

# The River Itchen Flood Alleviation Scheme: Supplementary Figures

This document provides some background information to the River Itchen Flood Alleviation Scheme to assist understanding of the current and future flood risk that the area faces, alongside how the scheme will benefit the area.

**Figure 1: Flood risk extent and historic photos**

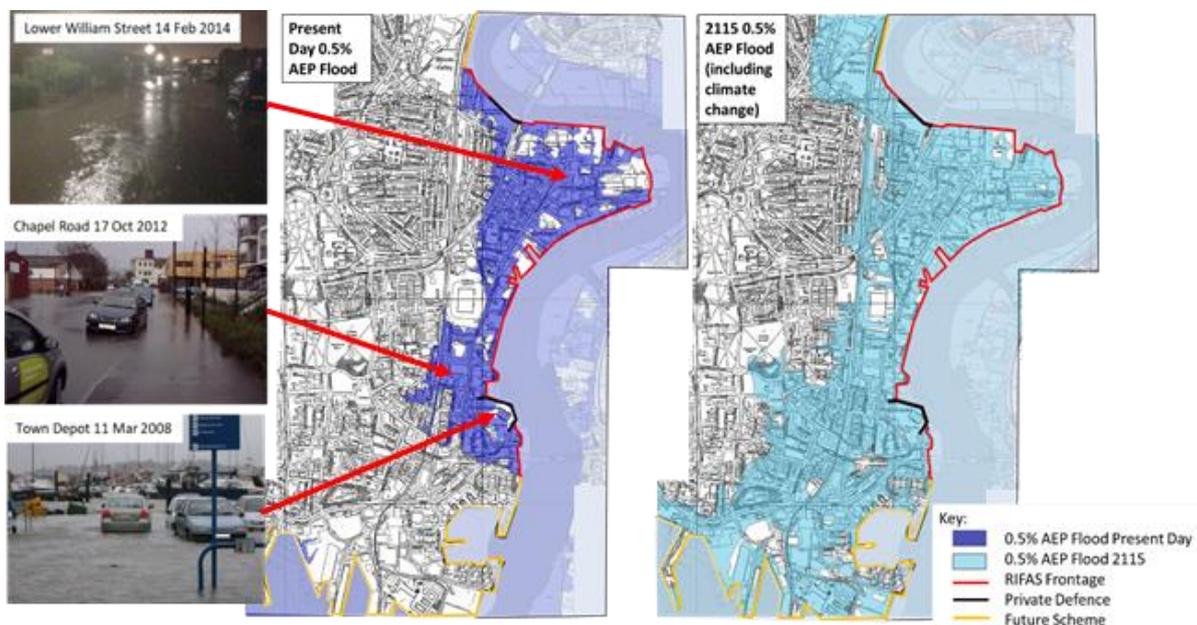


Figure 1 shows the areas (shaded dark blue) that are at risk from a present-day tidal flood event with an Annual Exceedance Probability (AEP) of 0.5%. The 0.5% AEP flood is deemed to be an ‘extreme’ flood event which could result in flood depths of between 0.3-0.6m dependent on the land level. To date, Southampton has not seen this level of flooding, however it has seen less extreme, yet sufficient to cause damage and disruption (see photos left), demonstrating the need to be proactive with flood defences.

The map on the right shows the modelled extent of tidal flood risk in 2115 as a result of climate change and sea level rise. Depths of flooding are predicted to rise to up to 1.6m in some areas. Areas that are at risk today (the dark blue), are likely to see flooding around twice per year if no intervention takes place.

Areas to the north (Bevois Valley and St Denys) and south (Ocean Village and Mayflower Park) will need defences in future years (by 2070) that ‘tie-into’ our proposed defence, otherwise there is a risk that flood water could by-pass the new defence. These are to be considered in a separate phase, as outlined within the Southampton Coastal Flood and Erosion Risk Management Strategy (2012).

**Figure 2: Spatial distribution of residential properties at risk**



At present there are 153 homes and 288 businesses at risk of flooding. The map on the left of Figure 2 shows the position of these homes against a range of different scales of flooding. Most of these homes are located within the Northam Estate which is within the top 5 most deprived communities in Southampton, and within the top 10% most deprived in England (for employment, health and education), therefore may struggle to recover should a flood occur. The Northam Estate also carries one of the Councils largest housing stocks which could present challenges with trying to reaccommodate families and repair properties following a flood.

The map on the right shows the distribution of businesses within the present day flood risk area. Many of the businesses with access to the waterside are deemed to be 'water compatible' (using the definition from the National Planning Practice Guidance, and from engagement carried out to date) and are able to recover more quickly following flooding. Some sites have seen flooding in the past.

