

TAUNTON STRATEGIC FLOOD ALLEVIATION IMPROVEMENTS SCHEME

FREQUENTLY ASKED QUESTIONS

November 2019

Q1) What is the current flood risk in Taunton and why are you doing this project?

Currently, there are approximately 1031 properties (residential, commercial and infrastructure buildings) at risk from river flooding in Taunton from the 1% Annual Exceedance Probability (AEP) flood. The 1% AEP flood has a 1 in 100 chance of occurring once in any one year, taking into account the standard of protection offered by the existing flood defences.

Somerset West & Taunton Council (SWT) and the Environment Agency (EA) are working closely together to identify strategic flood risk reduction measures for the town centre. The existing flood defences, built during the late 1960s/early 1970s were modified in the early 1990s. However, they are now deteriorating with time, and will not provide longer term flood protection to the Town, especially when considering climate change predictions for increased rainfall and flood flows.

Taunton is principally at risk of flooding from the River Tone and its tributaries. In 1960, fluvial flooding affected a considerable area of the town centre, particularly the North Town and Station Road areas. More than 360 houses, shops and business premises were badly flooded.

If we do nothing, we may start to see a return to flood events such as those pictured below:



Towards Town Bridge near St. James St, Taunton – 1960



Junction of Bridge St. and Station Rd, Taunton – 1960



Priory Bridge Road junction with Canal Rd / Station Rd. – 1960



North Town (Cleveland Road or Greenbrook Terrace) - 1960

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Calverts furniture shop, Station Rd – 1960



Aerial photo showing flood extent during 1968 event in Taunton

Since the 1960s, less damaging flood events have more recently been observed in Taunton in 2000, 2007, 2009 and 2012. In 2012, notable flooding occurred in Vivary Park and the adjacent Cricket Club.

Most recently, a major flood incident occurred downstream on the Somerset Levels & Moors in winter 2013/14, which resulted in an extensive land area being flooded for 3 months.

Taunton town centre narrowly avoided serious flooding on these occasions, but it experienced significant disruption to many local services such as access to health centres and food stores, as well as impacting local businesses, demonstrating that flooding events do not just impact the inundated area.



The River Tone comes close to flooding onto Clarence Street, North Town, near French Weir Park in October 2000

Q2) What is the project called and what are its objectives? Why are you working together?

Our project is called the “Taunton Strategic Flood Alleviation Improvements Scheme” (TSFAIS). This stage of the project is referred to as “Phase 2”. We have assessed a significant number of flood alleviation and mitigation options to determine preferred solutions to reduce flood risk in Taunton today and in the future, which also help to enable the delivery of the Garden Town regeneration plans. Solutions identified minimize any impacts on third parties and on the River Tone down stream of the M5. The preferred solutions form a phased approach over short, medium and long term periods. Concept designs, cost estimates, timescales and next steps have been identified to help provide a framework which can be built on to secure long term strategic flood protection for the town centre.

Working in partnership brings together significant knowledge and expertise, to identify and deliver a holistic solution to flood risk. Partnership provides potential to deliver improvements that may not be possible via SWT’s own actions, or solely through the EA’s flood defence funds.

Q3) What happens to flood risk in Taunton if we “do nothing” or continue with “existing arrangements?”

The condition and height of the existing 4km of flood defences provides a varying standard of protection through the Town. With no, or a minimal ‘patch and mend’ approach, they will eventually fail or overtop. Due to expected climate change impacts, they are likely to be overtopped far more frequently in the future if no interventions are made.



