

Appendix E – Summary of flood risk in Scarborough Borough and Ryedale District

The table below summarises the areas where there are notable flood risks within the districts.

Area	Fluvial flood risk	Existing defences	Coastal flood risk	Surface water flood risk	Susceptibility to Groundwater flood risk				Reservoir inundation risks	Historic, recorded flood events
					<25%	>=25% <50%	>=50% <75%	>=75%		
Upstream reaches of the Vale of Pickering (upstream of River Rye and River Seven confluence)	<p>The Vale of Pickering consists of relatively low-lying land, with Flood Zones 2 and 3 showing similar extents across a relatively wide floodplain.</p> <p>The Holbeck enters the area in the west and flows east until it joins the Rye. In its upper reaches the Holbeck and its tributary Thorpe Beck are confined to a relatively narrow floodplain due to the steep topography but still provide a risk to infrastructure and properties, with some properties along Mill Lane located in Flood Zone 3. The floodplain widens as the topography flattens further downstream, with several properties in Gilling East located in Flood Zones 2 and 3. Downstream, the floodplain becomes more rural, with only a couple of roads at flood risk until Hovingham, where several roads and properties in the north are located within Flood Zones 2 and 3. Wath Beck, a tributary of the Holbeck, also flows west to east within the area. The floodplain of Wath Beck is predominantly rural and Flood Zones 2 and 3 are confined to a narrow channel; however, there are a few properties in Wath, Fryton and the northern edge of Slingsby which are located within Flood Zone 3. Downstream the floodplain widens where Wath Beck joins the Holbeck, which then joins the Rye; however, this area is predominantly rural and flood risk is limited to a couple of isolated farmhouses.</p> <p>The River Riccal and River Rye enter the area from the northwest and flow east, with their flood zones largely indistinguishable from one another, due to the wide, low-lying floodplains, until the River Riccal joins the River Rye downstream at High Waterholmes. The Rye enters the area to the south of Helmsley, where there are a couple of properties located in Flood Zone 3 and several more located within Flood Zone 2. The Riccal enters the area north of the Rye and causes a flood risk to</p>	<p>The EA AIMS dataset shows the following defences:</p> <ul style="list-style-type: none"> • Embankment along the eastern bank and part of the western bank of Wath Beck from Little Farm to where it joins the Holbeck • Embankment along both sides of the Holbeck from High Waterholmes to where it joins the River Rye • Embankment along both banks of the River Dove from Wythe Farm to where it joins the River Rye. This embankment includes the eastern bank of Howkeld Beck • Embankment along both sides of the River Rye for most of its length from High Waterholmes to where it joins the River Derwent. The embankment along its northern bank extends further upstream to Low Woods. There is also an isolated section of embankment on the northern bank of the 	None	<p>Surface water in the area follows the topography, flowing downhill from the surrounding slopes and pooling across the low-lying topography of the Vale of Pickering. Surface water flows predominantly follow the paths of the watercourses in the area. The Vale of Pickering is predominantly rural with relatively few assets at flood risk; however, there are also a number of built up areas where there is a flood risk to properties and infrastructure:</p> <ul style="list-style-type: none"> • Gilling East – there is a low to high risk flow path heading south along Main Street and several properties are at low risk of flooding. • Hovingham – there are a couple of properties affected by localised areas of low risk surface water pooling. • Slingsby – medium risk flow paths along the High Street and Railway Streets. Flow paths are mainly confined to the roads but there are shown to be small areas of low risk around some properties. • Helmsley – the area to the southeast of the A170 falls within the study area. There are low to medium risk flow paths along several of the roads in this area and a large area of low to high risk pooling to the east of Ashdale Road affecting several properties. • Harome – there are low to high risk flow paths along Owmen Field Lane and Main Street, however, most of the flow is confined to the roads with only a couple of small areas of pooling around properties. • Nunnington – there is a large area of surface water pooling between the River Rye and Low Street affecting several properties, with low risk flow paths extending down Church Street and Rectory Lane. • Beadlam and Nawton – there is a high-risk flow path heading in a south-easterly direction towards Beadlam and Nawton with several properties at a high risk of flooding both to the north and south of the A170. 	