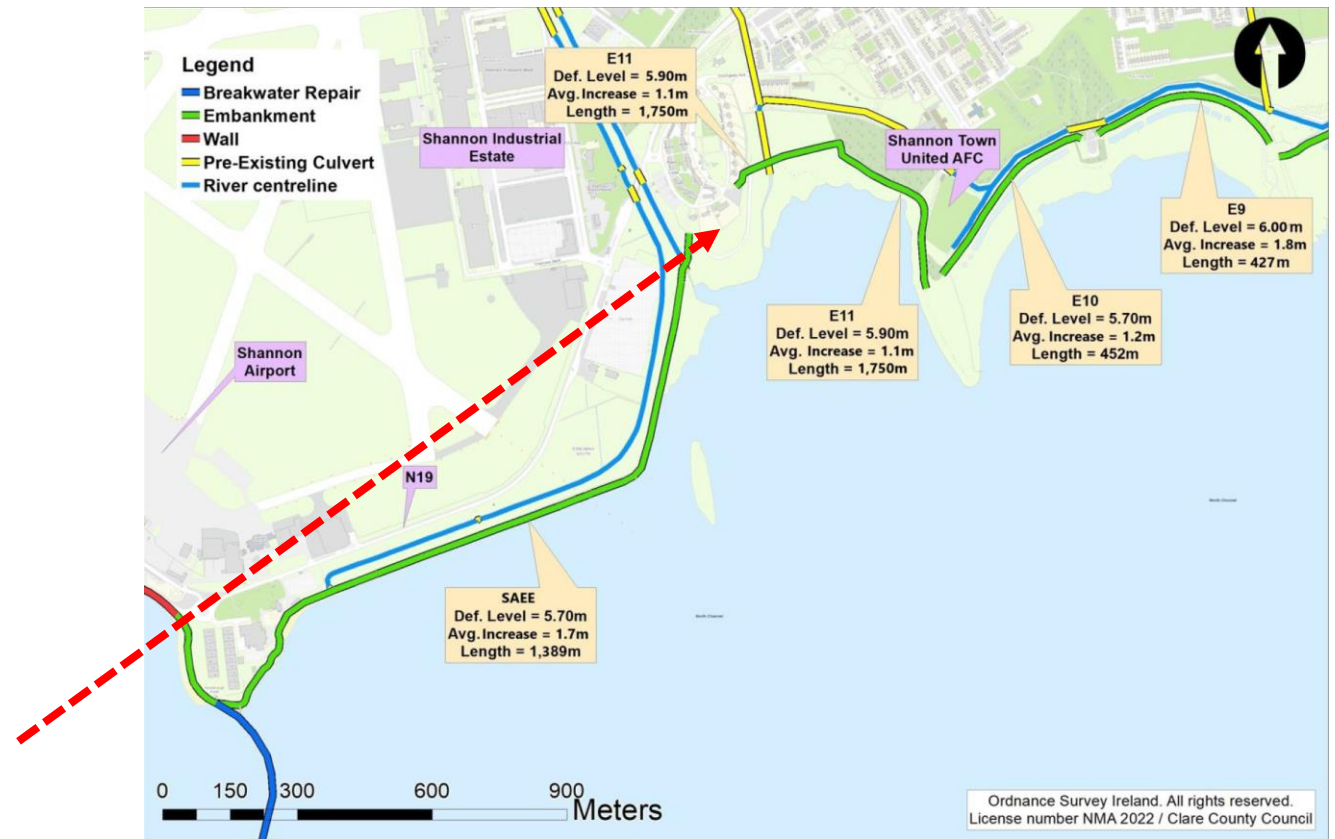
We understand that the defence levels (Def. Level) indicated on pages 11-23 of the public consultation document are the proposed future levels. The average increase in height from the existing embankments or wall is also indicated (Avg. Increase).

We understand that the proposed future coastal defences will follow the existing alignment. The plan is to raise the existing embankments to the future required defence height.

We support the plans to ensure that the toe of the embankments will not encroach further into the estuary due to the sensitivity of the habitat.

