

## **APPENDIX 3**



**RHONDDA CYNON TAF COUNTY BOROUGH COUNCIL**

**COUNCIL**

**25<sup>th</sup> NOVEMBER 2020**

**FLOODING IN RCT DURING 2020**

**JOINT REPORT OF THE GROUP DIRECTOR PROSPERITY, DEVELOPMENT & FRONTLINE SERVICES AND THE SERVICE DIRECTOR, DEMOCRATIC SERVICES & COMMUNICATIONS**

**1. PURPOSE OF THE REPORT**

- 1.1 To provide members with the opportunity to consider information relating to the severe flooding which took place across the County Borough during 2020 and update members on the work which has been undertaken to date by the Council in response.
- 1.2 This report seeks to appraise members of the recently published Natural Resources Wales report which provides important detail in respect of the flooding which hit Rhondda Cynon Taf following Storm Ciara and Storm Dennis earlier this year.
- 1.3 Members are reminded that this report is distinctly separate from the current work of the Overview & Scrutiny Committee taking place, which seeks to scrutinise and challenge the work of the Council and partners in response to this unprecedented weather event.

**2. RECOMMENDATIONS**

It is recommended that Members:-

- 2.1 Note the information contained within the presentation received from Officers and within the body of this report.
- 2.2 Consent to receive at a future meeting of Council, the Section 19 statutory reports on conclusion of the ongoing investigations that the Council is undertaking into the February Floods as the Lead Local Flood Authority (LLFA) under the Flood and Water Management Act 2010 (FWMA);
- 2.3 Note that Cabinet will consider a report in December setting out a number of key actions from the lessons learned work undertaken, including the internal Officer reviews and the work of scrutiny; and
- 2.4 Notes the ongoing scrutiny work of the Overview & Scrutiny Committee on this subject.

### 3. **REASONS FOR RECOMMENDATIONS**

- 3.1 In response to a previous commitment made by the Council Leader, this report seeks to provide the opportunity for all members to consider the issues associated with the severe flooding experienced during 2020.

### 4. **BACKGROUND**

- 4.1 In February 2020, some of the worst storms on record hit Rhondda Cynon Taf and the flooding that occurred following Storm Ciara and Storm Dennis affected almost one thousand five hundred homes and businesses. Further flooding hit the County Borough on the weekend of 29<sup>th</sup> February 2020 from Storm Jorge and again for a fourth time in June 2020.
- 4.2 As part of the Council meeting, members will receive information on the event preparation, an overview of the impact of the event and details of the Council's recovery response.
- 4.3 Members may wish to note that, in line with the statutory requirements, the Council is responsible for developing Local Flood Risk Management strategies for Rhondda Cynon Taf; the key legal framework is:-

A. The ***Flood and Water Management Act 2010*** (hereafter, the Act) make provisions for the management of flooding and coastal erosion in England and Wales. The Act provides powers to, and makes requirements of, the Welsh Government, Natural Resources Wales (NRW) and Local Lead Flood Authorities (LLFA);

B. **Section 6 of the Act** defines the roles and responsibilities of 'Risk Management Authorities', which include all 22 Welsh local authorities (who act as LLFA). The Act also places a duty on local authorities to develop and implement Local Flood Risk Management Strategies to set out objectives for managing local flood risk from surface water, groundwater and ordinary watercourses;

- C. **Section 19 of the Act** sets out the responsibility of a LLFA to investigate a flood event:
- (1) On becoming aware of a flood in its area, a lead local flood authority must, to the extent that it considers it necessary or appropriate, investigate—
    - (a) Which risk management authorities have relevant flood risk management functions, and
    - (b) Whether each of those risk management authorities has exercised, or is proposing to exercise, those functions in response to the flood.
  - (2) Where an authority carries out an investigation under subsection (1) it must—
    - (a) Publish the results of its investigation, and
    - (b) Notify any relevant risk management authorities

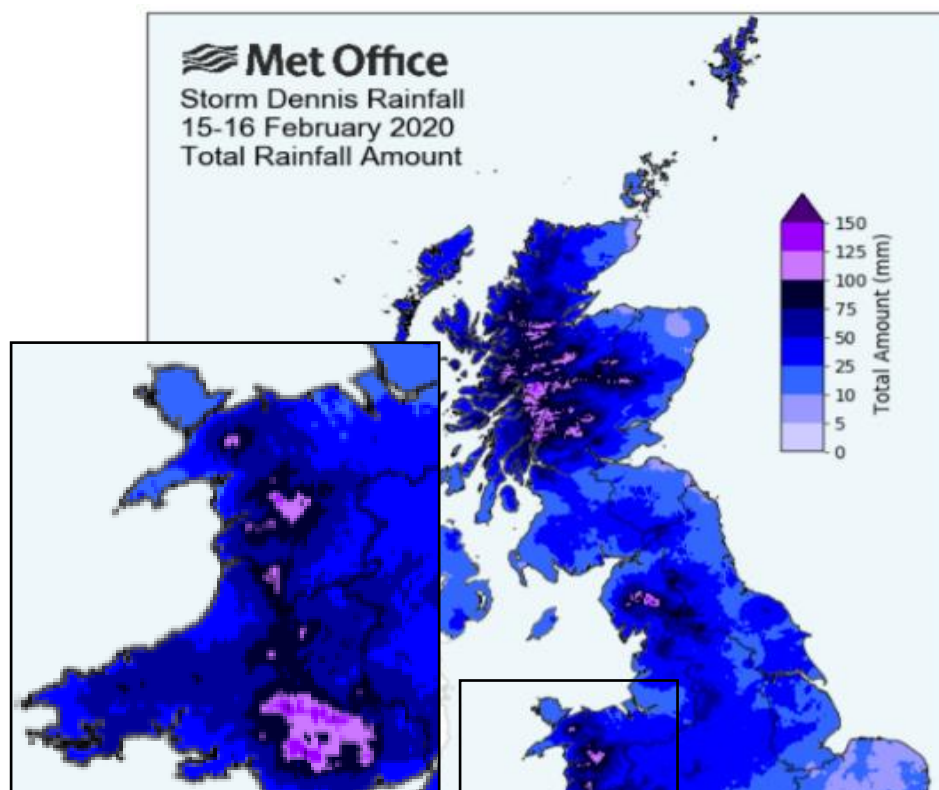
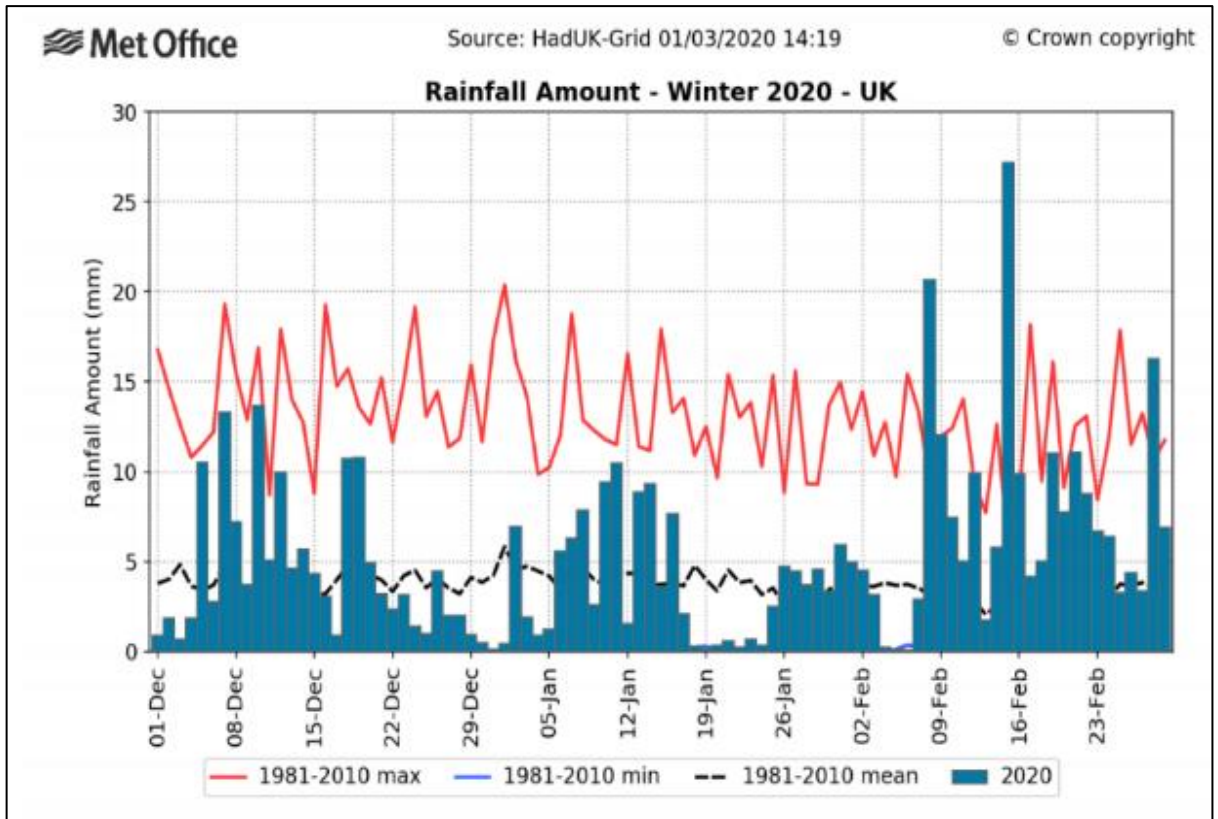
4.4 Storm Dennis was the tenth storm event to Impact the authority since the start of the winter in August 2019 and was the fourth named storm that impacted the authority during the 19-20 storm season. The Council received initial warnings related to Storm Dennis on the 11/02/2020 providing 4 days' notice of this weather and a further 5 warnings were issued by the Met Office.

Warning Level	Event	Date of issue	Time	Likelihood	Impact	Range Rainfall (mm)	Range Wind Gusts (mph)
Yellow	Wind	11/02/2020	10:34	Medium	Low	N/A	50-60
Yellow	Rain	11/02/2020	11:36	Low	Medium	100-120	N/A
Yellow	Wind	12/02/2020	10:24	Medium	Low	N/A	50-60
Amber	Rain	13/02/2020	10:57	Medium	Medium	100-120	N/A
Amber	Rain	15/02/2020	11:07	Low	High	100-120	N/A
Red	Rain	16/02/2020	06:10	High	High	100-140	N/A

- 4.5 It should be noted from the table that the forecast fluctuated from day to day, turning amber during the morning of Thursday 14<sup>th</sup> February with medium likelihood and medium impact. On the morning of Saturday 15<sup>th</sup> the likelihood dropped to low but the impact became high. The worst impacts of the storm were felt through the night of Saturday 15<sup>th</sup> February into the early hours of Sunday 16<sup>th</sup>. The red warning was issued at 06.10hrs on Sunday morning, several hours after the worst impacts of the storm had passed RCT.
- 4.6 As part of the event preparation, RCT undertook asset inspections on 300 Critical infrastructure sites. This included culvert inlets, manholes and outfalls. In preparation the Council increased the number of standby work crews and equipment with an additional 18 work gangs being co-ordinated. The Council deployed an additional 2 Drainage Sub Contractors as reactive teams with specific equipment to support the Council's response over the course of the weekend. To support residents, increased resources were deployed within the Council contact centre in preparation for high call numbers and these were further stepped up as the enormity of the event unfolded. In preparation additional sandbags were filled with approximately 500 ready for deployment,

supplies were constantly replenished but deployment was impacted by the fact that many roads were simply impassable due to deep flooding.

- 4.7 Key weather messages were communicated to residents in line with the severity of the weather warnings received.
- 4.8 Storm Dennis Rainfall Totals indicate the rainfall levels between **100 – 149mm** in parts of RCT.



