



The River Irwell at Kearsley Flood Risk Management Scheme

18th May 2023

What has been done so far

Completed the Strategic Outline Case and working towards the Outline Business Case

Modelling flood scenarios to assess defence height and economic damage to the area during various flood return periods

Fitted non-return valves on surface water outfalls

Surveys and ground investigations

Consultants and contractors investigating numerous design options

Assessed planning applications requirements and challenges to manage risk

Continue to work with the Riverside Drive Flood Forum

Challenges

Difficult ground conditions i.e. shallow bedrock

Impact of construction process on nearby properties and how to mitigate against these

Proximity of properties restricting access for construction

Scale of works to ensure the scheme is delivered safely for contractors and residents

Options Appraisal

Technical Aspect

Will it work and be stable for the life of the defence?

Is there a health and safety risk for contractors, residents or the public?

Environmental Aspects

What impacts will the scheme have on the environment?

Social Aspects

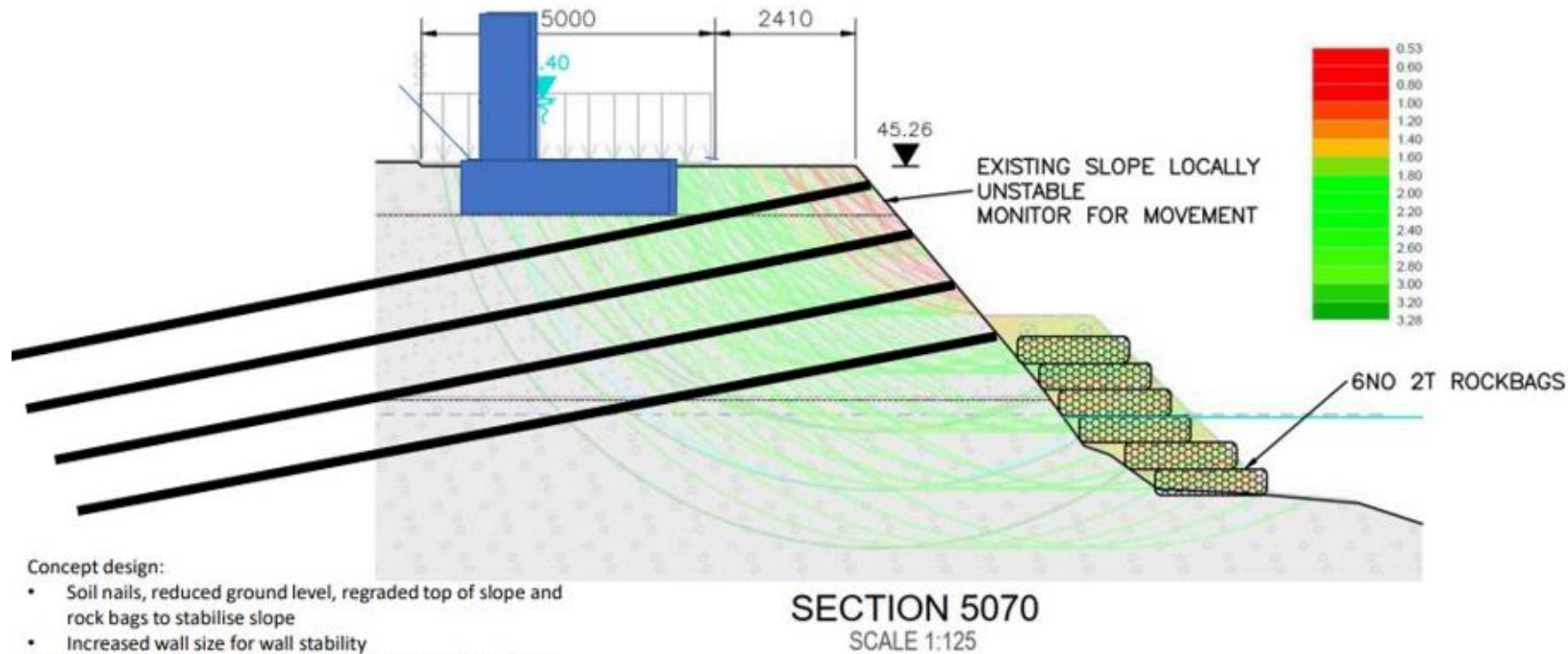
How the construction of the scheme will impact the community e.g. noise, vibration, dust, access and length of time to construct

Economic Aspects

What is the cost, maintenance and design life of the scheme?

