

RHONDDA CYNON TAF COUNTY BOROUGH COUNCIL

CABINET

18TH DECEMBER 2020

REVIEW OF THE COUNCIL'S RESPONSE TO STORM DENNIS

REPORT OF THE CHIEF EXECUTIVE IN DISCUSSION WITH THE LEADER OF THE COUNCIL (COUNCILLOR A MORGAN)

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1. <u>PURPOSE OF THE REPORT</u>

1.1 The purpose of the report is to provide an overview of the Council's response to Storm Dennis and set out a series of recommendations for Cabinet's consideration that enhance the Council's short term and long term response to extreme weather events and which limit the impact of flooding on those communities most at risk.

2 <u>RECOMMENDATIONS</u>

It is recommended that Members:

- 2.1 Note the action taken by the Council in respect of Storm Dennis:
 - 2.1.1 Before the Storm;
 - 2.1.2 During the Storm;
 - 2.1.3 Immediately after the Storm;
 - 2.1.4 In the days and weeks following the Storm;
 - 2.1.5 The longer-term response to repairing and replacing damaged infrastructure and preventing future flooding events.
- 2.2 Consider the feedback from the work to date of the Overview & Scrutiny Committee in respect of its review of the events of Storm Dennis and the multi-agency response as set out in Appendix C.
- 2.3 Consider and approve the recommendations for improvement set out in Section 11 of this report.
- 2.4 Require that progress against the recommendations for improvement are included in the Financial and Performance Management Reports, presented to Cabinet each quarter and to the relevant Scrutiny Committee.



2.5 Request that a further report which sets out the findings of the nineteen Section19 Investigation Reports of the Flood and Water Management Act 2010currently being undertaken are presented to a future Cabinet in the New Year.

3 **REASONS FOR THE RECOMMENDATIONS**

- 3.1 To provide a comprehensive summary for Cabinet of the action taken by the Council in response to the events of Storm Dennis; to consider the lessons to be learnt from the extreme weather event; and to set out a series of recommendations to enhance the Council's short term and long term response to flooding to limit the impact on those communities most at risk
- 3.2 This report does not determine the reasons why specific communities, homes and businesses were flooded. The Council is currently undertaking Section 19 Flood and Water Management Act 2010 Investigation Reports, and these will be available in early 2021.

4. BACKGROUND

- 4.1 During February 2020, Wales was hit by four major storms:
 - Storm Ciara 8 9 February 2020;
 - Storm Dennis 15 17 February 2020;
 - Unnamed Storm 21 24 February 2020;
 - Storm Jorge 28 February 1 March 2020.

Figure 1 - Rainfall Isohyet Map showing rainfall over a 48-hour period during Storm Dennis with the greatest intensity over RCT





- 4.2 These storms badly affected Wales within a period of just four weeks, with record rainfall and river flows causing some of the most significant flooding events seen in Wales since the 1970's. To understand the impact of Storm Dennis on Rhondda Cynon Taf, we need to recognise that this was an extreme weather event that happened after a series of other events:
 - February 2020 was the wettest February on record in Wales and the fifth wettest month ever recorded;
 - Rainfall in the catchment areas of Wales during these events was of such intensity that many rivers reacted extremely quickly, reaching record levels and flows. This was a result of the fact that river catchments were already saturated from the previous months of near continuous rain;
 - Storm Dennis resulted in substantial and intense rainfall with significant impacts on river flows, river levels and flooding in Rhondda Cynon Taf. During Storm Dennis:
 - Nant yr Ysfa gauge, situated between the Cynon and Rhondda Fach river catchments, received 130.4mm of rainfall in 24 hours, the equivalent to 72% of an entire month's rainfall in a single day.



- At the top of the Rhondda Fawr River catchment, Tyn Y Waun gauge received 132.4 mm of rainfall in 24 hours, this equates to 62% of a month's rainfall in a single day;
- In Pontypridd, the River Taff reached its highest level since records began in 1968. Peak flow passing through Pontypridd was estimated at 805 m3/s, enough to fill an Olympic size swimming pool in just over three seconds. This river level is 78cm higher than the previous record-level set during the 1979 floods.
- 4.3 We also need to take into account the impact of the topography of the County Borough. The rivers in Rhondda Cynon Taf, are relatively steep and flow through narrow valleys that are underlain by impermeable geology. As a consequence, runoff from headwaters rapidly reaches main rivers, and river levels respond quickly following intense rainfall. In a matter of hours, they rose from normal river levels to some of the highest on record. Due to this impermeable geology and the limited amount of groundwater, there is little in the way of base flow, which means when the rainfall ceases, river levels recede quickly as illustrated below.





Figure 2 – River level records for River Taff at Pontypridd during Storm Dennis

4.4 The Taff river level was 78cm higher than the previous highest level recorded during the 1979 floods, and went from an estimated flow of 55 tonnes of water per second at 7:00am on 15 February, in relatively normal conditions, increasing in excess of 14 times to a peak flow estimated at 805 tonnes of water per second in just 22 hours during Storm Dennis - an increase of 4.2m in height by 4:45am on 16 February.

Was this level of rainfall predicted and in particular, forecast to fall on Rhondda Cynon Taf?

- 4.5 To plan for extreme weather events, such as those experienced in February, the Council and the emergency services require robust and accurate weather and rainfall forecasts. Over the past few years, we have seen an improvement in the ability of the UK Flood Forecasting Centre to forecast rainfall more accurately and we need to continue to see further improvement into the future. In Wales, Natural Resources Wales (NRW) works with the Flood Forecasting Centre (FFC) (a partnership between the Met Office and Environment Agency) to analyse the latest forecast information. Together, NRW and the FFC assess the weather forecast and flood risk in Wales, summarising the information in the daily Flood Guidance Statement (FGS). The FGS goes to local authorities and emergency responders and is also replicated on the NRW website. It serves as an early warning and allows organisations to prepare for possible impacts.
- 4.6 Figure 3 below is taken from the Flood Guidance Statement issued in the lead up to and during Storm Dennis. The content of the specific FGS highlights the areas forecast to be impacted by the storm and the forecast impact and



likelihood in each case. It shows the build-up to Storm Dennis and that stormy weather was being forecast five days prior (Tuesday 11 February), and that the signals for significant impacts increased on the Thursday (13 February). This did help the Council and other partners prepare. The FGS issued on Saturday 15 February indicated severe impacts but remained at 'Medium' status due to the forecast likelihood. However, the overall flood risk only went to the 'High' risk (indicating a high likelihood of severe impacts) on the Sunday morning, after the Storm had already flooded many communities.

Figure 3 – Five day forecast summary from Flood Guidance Statements leading up to and during Storm Dennis

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

4.7 Figure 4 below shows content from the Flood Guidance Statement from the morning of the 15 February, when Storm Dennis was beginning to impact Wales. The severe impacts forecast for much of South Wales should be noted in 'Risk Area A', although this was also highlighted at a 'Low' likelihood at this stage in the weather event, giving the overall flood risk status as 'Medium'.



Figure 4 - Content from Flood Guidance Statement Issued on Saturday 15 February at 10:30am - *Source: Flood Forecasting Centre*



Figure 5 – The final warning issued on Sunday morning at 6.10am





- 4.8 The information provided by the Flood Forecasting Centre, to support councils and other agencies plan for weather events, are forecasts based on the available information and the knowledge and experience of the professionals undertaking this function. It is very difficult to precisely predict exactly where rain will fall and to what extent. However, it is essential that further investment is made by UK and the devolved governments to enhance the flood forecasting and in particular the identification of intense periods of high volumes of rainfall in areas such as the South Wales valleys, where there are few opportunities to capture and store the water.
- 4.9 An improvement in forecasting of such extreme events is essential to avoid the future loss of life. On reflection of the events of Storm Dennis, we were fortunate that the storm occurred at night when the vast majority of people were inside their homes. As a result, there were no direct deaths arising from the storm. If the storm had occurred during a working day with vehicles and pedestrians moving around, the situation could have been very different.

What has been the impact of the Storm on the communities of Rhondda Cynon Taf?



- 4.10 Flooding has a very significant negative and lasting impact on people's mental and physical wellbeing, their homes and their businesses. It also has other adverse impacts on the wider infrastructure that all communities rely on such as roads, bridges, rail networks, public services and public buildings.
- 4.11 The table below sets out the number of properties (domestic and commercial) impacted by the February storms across Wales and it highlights the overwhelming impact on properties in Rhondda Cynon Taf during Storm Dennis.

Local Authority	Storm Ciara	Storm Dennis	Storm Jorge	February
Area			_	Total
Blaenau Gwent	0	125	0	125
Bridgend	0	16	13	29
Caerphilly	0	203	0	203
Carmarthenshire	2	63	0	65
Cardiff	0	21	5	26
Ceredigion	1	3	0	4
Conwy	172	0	0	172
Denbighshire	23	0	0	23
Flintshire	0	20	0	20
Gwynedd	10	0	0	10
Isle of Anglesey	6	0	0	6
Merthyr Tydfil	0	225	0	225
Monmouthshire	0	215	11	226
Neath Port	0	88	3	91
Talbot				
Newport	0	11	0	11
Pembrokeshire	0	0	0	0
Powys	0	232	0	232
Rhondda	10	1,476	90	1,576
Cynon Taf				
Śwansea	0	45	0	45
Torfaen	0	21	0	21
Vale of	0	1	19	20
Glamorgan				
Wrexham	0	0	0	0
Storm Totals	224	2,765	141	3,130

Number of Properties affected by the three named February 2020 storms

4.12 The 1,476 properties in Rhondda Cynon Taf flooded during Storm Dennis can be analysed as follows:

Residential Commercial

Total



Total		1,070	406	1,476
Flooding	(Pluvial)			
Surface	Water	690	87	777
(Fluvial)				
River	Flooding	380	319	699

- 4.13 Flood water poses a high risk to life and can devastate homes, businesses and communities; and it will take a long time to recover. It also has a very significant negative and lasting impact on people's mental and physical wellbeing which is immeasurable.
- 4.14 The overall economic damage of Storm Dennis is difficult to calculate given the scale of the impact of the flooding on properties and infrastructure. However, the Association of British Insurers estimate that the average household flood claim is £32,000. Therefore, given an estimated 1,070 households were flooded in Rhondda Cynon Taf during Storm Dennis, the flood damage to household property alone is estimated to be in excess of £34 million. This will not include the substantial economic costs suffered by businesses, other non-residential properties and infrastructure across the County Borough estimated at over £100m of damage to public and private infrastructure.
- 4.15 As a Council, the significant prolonged rainfall during the first few months of the 2019/20 winter has created other potential issues that have had to be resolved such as securing the safety of high-risk former colliery tips. The significant landslide at Tylorstown, when over 60,000 tonnes of former colliery spoil fell into the Rhondda Fach River during Storm Dennis, has resulted in the Council undertaking considerable engineering works to ensure a further 100,000 tonnes does not slide into the river. The Council has already committed £2.5m to address the immediate issues and estimates the final costs to be of the order of £12.5m £15m. The UK Government has confirmed financial support for the first phase of this work.
- 4.16 We have estimated that the storm damage caused to highways infrastructure assets, drainage systems, and Council buildings such as the National Lido for Wales, Ynysangharad Park will be in excess of £76m, a small element of which is covered by the Council's insurance. These costs do not include the costs associated with the landslip and coal tips. To replace all of the bridges damaged or destroyed by the river flooding will take up to three to five years to complete, and the Council is working with Welsh Government to agree a financial programme to complete this work.



Who has the responsibility for Flood Management in Wales?

