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<b>Report To:</b>	<b>Environment and Regeneration Committee</b>	<b>Date:</b>	<b>14 January 2016</b>
<b>Report By:</b>	<b>Corporate Director Environment, Regeneration and Resources</b>	<b>Report No:</b>	<b>ERC/ENV/IM/15.261 Addendum ERC/ENV/IM/16.263</b>
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<b>Subject:</b>	<b>ADDENDUM - Flooding Update Report No 6</b>		

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## 1.0 PURPOSE

- 1.1 The purpose of this addendum to report number ERC/ENV/IM15.261 - Flooding Update Report No 6 is to provide Members with details on the preparation work and activities undertaken during the recent severe weather (Storm Frank).

## 2.0 SUMMARY

- 2.1 Inverclyde felt the full force of storm Frank that battered most of Scotland on the evening of the 29th and most of the day on the 30th December.
- 2.2 There were a number of areas across the district that experienced flooding as a result of this storm and recent storms (Desmond, Clodagh, Barney and Abigail), most of the significant flooding was primarily contained within the east side of the district.
- 2.3 Although there were a number of roads that had to be closed or were only passable with care, the greatest commuter disruption was again caused by the A8 Trunk Road flooding at Langbank; adjacent to the entrance to Finlaystone Estate; Newark Roundabout and at various sections along East Hamilton Street. The Trunk Road also flooded in a section of the A78 at Spango Valley.
- 2.4 The main cause of flooding at the Newark Roundabout was a result of the Bouverie Burn topping due to a complete blockage of a culvert. Although there was a significant amount of silt and gravel that had been washed down stream as a result of the torrent of water, the main cause of the blockage arose from fly tipping, a discarded mattress, a number of plastic bread boards and settee cushions that had been washed down stream completely blocked the culvert.

## 3.0 FLOOD RESILIENCE, PLANNING & ACTION

- 3.1 Inverclyde Council is responsible for maintaining the kerbside drains (gullies) which collect the surface water run-off from public adopted roads and footways and for removing blockages in rivers and burns, which are the responsibility of the Authority, all of which may lead to flooding. The Trunk Road operator is responsible for clearing and maintaining drainage systems on the Trunk Road.
- 3.2 Inverclyde has over 10,000 gullies, plus numerous other drainage systems to maintain. In addition to this are over a hundred water course grills that need maintaining.
- 3.3 Other agencies, such as Transport Scotland, Scottish Water, Network Rail and Private landowners have responsibility for maintaining drainage systems on their land/property.

- 3.4 To improve the Council's resilience during forecasted severe weather events, labour resource from Street Cleansing Grounds Maintenance are deployed to assist roads teams check and clean water course grills etc. Known flood hotspots are given particular attention during critical and severe weather forecasts.
- 3.5 The Council has a gully emptying vehicle, which is fully dedicated to either cyclic cleaning or reactive cleaning. In addition to this and to improve our resilience the Council hires specialist plant, such as Vactor machines to prevent and clear flooded areas.
- 3.6 Environmental & Commercial Services (Roads Service) endeavours to clean gully pots on a planned basis with known hot spots being cleaned on a more frequent basis.
- 3.7 Routine gully cleaning can be hampered by the following:
- parked cars
  - backlog of blocked gullies (during severe wet spells as a result of wash-downs)
  - blocked connections from the gully
  - heavily trafficked roads
  - building works or utility companies services works
  - flooding sites requiring reactive cleaning
- 3.8 In addition to the cleansing of surface water drains, there is a programme of works to repair, defects, maintain or improve drainage systems. These types of works generally involve excavation works. Examples of such work are:
- Resetting of gully gratings and frames and other ironwork (manholes)
  - Replacing broken gully gratings and frames or other broken ironwork (manholes)
  - Replacing stolen gratings
  - Replacing brick gully pots where the brickwork is collapsing
  - Investigating blockages and repairing collapsed pipe work
  - Repairing pipe work broken by utility companies installing services and recharging costs
  - Clearing/excavating and reshaping ditches
  - Cleaning soak-always/attenuation ponds

