

Summative Assessment of the part ERDF funded St Austell Bay Resilient Regeneration (StARR) Project

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European Union
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Development Fund



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1 Executive Summary

- 1.1 Cornwall Council have commissioned this evaluation and Summative Assessment to review the likely impacts of the St Austell Bay Resilient Regeneration (StARR) project across a range of economic, social and environmental outcomes and impacts within the Par and St Blazey catchment areas, to the north east of St Austell Bay. The study also identifies key lessons learned from the project that can be incorporated into future similar works, both locally and across future Government funded programmes.
- 1.2 This Summative Assessment report provides:
 - An evaluation of performance management data and milestones achieved over the period of the project
 - Qualitative reflections of key staff members at Cornwall Council, the Environment Agency, project contractors and key stakeholders
 - The contribution and impacts of the project to supporting broader social, environmental and regeneration and economic development objectives for Cornwall that were identified at Full Application stage
 - Recommendations and lessons learned for delivery of future projects
- 1.3 The StARR project is a local infrastructure project to protect commercial and residential properties and key transport routes against surface drainage water and fluvial flooding from the River Par, its catchment streams and the Treffry Canal. The project also aimed to protect and to improve local habitats and biodiversity.
- 1.4 A major flood event in November 2010 saw watercourses in the catchment overtop and the A390 and a number of commercial and residential properties in the immediate vicinity flooded. Major surface drainage flooding in the catchment area also occurs at the Par Lane/Harbour Lane roundabout.
- 1.5 The ERDF project had a start date of 1st January 2019, with an initial financial completion date of 31st March 2023 and an initial Practical Completion Date of 31st April 2023. The initial budget was £13,759,710, although this was subsequently requested to be reduced through a yet to be approved Project Change Request to £10,392,686.
- 1.6 The ERDF project is part of a wider £35m programme of flood defence improvements in the area, which includes an Environment Agency DEFRA Flood Defence Grant in Aid project to provide more effective flood defences directly on the Par River and elsewhere in the wider catchment.
- 1.7 The aim of the ERDF project was to test a whole “Catchment Based Approach”, to determine the best solutions to the enhanced flood risks faced by communities within the Par and St Blazey catchment. The Catchment Based Approach is based on utilising a framework of approaches to reduce the chances of fluvial and surface water flooding in a way that makes sense not only hydrologically, but also by utilising Natural Flood Management (NFM) through ‘greener’ Nature-Based Solutions (NBS).

- 1.8 Based on data from the National Receptors Database, there are 53 directly affected businesses that will have their flood risk reduced by the project and a further 153 businesses that would be indirectly affected by flooding (such as where a businesses cannot operate due to flooding of infrastructure, meaning staff and materials cannot get to these work premises on a regular basis). Overall the project is forecast to **exceed the output of directly supporting 124 commercial premises from coastal risks by 66%**, supporting
- 1.9 These 206 commercial premises are estimated to host **899.5 full time equivalent jobs**, which are expected to be safeguarded for the longer term in the area of direct flood risk within Par and St Blazey as a result of the investment. Most jobs safeguarded will be in the retail and hospitality sector, but almost 300 jobs will be safeguarded across light industrial/manufacturing.
- 1.10 Based on the latest ONS data, Current Gross Value Added (GVA) per filled job within Cornwall is £41,393¹. On the basis of the **899.57 jobs safeguarded**, this project should also protect a total **£37.2m** of sub-regional Gross Value Added per annum.
- 1.11 There were a further **504 residential properties** directly affected by fluvial flooding if flood defences were to breach that will now be better protected as a result of the programme and 323 residential properties at risk of flooding from surface water and sewerage, although it is not clear how many of these properties are additional to those at risk of fluvial flooding.
- 1.12 The project's other main output was to support a better conservation status of **30ha of habitat within the Lower Molinnis SSSI**. The process of preparing a Land Management Plan has been completed by the University of Exeter and wayfinding improvements through the site also increase physical access and a connection to the local heritage and habitat.
- 1.12 It is clear from stakeholder engagement that the project has been very complex from inception, design, securing funds through to delivery. There have been a broad range of partners and interests (both external and internal) to maintain relationships with over the duration of the project. This has sometimes tested the capacity of the core project team - especially as COVID-19 further complicated matters.
- 1.13 Stakeholders have had an overwhelmingly positive view of the StARR project and the levels of collaboration have been very good between partners and their respective contractors – especially given the timeframes and complexity of the programme. There was a common view that staff and partners were learning together as to how the catchment operates, how to deploy complimentary flood measures and some of the perspectives and constraints within their own and partner organisations.

¹ Regional gross value added (balanced) by filled job: Local Authorities by NUTS1 region (2021) ONS

- 1.14 The project was strong at engaging the community. Activity included a design and engagement workshop held in 2018 (before the project was live), a public information event held in 2019, three workshops to discuss the detail of the proposed schemes in 2020 (held online) and a public information event held in 2022.
- 1.15 Partners were clear that the timescales for the project did not help delivery, with more time needed to prepare some of the groundwork for the project in advance – especially in the upper catchment. There was also the challenges of working through COVID-19 to deal with, which struck as the project began building momentum.
- 1.16 The project undertook a CEEQUAL Assessment and a final score of 82.2% should be achieved, which would be above the 75% threshold for an Excellent score. Particular areas of strength have been working with people and communities, land use and landscape, the water environment and transport. Additionally, the wider project has won two national Leading Lights awards for Considerate Constructors (in the Environmental category) and was a finalist for a Biodiversity award.

Lessons Learnt

- 1.17 In terms of key lessons learnt from the StARR project, it was agreed across partners that there could have been an agreed strategy at an early stage as to what measures would be implemented that went beyond the high-level outline considered when the funding applications were submitted. Without an agreed and detailed strategy, decision making was harder and a wider set of partners (and individual departments) were not always brought onboard at an early stage.
- 1.18 The timeframes to start the project were condensed to meet the ERDF bidding timetables and there was not sufficient time to prepare detailed and prioritised activity – with the result that the programme was delivered based on what was ultimately possible and practical on an ongoing basis. This process was clearly not helped by COVID-19, but a catchment wide approach to flood management is clearly a long term and ongoing process.
- 1.19 A number of areas where there are lessons to be learnt revolve around the implementation of natural flood defence measures, especially working with private landowners. The process of delivering flood prevention measures and securing access to implement the works was difficult – especially as the ERDF project had a fixed end date. The pace that some of the natural flood management systems have been installed has meant there is only limited evaluation and monitoring systems in place to understand how the measures are working and their effectiveness.
- 1.20 Overall however, the ‘Whole Catchment’ based approach has been deemed successful and something to be replicated in other areas of Cornwall. There is a clear opportunity to look across some of the other ERDF funded flood management project to identify a network of best practice and learn from other agencies that have promoted natural flood management systems.

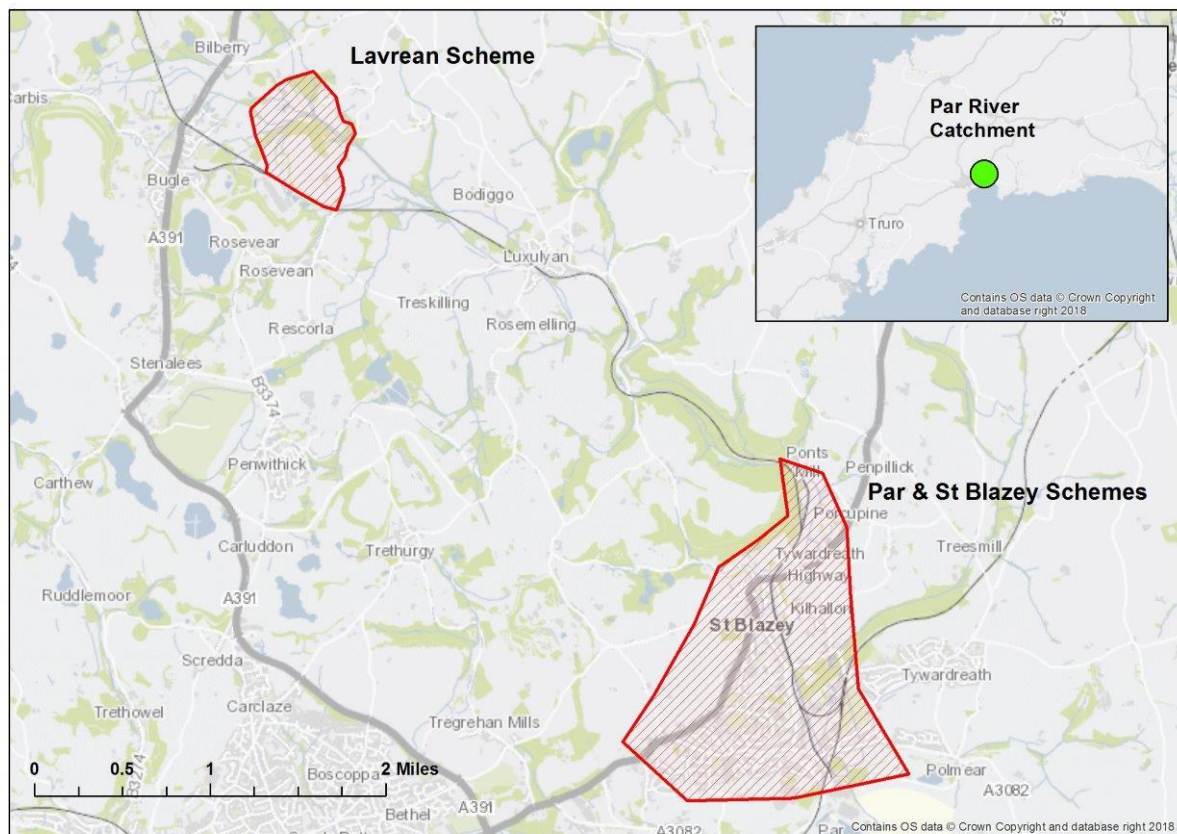
2 Introduction and Project Background

- 2.1 Every European Regional Development Fund (ERDF) Deed of Grant places a requirement on all recipients to undertake a Summative Assessment. Cornwall Council have commissioned this evaluation and Summative Assessment to review the likely impacts of the St Austell Bay Resilient Regeneration (StARR) project across a range of economic, social and environmental outcomes and impacts within the Par and St Blazey catchment areas, to the north east of St Austell Bay. The study also identifies key lessons learned from the project that can be incorporated into future similar works, both locally and across future Government funded programmes.
- 2.2 The Summative Assessment process draws from the project's completed Summative Assessment Plan and its associated Logic Model (explained further within the Methodology section). The Summative Assessment has been co-ordinated by S4W Ltd between November 2022 and March 2023, drawing on a range of project performance data collated by Cornwall Council and interviews with key project staff and local stakeholders (Refer to Appendix A). The study also draws from a range of technical reports created by some of the project's contractors and partners.
- 2.3 This Summative Assessment report provides:
 - An evaluation of performance management data and milestones achieved over the period of the project
 - Qualitative reflections of key staff members at Cornwall Council, the Environment Agency, project contractors and key stakeholders
 - The contribution and impacts of the project to supporting broader social, environmental and regeneration and economic development objectives for Cornwall that were identified at Full Application stage
 - Recommendations and lessons learned for delivery of future projects

About the St Austell Bay Resilient Regeneration Project

- 2.4 The StARR project is a local infrastructure project to protect commercial and residential properties and key transport routes against surface drainage water and fluvial flooding from the River Par, its catchment streams and the Treffry Canal. The project also aimed to protect and to improve local habitats and biodiversity.
- 2.5 A major flood event in November 2010 saw watercourses in the catchment overtop and the A390 and a number of commercial and residential properties in the immediate vicinity flooded. Major surface drainage flooding in the catchment area also occurs at the Par Lane/Harbour Lane roundabout.
- 2.6 The topography of the Par/St Blazey is a small compact water catchment with steep hillsides, a considerable area of built up land and a dense network of higher order streams. This makes the area particularly at risk of major flash flooding events.

