AtkinsRéalis

Flood Consequences Assessment

Neath Port Talbot County Borough Council

14 November 2025

NE04_001-ATK-GEN-SWMWREC-RP-LW-000001

SKEWEN FLOOD ALLEVIATION SCHEME

Notice

This document and its contents have been prepared and are intended solely as information for Neath Port Talbot County Borough Council and use in relation to a Flood Consequences Assessment (FCA) for the Skewen Flood Alleviation Scheme

AtkinsRéalis UK Limited assumes no responsibility to any other party in respect of or arising out of or in connection with this document and/or its contents.

This document has 27 pages including the cover.

Document history

Document title: Flood Consequences Assessment

Document reference: NE04_001-ATK-GEN-SWMWREC-RP-LW-000001

Revision	Purpose description	Originated	Checked	Reviewed	Authorised	Date
1.0	Issue for PAC	BAM/DW	MJT	DMH	MJT	14/11/2025

Client signoff

Client	Neath Port Talbot County Borough Council
Project	SKEWEN FLOOD ALLEVIATION SCHEME
Job number	100104460
Client signature/date	

Contents

Figures

1. Introduction

1.1 Background

AtkinsRéalis has been commissioned by Neath Port Talbot County Borough Council (NPTCBC) to produce the detailed design for a flood alleviation scheme through the residential area of Skewen to address flooding, particularly on Caenant Terrace, New Road, Old Road, Drummau Road, and Whitegates Courts. The scheme is known as the Skewen Flood Alleviation Scheme (herein referred to as 'the Scheme).

This report provides a Flood Consequences Assessment (FCA) for the Scheme which has been produced in accordance with Technical Advice Note 15 (TAN15) 2025[1]. TAN15 relates to the siting and impact of new development and provides a framework within which flood risks can be assessed.

Fluvial and surface water in the urban area of Skewen is routed via a number of drainage channels comprising of culverts, watercourses and/or open channels. The capacity of the culverts and channels are insufficient to adequately accommodate surface water flows such that properties are at risk of frequent flooding. The fluvial and surface water currently discharges into both the Tennant Canal and the River Clydach.

The proposed Scheme involves enhancements to the existing drainage infrastructure to increase capacity and reduce the risk of fluvial and surface water flooding across Skewen, with particular focus on Caenant Terrace, New Road, Drummau Road, Whitegates Court and Old Road. The implementation of an improved culvert system would reduce the frequency and severity of flooding in the area. Currently the threshold of flooding is below a 1 in 2-year flood (50% AEP). The proposed Scheme is designed to ensure that there is no internal flooding to any properties in a 1 in 100-year (1% AEP) flood event. The scheme would ensure no detriment to any third parties during any design events up to the 1 in 1000 (0.1% AEP) including climate change. This reduction in local flood risk will remove the associated stress, worry and wider human health impacts and economic impacts associated with the current flooding issues.

Recent hydrological analysis and modelling suggests that if no works are implemented the areas will flood even more frequently as a result of the of climate change.

1.2 Objectives of the FCA

The objectives of this assessment are to:

- Set out the planning policy context in terms of flood risk.
- Demonstrate the baseline flood outlines and overland flow paths in the area of the proposed Scheme and the locality.
- Specifically assess the with-scheme risk and compare this with the baseline flood extents.
- Define the flood consequences associated with the Scheme.
- Identify the flood risk to the proposed Scheme itself and the consequences of the proposed Scheme on the existing flood risk in the locality.
- Highlight any measures required to mitigate potentially adverse impacts on the existing baseline flood risk which would otherwise arise from the Scheme.

[1] Technical Advice Note (TAN) 15: Development, Flooding and Coastal Erosion. *https://www.gov.wales/technical-advice-note-tan-15-development-flooding-and-coastal-erosion*

1.3 Scheme Location

The Scheme spans approximately 1.3km within the residential area of Skewen, starting at Caenant Terrace to the west (grid reference SS72689752) and extending eastwards to Neath Abbey, at the intersection of the Tennant Canal and River Clydach. The Scheme lies approximately 8.4km northeast of Swansea and 2.6km West of Neath in South Wales and is entirely within the administrative boundary of Neath Port Talbot County Borough Council (NPTCBC).

Skewen is situated west of the River Neath, which flows in a north-east to south-west direction in the Neath Valley. The valley is bounded by steep slopes in its upper sections, with the northern and southern slopes exceeding 100m Above Ordnance Datum (AOD). The general topography of Skewen slopes down from west to east, with an average elevation of 38m (AOD) towards the west end at the inlet structure at Caenant Terrace, falling down to approximately 5m AOD to the Tennant Canal[2].

The site lies in a densely populated residential area where the existing culverts and watercourses gravitate in a west to east direction. These watercourses discharge into the River Clydach during nominal flow and also into the Tennant Canal, during peak flows. An existing overflow weir on the Tennant Canal diverts flows into the River Clydach which is a tributary of the River Neath.

Directly north of the site is the Network Rail passenger railway line, which crosses Drummau Road and backs onto the residential properties along the north of Caenant Terrace. A mineral railway line is also present to the north of Monastery Road.

The Scheme area comprises a mixture of land uses including residential properties, Cwrt-Clwydi-Gwyn Care Home and commercial premises such as motor repair workshops, retail outlets and industrial units. It also incorporates transport infrastructure, including the A4230 New Road and the B4290 Old Road.

The scheme location is presented in Figure 1-1 below.