- 4.9 Demonstrating the unprecedented nature of this weather event, the level of the River Taff in Pontypridd peaked at 5.2M, 0.8M more than the last record at 4.4M in 1979. This severity was mirrored across the County Borough.
- 4.10 The combined number of properties flooded during storm Dennis was 1476, comprised of 1070 residential properties and 406 commercial premises. The main causes of flooding are as follows;  
Fluvial (Main River); 380 residential, 319 commercial.  
Pluvial (Watercourses/culverts); 690 residential, 87 commercial.
- 4.11 Under the FWMA 2010;  
NRW is the Risk Management Authority responsible for managing the flood risk for Main rivers. RCT is the Risk Management Authority responsible for managing the flood risk for Surface Water, Groundwater and Ordinary watercourses. Other parties also have a role as risk authorities, i.e. Dwr Cymru Welsh Water will manage the risk associated with their apparatus and the Highway Authority (RCTCBC) is risk manager for highway related flooding.
- 4.12 It can be seen from the data that the majority of commercial flooding emanated from river flooding; predominantly Pontypridd town centre and Treforest Estate, whereas the predominant source of residential flooding was from ordinary watercourses and culverts, which was widespread.
- 4.13 As LLFA, the Council is carrying out 28 flood investigations, which include liaison with residents and businesses affected by internal flooding to understand the detail of the causation factors. Evidence from local members via the work of the Overview and Scrutiny Committee will also be considered and these investigations will inform the statutory S19 Reports which will cover 19 significant areas of flooding across the county borough, including cases of fluvial flooding as well as pluvial.
- 4.14 Members are also directed towards the discussions of [Major Incident Recovery Board](#) established by the Leader of the Council in February 2020, as part of his scheme of delegation, which sought to ensure an Authority-wide approach in the delivery of services and the prioritisation of resources following the major weather incident declared by South Wales Police.
- 4.15 In response to the Major Incident and in addition to the direct physical response to dealing with the flooding and its impact on infrastructure, homes and business premises, the following proactive actions were initiated:
- The Council supported temporary accommodation for almost 40 households (90 people, including children) the majority of those households that remain self-financed via their Insurance Companies to find alternative/ temporary accommodation;
  - Proactive visits were undertaken by Environmental Health Officers to food and other businesses to give positive sign off to re-open;
  - 4 Community Rest Centres were established;

- 150 + Volunteers worked alongside the authority;
  - 4 Donation and Distribution Centres established;
  - 910 Households were provided Food Parcels;
  - The Council funded Hardship Payments were established, which provided a total of £0.660M of financial support to residents and businesses, with the Council also administering a Welsh Government funded Flood Relief Scheme that provided £0.565M of financial support to residents;
  - White Goods H&S Testing established to distribute donations;
  - Provided free skips to flood hit residents to dispose of storm damaged household goods and furniture;
  - Recovered scores of abandoned and flood hit vehicles left obstructing highways after storm waters abated;
  - Removed thousands of tons of debris and silt from highways, parks and public spaces.
- 4.16 Since February the Council has undertaken significant surveying activities to support the delivery of an Accelerated Capital Programme with projects valued at £6.7m. The Council has also undertaken critical repairs to several Ordinary watercourse networks
- 4.17 The exceptional storm events created unprecedented damage to infrastructure across RCT. Damage consisted of landslips, scouring of foundations to bridge structures, damage to bridge structures from debris impact, scouring and collapse of retaining / river training walls, blocked and collapsed culverts, blocked surface water inlet and outlet structures and deterioration of highways, especially country lanes.
- 4.18 Since this period and despite the coronavirus pandemic, staff, consultants and contractors have been working to repair and rectify damage to all infrastructure and assets.
- 4.19 Over 380 highway structure assets have been inspected and assessed after the storms with over 160 of these structures requiring repairs. Some have been relatively minor repairs that have been completed e.g. Sion Street, Pontypridd, some works are being undertaken on site, some works involve significant design works and are scheduled to be undertaken over the next two years. The larger bridge structures are currently under discussions / designs with various bodies. Examples of these larger structures include Ynysyngharad Park footbridge which commenced on site in October 2020, White Bridge (Berw Rd) and Castle Inn are under discussions with Cadw and Welsh Government.
- 4.20 Numerous landslides occurred with Tylortsown Tip making the national news in February where over 30,000 cubic metres of the hillside slid into the river valley. Phase 1, i.e. the installation of the temporary surface water system has been completed with Phase 2 and 3 currently on site i.e. the removal of the material from the river valley and the reinstatement of the river to its pre-landslip line and level. Phase 4 which will be for the future remediation of the hillside is currently scheduled to commence in 2021. Over £0.5M of works have also commenced on the other tips owned by the Council to repair storm damage, with a number

already being completed and the remainder scheduled for completion later this year subject to weather.

- 4.21 A number of significant culverts and surface water drainage systems have been cleared with over a 1000 tonnes of rubble removed and there is ongoing surveying and cleaning of culverts with over 50km already covered. Damaged surface water inlet / outlet structures are being repaired on a prioritised basis and these include Pentre which saw significant flooding. Localised repairs and improvements to the surface water drainage system have been undertaken and more strategic flood prevention schemes are being developed for future implementation in high risk areas. An accelerated programme of 47 flood alleviation schemes will be undertaken this year at a cost of around £6.7M. This compares with historic annual spend of the order of £0.8M. A significant pipeline of flood alleviation work is being developed and promoted for WG funding in subsequent years including activity related to Property Level Flood Resilience.
- 4.22 It should be noted that with over 700km of culverted watercourses in RCT, the scale of the challenge is enormous and much of the culverting is under private houses and through private land where the owners have riparian responsibilities to maintain the culverts within their land ownership. In parallel and despite the Covid Emergency a huge programme of highways investment and refurbishment is taking place which includes significant lengths of rural roads which were badly affected by the storms.

## **5. COUNCIL CONSIDERATIONS**

- 5.1 The increasing threat of climate change means that extreme weather events are likely to happen more frequently and there will be an increasing need for local authorities and the public to adapt and prepare for these conditions.
- 5.2 This report seeks to ensure the engagement of all members in this challenge.
- 5.3 As part of the Council presentation members will receive information which sets out the following:-
- Storm Dennis Context
  - Event Preparation
  - The Impact of the Event
  - The Council's Response and Recovery
  - Emerging themes and areas for future development
- 5.4 Members will also receive a summary on the work of the Council to respond to these matters and the progress to date in key areas.

## **6. SCRUTINY PROCESS AND THE IMMEDIATE EMERGING THEMES**



- 6.1 The Council's Overview & Scrutiny Committee is currently scrutinising the Council's response to the severe flooding experienced during 2020 and at its meeting of the [14<sup>th</sup> October 2020](#) received a report and presentation from Council Officers on the scale of this weather event, the service and community response, and lessons learned to-date.
- 6.2 This meeting also received a presentation from Natural Resources Wales, which outlined the unprecedented scale of Storm Dennis, Storm Ciara and the wet winter weather during 2019/20 which resulted in the unprecedented levels of flooding across a series of locations in Rhondda Cynon Taf. Members also received evidence on the response of the organisation in these challenging circumstances and emerging themes, of the then yet-to-be-published NRW report into these events. The meeting can be viewed at <https://www.rctcbc.gov.uk/EN/Council/CouncillorsCommitteesandMeetings/Committees/Virtualmeetingsduringsocialdistancing.aspx>
- 6.3 Following discussion Scrutiny resolved to hold a scrutiny inquiry session on the 9<sup>th</sup> November 2020 to bring together the main responder agencies, Natural Resources Wales (NRW) and Dwr Cymru/Welsh Water with local councillors from affected areas, to receive more in depth evidence and information to support this scrutiny process.
- 6.4 The scrutiny enquiry session sought to deliver upon a commitment made by the Leader of the Council to facilitate the engage of local members in the 'lessons learned' work which the Council is already taking forward, but also as part of the development of future plans and severe weather response arrangements.
- 6.5 In addition to receiving oral evidence from 18 members, who were each allocated five minutes to present their experiences and observations, the Scrutiny Inquiry session facilitated presentations from Rhondda Cynon Taf Officers, Natural Resources Wales and Dwr Cymru/ Welsh Water who were present to respond to queries raised by members of the Overview & Scrutiny Committee in its formal role. The session lasted for three hours and twenty minutes and provided a strong evidence base for the scrutiny committee to continue its work.
- 6.6 Whilst the Scrutiny review is ongoing the common themes to have emerged from the inquiry session are as follows:-
- Overall there was much praise for the response to the February flooding from emergency services, community volunteers, neighbours and Council staff;
  - The views of members highlighted a number of areas where further work is needed and improvements could be made including communication with Elected Members and facilitating a better understanding of the Council emergency response procedures.

- The process has already identified the development of more precise forecasting by NRW which would enable early warning procedures to be delivered and to give communities time to respond as a key ask. (with the added caveat that there is a need to be as realistic as possible to identify major events);
  - Members acknowledged that Storm Dennis was significant and its impact felt county wide. It was declared a major weather incident by South Wales Police and under these circumstances it was recognised that flooding cannot always be prevented. However, Members did feel that the risk can be managed and actions can be taken to minimise the harm caused by flooding as far as possible.
  - The process has already identified the importance of training for Elected Members, particularly newly Elected Members, to identify roles and responsibilities in the case of flooding emergencies in addition to being able to signpost residents.
- 6.7 The evidence provided by each ward member will be collated and, in conjunction with any subsequent written correspondence, will be used to inform the conclusions and recommendations of the scrutiny review.
- 6.8 Members are reminded that the Council presentation is a distinct element of business, which seeks to ensure that all members are provided with the same opportunities as the Overview & Scrutiny Committee to be briefed upon the operational response of the Council and the scale of this major weather event.
- 6.9 The Scrutiny committee will consider the content of submissions and information received from partners and local members through the evidence session at its next meeting, before determining independent comments or recommendations for considerations by Cabinet.
- 6.10 Scrutiny will also be provided with the opportunity to consider Section 19 statutory reports on conclusion of the ongoing investigations that the Council is undertaking into the February Floods as the Lead Local Flood Authority (LLFA) under the Flood and Water Management Act 2010.

## **7. REVIEW BY THE SENIOR LEADERSHIP TEAM REQUESTED BY CABINET**

- 7.1 Earlier this year the Leader of the Council requested the Chief Executive and Senior Leadership Team to undertake an internal review and evaluation of the Council's response to major flooding.
- 7.2 This review is considering the planning activity undertaken to prepare for adverse weather warning, the activity that went on during the night in response to the arising emergency; and the immediate response to the emergency.

- 7.3 The review is also considering the response in the days and weeks following and the longer term response over the last nine months to ascertain and reflect what the Council did well and what could we have been done differently that would have further improved our planning or the response of the Council.
- 7.4 This review is planned to be reported to Cabinet before the end of this calendar year. Cabinet will consider this review alongside the comments of the scrutiny process, in particular the views of the local members, which were facilitated through the scrutiny enquiry session. Before agreeing specific actions, Cabinet will consider the content of both the internal review and the scrutiny processes.
- 7.5 At a later date Cabinet will also consider the Section 19 statutory reports on conclusion of the ongoing investigations that the Council is undertaking into the February Floods as the Lead Local Flood Authority (LLFA) under the Flood and Water Management Act 2010.

## **8. NATURAL RESOURCES WALES RESPONSE**

- 8.1 As a result of the Flood and Water Management Act 2010 certain changes have been made to the NRW role and remit. It now has new operational responsibilities in relation to coastal erosion and a wider oversight role for all flood and coastal erosion risk management in Wales.
- 8.2 This new allocation of responsibilities is also consistent with Natural Resources Wales' role; in relation to the Flood Risk Regulations 2009 which allocates specific responsibility for conducting assessments in relation to mapping and planning the risks of flooding from main rivers, the sea and reservoirs to Natural Resources Wales, as well as providing guidance to Local Authorities on these matters for flooding from other sources.
- 8.3 Independent of the Council's scrutiny process and Section 19 reporting duties, NRW has produced its own overarching flood summary report which takes in a factual report, a flood review, a recovery report and land estate review ; these reports can be viewed on the NRW website; <https://naturalresources.wales/about-us/news-and-events/statements/our-response-to-storm-ciara-and-storm-dennis/?lang=en>
- 8.4 There are a number of salient points related to RCTCBC which are worthy of note;
- The Data Summary paper confirms the exceptional nature of the Storm events coming on the back of a very wet winter and giving rise to record rainfall and river levels during the wettest February since records began in 1862. Storm Dennis is recorded as having delivered 72% of the monthly rainfall in 24 hours at its rain gauge between the Cynon and Rhondda Fach catchments. The River Taf at Pontypridd recorded river levels at 78cm higher than the previous records during the floods of 1979 with a volume of water equivalent to an Olympic sized swimming pool flowing past every 3 seconds.

- Record levels of Flood Warnings were issued by NRW across Wales during February and 3130 properties were flooded across Wales; approximately half of which were in RCT.
- NRW asserts that their river flood protection measures did not fail but acknowledges that they were overwhelmed by the exceptional volume of water.
- They note increasing levels of risk around climate change with their defences established to deal with 1 in 100 year storms and the likelihood that exceedance events will become more frequent.
- They also highlight that detailed consideration is needed related to how society and government deals with climate change and asserts that building flood walls higher is not the answer.
- NRW has published a paper titled; Natural Resources Wales Land Estate Management Review and this has particular implications for Pentre and Mountain Ash where there is a public perception that elements of the flooding are attributable to deforestation and leaving tree debris known as brash on the hillside.
- This paper, which involves investigation and independent reviews of the land management activities concludes that the general practices were accorded with best practice, but highlighting 10 key recommendations and actions for changing their current approach.
- The review states;

*“As part of the land management review, we have also looked at the management of the Welsh Government Woodland Estate land above Pentre in Rhondda Cynon Taff to determine any contribution land operations may have had on flood impacts in this area. This also informed our immediate recovery work.*

*The review found that our operations at the site above the village were in keeping with standards of good forestry practice and, that these operations were not likely to have been the primary cause of the flooding in Pentre.*

*We want to assure the community that we will continue to work with Rhondda Cynon Taf County Borough Council and Dŵr Cymru Welsh Water to understand the causes of the flooding in Pentre in February and what can be done to help protect at-risk communities in the future. We will continue our engagement with residents and business owners as these investigations progress.”*

- NRW identifies that their defences protected 19,000 properties from flooding (including 1,000 within RCT) with the number of flooded

premises being far lower overall than during the storms of 1979. That said, they identify areas where lessons can be learned related to flood warnings, out of hours capacity, more holistic organisational response, actions in the lead up to a response and recovery, adapting land management approach to help reduce the risk of flooding

8.5 The NRW reports are not statutory reports but they represent a significant body of work that has been undertaken by one of the main Flood Risk Management Authorities operating in RCT. As the body responsible for managing the government estate in RCT they have responsibility for around 30% of the total land mass of the entire county borough.

