

Perth And Kinross Council

Scrutiny & Performance Committee

22 November 2023

REVIEW OF EXTREME WEATHER EVENTS IN PERTH AND KINROSS IN OCTOBER 2023

Report by the Chief Executive
(Report No. 23/232)

1. PURPOSE

- 1.1 Following the events of 6-8 October 2023, specifically in relation to flooding close to the North Inch, Perth, officers were asked by elected members to review the arrangements in place over that weekend. Given the two subsequent weather events in quick succession (18-21 October and 27-29 October), these have also been considered to establish if there are lessons to be learned from similarities and differences in how these three events presented and how we responded to them. This is a first report as investigations continue. However, the report includes identified improvement activity to date for preparing for, and responding to, future severe weather events, as well as examples of good practice.
- 1.2 The Council acknowledges that, for residents and businesses affected as a result of the weather events, especially those who experienced flooding, this has been a very difficult time, particularly financially and emotionally, with some people facing ongoing disruption.
- 1.3 Elected members were invited to submit questions about the extreme weather events during October. Many of these are addressed within this report. Where this is not the case, elected members will receive a response via email.

2. RECOMMENDATIONS

- 2.1 It is recommended that Committee:
 - notes the impact on residents and businesses as a result of the severe weather experienced across Perth and Kinross area over October 2023
 - considers the findings of this review into the Council's preparedness, response and recovery activity during each of the three October weather events
 - considers the improvement actions identified within the report and makes recommendations for any other areas of improvement
 - notes that there will be a further detailed flooding report looking at the impact and contributory factors
 - notes that there will be a further review with partners, which will take place as soon as possible
 - thanks the Community Resilience Groups, and other community members, for their commitment and hard work, in responding to incidents

3. STRUCTURE OF REPORT

3.1 This report is structured over the following sections:

- Section 4: Scope of review
- Section 5: Background
- Section 5: Preparedness for 6-8 October 2023 weather events
- Section 6: 6-8 October 2023 weather events
- Section 7: 18-21 October 2023 (Storm Babet) weather event
- Section 8: 27 – 29 October weather events
- Section 9: Findings, Improvement Actions and Conclusions

4. SCOPE OF REVIEW

4.1 During October 2023, Perth and Kinross experienced periods of extreme weather, which had a significant impact on a number of communities across the area. In some areas, the disruption to residents, businesses and communities is ongoing.

4.2 While mainly focussed on 6-8 October, the scope of the review looks at the following areas of activity for all three events:

- notification and preparedness
- response management
- impact and recovery

4.3 There is a specific focus on the late closure of gates on the North Inch, Perth. The report also covers identified improvement activity for future significant weather events. These, in the most part, will require a detailed review, as time is needed to develop options, and for these to be costed. Therefore, a further report will be brought to elected members as early as possible.

4.4 The review recognises that there were particular circumstances surrounding these weather events, which tested existing arrangements. These included limited staff availability to supplement the standby arrangements with the first incident coinciding with the October holiday period. This, alongside the volume of rainfall and, for the subsequent events, the saturated catchments following the extreme weather on 6-8 October 2023 and Storm Babet, all combined to create a very specific set of circumstances. In preparing this report, officers have reviewed the Council's preparedness and response to the October weather events. This has included:

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- holding a debrief session with all officers involved in planning for, and responding, to the incidents;
- visiting available residents and businesses affected by flooding near the North Inch, including Bells Sports Centre, to provide support, establish the detail of what happened and the impacts as a result;
- seeking feedback and questions from elected members;
- holding a residents' meeting with members of the community impacted by the events near the North Inch;

- investigating the flood extent, flood mechanisms and causes of the flooding to properties around the North Inch;
- investigating the flood extents, flood mechanisms and causes of the flooding in other areas also impacted, such as Invergowrie;
- undertaking engagement with a range of partners including SEPA, SSE Renewables and local resilience partners
- commencing a detailed review of current procedures against our response to identify areas for further review and potential improvement.

4.5 Whilst the report focuses on the impact of extreme weather events, which generally only take place for a short period of time, it is acknowledged that the financial and emotional impact of such events can have a significant and long lasting affect.

5. BACKGROUND

5.1 Extreme events are becoming more frequent, and it is important that the Council and its partners, are effectively resourced, prepared and work alongside each other in their respective roles to mitigate the impact on local residents, when at all possible.

Existing procedures

5.2 The Council has well established processes in place which have proven effective over many years in relation to civil contingencies, emergency planning and business continuity. This includes a concurrent risk approach recognising that more than one incident may occur at the same time. This covers incidents such as severe weather, power outage, civil unrest, and cyber attack. There are also specific processes, set out in the Perth Flood Scheme Operating Manual which cover the operation of and triggers for flood gate (barrier) closure based upon tide levels and water flow data.

5.3 These arrangements are outlined in Appendix 1 of this report. These set out areas such as preparation, out of hours arrangements and stand by arrangements.

Severe weather planning

5.4 The focus on severe weather contingency planning has traditionally been around the winter period. While primarily focussed on the impact of cold weather (snow and ice), for a number of years, the annual winter maintenance policy report has highlighted that, in severe weather events, demand may exceed resources and often the Council will be unable to meet the public's expectations. When this year's report was considered in November (Report No 23/291 refers) at the Environment, Infrastructure and Economic Development Committee, it was agreed that, in recognition of changing weather patterns, officers will bring forward a report before summer recess 2024. This is to examine resource requirements to support year round resilience, recognising changing weather patterns.

5.5 Weather warnings from the Met Office affecting Perth and Kinross are not uncommon. Our records show that since July 2020 there have been 153

Yellow weather warnings, 11 Amber and three Red warnings. On this basis, there are approximately five weather warnings a month. Some warnings have been snow related, however the majority have been for rainfall and on only a small number of occasions have required action to be taken. During the same period, excluding the recent weather events experienced in October 2023 which are the subject of this report, there have only been four significant flooding events in Perth and Kinross since July 2020. On two of these occasions an amber warning was issued, whilst on two others only a yellow warning was issued.

Date	Area affected	Amber Warning
August 2020	Perth, Alyth, Blairgowrie & Rattray, Dunning, Forgandenny, Kinross	Yes
February 2021	Aberfeldy, Bankfoot, Fearnan, Methven & St Fillans	Yes
October 2021	Alyth, Blairgowrie & Rattray	No
September 2022	Perth and Bridge of Earn	No

- 5.6 Not all weather warnings will necessitate an Incident Management Team to be stood up. The requirement for this will be based on a risk assessment, based on the information available. These meetings generally take the same format and a copy of a generic agenda is attached as part of Appendix 1.
- 5.7 Our internal arrangements are also supplemented by long-established relationships and formal arrangements through the Tayside Local Resilience Partnership, with partner agencies including Police Scotland, Scottish Fire and Rescue Services (SFRS), SEPA, Scottish Water, NHS Tayside as well as Dundee and Angus Councils. Resilience is also supported by strong and effective relationships with Community Resilience Groups (CRGs), made up of local volunteers prepared to support their local area during emergency situations, including weather. There are currently 42 CRGs in Perth and Kinross.

Previous major weather event report and recommendations

- 5.8 The catchment area for the Tay covers approximately 5,000 sq km. As a result, the Perth and Kinross Council area has a long history of flooding. In 1993, Perth experienced a significant flooding event, following heavy snowfall and a rapid melt. Comrie has experienced a number of flooding events from the Water of Ruchill, the River Earn and the River Lednock. In July 2015, Alyth Burn caused significant flooding as a result of extreme rainfall and high flows. Storms Desmond and Frank in December 2015/January 2016 caused severe flooding on many roads across the area, as well as the failure of Bleaton Hallet bridge.
- 5.9 On 18 August 2021, the Environment & Infrastructure Committee considered a report on the flooding of 11/12 August 2020 (Report No. 21/122 refers). The report described the extent of the severe flooding which occurred in Perth and Kinross on 11 and 12 August 2020. The entire Perth and Kinross Council area suffered extensive rainfall (for approximately 6 hours) from around 11pm on

11 August 2020 into the early hours of the following morning. The storm was significant and particularly affected parts of Perth City, Alyth, Dunning, Forgandenny, Kinross, Pitlochry, Blairgowrie, Methven and other areas. The report also included the findings of the review of the Council's response to the flooding along with actions taken in response to the emergency motion approved by Committee on 19 August 2020.

- 5.10 The Council, across all these events, has recognised the impact on communities, residents and businesses, and worked, wherever possible, to look at support and mitigations, including undertaking flood studies and building flooding schemes.