[2] AtkinsRéalis, “Listed Buildings and Heritage Assets Assessment,” 2023

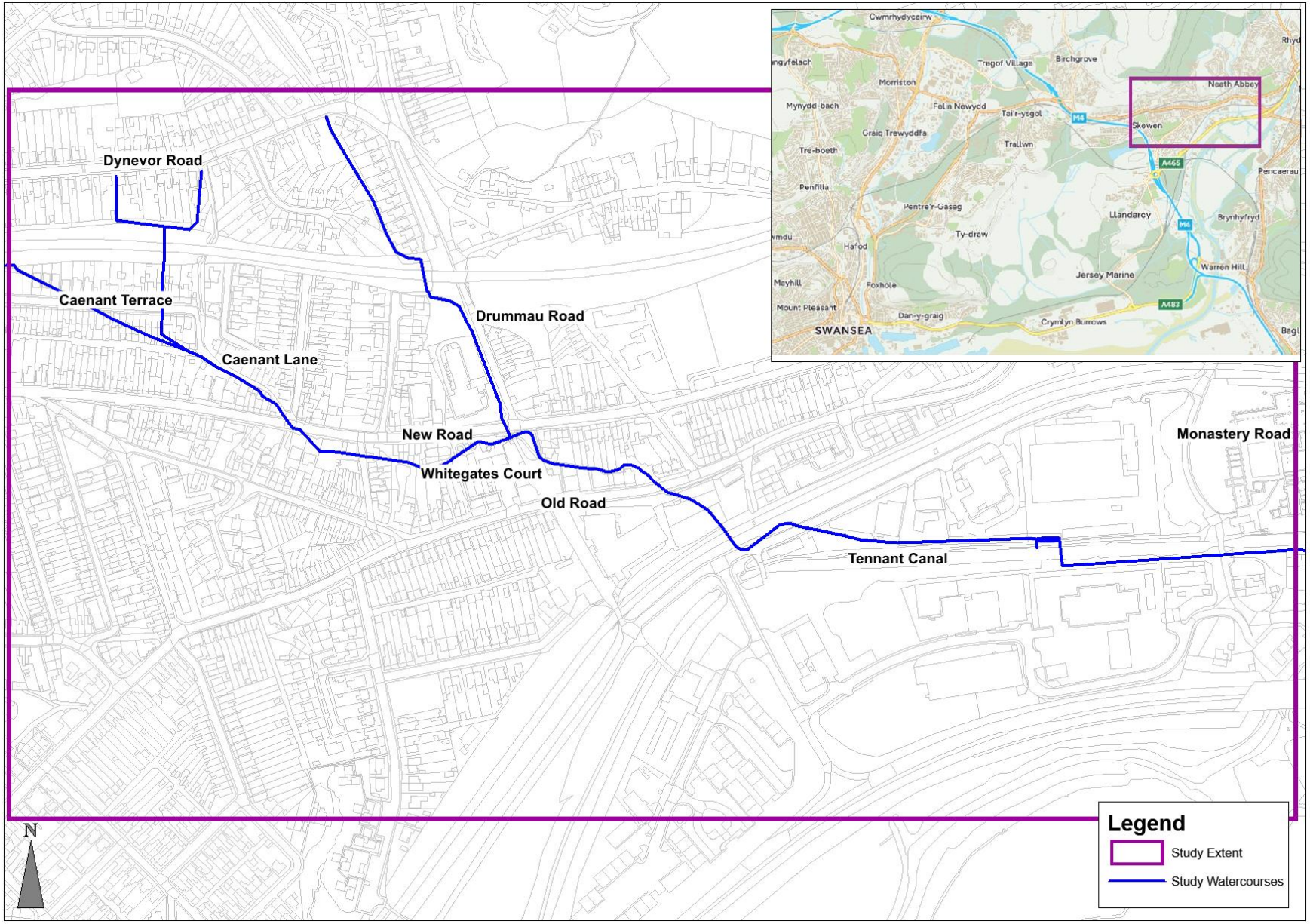

Figure 1-1 - Scheme Location Plan

1.4 Proposed Works

The upstream section of the proposed works begins at Caenant Terrace, located just off New Road in Skewen, (postcode SA10 6UP). Historic flooding has been observed from the open channel section near the former Skewen Snooker Club, parallel to the South Wales Main Line railway, which is on a raised embankment. The flooding has been attributed to the limited flow capacity of a culvert which runs beneath several of the properties in Caenant Terrace. The culvert has been inspected and has been found to be in a poor condition, which has exacerbated the problem.

To improve the hydraulic capacity of the culverted section of the watercourse, the proposed scheme entails the construction of a new 1050mm diameter culvert along Caenant Terrace. The existing inlet structure is to be replaced by a new structure, designed to incorporate a suitably sized trash screen. The existing culvert will be retained to permit existing drainage connections to continue. However, the upper section of the culvert beneath the houses on the north side of Caenant Terrace will be abandoned.

As a result of the improvements to the Caenant Terrace culvert, as well as addressing historic flooding downstream, a series of other network improvements are proposed. The proposed works downstream will involve installation of a new culvert in the highway, through green spaces and beneath existing railway lines. New inlet structures and trash screens will be required on the new and improved culverts. The new culvert will re-connect to the existing watercourse further downstream before discharging into the Tennant Canal and then into the River Clydach via a new overflow weir. This will allow excess surface water flows to gravitate from the upper reaches of Skewen to the Tennant Canal, thereby reducing the risk of flooding to properties and the highway to the south east of Caenant Terrace.

The scheme does not involve any areas of permanent land take with works predominantly underground. Temporary access to land will be required for construction vehicles as well as for the site compound and storage areas.

The proposed Skewen Flood Alleviation Scheme involves a series of works aimed at reducing flooding risks in Skewen specifically to properties along the Caenant Terrace.

There are no works being proposed in the Dynevor Road area.

The scheme overview can be seen in Figure **1-2**.

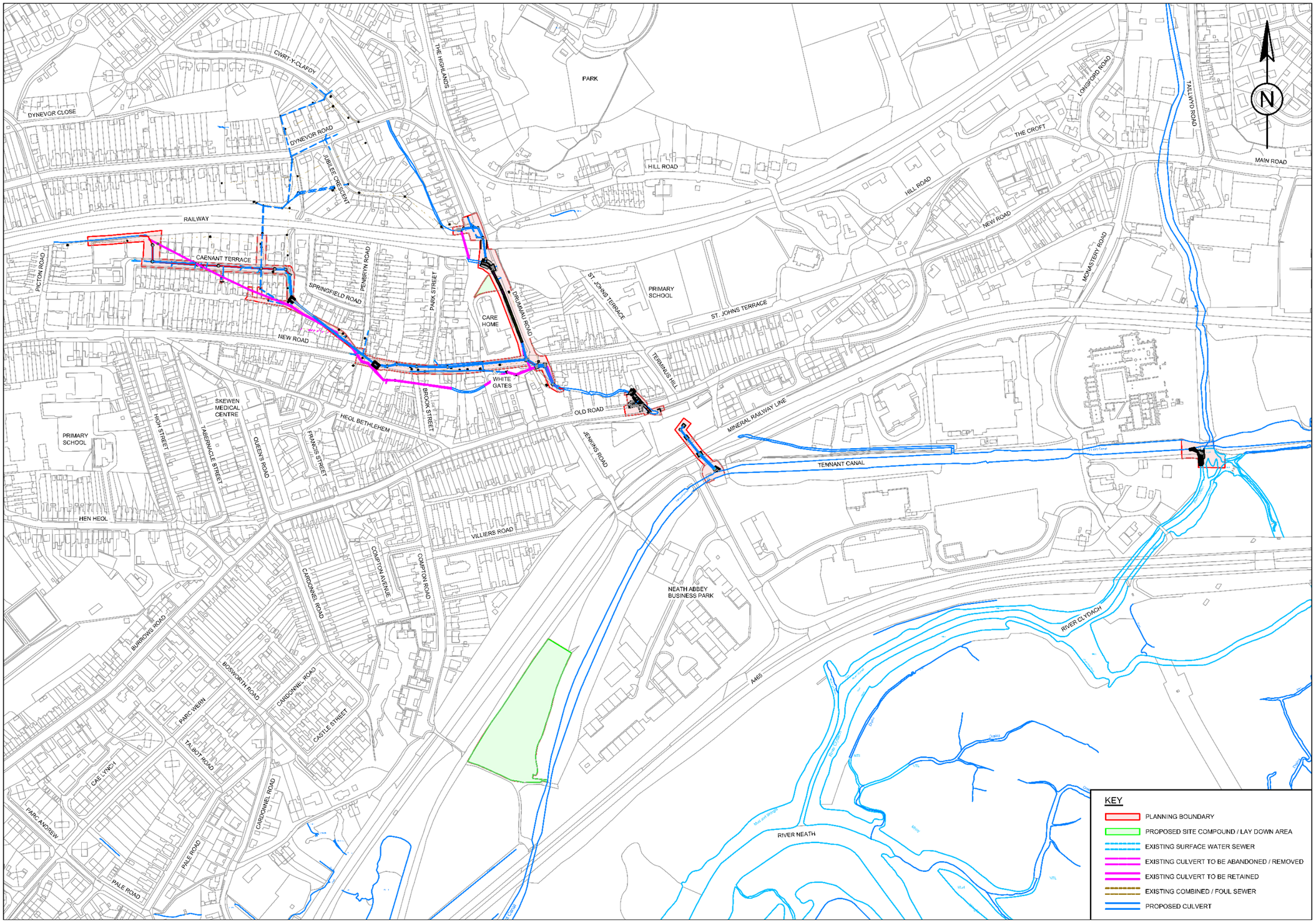

Figure 1-2 - Scheme Overview and proposed Red Line boundary from drawing NE04_001-ATK-GEN-SWMWREC-DR-CD-000100

2. Planning Policy Guidance – Flooding

2.1 Background

The development of the Scheme has been made possible by the funding made available by the National Strategy on Flood and Coastal Erosion Risk Management (FCERM) for Wales initiative which sets out to reduce the risk of flooding to homes and businesses providing benefits are demonstrated in line with the Welsh Government's FCERM Business Case Guidance.

TAN15[3] (2025) seeks to provide technical guidance to the Local Planning Authority relating to national policy on development and flood risk. The document provides advice on the risk and consequence of flooding to a number of development categories. These include highly vulnerable development (hospitals, schools, police station, fire station, residential premises, hotels, caravan parks etc), less vulnerable development (industrial, commercial and retail sites) and water compatible development (flood defences, boatyards and marinas).

The Scheme at Skewen falls within the above categories, as it involves enhancement to existing drainage infrastructure to increase its capacity to manage and mitigate flood risk. Therefore, the Scheme can be classified as Water Compatible Development under TAN15. By its nature, the Scheme must be located within areas at risk of flooding in order to deliver its intended function of protecting existing development and infrastructure.