BT Exchange



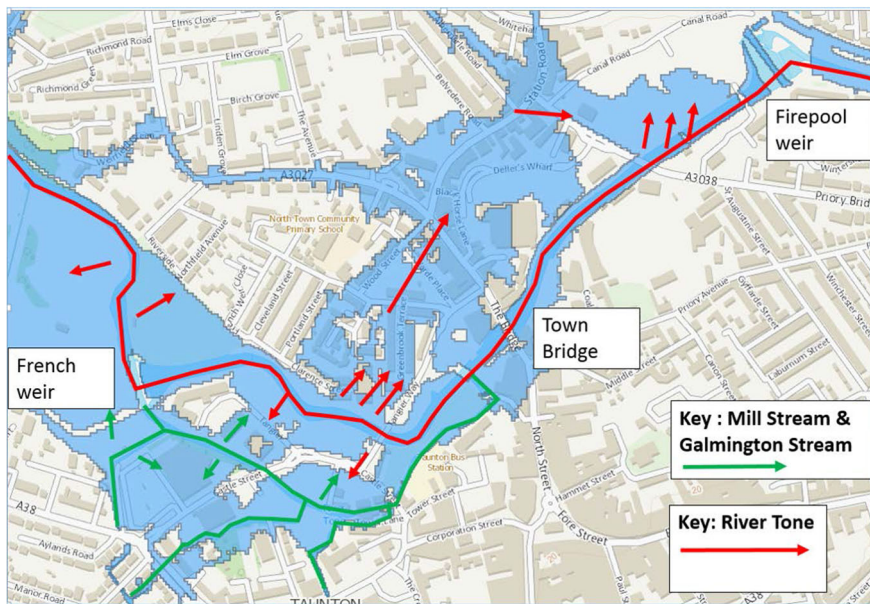
Clarence Street



Frieze Hill

Our Phase 2 work suggests that a single major flood could cost the local economy £50 million. Therefore to do nothing is not a viable option. It is recognised that the risk to the town will get worse as climate change is predicted to increase maximum flood flows over time. The risk comes not just from the River Tone, but from 3 other principal tributaries that flow into the town centre - the Galmington, Sherford and Mill Streams.

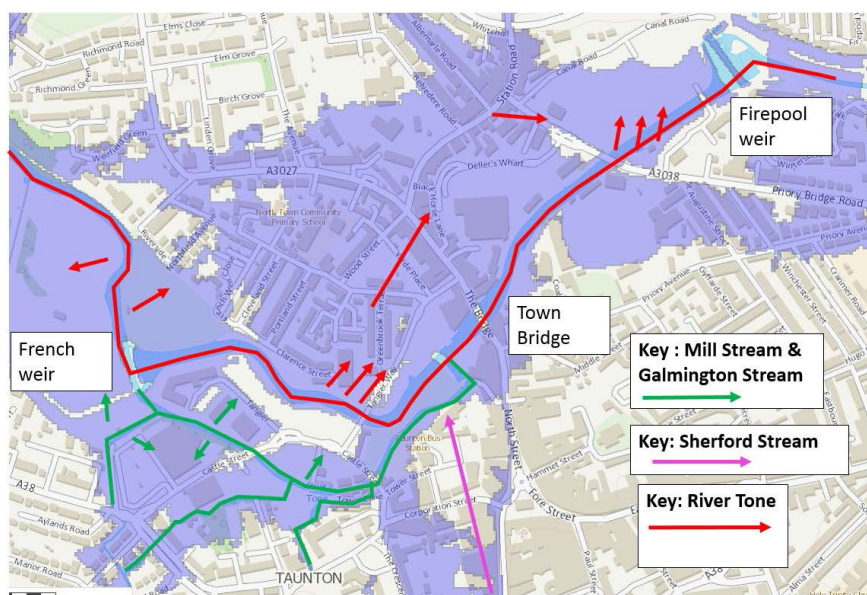
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River Tone and its Tributaries Flooding in Taunton Town Centre today - 2019

Q4) What is the risk of flooding in the future due to climate change?

The existing flood defence scheme will become increasingly sensitive to any climate change impacts. UK Climate Change Projections (referred to in UKCP18 research) suggest a trend towards more frequent and higher volume/intensity winter rainfall patterns. Any resultant increase in design and/or observed flood flows in the River Tone and tributaries will place many more homes and businesses at increased levels of flood risk. When considering the impacts of climate change on river flooding up to 2119 this increases the total number of properties at risk in Taunton from 1031 to 2548. In addition to the existing community, roads and businesses, the planned growth and regeneration sites in and around Taunton could also be adversely affected.



River Tone and its Tributaries Flooding in Taunton Town Centre with climate change - 2119

Q5) What options have been looked at to reduce flood risk in Taunton?

The Phase 2 work has assessed a 'long list of options' to determine if they could positively contribute towards reducing flood risk to existing properties and future development in Taunton today, and in the future when considering climate change. We have also considered impacts on third parties, the River Tone catchment downstream of the M5, feasibility of delivery and costs for constructing and maintaining any measures longer term. Historic options from previous studies were revisited as well as "Do Nothing" and "Doing the minimum to existing defences". Options assessed included:

- Retaining and repairing what is already in place,
- improving existing defences and storage,
- replacing existing defences,
- improving flood conveyance,
- new defences and flood storage in the town, and
- new defences and flood storage upstream of Taunton.

There isn't a single option that completely removes or reduces flooding in isolation. Instead, a combination of interventions is required. This combination of works is referred to as the "preferred approach".