Perth Flood Scheme protocol

- 5.11 The Perth Flood Scheme is managed and operated on behalf of the Council by the Roads Maintenance Partnership (RMP) and has been since its inception in 2001. The operational manual was developed utilising data provided by the scheme's design consultants relative to the level of protection the scheme gives. The scheme is designed to protect Perth City from flooding from the River Tay and consists of 77 operational flood barriers (gates) that require varying levels of intervention to put in place. It is also important to note that 10 barriers are permanently closed, and a further 10 closed during the winter months (1 October – 31 March).
- 5.12 As a result, the Flood Gate closure triggers do not include Yellow or Amber warnings issued by the Met Office. The triggers are based around tide levels and water flow data, which SEPA provides to the Council, and this data is applied to a "gate closure" table. The Flood Protection Scheme also includes 12 gate closure plans, and the appropriate one is initiated based upon the data provided by SEPA based on a template.
- 5.13 SEPA play an important role in the Perth Flood Protection Scheme. The Perth Flood Scheme Operating Manual states that:

In response to the special requirements of Perth, SEPA have agreed to provide the following warning services to PKC:

1. *An advance warning whenever conditions in the upper catchment of the Tay indicate that exceptional river flow may result.*
2. *An advance warning if Met. Office tidal surge forecasts indicate that a tide higher than 2.9M at Newport is expected.*
3. *A flood warning when the combined flow of the Tay and the Tummel at Ballinluig exceeds 550m³/sec, indicating flow at Ballathie, immediately upstream of Perth, of more than 800 m³/sec.*
4. *Notification of amber and red flood warnings for the River Almond*
5. *Periodic updates of the fluvial and tidal situation flowing either 2 or 3, in particular informing PKC when the fluvial or tidal thresholds shown on Table 15 are likely to be exceeded.*
6. *An "all clear" report when the flood risk has passed.*

- 5.14 Since 2013, Council records show that there have been 10 occasions where the flood gate closure plans have needed to be fully implemented. Appendix 1 outlines details of the flood gate closure protocols and triggers. On all occasions, the required plan has been implemented and the flood scheme has worked effectively, reducing the risk of flooding directly from the River Tay. In addition to this, there have been a number of occasions where the flood gates have been closed on the South Inch, due to weather warnings. Again, this procedure has worked effectively with the exception of two occasions. Firstly, when not all of the gates on the South Inch were closed on 12 August 2020, which contributed to flooding in the vicinity of Marshall Place, and also on 10 September 2023, although on this occasion there was no impact on any property.

Summary of October 2023 weather events

- 5.15 Two major flood events impacted upon Perth and Kinross during October 2023:
- 6-8 October 2023;
 - 18-21 October 2023.
- 5.16 Both periods of severe weather were preceded by weather warnings. There was another weather warning in place for the weekend of 27-29 October, which did not result in major flooding. Whilst the extreme weather during all three incidents took place over a relatively short period of time, the Council recognises that the impact of flooding on individual residents and property owners may last significantly longer.
- 5.17 The Council has now activated the Bellwin Scheme, which is now active for the remainder of the year. Under the terms of the scheme, the first £797,780 is to be met by the Council from existing resources. On 16 November 2023, the Scottish Government also announced communities affected by the worst flooding from Storm Babet will be able to claim financial support. Grants of £1,500 will be available for homeowners and £3,000 for businesses. We are looking at the detail of this to see whether Scottish Government support may be available for Perth and Kinross residents and businesses.

6. 6-8 OCTOBER 2023 WEATHER EVENTS

Notifications and preparedness

Weather and flooding risk warnings

- 6.1 In the days prior to the extreme weather, the Met Office issued a number of weather warnings for the week commencing 2 October 2023. The warnings received indicated persistent heavy rain, with the level of warning escalating from yellow to amber, the first of which was on the morning of Friday 6 October 2023.

Date Issued	Period Covered	Warning	Reason
2 October 2023	5 – 6 October 2023	Yellow	Heavy Rain
4 October 2023	6 – 7 October 2023	Yellow	Heavy Rain
5 October 2023	7 – 8 October 2023	Yellow	Heavy Rain
6 October 2023	7 – 8 October 2023	Amber	Heavy Rain
7 October 2023	7 – 8 October 2023	Yellow	Heavy Rain
7 October 2023	7 – 8 October 2023 (extended end time)	Amber	Heavy Rain
7 October 2023	8 October 2023 (extended end time)	Yellow	Heavy Rain

- 6.2 In addition to the information provided by the Met Office, SEPA's Scottish Flood Forecasting Service issue a daily Flood Guidance Statement.

Date of Issue	Flooding Risk Level				
	Weds 4 Oct	Thurs 5 Oct	Fri 6 Oct	Sat 7 Oct	Sun 8 Oct
3 October 2023	Very Low	Very Low	Low	Low	N/A
4 October 2023	Very Low	Very Low	Low	Low	Very Low
5 October 2023	N/A	Very Low	Very Low	Low	Low
6 October 2023	N/A	N/A	Very Low	Medium	Medium
7 October 2023	N/A	N/A	N/A	Medium	Medium
8 October 2023 (10.30am)	N/A	N/A	N/A	N/A	Medium
8 October 2023 (4pm)	N/A	N/A	N/A	N/A	High

- 6.3 In line with the information provided by the Met Office, the likelihood of severe weather during the 6-8 October 2023 was low or very low until Friday 6 October 2023. The Amber weather warning and medium flooding risk warnings issued on 6 October were the trigger for the additional preparations noted below.

Engagement with partners

- 6.4 In addition to the information received by email from SEPA and the Met Office, the Roads Maintenance Partnership contacted Scottish Water to check all seven pumping stations associated with the Perth Flood Protection Scheme were working correctly. Scottish Water confirmed that all pumps had been checked and were working correctly. Telemetry data from South Inch pumping station pumps for 8 October indicates pumps were operating satisfactorily throughout the flooding event on that day.

Engagement with communities

- 6.5 All Community Resilience Groups were made aware of the weather warnings issued once the initial Amber weather alert was issued on 6 October 2023. Over the course of the weekend, they were provided with information, advice and support as required.

Communication

- 6.6 Weather warning information for the weekend, including information to the Ready Scotland website, was first shared on the Council's social media channels at 9am on 6 October and later that day updated to reflect the Amber warning issued. An Elected Member Briefing Note issued at 5pm on 6 October provided an overview of arrangements for the weekend ahead. No public statement was made advising of the Council's preparations for the weekend.
- 6.7 The Council's social media channels shared updates through Saturday and Sunday to highlight SEPA-issued public flood alerts, road closures and warnings, and information on gate closures. Four further Elected Member Briefing Notes were also issued over the course of the weekend to provide updates on the flooding response.
- 6.8 Updates were issued to Elected Members on the response to flooding and preparations for the expected high tide at 6pm and 10pm.

General operational preparedness

- 6.9 A winter preparedness meeting with all relevant council services and the Health and Social Care Partnership had taken place on 25 September 2023, in line with normal practice. While this meeting is focussed on the winter period, it also ensures that all relevant teams are aware of arrangements for out of hours responses.
- 6.10 As part of the flood gate routine maintenance, an external contractor had undertaken an inspection of all flood gates in the weeks prior to October 2023. Some minor repairs were identified and are on-going. Furthermore, as part of the annual preparations for a flood event and to provide an annual training exercise for officers, the annual trial closure of the flood gates had taken place on 29 September to 1 October 2023. During this exercise it was established that one gate, at Mill Wynd, Perth, was not closing properly, although it could be closed with the assistance of a vehicle. This matter was not resolved prior to the weekend of 7-8 October 2023. However, contingency measures consisting of around thirty sandbags was in place following the test. While water did build up on the road during flood event of 8 October, there was no threat to any properties.
- 6.11 Blocked gullies are often thought to be a contributing factor in relation to flooding. Road gullies (drains) only hold a very small quantity of water have a

sump area in the base to allow solids to settle and prevent them entering and blocking the pipe system. The water collected in the gully discharges, principally, into the combined sewerage system in older urban environments. This system is usually owned and maintained by Scottish Water. During flood events, the combined sewer is often full to capacity, and the road gullies cannot drain away, leading to surface water ponding/flooding. This surface water drains away after the flood peak has passed and capacity returns to the combined sewer. Road gullies can often become blocked due to the volume of debris generated during a flood event. There will be isolated gullies blocked at any point in time across the Council network, however, in events such as these, locally blocked gullies would not have a significant impact.

6.12 The Council's gully cleansing programme consists of an annual cleanse of all road gullies on the A class network and a biennial cleanse for all other gullies. As at 6 October 2023, 14,860 (59%) had been cleansed in the financial year, out of a target of 25,000 for the full year.

6.13 Furthermore, gullies in areas which are considered "flood susceptible" are cleansed every six months. There are approximately 1,000 such gullies, some of which are located in Perth City Centre, including Barossa Place/Street, which were last cleansed in August 2023.

6.14 A review of the gully cleansing policy, particularly gullies, which fall into the definition of "flood susceptible", will be undertaken.

Preparedness specifically for 7-8 October

6.15 The weekend of 7-8 October was the start of the October break in Perth and Kinross, and part-way through the October school holidays in neighbouring areas. As this is also the last school holiday period before the winter maintenance policy comes into effect, it is a time when traditionally higher than average numbers of staff take leave. This impacted on the availability of additional volunteers to supplement standby arrangements throughout the weekend. However, once the amber warning was issued on 6 October 2023, additional volunteers from the Roads Maintenance Partnership and Council staff involved in civil contingency work were sought to be on standby across key roles. The support of these volunteers was essential in delivering a response to communities across the weekend:

- 24 staff from the Council's Parking and Civil Contingency teams on standby
- 8 vehicles prepared for deployment with sandbags, traffic cones and barriers
- 8 additional Roads Maintenance Partnership staff members volunteered to support the planned standby arrangements. This increased the available resource to 14 people across the whole of Perth and Kinross.
- Roads Maintenance Partnership standby arrangements for the weekend of 7-8 October 2023 included a Duty officer, two duty supervisory officers, seven operatives based at Ruthvenfield, three operatives at the Blairgowrie Depot, and a further four operatives at the Aberfeldy depot.
- The normal Housing out of hours service was in place

- 6.16 The Council contracts with Aberdeen City Council Customer Contact Centre to support the operation of emergency contact lines for roads, flooding and housing repairs. In line with the agreed process, Aberdeen City were contacted on 6 October to request that they arranged additional resources to support the answering of calls from Perth and Kinross given the amber warning.
- 6.17 While officers were involved in conversations around response planning and the direction of, and availability of resources, based on the available information on 6 October, no Incident Management Team meeting took place. However, members of a potential Incident Management Team were identified and placed on standby to meet when required. The Executive Director (Communities) was the strategic lead and “Gold Commander” for the weekend.