Map 2.1 Project location



Source: Cornwall Council Full Application to the European Regional Development Fund (2018) p4

- 2.7 Map 2.1 above shows the location of the project in relation to Cornwall and the location of the scheme of works in the lower and upper catchments in Par and St Blazey and the location of the habitat protection and management scheme (Lower Molinnis, part of the Mid Cornwall Moors SSSI) near the village of Bugle.
- 2.8 The StARR project has built its approach to flood defences on a 'whole catchment' approach, aiming to deliver a combined total of around 30 infrastructure projects to slow water within the catchment. Project activity included:
- Natural food defence measures in the upper catchment, including providing flood attenuation infrastructure and advice to landowners.
 - Water attenuation infrastructure within the urban catchment to reduce highways and surface water flow.
 - Increasing the capacity of existing flood defence systems in the lower catchment area.
 - Helping communities to adapt to climate change.

- 2.9 The ERDF project is part of a wider £35m programme of flood defence improvements in the area, which includes an Environment Agency DEFRA Flood Defence Grant in Aid project to provide more effective flood defences directly on the Par River and elsewhere in the wider catchment. This component of the project is not included within the ERDF project, partly because the timescales do not fully overlap and because there is less emphasis on protecting commercial premises, which is the focus of ERDF investment.
- 2.10 The ERDF project had a start date of 1st January 2019, with an initial financial completion date of 31st March 2023 and an initial Practical Completion Date of 31st April 2023. The total budget was £13,759,710, with an ERDF contribution of £7,791,030 awarded through Priority Axis 5b of the Cornwall and Isles of Scilly ERDF allocation (at a 56.5% intervention rate). As Cornwall is classified as a Less Developed Area, ERDF can provide up to an 80% intervention rate for projects.
- 2.11 The remainder of the budget was funded by the Environment Agency (£3,708,680 through the Flood Defence Grant-in-Aid scheme), £2m from Cornwall Council, £200,000 from South West Water and small contributions from the University of Exeter and Westcountry Rivers Trust. The detailed project budget is shown below.
- 2.12 The project budget was subsequently requested to be reduced through the issuance of a Project Change Request (detailed further in section 2.24 onwards). The revised budget is also shown in Table 2.1.

Table 2.1 StARR – ERDF Project Budget

Category	Budget	PCR March 2022 (Unapproved)
Capital		
Building and Construction	£11,003,192	£8,451,068
Fees	£1,443,456	£1,000,976
Revenue		
Marketing	£40,000	£746
Salaries	£721,182	£589,866
Consultancy	£413,700	£231,548
Other Revenue	£30,000	£30,000
Flat Indirect Costs	£108,180	£88,480
Total Project Costs	£13,759,710	£10,392,686

- 2.13 The aim of the project was to test a whole “Catchment Based Approach”, to determine the best solutions to the enhanced flood risks faced by communities within the Par and St Blazey catchment. The Catchment Based Approach is based on utilising a framework of approaches to reduce the chances of fluvial and surface water flooding in a way that makes sense not only hydrologically, but also by utilising Natural Flood Management (NFM) through ‘greener’ Nature-Based Solutions (NBS).

- 2.14 The ERDF-funded elements of the project mainly focussed on these greener measures and originally included over 30 infrastructure projects to slow water movement within the catchment. This included:
- A number of attenuation basins within the catchment in public open spaces and a subterranean attenuation tank at the Doubletrees School site
 - Natural flood defence measures in the upper catchment including a number of drainage ditches and attenuation ponds
 - Provision of advice and guidance to landowners to implement a range of natural flood defence measures including improving soil quality, encouraging planting and identifying opportunities for further funding (delivered by the Westcountry Rivers Trust)
 - Rain gardens on key highways routes
 - Improved highways drainage at Brook's Corner.
- 2.15 The wider Environment Agency project (out of scope of the ERDF project) aimed to increase the capacity of existing flood defence systems in the lower catchment around the Par River and Treffry Canal (non-ERDF funded) and helping local communities to adapt to climate change.
- 2.16 Finally, the University of Exeter prepared a land management plan for the Lower Molinnis Site of Special Scientific Interest (SSSI), a natural habitat landscape in the upper catchment near the Bugle and part of the Mid Cornwall Moors SSSI. The StARR project proposed this area be reconnected back into the flood plain and included physical works to create additional wetland environments to enhance the habitat for a number of species including the Marsh Fritillary Butterfly.
- 2.17 In terms of outputs, the project aimed to reduce the flood risk to **124 commercial properties** (ERDF Output P6 - based on a flood risk assessment using the DEFRA National Receptors Database) and a management plan developed to **improve the biodiversity of 30ha** at the Lower Molinnis SSSI site (ERDF C23 output - a fixed geographical output). The nature of these outputs is relatively fixed at the time of application submission – but a subsequent revision of the P6 output also means business premises indirectly affected by flooding can also be included in the count.
- 2.18 The wider benefits of the project include protecting over 500 residential properties along with key road, rail and utilities infrastructure. There also should be some improvements to localised water quality.

Partnership and Governance Arrangements

- 2.19 Cornwall Council has been the accountable body for the ERDF project and for part of the DEFRA Flood Defence Grant in Aid that formed part of the financial package. The StARR project has worked through a Programme Board, with representation from key partners meeting bi-monthly. Project delivery has been overseen by the project's Steering Group which has met on a monthly basis. A Programme Manager has been hosted by Cornwall Council, but worked directly to the Board and across all project partners.

- 2.19 There have been other partners that have engaged with the project at various times, including Network Rail with regards to asset protection on the railway lines and Natural England as a statutory consultee on the Lower Molinnis SSSI.
- 2.20 Much of the work in the upper catchment has taken place on privately owned land. As a result, Cornwall Council has had to engage a range of landowners to discuss and potentially impose flood prevention works and measures to take place on their land.
- 2.21 The project also undertook a series of formal engagement activities with the local community. This included a design and engagement workshop held in 2018 (before the project was live), a public information event held in 2019, three workshops to discuss the detail of the proposed schemes in 2020 (held online) and a public information event held in 2022.

StARR Community Display Panel



Source: Cornwall Council

Project Change Requests

- 2.22 Only one formal Project Change Request (PCR) has been submitted for the project, initially in March 2022. The project change process has been subject to ongoing dialogue between DLUHC and Cornwall Council due to the complex nature of the project and at the time of completing the Summative Assessment remains unapproved.
- 2.23 The PCR descoped three elements of the project: removing part of the attenuation ponds at the St Blazey Ponds site due to land contamination and rising costs, removing works at White House Farm due to reservoir safety review implications, technical and consenting issues, rising costs and the need for an increasingly heavy engineering solution due to poor ground conditions, and at Lower Molinnis where Natural England's Assent for the proposed engineering works has been refused.

- 2.24 The PCR has proposed a downwards amendment of the overall budget from £13,759,710 down to £10,392,685.59 and the ERDF grant from £7,791,029 down to £5,885,924.77 and has requested an extension to the project's Financial Completion Date to 30th June 2023.

3 Strategic Contexts

History and Local Context

- 3.1 St Blazey and Par are the 11th largest settlement in Cornwall with a combined population of 9,958 (according to the 2011 Census). St Blazey originally developed in the 19th century as an engineering centre. The lower part of the town is a former estuary, which silted up in the 19th century due to discharge from the tin mining industry upstream.
- 3.2 Par developed as a harbour to service local copper and china clay mines, including the development of the Treffry Canal to Pons Mill. Par Harbour still exports china clay, with the harbour operated by Imerys. Par is also a significant rail town for Cornwall on the London - Plymouth – Penzance line and with a branch line heading west to serve Newquay.
- 3.3 The area is a relatively deprived community, with the St Blazey West ward the 13th most deprived ward in Cornwall according to the 2019 Index of Multiple Deprivation and is in the lowest decile of deprived wards in England.
- 3.4 The Par and St Blazey area have been subject to significant flooding for a long period of time, with the in-situ flood defence system reaching its capacity in the 1970s. The most significant flooding event of recent times occurred on 17 November 2010 when fluvial and surface water flooding flooded 55 properties and caused significant disruption on the A390 and rail network. There have been floods of differing severities every few years and the estimated cost of these floods is around £20m. Surface water flooding of the highway happens yearly, particularly at the low lying areas around Brooks Corner and Station Road which form part of the functional Flood Plain 3B (areas where water is intended to be stored in times of flood).
- 3.5 It has been modelled that an extreme flood could cause up to £130m worth of damage and disruption. Par and St Blazey are now amongst the areas with the highest flood risk in Cornwall as cited by the Cornwall Preliminary Flood Risk Assessment of June 2011 and 2017 and the latest Cornwall Local Flood Risk Management Strategy 2020 - 2026.

National Adaptation Programme (July 2018)

- 3.6 The National Adaptation Programme is an overarching document which sets out Government proposals about how the UK must adapt to the multiple consequences of climate change. It covers multiple themes from which flow more detailed strategies of Government departments and related agencies. The Programme recognises that:

“Climate change is likely to increase flood risk in England from the four main types of flooding - fluvial (river), coastal, surface water, and groundwater. Sea level rise and potential changes in storm patterns are likely to increase coastal erosion rates in many areas.”²

3.7 The 2018 National Adaptation Programme is a refresh of the first document, produced in 2013 by the then coalition Government through the Department for Environment, Food and Rural Affairs (Defra). It is due to be refreshed during 2023.

3.8 The National Adaptation Programme identifies a need to blend natural and hard flood management approaches to be most effective in preventing recurring flooding:

“Natural flood management (NFM) approaches and/or working with natural processes can, in the right place, provide opportunities to manage water flow, potentially reducing the risk of flooding to our communities. NFM measures alone will not offer protection to areas of greatest risk or in the face of the most significant flood events. Good integrated flood management will see these incorporated alongside conventional defences³.”

3.9 The priorities in relation to flood management have been identified as:

- making sure everyone is able to access the information they need to assess any risk to their lives, livelihoods, health and prosperity posed by flooding and coastal erosion;
- bring the public, private and third sectors together to work with communities to reduce the risk of harm – particularly in vulnerable areas;
- make sure that decisions on land use, including development, reflect the level of current and future flood risk;
- boost the long-term resilience of our homes, businesses and infrastructure;
- take action to reduce the risk of harm from flooding and coastal erosion including greater use of natural flood management solutions; and
- include flood risk as a key feature of adaptation reporting from infrastructure reporting organisations.

Planning Considerations

3.10 The programme also reiterated that flood risk needs to be considered in National Planning Policy Framework. The planning framework identifies four Flood Zones: Low, Medium and High Probability and the Functional Floodplain. It places the requirement on Local Authorities to undertake a Strategic Flood Risk Assessment. Within different zones of flood risk, appropriate ‘sequential tests’ need to be applied for whether development should take place within areas of flood risk.

² Defra (2018) The National Adaptation Programme p43

³ ³ Defra (2018) The National Adaptation Programme p32

- 3.11 A significant proportion of Par and St Blazey within Cornwall are identified as Functional Floodplain with a 'high' flood risk greater than or equal to 1 in 30 (3.3%) chance in any given year). The St Blaise Neighbourhood Development Plan also highlights the need to consider flood risk on future regeneration proposals.