Question and Observation:

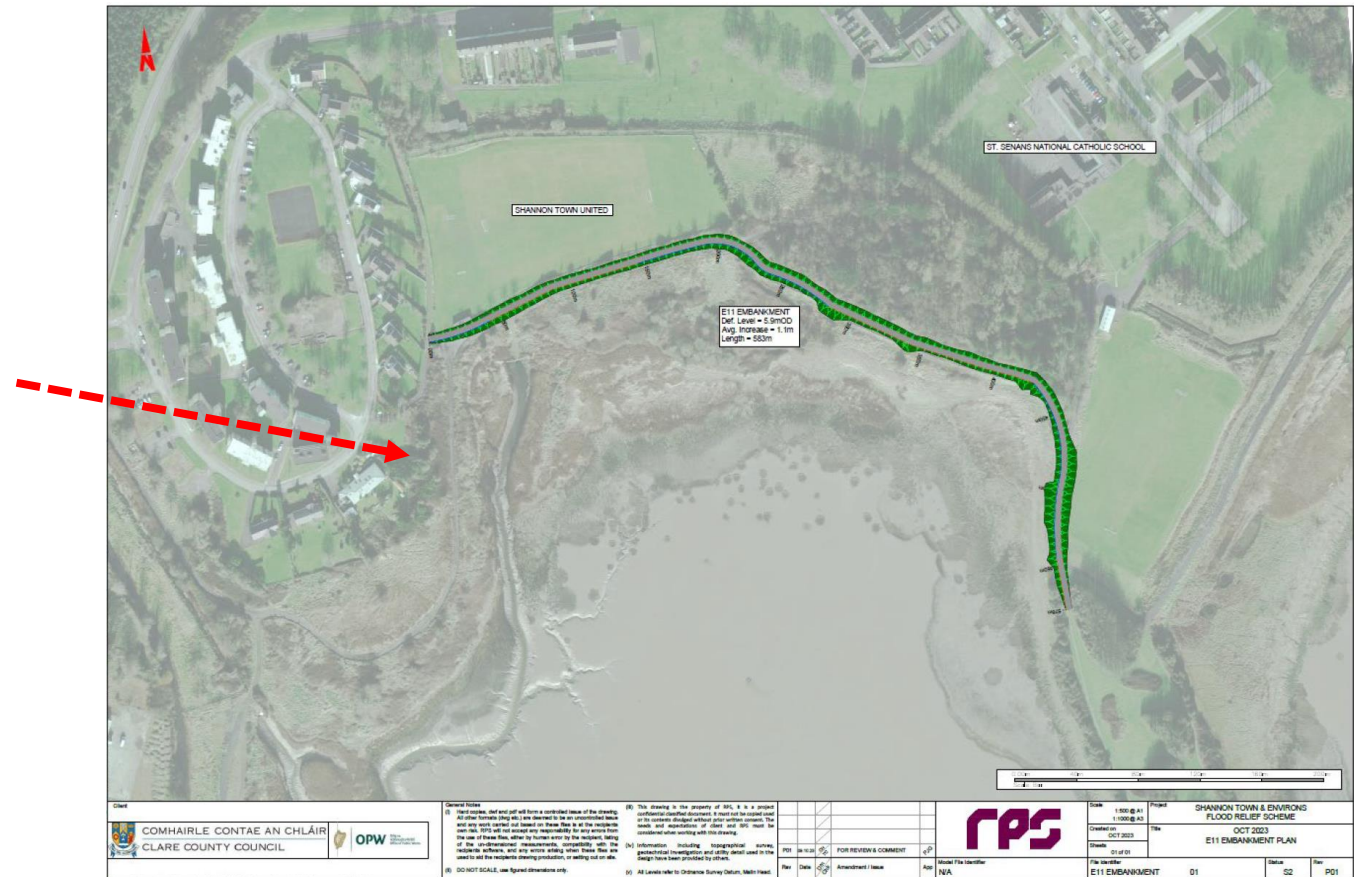
Why is there a gap in the line of the embankments at the southern end of Drumgeely Hill? This area is at a similar level to the green lines of embankments in the diagram opposite. The existing, and recently renewed hard core pathway, is subject to significant water pooling during the winter.



Shannon Chamber Supports the Proposal to Follow the Line of Existing Embankments

As indicated in the previous slide, it appears that the southern end of Drumgeely Hill will not see any enhancement of embankments in the proposed Option 3.

This area is at a similar level to the embankments east and west of this point.