8.6 The Council as LLFA will consider the content of these reports alongside its own investigations in developing the statutory S19 Reports. It should also be stated and acknowledged that a partnership approach has been developed between the Council and both NRW and DCWW in establishing proactive and complementary responses to imminent flood risks and in working in partnership to develop strategies to reduce the risk of future flooding.

## **9. CONSULTATION / INVOLVEMENT**

9.1 The process of engagement with key partners and local members will continue to steer the Council's consideration and methodology going forward.

## **10. EQUALITY AND DIVERSITY IMPLICATIONS**

10.1 Equality and diversity implications are to be considered as part of the Scrutiny review and subsequent recommendations to the Council's S19 report.

## **11. FINANCIAL IMPLICATIONS**

11.1 Financial and resource implications will be considered as part of any subsequent recommendations made for winter weather arrangements going forward

## **12. LEGAL IMPLICATIONS OR LEGISLATION CONSIDERED**

12.1 There are no legal implications arising from the recommendations in this report.

## **13. LINKS TO THE COUNCILS CORPORATE PLAN / OTHER CORPORATE PRIORITIES.**

13.1 The Well-being of Future Generations Act asks public bodies to work better with people, communities and each other to meet the Sustainable Development principle. The Council's approach to the implementation of the Act agreed by Cabinet is to make sure that its requirements are embedded into the everyday business.

13.2 Engagement with Stakeholders will inform the Scrutiny review will support the Working Group apply the Sustainable Development principle of the Act through the five ways of working, namely, Integration, Collaboration, Long term thinking, Involvement and Prevention and maximise the contribution to the 7 national Well-being goals.

**14. CONCLUSION**

14.1 This report demonstrates the progress undertaken by the Council to evaluate the response to these unprecedented weathers, to inform the statutory reporting requirements of the Council and provide a strong evidence base to for the Council to reflect upon what it did well and what can be done differently to further improve planning and the future response of the Council.

**LOCAL GOVERNMENT ACT 1972**

**AS AMENDED BY**

**THE LOCAL GOVERNMENT (ACCESS TO INFORMATION) ACT 1985**

**RHONDDA CYNON TAF COUNTY BOROUGH COUNCIL**

**COUNCIL**

**25<sup>th</sup> NOVEMBER 2020**

**JOINT REPORT OF THE GROUP DIRECTOR PROSPERITY, DEVELOPMENT &  
FRONTLINE SERVICES AND THE SERVICE DIRECTOR, DEMOCRATIC SERVICES  
& COMMUNICATIONS**



**RHONDDA CYNON TAF**





# Contents

Storm Dennis Context



Event Preparation



Impact of the Event



Response and Recovery

# Storm Dennis - Context

Storm Dennis was the **10<sup>th</sup> Storm Event** to Impact the authority since August 2019.

Storm Dennis was the **4<sup>th</sup> Named storm** that impacted the authority during the 19-20 storm season.

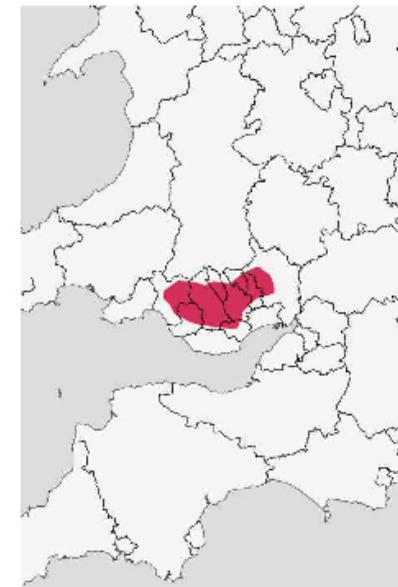
Initial Warnings related to storm Dennis were received on the 11/02/2020 **4 Days Notice**

A further **5 warnings** were issued gradually increasing in Likelihood and Impact

Warning Level	Event	Date of issue	Time	Likelihood	Impact	Range Rainfall (mm)	Range Wind Gusts (mph)
Yellow	Wind	11/02/2020	10:34	Medium	Low	N/A	50-60
Yellow	Rain	11/02/2020	11:36	Low	Medium	100-120	N/A
Yellow	Wind	12/02/2020	10:24	Medium	Low	N/A	50-60
Amber	Rain	13/02/2020	10:57	Medium	Medium	100-120	N/A
Amber	Rain	15/02/2020	11:07	Low	High	100-120	N/A
Red	Rain	16/02/2020	06:10	High	High	100-140	N/A

! **Red warning**  
**Rain**

Between  
**06:10 Sun 16 Feb 2020** and  
**11:00 Sun 16 Feb 2020**



**Storm Dennis is expected to bring further heavy rain for a time on Sunday morning, increasing the likelihood of high impacts.**

#### What to expect

- Danger to life from fast flowing or deep floodwater
- Extensive flooding to homes and businesses is likely
- Collapsed or damaged buildings or bridges
- Road closures and bus and train service delays and cancellations
- Dangerous driving conditions because of spray and flooded roads
- Loss of power and other essential services, such as gas, water, mobile phone service
- Communities could be completely cut off by floodwater, perhaps for several days

#### Further details

Prolonged, heavy rain will continue until mid-morning, easing slowly into the middle of the day. This rain will bring event totals to between 100 and 140mm over higher ground in south Wales.



**Issued at 06:10 Sun 16 Feb, 2020**

**For enquiries regarding this warning please contact the Met Office Weather Desk**

**Phone:** 0370 900 0100 **E-mail:** [enquiries@metoffice.gov.uk](mailto:enquiries@metoffice.gov.uk)

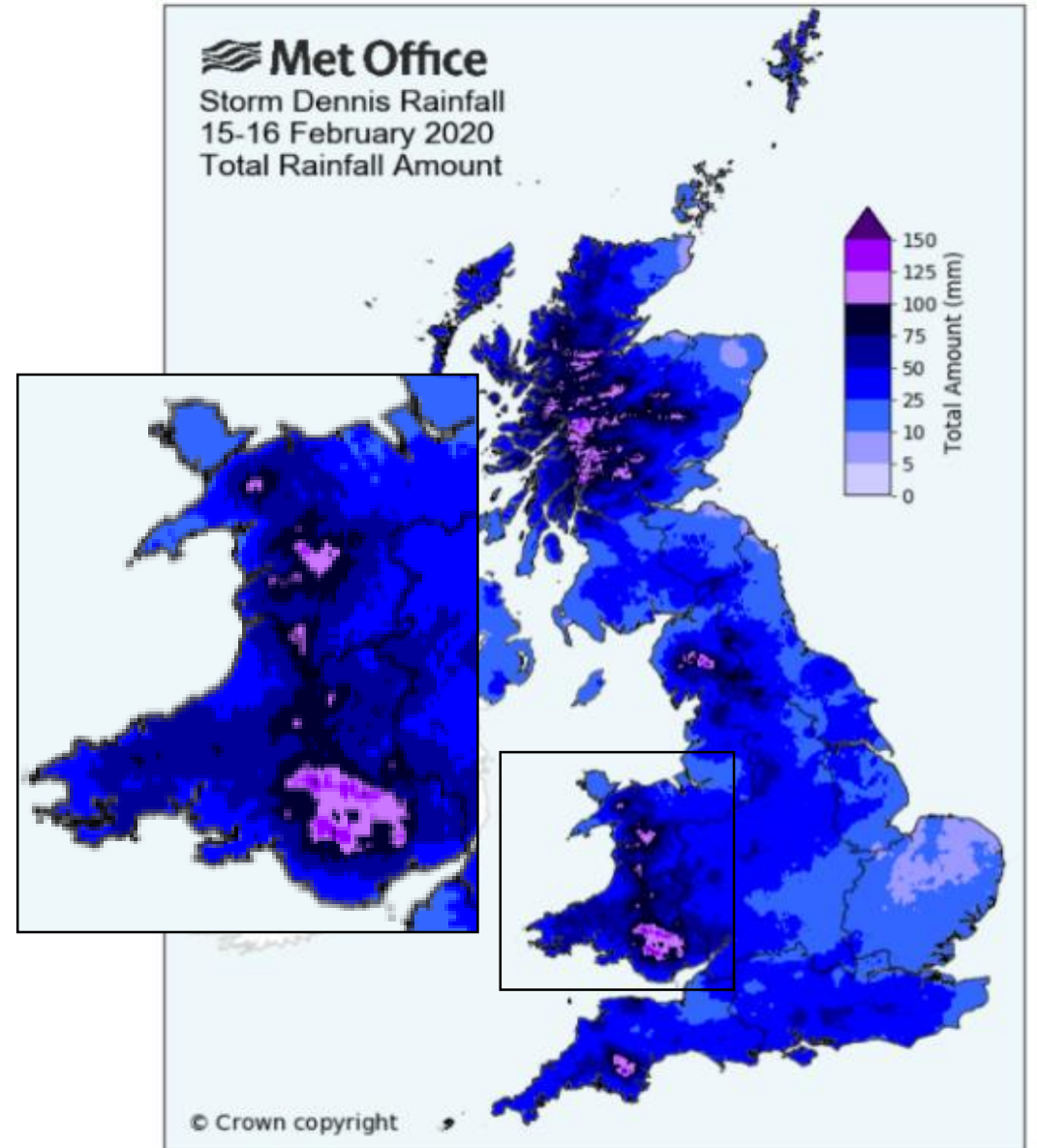
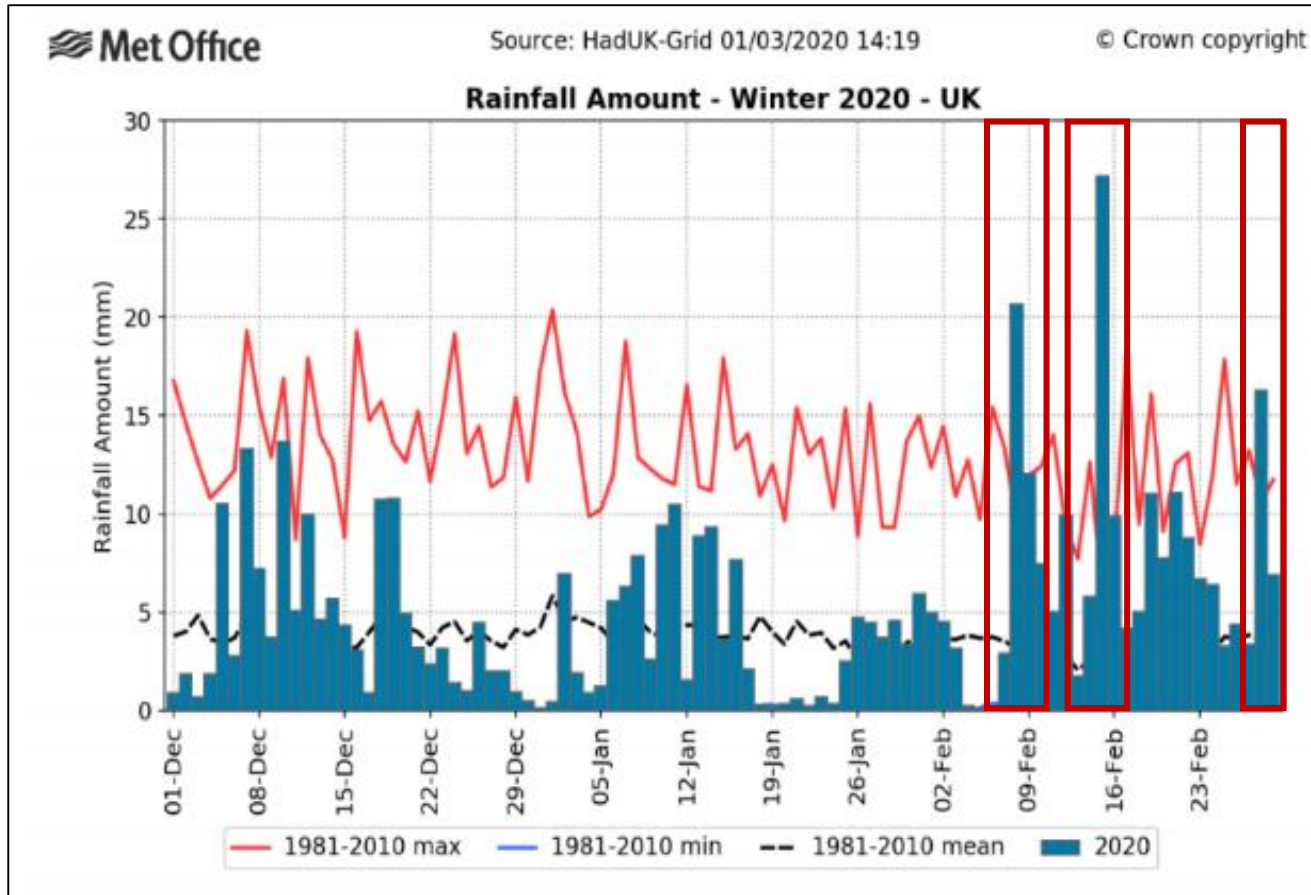
**Visit:** [www.metoffice.gov.uk/premium/hazardmanager](http://www.metoffice.gov.uk/premium/hazardmanager)