National Flood & Coastal Erosion Risk Management (FCERM) Strategy for England

- 3.12 The Environment Agency's original National Flood and Coastal Erosion Risk Management Strategy for England was produced in 2011, which was relevant at the time of the development of the project. The strategy sought to promote partnership activity to address local challenges.
- 3.13 The latest iteration was published in July 2020 and sets out practical measures to be implemented by risk management authorities, partners and communities to deliver the Environment Agency's vision of "A nation ready for and resilient to, flooding and coastal change – today, tomorrow and to the year 2100."
- 3.14 The strategy has three core ambitions concerning future risk and investment needs:
- Climate resilient places: working with partners to bolster resilience to flooding and coastal change
 - Today's growth and infrastructure resilient to tomorrow's climate
 - A nation ready to respond and adapt to flooding and coastal change.
- 3.15 The strategy aims to better manage the risks and consequences of flooding from rivers, the seas, groundwater, reservoirs, ordinary water courses, surface water, sewers and coastal erosion - setting out longer term delivery objectives for the nation to pursue over the next 20-30 years alongside shorter term, practical measures to be delivered in partnership.
- 3.16 The strategy suggests that between 2015 and 2021 risk management authorities, working with partners will have invested £2.7bn of Government funding and £600m of partner contributions (90% of which is from public sector budgets) in flood and coastal risk management. This investment will protect some 300,000 homes.
- 3.17 A total of 45% of this expenditure will be focussed upon coastal flood and erosion management, the remainder on inland flood risk management. The Environment Agency suggests that the scale of economic losses resulting from the 2019/20 flooding across England to be around £333m but estimates that the economic damage avoided by the protection provided is at least fourteen times greater.
- 3.18 The strategy recognises the impact of flooding is not just physical, but there is also an emotional and mental health impact on individuals and communities that suffer from significant flooding.
- 3.19 The Strategy highlights the four key factors to help local places adapt to flood risk and climate change. These are **Place Making** (making land use and design choices) **Protection** (flood defences and managing water flows) **Recover** (getting back to normal quickly and becoming more resilient as a result) and **Respond** (working with communities to forecast, warn and evacuate).

Cornwall Local Flood Risk Management Strategy

- 3.20 Cornwall has an activity Flood Risk Management Strategy, operational for the period 2020 – 2026. The strategy sets out how Cornwall Council and its partner statutory authorities intend to work together to manage flood risks from all sources.
- 3.21 Cornwall Council has a broad level of responsibility and services that can all impact on flood risk and mitigation. Cornwall Council is the Lead Local Flood Authority, the Land Drainage Authority, the Planning Authority, the Highway Authority, the Emergency Management Authority and the Coastal Authority.
- 3.22 The report highlights there are 12,000 properties in Cornwall at risk from river flooding and 20,000 properties at risk from surface water flooding, with priority given to the most at-risk areas, with Par and St Blazey identified in this category.
- 3.23 The report also places an emphasis on developing the natural environment to create climate change adaptation solutions and to encourage and support local people and businesses to take part in managing the risks that affect them.

“The sources of flooding in Cornwall are often interrelated, and the solutions to resolve these challenges require a comprehensive and integrated approach with partner organisations⁴.”

- 3.24 The local strategy also identified the need to work with natural processes to provide a catchment-based approach to flood risk management, including the need to link Natural Flood Management solutions with the priorities of the Cornwall Nature Recovery Network, Cornwall Catchment Partnerships (promoting water quality, resources and habitats) and other environmental stakeholders to identify where natural processes will have the widest benefit.
- 3.25 To deliver a catchment wide flood management approach it is also increasingly important to work with communities, businesses and landowners to use all available resources to manage flood risk and improve environment.
- 3.26 A further priority is to grow evidence base for effective natural flood management approaches and StARR was identified as a key project to draw lessons learnt from for future catchment wide approaches. DEFRA have identified the StARR project as a case study for working with natural processes to reduce flood risk⁵.
- 3.27 The strategy also recognises the importance of the Cornwall Community Flood Forum, which raises awareness of local flood issues including causes, preparation and recovery. The Forum also supports and trains a network of flood wardens. A local Par and St Blazey Community Flood Group was established in the wake of the 2010 floods and the group has been engaged with the StARR project.

⁴ Cornwall Local Flood Risk Management Strategy (2019) Cornwall Council, p7

⁵ Case Study 8: St Austell Bay Resilient Regeneration Project (StARR) (2021) James Burke and Tom Fletcher,

Cornwall Environmental Growth Strategy 2020-2065

- 3.28 Cornwall has developed an environmental strategy that is about underpinning a green economic recovery and enhancing nature on the land and in the sea, rather than just conserving it. Part of the approach of the strategy is using natural solutions to clean waterways and catchments and reducing flood risks.

Integrated Territorial Investment Strategy

- 3.29 The Integrated Territorial Investment (ITI) Strategy is the framework for Cornwall and the Isles of Scilly against which EU Structural and Investment Funds are allocated. Cornwall and the Isles of Scilly initially received a total of €603.7m of European Regional Development Fund and European Social Fund investment and £9.4m of European Agricultural Fund for Rural Development.
- 3.30 Cornwall and the Isles of Scilly were the only place in England classified as a Less Developed Region (with GDP per capita less than 75% of the European Union average). In these areas, European Regional Development Fund can contribute up to 80% of the overall cost of a project, compared to only 50% for a More Developed region.
- 3.31 The ITI clearly makes the links between the risks of coastal protection and flooding and the long-term conditions required to support economic growth and investment decisions. The strategy denotes the need to develop communities that are economically and socially resilient, sustainable and inclusive – which includes strengthening the economic and also environmental resilience of coastal and rural communities.
- 3.32 The ITI Strategy aimed to commit all of its flood management schemes by 2018 and ultimately support 163 businesses in commercial premises with reduced flood risk.
- 3.33 Finally the St. Austell Bay Area Investment Plan also recommends that it is important to the area's regeneration essential flood defence schemes are implemented as an early priority for the area's infrastructure to protect existing local businesses and communities and to unlock future economic growth. The enhanced flood risk within the area means there is a limited availability of development sites and the risks are holding back investment.

4 Funding and Project Context

- 4.1 Over recent time, there have been three primary sources of funding with regard to flood and coastal erosion risk management in England. These are:
- Government grants from DEFRA (accessed through the Environment Agency) which has a statutory responsibility for maintaining existing infrastructure relating to 'main rivers' as well as investing in new and improved risk management infrastructure.
 - European Structural and Investment Funds, which is linked to the ambitions contained within respective Local Enterprise Partnership Strategic Economic Plans, and related EU Structural and Investment Funds Strategies
 - Partner investments, which typically have come from other public authorities. This is most commonly Local Authorities, especially those Upper Tier Authorities that are Lead Local Flood Authority.
- 4.2 As has been the case with StARR, most ERDF flood protection projects tend to blend funding from two, three or more sources. Both the Environment Agency and EU Structural Funds both require some level of wider contribution towards project costs from other sources.
- 4.3 The majority of flood related funding comes through the Environment Agency which offers largely capital Grant-in-Aid funding towards Flood, Coastal Erosion and Risk Management (FCERM) projects to relevant Risk Management Authorities (including Local Authorities). The grant can also be used to fund related initial studies or the development of a risk management strategy covering several connected areas.
- 4.4 Historically a points-based system for determining which projects to support was always oversubscribed, which meant that only the highest priority schemes were supported. In 2011, the approach was modified to favour a partnership approach to project development, sharing the costs of projects between national and local sources of funding. This means, for the most part, proposals that demonstrate greater benefits than the project cost qualify more effectively for a contribution from the Environment Agency.
- 4.5 The level of funding is determined against the level of benefit delivered to people and property resulting from reduced risk. Additionally, projects within deprived communities, or which deliver environmental or wider economic benefit may attract more grant. The Environment Agency application process involves two key stages. The first involves submission of a project proposal which details:
- How the project will be funded
 - How much grant is required
 - A time frame for spending the grant
 - How many households will benefit
 - Information about the area that will benefit
 - Detail regarding potential environmental benefits
 - Detail regarding financial benefits resulting.

- 4.6 The project appraisal process can take as long as nine months to reach a determination. If successful, the proposal is added to the Programme of Flooding and Coastal Erosion Risk Management Schemes and the applying organisation is asked to prepare a detailed business case.
- 4.7 The ERDF England Operational Programme 2014 -2020 provides the overarching framework for how ERDF monies are invested in England, guided by each Local Enterprise Partnership's EU Structural and Investment Funds Strategies. The Programme identifies under Priority Axis 5: 'Promoting Climate Change Adaptations, risk prevention and management', the need for actions to support flood management and climate change resilience.
- 4.8 The process for securing EU structural funding broadly echoes the Environment Agency process in that it requires submission of an expression of interest which, if approved will require a subsequent more detailed submission. Matched funding is also a requirement.
- 4.9 The main difference is the focus of what is being protected – with the Environment Agency primarily focussing on protecting residential properties and ERDF solely focussed on protecting commercial premises and businesses:
- "Flood mitigation measures will support the protection of major employment areas and small and medium sized enterprises and unlock derelict, underused or neglected land on strategically important sites/areas identified as central to realising growth aspirations⁶."*
- 4.10 Extrapolation of monitoring information across all ESIF projects supported shows that as of February 2023 a total of 23 Priority Axis 5 schemes had been supported nationally, committing £52.4m towards a total cumulative expenditure of £124.4m⁷ (an average intervention rate of 42%).
- 4.11 A total of fifteen projects supported, including StARR, can be classified as predominately fluvial flooding protection projects. Across these the ERDF grant committed totals £39.8m towards a total cumulative expenditure of £95.2m, at an average intervention rate of 42%. The StARR project was the largest individual project within this group of projects and alone represents almost 20% of the allocation to this type of projects.

⁶ Call for Proposals European Regional Development Fund Priority Axis 5: Promoting climate change adaptation, risk prevention and management (2016)

⁷https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1135193/ESIF_List_of_Beneficiaries_Jan_2023.csv/preview - accessed March 2023

- 4.13 Partner investments represent the final funding source and it is likely that the largest proportion of this funding represents risk management authorities or Local Authority investment into local projects which they are leading, or partnering, rather than an additional funding source which third parties can apply for. The Environment Agency do not provide a figure or proportion regarding partner investments but do estimate that 90% of those contributions come from local authority or other public agency budgets⁸.
- 4.14 The original StARR project proposed to match a proportion of the Flood Defence Grant in Aid resources from the Environment Agency against a wider scheme that cost a total of £35m, which included a total Environment Agency contribution of £13.4m and a further contribution from DEFRA of £10.8m.

⁸ National Flood and Coastal Erosion Risk Management Strategy for England (2020) p38.

5 Methodology and Summative Assessment approach

“...Summative Assessments are intended to provide insights into project performance to enhance their implementation, reliable evidence of their efficiency, effectiveness and value for money, as well as insights into what and why interventions work (or not) and lessons for the future.”⁹

5.1 This Summative Assessment report is the cumulation of an ongoing process that began early in the project delivery cycle to understand the impacts and lessons learnt from the St Austell Bay Resilient Regeneration project and how the findings can be applied to flood and coastal protection projects and wider regeneration activity in Cornwall and beyond. The process has drawn heavily from the ERDF Summative Assessment Guidance, assessing the following key components:

- The continued relevance and consistency of the project;
- The progress of the project against contractual targets;
- The experience of delivering and managing the project;
- The economic and wider impacts attributable to the project; and
- The cost-effectiveness of the project and hence its value for money.

5.2 The Summative Assessment process is based around three phases, which are:

Stage 1 - Summative Assessment planning including the completion of a logic model and the summative assessment plan using templates provided by the managing authority. This process has been completed.

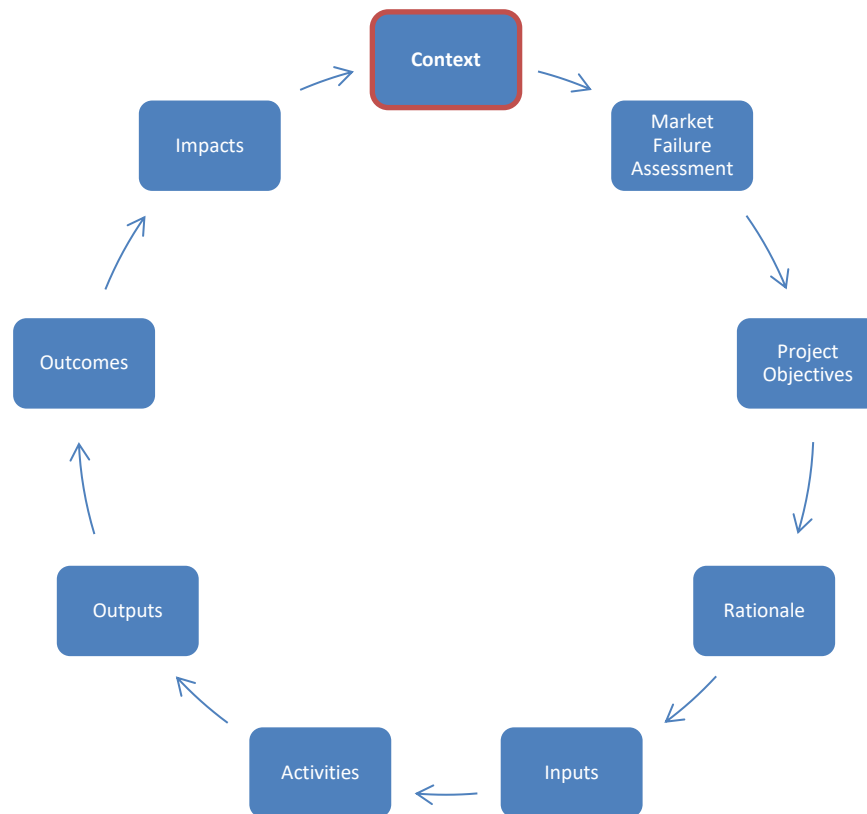
Stage 2 – Data collection and reporting on the ERDF programme’s monitoring requirements and to support the final Summative Assessment. This process is ongoing until the practical completion date.