- 4.17 The responsibility for Flood Management in Wales is set out in Welsh Government's *"National Strategy for Flood and Coastal Erosion Risk Management for Wales"*. This document sets out that Flood and Coastal Erosion Risk Management (FCERM) in Wales involves a number of organisations, including 28 Risk Management Authorities (RMAs), who have a duty to work together and co-operate on FCERM activity, including schemes and reporting. In summary the key organisations and their respective duties are set out below:
 - Natural Resources Wales (NRW) are responsible for managing flood risk from main rivers and the sea. NRW can also undertake certain activities on ordinary watercourses to reduce risk, such as altering water levels and existing works. NRW also have a strategic oversight and general supervision role. This is about having a Wales-wide understanding of all sources of flooding, coastal erosion and helping to communicate the risks associated with them. NRW are responsible for providing advice to the Welsh Government as well as helping inform RMAs and the public through their forecasting, warning and mapping activities.
 - The 22 Local Authorities as Lead Local Flood Authorities (LLFA) are responsible for managing flood risk from surface water, groundwater and from smaller streams called ordinary watercourses. They are also responsible for managing the drainage of local highways under the Highways Act. Their duties include preparing Local Flood Strategies, investigating all significant flooding and maintaining asset registers on defences in their area.
 - Water companies operating in Wales have operational responsibility for drainage via public sewers (foul, surface-water and/or combined).
 - The Welsh Government, as highway authority for trunk roads, has a responsibility for trunk road drainage under the Highways Act.
- 4.18 On 22nd October 2020, NRW published a series of reports in respect of the February 2020 floods. A copy of the reports can be read on the following link: <u>https://naturalresourceswales.gov.uk/february2020floods?lang=en</u>
- 4.19 The Council, as the Lead Local Flood Authority, has identified 28 Flood Investigation Areas of which 19 will require the publication of a Section 19



Investigation Report, due to their significance. A Section 19 Flood and Water Management Act 2010 investigation report is a public statement of the circumstances of a flood event that sets out which parties have a role in managing the risks. When investigating a flood, in accordance with Section 19, the Council will publish a report of the findings, where no other risk management authority is exercising or proposing to exercise its risk management functions and where:

- The flooding causes internal flooding to 20 or more properties or critical infrastructure assets in a localised area;
- The flood mechanism is complex, for instance, where there are 2 or more sources of floodwater involved or the source or mechanism of the flooding is unclear and there is a public interest to explain this mechanism;
- The Council determines that a report of the flooding is merited.
- 4.20 The nineteen Section 19 Investigation Reports are being prepared by Council officers and will be published in the New Year. Therefore, this report does not form an opinion on why specific communities were flooded. It is essential that the Section 19 Investigations understand the movement of the rainfall during the Storm and identify the exact causes of the flooding. For example: in respect of the flooding of Pentre, various opinions have been expressed that this was caused by NRW's approach to forestry management, or Dwr Cymru pumps failing, or the Council's culverts or highway drainage being blocked and not maintained. The Section 19 Report will consider all the facts and determine whether it was one or a combination of events that caused the flood. For example, this will also include the flooding event at Trehafod, where Dwr Cymru has made payments to residents on a goodwill basis but has not accepted responsibility in respect of issues at the local pumping station. The reports will also give an overview of how different types of infrastructure performed against current design standards. For example:
 - Highway drainage Q30 (1 in 30 year event);
 - Ordinary watercourses Q100 (1 in 100 year);
 - Sewers Q30 (1 in 30 year);
 - Main rivers Q100 (1 in 100 year).

Is Rhondda Cynon Taf an area that is likely to be prone to flooding in the future?

4.21 Flooding and coastal erosion are two of the biggest natural hazard risks affecting the safety and sustainability of Welsh communities. Across Wales over 245,000 properties are at risk of flooding from rivers, the sea and surface water.



Managing this risk from flooding is a priority for the Welsh Government and although investment for flood and coastal erosion risk management has been boosted over the last decade, difficult decisions will still have to be made as to where investment is made and the benefits of prioritising investment must be realised.

- 4.22 To support the prioritisation of investment, Welsh Government has prepared the Communities at Risk Register (CaRR) that identifies those most at-risk communities by considering and ranking flood risk from all sources, including Fluvial (Main Rivers), Tidal and Pluvial (Surface Water and Ordinary Watercourses) based on danger to life within individual communities. The CaRR has been analysed to assess flood risk within Rhondda Cynon Taf County Borough Council.
- 4.23 The key findings from the review of the Combined flood risk scores and rankings within the CaRR has identified the following key points:
 - Large parts of the Rhondda remain at high risk of both fluvial and pluvial flooding; and
 - 13 communities fall within the top 5% of communities in Wales at high risk of both fluvial and pluvial flooding.
- 4.24 The following graphs set out the challenge we face compared to the rest of Wales, and the potential household properties that could be flooded by a number of possible flood events.







Figure 7: Outlines the Receptors at risk of flooding during a one in ten year (Q10) storm event from all sources and compared against Local Authorities in Wales.





Figure 8: Outlines the Receptors at risk of flooding during a one in a 30 year (Q30) storm event from all sources and compared against Local Authorities in Wales.



- 4.25 The risk analysis highlights that the majority of the Rhondda valley is at significant risk of surface water and ordinary watercourse flooding, along with parts of the Cynon and lower Taf valley. This risk is primarily due to the steep sided valleys which cause rapid runoff of water towards residential development confined to the valley floors. The risk of Fluvial (river) Flooding is primarily owed to the urban extent of the communities within RCT around the flood plain areas.
- 4.26 The data from the CaRR does highlight the need for Welsh Government and NRW to prioritise their investment in flood prevention and alleviation schemes in Rhondda Cynon Taf.

5 HOW DID THE COUNCIL PREPARE FOR STORM DENNIS?

- 5.1 Over the past few years, the Council has implemented its Winter Plan that sets out how the Council prepares for the challenging winter weather, which includes significant rainfall, ice and snow events. Prior to Storm Dennis was no different, other than the preparations were greater than normal due to the forecast levels of rainfall over 100mm.
- 5.2 In the week preceding Storm Dennis additional Highways and Streetcare staff were deployed to inspect and clear all priority culverts within the County Borough. Orders of large quantities of sandbags were placed, purchasing every sandbag locally, these included prefilled sandbags or empty, in



total this amounted to a quantity of 17,381, these were in addition to the 600 plus that were already in stock. All these sandbags were delivered to homes and business throughout the County Borough in the period 15th February to the 29th February.

- 5.3 It is worth noting that before the storm the Council purchased all available sandbags on the market, indeed a neighbouring council contacted this Council to enquire whether they could purchase our sandbags.
- 5.4 We also ensured all available staff were called upon, along with external contractors, to ensure we had adequate resources to cover the upcoming event. These staff were then allocated slots on the rota to supply 48 hours of constant cover for the 15th and 16th February with both Abercynon and Dinas Depots being fully operational in this period. The Highways and Streetcare team working in conjunction with the Flood Risk Management Team in respect of inspection and cleaning of culverts. This additional resource was over and above the normal contract hours work when there would have been 100 plus operational staff dealing with flooding issues within this period. In doing so staff undertook asset inspections on 300 critical infrastructure assets i.e. culvert inlets, manholes and outfalls prior to the storm.
- 5.5 To respond to the risk of flooding, the Council also ordered six **6-inch pumps**, four of which were delivered and in position by Friday the 14th February 2020, with the other two being supplied on the 19th February. Two Drainage Sub Contractors were also employed to create a reactive team to respond to issues with specific heavy-duty equipment to support the Council's response.
- 5.6 The Contact Centre reviewed its Out of Hours Operations prior to Storm Dennis. The rota was reviewed and updated based on the weather forecasts to try and ensure additional cover was available during the peak periods. During the weather event reactive steps were taken to bring additional unplanned resources as weather and calls necessitated. The table below summarises the staffing resources (planned and unplanned i.e. reactionary) utilised and the calls received during the weekend of Storm Dennis:

From	То	Calls	Comments	Resources	Resources
		Received		(staff	(additional staff)
				rota'd)	
				,	



From	То	Calls Received	Comments	Resources (staff rota'd)	Resources (additional staff)
Friday 14 th Feb 5pm	Saturday 15 th Feb 9am	4		2 x resource 2pm – 10pm 1 x resource 10pm – 6am	1 x planned additional resource 5pm – 10pm
Saturday 15 th Feb 9am	Saturday 15 th Feb 9pm	137		2 x resource 6am – 2pm 2 x resource 2pm – 10pm	1 x planned additional resource 2pm – 10pm 1 x unplanned additional resource 6pm – 10pm
Saturday 15 th Feb 9pm	Sunday 16 th Feb 9am	9pm – 12am: 69 12am – 2am: 65 2am – 9am: 429 Total: 563	Met Office: Red warning for rain 6:10AM Sunday – request out to daytime staff to come in	1 x resource 10pm – 6am	1 x planned additional resource 10pm – 6am 3 x unplanned additional resources 2am – 12pm
Sunday 16 th Feb 9am	Sunday 16 th Feb 9pm	754	Additional lines opened in contact centre 9am- 5pm with 9 additional staff responding to management request to come in	2 x resource 6am – 2pm 2 x resource 2pm – 10pm	9 x unplanned additional resources 9am – 5pm



From	То	Calls Received	Comments	Resources (staff rota'd)	Resources (additional staff)
Sunday 16 th Feb 9pm	Monday 17 th Feb 9am	60		1 x resource 10pm – 6am	2 x unplanned additional resource 10pm – 6am
TOTAL	-	1,518			

- 5.7 Over the days running up to the projected storm, the Council issued regular messages and information to residents and businesses in line with the Council's Winter Weather Planning arrangements. In response to the change in the warning categories on Saturday and the early hours of Sunday morning, key information was published to assist the community response.
- 5.8 The communication with Members, residents and staffing teams during the height of the Storm was complicated by the issues experienced with the Council's website and full access to emails. Over the few months prior to Storm Dennis the ICT Service had been steadily transferring ICT functions and equipment from Bronwydd to the Rhondda Fach Data Centre and upgrading the capacity and capability of the ICT infrastructure to enable the Council and schools to become more digitally enabled. These changes had been undertaken in a controlled and measured manner and this approach had been very successful. The ICT team had planned the temporary shutdown of some ICT services over the February half term week, in order that the systems that support schools etc could be transferred. The Plan was for the servers and other infrastructure to be transferred Friday evening, the 14th February and installed and up and running by Saturday lunchtime. Everything went to plan except that there were unforeseen BT fibre issues and BT took time to respond. Once the BT issues had been resolved, Western Power Distribution had a power outage, as a result of the Tylorstown landslide, that compounded the issue and added to the delay in bringing services back on-line.
- 5.9 The plan to move the data servers, also had back up contingencies that could be deployed, so whilst the full functionality of the Council website was not available over the weekend of Storm Dennis , we could post emergency messages on the web page that were visible to all internet users, and we ensured the email systems remained in Bronwydd in order that these could be brought on line first. Based on the Met Office Yellow Warning information we had available on the Thursday 13th February 2020 from the Met Office, and the



fact that the change-over processes were well planned and the previous upgrades had been successful to date, the Chief Executive, in consultation with the Leader, authorised officers to proceed with the changes.

- 5.10 Whilst, the fact that the emails were unavailable until Sunday evening was not ideal, the telephone and text communication between the Council teams responding to the emergency, rehousing people, working with NRW and the emergency services worked effectively.
- 5.11 With hindsight, this was the correct decision, as the changes to the ICT infrastructure have enabled the Council to move all its office-based staff and transactions on-line and facilitate home and agile working, a month later in response to the Covid 19 lockdown. To be clear, the IT system changes made before Storm Dennis had no material impact on the Council's response.

6 WHAT ACTION DID THE COUNCIL UNDERTAKE DURING THE STORM?

- 6.1 During the night of Storm Dennis and through the early hours of Sunday morning, teams from across the Council responded to many requests for help from residents and where road and drainage infrastructure was damaged. The working conditions during the night were appalling, and recognition should be given to the staff who were out in extremely challenging and often dangerous conditions helping and assisting with the public and businesses in dealing immediately with the storm event.
- 6.2 Many roads and bridges to communities were impassable which created inherent difficulties in responding quickly to requests: for example, a 7.5 tonne lorry transporting sandbags was stuck in deep flood water on the A4059 and could not be recovered until almost 24 hours later. The commitment from all the staff that worked and were on-call that weekend was exceptional. The vast majority worked exceptionally long hours through Saturday night and all through Sunday to help all the communities and individuals that required support. It was not just over this weekend, with many key Highways, Streetcare and Drainage staff working exceptionally long hours to respond to the unique events of Storm Dennis. I am sure all Members value the commitment, effort and determination of the staff during this difficult period.
- 6.3 During the early hours of Sunday morning, it quickly became clear that the Council was facing a major incident and in response:



- Set up a command centre in Abercynon Depot to coordinate the Council's response to the Storm, where the majority of SLT officers and the Leader of the Council were based from the early hours. A satellite centre was also established in Dinas to deal with local flooding issues and staff were deployed to Tonypandy Fire & Rescue Station as a direct link with South Wales Fire & Rescue Service;
- Set up four rest centres to support people forced from their homes by the floods;
- The Streetcare staff attended many flooding related issues to respond to requests for help and to assist in dealing with flooding damage to infrastructure, properties, cleaning of drains, repairs, etc but the total number of issues to deal with was exceptional;
- Housing and Environmental Health Officers visited flooded homes and the rest centres to offer temporary accommodation in local hotels or secure temporary accommodation;
- The emergency services, in particular South Wales Fire and Rescue Service responded to many incidents, to support the Council in evacuating homes and properties, such as in Nantgarw, where coaches were provided to take residents to the rest centre established at Llantrisant Leisure Centre;
- Corporate Estates staff also responded to requests for help, with their main focus on securing sites in the interest of public safety, such as retaining walls, damaged buildings etc;
- Engineers and Corporate Estates worked on Sunday 16th February assessing risks that had arisen from Storm Dennis, particularly in relation to Tylorstown Landslip, which was **monitored 24/7 in the aftermath of the landslip**. The mountain road above the slip was closed as it was impossible to assess whether this had been affected by the slip until a more detailed inspection could be undertaken. Specialist geotechnical engineers were consulted and began an inspection on Monday 17th February.
- 6.4 In the past flooding has usually been limited to a relatively small area, and never to the extent that was experienced during Storm Dennis. Therefore, it took a while after the Storm has passed and even into Monday morning to fully understand the extent of the impact on homes and businesses and the Council's property and wider infrastructure and assets including the network infrastructure. Over the next few days, more families and businesses came forward requesting support and only then did the true extent of the suffering caused by the Storm become apparent.