**Figure 3: Leading Option (Option 1 mix of frontline and setback) alignment**

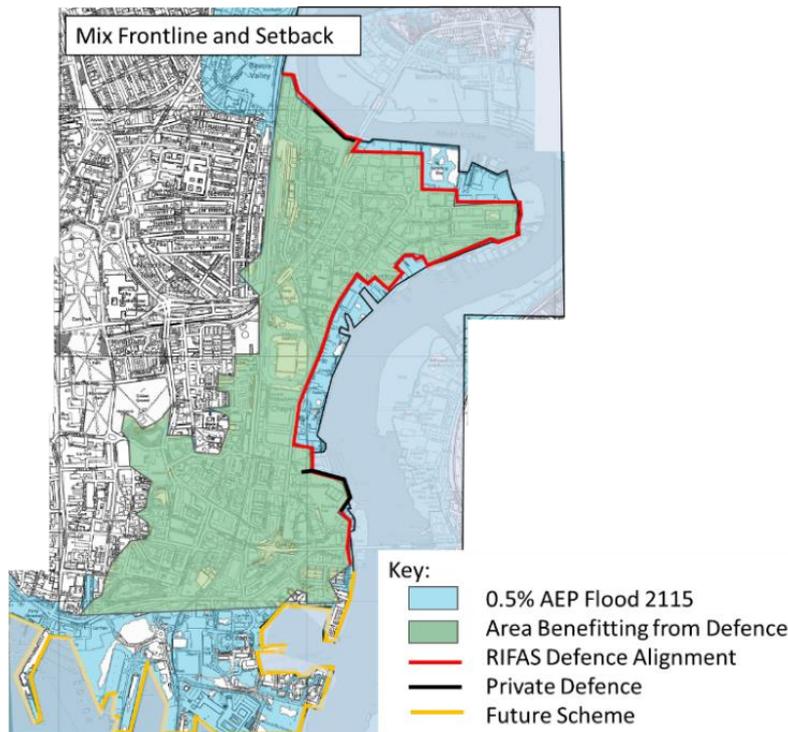
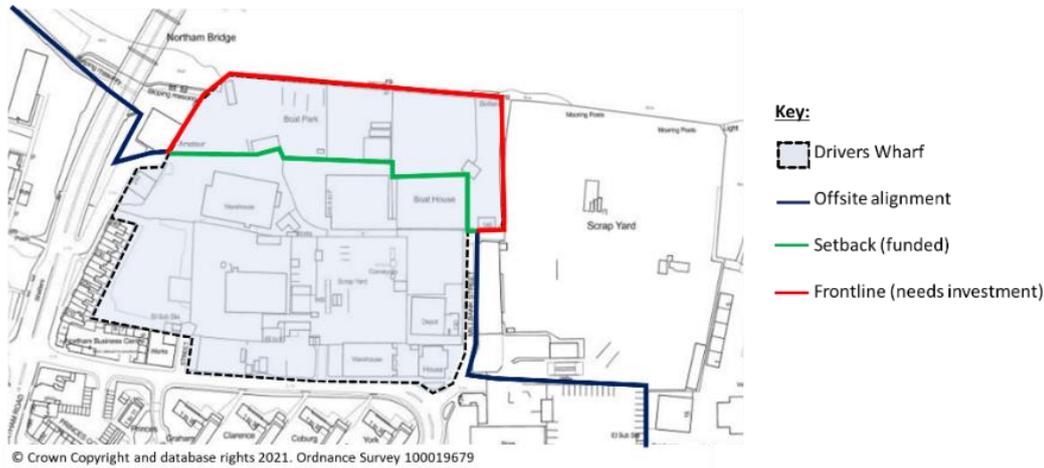


Figure 3 shows the proposed alignment for the RIFAS. The red line shows the proposed new defence, with the black showing the recently constructed developer led defences at Meridian and Chapel Riverside. The yellow line denotes future phases of the defence.

The area shaded green shows all areas that will benefit from the new flood defence. This provides a reduction in flood risk to 1167 homes and 1033 businesses at risk of flooding over the next 100 years, as well as council buildings, schools, religions buildings and critical infrastructure including the A3024 Northam Road, parts of the national railway line and electrical substations, that if flooded will cause disruption for many people outside of the immediate risk area.

By reducing the constraint of flood risk within the green area, this provides better potential for regeneration to come forward. The defence does not harm development potential of the areas remaining riverside of the defence (blue shading) as these can bring forward frontline defences in future should regeneration take place.

**Figure 4: Drivers Wharf Defence Options**



The current Local Plan indicates that Drivers Wharf is a site that holds potential for mixed use development in future. Figure 4 shows the options for the defence alignment at this site. The most economically viable defence option for this site is the setback alignment (green) which will be continued unless additional investment is made in the site to bring this to a fully frontline alignment (red).

The key consideration in the decision to alter the alignment is that just over half of the existing frontline quay wall has been assessed and is noted to be in poor condition. This means that the quay wall will need to be replaced within the next 10 years. Approximately 50% of the quay wall (west of the site, where deterioration is deemed to be more significant) is under Southampton City Council ownership. This means that the council will hold liabilities for any collapse of the quay wall that results in harm to people, property or release of contaminated land into the Itchen Estuary which is an environmentally designated Special Protection Area.

The quay wall will need to be addressed (within similar timescales for construction of the RIFAS), therefore investing now provides opportunities to combine the replacement with construction of a frontline flood defence instead of the setback alignment.

A frontline defence may increase regeneration potential for this site as reduces the risk of flooding, however the site will remain constrained by other factors including air quality, highway capacity issues and land contamination.