Stage 3 - The completion of the Summative Assessment and its summary template provided by the Managing Authority.

⁹ Summative Assessment Guidance (July 2020) MHCLG page 3

- 5.3 The Summative Assessment process draws from an underpinning logic model, which encourages projects to consider in project design, delivery and implementation how activity within the project can be measured and what type of outcomes and impacts the project will deliver.

Diagram 5.1 Summative Assessment Logic Model



Source: MHCLG – Summative Assessment Logic Model

- 5.4 Diagram 5.1 identifies the ‘theory of change’ driven logic model for the project development, delivery and final Summative Assessment process. The Logic Model involves understanding the context within which the StARR project will operate and the market failure(s) it will try and address. From these contexts, a set of objectives have been set for the Summative Assessment to identify how planning and implementation are clearly linked to achieving a set of outputs, outcomes and impacts.
- 5.5 The logic model is a key mechanism for ensuring learning and feedback is constantly incorporated into the delivery of the programme, how it effectively engages and supports beneficiaries, the quality of services it delivers and how it measures impact.

- 5.6 The logic model identifies the market failure the project aims to overcome and the intervention logic for how the prescribed actions will tackle this challenge. Within the Logic Model, the market failures were described as

“The community is vulnerable to flooding, which has given rise to economic stagnation resulting in a lack of investment and a spiral of economic and social decline. The proposed schemes are based on doing the minimum required to improve flood risk management and bide time for another 25 years before a longer-term solution can be secured.

Without any action the community of Par and St Blazey would continue to be regarded as a high risk investment area resulting on further social and economic deprivation. A significant opportunity will be lost as a result, putting many homes and lives at risk from flooding.”

- 5.7 The intervention logic stated that the project will provide security against climate change and flooding and enable economic, social and environmental resilience in one of Cornwall’s most deprived communities.

Summative Assessment Methodology

- 5.8 This Summative Assessment draws upon a range of quantitative and qualitative evidence to understand the long-term impact the programme will have on the sub-regional economy, whether it met its objectives and how it is performing against its profile targets. This evidence includes:
- Key ERDF project documentation
 - A site visit during March 2023
 - Virtual meetings with stakeholders/key project staff at Cornwall Council, the Environment Agency, Westcountry Rivers Trust, Mace Ward Joint Ventures and Savills
 - Performance Management Data and submitted ERDF Claims
 - A range of Planning and Engineering reports including the CEEQUAL Assessment score, the project Comprehensive Impact Assessment, StARR Project Newsletters and Twitter feed and the Business Case for the Flood Defence Grant in Aid contribution.
- 5.9 It also considers the project management structures, highlighting key learning points and making recommendations for any future coastal flood or erosion protection projects.
- 5.10 Although many businesses in the Par and St Blazey areas were classified as beneficiaries of the project, they did not directly receive either support or a grant from the project therefore undertaking a sample of interviews or a quantitative survey was deemed an inappropriate engagement tool. Primarily, the businesses may not have known about their present level of Flood Risk and there are no direct short-term or visible benefits that the businesses can comment upon.

- 5.11 The methodology has centred upon evaluating the following key impacts highlighted within the application and contained within the project's Logic Model:
- The impact of the project on protecting businesses from future flooding
 - Improving the quality and sustainability of local habitats
 - The implications for safeguarding jobs in Par and St Blazey from protecting their business premises
 - The long-term impacts on business and investment confidence as a result of better flood resilience
 - The impact on the local community.
- 5.12 The methodology has worked within the parameters of the General Data Protection Regulation and there was no primary data generated through quantitative surveys of businesses or the wider public.

Impact Calculations

- 5.13 One of the key elements of a Summative Assessment process is to understand the range of economic impacts of ERDF investment. The key impact measures for a Summative Assessment are usually increases in Jobs and Gross Value Added as a direct result of the project intervention
- 5.14 Measuring these impacts is a relatively difficult process for the StARR project as a) the project largely protects existing economic activity rather than creating direct growth by being linked to a specific development opportunity and b) the businesses that are beneficiaries had little direct knowledge that they would benefit from a project that is about preventing future detrimental events.
- 5.15 As a result of these factors, it is not possible to identify any growth impacts in these areas. However, the securing of the long-term future of a number of commercial properties brings with it the securing and safeguarding of a number of jobs.
- 5.16 To calculate the likely number of jobs that have been safeguarded, analysis of the ESIF 1-013 form has been combined with data from the Homes and Communities Agency on jobs densities by property type¹⁰. An average property size has been allocated to each property type based on either estimates from current vacant properties on the market or estimations of property sizes based on detailed land use maps of Cornwall.

¹⁰ Employment Densities Guide (2015) Homes and Communities Agency

6 Project Management and Delivery

- 6.1 The first application for ERDF funding was submitted in June 2016, with the final resubmission completed and approved in June 2019, although the formal by way of a project start date was in January 2019. The assumptions behind the current project were that investment needed to provide an increased level of protection for at least a 25-year period – during which time a series of longer-term options for managing the risks associated with flooding in the area could be better assessed through an Adaptation Plan (not part of the ERDF project).
- 6.2 Initial hydraulic modelling, survey and design work was undertaken to scope the potential project, supported by MottMcDonald. This formed the basis of the applications to both the Flood Defence Grant-in-Aid and the European Regional Development Fund. The project initially considered 28 individual but connected flood mitigation measures across the catchment.
- 6.3 It was originally envisaged that the project scope would incorporate some of the Sandy River catchment area, which also drains into St Austell Bay. The resources available to the project have dictated that StARR has ultimately had to focus on the Par River side of the watershed and measures have consequently excluded the Sandy River catchment.
- 6.4 A Community Consultation event was held in April 2018 to discuss the proposals. Feedback from the event showed there was overwhelming support for the project with 88% of residents saying they would support the measures knowing there would be short-term localised disruption during the construction phase.
- 6.5 The ERDF project has been managed by Cornwall Council (led by the Environment and Capital Projects Team), working in direct partnership with the Environment Agency (match funder and strategic partners) and South West Water (match funder and strategic partner responsible for local sewerage infrastructure). Other partners included the Westcountry Rivers Trust and the University of Exeter
- 6.6 Cornwall Council, as the Lead Local Flood Authority have a range of statutory responsibilities and functions in relation to flood management that are relevant to the StARR project. A Lead Local Flood Authority is responsible for managing the risk of flooding from surface water, groundwater and ordinary watercourses, with the Environment Agency having responsibility for main rivers. Cornwall Council is the lead agency for flood recovery. Along with this responsibility, Cornwall Council also has the following roles:
 - The local Highways Authority
 - The local Planning Authority
 - Has powers as the Land Drainage Authority
 - The Coastal Protection Authority
 - A significant land and/or infrastructure owner within the catchment area.

- 6.7 All of the above roles have been an instrumental component within the StARR project and a number of different Departments of the Local Authority have had a role to play in delivering the project.
- 6.8 The lead consultant and contractor for the project was CORMAC Solutions Ltd, who were appointed under Regulation 12 of the Public Contracts Regulations 2015¹¹. CORMAC (working with AECOM) have led the outline and detailed design work on all of the ERDF interventions.
- 6.9 Other key partners in the project included the Westcountry Rivers Trust, who led work to provide natural flood management advice for landowners in the catchment and the University of Exeter, who worked on the Land Management Plan to improve the conservation status around the SSSI site at Lower Molinnis.
- 6.10 Savills were also procured as the Local Authority's land agent to lead negotiations on all relevant ERDF land issues, which was primarily with the relevant landowners in the upper catchment where interventions were taking place on privately owned land.
- 6.11 On the Environment Agency led interventions (around the Par River and Treffry Canal) the design work was completed by Mott McDonald and the main contractor was Kier. The flood embankment works were outside of the scope of the ERDF project.

Retaining Wall and Bank Improvements on the Treffry Canal



¹¹ Cormac are classified as a company that can directly benefit from contracts for works, services or supplies from its parent controlling Contracting Authority/Authorities without having to go through a tender process.



Flood wall at St Andrews Nature Reserve, next to the Treffry Canal / Par River

Highways/Drainage Works

- 6.12 A number of sites within the portfolio of works for the ERDF project required planning permission, which were all associated with Highways drainage. Design work was completed by CORMAC/AECOM and the sites that required planning permission were:
- An underground attenuation tank and new car park at the Doubletrees School, St Blazey (approved April 2020). The tank collects stormwater and releases it slowly into the drainage network after each storm. These works included the creation of a temporary car park for the school at St Blazey Cricket Club, which is a legacy car park for the community and cricket club.
 - Attenuation basin at St Austell Road/Trenovissik Road, St Blazey (approved April 2020).
 - Attenuation basin at Bull Engine Park/Burrows Centre, St Blazey (approved September 2020) which also includes the development of a new play area and longer term a new skate park on the site.
 - The development of an attenuation basin by Aberdeen Close and St Blazey Football Club (approved March 2021)
 - Cornwall Council also improved highway drainage at the low-lying mini roundabout junction of Par Lane with St Blazey Road and Harbour Road (Brooks Corner) under permitted development (as the Highway Authority). The Council, as riparian owner, also carried out extensive emergency bank stabilisation and protection works on the Par River at Ponto Mill.

- 6.13 These interventions were augmented by smaller interventions including attenuation and natural flood management measures at sites including Doubletrees, Cornhill, Rose Hill, Par Lane (Rain Gardens), White House Farm (although this site was subsequently removed) and at Ponto Mill.



Flood Attenuation measures in progress by St Blazey Football Club/Aberdeen Close



Natural Flood Attenuation measures at Bull Engine Park (Par Lane/Burrows Centre)



Attenuation tank under the Doubletrees School in St Blazey



Installation of the Attenuation Tank

- 6.14 The proposed attenuation basins at St Blazey Ponds were ultimately removed from delivery due to land contamination issues. Initial plans to develop a large flood attenuation pond at the corner of Aberdeen Close and the A390 had to be abandoned due to high levels of contamination from previous industrial use on the site, which made the costs unviable and created a potential health hazard in disturbing the site. The Aberdeen Close area had suffered particularly badly from the 2010 floods and the nearby Prideaux Stream has been identified as a potential flood risk.
- 6.15 The project also improved the drainage and sewerage system at Brook's Corner (the meeting point of Par Lane and St Blazey Road) to include high-capacity kerbside drainage and sewerage infrastructure in Tredenham Close. Brook's Corner has frequently been subject to highway standing water and sewerage flooding on occasion due to highways and surface water run off higher up the catchment, worsened by tidal locking of the system at high-tide.

Upper Catchment Works

- 6.16 A number of Natural Flood Management measures (NFM) were implemented on agricultural land on the urban fringe in the upper catchment above St Blazey. The project has had some difficulty delivering NFM in the upper catchment primarily due to funding issues to be able to implement the full scope of works. It has not been possible to meet the project's original aspirations of delivering extensive complementary NFM across the catchment due to funding criteria at the time. This led to a reduced scope of works for the Westcountry Rivers Trust key partner in delivering predominantly land management advice.
- 6.17 Works at Ponts Mill took place within the Luxulyan Valley World Heritage Site and included initial emergency measures to protect the banks of the Par River, which had breached its banks. The river has over its history been subject to channel straightening and other engineering works that now mean the riverbed runs higher than the surrounding land, including the footings of the Treffry Railway Viaduct.
- 6.18 CORMAC then strengthened, reseeded and landscaped the riverbank to improve the environment on a key natural and industrial heritage historical walking route through blue/green infrastructure. The newly opened up site includes interpretation and seating.