# Event Preparation

- RCT undertook asset inspections on **300 Critical infrastructure** i.e. culvert inlets, Manholes and Outfalls
- RCT increased the number of standby work crews and equipment – **18 additional work gangs**
- RCT deployed **2 Drainage Sub Contractors** as reactive team's with specific equipment to support the councils response
- RCT further **increased the resources** available within the Council contact centre in preparation for high call numbers.
- Additional **sandbags** were filled approximately **500** ready for deployment



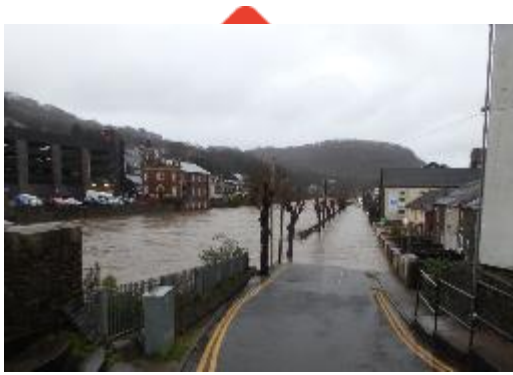
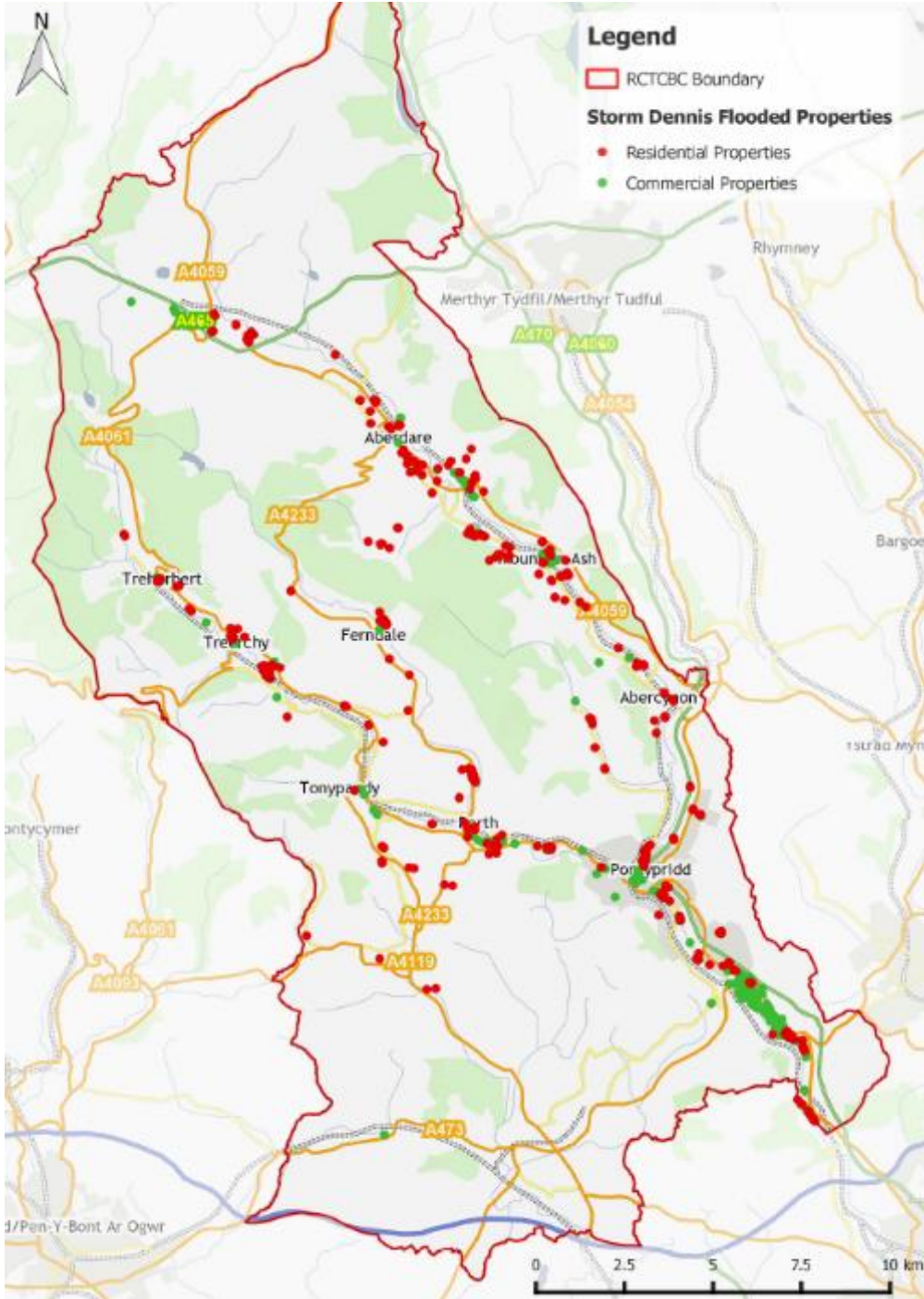
# February Storm Events



Storm Dennis Rainfall Totals indicate the rainfall levels between **100 – 149mm** in parts of RCT



# Storm Dennis Impacts



## Fluvial Flooding

1070 Residential Properties

Internally Flooded Commercial Properties = 319

**Total Receptors = 699**



## Pluvial Flooding

406 Commercial Premises

Residential Properties = 690 where internally flooded.

Commercial Properties = 87

**Total Receptors = 777**

**Total Receptors Internally Flooded - 1476**



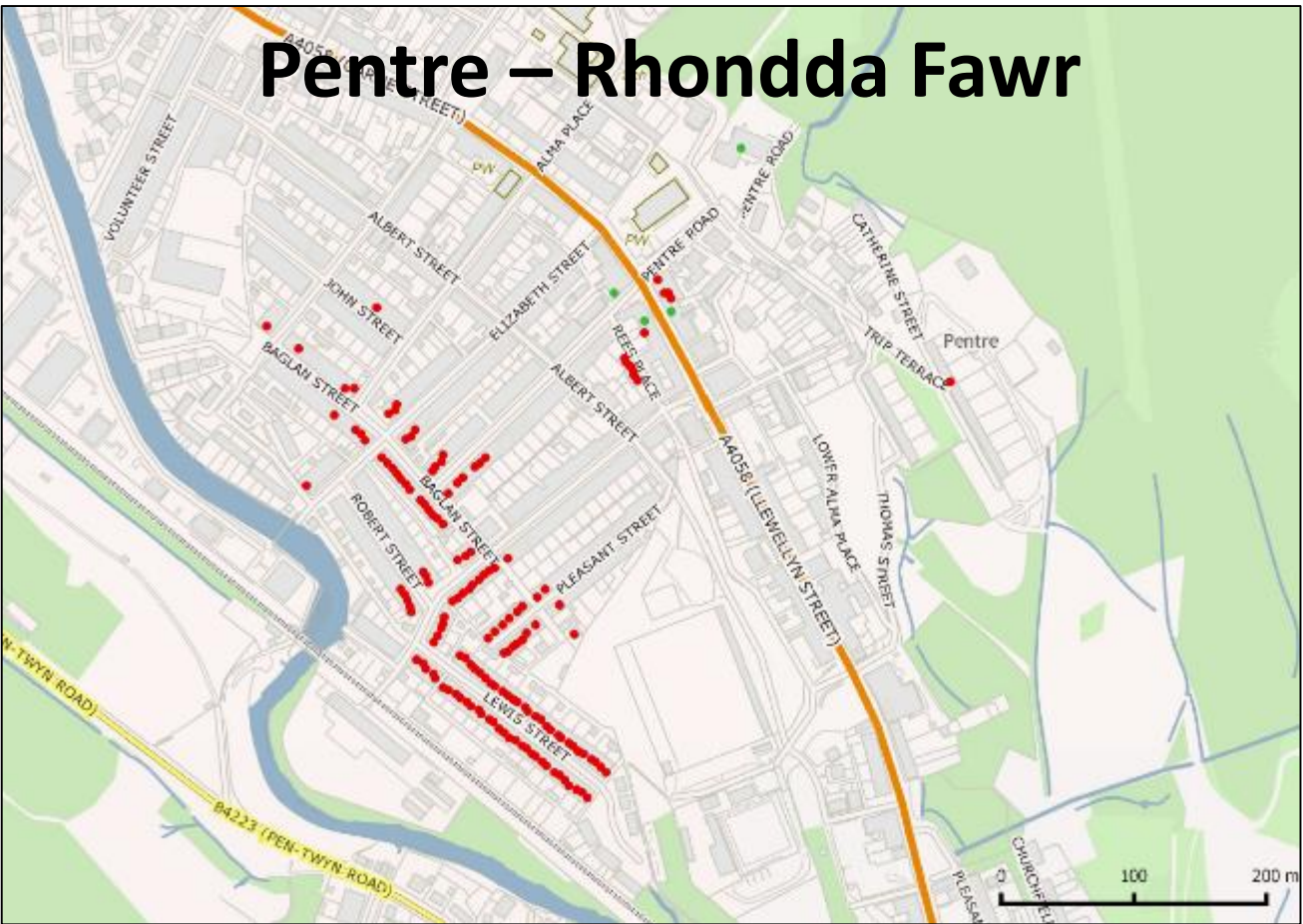
# Pontypridd Town Centre



# Treforest Industrial Estate





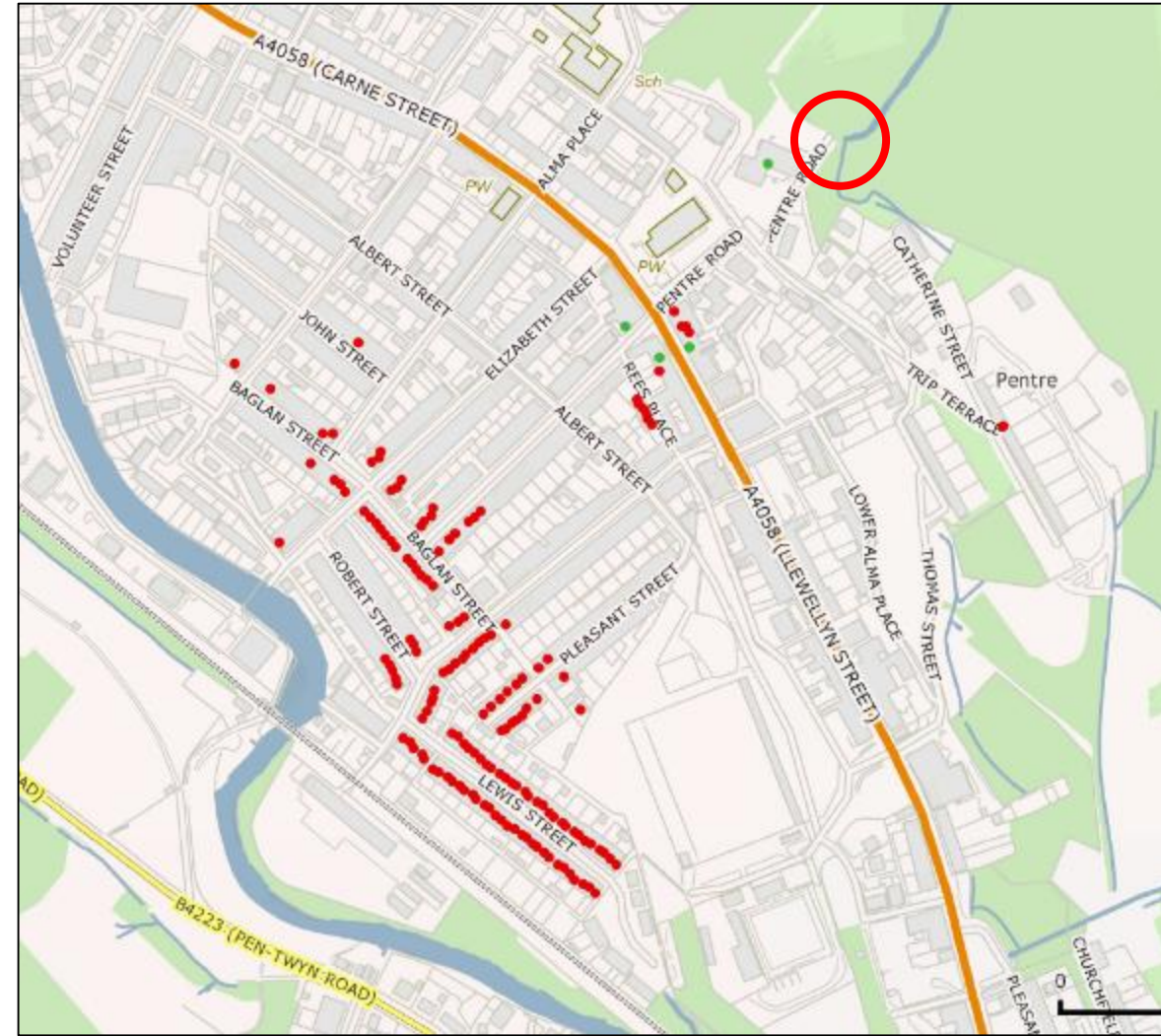


# Pentre – Rhondda Fawr

Item Type	Answer
Residential Properties	159
Commercial Properties	10
Primary Source	Pluvial (Ordinary Watercourse)