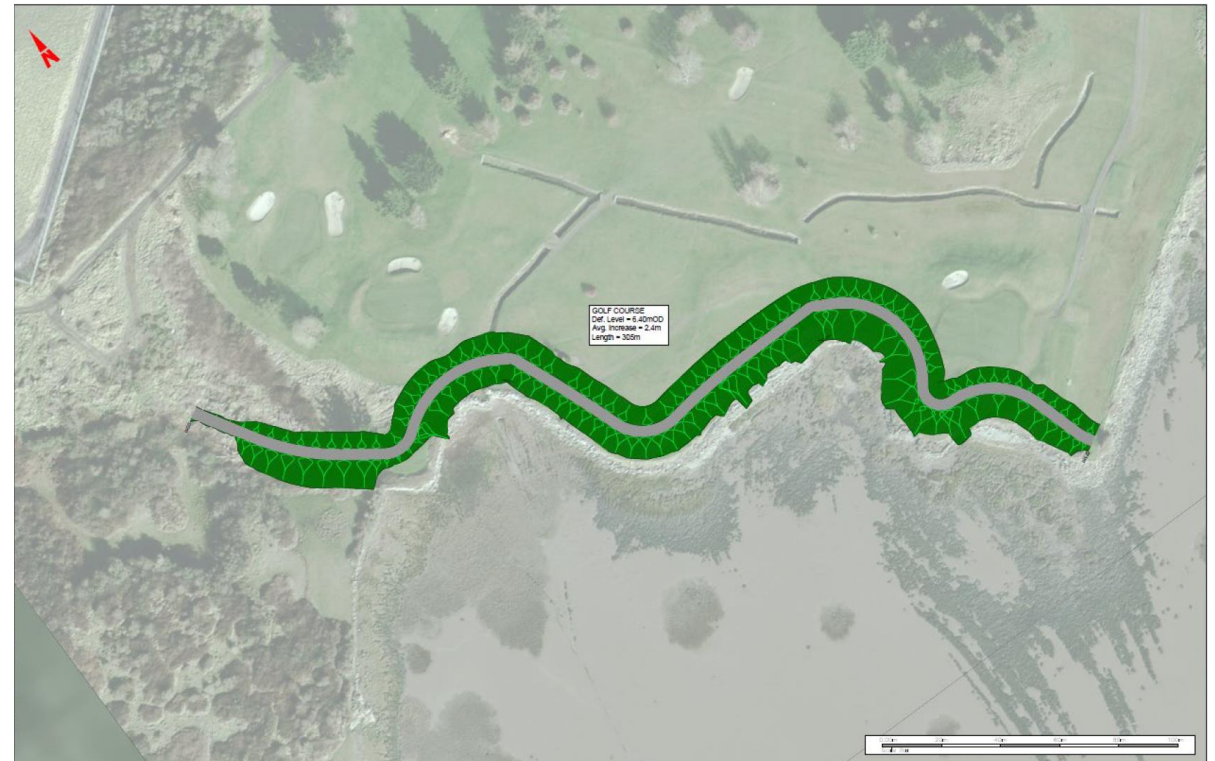


Experience of Recent Years at Shannon Golf Club provides a good indication of the extent and impact of high tides and over-topping

Strengthening of embankments adjacent to Shannon Golf Club is a welcome proposal.

There have been many occasions in recent years when storm and tidal surges have seen the estuary flow inland between the 16th green and 18th tee box at Shannon Golf Club.

On occasion the inflow has extended to the interior road which runs east to west close to the golf clubhouse.