The proposal has been subject to a robust project appraisal process, including an economic assessment comparing the benefits of the Scheme against the potential damages avoided through reduced flood risk. In addition, an Ecological Impact Assessment (EcIA), tree and bat surveys have been undertaken to identify and address any potential effects on local habitats, species and ecosystems.

The Scheme has been designed to have no adverse consequences to the local community and the local environment. It follows the underlying principles of TAN15;

- Uses government resources to reduce flood risk to existing communities.
- Manages the consequences of flooding.
- Makes provision for the increase in flood risk predicted to arise as a result of climate change.

Without the Scheme, the area will suffer an increase in the frequency and extent of flooding as a result of climate change. This report will demonstrate that there will be significant improvement to flood risk if the proposed Scheme is constructed with 45 residential and 6 commercial properties having been identified to benefit as a result of the proposals during a 1% AEP flood event.

2.2 TAN15 (2025)

TAN15 establishes a plan-led, risk-based approach to managing flood risk in the planning system. It directs new development away from areas at high risk of flooding unless such development is allocated in the Local Development Plan (LDP) and meets the acceptability criteria set out in Section 11 of the TAN. These criteria include defined flood frequency thresholds and tolerable conditions that must be satisfied to support a positive planning decision, based on the development's vulnerability classification and strategic importance.

[3] Technical Advice Note 15: Development, flooding and coastal erosion

In accordance with TAN15, this FCA has been prepared to assess the flood risk associated with the Scheme. The FCA evaluates whether the risks to and from flooding can be managed to an acceptable level, considering the nature of the Scheme, its location within the flood zones identified by the Flood Map for Planning (FMfP), and its potential impacts on surrounding land and existing infrastructure. The assessment follows the requirements set out in Section 11 of TAN15, which sets out the technical standards and evidence needed to demonstrate compliance with the policy; i.e. the acceptability of flood consequences.

This FCA is based on the most up-to-date flood risk information available through Natural Resources Wales, Flood Map for Planning (FMfP). The FMfP provides a comprehensive and spatially detailed representation of flood risk from fluvial, tidal, surface water and small watercourse sources, and incorporates future climate change (100-year) projections. As such, it forms a key evidence base for this assessment and ensures that the Scheme proposal is evaluated against the most current and robust data available. Detailed flood modelling has been carried out to assess the baseline flood risk and to inform the design of the scheme. This detailed modelling has also been used to demonstrate the effects of the Scheme on the existing flood risk in the area.

TAN 15 states that the prime objective of a FCA is to develop a full appreciation of:

• The risk and consequences of flooding on the development; and

• The risk and consequences (i.e. the overall impacts) of the development on flood risk elsewhere.

The FCA addresses these aspects in detail in the sections below.

2.3 Vulnerability of Development and Acceptability of Flood Consequences

Under Section 9 of TAN15, all proposed developments must be classified according to their vulnerability to flooding, ranging from Highly Vulnerable to Water-Compatible. This classification determines the suitability of the development within specific flood zones. Section 11 sets out the criteria for the acceptability of flood consequences, requiring that developments demonstrate—through a Flood Consequences Assessment (FCA)—that flood risks can be managed to an acceptable level. This includes ensuring safe access and egress, no increased risk to third parties, and resilience to climate change over the lifetime of the development.

2.4 Future Wales

Future Wales[4] sets out the strategic national development plan policies for Wales. It identifies key national and regional growth areas and provides national planning considerations for flood risk. The plan establishes that the Welsh Government will prioritise nature-based solutions and the enhancement of flood defences to improve protection for developed areas.

Due to Wales's geography and industrial history, many large urban communities are located in areas at risk of flooding. Several of these communities have been designated as National or Regional Growth Areas within Future Wales – The National Plan 2040. Communities in these areas should remain viable, vibrant, and resilient to flooding. Future Wales includes a policy commitment that the Welsh Government will support flood risk management initiatives in National and Regional Growth Areas. Skewen is identified as being within a National Growth Area under Future Wales.

[4] Update to Future Wales - The National Plan 2040

3. Existing Flood Information

3.1 Fluvial Flood Risk

The NRW fluvial FMfP, as shown in Figure 3-1, indicates that fluvial risks affecting Skewen primarily originate from two watercourses: the River Neath to the south and the River Clydach to the east. The FMfP also shows that the southern areas of Skewen have more than a 1% (1 in 100) annual probability of flooding from rivers, including the effects of climate change.

3.2 Surface Water and Small Watercourses Flood Risk

The NRW FMfP, as shown in Figure 3-1, also indicates that Skewen lies within an area with more than a 1% (1 in 100) annual probability of flooding from surface water and small watercourses, including the effects of climate change. Surface water flooding in Skewen is primarily attributed to inadequate drainage infrastructure and the limited discharge capacity of the ordinary watercourses flowing through the town.

3.3 Tidal Flood Risk

The NRW FMfP, as shown in the figure below, indicates that Skewen lies within an area with a greater than 0.5% (1 in 200) annual probability of flooding from the sea, including the effects of climate change. This tidal risk originates from the Neath Estuary, which is predicted to overtop the banks of the River Clydach and inundate the lower-lying areas of the town.

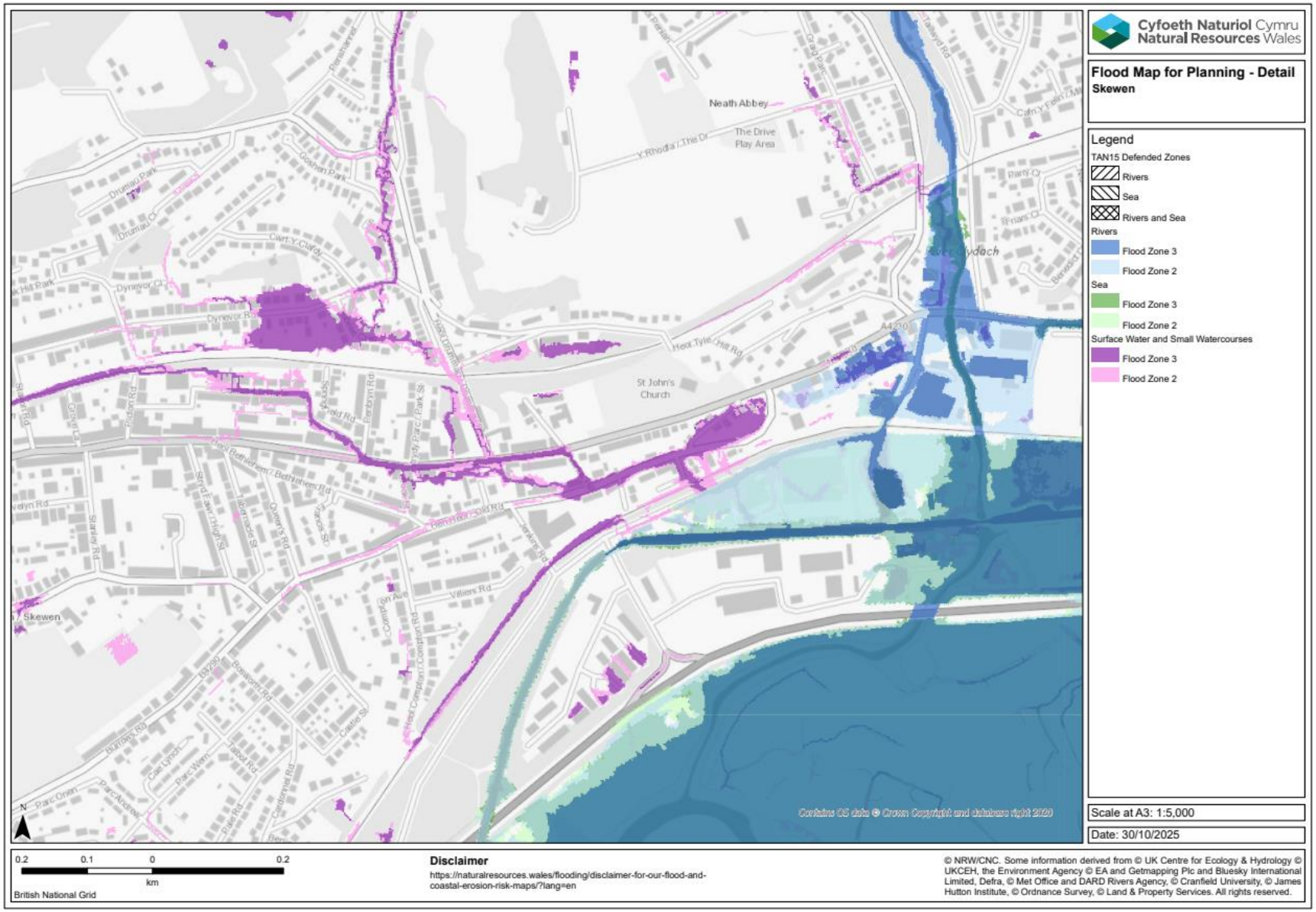

Figure 3-1 - Skewen Flood Map for Planning

4. Flood Risk Assessment

4.1 Assessment of Fluvial Flood Risk

Fluvial modelling has been undertaken to assess the baseline flood risk. The proposed scheme has then been incorporated into the model geometry to enable a full understanding of its potential impacts.