Luxulyan Valley World Heritage Site

The Luxulyan Valley was designed as part of the Cornwall and West Devon Mining Landscape World Heritage Site in 2006. The area now is a wooded valley dissected by the Par River, but in the 16th century the area was a prominent mineral mining area including copper and tin and a horse drawn tramway. In the 19th century the area became an area of granite and china clay mining. A rail viaduct was built, the Par River was channelled to provide water and power to industry and to feed the Treffry Canal. The valley now is a well-known local walk and a regionally important geological and geomorphological site.

Lavrean (Lower Molinnis) SSSI Management Plan

Part of the original ERDF application included surface water management works in the Lower Molinnis section of the Mid Cornwall Moors Site of Special Scientific Interest (SSSI). These works would have reconnected parts of the upper flood plain to improve flood resilience and improve the natural habitat, which is particularly important for the Fritillary butterfly. The works were due to take place at the Lower Molinnis designation.

Ultimately, Natural England, who designate and regulate for SSSI sites in England, did not give consent for the additional works on site so this aspect of the project was not completed. There were also potential issues with landowner consent that may have delayed the project. The University of Exeter did complete a revised Land Management Plan for the site, which has identified Biodiversity Net Gains and in turn has supported the delivery of the C23 target.

- 6.19 The Westcountry Rivers Trust worked with around fifty landowners as part of the project to improve soil quality and implement natural flood defences. These were all generally small-scale changes, but that were beneficial to the landowner and that would also have an impact on attenuation and drainage. Outcomes have included Habitat Actions for the River Par (HARP) funding which will assist with river habitat improvements, and some on-farm flood mitigation trials.

Out Of Scope Fluvial Flood Protection Works

- 6.20 Although out of scope of the ERDF project, much of the Environment Agency works focussed on improving flood defences on the Par River and Treffry Canal. Key components of the interventions included new sheet pile walls and embankment strengthening and improvements. There were also flood and site improvements at St Andrews Road Nature Reserve. This included providing better connectivity with an improved pathway and a more formal set of natural habitats and community spaces.

The Impact of COVID-19 on the Project

- 6.21 The COVID-19 pandemic had a major impact on the development and delivery of the project. As previously stated, much of the consultation process with local communities could not take place either on site or in a face-to-face manner – which did restrict the ability to both engage and involve local communities in understanding and mitigating the impacts of flooding their community.
- 6.22 Perhaps as a result of the pandemic, the use of online consultation may have helped to build an online flooding community of support. The Par and St Blazey Community Flood Facebook Group now has over 1,400 followers.
- 6.23 The pandemic also delayed and affected some of the planning processes for the sites that needed planning permission and later restrictions had an impact on delivery on site. The staff member at the Westcountry Rivers Trust was furloughed, which delayed some of the engagement work with landowners in the upper catchment and it had an impact on the ability of the University of Exeter to undertake site-based assessments at the Lower Molinnis SSSI site to help develop the Land Management Plan.

7 Outputs, Outcomes and Impacts

- 7.1 The methodology for the Summative Assessment proposed undertaking an assessment of progress against the range of outputs and outcomes included within the project's Logic Model. This section reviews current and projected financial and output performance and identifies any wider impacts of the StARR project.

Financial Performance and Outputs

- 7.2 The last submitted claim before the Summative Assessment was Claim 16, which covered the quarter to 31 December 2022. At this point the project had spent (defrayed) a total of £5,494,114.98 against a revised budget of £10,392,685. This represents a total spend of 52.9% of the budget.
- 7.3 A detailed breakdown of the capital and revenue budget against contracted expenditure (based on the unapproved March 2022 PCR) is shown in Table 7.1 below:

Table 7.1 Actual and Contracted Expenditure – StARR Claim 16

Category	Proposed Revised Budget	Actual Expenditure	Percentage of budget
Capital			
Building and Construction	£8,451,608.48	£4,154,441.98	49.1%
Fees	£1,000,976.31	£751,634.79	75%
Sub-Total	£9,452,044.70	£4,906,076.69	51.9%
Revenue			
Marketing	£746.28	£80	10.7%
Salaries	£589,865.99	£366,150.58	62.1%
Consultancy	£231,548.35	£163,526.48	70.6%
Other Revenue	£30,000.00	£3,358.4	11.2%
Flat Indirect Costs	£88,480.18	£54,922.83	62.1%
Sub-Total	£940,640.80	£588,038.29	62.5%
Total Project Costs	£10,392,685.50	£5,494,114.98	52.9%

- 7.4 The project will likely deliver under its capital budget envelope, although there were some additional costs related to the project that would have been ineligible for ERDF that project partners covered outside the scope of the project. The revenue budget (which was primarily to cover staff salaries and on-costs) also underspent.
- 7.5 Some of the challenges for the project have resulted from the impact of COVID-19, which significantly delayed some of the design, planning and ultimately on site works for the programme. Only limited progress was able to take place during national lockdowns – which invariably had an impact on capital spend.
- 7.6 Two major projects, at White House Farm and St Blazey Ponds were ultimately delayed due to contamination and ground condition issues and the implications of the Reservoir Safety Act 2021 (at White House Farm) these two projects had to ultimately be requested to be removed from the project through the March 2022 Project Change Request submission.

- 7.7 Salary spend has been lower than expected due to delays in recruiting some posts associated with the project and some project staff being furloughed. As salaries (and flat revenue costs) are a fixed cost every month, there is no scope for this aspect of the project to catch up to profile.

Output Performance

- 7.8 The first ERDF outputs for the StARR project has been the protection of 124 commercial properties from flooding (with a map of target properties identified as Appendix B). The definition of the output is shown in detail below.

P6 - The number of business premises that have reduced risk of flooding and/or coastal risks as a result of activity through ERDF. The reduced risk can be direct or indirect to the business premises and evidenced to reflect local circumstances as the impacts of flooding can vary from location to location. Examples of indirect risk include (but are not limited to): an access road is at risk of flooding, which would prevent staff, deliveries etc gaining access to the business premises.

Source: 2014 to 2020 European Growth Programme Output Indicator Definitions Guidance for the European Regional Development Fund for England: Version 6 (2018) MHCLG

- 7.9 The second output for the project was the improved conservation status of 30ha of habitat (C23). This output relates to the enhancements made in the area around Lower Molinnis/Lavrean in the Luxuylan Valley. The definition of the output is shown in detail below.

C23 - Surface area of habitats supported in order to attain better conservation status. The project must make improvements to an existing habitat(s) that have in place a management plan which can demonstrate how the proposed activity will improve the biodiversity of the site. Public access to the site will be required to demonstrate the economic benefit to an area except where access will have a detrimental impact to a habitat or species.

Source: 2014 to 2020 European Growth Programme Output Indicator Definitions Guidance for the European Regional Development Fund for England: Version 6 (2018) MHCLG

- 7.10 In terms of the project's contractual outputs, these are to be reported on completion of the project with the final claim (still to be submitted). For properties that were at risk of flooding, at full application stage these were estimated based on utilising the National Receptors Database (NRD) provided by DEFRA. The original estimate was 124 businesses with enhanced protection. Over the duration of the project, these properties were then verified by visiting and checking the buildings for evidence the businesses are located there. At present the project has identified 53 directly affected businesses that will have their flood risk reduced, but this process remains ongoing.

- 7.11 A revision of the methodology of classifying P6 outputs was issued by DLUHC in 2018 and a further 153 businesses that would be indirectly affected by flooding can be counted as outputs of the project. Indirect effects of flooding can include where businesses cannot operate due to flooding of key infrastructure, meaning staff and materials cannot get to these work premises on a regular basis. The process of identifying and verifying businesses has not yet been completed so these figures are provisional and may not represent the final claimed outputs.
- 7.12 Based on current information, overall the project is forecast to **exceed the output of directly supporting 124 commercial premises from coastal risks by 66%**.
- 7.13 There were a further **504 residential properties** directly affected by fluvial flooding if flood defences were to breach that will now be better protected as a result of the programme. There were also 323 residential properties at risk of flooding from surface water and sewerage, although it is not clear how many of these properties are additional to those at risk of fluvial flooding. These 'at risk' properties were identified within the original Business Case for the Flood Defence Grant in Aid investment from the Environment Agency.
- 7.14 The flood risk also extends to key infrastructure within Par and St Blazey. This includes utilities including electricity transmission and sub-stations and the sewerage system and water management and treatment. Key infrastructure also includes the rail network. The mainline and only connection between London, the rest of the UK and West Cornwall runs next to the Par River. Flooding could cause considerable disruption to this key transport artery. The route is also important for the export of minerals from the nearby Imerys processing plant. Also at risk is the Par to Newquay branch line which runs parallel and between the Par River and Treffry Canal towards Pontois Mill, north of Par Station.
- 7.15 The A390, one of Cornwall's key arterial routes also passes through Par and has previously been subject to closure and repairs due to flooding that has had major social and economic consequences across Cornwall.
- 7.16 With regards to the C23 target, the University of Exeter has now completed the Land Management Plan and **30ha of habitat within the Lower Molinnis SSSI will have a better conservation status** as a result. Wayfinding improvements through the site also increase physical access and a connection to the local heritage and habitat.
- 7.17 Alongside the formal SSSI habitat improvement, the project team have also made a range of improvements to the banks, heritage interpretation and of the Par River in the Luxulyan Valley World Heritage Site. These reduce flood risk while improving intellectual and physical access through the levels of interpretation of the valley's industrial heritage and providing seating and picnic areas. Wetland, species-rich grassland and wildflower planting has also replaced previously basic amenity grassland areas across flood measure sites in the urban public realm.

- 7.18 Similarly, the St Andrews Nature Reserve, although out of scope of the ERDF project, has also seen significant improvements in accessibility and habitat improvement. This has included utilising some of the felled trees to create natural seating, cycle racks and bird, insect and bat homes and habitats.

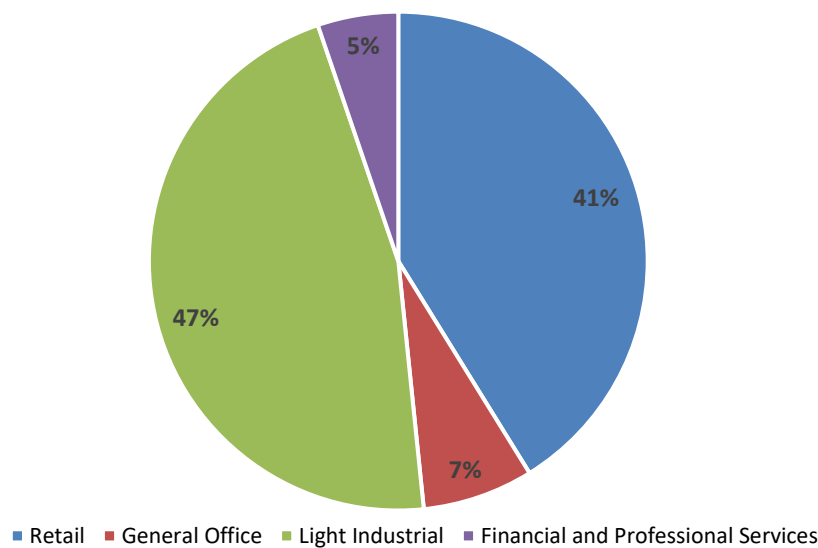
Table 7.2 Projected and Achieved Expenditure and Outputs

Indicator	Targets		Performance at Time of Evaluation		Projected Performance at Project Closure		Overall Assessment
	Original (m)	Adjusted (m)	No. (m)	% of Target	No.	% of Target	
Revenue Expenditure (£m)	£1.313	£0.940	£0.588	51.9%	0.940	100%	
Capital Expenditure (£m)	£12.447	£9.452	£4.906	52.9%	9.452	100%	
(P6) Business premises with a reduced risk of flooding/coastal erosion	124	124	0	0%	206	166%	
(C23) Surface area of habitats supported to obtain better conservation status	0	30ha	0	0%	30ha	100%	

Employment Impacts

- 7.19 One of the objectives within the StARR ERDF application was to reduce the flood risk to stimulate investment and economic development within the area. Whilst protection against flooding is no guarantee of future business growth it does create a more stable environment in the short to medium term for existing business to invest, new sites to be brought forward and additional jobs to be created. It is beyond the scope of the Summative Assessment to identify whether this will occur over the next 25 years, but the protection of existing business premises should lead to a number of businesses and ultimately jobs being safeguarded.
- 7.20 In order to identify the likely number of jobs safeguarded by providing enhanced flood protection, the number of potential jobs hosted within the 206 business premises that will have enhanced flood protection needs to be estimated.
- 7.21 Chart 7.1 below shows the different type of business premises that were classified as proposed P6 outputs for the project (where business type could be identified). A total of 53 properties were deemed not applicable as they are unlikely to host any employment. Most of the protected properties that were likely to host employment were light industrial in nature (46.4%) with (41.2%) being retail or food and drink/hospitality businesses. Office-based made up 7.2% of all properties and Financial and Professional Services 5.2%.