7 <u>WHAT ACTION DID THE COUNCIL TAKE IMMEDIATELY AFTER THE</u> <u>STORM?</u>

- 7.1 On Monday 17th February 2020, the Council's Senior Officers met with the Leader to assess the situation and put in place a robust Flood Response to support homeowners and businesses to immediately begin the clean-up of their properties, to safely secure any infrastructure assets damaged by the flood, respond to the increasing concerns over Tylorstown Tip landslip, and supporting householders to secure alternative accommodation if required.
- 7.2 On Monday, the following actions were put in place:
 - All the Highways, Streetcare, Parks and Drainage staff were immediately utilised on a major clean-up operation, this included revisiting all priority culverts to clear blockages, deploying gangs with 20 tonne lorries and JCB's to remove large amounts of flood debris from various locations across the County Borough. This included providing skips and collection services for damaged household items and for town centre businesses;
 - Over and above the Council's dozen road sweepers and gully emptiers, an additional eight gully and street cleaning manned vehicles were provided by Cardiff, the Vale of Glamorgan and Flintshire Councils, for the first week which was a valuable resource in the clean-up. The Vale of Glamorgan also provided two drainage engineers to support the FRM Team;
 - Five Streetcare crews were allocated to drainage repairs on 17th February and are still completing the high number of repairs across the County Borough. A list of all the work undertaken to date is set out in Appendix A;
 - A further 1,400 filled sandbags were made available in the period immediately afterwards to replenish stock levels;
 - We purchased **1,500 flood sacks** which inflate when in contact with water and are much quicker to deliver than traditional sandbags due to them being able to be carried in the Inspectors vans. These were offered as an immediate assistance to property owners when required;
 - Additional pumping capacity was procured and leased, both to help the clean up but also for future significant flood events;
 - The Council's engineers worked with the utility companies, and in particular Western Power Distribution, in disconnecting street lighting damaged by the floods;
 - Inspections were immediately carried out on the highway network with bridges and roads being closed, with particular issues in rural lanes that have few or limited drainage systems;



- During the immediate week after Storm Dennis, Redstart geotechnical engineers were called upon to carry out inspections of other significant former colliery tips, where there appeared to have been some movement. Mott MacDonald Engineers were also utilised in particular in relation to a land slip above Clydach offices;
- Inspections of all Category C and D Risk tips were undertaken by geotechnical engineers and this has continued throughout the period especially on D tips after a period of heavy rainfall;
- There were several slips along the Maerdy Mountain Road. A contractor was immediately appointed and undertook extra drainage works on the Mountain;
- A review of all the structure inspections was undertaken whilst maintaining the existing programme of work. Repairs continued to be prioritised and procured both directly and through Redstart engineers. One hundred and forty structures required repair or further review with investigations still ongoing. It is anticipated that the programme of repairs to structures damaged during Storm Dennis will take until 2022/23 to be completed;
- The Council's Corporate Estate's maintenance team had contractors assisting business to safely reinstate power and gas supplies, and providing dehumidifiers;
- Highway and surface water culverts across the County Borough were being surveyed for damage and those that were blocked by debris were being immediately cleared;
- Council buildings that were damaged by the flood such as Ty Glantaf Depot, Ynysangharad Park including the Lido and other buildings, Pentre Home for the Elderly, Riverside Day Centre, and Treforest Learning Curve Day Centre were inspected and action taken to make the locations safe;
- Monitored river walls at risk of collapse, and watched 24/7 Tylorstown Tip, and other key sites in the interests of public safety;
- 7.3 All the available Environmental Health and Housing Officers visited flooded communities and individual homes each day during the first week, with many residents receiving repeat visits. The officers provided advice and offers to households to be rehoused if they wished, health advice on safely cleaning the home, and the officers recorded all the respective resident's details which were essential for the Flood Hardship Grant payments.
- 7.4 During the first week, we provided temporary accommodation to 37 households (90 people, including children), the majority of which quickly left the temporary accommodation having been supported to move on to 6-month tenancies in alternative homes. The majority of the households were funded by their



insurance companies and the Council supported the remainder through Housing Benefits or other financial support.

- 7.5 It also become apparent that for some residents, which were flooded, their mental health needs were significant and contact was made on their behalf with the Community Psychiatric Nurses and or family and friends to offer additional support. As new intelligence was received throughout the day, during Monday and Tuesday, on properties affected by the floods, officers were directed to these areas to offer advice and assistance. This included meeting with the local Member in Trehafod to visit residents of Fountain Terrace who had advised of water penetration to their homes and to explore the need for possible temporary accommodation.
- 7.6 In respect of the response to Pontypridd Town Centre and Treforest Industrial Estate businesses, on the Monday morning, approximately forty staff from the Prosperity and Development Service were redirected from normal duties to visit either the Town Centre or Industrial Estate with a focus on business support. Staff were deployed with the objective of engaging with as many affected businesses as possible and having a visible presence within the town and estate. Officers engaged with businesses owners, sometimes in distressing circumstances, listened to their concerns and were then able to coordinate the required support. In Pontypridd 12 skips were placed around the town for businesses to remove damaged goods and furniture, abandoned cars were removed, electrical contractors made safe and reconnected electric supplies, staff coordinated the safe access of contractors into the town and street cleaners started to remove the flood debris.
- 7.7 This was followed up with visits to businesses in Pentre, Cwmbach and Mountain Ash on Tuesday, providing similar levels of support. Immediate feedback from the retail/town centre community towards the Council was positive, with a number of comments on social media that evening including, *"The Council have been fantastic and so supportive"*. A later survey of businesses by 'The Means' consultants found that 'the council's reputation has largely been enhanced as a result of the actions it has taken ...in response to Storm Denis ... Comments included *"exceptional work"* and *"the council had a strong vision of what needed to be done and delivered on their promises"*.
- 7.8 On Tuesday afternoon, 18th February 2020, the first Flood Recovery Board met, chaired by the Leader of the Council, which included the Deputy Leader, Cllr Crimmings and Cllr Norris, which was to become the Major Incident Recovery Board, meeting twice weekly. The Recovery Board included representation



from NRW, the Police, representatives of Pontypridd BID, Pontypridd Town Council, business representatives from Treforest Industrial Estate, Citizen's Advice and a range of Council officers.

- 7.9 Immediately, the Board considered and agreed to proposals to provide a Financial Support package for Residents and Businesses. At the time it was estimated that over 530 homes and at least 300 businesses had been affected by the flood waters and in response the Council Leader established a Community Flood Recovery Grant Hardship Payment, which made £500 available to each home and £1,000 to small and medium sized enterprises affected to help deal with the initial impact of internal flooding.
- 7.10 An online form to apply for the Hardship Payment was developed and made available to the public on the 19th February 2020 and face to face drop-in sessions were organised in the respective communities to provide the financial grant. Environmental Health officers attended the drop-in sessions as well and provided public health information to assist householders cleaning and decontaminating their homes and belongings. To access the grant, all the homes were also visited during the short space of time by the Housing Team from the Council's Public Health and Protection Service. Senior officers, Transactional Services Teams along with the Communities for Work Team attended the following community centres with cheques already available to residents who had been impacted (which could be alternatively replaced with a BACS transfer, which most residents opted for).

Monday	Tuesday	Thursday	Friday
24 th Feb	25 th Feb	27 th Feb	28 th Feb
Canolfan	Trallwng	Canolfan	Coleg y
Pentre	Community	Pennar	Cymoedd
Pentre	Centre 9.30am – 5pm	Mountain Ash 9 30am – 5pm	Nantgarw
9.30am – 5pm			9.30am – 4pm
Trehafod	Trehafod	Taffs Well Hub	
Village Hall	Village Hall		
1911 – 9911 1	9.30am – 5pm	9.30am – 5pm	



- 7.11 The face to face sessions with residents were much appreciated, with many wanting to share their experiences and staff provided practical support such as obtaining bank details to provide a faster and more secure payment process than postal cheques, especially as many residents had temporarily moved out of their homes. The first Residential Flood Hardship Grants were paid directly into residents' bank accounts on 25th February 2020. We also provided Uniform Grant support for those school age children who were flooded and who required support.
- 7.12 Over the course of the initial recovery period, **803 residential households** received the £500 Council flood support, amounting to **£401,500**. A further **326 uniform grants**, amounting to **£32,600** were paid. In addition, the Council also administered and paid Flood Hardship Grants to residents on behalf of Welsh Government amounting to £565,000. Accountancy Teams contacted residents to establish whether they had household insurance, as the basis of WG support was £1,000 for uninsured homes and £500 for insured homes. Further payments were also made by the Council's Transactional Services Team to residents, on behalf of MPs/AMs/CIIrs from local flood relief donations. This was a considerable logistical challenge which the teams across the Council worked well together to deliver.
- 7.13 A similar approach was adopted for small and medium sized businesses that were also flooded. An online claim form was made available and the Prosperity & Development Team visited local businesses to obtain necessary bank details and validate potential claims, also providing advice and guidance. Meetings were held with businesses to discuss queries around criteria, particularly those businesses that work from home. A total of **226 businesses** received the £1,000 business flood relief support payments, amounting to £226,000.
- 7.14 The Council's website and Contact Centre was also providing support during the period. The table below sets out the types and numbers of requests for help and support.

Support Requested	Number of requests
Hardship Support Grant	1,402
Special Collection	700
Replacement wheelie/food bin	415
Housing Assistance	283



Support Requested	Number of requests
Assistance with Repairs	119
Assistance with Insurance Claims	72
TOTAL	2,991

- 7.15 During the first week following the Storm, the Council's focus was on the practical issues that the Council does best that were driven by services. For example, homeless households were rehoused, support was provided to clear up homes and businesses, the flood debris was removed, culverts and other water courses were cleared, etc <u>but we were less focused on the other issues that arise from having your home flooded, such as access to food, cleaning materials, infection control and hygiene, and other practical issues.</u>
- 7.16 As a Council, we were therefore very grateful for the speed in which local communities responded, often led by the local elected Member, usually via the local community centre or other community venue. We would like to pay a particular thank you to the following community centres and the volunteers that provided invaluable support to many individuals and families:
 - Canolfan Pentre;
 - Taff's Well Rugby Club;
 - Taff's Well Village Hall;
 - Trallwn Community Centre;
 - Treforest Community Centre;
 - Trehafod Hall;
 - Salvation Army, Pentre;
 - St. Catherine's Church, Pontypridd.
- 7.17 We recognise that we need to revise and strengthen arrangements for community support in our emergency planning procedures. However, the following section of the report sets out how we recognised this weakness and how we have addressed it. This is reflected in the way in which we supported hundreds of people that were shielding or vulnerable during the first Covid19 lockdown over Easter and early summer.
- 7.18 The focus of services through the Storm, and Sunday and Monday was to respond to the emergency. During this period, we were still uncertain as to the extent of the damage caused and we had a very mixed picture in respect of the



size of the issues and the problems faced. Therefore, it was very difficult to provide an accurate picture of the position and report this via media and social media channels to the public and to elected members. Understandably, some members felt that they did not have sufficient information to understand the impact on their ward and were uncertain of the range of action being undertaken by the Council.

- 7.19 We recognise and appreciate that elected members wanted a better grasp of the situation, but senior officers were for the first two days also struggling to get a clear position of all the issues due to the sheer scale of the event and the number of individual areas flooded. They also had to focus on further challenges such as the landslip at Tylorstown.
- 7.20 One of the biggest lessons for the Council's officers in responding to the major emergency is the need for a suitably staffed and resourced Control Room with accurate, and up to date information being available as telephone calls are logged, ansd as other various information sources provide details on homes and businesses. This will require the provision of better digital equipment to allow staff on the ground to input information there and then to inform management data dashboards.
- 7.21 Having access to this comprehensive information, enables faster decision making but also the opportunity to provide more timely information and updates to elected Members, specific communities affected and the wider public. We are also developing a system to provide instant messaging to elected Members such as Text Messages or put in place an elected Members Emergency/Essential Information WhatsApp, that quickly updates Members and directs them to further data sources for their information and use. We would also seek to bring together, physically or virtually the Council's Communications Team into the Control Room, so that necessary information can be quickly communicated to elected Members and the general public as appropriate.
- 7.22 Progress has already been made in establishing the Control Centre, based in Ty Elai, which has its own power backup generator, a backup network provision (including WiFi), and access to CCTV pictures from across the County Borough. The drainage, river and key highway network will also become connected to this Control Centre over the coming months, to monitor potential emergency events, to have better access to data and other information to help inform decision making and to also better inform others, including elected Members.