4.1.1 Existing Information

A review of available data confirmed that the only hydraulic model for the study area was a 1D–2D InfoWorks ICM model originally developed by JBA consultants. The previous assessment utilised available LiDAR data and OS MasterMap to inform the hydraulic analysis.

4.1.2 Flood Events and Boundaries Tested

The following annual exceedance probabilities (AEP) flood events have been tested in the model to inform the FCA:

- 1% (Q100) AEP flood event
- 0.1% (Q1000) AEP flood event
- 1% (Q100) AEP + 30% climate change flood event[5]
- 0.1% (Q1000) AEP + 30% climate change flood event

4.1.3 Hydrology

A hydrological assessment was carried out by JBA in March 2018 as part of an earlier stage of the business case appraisal of the scheme options (Outline Business Case - OBC). This included the generation of peak flow estimates using both the FEH Statistical and ReFH2 methods for a range of return periods, along with gross and net design rainfall estimates for the catchments based on FEH methodologies.

As the study area has extended since the earlier OBC, to look at the flood risk issues to the wider Skewen area, the hydrological assessment was updated following the latest available NRW guidance[6].

4.1.4 Hydraulic Modelling

The 1D-2D linked InfoWorks ICM model originally developed by JBA for the study area was subsequently converted by AtkinsRéalis to an ESTRY-TUFLOW model. ESTRY-TUFLOW is widely recognized as an industry-standard tool for modelling fluvial, sewer, and surface water systems, enabling the simulation of interactions between these components.

The model geometry was enhanced by AtkinsRéalis by the inclusion of additional topographic and drainage survey data at key locations. Boundary conditions for the hydraulic model were revised, with fluvial boundaries based on flows derived using the latest NRW guidance.

---

[5] Welsh Government. (2021). Climate change allowances and flood consequence assessments. *https://www.gov.wales/climate-change-allowances-and-flood-consequence-assessments*

[6] NRW, GN 008 Flood estimation technical guidance

The updated model was used to redefine the baseline flood risks and subsequently adapted to represent the proposed flood alleviation measures, allowing quantification of the Scheme's flood risk impacts.

The extent of the hydraulic model is shown in Figure 4-1 below:

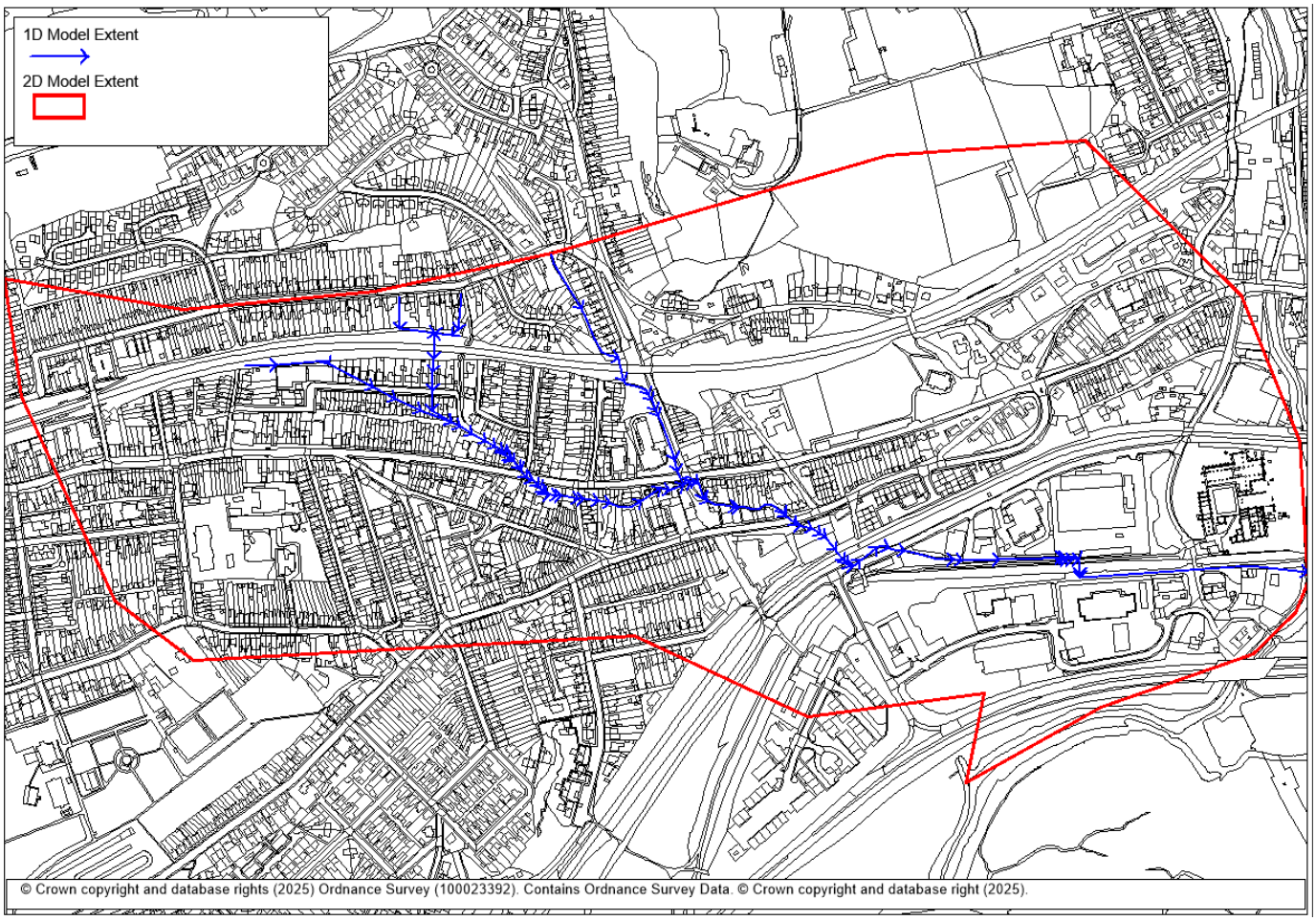

Figure 4-1 - Extent of Hydraulic Model

5. Model Results and Flood Consequences

5.1 Fluvial Flood Risk

As described in 4.1.2, the hydraulic model was run to assess flood events for two scenarios across a range of flood events:

(i) the Baseline Scenario and (ii) the Proposed Scheme Scenario.

This discussion focuses on two key events:

- The 1% Annual Exceedance Probability (AEP) event, representing current-day conditions.
- The 0.1% AEP event with a 30% climate change allowance, representing an over-design event which also accounts for future climate impacts.

The results of the modelling for these two scenarios are described below for the two flood events. The consequences of the scheme are then described in Section 5.2.

5.1.1 1% (1 in 100) AEP Flood Event

The figures below compare flood extents for the two scenarios – baseline and with-scheme . They demonstrate clearly that during a 1% AEP (1 in 100-year) event, the proposed scheme delivers a significant improvement in flood risk in the area. Flows are contained within the channel along the full length of the watercourses, with the Dynevor Road area being the only location where out-of-bank flooding is observed.