Response Management

- 6.18 During the weekend, groups in Alyth, Rattray and Aberfeldy were mobilised and provided assistance to their communities. At around 10.10am on Sunday 8 October, Aberfeldy CRG advised the Council that the water levels were rising again and that they had started to deploy sandbags. Officers were also in contact with Alyth CRG and Rattray CRG on the morning of 8 October 2023, who were also proactive. Council officers were deployed to various locations as resources allowed to provide assistance to the CRGs and deliver and deploy sandbags.
- 6.19 In communities, where a CRG has been established, particularly Aberfeldy, Alyth and Perth, the groups proved to be invaluable in providing an effective response and a valuable support to residents and businesses. The Council acknowledges the outstanding work of the resilience groups during the flood events.
- 6.20 Roads Maintenance Partnership officers and Parking attendants played an important role throughout the weekend, working alongside colleagues from the Scottish Fire and Rescue Service, Police Scotland and Community Resilience Groups. The teams were involved in dealing with issues including distributing and deploying sandbags as well as feeding back information from the ground to assist with identifying issues and targeting resources where they were needed.
- 6.21 During the weekend of 7-8 October, Aberdeen’s Contact Centre received 615 calls to PKC out of hours numbers, of which 257 were answered. Some of the unanswered calls would have been repeat callers who were later answered, but it is not possible to identify how many of these there were:

Date/Time	Calls made to Aberdeen	Calls answered by Aberdeen
Saturday – 7 October	297	110
Sunday – 8 October	318	147
Total	615	257

- 6.22 145 calls were in relation to housing repairs, the majority of which were weather related, mainly due to small leaks. A total of 39 calls were forwarded to the Repairs Inspector on stand-by. The remainder being resolved at point of contact or forwarded to the Trades directly. Only two Council tenancies required decanting due to flooding and, in both cases, alternative temporary accommodation was provided.
- 6.23 A number of locations across Scotland were experiencing extreme weather events at the same time, therefore call volumes were significant from residents from across Scotland. Also, given the nature of these extreme weather events, it is unlikely that any Contact Centre would be able to adequately cope with demand.
- 6.24 At the request of the Incident Management Team, the Council's Customer Service Centre was opened from 5pm-10.20pm on Sunday 8 October to assist with answering calls to the roads emergencies line. While no out of hours service is operated by the Council's Customer Service Centre, four members of staff volunteered to answer phones during this time.

Date/Time	Calls made to CSC	Calls Answered by CSC
8/10/2023 (5pm – 10.20pm)	16	15

Aberfeldy

- 6.25 The main area affected on Saturday 7 October 2023 was Aberfeldy Holiday Park. Officers first became aware of potential flooding at the Park at around 11am on 7 October 2023. An officer from the Parking & Civil Contingencies Team was deployed to the site with a 4x4 vehicle to assist and to assess the developing situation, and a request was made by the Council to the Aberfeldy CRG for assistance. It was reported that the Park was well under water by 1.20pm (approximately 3 feet in depth at the entrance). Contact was established with the Chair of the Aberfeldy Community Council who advised that they were ready to open up the town hall as a rest centre, if required. There were 10 displaced people, although none required assistance and all managed to make alternative arrangements.

Perth

- 6.26 Officers from the Parking & Civil Contingencies Team worked throughout the weekend distributing and deploying sandbags, assisting with road closures, and providing eyes and ears on the ground to assist in situational awareness. The team commenced around 9.30am on 8 October deploying sandbags, in locations such as Queen Street and assisting residents (including visiting vulnerable residents in the area) to provide assistance and reassurance. A decision was made at around 9.45am by Parking to close a number of roads including Queen Street. This was due to vehicles driving through surface water, which was creating a wave effect and overcoming residents sandbag defences. In Windsor Terrace, a sandbag dam was created across to the road to successfully divert water back into the watercourse and protect properties. The team also provided support and deployed sandbags at Glenearn Campus.

- 6.27 In addition, the Parking Attendants visited properties on Tayside Crescent and Wade Place Aberfeldy, during the afternoon and Charlotte Street, Barossa Place and Rose Terrace at various times throughout the afternoon and evening on Sunday engaging with residents affected, colleagues from SFRS and Police Scotland, offering support and assistance.

Perth Flood Scheme

- 6.28 The Roads Maintenance Partnership (RMP) is a partnership between Perth and Kinross Council and Tayside Contracts, which undertake a number of activities on behalf of the Council, including responding to extreme weather events and operating and maintaining the Perth Flood Protection Scheme. The scheme is designed to protect Perth City from flooding from the River Tay and the Scouring and Craigie Burns. It consists of 77 operational flood gates that require varying levels of intervention to put in place. Ten gates are permanently closed, and a further 10 closed during the winter months (1 October 2023-31 March 2023). Therefore, on 6 October 2023, 20 gates plus those at the South Inch (3) were already closed leaving 54 flood gates open at this time.
- 6.29 The Roads Maintenance Partnership Duty Officer was the main point of contact with SEPA during the weather event. The following information across the remainder of the weekend is based on our records. During Saturday 7 October, the Council was provided with information by SEPA about water levels in the rivers Earn, Lyon, Isla and Upper Tay at Aberfeldy. No information on the River Tay at Ballathie was provided until the RMP Duty Officer specifically requested an update at 7.10pm, at which point SEPA advised no Perth Flood template was to be issued by them at that time (see Appendix 1 for operating procedures). No action was therefore triggered in relation to the River Tay at that time.
- 6.30 SEPA phoned the RMP Duty Officer at 8.14pm to advise that the flow rate in the river was forecast to be 1,400 m³/sec and the tide level would be 1.3m at high tide (9.45pm). This information indicated that flood closure Plan 9 (all gates to be closed except Tay Street, Queens Bridge and three gates at Friarton) should be activated.
- 6.31 The Operations Manual states that three squads of four men are required to undertake the procedure. Given that at this point, there was only 1 hour and 31 minutes before high tide, and it takes four and three quarter hours to close the gates, there would not have been enough time to implement Plan 9, nor enough staff on standby to undertake the procedure.
- 6.32 Consequently, the Duty officer consulted with another senior colleague within the RMP and agreed that the best course of action was to instruct the Duty Supervisor (Assistant Roads Maintenance Officer - ARMO) to undertake a visual inspection of the water levels in the River Tay from that point until midnight. While this was not in line with the agreed operating procedure, the decision was taken on the available information and resources. The officer arrived at approximately 8.30pm and reported that there was approximately .1.5m freeboard at Perth Harbour. Checks at Commercial Street and Tay

Street were also undertaken, with around 1.5m of freeboard at Commercial Street and no flooding issues at Tay Street dry arch section. No further action was taken to implement flood gate closures or standby procedures at that time, and high tide in Perth passed without significant issue.

- 6.33 Several more calls took place throughout the night to establish forecasts for high tide the following day, which SEPA advised were still being calculated. At 12.40am, SEPA advised that while the forecast looked uncertain they were expecting a marginally lower tide next morning and broadly similar flow rates to the 9.45pm high tide. Given there were no significant issues at the earlier high tide, the decision was taken to seek a further update from SEPA at 6am. No further action was taken to implement flood gate closures or standby procedures at that time.
- 6.34 The RMP Officer contacted SEPA to request an update at 5.16am on Sunday 8 October. SEPA advised that the flow rate had increased to 1,528 (m³/sec) and may increase further to 1,650 at high tide. Consequently, the Duty Officer activated standby procedures and an RMP senior engineer with previous experience of managing the flood gate closure process came into support this.
- 6.35 By 7am, all five “on call” operatives, the duty officer, senior engineer and one ARMO were at the Ruthvenfield Depot and ready to be deployed, with two further operatives having already been deployed to clear trash screens on the Craigie Burn. A briefing took place at around 7.15am at which point a plan of action was agreed which took into account that there were only seven individuals available to implement the flood gate closure process which would normally have taken 12 officers.
- 6.36 Two separate squads left the depot at around 7.30am, with one squad of four employees going to the flood gates at Perth Harbour and the second squad containing three employees attending to the flood gates at Commercial Street/Bridgend Court. These two locations were prioritised to focus on protecting the most vulnerable residents and business premises.
- 6.37 Throughout the morning, the heavy rain persisted and flooding was present at a number of locations. Consequently, resources were deployed in response to the emerging situation. A summary of the key decision points around the closing of flood gates are below.