8 WHAT ACTION DID THE COUNCIL TAKE IN THE DAYS AND WEEKS FOLLOWING THE STORM?

- 8.1 The public response to the flooding across the County Borough, was overwhelming with offers of help and support from businesses, supplies of food and other goods from UK supermarket chains, and the many individual volunteers and community groups that offered their time to the Council to help in the clear up and to support those families affected by the floods.
- 8.2 Coordinating and managing all these offers of help and support and identifying the best way to use the volunteers in a safe manner was a very new experience to the Council and our staff. The Council's Public Health, Protection & Community Services teams took on this responsibility and quickly established:
 - A food and goods collection and distribution network;
 - Food parcels and non-food donations;
 - The coordination of volunteers.
- 8.3 Collection and Distribution network A plan was implemented to coordinate the collection of food donations, and to ensure the preparation and redistribution of food parcels for individuals and families affected by Storm Dennis. The following buildings were identified as collection points for donations by the public:
 - Council offices at Ty Elai and Ty Trevithick;
 - Canolfan Pennar;
 - Libraries;
 - Leisure Centres.
- 8.4 Local and national businesses, including supermarkets, made large scale donations of food and other items. Non-perishable/long-life food items were delivered to the Food Distribution Unit at Tonypandy, perishable food items offered by Council suppliers being diverted to local community centres that were supporting residents, and non-food items were stored at a unit in Clydach Vale and re-distributed from there to the following community centres that played an invaluable role in supporting the delivery of food and supplies;
 - Canolfan Pentre;
 - Taff's Well Rugby Club;
 - Taff's Well Village Hall;
 - Trallwn Community Centre;
 - Treforest Community Centre;



- Trehafod Hall;
- Salvation Army, Pentre;
- St. Catherine's Church, Pontypridd.
- 8.5 We also sought to support these community centres in a variety of ways for example, food and other personal and household items were provided to meet any needs identified, PPE was purchased for volunteers involved in the clearing-up, and community development officers were allocated to support centres on-site in response to requests by some centres.
- 8.6 It was recognised that allocating a named contact to each Community Centre at the outset of the major incident would have been beneficial. Community development officers were allocated to Canolfan Pentre, Trehafod Hall, Trallwn Community Centre and Taff's Well Village Hall. This will be taken into account in the planning for future emergencies.
- 8.7 **Food Parcels and Non-Food Donations** Food parcels were tailored to meet the needs of families both in respect of the number of people to be provided for and also to reflect the needs of families who were in temporary accommodation with limited access to cooking facilities. Where required kettles, toasters and microwaves donated by supermarkets and the public were provided to those who needed them. Six vans and twelve staff from the Highways Enforcement teams, plus resource from Libraries and Leisure Services were made available to ensure that families in need received their food parcels. In total 910 families received a food parcel. (52 affected households indicated they did not require one). The deliveries took place over a fortnight concluding on 20th March 2020.
- 8.8 The collection and distribution of food parcels during Storm Dennis was achieved due to the collaboration between a range of Council services and staff, in partnership with community organisations, volunteers and businesses. This partnership approach has been harnessed more recently in the County's response to Covid 19.
- 8.9 Significant donations of non-food items including clothes, cleaning items and small electrical appliances were received. For example, one supermarket donated over 75 new microwaves, 200 kettles and toasters. These were stored at Clydach and delivered to those identified by Council services as being in need. Cleaning items and personal hygiene items were placed in libraries for use by affected residents and/or provided to community centres that identified they were running short of supplies to support residents.



- 8.10 The Council worked with Too Good To Waste to facilitate the processing of large items of furniture and white goods (and ensuring these met required Health and Safety standards) for those who had lost possessions during the floods. It should be noted that any non-food items remaining after the flood were given to local RCT charities or used to provide home starter packs for people moving into new accommodation and any residual food items were used to support shielding and vulnerable people during the Covid19 pandemic.
- 8.11 **The Coordination of Volunteers** The Community Development Team coordinated the effort to deploy individual volunteers to where they were of most value. Eighty-seven calls came via the RCTCBC helpline immediately from individual community members. However, the safeguarding issues were too high to utilise these volunteers to assist households. Each of the individuals were contacted later and thirty-five were used to support activities at Trallwn Community Centre, Tonypandy Food Distribution Unit, Clydach Donation Centre and Tesco, Aberdare. Coordination of volunteers was a new development for the Council and lessons were learned from this experience that has served the Council well during Covid 19 lockdown. During this period we coordinated a range of volunteering support to individuals, ensured DBS checks were in place and made use of a specifically designed App to communicate, engage and coordinate the volunteers.
- 8.12 Other key organisations worked with the Council to provide specific support, and we are very grateful for their invaluable help and assistance, in particular:
 - Citizen's Advice and a range of Council services visited affected communities using our Mobile libraries so that any residents could receive support locally, for example Citizens Advice provided advice on insurance claims, uninsured losses and access to financial support;
 - A number of private businesses donated staff time, vehicles and equipment to help with the clean-up. Large teams were deployed from Persimmon Homes, Llanmoor Homes, CMB Pipe Fitters, GEs and Transport for Wales. These worked alongside the Waste and Streetcare teams for days, in many communities, supporting the clean-up operations. Their deployment was coordinated by Public Health and Protection staff;
 - Job Centre Plus delivered benefit advice to people in communities confirming that any Hardship Payments would not affect benefits. Information was disseminated to Neighbourhood networks;
 - Interlink released a small fund for Community Groups who wished to support the flood response to apply (up to £250.00 for extra costs per group). This



information was widely distributed by the Community Development team to Neighbourhood Networks.

- 8.13 In the immediate aftermath of the flooding, the Housing Grants and Strategy team working with Housing Advice colleagues reviewed and re-organised budgets to allow for financial support to ensure they could return quickly to their homes be offered to vulnerable residents that had been affected by the floods. An opportunity to merge underspend in other grants was identified to create a new **Emergency Flood Recovery Grant (EFR)** targeted at our most vulnerable residents.
- 8.14 In terms of process, the Grant was accessed the same way in which a Disabled Facility Grant (DFG) is accessed, through a very simple referral process. Referrals were completed by the Housing Advice team, who were delivering face to face support to those vulnerable residents whose homes had been affected by the floods and who had already received the hardship grant of £500. As these grant recipients were some our most vulnerable residents, we worked in partnership with Care and Repair, who agreed that they would offer a handholding service where possible. Twenty-four referrals were received, twenty one were approved and the work completed at a cost of £47,201.The Housing Strategy team also signposted residents (regardless of grant eligibility) to the Council's Community Support team to access donated items which were available to anybody affected by the floods, such as microwaves, kettles and toasters.
- 8.15 The process has worked very well due to the robust processes that already exist within the Housing Grants team as well as the collaborative working between the Housing Grants, Housing Strategy and Housing Advice teams. Residents who have accessed the grant have been able to get back into their homes and out of temporary accommodation, which has been essential especially with the Covid-19 outbreak and the need for people to self-isolate.
- 8.16 After the Council's initial clean up response to the storm, significant work continued in order to inspect and assess the damage caused to the County Borough's infrastructure. In the aftermath of Storm Dennis and Storm Jorge that followed it, the Highways Inspection Policy was suspended for the resources to be utilised assisting reactive works and drainage inspections. A comprehensive review of the network was subsequently undertaken and significant works delivered to repair storm damaged areas in mainly rural locations.



- 8.17 Full inspections of bridges, major culverts and major river retaining walls were undertaken in the two to three weeks after Storm Dennis, staffed by two teams of Council Engineers and two teams of Redstart engineers. Over 350 bridges, walls and culverts were inspected. Several bridges were closed including Berw Road Bridge (White Bridge) in Pontypridd, Castle Inn Footbridge, Treforest and Ynysangharad Park Footbridge, Pontypridd. Several walls had collapsed requiring traffic signal control including Hopkinstown Wall, Berw Road, Sion Street, Cardiff Road (adjacent to Castle Inn), Blaen y Cwm Road, Blaencwm, Brook Street, Pontypridd and a number of others. Significant work has also been completed to clear culverts blocked with debris including Nant Gelliwion Bridge and Campbell Terrace, Mountain Ash.
- 8.18 Within a month of Storm Dennis, the UK was locked down as part of the UK Government's response to the Coronavirus Pandemic. This significantly hampered the opportunity to undertake significant repair work to the highways infrastructure in residential areas, due to the exceptionally high number of parked cars and other vehicles on the highway. Whilst the drainage gangs in the depots, and their contractors, undertook significant cleansing and repair of road gullies and gulley connections where access was available, a comprehensive street by street exercise involving letter drops, door knocking, removal of parked vehicles, etc was not undertaken until after the first UK wide Coronavirus lockdown was relaxed in June 2020.
- 8.19 This had a similar impact on our highways; carriageways and footways, recovery programme was targeted at more rural areas through the first lockdown. The value of such works to the Council's rural highway network, undertaken to date, is in excess of £550k with over 5 miles of highway repaired, these repairs have mainly consisted of traditional carriageway replacement due to significant surface water erosion, with localised ditching and drainage works incorporated.
- 8.20 There are further areas of the Council's rural network compromised by storm damage and it is the intention to target these in the coming months. The programmed works for the next four months, to Spring 2021, are estimated to be £350k, with a further £300k of work to be completed in the summer. These works will improve the condition and safeguard the future of a further 4.5 miles of the highway network.
- 8.21 One of the areas that has been strengthened is the degree of coordination and mutual support between the flood risk management authorities. In response to flood warnings during and after Storm Dennis, the Council, NRW and DCWW



have worked together, shared knowledge and resources and agreed lead roles and responsibilities. For example;

- The Council, NRW and DCWW have coordinated deployment of pumps to meet specific needs, particularly around Pentre, during Storm Dennis and also in preparation for other storm warnings;
- The Council has led on delivery of the new headwall and inlet arrangements for the NRW owned culvert inlet at Pentre which failed, funded by WG secured by the Council and part funded by NRW;
- The Council has quickly rebuilt numerous flood assets along rivers;
- DCWW has facilitated an overflow arrangement from the highway drainage system in Lewis Street, Pentre to the DCWW sewers to improve the resilience of the highway system in Lewis Street, funded by WG grants secured by the Council;
- DCWW has reconfigured manholes at Treorchy to enable highway flows to be dealt with more efficiently. This will make the highway system more resilient and will alleviate the build-up of silt and reduce a maintenance liability;
- NRW, DCWW and the Council have established a project board to oversee strategic flood prevention measures in some of our highest risk communities;
- The Council and DCWW are working together to map integrated infrastructure to identify where systems can be modified to reduce flood risk, particularly with respect to highway drainage, combined systems and pump stations.
- 8.22 There is more that can be done at a strategic level with our partners and every avenue of improvement will need to be explored to ensure the best outcomes for our communities and businesses in future storm events.
- 8.23 The range and extent of the remedial works being undertaken by the Council's engineers over the period since the Storm is significant, which has been in addition to the planned maintenance and capital programme:
 - Approximately 47km of ordinary watercourses (culverted and open) and surface water drainage infrastructure has been surveyed to date;
 - Approximately 1,300 tonnes of debris has been removed from within culverted and open channel ordinary watercourses;
 - Emergency repairs have been identified at 26 locations with 19 locations completed to date which range from culvert repairs (replacing collapses),



repairing scoured channels, rebuilding manholes and removing accumulated debris;

- The Flood Risk Management team is currently coordinating the delivery of 28 investigation reports into the mechanism of flooding within key areas affected by Storm Dennis, Jorge and the extreme thunderstorms in June. They will also be developing a further 19 Section 19 flood investigation reports which require publication under Section 19 of the FWMA 2010;
- Up to the end of September over 6,000 hours of officer time has been spent on Storm Dennis recovery; that is the equivalent of 6 engineers working full time. The planned programme of works has also been ongoing with major schemes also taking place. Some footbridge schemes have been delayed as resources were allocated to Storm Dennis;
- Highway Term Maintenance Contract Hammonds Civil Engineering Contractors have been used for many of the wall repairs. This has proved an effective and efficient means of procurement;
- Specialist Contractors coordinated and appointed the nature of the Storm Dennis defects has required contractors that specialise in underwater/confined space repairs;
- Tips (A-D risk classification) Four contractors have been appointed to improve the stability of the high-risk tips. A number of the tips have had their remedial works completed;
- Specialist Demolition Feeder Pipe Bridge required removing prior to the winter season due to risk to the bridge been further destabilised. A demolition company experienced in difficult demolitions were employed and safely removed the bridge;
- Ynysangharad Park Footbridge repair has been designed and is currently being repaired and due to be open in Feb 2021;
- Maerdy Mountain Landslip external consultants procured to identify additional remedial works.
- 8.24 A major issue the Council has had to address was the significant landslide in Tylorstown where 60,000 tonnes of former colliery spoil slide into the Rhondda Fach River. The overwhelming concern was that the rest of the remaining spoil was unstable and could potentially result in a major incident resulting in flooding and a potential loss of life. In response, a team of Council engineers maintained a 24/7 presence on site for a number of weeks. Subsequently, the procured contractor to stabilise the site was appointed and they were able to drain the high-water levels on the site that reduced the risk of further spoil movement. An Emergency Plan was developed with all the emergency services and other agencies to ensure a comprehensive and coordinated response in the event that a further landslide occurred.