#### **4.0 WHY ROADS MAY STILL FLOOD**

- 4.1 Problems of flooding will occur despite drainage systems being cleaned and well maintained. Such problems may be caused or exacerbated by a number of factors including:
- Rainfall of high intensity which is occurring more often and is possibly the consequence of climate change. Large quantities of water arriving on the road, greater than the drainage capacity to take it away.
  - Exceptional rainfall washing mud and other debris from nearby fields and quickly blocking gullies which were otherwise clean.
  - Long periods of relatively heavy rainfall. This causes land which is normally permeable to become saturated and then acts as if it were impermeable, meaning that any additional rainfall will result in rapidly increasing run-off and overloading of drainage systems and watercourses.
  - High tides and wind direction.
  - Carriageway drainage systems of inadequate capacity, for instance if there are too few road gullies or if drainage pipes, ditches, culverts etc. are too small to take peak flows of surface water run-off.

- The combined surface/foul sewer network being overloaded, often resulting in water discharging from gullies and manhole covers. This mainly occurs in built up areas.
- Changes in land drainage patterns. Removal of hedges and woodlands or new springs appearing.
- An increasingly common problem is the run-off from house gardens which have been paved for vehicle parking.
- Severe flash floods causing flooding to rivers, burns and ditches, preventing highways systems discharging and in some cases causing backing up (a reverse flow phenomena) which results in water flowing out of gullies.

4.2 The causes of flooding are generally complicated and there is typically a range of contributory factors to any single flooding event.

4.3 Unfortunately gullies are also used as a tipping area for various types of waste. Items removed from choked gullies in Inverclyde include, car batteries, vehicle sump oil, garden refuse, hardened concrete and hypodermic needles, shopping bags and cooking fat. Leaf fall if allowed to build up can cause significant problems by blocking gully gratings.

## **5.0 PLANNING AND RESOURCE DEPLOYED FOR SEVERE WEATHER EVENTS (STORM FRANK)**

5.1 Sandbags are stockpiled, available for use by Environmental & Commercial Services or collected by local businesses or residents. In many cases the Council delivers sandbags to residents and local businesses in known flood hotspots, such as Cove Road when a severe weather is forecasted.

5.2 On the run up to the festive holidays crews were deployed to check and clean watercourse grills, sweep road channels and clean gullies across the district with particular emphasis on known flood hot spots, e.g. Sinclair Street, West station, etc.

5.3 During the leaf fall Grounds and Street Sweeping staff work overtime to clear leaves.

5.4 In severe weather spells crews are deployed to deal with issues with fallen trees and branches. At the height of Storm Frank crews had to deal with fallen trees and branches at Larkfield Road; Edinburgh Drive; Tower Drive; Station Avenue and fallen roof tiles on Cumberland Rd at junction of Auchmead Road.

5.5 Environmental and Commercial Services (Roads Service) resource were mobilised at around 11.00pm on 29 December 2015. Operatives and supervisors worked throughout the night in very difficult and at time dangerous conditions to clear blockages, drains, trees, etc. and were eventually stood down at 9.00pm on 30 December 2015. Gritter crews were deployed at 5am on the 30<sup>th</sup>.

5.6 A Vactor, hired to deal with the flooding within Inverclyde, was commandeered by the Fire and Rescue Service at Langbank to assist with their operations to clear flooding from the Trunk Road and later released to report to Inverclyde Council.

5.7 The A8 was re-opened to traffic at approximately 3.00pm on 30 December 2015.

5.8 Cove Road, Gourock was exposed to an exceptionally high tide at 3.20pm on 30 December 2015 which resulted in the River Clyde breaching the adjacent sea wall. Resources were mobilised to prevent any flooding of property in this area however the tide turned before any flooding to private property occurred. No damage was done to the roads infrastructure along this length of road.

5.9 Crews worked later in the day clearing wash-down debris from the footways and carriageways.

- 5.10 This addendum report is for information only and has no immediate budget implications. It aims to highlight the forward planning, planned routine maintenance and level of service that is provided to assist residents, commuters and local business in Inverclyde during severe weather events.

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