Chart 7.1 Commercial properties with improved protection by type (%)



Source: ESIF 1-013 Data Monitoring Sheet (March 2023) Cornwall Council

- 7.22 As shown in Table 7.1 below, an estimated **899.5 full time equivalent jobs** are expected to be safeguarded for the longer term in the area of direct flood risk within Par and St Blazey as a result of the investment. Most jobs safeguarded will be in the retail and hospitality sector, but almost 300 jobs will be safeguarded across light industrial/manufacturing.

Table 7.1 Projected and Achieved Direct and Indirect Outputs

Property Type	Properties	Average Property size m ²	Cumulative property size m ²	m ² needed per job	Total Jobs
Retail/Café Restaurant	63	130	8,190	20	409.5
Financial Professional Services	11	130	1,430	16	89.4
Light Industrial	71	200	14,200	47	302.1
General Office	8	160	1,280	13	98.5
Total Jobs	153				899.5

Source: ESIF 1-013 Data Monitoring Sheet (March 2020) Cornwall Council and Employment Densities Guide (2015) Homes and Communities Agency

- 7.23 According to data from the Business Register and Employment Survey (BRES), there are an estimated 2,250 full time jobs within the Par and St Blazey Gate and St Blazey electoral wards and a further 1,400 part time jobs¹². The project has potentially safeguarded for the long term the equivalent of around 40% of all the full-time positions within the wider Par and St Blazey economy.

¹² Based on BRES data for 2018 based on employee counts in Par and St Blazey Gate and St Blazey wards. Data for each ward has been rounded to the nearest 5 employees which has a significant impact on accuracy of the data.

- 7.24 Based on the latest ONS data, Current Gross Value Added (GVA) per filled job within Cornwall is £41,393¹³. On the basis of the **899.57 jobs safeguarded**, this project should also protect a total **£37.2m** of sub-regional Gross Value Added per annum.

¹³ Regional gross value added (balanced) by filled job: Local Authorities by NUTS1 region (2021) ONS

8 Cross Cutting Themes

- 8.1 The incorporation of Equality and Anti-Discrimination and Sustainable Development in the commissioning, delivery, monitoring and evaluation of all ERDF projects is a mandatory requirement. With regards to equalities, each project has to consider gender equality, ensuring access for people with a disability and wider discrimination for those with protected characteristics. The project must also respect the sustainable development principle, including how the project will maximise positive environmental impacts.
- 8.2 Across the project, Cornwall Council and other delivery partners worked within the principles of their own Equality and Diversity and Sustainability/Environmental policies. The process of procuring consultants and contractors also followed these principles.

Equality and Diversity

- 8.3 With regards to equality and diversity, within the project's Full Application the main emphasis for Cornwall Council was to ensure the delivery and outcomes of the project did not discriminate against any group with protected characteristics and to improve accessibility where this was possible.
- 8.4 A Comprehensive Impact Assessment was completed before formal delivery of the project, which highlighted that there should be no significant impact on equalities from either a positive or negative aspect.
- 8.5 There have been improved accessibility outcomes from the StARR project – including those out of scope of the ERDF project. Enhancements including additional seating have been provided at Pontois Mill, Bull Engine Park and Aberdeen Close and some of the Par River pathway now has improved accessibility to the wider St Andrews Wetland Local Nature Reserve and surrounding community.
- 8.6 Cornwall Council made every effort to engage local communities in the plans for the project, but there were issues caused by the COVID-19 pandemic and utilising community spaces to consult. Invariably the use of online consultation may have made this activity more accessible for some groups and less meaningful and accessible for others. Due to legal requirements at the time, there was no other way of undertaking the consultation without significantly delaying the process.
- 8.7 The project team have produced continually updated website content, some newsletters and a Twitter social media feed to keep interested parties up to date with progress.

Sustainable Development

- 8.8 The core of project was to support the Par and St Blazey catchment area to adapt to short term risks of flooding and climate change and provide enhanced habitat. The output relating to this has been achieved and some of the wider environmental impacts have been highlighted elsewhere in the report.

- 8.9 Within the full ERDF application, the project stated it would achieve a CEEQUAL Whole Team Excellent award. Mott McDonald undertook a pre-assessment for CEEQUAL before submission of the ERDF application and the scores have been updated as the project has progressed. The project successfully achieved an Excellent Interim 'Client and Outline Design' Award in September 2020. A final CEEQUAL Assessment Report will be delivered in late April 2023. The initial designs, pre-assessment and ongoing scores have indicated that the scope would achieve CEEQUAL Excellent by a reasonable margin.

CEEQUAL

The Civil Engineering Environmental Quality Assessment and Award Scheme (CEEQUAL) is an evidence-based sustainability rating scheme for infrastructure, engineering, landscaping and public realm projects. Within major ERDF capital projects, an accredited environmental standard must be used to assess the process and outcomes. Most civil engineering projects have utilised CEEQUAL as the assessment tool.

CEEQUAL rewards project teams who go beyond the legal, environmental and social minimum to embed environmental and social performance in their projects. CEEQUAL works with trained assessors, who prescribe points against a range of sustainability criteria, assessed against over 200 questions. The process is then verified by BRE Ltd who administer the scheme and a final certificate is awarded.

There are several different CEEQUAL Award levels that a project can achieve, depending on the percentage number of points scored against the scoped-out question set. These are:

- more than 25% - Pass
- more than 40% - Good
- more than 60% - Very Good
- more than 75% - Excellent

The expectation from ERDF is that a project achieves an Excellent Whole Team Award (covering projects from design through to completion of contracting).

- 8.10 Table 8.1 overleaf suggests a final score of 82.2% should be achieved by the StARR project, which would be above the 75% threshold for an Excellent score. Particular areas of strength have been working with people and communities, land use and landscape, the water environment and transport.
- 8.11 Additionally, the wider project has won two national Leading Lights awards for Considerate Constructors (in the Environmental category) and was a finalist for a Biodiversity award.

Table 8.1 Current CEEQUAL Scores for StARR

Criteria	Score
Project Management	79%
People and Communities	99%
Land Use and Landscape	99%
Historic Environment	85%
Ecology and Diversity	59%
Water Environment	90%
Physical Resources Use and Management	63%
Transport	97%
Total Score	82.2%

9 Qualitative Review of Local Stakeholders

- 9.1 As part of the Summative Assessment process, S4W Ltd undertook a range of virtual interviews between December 2022 and April 2023 with a range of key stakeholders involved in the project including staff from relevant departments at Cornwall Council, the Environment Agency, Westcountry Rivers Trust, Mace Ward Joint Ventures Ltd (Project Managers) and Savills (Land Agent). A site visit also took place with the StARR Programme Manager on 21 February 2023.
- 9.2 It is clear from stakeholder engagement that the project has been very complex from inception, design, securing funds through to delivery. There have been a broad range of partners and interests (both external and internal) to maintain relationships with over the duration of the project. This has sometimes tested the capacity of the core project team - especially as COVID-19 further complicated matters.
- 9.3 Stakeholders have had an overwhelmingly positive view of the StARR project and the levels of collaboration have been very good between partners and their respective contractors – especially given the timeframes and complexity of the programme. Communication was deemed as very effective between core partners, but sometimes a little inconsistent with wider partners.
- 9.4 It had proven difficult sometimes to thread the complex strands of the project into a seamless approach and then sell this message to wider audiences – especially given the split between the Environmental Agency led part of the project and the Cornwall Council led part of the project.
- 9.5 There was a common view that staff and partners were learning together as to how the catchment operates, how to deploy complimentary flood measures and some of the perspectives and constraints within their own and partner organisations.
- 9.6 Whilst the direct project team enjoyed an excellent working relationship, there were times that individual Departments within the two main partners were playing catch up and did not understand the bigger picture of the project or could not prioritise StARR as a strategically important project over other workloads.
- 9.7 It was also stated that both Network Rail and Natural England could have been brought into the project earlier and been more of a partner than a consultee. This may have helped reduce consultation times and improve outcomes.
- 9.8 The project engaged with some of the direct business beneficiaries of the project, especially those that have had direct experience of flooding. This also helped to understand the impact on business as usual during a flood event.
- 9.9 The project was also strong at engaging the community, undertaking a series of engagement activities. This included a design and engagement workshop held in 2018 (before the project was live), a public information event held in 2019, three workshops to discuss the detail of the proposed schemes in 2020 (held online) and a public information event held in 2022.

- 9.10 The scope of the engagement was primarily based around some of the capital works and it was felt that, whilst raising awareness of flooding in the community was a good thing, a trick was missed by not including the community as active participants to reduce flood risk within their own residential home.
- 9.11 Partners were clear that the timescales for the project did not help delivery, with more time needed to prepare some of the groundwork for the project in advance – especially in the upper catchment. There was also the challenges of working through COVID-19 to deal with, which struck as the project began building momentum.
- 9.12 Parts of the lower catchment had issues with contaminated land due to the area's industrial heritage which meant some potential works were dismissed at the planning stage whilst some parts of the St Blazey Ponds scheme quickly became unviable options. This area around Aberdeen Close suffered the most during the 2010 floods and possibly the area that needs the most protection. This area is now partly reliant on measures elsewhere in the catchment, rather than the intended highly-visible and directly relevant measures by Aberdeen Close.
- 9.13 Engagement with landowners was challenging, both for the Westcountry Rivers Trust and for the project team and CORMAC looking to undertake flood alleviation works on third-party land. Engagement needed to be face-to-face and on-site and COVID-19 significantly hampered the ability to do this.
- 9.14 The Westcountry Rivers Trust noted the general lack of funds to help or incentivise landowners implement low level and conservation driven natural flood management activities was a barrier to the delivery of additional small-scale projects. Generally, there was a low level of understanding of the issues that activity in the upper catchment could cause for flood risk elsewhere and a low comprehension of the part that landowners can play in mitigating this.
- 9.15 Across all activity in the upper catchment, just over three years, punctuated by COVID-19, is not enough time to promote, fund and embed voluntary natural flood management methods and a much longer time horizon is needed.
- 9.16 Where natural flood management measures were directly linked to interventions on third party land, timeframes were a similar issue and brought a wider set of problems. The responses of some landowners to the requirement to undertake flood prevention works on their lands ranged from scepticism to repudiation.
- 9.17 In some cases the permission and access to scope and complete various works such as attenuation ponds and drainage ditches had to be delivered through the Local Authority's powers under the Land Drainage Act 1991. These powers, ultimately, proved to be limited within the scope of the StARR project, namely because of the stepped and lengthy process seeking a penalty fine before an injunction to gain access. The timeframes for the project were relatively short in comparison to those of the legal process which naturally led to a regrettable, but unfortunately necessary, adversarial approach.