- 8.25 Further work has progressed on remediating the landslide, all being carried out during the Covid lockdown period. The Phase 1 that installed emergency surface water drainage on the hillside in Tylorstown commenced within days of the Storm and was completed within weeks (April 2020). Over the following weeks, the Council's engineers working with consultants and contractors experienced in the field of tip reclamation, developed a remediation strategy and safe methods of working that would enable works to commence to safely remove the 60,000 tonnes of slip material from the valley floor and reduce the significant risk of blockage of the river. The agreed engineering solution has 3 phases, Phase 1 having already been completed. Phases 2 and 3 are on-going and remove the spoil from the river and continue as emergency work.
- 8.26 A further phase; Phase 4, involves removing the residual tip material which still sits on the hillside above the river. This work is progressing through the rigorous statutory approvals process and, subject to such approvals, will commence late summer 2021. There is an ongoing risk that this material will slip and potentially block the watercourse but the Phase 1 drainage scheme, the Phase 2 & 3 removal of the existing slip material from the valley floor and ongoing monitoring will significantly reduce and mitigate this risk. An emergency plan is in place to respond to and manage a potential incident.
- 8.27 In terms of the support provided to local businesses, in the first few weeks, the Council provided:
 - Thirty-five skips throughout Pontypridd Town Centre;
 - Six domestic style heaters and two dehumidifiers to be loaned to businesses in order to assist with the drying out of properties affected by the flooding;
 - Provided advice and support in respect of available office space to flooded businesses and the team directed affected businesses to the owners of temporary accommodation where required/appropriate;
 - More than 80 retail businesses were visited and 38 local independent businesses received emergency flood assistance grants.
- 8.28 In respect of Treforest Industrial Estate and Nantgarw, 110 businesses had contacted the Council seeking advice and support. In response we set up a multi-agency drop-in session for local businesses with Business Wales, Development Bank of Wales and Welsh Government's Regional Economic Team all available to provide advice and support. The first session was held in Coleg-Y-Cymoedd on Monday 24 February where support was available for businesses to complete the emergency funding application, advice on insurance and opportunities to access loan funding through the Development Bank of Wales. Over 40 businesses attended. Council officers were also



deployed out on site to meet with businesses directly to ensure that all affected were made aware of the support available. A further drop-in session for businesses was held at Coleg-Y-Cymoedd, the following day. As a result 85 businesses in the area have received grant support. The team also coordinated the delivery of a further 14 skips to some smaller businesses affected in the Treforest / Nantgarw area.

- 8.29 In September, Cabinet approved a report from the Director of Prosperity & Development which recommended a restructure of the current Regeneration Grants Programme and allowed for the creation of a Flood Resilience Grant to provide targeted support for businesses in Town Centres who were severely impacted by the significant flooding caused as a result of Storm Dennis. The grant will support the implementation of anti-flood measures which will improve business resilience to deal with any such potential weather events in the future. The grant has recently opened for applicants and businesses have already started to apply.
- 8.30 In recent weeks, the Prosperity & Development Service has been exploring the impact the flooding on Treforest Industrial Estate has had on businesses' insurance premiums. To understand the extent of the issue, we undertook a survey of all affected businesses on the estate and received 35 questionnaire responses and the results are summarised below. The main purpose of the questionnaire was to find out about any difficulties business were now experiencing obtaining insurance, particularly for flood insurance provision. The results of the main question asked:

How has your business insurance been affected by the flooding? is summarised below:

	No of
Response	businesses
No Change	5
Some increase	5
Major Increase	13
Unsustainable Increase	6
Not able to get insurance	
at all	6

8.31 As a result, meetings are taking place between senior managers in the Council, key business owners on the estate and world leading insurance experts to explore solutions to obtaining suitable and affordable insurance cover going forward. Officers from the Service are also assisting some businesses with


finding space to relocate key stock if a major flood warning was issued in the future.

9 WHAT IS THE COUNCIL'S LONGER-TERM RESPONSE TO REPAIRING, REPLACING DAMAGED INFRASTRUCTURE AND PREVENTING FUTURE FLOODING EVENTS?

- 9.1 The total cost of repairing or replacing all the damaged infrastructure, caused by Storm Dennis is estimated to cost in excess of £91m including the cost to make safe the former tip in Tylorstown. The Council is currently using its capital programme funding to undertake the necessary repairs of highways and drainage infrastructure, supported by Welsh Government grants and other funding applications.
- 9.2 This section of the report evidences that:
 - A number of the bridge and retaining walls repairs have already been actioned;
 - Consultants have been procured and are progressing with a number of designs for repairs to bridges, retaining walls, landslips and other infrastructure assets;
 - The full costs on repairs to structures have not been finalised as the results of the inspections are still being evaluated and it is expected that the costs will dramatically increase;
 - Our total estimate for repairing flood damage to our civils infrastructure remains at £70m (excluding tips). The Council has made a commitment to date to fund Highway Structures and landslips of circa £2.4million, and it is estimated that the overall spend on the Highway Structures and landslips will be in excess of £91 million
- 9.3 In respect of the tips, the scenes at Tylorstown that were so vividly captured on social media have reverberated across the communities of South Wales. The Council is heavily involved in work that is being undertaken by Welsh Government in conjunction with the UK Government and the Coal Authority. This work is moving at pace to: understand the scale of the problem; develop a definitive data base of all tips and their ownership; understand the level of risk and to establish a common assessment framework; review whether legislation is fit for purpose; and ultimately to establish a strategy for the future that provides the public and the various tiers of government that ongoing risks are acceptable and restoring public confidence. The legal framework is being reviewed by the Law Commission and this is important as many of our tips are in private ownership.



- 9.4 In the interim, the Council continues to monitor all our tips and our inspection regime has been enhanced by further support from the Coal Authority. Our risk framework is being adopted as the common framework across all coal tips and we are delivering of the order of £600k of works to Council owned tips to ensure ditches, headwalls, culverts, etc operate as designed.
- 9.5 In terms of the Council's own buildings that were damaged by the flood, the Council has already made good progress in repairing these facilities, including key sites such as Pontypridd Lido and other sporting facilities in Ynysangharad Park. The plan is to open these facilities in 2021, subject to any Coronavirus restrictions
- 9.6 Following Storm Dennis, the Flood Risk Management (FRM) team have reviewed the County Borough, identified those areas most liable to flooding and have considered how we can manage the risk of surface water, ordinary watercourses and groundwater flooding going forward through the identification of 'Strategic Flood Risk Areas' (SFRA) of which there are 12 within RCT. These boundaries are intended to sub divide the County Borough into strategic boundaries for better analysis of the wider flood risk and prioritisation based on local and national flood risk.
- 9.7 To develop the SFRA, the Council has commissioned a Pilot Program Business Case for the Upper Rhondda boundary which will be used to review the actual flooding against the perceived modelled flooding forecasts and provide an estimate of the damage associated to the area and the high level options for managing the pluvial (non-river) flood risk. The FRM team has also commissioned a further pilot study focused around the practicalities of utilising Property Flood Resilience (PFR) Measures and how they could be deployed within those communities at a high risk of flooding. This project will take into account the limitations and risk of PFR measures and also the opportunities.
- 9.8 The Council's Local Flood Risk Management Strategy is due for review and update following the publication on 20th October 2020 of the Welsh Government's National Strategy for Flooding and Coastal Erosion Risk Management (FCERM). This review will have to be undertaken with neighbouring local authorities, NRW and other bodies such as Dwr Cymru. Nevertheless, a number of capital schemes being developed in partnership with NRW and Dwr Cymru are being accelerated for delivery. The plan is to deliver 58 projects over the next 2-3 years, with 7 having been completed to date.



- 9.9 To assist in the development of robust flooding infrastructure, surveys are ongoing to ascertain the structural and serviceable condition of below ground infrastructure to identify the need for remedial works in some areas and opportunities to increase and improve the structures in other areas. This exercise will bring forward a proposed infrastructure work programme for prioritisation as part of the Council's capital programme and to form part of funding bids to Welsh Government.
- 9.10 The FRM team is also engaged in the ongoing development of the Sustainable Drainage Systems through the SuDs approval body (SAB) to ensure the standards are being adhered to by developers on new developments and surface water flood risk is alleviated.
- 9.11 Over the period since Storm Dennis, the FRM team has been working on a number of immediate responses to address infrastructure repairs and also develop and design major schemes. The first table below sets out the short-term schemes.

Category	Number of Projects	Completed
Emergency Repairs.	26	19
Flood Risk Management - Major Schemes	11	0
Flood Risk Management - Small Schemes (2020/21)	23	5
Flood Risk Management - Small Schemes advanced preparation (2021/22)	8	0
Resilient Road 2020/21	16	2
Total Projects	84	26



9.12 The following table sets out some of the major flood alleviation schemes being developed, with timetables for completion of the works in 2023 at the latest.

Project	Brief Description	Benefits	Estimated Value
Nant Gwawr (Phase 2)	Flood Alleviation Scheme	Increased standard of protection to Approx. 62 properties.	
			Not Known
Oaklands Terrace, Clifynydd	Flood Alleviation Scheme	Increased standard of protection to Approx. 78 properties	Not Known
Park Lane Aberdare	Flood Alleviation Scheme using overland flow and natural attenuation areas.	Increased standard of protection to Approx. 31 properties	£530,000
Cwmbach, Canal Rd	Flood Alleviation Scheme using overland flow and flood routing to increase capacity in existing system.	Increased standard of protection to Approx. 69 properties	£450,000
Treorchy FAS - (Phase 1) Cemetery Road	Flood Alleviation Scheme. Phase 1 - diversion/upgrade of culverted watercourse	Increased standard of protection to Approx. 236 properties	£750,000+
Treorchy FAS - (Phase 2) - Column Street	Flood Alleviation Scheme	Increased standard of protection to Approx. 236 properties	£1,000,000+
Cwmaman Phase 2	Flood Alleviation Scheme Phase 2 - Reduction in peak flows through upper catchment management and traditional methods	Increased standard of protection to Approx. 60+ properties	£550,000
Glenboi Road – Mt Ash	Options to manage the highway drainage and exceedance flows from the ordinary watercourse.	Increased standard of protection to Approx. 24 properties	£800,000
Pentre Flood Alleviation Scheme	Flood Alleviation Scheme	Increased standard of protection to Approx. 400 properties	£3,000,000+
Nant Frwd Culvert – Flood Routing	Flood Alleviation Scheme	Increased standard of protection to Approx. 18 properties	£300,000
Abercwmboi – Upper Bronallt Terrace Catchment	Instillation of an enlarged debris control structure and channel armouring. Within the Upper Culverted ordinary watercourse Inlet area including flood water storage areas.	Increased standard of protection to Approx. 30+ properties	£250,000



- 9.13 Further detail on all the schemes is set out in Appendix A.
- 9.14 An analysis of the £13m invested in recent years in flood prevention schemes is set out in Appendix B.

10 OVERVIEW & SCRUTINY COMMITTEE FEEDBACK

- 10.1 The Overview & Scrutiny Committee is currently in the process of scrutinising the events of Storm Dennis and the Council's response to this extreme weather event. The Scrutiny Committee will formalise its report in the coming months as all the available evidence and information becomes available. To support Cabinet's review of the Council's response to Storm Dennis, the Scrutiny Committee has provided the information they have collated to date and their initial common themes emerging from their review. At the Scrutiny Committee meeting on 9th December 2020, the Committee agreed to submit the information set out in Appendix C to this report.
- 10.2 A summary of the information in Appendix C is as follows:
 - Overall, there was much praise for the response to the February flooding from the emergency services, community volunteers, neighbours and Council staff;
 - Members recognise the huge effort of staff and the mobilisation of resources to respond to these unprecedented weather events. Many contributions recognise the swift response of the Council on the ground to support communities in the aftermath of the storm;
 - The swift recovery response of the Council members recognised the recovery arrangements and support made available to residents and businesses and the swift way in which they were made deployed in challenging circumstances. The continued support made available to support residents and local members over the last nine months has also been acknowledged.
 - 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;
 - NRW has already identified the need to develop more precise forecasting and early warning procedures to give communities time to respond. This was identified as a key ask by the Committee. (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 Scrutiny 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.
- The capacity and capability of the current flood water infrastructure to cope with extreme weather events – Members noted that much of the infrastructure was built to deal with 1:100 year flood events, however, these measurements have significantly changed in recent years. Communities need confidence that the Council, NRW and Dwr Cymru will invest to ensure that new and existing infrastructure will be future proofed to deal with more frequent extreme events;
- The management of forestry, the mountainsides and private land a number of the flood events appear to have been caused by the way in which NRW has managed its commercial forestry business, clearing hillsides of trees and leaving natural debris on the hillside, which has found itself in blocked culverts on the valley floor;
- The first few days in the aftermath of Storm Dennis communication with local elected members - a number of members have referred to the immediate aftermath of the storm and being able to access information on the action of the Council to respond in their respective community;
- The human impact of the Storm in terms of individual's mental health and well-being – inevitably the experience of having your home flooded, destroying your personal effects and possessions and the impact that has on your confidence of feeling safe and secure at home is considerable. We need to understand the long-term effects of this and ensure support is available;
- What is Wales' long-term response to Climate Change? Are public bodies doing enough and at a sufficient pace to tackle this issue to protect future generations? National targets have been set and progress has been made to reduce our reliance on carbon fuels but not at the pace required to prevent future extreme weather events becoming even more prevalent and damaging.
- 10.3 The Scrutiny Committee also acknowledged the pressure placed upon emergency services and other public agencies in responding to such a



significant event. Members appreciate their response, recognising that all agencies were initially overwhelmed by the severity of the weather and the geographical spread of the impact.