✓	✓	✓	✓	<p>Gilling Lower Fish Pond – predominantly follows the flow path of Holbeck with some flow heading south and following the path of Spring Beck and Marrs Beck before entering Holbeck and eventually entering the River Rye just upstream of Butterwick.</p> <p>Elleron Lake – follows the flow path of Sutherland Beck to the west and then flows south following the path of Cropton Beck into the River Seven.</p>	<p>From the EA's Recorded Flood Outlines Shapefile:</p> <ul style="list-style-type: none"> • February 1991 – fluvial flooding due to overtopping of defences along the Holbeck, the River Dove, the River Riccal, the River Rye and the River Seven • March 1999 – overtopping of defences along the Holbeck, the River Dove, the River Riccal, the River Rye and the River Seven • June 2005 – fluvial flooding due to the River Rye exceeding its capacity upstream of Great Habton • Autumn 2000 – fluvial flooding due to overtopping of defences along the River Riccal, the River Dove and the River Rye • December 2015 – fluvial flooding due to overtopping of the River Rye at Butterwick • February 2020 (Storm Dennis) – fluvial flooding due to many watercourses across the area exceeding their capacity



	<p>infrastructure and a couple of isolated properties. At Harome, the flood extents from the two rivers become largely indistinguishable. The flood extent covers a largely rural area with the main flood risk to several isolated farm properties located within Flood Zone 3. Built up areas affected are the west of Harome where there are a number of properties located partially within Flood Zone 3 and the north of Nunnington where there are a number of properties located within Flood Zone 3.</p> <p>Syke Cut enters the area to the north of the River Riccal and there are several properties between Beadlam and Nawton located within Flood Zone 3. Further downstream this watercourse becomes Keld Spring Beck and Walmouth Beck. The floodplain widens but is rural and unoccupied.</p> <p>The River Dove flows north to south until it joins the River Rye. The flood risk from Hodge Beck is confined to a narrow floodplain. Howkeld Beck has a much wider floodplain, with several isolated properties and farm buildings located within Flood Zones 2 and 3. North of Kirkby Mills, the Flood Zones for the River Dove are confined to a narrow floodplain. Just north of the A170 there are several properties located within Flood Zone 3 at Kirkby Mills and Keldhlme, and further properties located within Flood Zone 2. South of the A170 properties along Dove Way are mostly located within Flood Zone 3. Downstream there are several roads and isolated properties located within Flood Zone 3. In Salton, located just upstream, of the Dove and Rye confluence, the majority of properties are located in Flood Zone 3, with further properties located within Flood Zone 2.</p> <p>The River Seven flows north to south through the area. The low-lying land means the flood risk is spread across a wide floodplain. The Seven enters the area at Sinnington where several properties along the Main Street are located within Flood Zone 3, with further properties located within Flood Zone 2. Heading downstream there are several properties along Marton Road located within Flood Zone 3 and most properties within the village of Marton are located within Flood Zone</p>	<p>River Rye by Rye House Farm</p> <ul style="list-style-type: none"> • Embankment along both banks of the River Riccal from Crook House Farm to where it joins the River Rye • Embankment along both banks of the River Seven from Sinnington Grange Mill to where it joins the River Rye 		<ul style="list-style-type: none"> • Salton – there is a large low to high risk flow path and surface water pooling in Salton with several properties at flood risk. • Marton – there is a high-risk flow path flowing north to south through Marton following the course of the River Seven. There are a couple of properties to the east of the Seven that are at a high risk of flooding. • Brawby – there are areas of low to high risk surface water pooling along Moor Lane with several properties at a low risk of flooding. 							