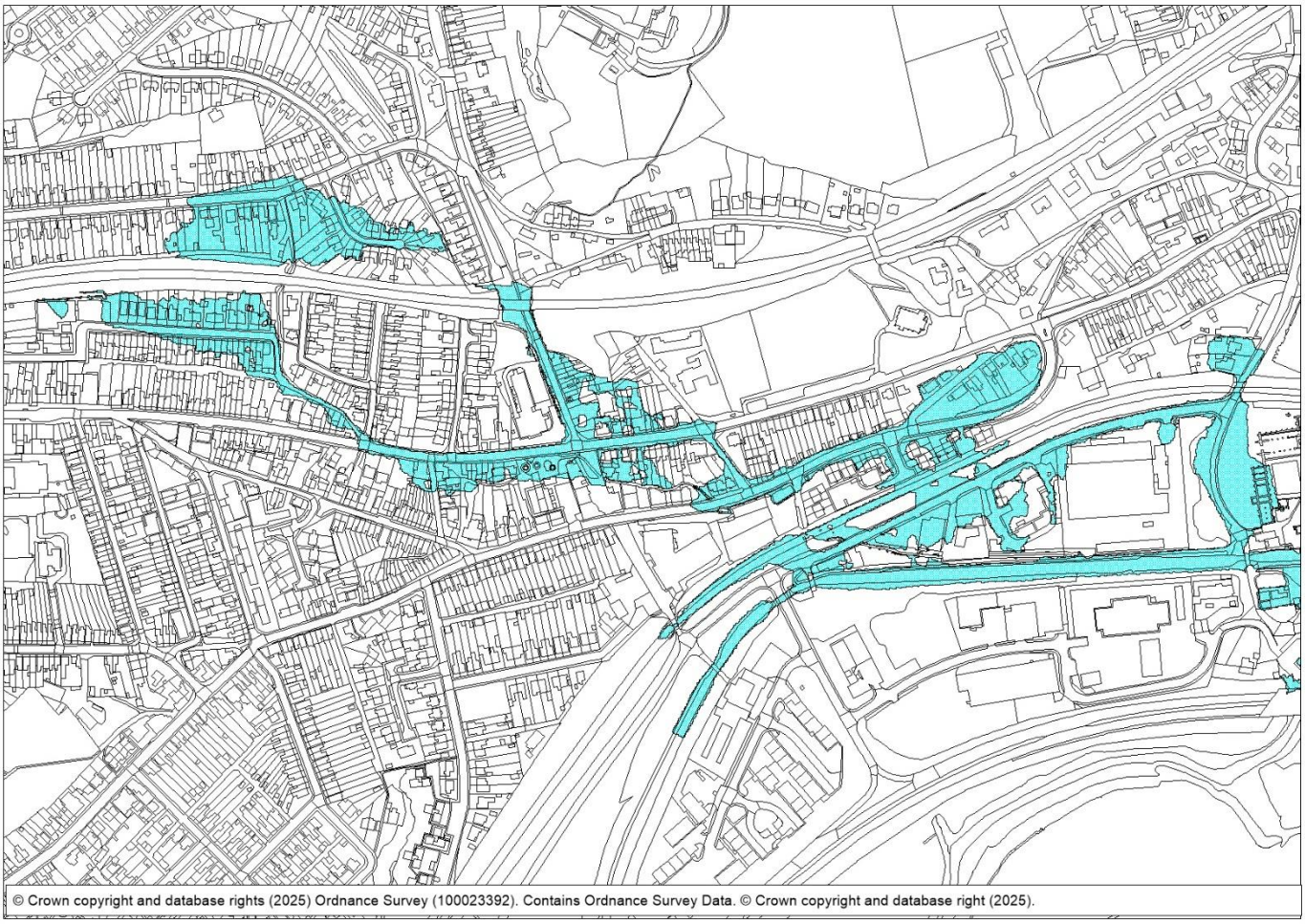

Figure 5-1 - 1% AEP Flood Extent for Baseline Scenario

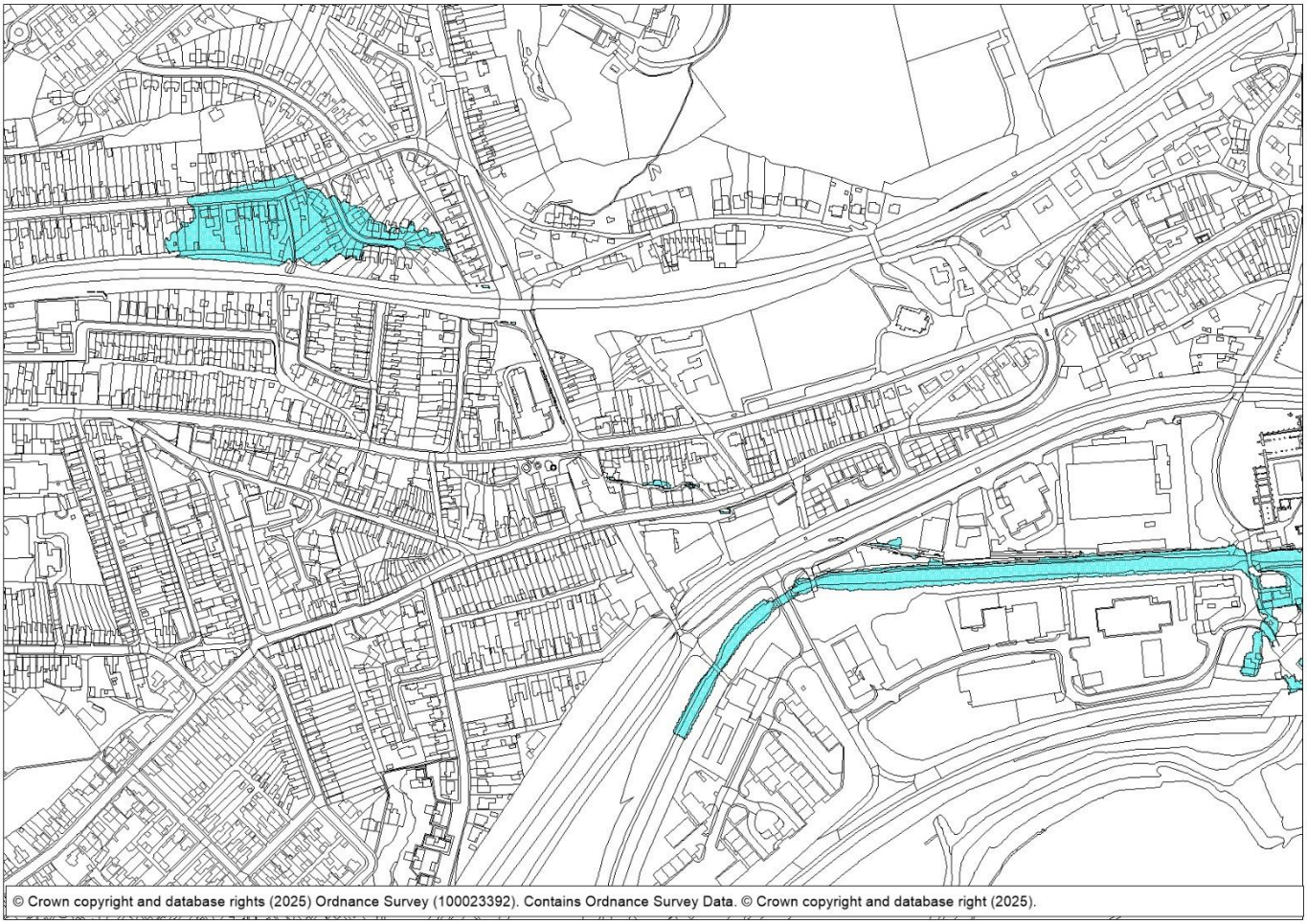

Figure 5-2 - 1% AEP Flood Extent for Proposed Scheme Scenario

5.1.2 0.1% (1 in 1000) AEP Flood Event Plus 30% Climate Change

When the effects of climate change (CC) are considered, the results for the 0.1% AEP + 30% CC fluvial event show extensive flooding under the baseline scenario (Figure 5-3). Under the proposed scheme (Figure 5-4), although channel capacity remains insufficient to contain flows, the predicted flood extent is reduced compared to the baseline scenario.