10.4 The Scrutiny Committee has yet to complete its review into the events of Storm Dennis, and this Cabinet report could form part of the evidence basis of the Scrutiny review, along with the S19 Flood Investigation Reports due to be completed in the new year. The observations, findings and recommendations from the Scrutiny Committee review will be presented and considered by Cabinet in due course.

11 LESSONS LEARNT & RECOMMENDATIONS FOR IMPROVEMENT

- 11.1 This report outlines a comprehensive response by the Council to the events of Storm Dennis, when many local elected Members, Cabinet Members, managers and staff worked above and beyond their duties to support individuals, families and communities impacted by the extreme weather event. Whatever planning and preparation had been undertaken by the Council and other agencies prior to Storm Dennis, no action could have prevented the unprecedented levels of rainfall and such high river levels.
- 11.2 It is also very unlikely to be the only extreme weather event we experience in the near future, as the UK climate becomes significantly wetter, warmer and unpredictable as a result of climate change.
- 11.3 We were very fortunate that the worst of Storm Dennis occurred in the early hours of the morning and not at rush hour on a busy working day otherwise there would probably have been casualties due to the force of the water in locations such as Treforest, Nantgarw and Pontypridd.
- 11.4 We cannot wait until an extreme weather event causes significant casualties before we all seriously focus on the environmental issues we face. Addressing the causes of Climate Change is essential and as a Council we are actively tackling our carbon footprint. We have made good progress when compared to the majority of the public and private sectors in Wales. However, we and the rest of society need to take greater action and at a faster pace if we are to slow down the rise in temperature of Earth. To achieve this requires international and national leadership and a global political commitment that we have yet to see.
- 11.5 As a Council, we will have little influence to change international politics but we can commit to an Environmental Strategy that not only considers how we



eliminate our carbon footprint but also tackles other issues such as air quality, managing the environment and alleviate wherever possible the impact of extreme weather.

- 11.6 <u>To do so successfully, we have to recognise that as a Council we need to</u> <u>understand our role and that we are not responsible for everything that needs</u> <u>to be undertaken. This includes preventing significant weather events, clearing</u> <u>up the events and providing solutions to meet the needs of all those affected</u>. In our Community Leadership role, we do need to work with other agencies and partners to ensure we all are aware of each other's respective roles and responsibilities in preventing and responding to significant weather events, and we hold each other to account for competently delivering on our respective duties.
- 11.7 There are other public sector agencies that should respond to specific issues, for example, in respect of River Flood Prevention, Flood Mitigation and Flood Warnings National Resources Wales is responsible for managing the river courses, preventing river flooding, providing accurate and timely flood warnings and is also responsible for 30% of the landmass of Rhondda Cynon Taf, and so has significant landownership responsibilities to the communities of the County Borough.
- 11.8 One of the biggest issues we experienced before and during Storm Dennis was receiving accurate weather forecasts and sufficiently early flood warnings from NRW. If we are to adequately plan to respond to extreme events in the future the early warning information we receive needs to be more accurate and reliable.
- 11.9 The recently released NRW Flood Reports highlight a number of issues that still need to be addressed and the Council's Chief Executive is in discussion with NRW Operation Director to resolve the following:
 - **"The Current Flood Warning System Telematics** Significant damage was caused to river measuring sensors and other telematics, and we need confirmation that the system has not only been repaired but steps taken to enhance the data systems to better inform the flood warning system;
 - Improving rainfall forecasts the NRW February Floods report provides some excellent ideas as to how to better predict future storm and rainfall patterns across Wales, using new technology. However, the red warning was issued on 15th February after communities had been flooded. When will we see the benefits of these improvements and can they pilot the new forecasting methodology in South Wales?



- Flood Warning System the NRW report highlights the limitations to the current flood warning system, and we were surprised at the high level of human intervention into the process. During Storm Dennis the report evidences that the staff were totally overwhelmed by the limitations of the system and the expectations placed upon them. Is the Flood Warning System being upgraded and properly resourced in terms of the decision making on when to issue the emergency commands? Again, when is this being introduced and what improvements are being made that will have a positive impact on our data analyses in RCT?
- Achieving 1:100 year flood protection of river flooding relies on significant third party assets that are not necessarily intended for flood protection purposes. As the risk management authority, how can you provide reassurance that these assets are fit for purpose and adequately maintained?
- Local responsibilities As the body responsible for managing 30% of the land in RCT, what steps are you taking to maximise the flood mitigation opportunities to which this land could contribute."
- 11.10 In respect of the fourth and fifth bullet point, we will need to resolve these in partnership with NRW, by prioritising high risk flood areas and finding solutions together.
- 11.11 Another pressing issue as a result of Storm Dennis is **Mental Health.** A number of elected members have rightly raised the issue of the mental health and wellbeing needs of those personally affected by the Storm. For example, for some people the trauma of being rescued from their home has been emotionally very difficult. This is an issue for the University Health Board and the local GPs, and they should be seen to respond to this community need.
- 11.12 RECOMMENDATION 1 To strengthen plans to respond to extreme weather events, it is recommended that we establish a multi-agency working group, which includes NRW and Dwr Cymru, that plans and prioritises County wide investment in flood alleviation and prevention schemes, makes strategic flood prevention funding applications to Welsh Government, develops a comprehensive emergency response to extreme weather events, and provides the immediate comprehensive response to meet the communities' needs.
- 11.13 RECOMMENDATION 2 We will undertake a further comprehensive review of the County Borough to identify the high risk residential and industrial areas likely to be at most risk of flooding in the future as climate change takes effect and identify the possible longer term alleviation and mitigation measures that could be put in place. However, this may require



us to consider the future viability of existing homes and properties in areas that are a high risk of flooding, as a result of climate change. The public and businesses will need to recognise that the Council, NRW and other agencies will not be able to protect all properties, and the public sector may have to acquire and demolish such properties to create flood defences or alleviation schemes to protect others. The Strategic Flood Risk Areas analysis has started this process, and we now need to prioritise smaller high risk areas and develop long term flood alleviation schemes that substantially reduce the risk of flooding. This may require the Council to set aside land, such as sports and recreation fields, to create water holding areas to mitigate the risk of river flooding evidenced during Storm Dennis or building underground tanks.

- 11.14 RECOMMENDATION 3 The Council will create a Flood Support Team alongside the Housing Grants Service, that supports landowners, residents and businesses in high risk flood areas to procure local flood prevention measures, provides advice and guidance and supports home owners to apply for the Insurance Re Scheme to improve people's understanding of what insurance they need and ensure they are financially protected against future flooding. We would also seek to support businesses in flood risk areas to access affordable business and flood insurance, in the event of a future flood.
- 11.15 **RECOMMENDATION 4 Individual landowners and property owners,** particularly in high flood risk areas, will be requested to consider and evidence how best they can protect their land, homes, and businesses through local measures. Such measures could include flood gates, bunds around commercial properties and ensuring that the property has flood "resilience" features, in terms of stone floors, power supplies above the flood line, and high value machine equipment raised off the floor. This will help limit the potential damage and cost if the property was to flood again. Where the landowner has significant surface water or drainage issues on their land we will expect that the infrastructure is sufficiently robust to alleviate the risk of flooding to other properties. It is proposed that we will appoint a small team of Flood Enforcement Officers including legal support to ensure landowners take their flood responsibilities seriously and are fully compliant with the relevant legislation.
- 11.16 RECOMMENDATION 5 To further update the Emergency Plan to ensure that in the event of a major incident we provide local community responses centres within the communities most affected. We cannot plan for every emergency, but we have to rely on an effective multi-agency



emergency operations framework (the Emergency Plan) and the support from well trained staff that have the equipment and the facilities to be able to think on their feet and respond appropriately to the respective emergency. In doing so, we also need to continue to be able to call upon the local knowledge of elected ward members, the voluntary and third sector and willing volunteers to provide very localised support, such as that provided by Trallwn Community Centre in the period immediately after Storm Dennis. We will also seek to provide a named officer to work with the local elected member(s) to coordinate and facilitate a community response as required from the local community centre.

- 11.17 RECOMMENDATION 6 To respond to the risk of flooding, in the short term we have to ensure that we maximise the benefits of our current infrastructure by undertaking comprehensive maintenance and introducing some enhancement so this infrastructure operates at the optimum level in its response to extreme weather events. For example, we need to consider our approach with NRW to:
 - Scour risk assessments need to be undertaken on bridges. All river bridges that require maintenance, we should ensure that a scour risk assessment should be undertaken to determine if protection from scour needs to be included within the repair strategy. This will increase costs but in the longer term would reduce risk of significant flood damage;
 - River-walls there needs to be a programme for specialist inspections of key river-walls developed and a longer-term strategy for vegetation management. Storm Dennis highlighted that certain walls are very susceptible to the force of water catching trees and pulling the walls down. There are also walls which are perceived to be flood walls but they are not designated or built as such. We need to determine whether these walls need to be replaced and/or strengthened in the future;
 - Culverts stone masonry culverts throughout the county borough were constructed when the towns and villages were built. They are over 100 years old and have had little regular maintenance so are at high risk of damage due to scour. It is planned to procure a term maintenance contract so repairs can be procured quickly and easily. An exercise to review all the watercourses that pass under the highway that started before Storm Dennis has highlighted that the culvert records for culverts 900mm diameter and over were not complete. This exercise needs to continue so that all the culverts are inspected. Many of these culverts have access chambers that have been covered and will need to be re-established in order to maintain safe access for repairs and inspections. Most of these actions were being



planned before Storm Dennis but the storm certainly emphasised the importance of this work;

- Undercut/Scour damage historically for some inspections river entry has not been possible. Going forward inspections will be targeted when river levels are low so river entry is possible. If the river levels are still too deep then specialist inspections should be made. Scour defects will be given a higher priority for repair, possibly included in the term contract above as the skills required are similar;
- River Management river bed levels are lowering in certain watercourses as can be seen where previous scour repairs are seen to be undercut. This will continue unless there is a longer-term strategy to manage river bed levels. This should be considered alongside the scour risk assessments. We need to agree a comprehensive programme to ensure the river bed levels provide greater capacity wherever possible in partnership with NRW.
- 11.18 **RECOMMENDATION 7 The Council will digitalise and remotely monitor** its key flood defences, which will include key culverts, outlets and other drainage systems via a central control room. These key flood defences will be equipped with alarms, remote telemetry systems, digital cameras and will enable the operators to ensure the drainage systems are operating effectively. We will also seek to employ cameras on key points of the river network that have previously flooded in order to be able to regularly monitor levels and be better equipped to warn residents if there are potential river breaches. We will also use the contacts received by the Contact Centre to identify potential cluster of issues and be able to provide a comprehensive and informed response, rather than respond to individual requests in a haphazard manner. We would also seek to bring together, physically or virtually the Council's Communications Team into the Control Room, so that necessary information can be quickly communicated to elected Members and the general public as appropriate. The central control room will be based in Ty Elai, along with the Council's Contact Centre and CCTV centre. We will also improve the digital access of Housing and other Public Health & Protection Staff working with flood victims in the aftermath of future storm events which will provide instant and updated information in the control room, and will facilitate additional support to the flood victims, such as automatic flood payments, or the provision of a skip, or access to a home repairs grant etc.
- 11.19 **RECOMMENDATION 8 Creating the capacity to be able to provide timely Elected Member and Public Information during Major Emergencies –** Implementing Recommendation 8, creates the opportunity for Senior Officers and the Communications Team to have direct access to a comprehensive suite



of information that not only facilitates faster decision making but also the opportunity to provide more timely information and updates to elected Members, specific communities affected and the wider public. We will commit to reviewing how we can better use instant messaging such as Text Messages or WhatsApp, that quickly updates Members and directs them to further data sources for their information and use.