Flood gates in the vicinity of the North Inch

- 6.38 At approximately 9.10am, water was noted to be accessing the North Inch via the open gate at the War Memorial, and was at this point approximately 30cm-50cm deep. The squad at Commercial Street/ Bridgend were instructed to proceed immediately to the North Inch once they had concluded the closure of those flood gates. An additional two off-duty RMP officers who were previously called (05:45) contacted the RMP senior engineer around this time and came in to support flood gate closures.
- 6.39 When the squad arrived at the North Inch at 9.40am, they were unable to close the flood gate at the War Memorial as the force of water was too strong to stand up in and padlocks were submerged. The remaining four North Inch

gates were closed by 11.40am, but despite checking again at that time, the force of water at the War Memorial gate remained too strong to stand in. As such, the decision was taken to monitor the water level while moving the squad on to close other gates in Perth city centre.

- 6.40 A request was also made for sandbags to be delivered to the rear of Charlotte Street properties and be deployed to protect the threshold of the properties. This was because at this point the gate at the rear of Charlotte Street was also open and had been breached. This gate was eventually closed at around 10.55am
- 6.41 All of the remaining gates, were closed by approximately 3.30pm at which point, the squad went to Ruthvenfield Depot and retrieved a JCB digger and then returned to the remaining open gate. The squad proceeded to close it, and this was completed at around 5pm.

Mill Wynd

- 6.42 As the flood gate at Mill Wynd would not close fully due to the issue identified during the previous flood closure trial, sandbags were already in place. Water from the lade was reported to be approximately 30cm deep on the carriageway but no properties were affected.

Perth Harbour/Lower Friarton flood gates

- 6.43 The senior engineer arrived at Lower Friarton at around 9.00am, at which point there was surface water on roads in the area. In addition, he witnessed water flows, which, in his opinion, had increased significantly above those previously advised by SEPA. Consequently, he commenced closing the three flood gates at Lower Friarton which, according to the Operating Manual, are only required when the water flow is in excess of 1,800 m³/sec.
- 6.44 At around 9.45am, the senior engineer received a call from SEPA to advise that overnight a considerable amount of water had flowed from SSE Hydro's dams infrastructure and along with the heavy rainfall, the River Tay was rising rapidly. He was also advised that the current estimate was around 1,650 m³/sec. The senior engineer responded by stating that, in his opinion from observations, the water flow was significantly greater than the estimate and he advised that the "full" gate closure process (Plan 12) was being implemented.
- 6.45 Given the extent of the issue, and the observed water flows, the squad was then instructed to prepare and initiate the closure process at Queen's Bridge and Tay Street Promontory. This requires the collection of modular gate sections from storage from Ruthvenfield and a hi-ab crane and operator to move them. This was completed at 3.30pm.

Property Services

- 6.46 At approximately 1.40pm on Sunday 8 October, a request was made by the Scottish Fire and Rescue Service (SFRS) for the Council to attend to a potentially dangerous building in George Street, Perth, due to falling masonry. Property Services sourced a consultant structural engineer who made

recommendations to make safe (erect fencing). Property Services arranged heras fencing which was installed on 9 October. Whilst a solution was found to deal with this matter, a review of the out of hours arrangements with regard to dangerous structures would be appropriate.

Local Resilience Partnership and Incident Management Team arrangements

- 6.47 Given the extreme weather, a major incident was declared by Police Scotland in Tayside at 9.36am on Sunday 8 October 2023 and a Tayside Local Resilience Partnership (TLRP) meeting held at 10.15am.
- 6.48 Whilst the first IMT and TLRP meetings were not until Sunday, there was a significant amount of communication on both Saturday and Sunday involving numerous officers at all levels of the organisation. This included the direction of staff to respond to issues in various areas of Perth and Kinross.
- 6.49 The TLRP meeting was attended by the Executive Director (Communities), the Emergency Response Duty Officer (ERDO), and the on-call Communications Officer. At this meeting the on-duty SEPA Officer informed us that Aberfeldy Caravan Park was at risk of flooding at some point today – this had flooded approximately 24 hours earlier and had been dealt with. He went on to update that the forecast was for high levels tomorrow, similar to 2016 and that flood gates should be closed.
- 6.50 Further LRP meetings were held on Sunday at 2.45pm, 7pm, 9.30pm and finally on Monday 9 October 2023 at 11am. Incident Management Team meetings were also held on Sunday. The first IMT meeting during the extreme weather was at 4.15pm, and was followed by two further IMT meetings later that day at 6.30pm and 9.15pm, and continued on Monday, Tuesday and Wednesday. These meetings helped to co-ordinate information and responses across the area, and were a prompt for elected member and public updates. The Incident Management Team also prepared a rest centre to be stood up for residents around the North Inch if it became necessary. This was ultimately not required.

SSE

- 6.51 During the incident the Council had no direct contact with SSE Renewables. SSE have advised that the company did have regular dialogue with SEPA during the event via the company's 24/7 Hydro Operations Centre. However, at the Council's request SSE Renewables joined the TLRP meetings from the second meeting on 8 October 2023.
- 6.52 The Council has also since been advised by SSE (Renewables) Head of Hydro Programmes that in the days leading up to the extreme weather (and during it) SSE's assets were discharging water into the overall Tay system at Perth, and during the 7-8 October 2023 a series of reservoirs did go on uncontrollable spill (simply due to volume or rainfall). However, the main storage reservoir in the Tummel Valley at Loch Ericht did not spill and the Company did not generate or discharge flows from it through the event until

after the peak of the event in Perth, which SSE advises provided a net benefit to the Tummel Valley and indeed Perth.

Impact and recovery

6.53 Within Perth and Kinross, the extreme weather during 7-8 October 2023 predominately affected Perth, although other areas were affected including:

- Aberfeldy Caravan Park
- Pitlochry – Moulin Burn.
- Bridge of Earn (Back Street and Old Edinburgh Road).
- Bankfoot (Prieston Road, Nicoll Drive and Church Lane)
- Alyth (Meigle Road, Cambridge Street, and Loyal Road)
- Blairgowrie/Ratray – Ratray Burn (David Grimmond Drive, Back Row, Schoolfield Road and High Street)
- Tibbermore at Pow Bridge
- Methven (east end of Main Street around Bowling Club).

Communities Affected

6.54 The Council understands that the impact of flooding on households lasts beyond the days of the severe weather, and that many residents are continuing to deal with the after effects of their property being flooded. As part of the ongoing work to recover from and review the circumstances surrounding the 7-8 October officers have been speaking to residents to listen to, and understand their concerns. Feedback from a residents meeting for those impacted by the North Inch flooding is included within this report. In line with normal practice, over the coming weeks, community meetings will be held for residents and businesses in the areas affected. The meetings will be supported by a multi-agency group, including the Council's flooding team, the Roads Maintenance Partnership, the Scottish Flood Forum, Scottish Water, SEPA and the emergency services, where appropriate.

6.55 Following the event, in line with similar extreme weather events, a Flooding Bulletin was issued on 13 October 2023 [Perth and Kinross flooding bulletin - Perth & Kinross Council \(pkc.gov.uk\)](#). This bulletin, which is a joint agency communication, provided an update on the weather event, and asked directly affected property owners to contact the Council's flooding team to assist in understanding the impact of the event and the cause.

6.56 To date, across the Council area, investigations indicate that approximately 120 properties have been affected, with approximately 70 experiencing some internal flooding. It has been reported that approximately 91mm of rainfall fell in Perth, which is more than an average month's rainfall at this time of year. SEPA will provide an assessment of the storm event when data analysis is complete.

6.57 While the Council is aware that 14 households had to find alternative accommodation, 10 of which were displaced from Aberfeldy Caravan Park, the majority of people made their own arrangements. Temporary accommodation was provided for Council tenants of two properties, who were amongst those affected by the flooding in Commercial Street, Perth.

Perth City

- 6.58 In Perth, as a result of the extreme weather on 7-8 October 2023, the following were affected:
- The North Inch (Charlotte Street, Charlotte Place, Atholl Place, Rose Terrace, Barossa Place and Bells Sports Centre);
 - The Scouring and Craigie Burn catchment (Broxden, Lamberkine Drive, Cherrybank, Low Road, Murray Crescent, Balmoral Place, Queen Street, Queen Avenue, Queens Court, Windsor Terrace, Glenearn Road, Croft Park and South Inch);
 - Feus Road, Cavendish Avenue/Gray St, Marshall Place, Perth Town Lade, Commercial Street,
- 6.59 The Council has been provided with information from properties in the vicinity of the North Inch that were directly affected by flooding in Perth on 8 October. A total of 34 properties located behind the Perth Flood Scheme experienced internal flooding.
- 6.60 Four flood gates adjacent to the North Inch remained open for a period of time during the flood event. The Council acknowledges that the delayed closure of these may have contributed to the flooding of some properties. However, full investigations to determine the impact of this are yet to be completed as there are also existing sewer, surface water and/or groundwater issues in this area. This will form a more detailed flood report in due course.
- 6.61 A number of property owners incurred water damage to their property and possessions as a result of flooding, which unfortunately caused personal loss and distress. An initial summary of the properties and location impacted is set out in the table below:

Location	Impact
Bells Sports Centre & North Inch Bowling Club	<ul style="list-style-type: none"> • Both properties experienced flooding
Barossa Place	<ul style="list-style-type: none"> • 7 properties internally flooded
Rose Terrace	<ul style="list-style-type: none"> • 15 property basements flooded (4 confirmed to be habitable, others abandoned or used for storage only). Flooding from the River Tay did not reach these properties (there was no direct flow path)
Charlotte Street	<ul style="list-style-type: none"> • 2 properties flooded internally • A third property was protected from internal flooding by sandbags. Closure of the flood gate at 11am prevented flooding from the River Tay at this location.
Charlotte Place	<ul style="list-style-type: none"> • 2 properties flooded internally
Atholl Place	<ul style="list-style-type: none"> • 1 property basement (affected by minor water ingress)

Five properties were also flooded in Commercial Street. Initial flooding was due to surface water as a result of heavy rainfall, and the outfall of surface water drainage system being submerged. The main cause of flooding in this case was due to flood water from the River Tay infiltrating the combined sewer (via manholes on 'wet' side of the flood barrier).