- 9.18 As the land was pasture and predominately on the urban fringe, many landowners felt the infrastructure would impede the operations or safety of livestock or would add a further barrier to any development potential for their sites longer term. Ultimately a number of projects were agreed with a package of compensation through respective land agents (outside the scope of the ERDF project). This in itself was at times a complex and lengthy process due to inevitable and significantly differing views on amounts.
- 9.19 The timeframes of the project meant there was only limited time to undertake engagement and agree compensation under a 'ticking clock' which tended to move the needle in the favour of landowners.
- 9.20 Key lessons learnt from this process include the need to engage landowners at a much earlier stage – and involve them in the design and implementation process. Sometimes solutions were presented rather than agreed and it was stated that communication was sometimes too formal too early. There was a process of education to go through about how activity in the upper catchment can have a beneficial or detrimental impact on flood risk in the lower catchment.
- 9.21 It would also have been beneficial to have had a broader range of options and back-up sites for natural flood management projects in the upper catchment so those that were increasingly difficult to agree could be either dismissed or put on the backburner. This is an area where the connection between the work of the Westcountry Rivers Trust and the wider project team could have been strengthened and an area that significantly suffered due to COVID-19.
- 9.22 There are potentially issues around ongoing maintenance and liability of a number of assets that would be purchased through the ERDF investment, especially those sited on private property. These are issues that are still being worked through – but at the time of completing the Summative Assessment there is no conclusion to this issue. The backstop is that Cornwall Council will maintain these assets under the Land Drainage Act 1991 in perpetuity as the Lead Local Flood Authority.
- 9.23 There were also a range of environmental restrictions involved in working in the upper catchment area and the Lower Molinnis SSSI designation and the proposed works surface water courses could not be brought to complementary solution within the project timeframes. There were also restrictions to manage across the World Heritage Site and Local Nature Reserves, especially related to working during bird breeding season and fish migration seasons.
- 9.24 One aspect of the project that had proven to be difficult was to develop systems and processes to monitor the success or otherwise of natural flood management measures across the catchment. Whilst monitoring river levels and flow is relatively commonplace, it is more difficult to measure the successes of natural flood measures and it was felt that more attention could have been given to this aspect of the project – especially as it is meant to be a pilot for the whole catchment approach to flood management.

- 9.25 Whilst partners felt the project overall had been successful in its implementation, it was a project that would have benefitted from having more lead times at all stages from concept to delivery. Partners stated the design stage was partially rushed to meet the funding call deadline and the start of capital works were playing catch up as momentum halted during the COVID-19 pandemic. A key lesson for implementing a whole catchment approach to flood management is that it is an ongoing process and cannot be easily squeezed into artificial timeframes dictated by funding timetables and milestones.
- 9.26 As there is a variety of works, including soft and hard engineering, on a variety of sites with a variety of access, planning and topography (including sites that are not in direct ownership or control of project partners) – there are far more variables to deal with than most other externally funded capital projects.

10 Comparator Projects

- 10.1 There has been a number of ERDF projects funded under Priority Axis 5 that have focussed on reducing the risk of fluvial flooding. Four specific projects have been used to provide comparisons to the StARR project. This is to demonstrate how natural flood management has been incorporated into projects and to demonstrate the wider scope of works outside of the ERDF projects.

Leeds Flood Alleviation Scheme

- 10.2 The scheme has incorporated two individual ERDF projects, the Leeds Flood Alleviation Scheme and Kirkstall Road Corridor Flood Alleviation Scheme (Leeds Flood Alleviation Scheme 2). These two projects received a total of £9m of ERDF investment. The project was a response to a major flood in Kirkstall and Leeds city centre on Boxing Day in 2015, where 2,600 homes and 700 businesses were inundated.
- 10.3 As with the StARR project there has been a wider £76m flood alleviation project funded by the Environment Agency and other partners in the broader Aire catchment extending all the way to the source in Malham, North Yorkshire. The project aims to improve the flood protection of 1,048 homes and 474 businesses to a 1 in 200 year flood level of protection.
- 10.4 The projects included a range of engineered solutions including movables weirs and large water attenuation basins. There have also been a number of natural flood management measures including planting 930ha of woodland in the upper catchment to promote biodiversity, carbon reduction and to slow surface water and drainage. The project has worked with a number of environmental charities and landowners including the White Rose Forest.
- 10.5 As part of the project, a Living Lab has been created at the University of Leeds Bodington Fields playing fields and triathlon course. The Living Lab includes a range of measurement techniques to assess the effectiveness of the installed natural flood management measures.

Gypsey Race Park and Avenue

- 10.6 The Gypsey Race Park and Avenue was a £5m project supported by around £2.5m of ERDF investment to improve flood protection and unlock key regeneration sites on the edge of Bridlington town centre. The site was subject to flooding in January whilst works were underway. The project will rehabilitate a total of 0.3ha of formerly derelict land and improve 1.63km of watercourses. Works included deepening and reprofiling sections, gravels for spawning and new pool and riffle habitat, planting and trees.

- 10.7 The project has created a new high quality urban habitat including a new access route into the town centre, new habitat space, an urban park and viewing platform. The project, linked with adjacent highways improvements, has opened up a number of key regeneration sites for retail and mixed use development.



New habitat creation in Gypsy Race Park and Avenue Phase 1

Project Munio - Derby

- 10.8 Project Munio was developed as a response to flooding on the River Derwent, but also aimed to improve and protect heritage assets and biodiversity in key sites in the city. The project received £4.6m of ERDF investment towards a wider project cost of £9.2m.
- 10.9 The project has included engineering solutions including flood walls and flood barriers. There have also been a number of natural flood management measures including tree management and wildflower meadows installed in Darley Park and a backwash lagoon has been created for fish passage.

Rotherham Renaissance Flood Alleviation Scheme

- 10.10 The Rotherham Renaissance Flood Alleviation Scheme was devised to reduce the risk of flooding from the River Don and its tributaries after flooding, including in 2007 and 2019. The widest scheme also covers a programme of works covering five kilometres of the River Don.
- 10.11 The scheme will reduce the risk of flooding to around 400 existing businesses as well as key highways, rail and tram/train networks including Rotherham Central and Parkgate station.
- 10.12 The ERDF funded phase of the project includes 0.5km of new flood defences upstream of the Rotherham United FC stadium. The overall cost of this phase is £3.2m, with a £1.6m ERDF grant. The project will both protect existing projects and also key development sites in and around Rotherham town centre.



Bank repair on the River Don, Rotherham

11 Value for Money

- 11.1 Ensuring value for money for European Union Structural Funds investment is a key component of the current ESIF programme and of the current Summative Assessment guidance.
- 11.2 The Environment Agency apply an exhaustive process to evaluating potential projects in advance of any offer of Grant-in-Aid funding, including ensuring value for money. The application and appraisal process can take a significant amount of time but ensures that funding is spent in a consistent way across the country, provides best value for money and the greatest benefits for society as a whole. To achieve this the appraisal process has been designed to show how value for money can be maximised through the testing of a range of options against the following criteria:
- Economic viability (Benefit-Cost Ratio)
 - Technical feasibility (engineering difficulty)
 - Environmental impacts
 - Public acceptability.
- 11.3 The benefit-cost ratio (B:CR) is the ratio between the cost of the project against the approximate value of damages if a 'do-nothing' approach was taken. The Environment Agency typically require a B:CR of between 1 in 5 to 1 in 8 to demonstrate that they are getting the most out of public funding.
- 11.4 The Environment Agency Long-term Investment Scenario (LTIS) 2019 considered scenarios for investment in flood and coastal erosion risk management going forward. The report states that across the LTIS 2014 baseline an average benefit to cost ratio of 5 to 1 was achieved¹⁴.
- 11.5 The B:CR for the Food Defence Grant in Aid project came in at 5.3 to 1, so was just over the threshold and the preferred option was deemed the most cost effective (including against a Do Nothing option). The Business Case for the Environment Agency investment was for a wider scope than just the ERDF project – but it did include all of the activity funded by ERDF.
- 11.6 The Summative Assessment has forecast the scheme will protect 899.57 jobs for the longer term that can be attributed to the commercial properties that will be protected. Given the total project cost has been estimated at £10,392m, this suggests that each job safeguarded will be done at a unit cost of £11,553 – although as the project will come in under budget the unit cost will likely be much lower.

¹⁴ <https://www.gov.uk/government/publications/flood-and-coastal-risk-management-in-england-long-term-investment/long-term-investment-scenarios-ltis-2019>

- 11.7 Based on the latest ONS data, Current Gross Value Added (GVA) per filled job within Cornwall is £41,393. On the basis of the 899.57 jobs safeguarded, this project should also protect a total £37.2m of sub-regional Gross Value Added per annum.
- 11.8 A report by Regeneris Consulting in 2013 on behalf of DCLG, provides a range of anticipated unit costs per output across the 2014-20 ERDF programme. Whilst there is no benchmark cost for jobs safeguarded (as it is not an ERDF output), the median benchmark for a 30 hour a week FTE job created across ERDF projects was £25,700 (at 2013 costs) and the mean cost per job was £71,000. **Overall, the project has delivered good value for money.**
- 11.9 In terms of some of the comparator projects identified in the previous chapter, it is difficult to make direct comparisons as most projects were part of longer-term and wider-scoped projects. StARR should protect 206 commercial properties for around £5-6m of ERDF investment. The Leeds, Rotherham and Derby schemes will all protect more commercial properties for a lower unit cost – but all of these projects are based on major urban areas rather than smaller settlements.
- 11.10 What these projects do demonstrate is that the type of interventions deployed in small catchment and populated areas such as Par and St Blazey are also being considered and deployed in much larger and wider catchments.

12 Lessons Learnt and Conclusions

Lessons Learnt

- 12.1 In terms of key lessons learnt from the StARR project, it was agreed across partners that there could have been an agreed strategy at an early stage as to what measures would be implemented that went beyond the high-level outline considered when the funding applications were submitted. Sometimes decisions had to be made on complex pieces of soft and hard engineering without a clear plan or ideas of the consequences of any changes.
- 12.2 The timeframes to start the project were condensed to meet the ERDF bidding timetables and there was not sufficient time to prepare detailed and prioritised activity – with the result that the programme was delivered based on what was ultimately possible and practical on an ongoing basis. This process was clearly not helped by COVID-19, but a catchment wide approach to flood management is clearly a long term and ongoing process.
- 12.3 Without an agreed and detailed strategy, decision making was harder and a wider set of partners (and individual departments) were not always brought onboard at an early stage. This includes partners such as South West Water and Natural England, but also community and environmental organisations that could have added value such as the Cornwall Wildlife Trust.
- 12.4 A number of areas where there are lessons to be learnt revolve around the implementation of natural flood defence measures, especially working with private landowners. The process of delivering flood prevention measures and securing access to implement the works was difficult – especially as the ERDF project had a fixed end date.
- 12.5 As previously stated, benefits of the StARR approach have been captured as a DEFRA case study, which highlights the opportunities that natural flood management can offer to boost the natural environment and support tourism and recreation, such as the improvement works and interpretation completed in the Luxulyan Valley. It is also identified that funding for the natural environment and tourism can also support natural flood management, especially in areas where funding is limited.
- 12.6 The powers available to Cornwall Council through the Land Drainage Act were not strong enough to force landowners to make land available for attenuation measures – as the enforcement process involved a court process that would have been out-of-time with regards to ERDF. Some landowners frustrated the system – potentially seeking higher compensation for the installation of measures on their land. Earlier engagement may have ultimately helped the process and sometimes the communications with landowners were based on the statutory minimum requirement and could have benefitted from a more strategic approach.

- 12.7 One of the constraints of the project has been the pace that some of the natural flood management systems have been installed has meant there is only limited evaluation and monitoring systems in place to understand how the measures are working and their effectiveness.
- 12.8 Overall however, the approach has been deemed successful and something to be replicated in other areas of Cornwall. There is a clear opportunity to look across some of the other ERDF funded flood management project to identify a network of best practice and learn from other agencies that have promoted natural flood management systems such as the Highways Agency. This includes staff members from the StAAR project and wider Cornwall Council sitting on the Devon, Cornwall and Isles of Scilly Natural Flood Management and Nature Based Solutions Group.