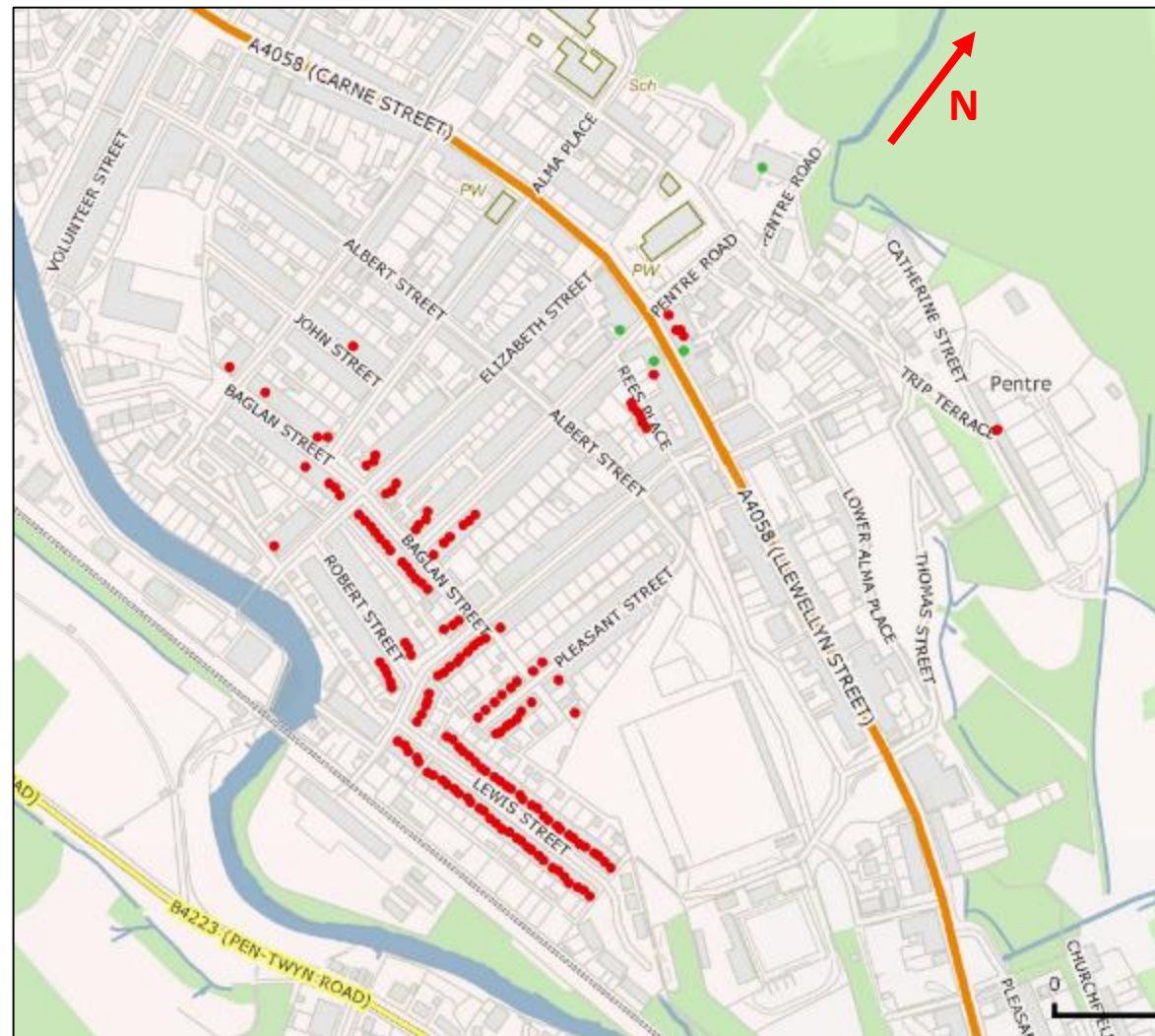
# Pentre Road Roadworks 2019 Dennis



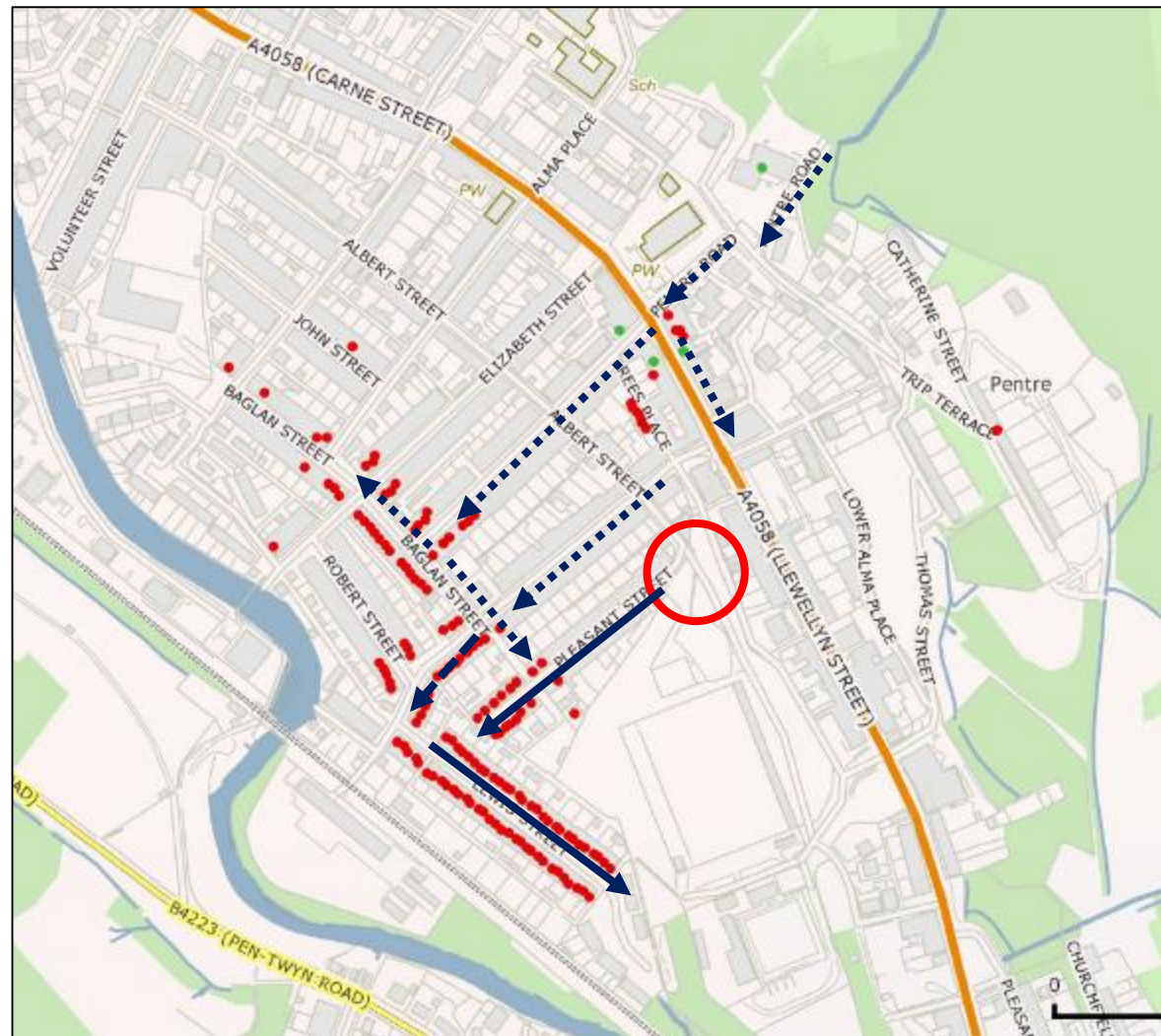
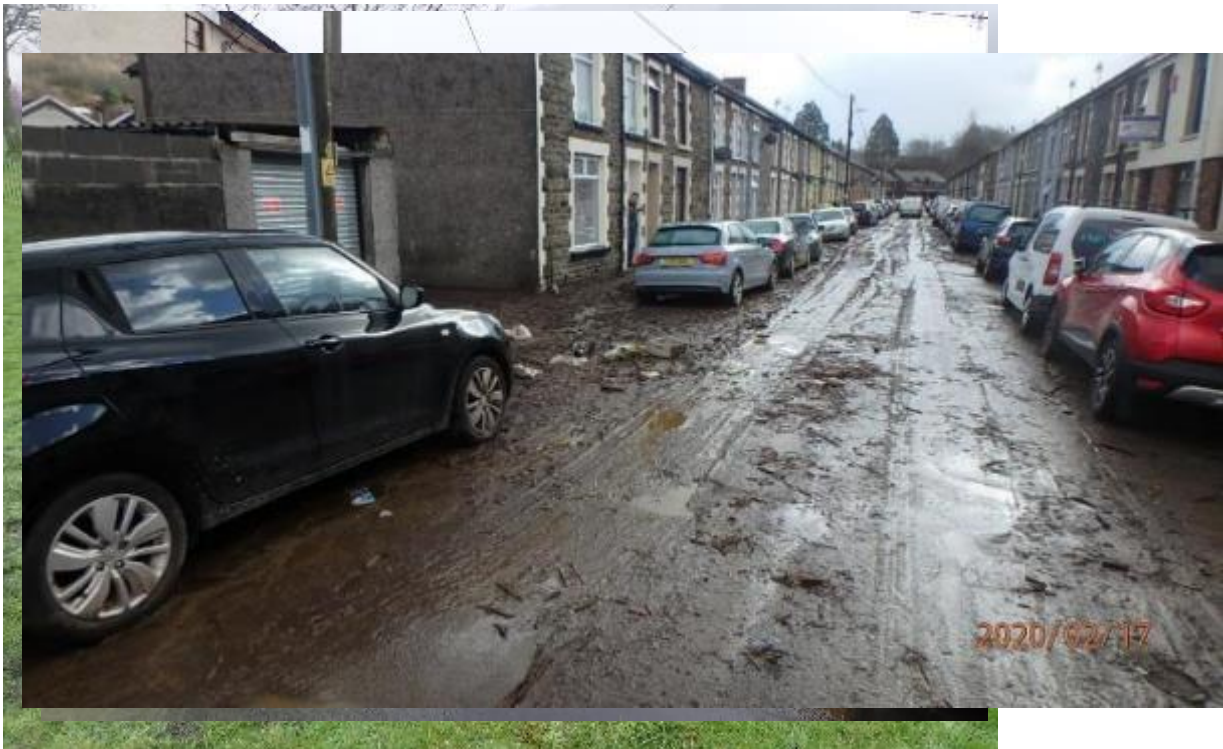




## Pentre Upper Catchment









## Emergency Response

- RCB's resource centres responded to **1030 Reports** of flooding
- Significant Volunteer worked alongside the authority some 150k
- Support was provided by Vale of Glamorgan, Cardiff Council, Distribution Centres established
- 910 Households were provided Food Parcels
- 5 Additional teams of Sub contractor with heavy plant i.e. Recycler and Camera Team
- Hardship Payments were established
- White Goods H&S Testing established to distribute donations

