

Emerging Preferred Option – River Lee (Poster 1)

- Development of **Optimised Dam Operating Procedures** for extreme flood events
- Development of a Detailed **Flood Forecasting System**
- Development of **Flood Warning System** (Public Alerts)
- **Designation of upstream washlands** to facilitate greater advance discharges (up to 350m³/s) from the dams.
- **Local conveyance improvements** and **direct defences** at Inniscarra Bridge to defend against both advance discharges from the dams and from the design event
- **Localised defences** and/or **individual property protection** at an isolated number of properties between Inniscarra and the City



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Emerging Preferred Option – River Lee (Poster 2)

- **Local defences at Inchagaggin** to prevent Lee flood waters from the Lee entering the Curraheen
- **Flow reduction structure on South Channel** to rebalance flows in the North and South Channel (divert greater proportion of flow to North Channel during extreme events)
- **Direct defences on Curaheen, Glasheen, North and South Channel** (walls, embankments, building upon existing quay walls)
- **Flood gates** at some footbridges and boardwalk locations
- Possible **raising of Vincent’s Pedestrian Bridge and Cornmarket Street Footbridge**
- **Localised surface water pumps** to deal with ‘back of wall drainage’



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Further Optimised Dam Operating Procedures

- **Normal Time**

- Most of the time, the dams will continue to operate as they do at present
- Continuous monitoring and simulation of predicted rainfall using the new flood forecasting system will allow potentially significant flood events to be detected further in advance

- **In advance of Predicted Extreme Event**

- Once a potentially significant event is detected, the optimised procedures will require dam levels to be safely drawn down to create storage in advance of the event. This will be achieved by:
 - Using Carrigadrohid and Inniscarra as a system rather than individual dams
 - Allowing for greater discharges (without causing flooding of properties) in advance of a forecast event due to creation of washlands and downstream defences

- **During an Event**

- During the rising flood, continued increased discharges, not exceeding the threshold of flooding, will ensure that dam storage is retained until it is needed at the peak of the event
- The New Rules will allow dam discharges to be managed optimally in conjunction with the tidal cycle
- The new rules do not impact on dam safety requirements, and if a flood in excess of the design event occurs, existing dam safety rules will take precedence



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Flood Forecasting System

- **Tidal and Fluvial Forecasting Systems**

- Tidal Forecasting System currently in place
- Fluvial Forecasting System being developed
- Will use predicted rainfall ensembles in lead up to event as well as real time data during event

- **How it Will Work**

- Will run continuously based on predicted rainfall ensembles, monitoring for potential extreme events
- Will provide an alarm to the operator, a number of days out, when a predicted significant rainfall event or a predicted tidal surge event is above a predefined threshold that could otherwise result in flooding.
- This will allow dam levels to be lowered at predefined spill rates which won't flood property, in preparation for/anticipation of the extreme event
- Will allow management of discharges in real time (if required) taking account of inflow from the Shournagh/Western Bride and tide levels



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Flood Early Warning System

•Warnings Needed for:

- Warning of increased advance discharges for recreational users of river and floodplain downstream of Innsicarra
- Warning to landowners of 'washland' areas to allow livestock etc. to be moved.
- Warning to Cork City Council to erect demountable elements if necessary
- Emergency response planning for exceedance of design event

•Dissemination of Warnings:

- Direct notification to 'washland' landowners
- Sirens in public amenity floodplain areas
- Via local authority websites and social media platforms
- Local authority 'text alert' system
- Radio and television public alerts if necessary



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