- 6.62 A meeting was held at 6pm on 15 October 2023 in the Civic Hall in 2 High Street, Perth with affected residents from those streets listed in the table above. Some residents who were also affected and lived on Tay Street or had businesses located on Tay Street also attended. In total, there were approximately 30 residents/business owners in attendance. The meeting was also attended by elected members, including the Leader of the Council, the Depute Leader of the Council, the Convenor and Vice Convenor of Scrutiny and Performance Committee, the vice convenor of Environment and Infrastructure Committee, and the local ward elected members. The meeting was chaired by the Chief Executive and supported by officers. The Chief Executive opened the meeting by recognising that the meeting was to listen and understand the impact on those affected, which would then be summarised within this report. Information would also be used to underpin improvement activity as a result of feedback from those impacted.
- 6.63 Understandably, residents and business owners were frustrated, upset and angry about recent events. Attendees expressed their views and sought answers about the Council's involvement prior to, during and after the extreme weather on 6-8 October 2023.
- 6.64 The key themes raised at the meeting included:
- The timing and decision making around the gate closures, particularly why the large gate on the North Inch was not closed until after 5pm on Sunday afternoon and what the rationale was for closing the gates in the order that they were closed.
 - What plans were in place for a weather event, what were the standby arrangements and why the gates were not closed much earlier in the week when weather warnings were being issued.
 - Residents had been living in their properties for a number of years and had a lot of "lived experience" with regard to flooding and monitoring the River Tay. The residents felt that this experience and "eyes on the ground" should be utilised, for example introducing a means by which residents could contact officers if and when issues were developing.
 - The issue of insurance and liability for damage to properties around the North Inch that may have been impacted upon by the late closure of the flood gates
 - Concerns were raised about the capacity of Scottish Water's sewer network in and around the Commercial Street area. Residents suggested that this was a historical issue

- Comments were made about the visibility, support, and effectiveness of the Council's officers during the flood event on Sunday 8 October 2023 and since the event. Residents' ability to speak to somebody and receive advice and support was also felt to be lacking. There was also criticism of some of the responses from the Out of Hours contact centre, and this will be considered as part of our further review.

6.65 It was agreed that further engagement would take place with residents following the meeting. It was also requested that residents come together to agree how they would like to present any deputations at the Committee meeting, and a commitment was provided that the Civic Hall would be made available for residents to watch the meeting on the TV screen should there not be enough room in the Council Chamber.

Bells Sports Centre

6.66 In addition, Bells Sports Centre incurred significant damage across the entire ground floor including the arena, new gym and associated equipment, squash courts, meeting rooms and changing rooms. This is not the first time that the Sports Centre has incurred water damage from flooding. The last notable event occurred on 12 August 2020, as a result of the widespread surface water flooding which overloaded the combined sewer network in this area.

Impact on roads

6.67 More than 20 roads were impacted by flooding, many of which were required to be closed during parts of the weekend although two landslips and a fallen tree also played a part. Some roads remained closed for days after the event whilst water levels receded, further impacting residents. Adverse Weather Road Closure Updates were issued regularly during both days to an extensive distribution list, including elected members, community councils, key officers and partner agencies and used to update the public information on the Council's social media channels.

6.68 The C448 Glen Lyon road at Woodend Cottage was one of the most affected roads, as this was damaged by a landslide. In response the RMP prioritised its safe repair, working weekends and mobilising contractors in order to reopen the road as a matter of urgency. The road reopened on Thursday 26 October 2023.

Communications

6.69 The majority of communication amongst officers during 7-8 October 2023 at both a strategic and tactical level was online. All LRP and IMT meetings took place on-line via MS Teams, which is common practice given the timing of these meetings and the geographic location of officers, particularly when multi-agency partners are involved. This approach allowed for meetings to be arranged quickly and for officers to inform, advise, instruct and respond as appropriate in a timely manner.

6.70 There were no discussions with SSE during the 7-8 October event. Communication with regard to SSE assets and the management of water, and

the impact on the Tay catchment area take place between SSE and SEPA. This may have impacted upon the Council's ability to make timely decisions.

- 6.71 The Flood Gate Closure Operating Procedure states that the RMP Duty Controller will make contact with a list of named businesses and contacts in the event of a gate closure. However, given the shortage of the resources, the Duty Controller was needed to assist with the closure process and therefore was not able to telephone the list of contacts. This will be considered as part of the improvement action to review the flood gate closing procedures.

7. 16-21 OCTOBER (STORM BABET) WEATHER EVENT

Notifications and preparedness

- 7.1 Learning from the experience of the previous weather event influenced preparations for Storm Babet.
- 7.2 Over the weekend of 15/16 October, the Met Office began to warn of high winds and rainfall that would move northward, and likely impact the eastern part of Scotland. Heavy downpours were forecast from Wednesday 18 October. The Met office advised that as this rain would fall on saturated ground there would be a risk of localised flooding. The rain was forecast to be accompanied by high winds in places, and unusually the wind would be from the east with the potential to topple trees in leaf.
- 7.3 At 11.30am on Monday 16 October the Met Office issued a severe weather warning: *"As well as heavy rain, Storm Babet will bring some very strong winds and large waves near some eastern coasts too. Gusts in excess of 60mph are possible in eastern and northern Scotland from Thursday. It is likely Met Office warnings will be updated through the week."*
- 7.4 Preparations for responding to the likely impact of the weather warning began on Monday with discussions with SEPA taking place regularly to ensure clear lines of communication were in place.
- 7.5 On Tuesday afternoon the rain forecast for north-east Scotland, covering the north-eastern part Perth and Kinross was updated to Amber, with the rest of the Perth and Kinross area remaining Yellow. The wind risk was also Yellow for the east coast, with some concern for coastal communities as this was not the prevailing wind direction.
- 7.6 An IMT meeting was held at 4pm where it was agreed that a command structure would be put in place to manage any required response to Storm Babet led by the Head of Planning and Development (gold), Head of Communities Business and Resources (silver) and the required service leads (bronze).
- 7.7 At that meeting it was noted that 31 flood gates remained closed following the previous weather event, including all those at the South Inch. The IMT agreed that flood risk would be reviewed on Wednesday morning following SEPA's daily update. It was also agreed that sandbags would be delivered to key at risk locations including Bell's Sports Centre in Perth and Alyth town centre, and communications issued.

Communication

- 7.8 As with the previous weather event, all IMT meetings were held online and a specific Storm Babet IMT Teams chat was set up. This proved useful in separating strategic and tactical decisions and actions from “on the ground” operational decisions and actions were then communicated from staff on duty. All agreed IMT actions were logged. Both gold and silver commanders were physically present at 2 High Street working alongside Communication Team colleagues.
- 7.9 As per the previous weather event, posts were shared on the Council’s social media channels advising of weather warnings. An Elected Member Briefing Note advising on arrangements for the weekend was also issued. Given the degree of public interest following the previous weather event a public statement was also issued to media and published on the Council’s website and main social media channels advising on the arrangements which had been put in place to prepare for the forecasted weather.

Response management

- 7.10 During Storm Babet much of Scotland was affected by significant rainfall, resulting in widespread flooding. Within Perth and Kinross, the flooding predominately affected properties in some parts of Invergowrie, although other areas were affected including Alyth and Coupar Angus. To date, investigations indicate that approximately 31 properties have been affected, with approximately 7 experiencing some internal flooding. It has been reported that approximately 119 mm of rainfall fell near Invergowrie, which is more than an average month’s rainfall at this time of year. SEPA will provide an assessment of the storm event when data analysis is complete.
- 7.11 However, although Storm Babet impacted several communities notably, Invergowrie, the greatest impact of the exceptional rainfall was experienced further north. SEPA did not issue any localised flood warnings and although the water level of the Tay rose sufficiently to cause overtopping at the harbour at high tide, the volumes of water flowing into the Tay from the rivers Isla and Erich did not cause any unmanageable issue further downstream.
- 7.12 On the morning of Wednesday 18 October SEPA advised that the Met Office was considering raising the Amber warning for heavy rain to a Red warning for severe rain largely covering south Aberdeenshire and Angus but also extending to the northern edges of Perth. This indicated that the Tay catchment would be more directly affected by what was being termed exceptional rain and impactful wind. It also became clear that that this exceptional rain in part of the Tay catchment may affect the river level at Perth and would coincide with a particularly high tide, with water potentially being pushed up the estuary by gale force winds.
- 7.13 By late afternoon power outages, caused by falling trees, began to be reported along with road closures due to landslips. Kettins experienced a power outage. Some surface water flooding was reported in Blairgowrie, Coupar Angus, the A85 at Huntingtower, Alyth and Bridge of Earn, but no properties in these communities were reported as being affected. However, by early evening reports of some flooding in parts of Invergowrie were being

received, and by early morning there was confirmation of significant flooding in parts of Invergowrie.