Short Term  
0 - 3 Months

Medium Term  
3 - 12 Months

Long Term  
12+ Months



## Emergency Repairs

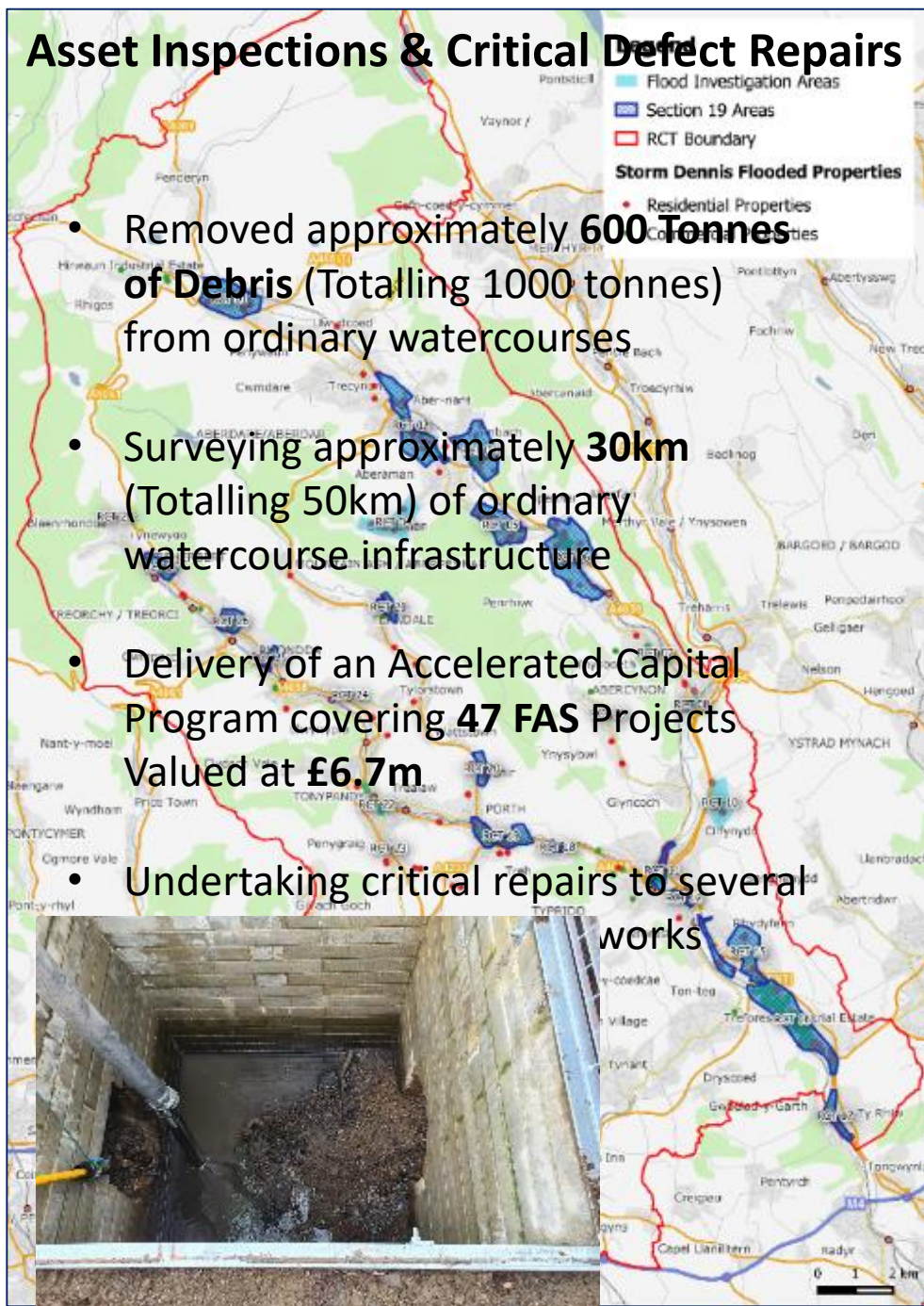
- Removed approximately **400 Tonnes of Debris** from ordinary watercourses
- Inspected approximately **19km** of Ordinary watercourse infrastructure
- Repaired 10 collapses within Ordinary watercourses

## Over pumping deployment

- Deployed around 8 High capacity Pump units within key locations
- Requested the NRW deploy 2 additional pumps to the Pentre community



# Asset Inspections & Critical Defect Repairs



- Removed approximately **600 Tonnes of Debris** (Totalling 1000 tonnes) from ordinary watercourses

- Surveying approximately **30km** (Totalling 50km) of ordinary watercourse infrastructure

- Delivery of an Accelerated Capital Program covering **47 FAS Projects** Valued at **£6.7m**

- Undertaking critical repairs to several works



Short Term  
0 - 3 Months

Medium Term  
3 - 12 Months

Long Term  
12+ Months



# Winter 2020-21 Preparation Flood Investigation Areas & Section 19 Investigations

28 Investigation areas where identified through a

- Stockpiling Sandbags and Flood Sax to support winter responses
  - No of Receptors Internally Flooded
- Advanced deployment of a Number of Pump units within High risk locations
  - Geographical location i.e. Catchment interactions
- Updated Pre event inspection Programs
  - Existing Study Areas

Approximately 19 Invest  
publication of a Section



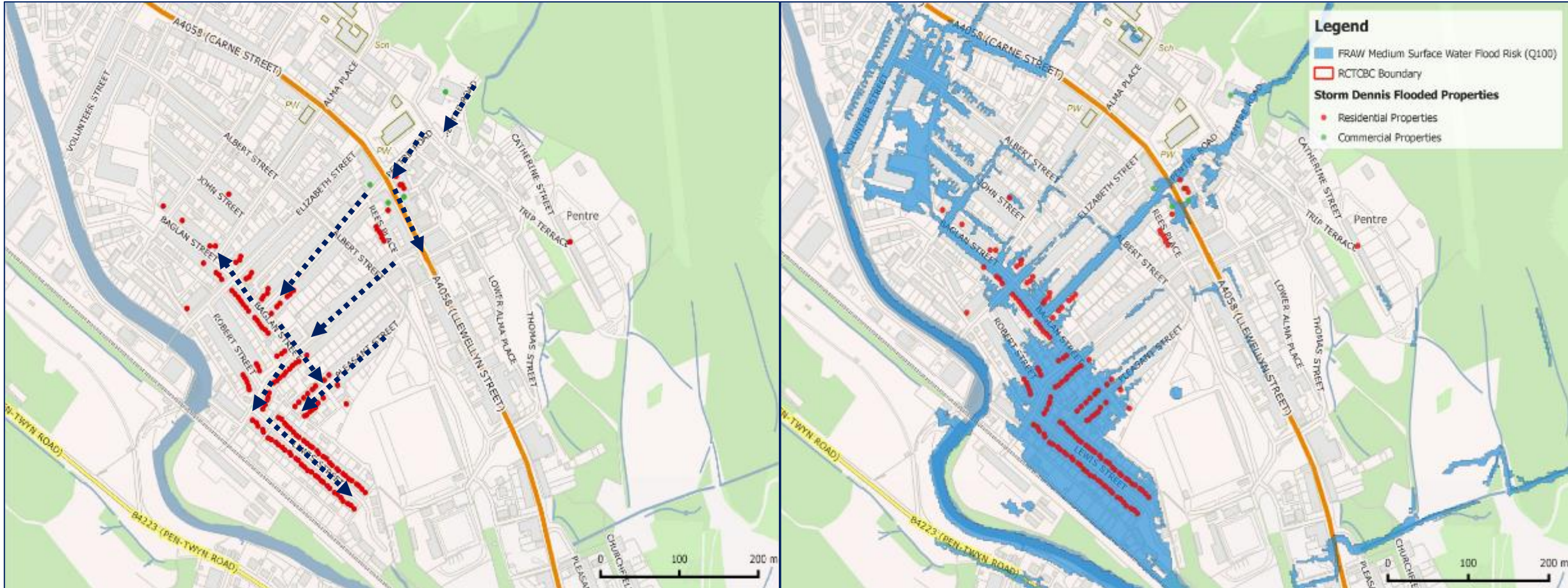
Approximately 63  
not located



# Lessons Learnt from National Mapping & Plans to Actual

Long Term  
12+ Months

- FRAW Mapping

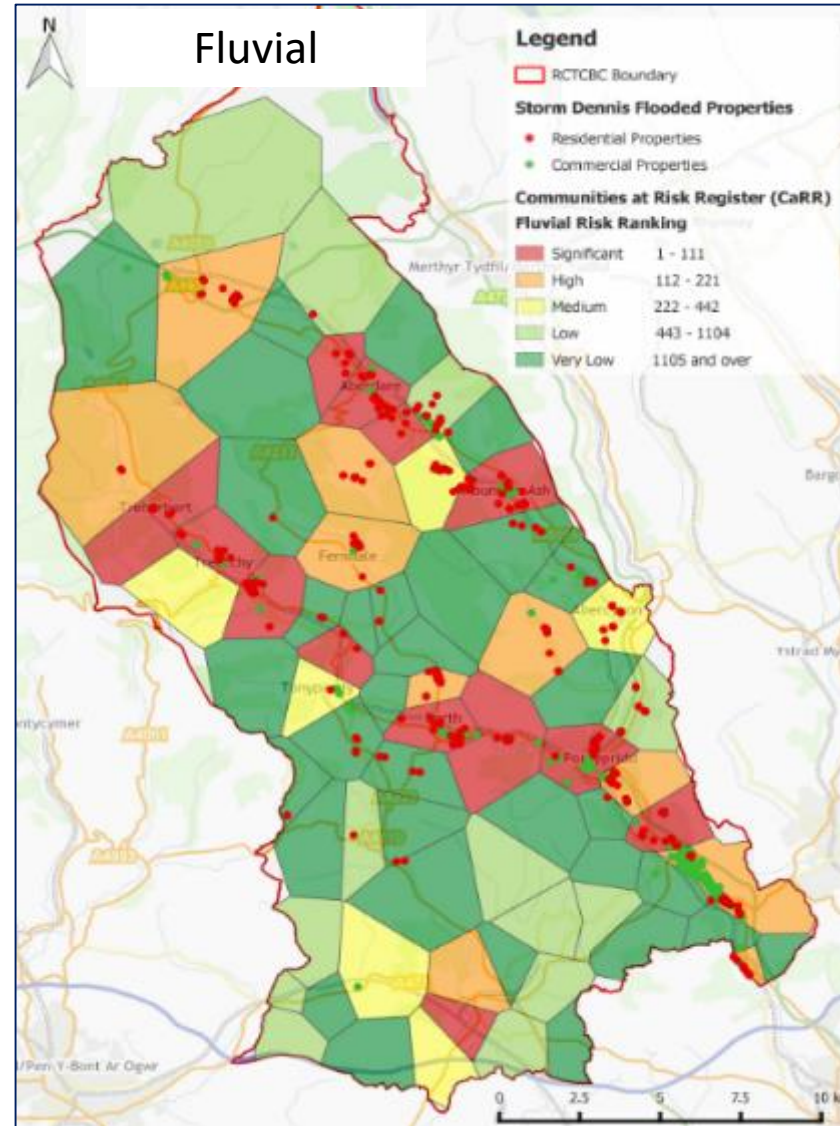
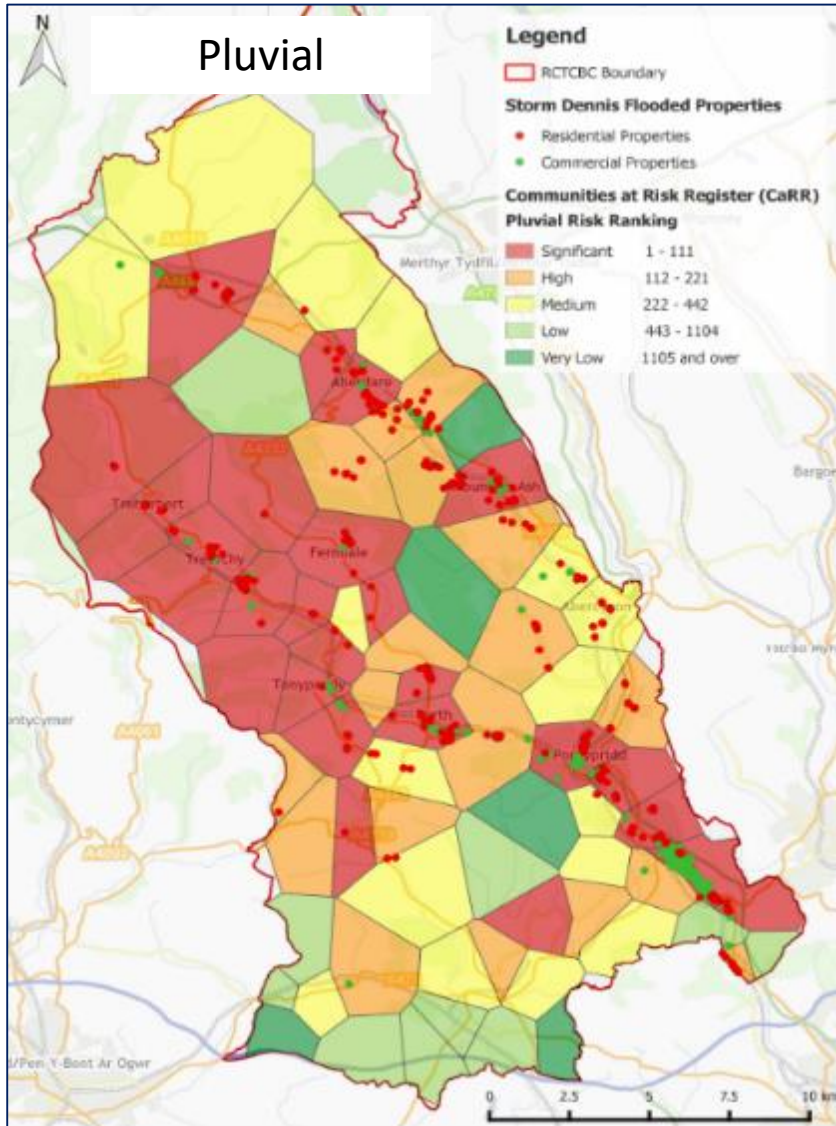