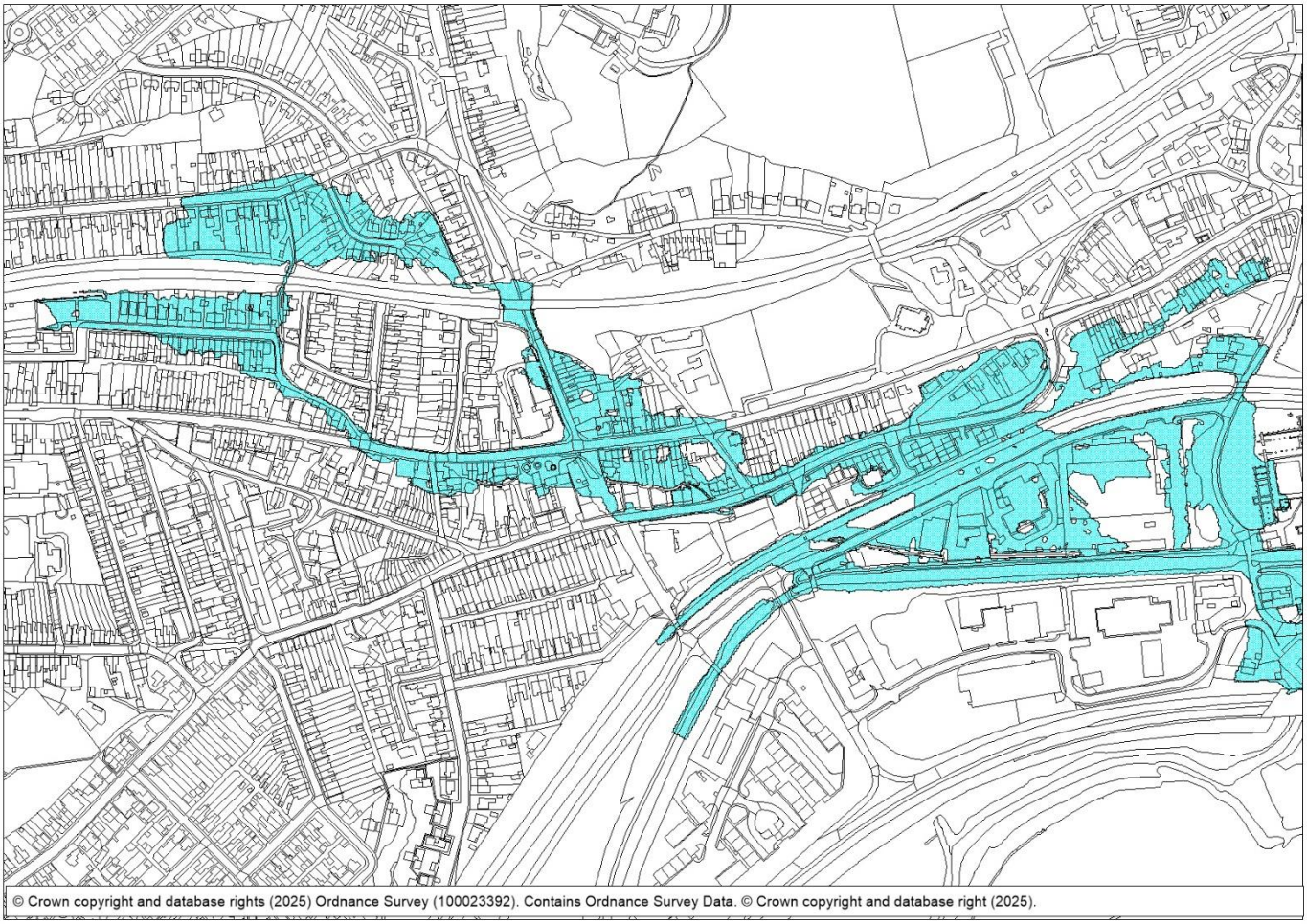

Figure 5-3 – 0.1% AEP + 30% CC Flood Extent for Baseline Scenario

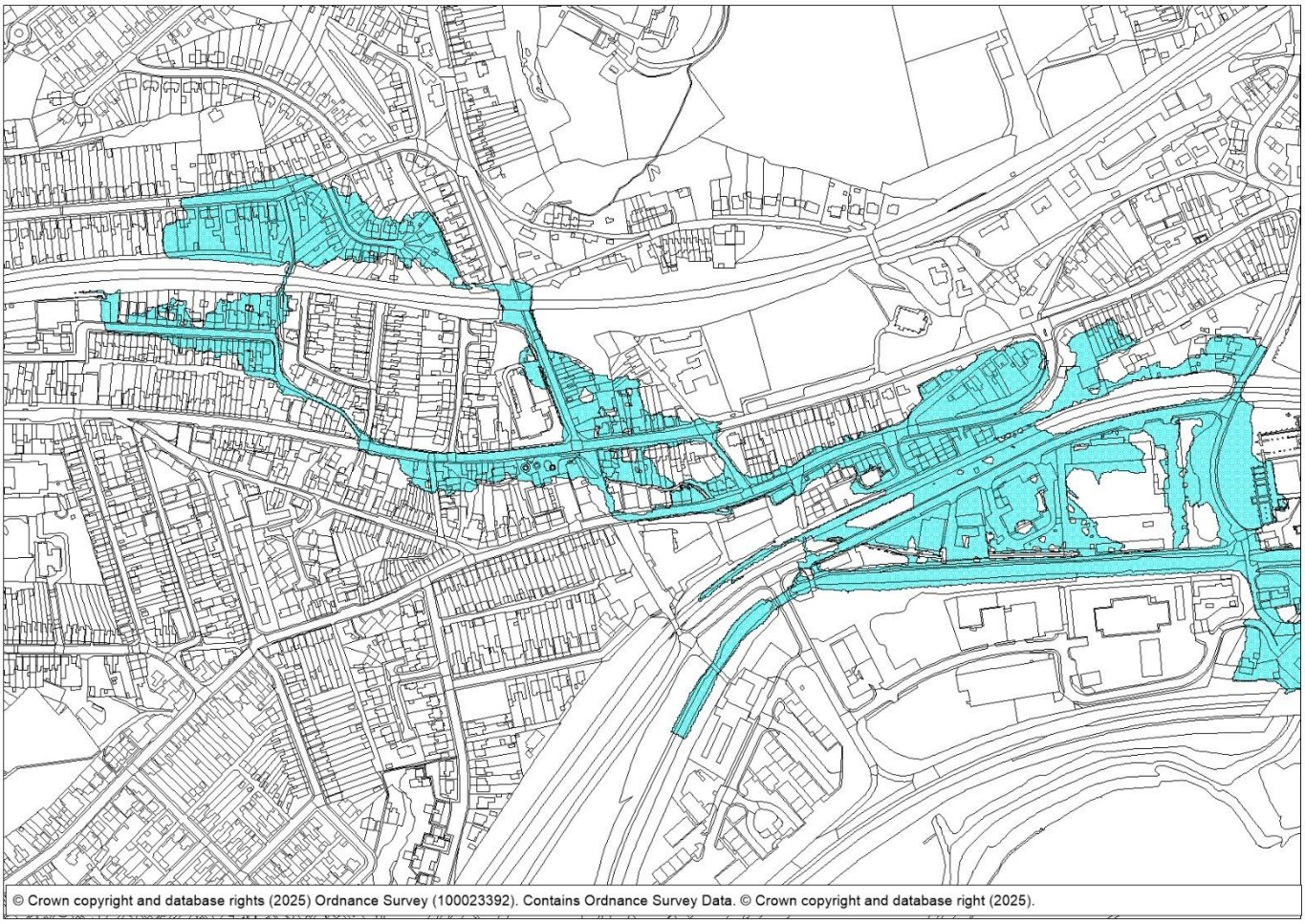

Figure 5-4 – 0.1% AEP + 30% CC Flood Extent for Proposed Scheme Scenario

The flood consequences associated with the scheme, based on the model results are described in Section 5.2

5.2 Flood Consequences

This section considers the assessed consequences associated with the proposed flood alleviation scheme.

TAN15 requires that the development should remain flood free during a 1% AEP + CC fluvial event for the lifetime of the development. TAN15 also does not permit flood risk elsewhere increase as a result of the scheme.