- 7.14 The response to Storm Babet was in line with Council protocols and procedures for significant weather events. Given the learning from the previous flooding event there are no additional specific improvement actions identified in respect of the Council's response.
- 7.15 A decision was taken by the gold and silver commanders to close all the flood protection gates that remained open except for the Queen's Bridge and the Harbour which would be reviewed early on Thursday morning as the potential impact on the Tay became clearer.
- 7.16 At 1pm on Wednesday, a North of Scotland Regional Resilience Partnership meeting was chaired by the Scottish Government and attended by PKC's gold commander and ERDO, and the Tayside LRP was stood up at 3pm. The PKC IMT also met and continued to meet three times a day on 19 and 20 October and once on Saturday 21 October before being stood down. The Tayside LRP continued to meet, principally focussed on the major incident at Brechin.
- 7.17 On the morning of Thursday 19 October, the flood protection gates at Queen's Bridge were lowered into place after the traffic peak and the Harbour flood gates closed. 24/7 cover was provided at the Harbour to facilitate business access/egress although the staff on duty there also assisted with trash screen clearing at the Craigie Burn etc. Trash screen clearing continued throughout the storm event.

Impact and recovery

- 7.18 The impact of the Queen's Bridge closure was minimal as Police Scotland advice was to avoid all unnecessary travel and some city centre businesses, opted to close and send staff home. Council employees were advised to work from home. Following the afternoon IMT the decision was taken to suspend waste collections on Friday 20 October and for recycling centres to remain closed in the interests of public and staff safety. All burials and cremations on Friday 20 October were also cancelled. Education and Children's Services advised that all open schools would be closing at 3pm – as most schools were closed for the October break this only impacted schools operating lets and other holiday services. Vulnerable housing tenants in known flood risk locations were contacted and at home care visits completed. Staff were also on standby to open emergency rest centres if needed.
- 7.19 The local Community Resilience Group opened the village hall as a rest centre and sourced a generator to provide power.
- 7.20 At its early morning meeting on Friday 20 October the IMT became aware of significant flooding in parts of Invergowrie. Council staff were on the ground to assist the emergency services including the Coastguard and the Scottish Fire and Rescue Service for evacuation of properties. It was agreed to open a rest centre in the Invergowrie sheltered housing development and staff were on standby to open the primary school if needed. Ultimately the number of

residents requiring assistance was minimal, with everyone affected being supported directly by friends or family.

- 7.21 In addition approximately 20 road closures had been put in place by the Friday morning as a result of flooding with regular updates being posted on social media channels as new road closures were added and others removed. It was also noted that some local bus operators had cancelled services for the day and rail services had been cancelled into the Met Office designated red area.
- 7.22 Relevant members of the IMT agreed to meet again at 8pm following the high tide at Perth. Photos showed the river at the Harbour had overtopped the quay walls but there was no flooding of business premises. It was agreed to meet the following morning to consider the re-opening of the Queen's Bridge and some of the Harbour gates. The situation across Perth and Kinross had largely stabilised except for Invergowrie where the flood water continued to rise but affecting no additional properties.
- 7.23 The approach to communications in response to Storm Babet was broadly similar to that adopted in respect of the previous flooding event. Social media posts were made regularly updating on known surface water flooding, land slips and road closures. Reminders of numbers to call were also regularly posted.
- 7.24 As and when significant actions were taken, such as the closure of the Queen's Bridge, communications statements and social media posts were issued. After each IMT further statements were released and an Elected Member briefing was also issued. In total five Elected Member briefings were issued, one each day from October 17 to 21.
- 7.25 On Monday morning based on the latest SEPA river flow data and Met Office forecast a decision to re-open the Queen's Bridge and some Harbour area gates was confirmed and actioned that morning with regular in person checks carried out throughout the day and into the evening at high tide. Staff were on standby to close at short notice if required. It was agreed the status of the remainder of the gates would be reviewed the week commencing 23 October. The full IMT met at 11am on 21 October when it was agreed to stand down and revert to the Council's normal out of hours emergency and civil contingency procedures. The ERDO agreed to advise the Tayside LRP of this decision at its next meeting later in the day.
- 7.26 Council staff continued to carry out welfare checks in affected communities and initial recovery/clear up activity was actioned in Invergowrie with Operations staff removing large quantities of sludge and silt from the road and path network and debris left by the flood water. A gully emptying vehicle was also dispatched to Invergowrie on October 23 to provide additional cleans in the most affected streets.

Impact on roads

- 7.27 The Council is working with Transport Scotland and the National Trust for Scotland to repair a pedestrian footbridge on the river Braan which connects

Dunkeld with Inver after the bridge was damaged during storm Babet. Repair work commenced this week (w/c 13 November) but no completion date is available at the present time.

- 7.28 On the C502 Rotmel road between Dunkeld and Dowally a section of carriageway and embankment sustained damage during storm Babet which has led to the road being closed. The Rotmel road remains closed while repair option designs are being considered by Council staff.
- 7.29 A further flood bulletin was issued on 27 October 2023 following Storm Babet. [Perth and Kinross Flooding Bulletin - Perth & Kinross Council \(pkc.gov.uk\)](https://www.pkc.gov.uk/perth-kinross-flooding-bulletin)

8. 27 – 29 OCTOBER WEATHER EVENT

Notifications and Preparedness

- 8.1 During the week commencing 23 October 2023 the Met Office first issued a Yellow weather warning on Wednesday 25 October 2023, which covered Thursday 24 October through to Saturday 28 October 2023, then a further Yellow warning which extended through to Sunday. It is not usual for an Incident Management Team meeting to be arranged when a Yellow warning is issued, however given the already saturated ground from previous extreme weather events an Incident Management Team (IMT) was held at 12.30pm on Friday 2023. A further meeting was also arranged for later that day at 4pm.
- 8.2 A large number of Perth Flood Scheme flood gates were already closed from the previous extreme weather events at this point, although further closures were undertaken so all gates other than the gates at the bottom of Charlotte Road, Queens Bridge and Lower Friarton would be closed during the weekend.
- 8.3 Various preparatory activities were undertaken during the previous evening by the RMP, including clearing trash screens, and monitoring flood storage ponds. The normal stand-by arrangements were in place and there were approximately 15 staff from the RMP that could be called in over the weekend. Additional support was also made available from the Parking and Civil Contingency team in the form of staff and vehicles, which were stocked with sandbags to help affected areas if necessary. Housing Trades staff were also kept on until later that today to cover emergency repairs.
- 8.4 An Elected Member Briefing Note advising on arrangements for the weekend was issued at 5.45pm on 27 October, with an updated note issued on 28 October. Social media updates were also provided throughout the day on 27 October on road closures.

Response management

- 8.5 Issues first began to be reported during the morning of Friday 27 October 2023. It was reported that the Burn was rising at Coupar Angus, therefore sandbags were delivered. At Bridge of Earn a 3 inch pump was deployed by the RMP early morning, which was later replaced with a larger 6 inch pump to clear water at Back Street and Burnside following reports of surface water,

which was at risk of entering residential properties caused by vehicles driving through the surface water. A pump was in situ until the water had been cleared later that evening. A gully motor was also sent to the area on Saturday morning.

Impact and recovery

- 8.6 There were a number of further issues reported during the Saturday, which required road closures, and the routine clearance of trash screens, however there were no initial reports of flooding to any properties and no response required. It was therefore agreed that no further IMT was required.
- 8.7 To date, investigations indicate that approximately 4 properties have been affected, with approximately 2 experiencing some internal flooding.

9 FINDINGS, IMPROVEMENT ACTIONS AND CONCLUSION

- 9.1 This review was established to consider the Council's preparedness, response and recovery from the weather events which impacted Perth and Kinross during October 2023 and in particular the response to the weather events of the 6-8 October. The findings of the review, and learning actions based on these findings, are set out within this section against the key themes within the scope, these being:

- **Notifications and Preparedness**
- **Response Management**
- **Impact and Recovery**

Notifications and preparedness

- 9.2 The Council has plans and arrangements in place to respond to emergency situations and these have worked well over many years.
- 9.3 In the weeks leading up to the weather event, the Council had prepared its annual winter resilience plan, subsequently signed off by its EI&ED committee in early November, where it was recognised that the changing weather patterns required consideration of a whole year resilience plan to be developed and brought back to committee by June 2024.
- 9.4 The Council had also undertaken a training exercise to test the deployment of the Perth City Flood Defence System which was carried out successfully but highlighted a defect in the deployment of one of the network of gates across Perth city.
- 9.5 Additionally, there is the ongoing leadership review and changes in the leadership structure across the Council which will be finalised over the coming months and it is required that this ensure that there is continuing robust command and resilience management structures and processes in place.
- 9.6 The Council was aware of the potential for the extreme weather events in October 2023, which were set out in information provided by the Met Office

and SEPA and preparations were made accordingly, within the deployed resources. This information was generally well utilised by the Council to provide regular updates to the public in advance of weather events impacting on Perth and Kinross and to share this information with local resilience groups. However, it is clear that the impact of the extreme weather on Perth and Kinross, particularly during the weekend of 6-8 October 2023 was more severe than anticipated.

