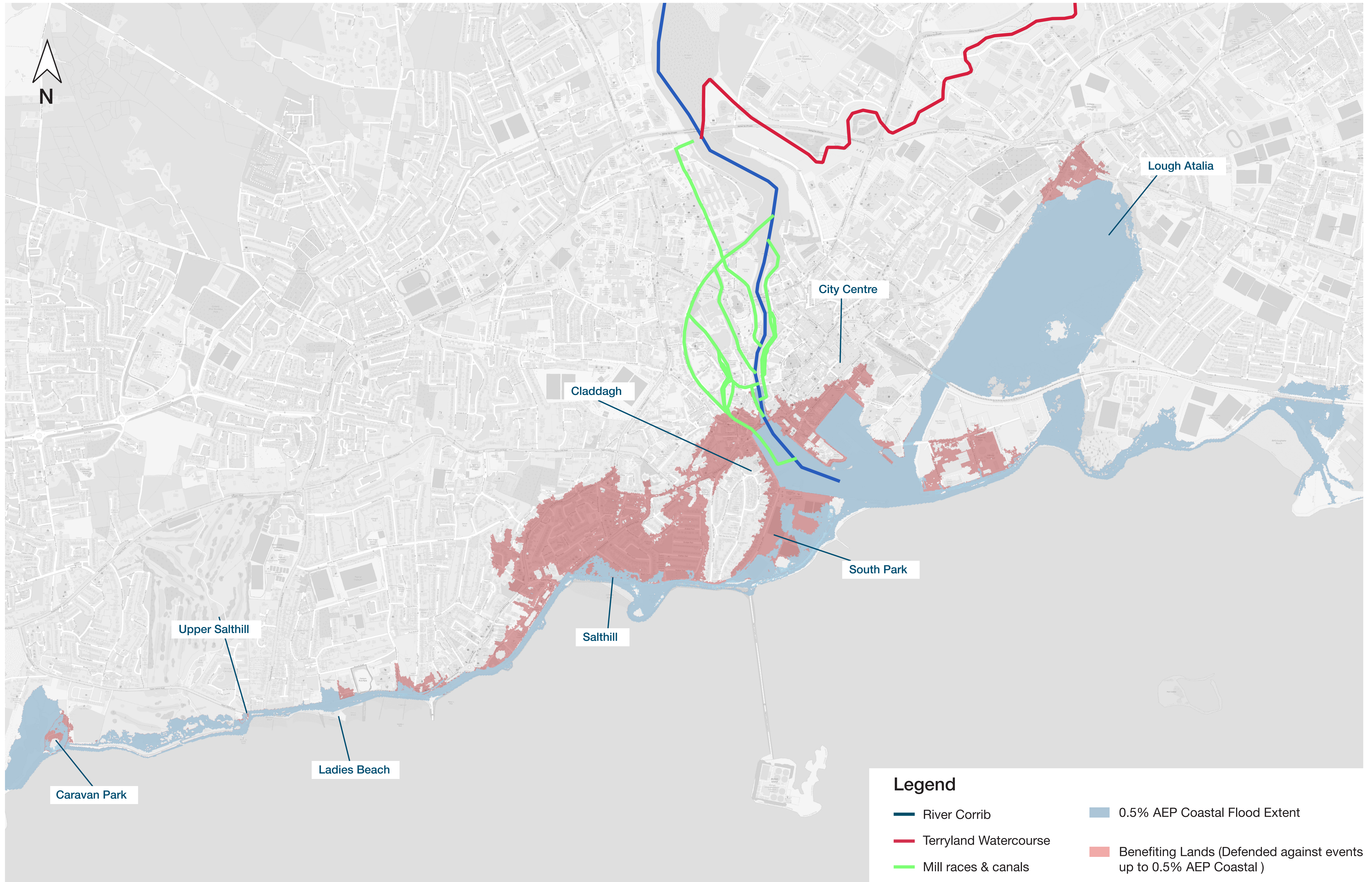


Coastal Benefiting Flood Extent Map



The Benefiting Area map identifies lands and properties that benefit from reduced flood risk due to the Emerging Preferred Scheme. This map delineates areas where structural interventions (such as embankments or flood walls) manage coastal flood risk, allowing for improved land use and protection.

Benefiting Area Maps are distinct from predictive flood zone maps, focusing specifically on the impact of implemented engineered solutions rather than just natural, undefended flood probability. The 0.5% AEP Coastal Flood Extent shows the flood extent with the Emerging Preferred Scheme in place.