# Lessons Learnt from National Mapping & Plans to Actual

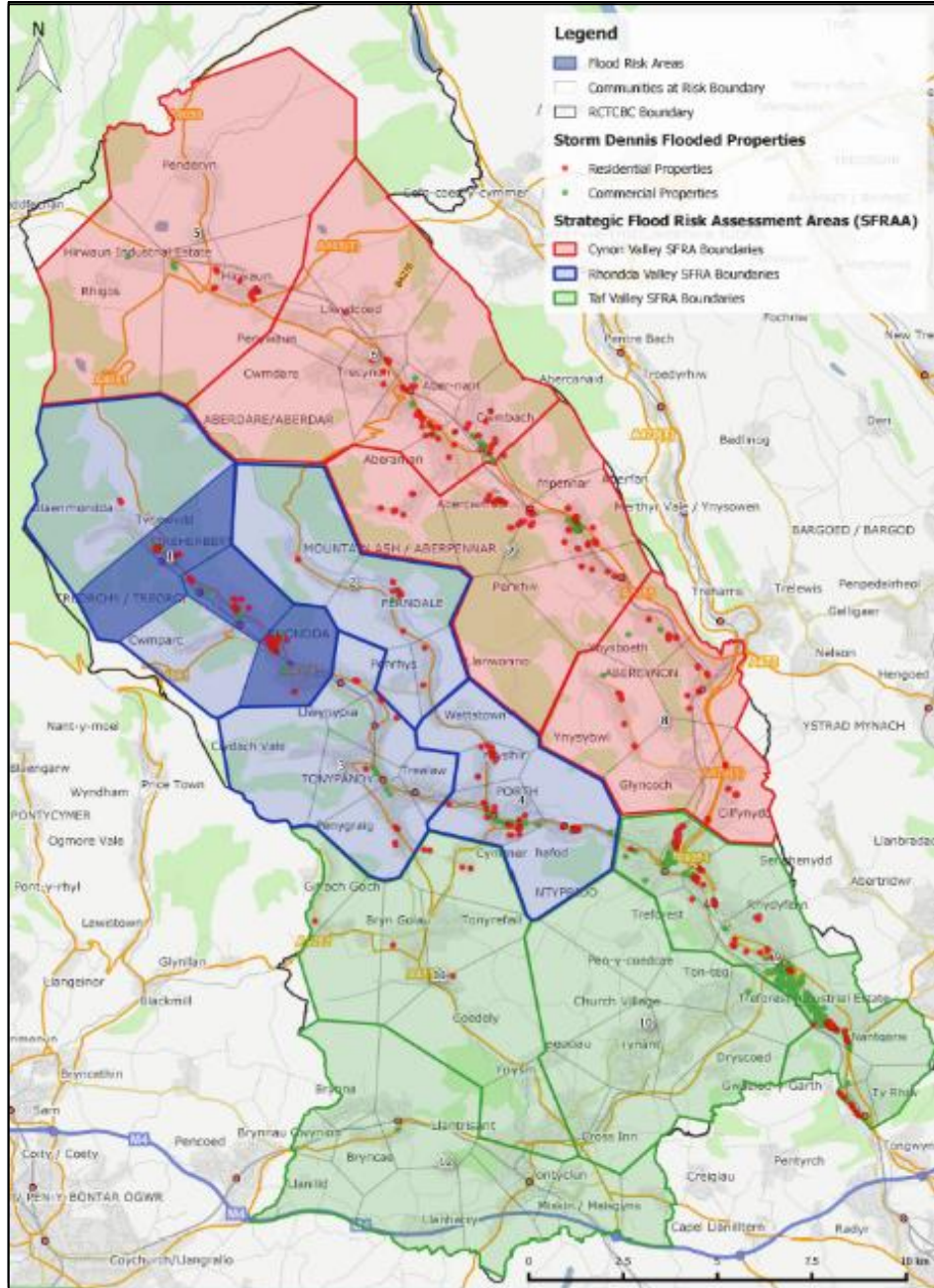
- Communities at Risk Register (CaRR)

Long Term  
12+ Months



# Development of Strategic Flood Risk Management in RCTCBC

Long Term  
12+ Months



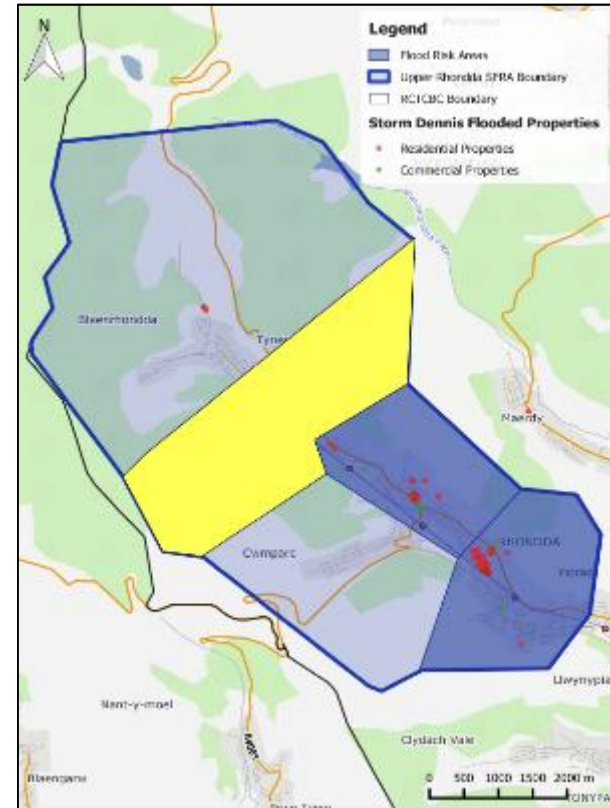
**12** Strategic Flood Risk Assessment Areas (SFRAAs)

**Approximately 30%** of RCTCBC land cover is owned by NRW Forestry

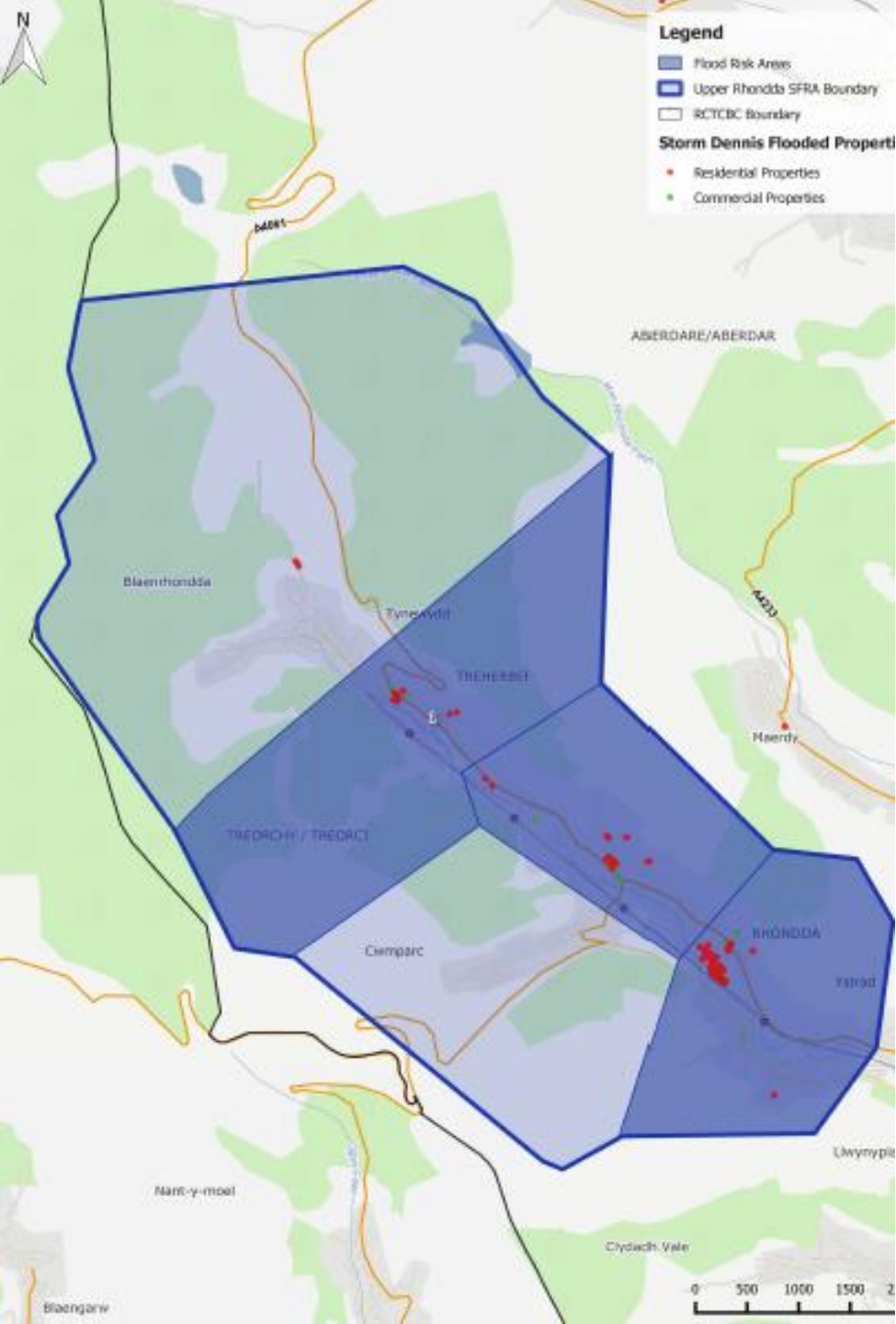
**Upper Rhondda Strategic Flood Risk Assessment** currently being developed

**3** Flood Risk Areas as identified within the PFRA lies within the Upper Rhondda

- Rhondda 1
- Treorchy 3
- Treherbert 6







# Pilot Study: Suitability of Property Flood Resilience (PFR) in the Upper Rhondda Valley

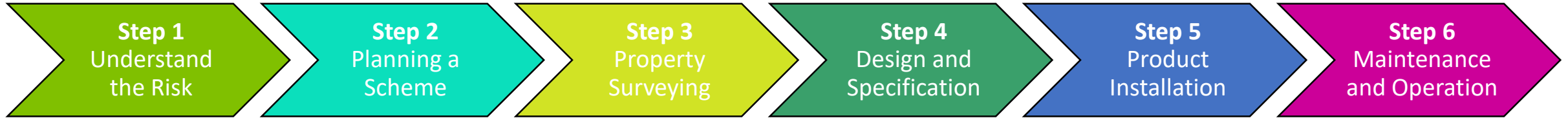
The outcomes of this pilot study include;

1. Development of a high-level understanding of the **nature and severity** of flooding within the study area
2. Undertake a high-level assessment of the key areas known to have been affected during both **storm Dennis and the June thunderstorms**
3. Produce a concise report setting out the findings of the investigation (as per item 1 & 2) and the likely measures which would be appropriate given the **nature of flooding, type of property impacts and the potential costs** in delivering PFR.
4. The report will provide clear advice regarding **successful delivery approaches for PFR, providing best practice, guidelines, key risk and limitations** associated to delivering a PFR scheme.





# Six Steps to Flood Resilience



Check NRW's  
National Flood  
Hazard & Risk Maps



Independent flood risk property  
surveys by competent and  
qualified professionals.