- 9.7 Between 2 October and 6 October there were five Yellow weather warnings issued, with the forecasted times and areas impacted changing with each warning as the forecast was updated. Once the first Amber warning was issued on the morning of 6 October action was taken to identify additional staff volunteers to enhance standby arrangements in case they were required however resources available at that time were not sufficient to mobilise and deploy flood defence systems within normal operational timescales.
- 9.8 In the lead up to Storm Babet the first Yellow warning was issued on 17 October, 36 hours before it was due to take effect. This additional notification time, in addition to the learning from the impact of the previous weather event, was beneficial in preparing the Council's response.

Improvement Action

- 9.9 **In addition to the agreed action from the Council's EI&ED committee to bring back an all year resilience plan by June 2024, officers review and put in place new minimum staffing/stand-by levels at command and operational levels to ensure resources are available, including the utilisation of staff from other services, to successfully co-ordinate and deploy all flood defence measures within timescales set within the to be revised protocols.**

Incident Management, Resourcing and Response

- 9.10 The period of the weather event fell during the October School holidays and in advance of the move to the Council's traditional winter response arrangements, when additional staffing resources are deployed to address the weather patterns over the period to April 2024.
- 9.11 Based on the information collected during the review, it is evident from the level of resources available that there were insufficient staff resources available to effectively deploy the range of necessary measures, at speed, during a significant weather event.

Incident Management

- 9.12 The Council has agreed protocol and command structure arrangements for overseeing weather and other incidents and these were activated during the period. It is recognised that not all weather events trigger the need for the establishment of an Incident Management Team (IMT) nor the standing up of the Local Resilience Partnership at a regional level.

- 9.13 The requirement for this will be based on a risk assessment of the available information and conditions. Not having an Incident Management Team does not preclude direction and advice being sought and provided from across the Council or from partners, and this was undertaken in the period leading up to the 6 to 8 October, before the first Incident Management Team first met on Sunday 8 October and through that day. Incident Management Teams continued until Wednesday 11 October. Further IMTs were stood up in advance of the arrival of and during the Storm Babet period before standing down after the incident. No IMTs were required for the period of the weather event for the final weekend of the weather event.
- 9.14 Officers recognise that some residents in Perth have criticised the visibility, support, and effectiveness of the Council's officers during the flood event on Sunday 8 October 2023 and following. Ensuring that welfare needs are consistently considered within Incident Management Teams both during and following events will be built into the further training in terms of emergency planning across the wider leadership team.
- 9.15 As part of preparations for the Council's new operating model and changes in personnel as a result of the Leadership Review, it has been identified that there is a need to ensure more officers are aware of, and involved in leading, the response to incidents. Following the events over the period a session has been held with the Extended Executive Leadership Team to widen awareness of, and preparedness, for addressing incidents. Revised arrangements for the strategic planning, operational oversight and response to incidents have also been agreed, prior to the loss of experienced officers.

Improvement Action

- 9.16 **Undertake further training in terms of emergency planning across the wider leadership team to ensure resilience to deal with incidents.**

Operational Resourcing and Response

- 9.17 The Council and the Roads Maintenance Partnership (RMP) had plans in place to respond to out of hours emergencies and severe flood events and these were initiated as appropriate and within the available resources. The out of hours stand-by arrangements are insufficient to undertake the Perth Flood Scheme Gate Closure Operational Procedures out with the Winter period, and this was evident on 7-8 October 2023. It is important to recognise that the height of the River Tay and the water flows on the 7-8 October 2023 were the worst for more than 30 years, and as such is an extremely unusual situation. However, for the same situation to be avoided in the future, the standby arrangements need to be reviewed, which should include exploring the opportunities for expanding the remit of council staff from other Council services.

Improvement Action

- 9.18 **The Council's Out of Hours Standby arrangements be reviewed to include exploring the opportunities for expanding the remit of staff from other Council services.**

Engagement with communities

- 9.19 Individuals, businesses and communities played an important part in making themselves more resilient and helping to reduce the impact of flooding. It is important to note that those owners can take steps to protect their own properties. Part of the Council's public messaging was to direct people to the Council's website, Ready Scotland and the Scottish Flood Forum website where there is information about the steps property owners can take. This was even more evident in communities where residents have come together to form Community Resilience Groups.
- 9.20 The Community Resilience Groups at Alyth, Rattray and Aberfeldy made a significant contribution towards minimising the impact of the extreme weather events in their areas. Community Resilience Groups have a vital part to play in ensuring that local communities are able to quickly access support in the case of a severe weather event. The Council's Parking & Civil Contingencies Team continue to work to encourage and support new groups where there are currently none with the aim of ensuring as many areas as possible establish Community Resilience Groups. Officers also recognise that the best time to galvanise support to establish such a group is in the immediate aftermath of an incident and are therefore increasing efforts in areas where contacts were established during the October events.

Improvement Action:

- 9.21 **Continue to work with current Community Resilience Groups and build on the success of these models, reflecting that public agencies including the Council are unable to respond to all impacts across the authority.**

Engagement with partners

- 9.22 Over the period of the weather incidents, there was regular and ongoing engagement with a range of partners, both in community and at a co-ordinated level through established Local Resilience Partnerships, stood up initially over 8 October and then redeployed in advance of Storm Babet. Partners from the transport network and utilities networks were also engaged and deployed to address incidents across the roads and drainage network as well as responding to power outages in a number of communities, most notably the village of Kettins.
- 9.23 Overall, these arrangements worked extremely effectively and most notably in the co-ordinated response to the flooding experienced in the Invergowrie area during the Storm Babet event with colleagues from the Council, including the Health and Social Care Partnership, Police, SF&R and Coastguard working effectively alongside local community representatives.
- 9.24 As is usual, the Local Resilience Partnership will undertake a review of the response and this will take place at the end of November.

- 9.25 Since the 6-8 October, Council officers have had a number of discussions with key partners such as SEPA and SSE Renewables. This has included a discussion at Chief Executive and senior officer level between the Council and SEPA. From this, it was clear that there was some disparity of information held between both organisations. It was also agreed that the protocols in terms of logistical and resource constraints requires to be reviewed.

Improvement Action

- 9.26 **Review how the logging and sharing of information between partner agencies is undertaken, building upon the conversations which have taken place to date with SSE and SEPA**

Call Handling

- 9.27 The Council's Out of Hours Call handling arrangements are provided by Aberdeen City Council, and this has been the case since 2010. In line with the policy agreed by Environment and Infrastructure Committee following an emergency motion, on the issuing of an amber warning officers will make a request to Aberdeen for up to three additional call handlers. This request was made prior to the extreme weather during the weekend of 7-8 October.
- 9.28 A significant volume of calls were made to Aberdeen during that weekend, with a significant number of these calls not answered. However, it is not clear how many of these were repeat callers who did get through when redialling.
- 9.29 After the Incident Management Team instructed that the Council's Customer Service Centre should be stood up on Sunday evening all but one of the calls made to the Perth CSC were answered. However, given that this was in the evening after the peak of the flooding incidents it does not provide a strong indication the ability to have answered more calls locally than were answered in Aberdeen, if the Perth CSC had been operational earlier.
- 9.30 It should be recognised that it would be extremely difficult and unlikely to be cost effective to put arrangements in place to deal with a very infrequent high volume of out of hours calls inhouse, nevertheless, it can be concluded that the current arrangements are not effective when having to deal with a situation similar to that which incurred during 7-8 October 2023.
- 9.31 Following criticism received at the Perth residents' meeting about some of the responses individuals experienced from the Out of Hours contact centre, a review of how these calls were handled will be incorporated within the wider review of out of hours customer contact arrangements.

Improvement Action:

- 9.32 **A review of the handling of calls to the Out of Hours contact centre, as well as a further review of the Council's out of hours customer contact arrangements should take place alongside the review of out of hours standby arrangements.**

Perth Flood Scheme

- 9.33 Whilst the engagement with partners as set out in the previous section has been broadly positive there remains a question over the engagement and information sharing in relation to the data and decision making around the operation of the Perth flood scheme over the weekend of 6-8 October.
- 9.34 Weather and flood updates were provided by SEPA to the Council and other partners in the lead up to the events of that weekend and there were a number of conversations with colleagues from SEPA on Saturday 7 October 2023. However, the first time that the Council received information from SEPA about the water flow and tide levels at Ballathie in the River Tay was at 8.14pm, which was just 1hr and 31 minutes prior to high tide.
- 9.35 Notwithstanding the shortage of resources available noted above, this did not provide sufficient time to put in place the Council's operational plans. It is therefore vital that the Council and SEPA work together to review the existing communication protocols to ensure that they are sufficient to be able to deliver the flood gate closure plan.
- 9.36 An operational decision, based upon the timing of the warning, the information provided by SEPA and the available resources not to initiate the flood gate closure procedure (Plan 9) on the evening of Saturday 7 October 2023. This decision was delayed until the following morning when SEPA provided further information, which set out higher flow rate and a worsening potential flooding position. As there had not been enough staffing resources available to close the gates in line with the Plan 9 operating procedure, a decision was made to deploy resources to Commercial Street and Perth Harbour to prioritise vulnerable residents and businesses, and not the North Inch. These decisions contributed to water breaching the flood gates at North Inch, particularly at the War Memorial site, before they could be closed by council officers.