TAN15 does allow flexibility for existing communities, particularly where improvements align with the National Strategy for Flood and Coastal Erosion Risk Management. On this basis the requirement for a 1% AEP fluvial event for the lifetime of the scheme should not apply to the proposed development as it serves an existing community. The proposed scheme development is in line with the National Strategy on Flood and Coastal Erosion Risk Management (FCERM) for Wales (Welsh Government, 2020) as it will reduce the risk of flooding to homes and businesses and provides benefits, demonstrated in line with Welsh Government's FCERM Business Case Guidance.

5.2.1 1% (1 in 100) AEP Fluvial Flood Event

- There is reduction of flooding to the town, with the flows in the study watercourses being contained within the channel.
- Figure 5-5 shows the difference in flood levels between the proposed scheme and the baseline scenario for a 1% AEP event. These results show that during a 1% AEP event, flows remain contained within the channel along the full length of the watercourses, with the Dynevor Road area being the only location where out-of-bank flooding occurs. Importantly, the proposals do not exacerbate the predicted flood depths at Dynevor Road.
- The proposed works do not result in any detriment to any third parties during a flood of this probability.
- The model results indicate that if not mitigated, water levels in the Tennant Canal would increase as a consequence of the proposed scheme. Mitigation measures are therefore included in the scheme design to address the increase water levels. A review of canal inflows under both the baseline and scheme scenarios identified the need for an additional overflow weir. This weir, designed to discharge directly into the tidal reach of the Afon Clydach, fully mitigates the additional flow entering the canal as a result of the scheme. The hydraulic model does not include this spill, as the calculations were undertaken separately; therefore, the elevated canal levels shown in the figure reflect this omission.

5.2.2 0.1% (1 in 1000) AEP Fluvial Flood Event Plus 30% Climate Change

- There is flooding to Skewen in the proposed case during a 0.1% AEP plus climate change event although the depths are over 200mm lower than those predicted for the baseline case.
- A comparison of flood levels in the area with the proposed scheme in place compared against the baseline scenario is presented in Figure 5-6. The results indicate that during the 0.1% AEP event, including climate change allowance, there is no adverse impact on third-party properties, with flood levels generally lower than the baseline. Some localised areas of increased flood levels are predicted, including around the Caenant Lane inlet structure and minor elevated flood levels along Drummau Road. There is also some detriment to the rear gardens of properties on New Road between Whitegates and Old Road. This minor detriment does not directly impact any domestic properties. In fact, many of these properties, which are currently at flood risk, will benefit significantly from the proposed scheme as they will no longer experience internal flooding. A slight detriment is also predicted at the corner of the property at 7 Old Road; however, a similar proportion of the property shows a reduction in flood level. It is therefore considered that the overall flood risk to the property will remain unchanged.
- Although the model results suggest that detriment in the Tennant canal, this is in fact fully mitigated by the measures described in section 5.2.1, above.

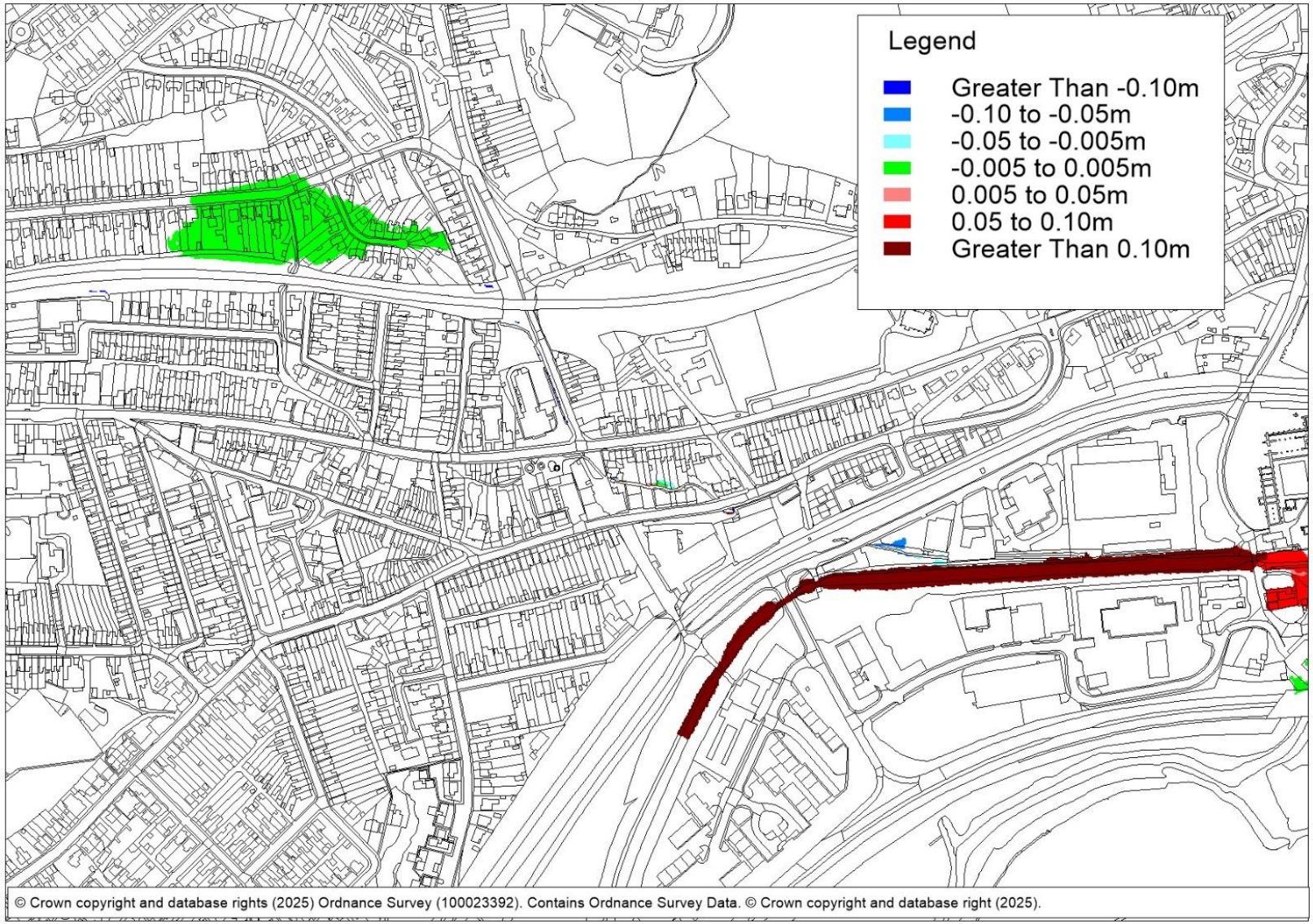

Figure 5-5 - Comparison of 1% AEP Flood Levels for Baseline and Proposed Scheme Scenarios