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	<p>3 where the floodplain extends to the west due to the underlying topography. There are further properties located in Flood Zone 3 along Malton Road and into Normanby. Here the floodplain extends further east where the land is largely unoccupied but there are a couple of isolated properties located within Flood Zone 3. Downstream the topography flattens, and the floodplain widens and becomes indistinguishable with flood extents from Double Dike and Ackland Beck. Despite the wider floodplain the area is predominantly rural with only a few isolated properties and properties on the western edge of Great Barugh located within Flood Zones 2 and 3. Further downstream, just upstream of the Rye and Seven confluence, there are a number of properties in Brawby located within Flood Zone 3, with several more properties located within Flood Zone 2. There are also a couple of properties further west along Brawby Lane located within Flood Zone 2.</p> <p>Between its confluence with the River Dove and its confluence with the River Seven, the River Rye floodplain is rural with only a couple of isolated properties at flood risk.</p>									
<p>Downstream reaches of the Vale of Pickering (downstream of confluence of the River Rye and the River Seven)</p>	<p>The downstream reaches of the Vale of Pickering are characterised by low-lying flat topography with wide floodplains. The area is predominantly rural with the main settlements at risk being Pickering, The Carrs and Great Habton.</p> <p>Ackland Beck originates north of Great Barugh and flows south parallel to the River Seven past Great Barugh where a few properties on the western edge are located within Flood Zone 3. Ackland Beck then flows east until its confluence with Costa Beck. It has a wide floodplain due to the flat underlying topography however the floodplain is rural with only a few isolated properties and farms at flood risk.</p> <p>Pickering Beck enters the study area to the north of Pickering and flows south until it joins Costa Beck. Pickering Beck flows through the centre of Pickering where there are several properties and infrastructure located within Flood Zones 2 and 3. Downstream of Pickering the</p>	<p>The EA AIMS dataset shows the following defences:</p> <ul style="list-style-type: none"> • Embankment along both sides of the River Rye for most of its length from High Waterholmes to where it joins the River Derwent. The embankment along its northern bank extends further upstream to Low Woods • Embankment along the western bank and parts of the eastern bank of Costa Beck from Low Carr Farm to Bulmer Farm. Embankment also along both 	<p>None</p>	<p>Surface water in the area follows the topography, flowing downhill from the surrounding slopes and pooling across the low-lying Vale of Pickering. Surface water flowing downhill predominantly follows the paths of the watercourses. The area is rural so there are relatively few assets at risk of flooding; however, there are a number of built up areas where there is flood risk to properties and infrastructure:</p> <ul style="list-style-type: none"> • Pickering – there are several low to high risk flow routes along roads through Pickering, particularly along the main Whitby / Malton Road (A169) and Westgate / Hungate / Eastgate roads. There are areas of surface water pooling around Pickering Station and Westgate and to the west around Westgate Carr Road affecting several properties. Further properties across Pickering are at flood risk from smaller localised pools of surface water. • Great Habton – there is a low risk flow path flowing south along Kirby Misperton Lane with an area of high-risk pooling at the junction with Habton Lane and some medium risk 	<p>✓</p>	<p>✓</p>	<p>✓</p>	<p>✓</p>	<p>Pickering Flood Storage Reservoir – follows the flow of Pickering Beck to the south of Pickering where the flow route splits, with some flow heading south along Pickering Beck, some flow heading west and following the path of Pry End Drain and some flow heading east along Malton Road (A169)</p>	<p>From the EA's Recorded Flood Outlines Shapefile:</p> <ul style="list-style-type: none"> • February 1991 – fluvial flooding due to overtopping of defences along the River Derwent upstream of its confluence with the River Rye and overtopping of defences along the River Rye downstream of its confluence with the River Seven • March 1999 – fluvial flooding due to overtopping of defences along Costa Beck, Pickering Beck, the River Rye and the River Derwent • Autumn 2000 – fluvial flooding due to overtopping of defences along Costa Beck, Pickering Beck, the River Rye and the River Derwent • June 2007 – fluvial flooding due to Pickering Beck exceeding its capacity from Beacon Hill downstream to Mill Lane. The River Seven also exceeded its capacity at Sinnington, just upstream of where the river crosses Sinnington Cliff Road • December 2015 – fluvial flooding due to channel capacity