- 11.20 RECOMMENDATION 9 The Council will create two dedicated Pluvial Drainage Teams, an East and a West team. The teams will increase the staffing compliment in the Drainage teams from 20 to 31 staff, comprising a service manager, two senior drainage engineers and 8 additional operational staff. The two new Drainage Teams will focus entirely on the refurbishment and maintenance of the Council's highways, surface water and other water course drainage systems throughout the year. One team will be based in Abercynon and the other in Dinas, serving the County Borough. In addition, the Council will engage with a Specialist Vactor Contractor providing 365 day access to heavy drainage clearance machinery, and two operatives, that can clean the largest, deepest and most inaccessible of heavily silted drains, quickly including pipes, culverts and sewers.
- 11.21 RECOMMENDATION 10 The Council will produce on-line information and booklets for flooded households that set out the support available from the Council, and its partners in responding to a households needs, from securing alternative accommodation, financial support and advice, applications for home repairs assistance, health and wellbeing support, environmental health advice on how to safely clean your home after a flood, and other offers of support from the third sector.
- 11.22 The Section 19 Flood Investigation Reports will be completed in 2021, and these reports will also identify issues, some of them consistent issues, which we will need to resolve. In addition, the Scrutiny Committee will also consider weaknesses that need to be addressed in how the Council responds to future extreme weather events. Therefore, the list of recommendations above is likely to increase over the coming months, as the other pieces of work are completed.
- 11.23 RECOMMENDATION 11 The Council will publish a comprehensive Environmental Strategy by 31 March 2021 that sets out the action the Council will take to ensure it is a Net Zero organisation by 2030 and how it will engage with local communities and businesses to change behaviours to significantly reduce the carbon footprint of the County Borough.





12 EQUALITY AND DIVERSITY IMPLICATIONS

12.1 An Equality and Diversity Assessment has not been carried out in connection with the recommendations set out in this report as the contents and actions do not require a policy or service change, resulting in no reasonably foreseeable differential impacts.

13 **CONSULTATION**

13.1 There is no requirement to consult on this report, it is primarily for information.

14 FINANCIAL IMPLICATION(S)

14.1 The financial implications of the Council responding to Storm Dennis are significant. The Council triggered an application to Welsh Government's Emergency Financial Assistance Scheme (EFAS) on 25th February 2020 to provide some financial support for the immediate recovery costs. The total cost claimed was £3.762m of which the EFAS, in accordance with the terms and conditions, repaid £1.697m.

Storm Dennis	2019/20	2020/21	Total
	£	£	£
Total Cost to Council	2,782,950	979,218	3,762,168
Less EFAS Grant	(717,695)	(979,218)	(1,696,913)
Net Cost to Council	2,065,255	-	2,065,255
General Fund Allocation	(1,500,000)	-	(1,500,000)
Balance funded in 2019/20 Outturn	565,255	-	565,255

14.2 It is estimated that the total recovery costs, taking into account the need to replace highways infrastructure and drainage systems, will be in excess of £70m and we have had WG confirmation of funding of approximately 10% of this total cost amounting to £6.827M, which was reported in Q2 performance report in November 2020.



- 14.3 During the course of the response the following financial delegated decisions were made to provide the support required by residents and businesses, and to fund the action taken by the Council.
 - <u>17th February Allocation of Resources from General Fund Balances</u> £1M to support immediate recovery;
 - <u>18th February Financial Support for Residents and Businesses</u> Community Flood Recovery Grants – £500 per residential property, £1,000 per business property (SME);
 - <u>21st February Further Allocation of Resources from General Funding</u> <u>Balances –</u> £0.500M to continue to maximise clean-up, recovery and community support work;
 - <u>25th February Grant Funding Support for Property Renovation and Free</u> <u>School Meals</u> – £800K fund (£500K for residential properties, £300K for businesses) funded by £150K general reserves already released, £150K donations, £500K reprioritisation of capital. FSM for 4 weeks (cost £11K);
 - <u>5th March Support to Businesses Non Domestic Rates Relief</u> 3 month local relief
 - <u>10th June Tylorstown Tip Remedial Works</u> £2.5M of emergency works to be undertaken at financial risk to the Council in the absence of any WG funding confirmation.
- 14.4 If the recommendations in this report are approved, there will be financial consequences, such as in respect of Recommendations 4,8 & 10. Any revenue and capital costs arising from this report will be considered as part of the budget setting process for 2021/22.

15 LEGAL IMPLICATIONS OR LEGISLATION CONSIDERED

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

16 LINKS TO THE CORPORATE AND NATIONAL PRIORITIES AND THE WELL-BEING OF FUTURE GENERATIONS ACT

16.1 This report is primarily an information report on progress in responding to the consequences of a major emergency caused by Storm Dennis. No significant policy change decisions are being taken in this report. The focus is to strengthen and improve our existing infrastructure, and operating procedures.

17 CONCLUSIONS



- 17.1 Planning for an unknown weather event is never easy, and when that event is an extreme event that happens in the middle of the night, on a weekend, and covers a wide area, it is inevitably difficult and logistically complex to respond to, particularly when the majority of the workforce is also at home. As a Council, we are not an emergency service, and we do not have the capacity to respond to extreme weather events during the event. Our work is undertaken before and after the event, and this is done in partnership with other public bodies that all have different responsibilities which ideally dovetail together.
- 17.2 The Council's pre-storm planning and its approach after the storm was exceptional. Very few local authorities in Wales could have responded in the same way, taking into account the severity of the storm and the damaged caused to homes, businesses and other infrastructure across so many communities. The commitment from Members, managers and staff across the organisation to support those affected was exemplary and it is clear from letters and emails we have received from residents and businesses that this was appreciated.
- 17.3 Many community and third sector organisations provided an excellent response and took responsibility for aspects of the flood recovery. I would particularly make reference to Citizen's Advice who supported many households in negotiating the right support from insurers and holding the insurers to account.
- 17.4 We also recognise that the Council's response to Storm Dennis could be improved. The list of recommendations in Section 11 set out these opportunities.
- 17.5 It is particularly worth drawing attention to the fact that we were unprepared for the overwhelming offer of food and other goods from individuals and businesses for those people affected, including enormous quantities of food from UK national supermarkets. We are very grateful for this support and for the many financial and other donations received.
- 17.6 We also did not initially appreciate some of the basic needs of those flooded and the systems we would have to put in place to help meet those needs. We are grateful for the way in which local community groups stepped in to fill that void. However, we did learn quickly, and responded accordingly, which put us in a strong position when the Covid 19 lockdown occurred a month later.
- 17.7 Storm Dennis caused many types of flooding, all of which are the responsibility of different public and private bodies. To ensure the river, surface water and



sewerage infrastructure is fit for purpose for future extreme weather events and effective flood alleviation schemes are in place, the Council, in its community leadership role, has to bring these organisations together to plan and deliver long term flood alleviation schemes. This will be the most challenging action to deliver, but we will start this process in earnest early in the New Year.

- 17.8 This multi-agency forum will also provide the opportunity to share and consider the S19 Flood Investigation Reports and how collectively we respond to the specific lessons learnt in the communities most affected.
- 17.9 The effects of Climate Change will be with us for decades and Storm Dennis will not be a one-off event. If the equivalent of Storm Dennis occurs again in 2021 after other significant rainfall events, flooding will be inevitable. A coordinated and comprehensive response to severe weather events will take many years to deliver by increasing, where possible, flood alleviation and prevention schemes.
- 17.10 Nevertheless, this Council will do whatever it can to ensure that the impact of future floods is minimised through a comprehensive programme of investment.



APPENDIX A

OVERVIEW OF FLOOD RISK MANAGEMENT PROJECTS BEING DELIVERED BY THE STRATEGIC PROJECTS SERVICE -NOVEMBER 2020

Summary

Category	Number of	Completed
	Projects	
Emergency Repairs.	26	19
Flood Risk Management - Major Schemes	11	0
Flood Risk Management - Small Schemes (2020/21)	23	5
Flood Risk Management - Small Schemes advanced preparation (2021/22)	8	0
Resilient Road 2020/21	16	2



Total Projects	84	26



Flood Risk Management - Major Schemes

Project	Brief Description	Benefits	Estimated Value	Current Status	Est Completion
Nant Gwawr (Phase 2)	Flood Alleviation Scheme	Increased standard of protection to Approx. 62 properties.	Not Known	Application for OBC/BJC only for 2021/22	2022/23
Oaklands Terrace, Clifynydd	Flood Alleviation Scheme	Increased standard of protection to Approx. 78 properties	Not Known	Application for OBC/BJC only for 2021/22	2023/24
Park Lane Aberdare	Flood Alleviation Scheme using overland flow and natural attenuation areas.	Increased standard of protection to Approx. 31 properties	£530,000	Under Construction Scheduled for completion by Dec. Weather dependent.	Winter 2020/21
Cwmbach, Canal Rd	Flood Alleviation Scheme using overland flow and flood routing to increase capacity in existing system.	Increased standard of protection to Approx. 69 properties	£450,000	Detailed Design ongoing. Expected construction start Advanced work Sept 2020. Main scheme Nov 2020.	Spring 2021
Treorchy FAS - (Phase 1) Cemetery Road	Flood Alleviation Scheme. Phase 1 - diversion/upgrade of culverted watercourse	Increased standard of protection to Approx. 236 properties	£750,000+	BJC being developed. Preliminary Design ongoing	2021/22
Treorchy FAS - (Phase 2) - Column Street	Flood Alleviation Scheme	Increased standard of protection to Approx. 236 properties	£1,000,000+	BJC being developed. Preliminary Design ongoing	2022/23



Project	Brief Description	Benefits	Estimated Value	Current Status	Est Completion
Cwmaman Phase 2	Flood Alleviation Scheme Phase 2 - Reduction in peak flows through upper catchment management and traditional methods	Increased standard of protection to Approx. 60+ properties	£550,000	OBC/BJC development (Mott Mcdonald). Flood Wall option being developed	2021/22
Glenboi Road – Mt Ash	Options to manage the highway drainage and exceedance flows from the ordinary watercourse.	Increased standard of protection to Approx. 24 properties	£800,000	Design and Development (Redstart) ongoing Grant bid for D&D submitted	2021/22
Pentre FAS	Flood Alleviation Scheme	Increased standard of protection to Approx. 400 properties	£3,000,000+	OBC development (RPS) Being integrated with DCWW and NRW assists. Ongoing. Interconnectivity survey ongoing	2022/23
Nant Frwd Culvert – Flood Routing	Flood Alleviation Scheme	Increased standard of protection to Approx. 18 properties	£300,000	Application for Grant for BJC development ongoing	2021/22
Abercwmboi – Upper Bronallt Terr Catchment	Instillation of an enlarged debris control structure and channel armouring. Within the Upper Culverted ordinary watercourse Inlet area including flood water storage areas.	Increased standard of protection to Approx. 30+ properties	£250,000	Preliminary Design and Land enquiries ongoing.	2021/22





Flood Risk Management - Small Schemes (2020/21)

Project	Brief Description	Benefits	Estimated Value	Current Status	Est Completion
Bryn Ifor Inlet Upgrade	Upgrade of a Culvert Ordinary watercourse Inlet - inlet enlargement and instillation of a larger Debris screen and overflow route within the headwall structure The work will also facilitate a new access track for future maintenance	Increased standard of protection to Approx. 60 properties	£80,000	Construction Completed (Streetcare)	Completed
Plantation Road	Replacement of existing culvert.	Increased standard of protection to Approx. 20 properties and highway	£100,000	Completed	Completed
Cardiff Road, Aberaman	This scheme is proposed to upsize the capacity of the existing culverted ordinary watercourse overflow system and identify opportunities to	Increased standard of protection to Approx. 7 properties	£150,000	Detailed design ongoing in 2020/21. Upgrade requires use of private land	2021/22



Project	Brief Description	Benefits	Estimated Value	Current Status	Est Completion
	daylight the redirected culvert.				
Campbell Terrace - Mt Ash	Replacement of culvert Inlet	Increased standard of protection to Approx. 10 properties	£125,000	Grill advanced works (Streetcare) start WC 16/11/20 Detailed Design ongoing for flood Routing element.	2020/21
Granville St - Allen sT mt ash	Replacement and upgrade of Concrete Debris Catcher.	Increased standard of protection to Approx. 13 properties	£150,000	Detailed design Completed. Tender WC 23/11/2020	2020/21
Fernhill Abercwmboi	Upgrade of Inlet structure and facilitation of overland conveyance and interception route to reconnect conveyance flows back into the culverted ordinary watercourse.	Increased standard of protection to Approx. 22 properties	£35,000	Completed	Completed



Project	Brief Description	Benefits	Estimated Value	Current Status	Est Completion
Troed y Rhiw/Forest Road - Inlet Upgrades	3 Inlet upgrades feeding into the main Culverted Watercourse.		£75,0000	Detailed Design ongoing	2020/21
Victor Street, Kingscraft St Mt Ash - inlet	Replacement and upgrade of inlet with overflow arrangement (if Possible)	Increased standard of protection to Approx. 24 properties	£100,000	Preliminary Design ongoing. Advanced works to "channel" designed and out to price.	2020/21
Painters Row, Treherbert - Inlet	Replacement and upgrade of inlet with overflow arrangement (if Possible)	Increased standard of protection to Approx. 4 properties	£45,000	Under Construction DT Contracting on site. Progress good	End of Nov 2020
Pentre (Volunteer St) FAS (Advanced Works - Nant Y Pentre Inlet)	Upgrade of the existing culvert inlet structure with the emplacement of an upper debris screen/platform and overflow route.	Increased standard of protection to Approx. 237 properties	£300,000	Under Construction Streetcare (Hammonds) on site.	December 2020
Pentre (Volunteer st) FAS	Instillation of an exceedance flow path and interception drainage (Linear Drainage) to	Increased standard of protection to Approx. 167 properties	£125,000	Preliminary/Concept Design ongoing	2020/21



Project	Brief Description	Benefits	Estimated Value	Current Status	Est Completion
(Advanced Works	reconnect overland flows				
- Pleasant Street)	back into the culverted				
	ordinary watercourse.				
	Highway Drain	Highway Flooding		Completed	Completed
Oxford Street	Replacement due to		£60,000		
	collapse				
Mount Street	Highway Drain	Highway Flooding	£25,000	Completed	Completed
	Replacement and upgrade		220,000		
		Green Infrastructure.		Detailed design ongoing	March 2021
"Pretty Ponty"	Pilot Scheme for Urban	Takes water out of the drainage	£35,000		
	Subs	systems.			
		Increased of protection to Approx.		Project plan and	2020/21
PFR – Property	Distribution and "loan" of	350+ properties.		procurement ongoing	
Flood Resistance	expandable flood barriers		£357,000		
(9 Projects)	to doors as interim				
	measure in Flooded/high				
	risk areas.				