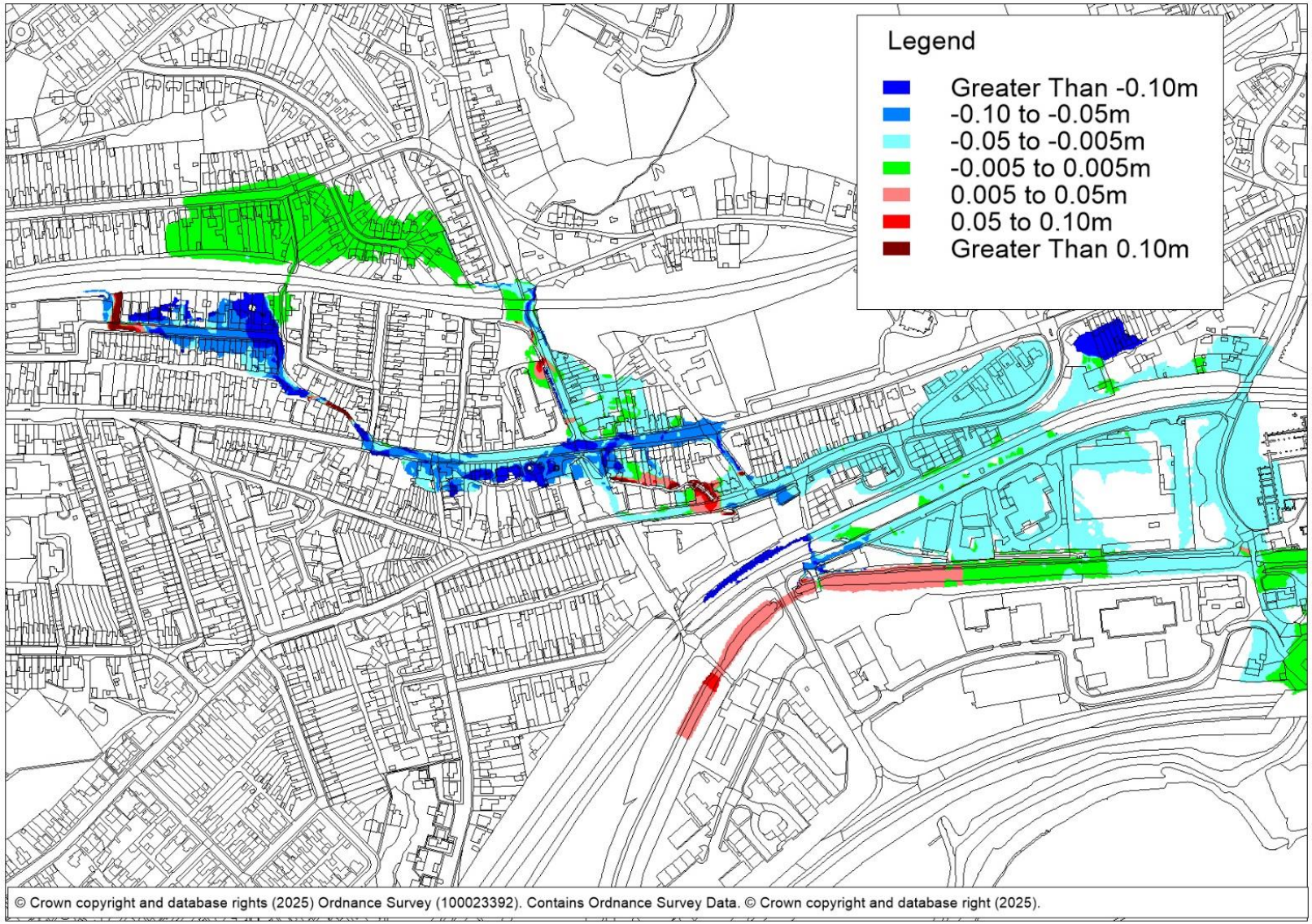

Figure 5-6 - Comparison of 1% AEP + 30% CC Flood Levels for Baseline and Proposed Scheme Scenarios

5.3 Acceptability of Consequences

The structures proposed as part of this scheme are located within Flood Zone 3 for both fluvial, tidal flooding, as well as within the extents of surface water and small watercourses. The area is known to have flooded historically, and these risks must be appropriately managed. TAN15 emphasises that specific requirements must be met for any development permitted in flood risk areas. In all cases, developers and planning authorities should ensure the following conditions are satisfied:

- No increase in flooding elsewhere
- Occupiers aware of flood risk
- Escape/evacuation routes present
- Flood emergency plans and procedures agreed and in place
- Flood resistant and resilient design
- Acceptable consequences for type of use

These are discussed below.

No increase in flooding elsewhere

The proposed works would provide significant flood relief in the 1% AEP flood event where all flow is predicted to be contained within in-bank.

During the 0.1% AEP with an allowance for climate change, there are localised pockets of detriment predicted although there is no detriment shown to any domestic properties as a result of the proposals.

Occupiers aware of flood risk

The proposed works form part of a flood alleviation scheme; therefore, there are no occupiers associated with the development. The scheme is designed to reduce flood risk within Skewen, delivering an overall improvement in resilience for the community.

Escape/evacuation routes present

The scheme is designed to reduce flood risk within Skewen, delivering an overall improvement in community resilience. As a result of the proposed works, all escape and evacuation routes will remain operational for a longer duration during flood events, enhancing safety and accessibility.

Flood emergency plans and procedures agreed and in place

Agreeing flood emergency plans for the entire community of Skewen as part of this proposed flood alleviation scheme would not be appropriate. The scheme is specifically designed to reduce flood risk within Skewen, delivering an overall improvement in resilience for the community.

Flood resistant and resilient design

The proposed works have been designed to be flood-resilient, incorporating measures, techniques and materials to ensure durability and reduce vulnerability to future flood events and to minimise recovery post such events.

Acceptable consequences for type of use

The proposed works extend along a significant length through Skewen. Whilst some areas would be subject to water depths and velocities exceeding tolerable limits for water-compatible development during over-design events, most areas will be subject to lower depths and velocities compared to the baseline scenario.

Section 11.5 of TAN 15 states that the FCA should establish if suitable avoidance and mitigation measures can be incorporated, in a manner compatible with the placemaking aims of Planning Policy Wales, within the site design to ensure that development is safe and there is:

- Minimal risk to life;
- Minimal disruption to people living and working in the area;
- Minimal potential damage to property;
- Minimal impact of the proposed development on flood risk generally;
- Minimal disruption to the sustainable management of natural resources.

These are considered and discussed in relation to the current scheme development below.

Flood protection

The scheme development will remove 45 residential and 6 commercial properties from the predicted 1% (1 in 100) AEP flood extent, which would otherwise flood during this event.

Minimal risk to life

The proposed Scheme reduces flood risk at Skewen to the 1% (1 in 100) AEP event, and therefore reduces the risk to life.

Minimal disruption to people living and working in the area

By minimising the flood risk at Skewen, disruption to residents, workers and visitors will be reduced.

Minimal potential damage to property

The proposed scheme will reduce the expected damages to residential and commercial properties arising due to flooding.

Minimal impact of the proposed development on flood risk generally

The proposed scheme will significantly reduce flood risk to Skewen, with no overall detriment predicted to any third-party domestic properties.

Minimal disruption to the sustainable management of natural resources

The development is located within the built-up area of Skewen. The proposals will not reduce the overall length of open-channel watercourse, as existing structures and culverts are being upgraded to provide additional conveyance. Furthermore, the proposals are not expected to adversely affect the sustainable management of natural resources in Skewen.

Frequency thresholds: designing development to be flood free

The proposals have been designed to provide a 1% Annual Exceedance Probability (AEP) standard of protection under current conditions. However, as a result of climate change, future 1% AEP events are expected to exceed the capacity of the watercourse channels and associated structures, leading to overtopping of the banks. It should be noted that, due to on-site constraints and the economic viability of the scheme, it has not been feasible to design the proposed scheme to provide a higher standard of protection.

6. Conclusion

This assessment has demonstrated that the consequences of flooding associated with the proposed Scheme are understood, are acceptable and that the flood risk can be managed. Crucially, the scheme will significantly reduce the flood risk to the people and properties of Skewen.

- The assessment presented is based on detailed hydraulic modelling which has been developed to assess the baseline flood risk and with the scheme in place.
- The proposed works provide a 1% (1 in 100) AEP standard of service.
- A total of 45 residential properties will benefit, being removed from the 1% (1 in 100) AEP flood extents, along with 6 commercial properties.
- A 100-year development lifetime has been assumed. Climate change effects on fluvial flows up to a 0.1% AEP event have been tested.
- The hydraulic model results have been used to assess both the impacts of over-design flood events and the influence of future climate change under pre-scheme (baseline) and with-scheme conditions.
- Localised areas of elevated flood levels are predicted during the most extreme event tested—the 0.1% AEP event with climate change allowance. These areas include the Caenant Lane inlet structure, small sections along Drummau Road, and some gardens adjacent to the open channel between White Gates and Old Road, where flood levels increase as a result of the proposals. Importantly, no properties are adversely affected in these areas..
- There is no detriment or negative effect on fluvial flooding as a result of the scheme that would increase the overall flood risk to any third-party properties over the lifetime of the development.
- The proposed scheme includes measures to mitigate the impacts of increased flows in the Tennant canal which will result from the proposed works in Skewen. The results of the hydraulic modelling have been used to calculate the size of an additional overflow weir. This weir, has been designed to discharge directly into the tidal reach of the Afon Clydach. It fully mitigates the additional flow entering the canal as a result of the scheme.

AtkinsRéalis

Dyfan Walters

West Glamorgan House
12 Orchard Street
Swansea
SA1 5AD

Tel: +44 (0)1792 641172
Fax: +44 (0)1792 472019