Option	Title	Not Viable because
1	Construct a bund above slope	Additional load and increased height will decrease stability of slope
2	Construct a flood wall above slope	Additional load and increased height will decrease stability of slope
3	Offset flood wall with slope regrade	Regrading makes the slope more stable. Adding extra load is more viable but this option would demolish 18 houses which makes it unviable
4	Construct a flood wall above slope with piles and rock-bags to stabilise slope, plus small slope regrade	Rock bags at the bottom of slope to provide stability, this makes adding the flood wall viable if founded on concrete piles. Access constraints for large plant results in complicated construction sequencing
5	Construct a flood wall above slope with piles and soil nails to stabilise slope, plus small slope regrade	Soil nails at the bottom of bank provide stability. Potential clash between soil nails and piles makes installation difficult. Cofferdam will be needed increasing the risk
6	Construct embedded retaining wall using sheet piles	Risk of more slope eroding into the river causing instability. Access issues as large excavators required
7	Redi Rock block, flood wall defence built along the riverside with infill	Soil nails provide stability to the bank. Potential clash between soil nails and piles makes installation difficult

Options 8- Current Investigation- Flood Wall, Soil Nails and Rock Bags



Concept design:

- Soil nails, reduced ground level, regraded top of slope and rock bags to stabilise slope
- Increased wall size for wall stability

All technical details are subject to an assessment of viability of construction and design.

Sequence

1. Lower ground level
2. Install rock bags
3. Regrade slope
4. Soil nail
5. Build wall

Looking at a combination of methods to provide slope stability to build a wall

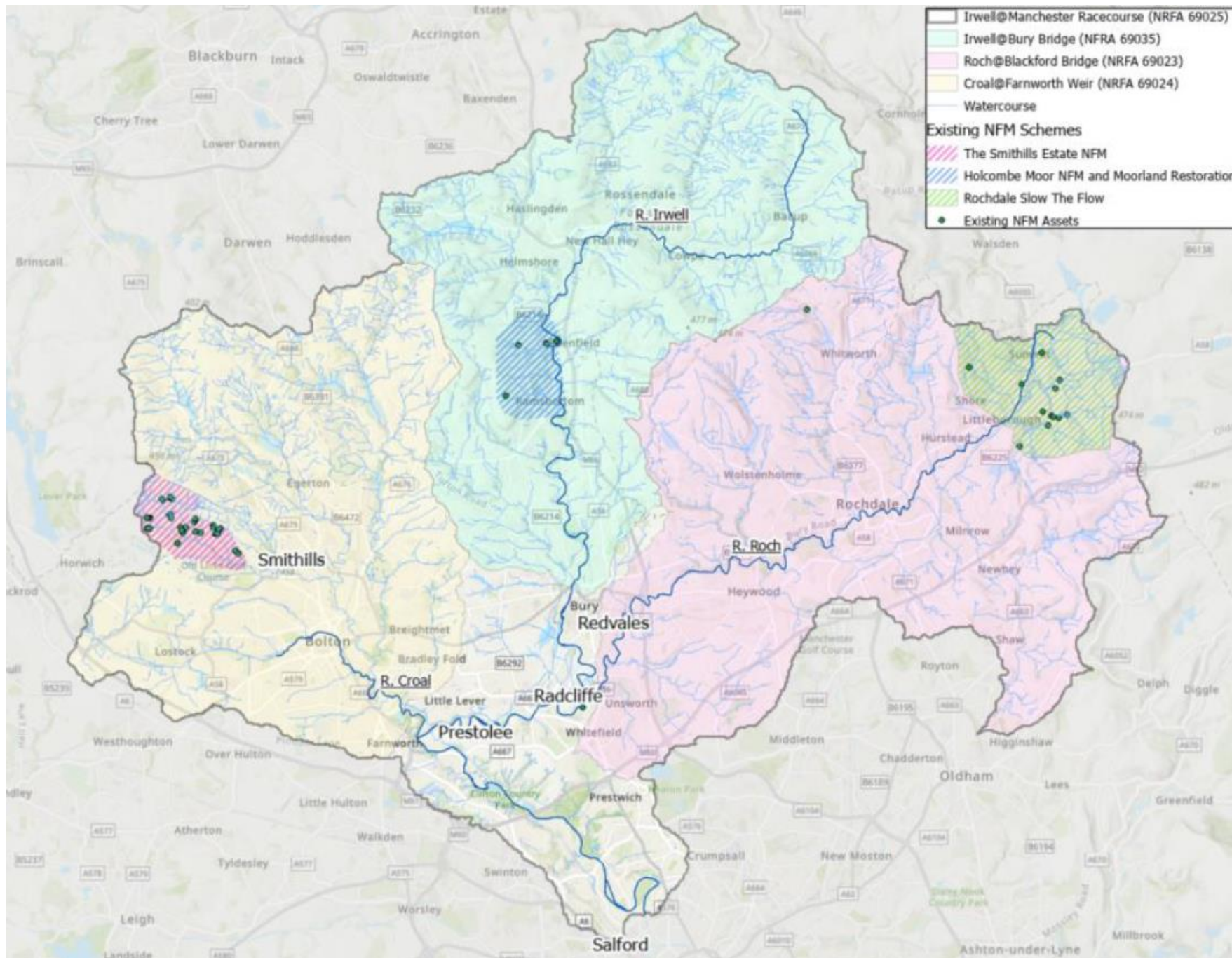
Currently working with CAN, a specialist soil nailing contractor, to carry out further ground investigations and soil nail testing to determine if this design can be progressed further

Pre-vegetation



Established Vegetation





Natural Flood Management that has been done in the catchment upstream of Kearsley