Coastal Flooding (Tidal and Wave Overtopping)

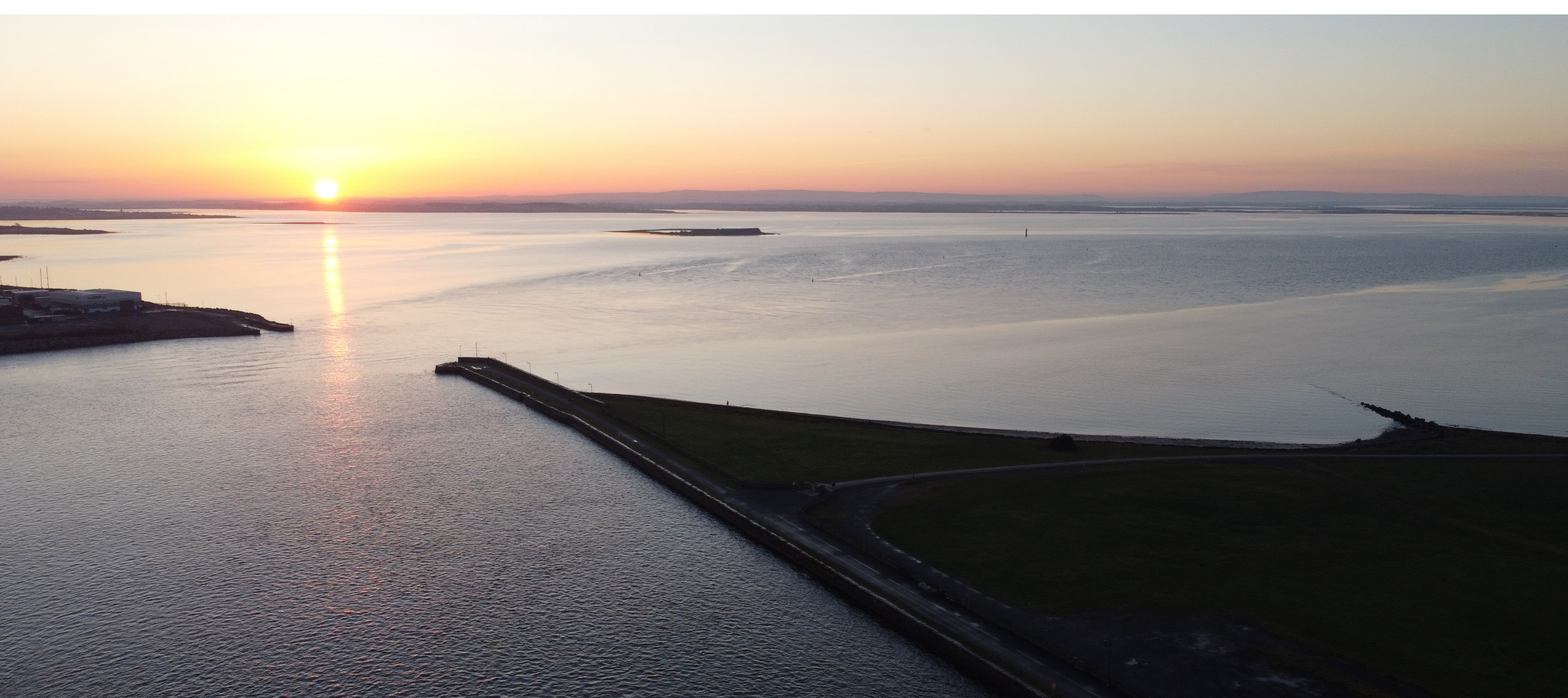
Coastal flooding occurs when a storm surge event coincides with a high astronomical tide causing the tidal water level to exceed the existing ground level adjacent to the coast. A further source of coastal flooding in Galway city is wave overtopping in which breaking waves lead to water flowing onto the floodplain. Wave overtopping typically occurs in combination with tidal flooding.

Designing defences to eliminate all wave overtopping for the T200/WOT200 (Current +250 mm CC) event is not feasible, as it would require very high wall heights with significant visual and landscaping impact.

Coastal flooding was assessed in detail as part of the study using a dynamic hydraulic model of the entire coastal floodplain of the study area. Both sources of coastal flooding were assessed in detail as part of the work: direct tidal flooding and wave overtopping flooding.

A compromise approach is therefore required, allowing some wave overtopping during large storm events in non-critical areas such as promenades and green spaces. That is why coastal flood extents are still shown inland of the proposed defences with the Emerging Preferred Scheme in place. Full protection to properties will still be maintained up to the target SoP of the scheme. This approach is in line with accepted international coastal engineering practice.

The City Centre is generally sheltered from wave overtopping and is therefore predominately at risk from direct tidal flooding only. The rest of the study area is however at significant risk from both sources of coastal flooding. This includes the areas adjacent to Grattan Road, Salthill Road Lower as well as Salthill and all along the Upper Salthill Road.



The target Standard of Protection for coastal flooding for the scheme is to prevent flooding to properties during fluvial flood events with a 0.5% Annual Exceedance Probability (AEP). For further information on the Standard of Protection of the scheme, refer to the Boards Overview.

Annual Exceedance Probability	Probability of Occurrence in a Given Year	Return Period (Years)
0.5%	1 in 200 chance	200