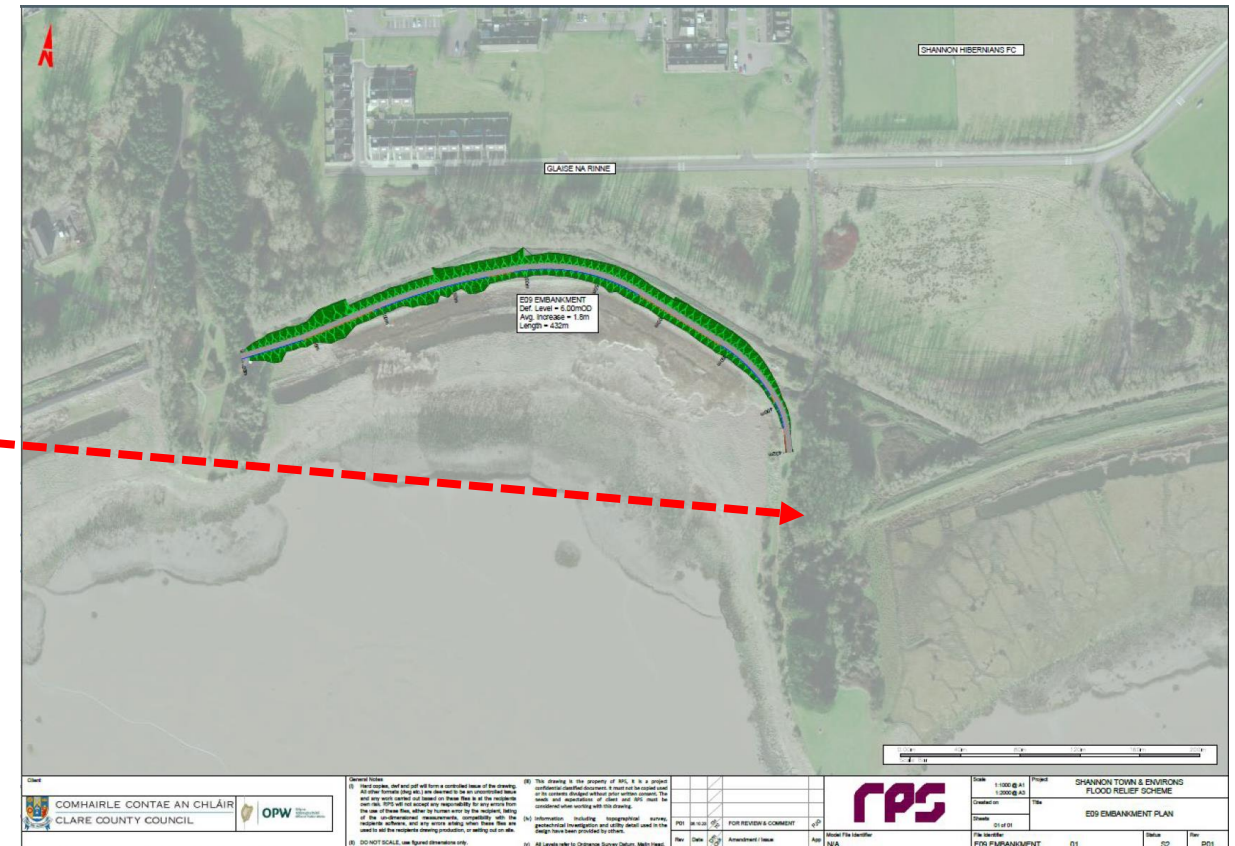
Images Suggest that there may be a Gap in the Embankments at Illaunagowan Point?

Images of the proposed improvements to embankments east and west of Illaunagowan point suggest that there will be a gap at this point.

Local knowledge suggests that there is little difference between the height of the point itself and the existing embankments at either side.

Extra care will be required at this location due to the proximity of the housing development at Glass na Rinne.

The recently raised pathway between the point and the road at Glass na Rinne is in an area subject to extensive pooling of water during the winter.



Cross sections of the heightened embankments include road and pathways

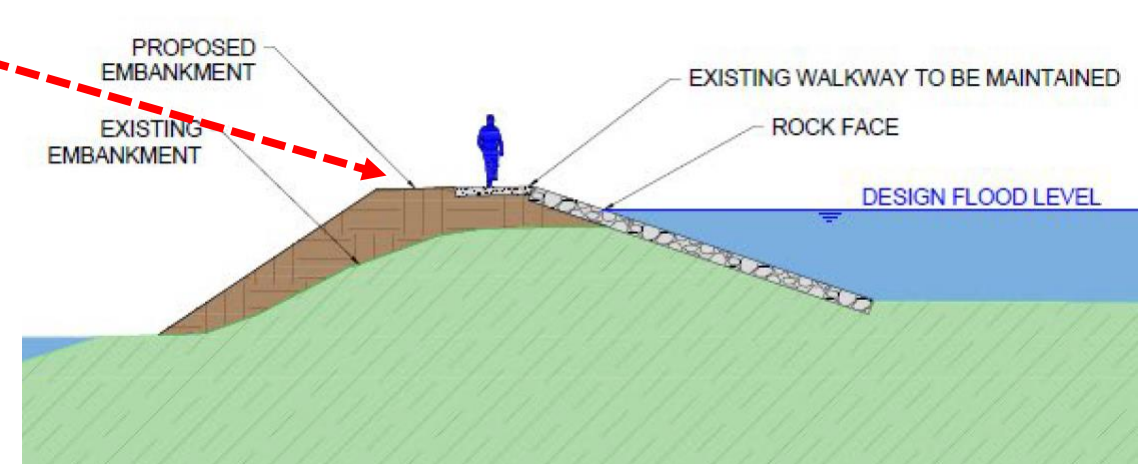
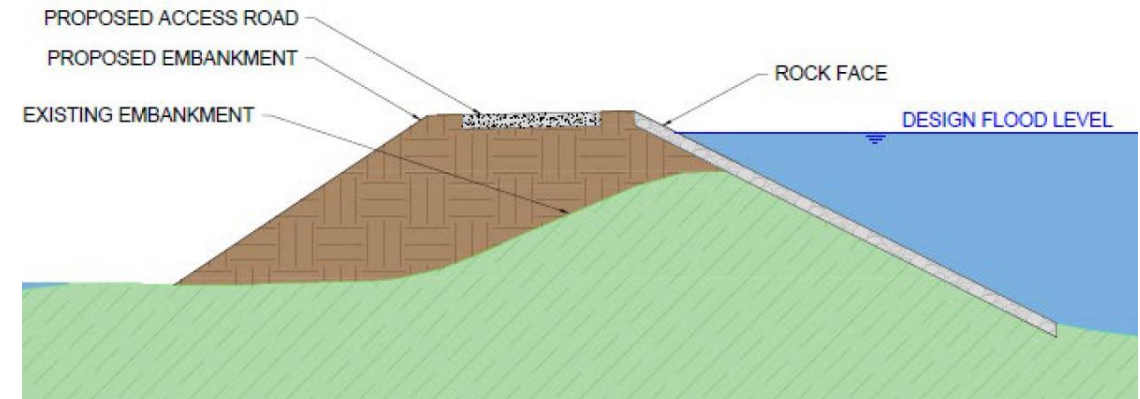
It is essential that these support, rather than restrict, the growing amenity and leisure use by the community and an increasing number of Irish and international visitors