Improvement Action:

- 9.37 **Review the Perth Flood Scheme Gate Closure Operational Procedure document with SEPA.**

Communications and Engagement

Internal

- 9.38 The use of online resources and messaging amongst officers worked well and enabled timely information to be communicated to the relevant officers, who could assist in the response.
- 9.39 The Elected Member Briefing Note process introduced in 2022 provided a solid foundation for the regular distribution of updates to Elected Members throughout each of the October weather events. Elected Members were also copied into Adverse Weather Road Closure updates as they were issued throughout each of the events, which allowed them access to the latest information on road conditions within their ward, as well as providing an overview of the impact of the weather across the whole area.

Public Communications

- 9.40 In each of the weather incidents information from partners on confirmed weather warnings for Perth and Kinross were shared on the Council's social media channels, with links to where further information could be found. This assisted with public awareness and provided the opportunity for property owners to take appropriate precautions.
- 9.41 Following the learning from the 7-8 October weather event additional proactive media statements, also shared on the Council's website and social media statements, provided updates in the days ahead of the weather incident about the Council's preparations. This was a positive additional step to help build public awareness and reassurance and will be considered for future Amber warnings.

Engagement with those directly impacted

- 9.42 Whilst the focus of much of the resources deployed by partners in communities was focused on responding to the impact of flooding on the roads network and protecting properties the focus on those directly impacted by flooding has been an area where there have been mixed experiences. Whilst there have been examples of positive feedback on the visibility, deployment and support from a wide range of council and partner services, there has been criticism from a number of those individuals and businesses directly impacted by flooding within Perth City Centre. A lack of visibility at the height of the flooding on the October 8 has been fed back along with comments on the sensitivity of the impact experienced by those who saw their properties flooded.
- 9.43 Engagement after the immediate impact in relation to the recovery process and assistance with welfare checks and support was also highlighted by some individuals as being a failing on the part of the Council.
- 9.44 This has not been the feedback in other areas, including Aberfeldy where individuals were asked re accommodation and other needs and similarly in Invergowrie where the Council, Health and Social Care and colleagues from blue light services supported the establishment of a rest centre during the incident.
- 9.45 More widely whilst there has been operational engagement of resources over the period since the weather event, there has been no formal feedback undertaken with local community resilience groups or other impacted communities, beyond the engagement event with impacted residents and businesses in Perth City Centre.
- 9.46 Whilst it is recognised that there are improvements to be made in the preparation for and response to the recent weather events, it is noted that in many areas the Council and partners worked extremely well to respond to and support communities across the authority. A significant number of Council officers worked tirelessly during the extreme weather, supporting residents and assisting in any way they could. A number of officers volunteered to come on shift, chose to work during agreed holiday periods or worked unpaid to

support residents. Their efforts are recognised and are consistent with our values as a public service organisation.

Impact and Recovery

- 9.47 The extreme weather events that affected areas of Perth and Kinross during October 2023 had a significant impact on a number of our residents and their properties, particularly on 7-8 October where the worst affected areas were Aberfeldy, Perth City and surrounding area, whilst between 20- 22 October 2023 where the worst affected area was Invergowrie. However, all communities were impacted to some extent with localised flooding, road closures and power outages were experienced across Highland Perthshire into Alyth, Blairgowrie, Coupar Angus, Kettins and other rural communities.
- 9.48 It is also important to acknowledge that a Strathtay resident sadly died during the flooding, and our thoughts remain with his family and friends.
- 9.49 Over the weekend of 7-8 October, the primary adverse impact was on a small number of properties in Perth City Centre in and around the North Inch, Commercial Street and Tay Street. Whilst council and partners resources were deployed into this area on these days and in the days to follow, the feedback from a number of local residents and businesses, invited to meet with the Council Chief Executive and officers, has been that there was a lack of visibility by the council and questions raised over the welfare response provided to those directly impacted during and after the flooding event. Criticism of the clean up operation by the Council and Scottish Water was also made. In response the Chief Executive has issued an apology to those impacted where it was considered by residents that the response and support did not meet with our organisational values and expected levels of support.
- 9.50 Over the period of the 20-22 October when during this event there was a red weather warning in place for much of Perth and Kinross, there was significant disruption to the traffic network, impact on the power network, landslides, trees down and at least one bridge outage. During this period the Council and partners continue to deliver emergency responses, whilst a number of Council services were suspended against national advice for only essential travel to be undertaken.
- 9.51 The main impacted community across Perth and Kinross was that of Invergowrie where flooding impacted a number of properties and Council, Health and Social Care, Police, SF&R and Coastguard services were deployed alongside community resources. During the period a number of properties were evacuated and a rest centre stood up. Post event the Council mobilised significant resources to support the clean up operation in the local area.
- 9.52 More widely Council services and partners have continued to be engaged across the authority, reinstating infrastructure and addressing road closures, including the early reinstatement of the road near Glenlyon impacted by a landslide.

9.53 Ongoing engagement with local resilience groups has taken place however at this stage no formal engagement and learning review has been carried out.

Improvement Actions:

9.54 **Review of welfare response protocols and engagement with those directly impacted, including follow up with affected individuals in Perth City and Invergowrie.**

9.55 **Establish formal feedback mechanisms from community resilience groups to take on board learning and develop future response arrangements.**

Author

Name	Designation	Contact Details
Mark Butterworth	Head of Environmental & Consumer Services	ComCommitteeReports@pkc.gov.uk 01738 475000
Fraser Crofts	Strategic Lead – Environment & Infrastructure	

Approved

Name	Designation	Date
Thomas Glen	Chief Executive	17 November 2023

APPENDICES

- Appendix 1 – Incident Planning/Standby Arrangements
- Appendix 2 – Improvement Plan
- Appendix 3 – Flood gate location map

If you or someone you know would like a copy of this document in another language or format, (on occasion, only a summary of the document will be provided in translation), this can be arranged by contacting the Customer Service Centre on 01738 475000.

You can also send us a text message on 07824 498145.

All Council Services can offer a telephone translation facility.

1. IMPLICATIONS, ASSESSMENTS, CONSULTATION AND COMMUNICATION

Strategic Implications	Yes / None
Community Plan / Single Outcome Agreement	Yes
Corporate Plan	Yes
Resource Implications	
Financial	Yes
Workforce	Yes
Asset Management (land, property, IST)	None
Assessments	
Equality Impact Assessment	None
Strategic Environmental Assessment	None
Sustainability (community, economic, environmental)	None
Legal and Governance	Yes
Risk	None
Consultation	
Internal	Yes
External	None
Communication	
Communications Plan	None

1. Strategic Implications

Corporate Plan

1.1 This report supports the following objectives within the Corporate Plan:-

- *tackling climate change and supporting sustainable places*
- *developing a resilient, stronger and greener local economy*
- *protecting and caring for our most vulnerable people*
- *working in partnership with communities*

2. Resource Implications

Financial

2.1 The Council incurred a number of additional costs in response to the winter flooding events, mainly in the form of officer time, over time and call out allowance. The Council also incurred costs as a result of, for example of the damage to the Glen Lyon road.

2.2 The recommendations in this report could have financial implications, however the exact extent of these cannot be quantified until a more detailed analysis is undertaken.

Workforce

- 2.3 The recommendations in this report could have implications for Council officers, and those within the Roads Maintenance Partnership, however the exact extent of these cannot be quantified until a more detailed analysis is undertaken.

Asset Management (land, property, IT)

- 2.4 None.

3. Assessments

- 3.1 The Impact and Value Assessment Tool has been completed for this paper, with the following findings:

- 3.2 Under the Equality Act 2010, the Council is required to eliminate discrimination, advance equality of opportunity, and foster good relations between equality groups. Carrying out Equality Impact Assessments for plans and policies allows the Council to demonstrate that it is meeting these duties. The Equality Impact Assessment undertaken in relation to this report can be viewed clicking [here](#).

- (i) Assessed as **not relevant** for the purposes of EqIA

Strategic Environmental Assessment

- 3.3 The Environmental Assessment (Scotland) Act 2005 places a duty on the Council to identify and assess the environmental consequences of its proposals.
- 3.4 However, no action is required as the Act does not apply to the matters presented in this report. This is because the Committee are requested to note the contents of the report only and the Committee are not being requested to approve, adopt or agree to an action or to set the framework for future decisions.

Sustainability

- 3.5 Under the provisions of the Local Government in Scotland Act 2003 the Council has to discharge its duties in a way which contributes to the achievement of sustainable development. Under the Climate Change (Scotland) Act 2009 the Council also has a duty relating to climate change and, in exercising its functions must act:
- in the way best calculated to delivery of the Act's emissions reduction targets;
 - in the way best calculated to deliver any statutory adaptation programmes; and
 - in a way that it considers most sustainable.

Legal and Governance

- 3.6 Officers from Legal and Governance have been consulted in the preparation of this report.

Risk

- 3.7 Not applicable.

4. Consultation

Internal

- 4.1 Officers from a number of services involved in the preparedness, response and communications with regard to the recent extreme weather events have contributed to this drafting of this report.

External

- 4.2 None.

5. Communication

- 5.1 Not applicable.

2. BACKGROUND PAPERS

- 2.1 Perth Flood Scheme Operating Manual