Q6) Isn't this project just about facilitating growth and regeneration in Taunton, and won't the regeneration sites make flooding worse?

No. As mentioned in Q1 and Q3 answers, there are many other existing flood risk beneficiaries to consider in the town centre alongside the regeneration site areas.



Town Bridge 2012



Clarence Street

Although redevelopment sites such as Tangier and Firepool (Cattle Market) would also benefit from reduced flood risks in the future, these sites will not themselves increase fluvial flood risks either in, upstream or downstream of the Town, provided that they deliver their own appropriate flood mitigation measures on site.

Our TSFAI project provides an opportunity to replace the temporary demountable defences agreed as part of the Firepool planning application with a more permanent solution, which could offset the operational challenges faced with erecting temporary defences. This would also improve the longer term level of flood protection to the wider North Town community.

Q7) So what works are you considering?

The project's preferred approach consists of upstream flood storage, optimising existing flood storage assets in the town centre, new or raised flood defences along the River Tone and tributaries and a pumping station at Bathpool.

The TSFAIS Phase 2 has identified a preferred approach of measures to provide a 1% AEP standard of protection when considering climate change. The measures identified can be phased over a period of time to make them easier to deliver as they align with future funding sources and climate change impacts. The various short, medium and long term elements create an overall strategic solution to reduce flood risk in Taunton for the next 100 year period. The preferred approach consists of:

- Optimise Longrun Meadow for flood storage;
- Raised / New Defences on the Tangier Tributaries
- Raised / New Defences on the River Tone (left bank) from Frieze Hill to Town Bridge;
- Raise Firepool canal lock gates;
- Increase the height of defences between Firepool and Obridge (left bank);
- New pumping station at Bathpool;
- River restoration and flood storage at Vivary Park;
- Upstream storage at Bradford on Tone;
- Possibility of raising Castle Street Bridge & Bus Station footbridge;
- Possibility for a Mill Stream flow diversion weir;

All of the preferred approach interventions will consider maximizing available opportunities to enhance the natural and built environment, where it is feasible to do so, and align with wider Garden Town design objectives set by SWT Council.

Q8) What about areas other than Taunton which flood?

The TSFAIS project has prioritised reducing flood risks in Taunton town centre as its main objective. That doesn't mean to say that there aren't other locally important flooding problems to be addressed elsewhere in Taunton, and the wider district.

The preferred approach has identified which interventions, and on which watercourse(s), have the greatest potential to lessen flood risks to the central core of businesses and residential properties in the town. Some of the other watercourses flowing into Taunton, such as Black Brook, Stockwell Stream, Mill Lease stream, and Norton Brook do have their own local flood risk issues, but dealing with these in isolation does not significantly reduce flood risk in the town centre area.

Importantly, SWT Council and the Environment Agency have access to a number of other assessments on flood risk that inform decisions we both make as flood risk management authorities.

The Council's Strategic Flood Risk Assessment tells us what the flood risk is from various sources (river, surface water, coastal, groundwater, drainage and sewer) for the whole district.

The EA's Shoreline and Beach Management Plans provide details on flooding and erosion at the coast, and indicate how we can managing those risks. Our partners at Somerset County Council produce Surface Water Management Plans, and Wessex Water produce Drainage and Wastewater Management Plans.

Using these other sources of information both organisations will continue to work in partnership with others to tackle flood risk and resilience issues elsewhere in the district. For example, working with organisations such as the Somerset River Authority, Flood Action Groups, Friends Groups and Internal Drainage Boards.

Q9) Will this work impact on the Somerset Levels and Moors?

The modelling analysis of our preferred approach options specifically looked at the impact downstream of the M5, which provides an indication of any likely impacts on the Somerset Levels and Moors. The preferred approach options have no significant impact on downstream flood risk, but will be checked again during any detailed design work. Large flood storage upstream of the town has the potential to 'slow the flow' into the downstream Levels and Moors area.



Levels and Moors winter 2013/2014

Q10) How much will it cost?

Based on the conceptual designs for each of the preferred approach options, indicative construction and whole life costs have been established. These have been sourced from our technical consultants, project cost tools and with reference to similar schemes built elsewhere in the country.

Costs will vary according to the complexity of the option. Most projects fall within the range of £5-12million each, but some are considerably less. The largest option of upstream storage at Bradford on Tone is costed at approx. £50M for construction.

The preferred approach will need to be phased to make it affordable as it is unlikely to attract full or majority funding from central government Flood Defence Grant in Aid (FDGIA). Alternative funding sources have been identified by the SWT & EA Project Team (Community Infrastructure Levy (CIL), Housing Infrastructure Fund (HIF), New Homes Bonus and the Wessex Flood Defence Committee. The project team will also be investigating funding from other stakeholders and interested parties.