Flood Risk Management - Small Schemes advanced preparation (2021/22)

Project	Brief Description	Benefits	Estimated Value	Current Status	Est Completion
Mt Ash A4059 Upper catchment scour	Repair and armouring of the scoured sections of the Ordinary Watercourse Channel	Increased standard of protection to Approx. 22 properties	£150,000	D&D Grant Awarded. Preliminary/Concept Design ongoing.	2021/22
Heath Terrace	Repair and armouring of the scoured sections of the Ordinary Watercourse Channel and replacement of two number ordinary watercourse inlet headwalls and debris screens.	Increased standard of protection to Approx. 10 properties	£95,000	D&D Grant Awarded. Preliminary/Concept Design ongoing.	2021/22
Abergorki Tip - Treorchy Cemetery	Upgrade of the existing culvert inlet structure with the emplacement of an overflow route. Repair and armouring of the scoured sections of the Ordinary Watercourse Channel	Tip Safety	£125,000	D&D Grant Awarded. Preliminary/Concept Design ongoing.	2021/22



Project	Brief Description	Benefits	Estimated Value	Current Status	Est Completion
Turberville Rd - Porth	Upgrade of the existing culvert Ordinary Watercourse identified as Hydraulically under- capacity and structurally	Increased standard of protection to Approx. 20 – 30 properties	£150,000	D&D Grant Awarded. Preliminary/Concept Design ongoing.	2021/22
	failing.				2021/22
Tyn-Y-Wern	weakened ordinary watercourse culvert and rebuild of several Manhole structures.	properties	£125,000	Preliminary/Concept Design ongoing.	2021/22
Standard View	Lining of a structurally weakened ordinary watercourse culvert and rebuild of several Manhole structures.	Increased standard of protection to Approx. 5 properties	£125,000	D&D Grant Awarded. Preliminary/Concept Design ongoing.	2021/22
Nant Cae Dudwg	Repair and armouring of scoured sections of the ordinary watercourse channel and replacement of damaged debris screen and channel base	Increased standard of protection to Approx. 12 properties	£50,000	D&D Grant Awarded. Preliminary/Concept Design ongoing.	2021/22



Project	Brief Description	Benefits	Estimated Value	Current Status	Est Completion
Mostyn Street	Rebuild of Culvert Inlet with inclusion of a debris platform/catchpit The works will also re- channel the ordinary watercourse channel upstream of inlet.	Increased standard of protection to Approx. 3 properties	£30,000	D&D Grant Awarded	2021/22



Resilient Road 2020/21

Project	Brief Description	Benefits	Value	Current Status	Est Completion
Rhigos Road - Nant Cnapiau & 2 x Culverts (CV6)	Upgrade an Existing Culverted Ordinary watercourse conveying within the Highway to prevent further structural failure of the culvert plus 2 upgrades or overflows. 3 x Culverts		£350,000	Detailed Design ongoing.	2020/21
Aberdare - Asda Roundabout (CV3)	Raising of the road by 200-400 mm to avoid flooding onto the highway (1km)		£480,000	Detailed Design ongoing. Est Start Feb 2021	2020/21
Bronallt Terrace - Phase 3 (CV5)	Replacement of defective masonry culverted ordinary watercourse conveying through Bronallt Terrace highway		£200,000	Design Completed. Tender WC 16/11/20	2020/21
Aberdare Bypass (CV1)	Replacement of existing highway Filter drain with gully connections		£300,000	Design Completed Cost Estimate Awaited.	2020/21



Project	Brief Description	Benefits	Value	Current Status	Est Completion
A4059 - Abercynon - Mt Ash (CV7)	Various Improvements of overland conveyance i.e. instillation of low point within the verge area to manage the low spot flooding.		£65,000	Various Works. Overflow – completed Build out – completed Drainage Mt Ash Town Hall Completed Additional Drainage at Layby (NEW) – Streetcare Design/Constructio n	2020/21
Abercynon Road to A4059 New Road	Install wholly new Carrier line with additional gullies to manage the surface water flooding associated to the low spot within the highway approximately 100m		£80,000	Scope may be less than expected.	2020/21



Project	Brief Description	Benefits	Value	Current Status	Est Completion
Cynon Valley Monitoring Stations	Telemetry monitoring stations to be installed at various locations across the Cynon valley		£30,000	Locations completed and a schedule produced for consultation	2020/21
Ynyshir Cycle Path (RV6)	Surface water drainage networks are ineffective and flooding the footpath approximately 280m - history of minor landslips in 2016 that caused the closure for 6months of the path, further uncontrolled surface water conveyance could shut the critical route more frequently		£95,000	Preparing info for pass onto Depot	2020/21
Mynydd-yr-Eos Penygraig (RV8)	Renew kerb, channel, renew 150mm diameter perforated pipe and stone, provide 9 new gulley pots covers and frames, 2m edge of carriageway reinstatement, all over a length of approximately 300m.		£65,000	Complete	Completed
A4223 - Porth Relief Road (RV1)	Highway drainage has deformed up to 70% in places and will need replacement (around 100m)		£165,000	Complete	Completed
Tonypandy Bypass A4058 Asda- Tonypandy R/About (RV5)	Existing Highway Carrier Line (filter system) is showing significant root mass within the main system approximately 500m which is reducing		£115,000	Detailed Design Complete.	2020/21



Project	Brief Description	Benefits	Value	Current Status	Est Completion
	the capacity of the carrier line to function resulting in frequent Highway Flooding				
Tonypandy Bypass A4058 Tonypandy R/A- Trealaw R/A (RV4)	Existing Highway Carrier Line (filter system) is showing significant root mass within the main system approximately 550m which is reducing the capacity of the carrier line to function resulting in frequent Highway Flooding		£110,000	Preliminary Design	2020/21



APPENDIX B

RECENT CAPITAL EXPENDITURE ON FLOOD DRAINAGE SCHEMES

Ward	Schomo	Expenditure						Spend To 30/11/2020	Remaining Budget	Total
vvalu	Scheme	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2020/21	
		£M	£M	£M	£M	£M	£M	£M	£M	£M
	Culvert Inlet Programme					0.047				0.047
	Cynon Valley Highway Drainage							0.044	1.331	1.375
	Drainage Improvements Unallocated							0.000	0.061	0.061
	Flood Alleviation Investment			0.517	0.042	0.005				0.564
	Highways Drainage Improvements	0.167	0.164	0.002						0.333
	Ortho Clinical Diagnostics Projects			0.054						0.054
Various	RCT Inlet Upgrade Programme					0.036				0.036
	Rhondda Valley Highway Drainage							0.025	1.055	1.080
	Scheme Development of FRMP					0.007				0.007
	Small Works Drainage				0.062	0.042	0.027	0.067	0.016	0.214
	Storm Dennis						0.550	0.910	0.190	1.650
	Strategic Outline Cases						0.041	0.000	0.015	0.056
	Upper Rhondda Strategic Flood Risk Area							0.011	0.029	0.040
	Water Level Monitoring Devices		0.024							0.024
Treherbert	Painters Row, Treherbert							0.004	0.021	0.025
Treorchy	Cemetery Road, Treorchy				0.025	0.001	0.019	0.017	0.000	0.062



Word	Sahama	Expenditure						Spend To 30/11/2020	Remaining Budget	Total
vvaru	Scheme	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2020/21	
		£M	£M	£M	£M	£M	£M	£M	£M	£M
	Park Road Cwmparc					0.091				0.091
	Mynydd Yr Eglwys	0.008	0.007		0.012	0.003	0.015	0.000	0.010	0.055
	Nant Y Pentre Inlet, Pentre							0.027	0.123	0.150
Pentre	Pleasant St Flood Routing, Pentre							0.003	0.148	0.151
	Tudor Rd, Ton Pentre						0.114	0.024	0.054	0.192
	Volunteer St, Pentre				0.031	0.025	0.004			0.060
Llwynypia	Rosedale, Llwynypia				0.006					0.006
Cymmer	A4058 Cymmer Rd, Cymmer						0.003			0.003
	A4233 Porth Relief Road, Porth						0.008	0.124	0.053	0.185
Porth	Aberrhondda Rd, Porth				0.009	0.071	0.059	0.002	0.008	0.149
	Graig Ddu, Dinas				0.001	0.008				0.009
	Nythbran Terrace, Porth					0.065				0.065
Vnychir	Ynyshir Cycle Path, Ynyshir						0.001			0.001
	Ynyshir Wall Project	0.017								0.017
Rhigos	Cysgod Y Mynydd Rhigos		0.001							0.001
Hirwaun	Brecon Rd, Hirwaun						0.015	0.000	0.015	0.030
	Rhigos Road, Hirwaun						0.067	0.000	0.008	0.075
Aberdare West	Bwlfa Road, Cwmdare	0.220	0.008							0.228
	Park Lane Trecynon					0.009	0.054	0.238	0.187	0.488
Aberdare East	Maes y Ffynnon Road, Aberdare						0.122	0.002	0.149	0.273
Aboromon North	Bronallt Terrace, Abercwmboi					0.052	0.059			0.111
Aberaman North	Cardiff Road, Aberaman	0.251	0.008							0.259
	Nant Gwawr Aberaman	0.666	0.017							0.683


Ward	Scheme	Expenditure						Spend To 30/11/2020	Remaining Budget	Total
		2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2020/21	
		£M	£M	£M	£M	£M	£M	£M	£M	£M
Aberaman South	Cwmaman (Nant Aman Fach)				0.029	0.030	0.015			0.074
	Cwmaman Flood Alleviation			0.023	0.334	0.193				0.550
	Glanaman Rd Cwmaman			0.092	0.149					0.241
Cwmbach	Cwmbach Industrial Estate						0.022	0.135	0.569	0.726
	Cwmbach PROW		0.007		0.018		0.062	0.022	0.128	0.237
Mountain Ash East	Campbell Tce, Mt Ash							0.012	0.113	0.125
	Granville Tce, Mt Ash							0.017	0.132	0.149
	Troed Y Rhiw/ Fforest Rd, Mt Ash							0.007	0.068	0.075
Mountain Ash West	A4059 Layby Drainage				0.048					0.048
	Brynifor FAS, Mountain Ash							0.078	0.002	0.080
	Fernhill Inlet, Mt Ash West							0.005	0.030	0.035
	Glenboi Pumping Station, Mountain Ash							0.013	0.145	0.158
	Victor St & Kingscraft St, Mt Ash							0.015	0.085	0.100
Abercynon	Nant Y Fedw Drainage Improvements	0.607	0.020							0.627
	Wood Rd, Abercynon Flood Alleviation	0.005	0.049							0.054
Glyncoch	Ynysybwl Rd, Glyncoch						0.001	0.004	0.000	0.005
Cilfynydd	Nant Cae Dudwg, Cilfynydd	0.211	0.007		0.018					0.236
Pontypridd Town	Hafod Lane, Trehafod	0.003				0.022				0.025
Rhydyfelin Central	Caenant Flats flood alleviation scheme	0.001								0.001
	Rhydyfelin Flood Alleviation	0.031								0.031



Ward	Scheme	Expenditure						Spend To 30/11/2020	Remaining Budget	Total
		2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2020/21	
		£M	£M	£M	£M	£M	£M	£M	£M	£M
	Sycamore Development, Rhydyfelin					0.003	0.094			0.097
	Taff Trail Rhydyfelin	0.058								0.058
Treforest	Gene Metals, Treforest						0.016			0.016
	Treforest PROW		0.002	0.011	0.032					0.045
Taffs Well	Llanwonno Road, Mt Ash						0.065			0.065
	Moy Road, Taffs Well						0.004			0.004
	Nantgarw Rail Training - Waiting Restriction		0.003							0.003
Llantwit Fardre	Plantation Road, Abercynon						0.001	0.099	0.001	0.101
	Waun Hir Phase 1	0.001								0.001
Pontyclun	Miskin Quarry Flare	0.003								0.003
Grand Total		2.249	0.317	0.699	0.816	0.710	1.438	1.905	4.746	12.880