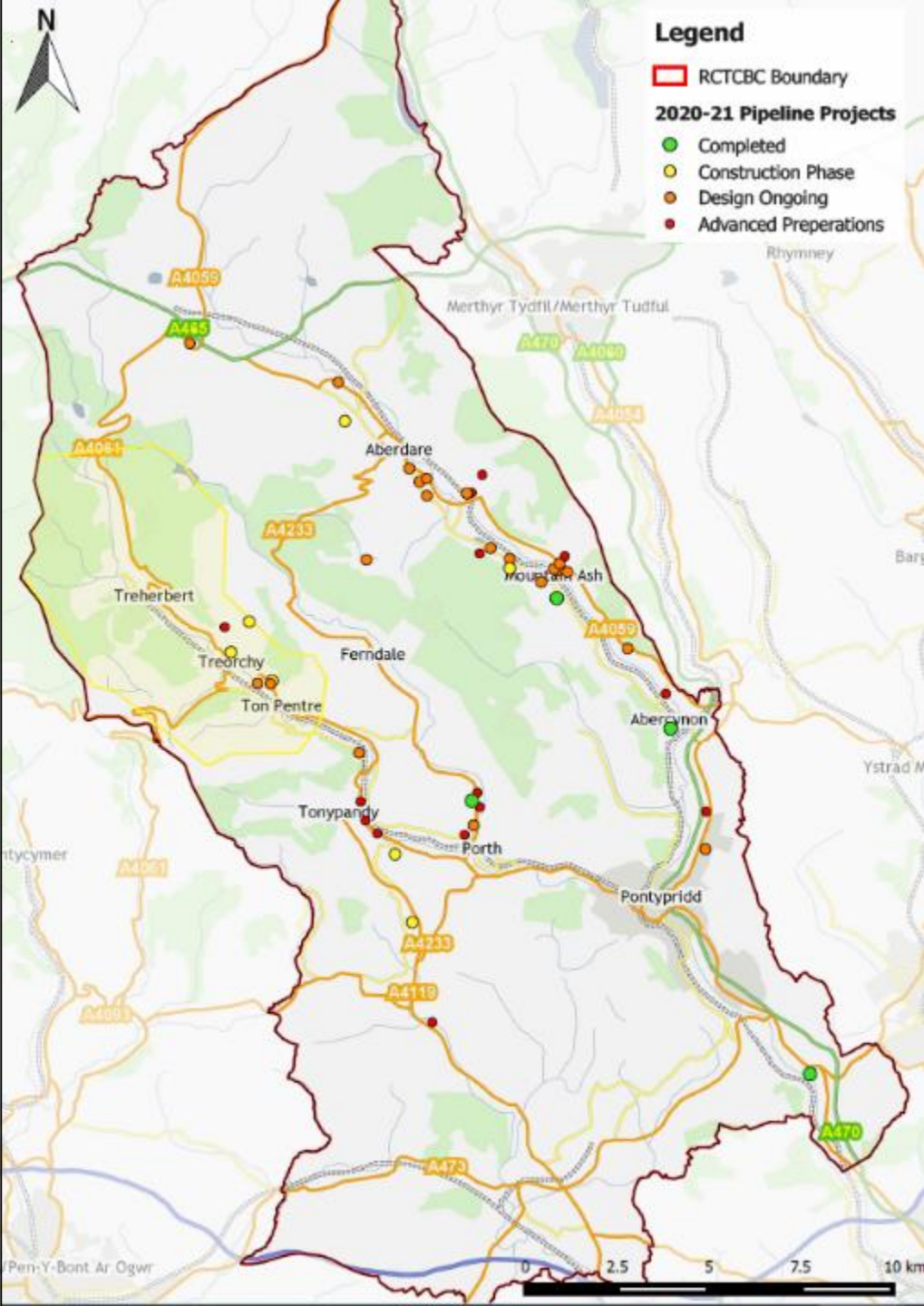


Product selection, design and  
installation from a list of approved  
suppliers

Environment Agency **PFR Framework** –  
RCTCBC Sign-up







# Active and Future Flood Alleviation Schemes

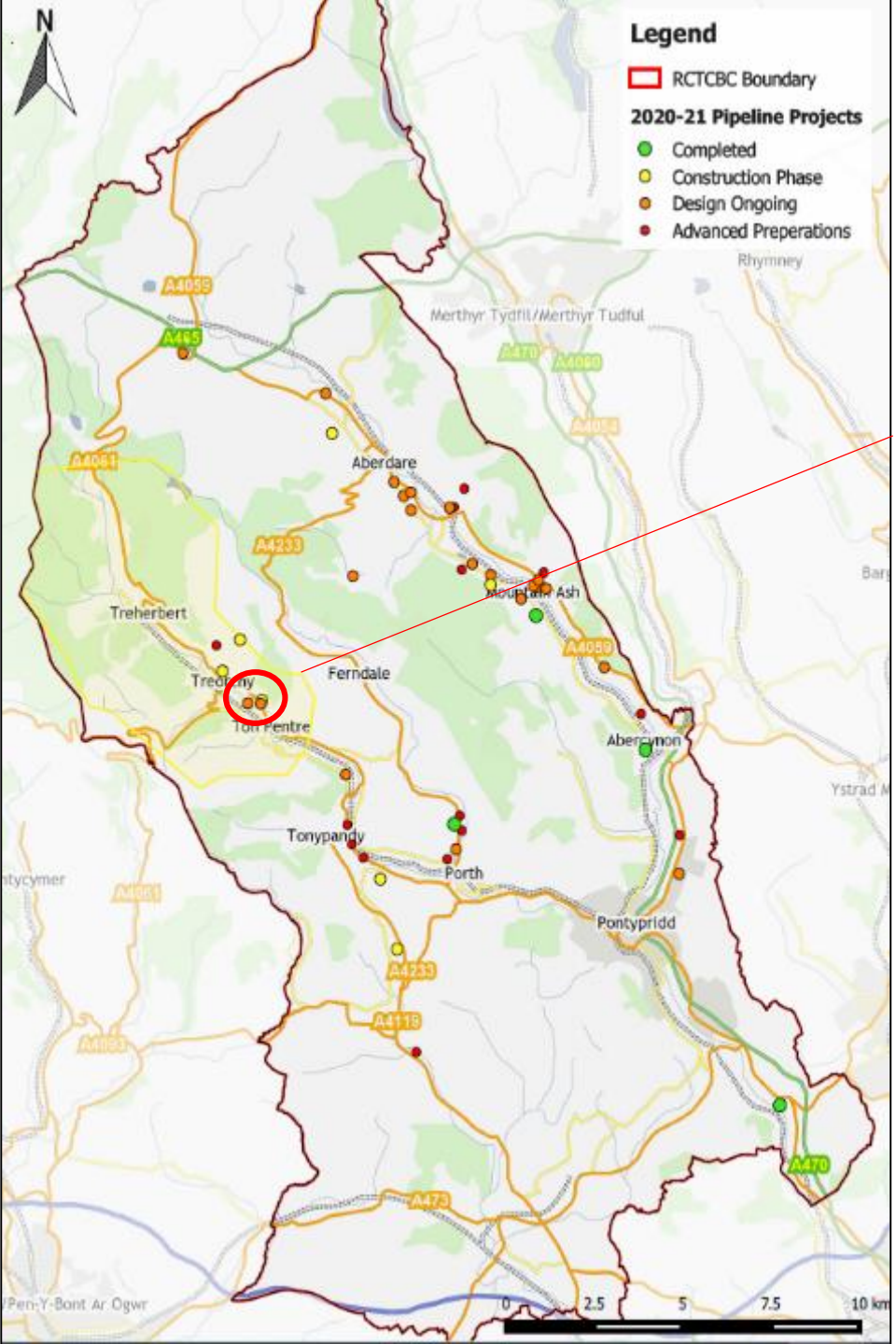
4-year programme

Grant Type	Number of Projects	Completed	Construction Phase	Design Ongoing	Advanced Prep
Mixed Grant	2	£700,000		1	0
Non Grant	3	2	£190,000	1	0
Resilient Roads	16	£2,610,000		14	0
Small Scale Works	20	£2,060,000		5	11
Welsh Government Pipeline	9	£7,170,000		7	0

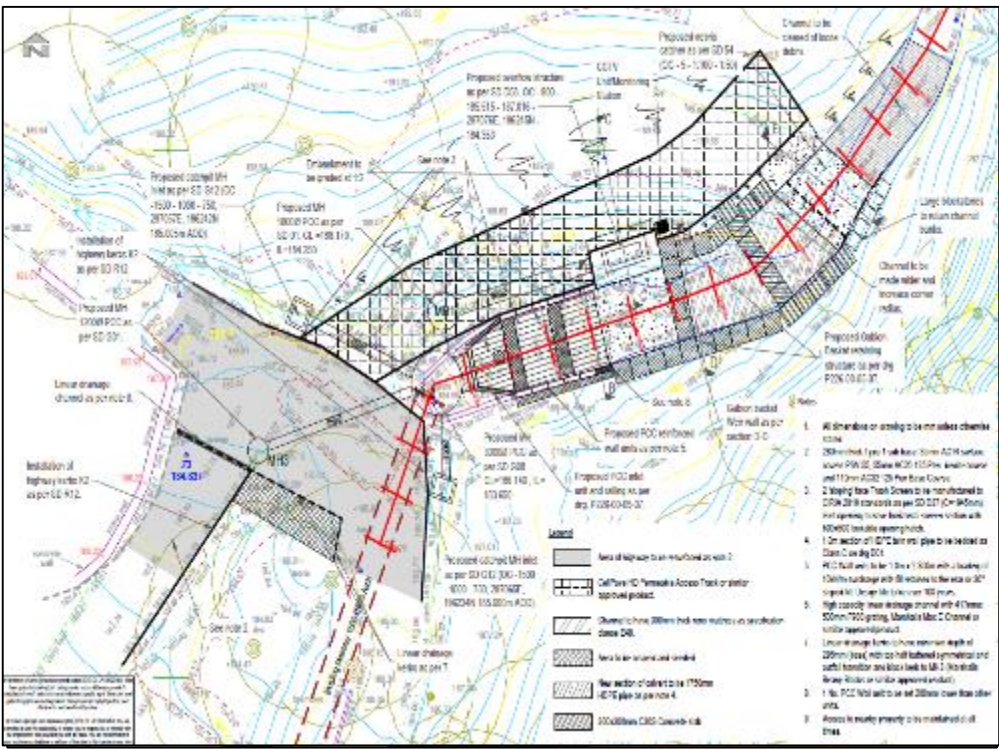
<b>TOTAL</b>	<b>50</b>	<b>£12,730,000</b>		<b>28</b>	<b>11</b>
--------------	-----------	--------------------	--	-----------	-----------

NB: Further projects likely to be added upon completion of Flood Investigation reports





# Pentre Road, Pentre - Inlet Upgrade



**Status:** Construction

**Grant:** Small scale works

**Description:** Upgrades to the existing inlet structure with the placement of an upper debris platform and overflow route

**Cost:** £300,000

Fig 2: Existing drainage network of the upgraded works

Properties Benefitting		
Homes	Businesses	Total
217	10	227



# Structures

**350** individual Structures assets were surveyed following storm Dennis

The number of Structures assets are still being verified and under review on a priority basis however the cost of damages is estimated to be **approximately £50 million**

Priority schemes:

- Berw Road Bridge
- Castle Inn Footbridge
- Ynysangharad Park Footbridge
- Feeder Pipe Footbridge
- Blaen y Cwm Road
- Scour repairs to other bridges completed or commissioned, such as Merlin Bridge
- Campbell Terrace culvert repairs
- Afon Dar and Tramway Culverts, Aberdare – debris removal and scour repairs



Blaen y Cwm Road  
Ynysangharad Park Footbridge









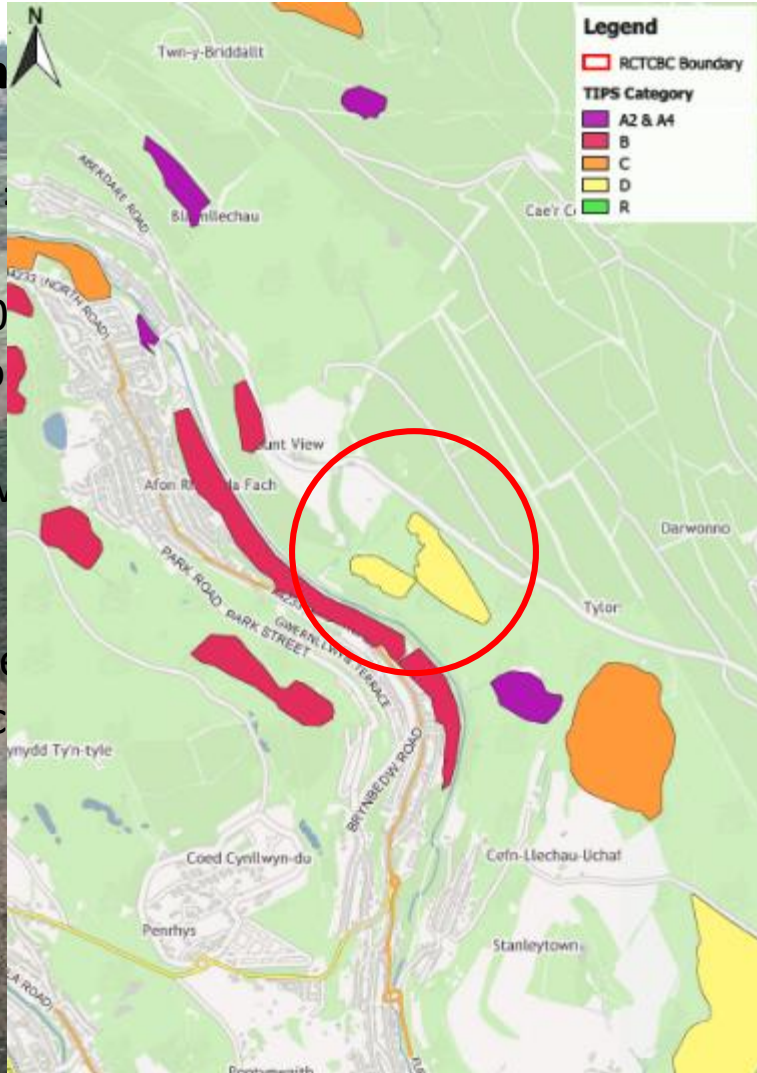
# TIPS – Tylorstown Landslip

16<sup>th</sup> Feb 2020 part of Tylorstown TIP became unstable and slid down the hillside, **over 60,000 tonnes** remain on the valley floor

## Short Term: Emergency

Estimated Costs:

- Remove 60,000 tonnes of debris from the valley floor
- Restore the river channel to its original level
- Reinstatement of the walking and cycle routes to incorporate safety works



## Long Term: Critical Safety Works

Estimated Costs: **£10M +**

- Undertake stabilisation and remediation works to the Upper Tip
- Full reinstatement of walking and cycle routes and links to the community

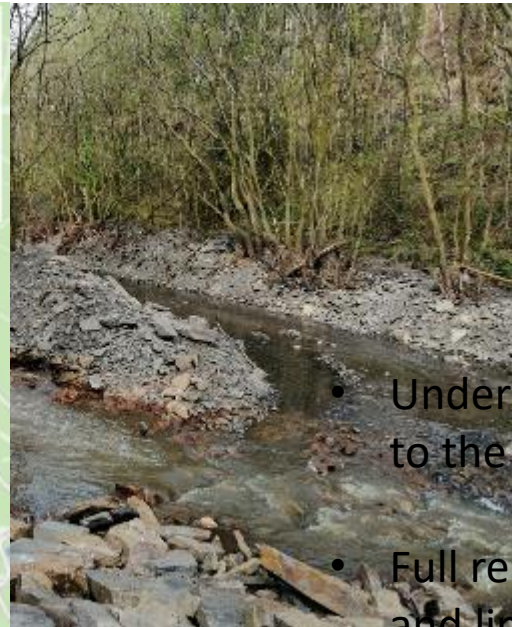


Fig 2: Reinstatement of river channel completed beginning of Oct 2020

Any Questions