Q11) When will it happen?

The preferred approach options have been given time ranges of: short - 0-10 years; medium - 10-15 years; and long term 30 years +.

SWT and EA have identified three opportunities which may come forward in the short term:

- Raised or New Defences on the left bank of the River Tone from Frieze Hill to Town Bridge;
- Optimisation of Longrun Meadow flood storage; and
- Raise Firepool canal lock gate entrance, and increase the height of defences on the left bank between Firepool and Obridge.

Q12) What will happen next?

Detailed design work is proposed to be undertaken for each of the preferred approach options as part of a phase 3, which is yet to be started.

This will enable the relevant consents and permissions (Planning Consent, Habitat Licenses, EA License) to be obtained. It will also help us determine detailed costs.

Engagement with local stakeholders will be key, and an integral part of the detailed design work under phase 3.

Only then could a contract be let to enable actual construction works to start.

SWT and the EA will continue to work in partnership to secure delivery of the short term preferred options and we will shortly be setting out how we will do that in a collaborative agreement.

Q13) Why don't you just dredge the river instead?

Firstly, there is an important distinction to make between dredging and de-silting. De-silting involves the removal of accumulations of silts and sediments in order to restore the natural channel and keep navigations possible. Dredging goes further by enlarging the original channel design through deepening and/or widening.

Dredging, and other types of watercourse management such as de-silting and vegetation removal have been considered when assessing how to manage existing and future flood risk in Taunton. Dredging has to be prioritised and justified technically, environmentally and economically.



Conventional Dredging on the River Parrett in 2014

In Taunton town centre, dredging is not part of the preferred approach because it is not physically possible in many areas to enlarge the existing channel size through the town, nor remove the weirs at French Weir and Firepool, which significantly contribute to deposition of silt behind them. De-silting works immediately upstream of Firepool weir have taken place in the past to remove silt for visual, amenity and navigation reasons. However, this de-silting (maintenance) work does not significantly reduce flood risk in the town centre. Any benefits derived from this work are also short lived, as removing the silt creates capacity for more material to be deposited, and starts the natural accretion process again.

Following extensive flooding during the winter of 2013/14, dredging and subsequent de-silting has instead been carried out on sections of the River Parrett/Tone downstream of Taunton, where it is more effective in helping to maintain the capacity of the rivers in their lower tidal sections.

This dredging/de-silting work has been undertaken by either the Environment Agency or the Parrett Internal Drainage Board for the Somerset Rivers Authority and means that the duration of flooding downstream of Taunton will be reduced, along with the impacts on properties, land and infrastructure. Ongoing regular maintenance of the recently de-silted lengths of river will be key to maintaining channel capacity downstream of Taunton.

As mentioned in Q9 above, our preferred approach options have been selected to ensure that they have no significant impacts on downstream flood risks in the Somerset Levels and Moors area.

Q14) Won't some of the Taunton town centre options conflict with existing land uses such as recreation and amenity?

Potentially yes they could conflict, but it's possible these proposals could also offer opportunities to improve these facilities. At this stage the preferred approach options are simply concept design stage arrangements that have been proven to reduce flood risk. Before any of the works can proceed to construction there will need to be an extensive stakeholder and public consultation to inform any design processes. We already know that the public value highly the existing facilities at Longrun Meadow and Vivary Park and the multiple uses that they offer. We fully appreciate that we would need to work sensitively with those respective users that could be effected by any of our proposals.

Q15) What about any wider impacts on water quality and the environment?

These important aspects will be more fully assessed as part of the phase 3 project work. As mentioned in Q7, the preferred approach options will be designed to maximise their environmental benefits, where they can do so. This can include incorporating appropriate measures that can help improve water quality and biodiversity for some of the works.

In addition, other ongoing projects led by other partners will be broadly complimentary to the preferred approach options identified by our project.

For example, the use of more natural flood management (NFM) techniques in the upper catchment of the River Tone and its tributaries will contribute to the overall effectiveness of our preferred approach options further down these watercourses.

As part of the Somerset 20year Flood Action Plan, NFM works are already being delivered by a project called Hills to Levels, funded by the Somerset Rivers Authority. Further details of this project can be found here:

<https://www.fwagsw.org.uk/hills-to-levels>, and

<https://catchmentbasedapproach.org/learn/what-is-natural-flood-management/>



Environment Agency picture of Natural Flood Management