Access roads at the top of a number of embankments are afforded a significant width.

In contrast, other diagrams show a much narrower width for existing walkways.

As highlighted in numerous submissions and engagements with the Council by Shannon Chamber and other key stakeholders, there is potential for a high-quality greenway from Shannon Airport, via the existing embankments, to Bunratty and onwards to Sixmilebridge and Limerick.

The design solution must incorporate walking, running, cycling and other uses along the top of the full stretch of embankments.



Just one example to illustrate valuable and practical links between Airport, Town and the Embankments

Introduction of Shannon's Illaunamanagh Park Run in April 2022 is just one clear example of the increasing and regular use by community and visitors of the estuary environment.

The 4 November 2023 Parkrun included:

- A group of 20 from Hemel Hempstead who flew Ryanair from Stansted to Shannon, walked from the airport along the estuary and embankments, completed parkrun, breakfasted in town, visited Bunratty (by bus) including lunch and returned to airport by bus for return flight;
- A group of 2 from London and another group of 2 from Norwich also visiting for Parkrun who travelled on the same flight
- Visitors from Ennis, Naas and other parts of the country apart from locals from Shannon, Newmarket and Sixmilebridge.

This mix of local, Irish and international visitors is a frequent feature of Saturday morning park run in Shannon.



Maintenance and operation of culverts and pumping stations is a critical requirement for success

Option 3 includes a range of proposals for upgrading of culverts, diversions and new sections. There are also references to upgraded pumping stations.

These proposals are welcome. However, it is essential that the design solutions extend beyond capital works:

- There must be a service element as well to ensure that there is a regular programme of clearing and maintenance of culverts
- Operation of the network of pumphouses requires specialist knowledge of the impact of changes in one node on other parts of the network particularly during storms and tidal flows

Overflows, blockages and breaks occur from time to time. There may be potential to have an early warning system based on voluntary incident reports from those who regularly use the embankments – walkers, runners, dog walkers, parkrun, cyclists, ...