Conclusions

- 12.9 The StARR project has been deemed as being a real success in a 'whole catchment' level approach to flood risk management by partners. The delivery of the project has demonstrated that this approach can be successful in areas where a single big ticket infrastructure approach is neither feasible nor affordable.
- 12.10 The project has extended the life of a number of flood management assets and reduced the flood risk for local communities from a likely 1 in 5 year flooding to 1 in 25 year. The project has struggled with a range of challenges, not least related to COVID-19 which has meant defrayal of the project budget is behind profile and some of the proposed interventions have not been feasible in terms of timeframe and/or budget.
- 12.11 Despite the challenges, the partnership between the Local Authority and the Environment Agency has been strong and the Programme Team were very effective in facilitating these relationships. Despite the 'catchment wide' approach being relatively uncharted territory there was a desire to make the approach successful.
- 12.12 As works are ongoing, it is difficult to predict the final outturn in terms of expenditure. However, the project is expected to meet all of its targets, including reducing the flood risk for 206 commercial properties (+66% of target) that collectively host around 900 jobs and provide £37m of GVA for the local economy. The project has also delivered an improved management plan for the 30ha Lower Molinnis SSSI in the upper catchment.

Appendix A –Key Interviewees

Mark Allot, StARR Programme Manager, Cornwall Council

Shelley Bates, Grants and Loans Accountant, Cornwall Council

Matt Brown, Land Agent, Savills

Sean Carter, Management Accountant, Cornwall Council

Kieren Couch, Principal Project Manager, Mace Ward Joint Ventures

Tom Fletcher, Partnerships and Strategic Overview Team, Environment Agency

Martyn Gaffney, Quantity Surveyor, Mace Ward Joint Ventures

Matt Healey, Rivers Team Project Manager, Westcountry Rivers Trust

Rhys Hobbs, Catchment and Coastal Lead, Cornwall Council

Ian Pearne, Project Manager – Capital Projects, Cornwall Council

Amy Thurtle, Project Officer, Cornwall Council

Appendix B - Logic Model

St Austell Resilient Regeneration (SIARR) Project

Click on the arrows to navigate around the model. Tables can be edited directly in the model. To edit free text, click Edit under each title

Context

Edit

Chronic flooding around the St Austell Bay area currently blights the potential for regional economic growth. The project has been identified as being of national importance, and, Par and St Blazey have been identified as a location to prioritise flood risk management activity and resource. On average the community are affected by floods every 2 years, and a recent damage assessment has calculated that the impact of a large flood event (if no further flood protection was to take place), would cost in excess of £130m, with damages to properties, infrastructure and the economy. Hydraulic modelling shows the standard of flood protection is lower than the 1 in 5 year return period, with existing defences and assets in the area reaching the end of their life with imminent failure more likely after every flood. The communities of Par and St Blazey are currently regarded as a high risk investment area resulting from further social and economic deprivation, and, are recognised in the Councils Economic white paper as one of the two priority areas for strategic regeneration and investment. As well as this, the Cornwall Local Plan identifies two key objectives for the area; conserving the heritage environment and reduce the occurrence and impact of flooding. Additionally, both parishes (Par and Tywardreath & St Blazey) are developing neighbourhoods plan which make reference to the flooding issues and the SIARR project.

Market Failure Assessment

Edit

Par and St Blazey lie within a former estuary silted up by the mining industry. The rivers were used to transport materials in suspension, which has significantly altered the landscape, leaving a legacy of degraded habitats, heavily modified and degrading drainage networks and on-going pollution management issues. A large part of the fluvial system is perched above the threshold of residential properties, and, both channels are engineered straight and constrained very tightly in position with the urban development which is built on the infilled estuary. Furthermore, future climate change suggests that flood risk and severity will only increase. The community is vulnerable to flooding, which has given rise to economic stagnation resulting in a lack of investment and a spiral of economic and social decline. The proposed schemes are based on doing the minimum required to improve flood risk management and bide time for another 25 years before a longer-term solution can be secured. Without any action the community of Par and St Blazey would continue to be regarded as a high risk investment area resulting on further social and economic deprivation. A significant opportunity will be lost as a result, putting many homes and lives at risk from flooding.

Project Objectives

Edit

Identified project risks are: 1) Reduce flood risk and pollution affecting the local community of Par & St Blazey including over 600 homes and 124 businesses 2) Improved conservation status of 30 hectares of publically accessible land at Lavean 3) Reduce flood risk to the main road network and main London rail link 4) Work with nature to reduce flood risk, restore river corridor and create new habitats for plants and wildlife 5) Encourage investment in the St Austell Bay area through providing greater flood resilience 6) Increase the wellbeing of the affected communities, making the St Austell Bay a better place to work, play and live 7) Improved bathing water quality by removing silt and debris before reaching the sea 8) Enable regeneration of community green space and historic structures 9) Act as a national pilot project to demonstrate the whole catchment approach to reducing flood risk.

Rationale

Edit

St Blazey and Par has suffered flooding for many years. The project has now been identified as being of national importance given that it is a significant investment as well as being innovative and unique in offering a whole catchment approach to flood management and climate change adaptation. The ERDF investment will provide security against climate change, and enable economic, social and environmental resilience. Progressing with business as usual will result in poor soil management and greater flow rates, which will place more stress on existing flood risk measures and lead to hydraulic overloading of the system. The project adopts an innovative 'whole-of-catchment' approach that proposes an integrated system of using natural flood management techniques in the upper catchment area, the creation of water attenuation and conveyance routes in urban areas, and increased capacity of existing systems in the lower parts of the catchment - a combination of the physical and human interventions is required to ensure an integrated approach. The project will implement 28 flood mitigation measures across the whole catchment. These schemes are based around each of the main watercourses within the area and collectively act as an integrated flood management system. The investments made will help to contribute to a reduction in flood risk, offer an improved level of flood protection to the communities of Par and St Blazey (from 1 in 5 years to 1 in 25 years, in some cases 1 in 100 years), and, provide a long term solution to help the community adapt to climate change. It will improve protection for a number of commercial properties and infrastructure, and, improve habitats in the area. It will support the development of a thriving, resilient community, providing a catalyst for economic growth and business investment by the removal of blight created by the threat of flooding and provide a foundation for longer term investment plans. The primary purpose of these state defences are to provide flood protection that benefits everyone without discrimination.

Inputs

What	Value
ERDF (capital income)	£ 7,079,471.00
CC (capital income)	£ 5,167,177.00
SWW (capital income)	£ 200,000.00
UoE (revenue income)	£ 32,000.00
WRT (revenue income)	£ 28,000.00
ERDF (revenue income)	£ 711,558.00
CC (revenue income)	£ 541,503.00
	£ 13,759,709.00

Intended Impacts

What
Mitigation of climate change
Economic growth through protecting commercial premises from flood risk
Economic growth through developing and retaining local rural skills, increasing the attractiveness of the area and tourism
Improved health and wellbeing through making St Austell Bay a better place to live, work and play
Improved biodiversity

Outcomes

ID	Intended Outcome	How is it Measured	Level	Baseline	Actual
1	Improved flood protection for businesses by decreasing the frequency and severity of flood events	Business	Mott MacDonald baseline data: 124 businesses. Previous flood event data.	Flood mapping, CC Gazetteer data and ground truthing.	
2	Resilient infrastructure	Project	Flood events and severity - previous flood event data & hydraulic modelling shows the standard of flood protection is lower than the 1 in 5 year return period.	Survey and mapping	
3	Pollution management and improved freshwater ecology and bathing water quality	Project	EA bathing water profile for Par Sands - currently classed as 'good'.	Surveys (before and after), EA bathing water profile for Par Sands update.	
4	Improved habitats and conservation status	Project	Natural England condition assessment - 'unfavourable declining'. Biodiversity net gain documents. Permanent study plots and pictures.	Condition reassessment. Permanent data and pictures (during project).	

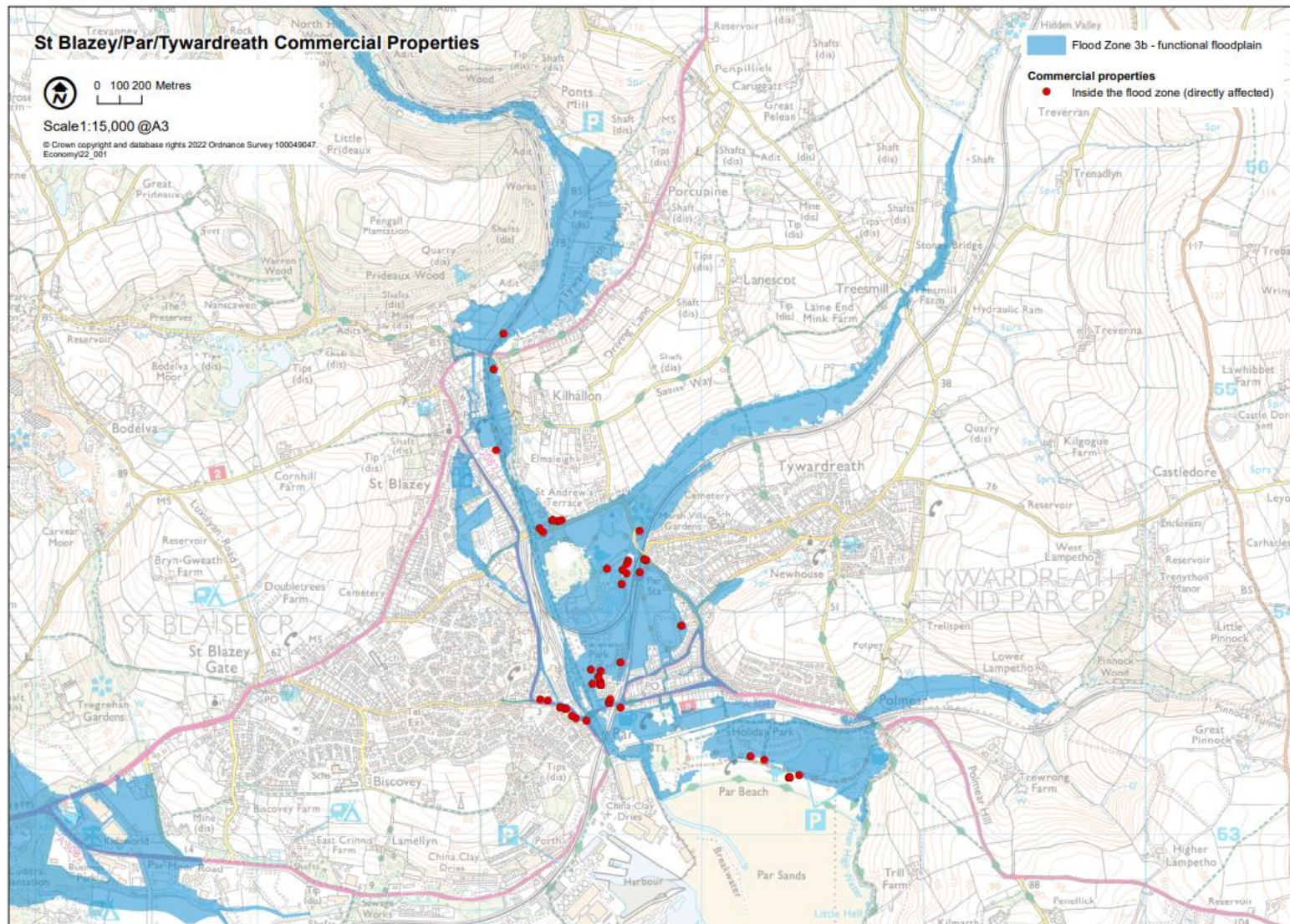
Outputs

What	Value
Protection of commercial properties	124
Hectares of habitat supported in order to attain a better conservation status	30

Activities

What	Column1
Catchment based approach to flood management.	
Construction of 28 flood interventions within Par and St Blazey.	
WRT - engaging with private landowners in the upper catchment to improve soil management and adopt natural flood management measures.	
UoE - creation of a management plan for the area of improved habitat.	

Appendix C – Businesses directly affected with reduced flood risk (Output P6) map



Appendix D – Businesses indirectly affected with reduced flood risk (Output P6) map