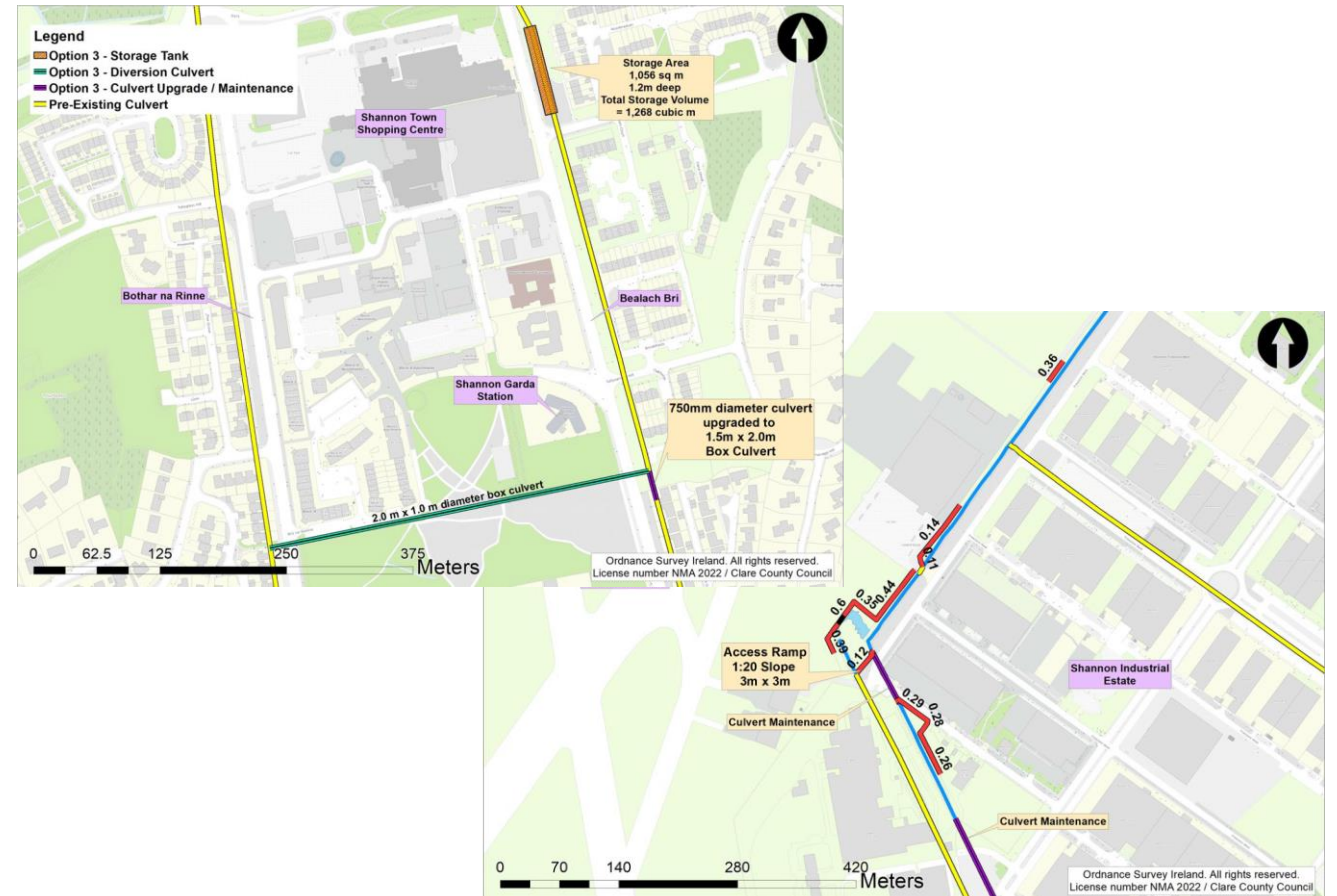
Extra care is needed in interventions planned for business and residential areas

A range of interventions are proposed in close proximity to existing business and residential areas in the town and its network of industrial and business parks.

For many of these there is no other option given existing features and developments. For example, companies such as Atlantic Aviation Group, Meira GTX, Element Six are adjacent to existing rivers or culverts. The same applies to other locations in Shannon Free Zone East and West and Smithstown.

Questions: What is the function of the storage area between Shannon Town Centre and Rossbracken? Is this an upgrade of an existing tank? What are the risks associated with location in this area? Have other areas been considered?

Observation: The new Shannon Town Park included a wetland area in the form of a mini stream and pond. There have been some difficulties in day-to-day operation which may be useful in finalising designs for the proposed new box culvert in this area.



There is a range of historical resources and local knowledge that could provide valuable information during the design process

The Shannon Development photographic archive includes an extensive range of images dating from the early days of construction of the airport, industrial zone and town. The example on the right shows the position and direction of rivers not visible in today's built environment.

Engineers from the 1960s who are still alive today could be important sources of knowledge and information. Local knowledge indicates, for example, that telegraph poles were driven into the mudflats on the river side of the embankments to prevent erosion adjacent to culvert outfalls.

Residents of the town are a valuable source of information on areas which tend to accumulate water during bad weather.

We recommend that the designers actively engage with these and other such resources during the design phase.



Early housing at Drumgeely including adjoining estuary and tributaries.
Source: [Shannon Development Photographic Archive at Glucksman Special Collection](#), University of Limerick



End of Submission

Submitted by:
Helen Downes, CEO
hdownes@shannonchamber.ie
T: 061 475854