	<p>floodplain widens due to the low-lying topography. This area is rural with several farms located within Flood Zone 3.</p> <p>To the west of Pickering, Costa Beck and its tributary West Drain originate. This area is rural and flood risk is limited to farm buildings and small roads. Costa Beck passes north of Kirby Misperton but the flood extent does not reach the village. The flood risk is limited to the surrounding roads and northern parts of the Flamingo Land Resort located to the north of Kirby Misperton.</p> <p>The River Rye continues to flow east from its confluence with the River Seven until it joins the River Derwent. There are several isolated properties located within Flood Zone 3. Malton Grange Lodges, located east of Amotherby Lane, are located within Flood Zone 3. There are also a few properties at the southern end of Great Habton which are located within Flood Zone 2. Further east, near the confluence of the River Rye and The Cut the floodplain extends further south, finishing just north of the A64, covering a rural area with a few isolated properties that are at risk. To the east, the A169 is located in Flood Zone 2 with some areas within Flood Zone 3.</p> <p>The River Derwent flows west across the Vale of Pickering, entering the area between West Ayton and East Ayton where there are several isolated properties located within Flood Zones 2 and 3. The Derwent has a number of small tributaries along its length and the floodplain is wide. However, the area is rural and flood risk is predominantly limited to minor roads and isolated farm properties.</p>	<p>sides of Costa Beck from Pickering to High Costa Mill, with the eastern embankment continuing downstream to Low Costa Mill</p> <ul style="list-style-type: none"> • Embankment along both sides of Pickering Beck from Barker Stakes Farm to Wintofts Farm • Embankment and flood wall along both sides of the River Derwent / The Cut from West Ayton Carr through The Carrs to Malton 		<p>along Alverton Close. Most of the surface water remains confined to the roads however there is low flood risk to a few of the properties towards the south of Kirby Misperton Lane.</p> <ul style="list-style-type: none"> • Kirby Misperton – there are large areas of low to high risk surface water pooling across the Flamingo Land Caravan Site to the northwest of Kirby Misperton. Through Kirby Misperton there is a low to high risk flow route along Kirby Misperton Road with a low risk flow route to the south along Main Street. These flow routes remain confined to the roads but there are areas of low to medium risk surface water pooling around properties along Shire Grove to the west of Main Street. 					<p>exceedance along the River Derwent from Espersykes down to Low Hutton</p> <ul style="list-style-type: none"> • February 2020 (Storm Ciara) – fluvial flooding due to channel capacity exceedance along parts of the River Derwent, Ackland Beck, Costa Beck and the River Rye • February 2020 (Storm Dennis) – fluvial flooding due to channel capacity exceedance along parts of most watercourses across the area
<p>Whitby and surrounding settlements</p>	<p>The River Esk enters the area from the southwest and flows northeast, along the northern boundary of the North York Moors National Park, then flows north through Whitby where it enters the North Sea.</p> <p>Within the town of Sleights there is a large area of Flood Zone 2 which extends south along Thurndale Beck at its confluence with the Esk. There are a small number of properties at flood risk.</p>	<p>The EA AIMS dataset shows one embankment in the area located along the eastern bank of the River Esk in Ruswarp providing protection to properties along Larpool Lane.</p>	<p>There is coastal risk along the northern boundary of Whitby from the North Sea which was assessed using present day (2021) projection modelling.</p> <p>There is a small area of risk during the 200-year event along Sandsend Road at Teapot Hill to the northwest of the area.</p>	<p>Across the area there are many locations of localised flood risk, but in a lot of these areas the flood risk remains confined to the roads or the flow paths of watercourses through the area and does not pose a risk to properties.</p> <p>There are areas of low to high flood risk in Whitby around properties to the west of the River Esk along Uppgang Lane and Station Avenue, and Spring Vale. There is also low to medium flood risk to properties along Stakesby Road.</p>	<p>✓</p>	<p>✓</p>	<p>✓</p>	<p>None</p>	<p>From the 2012 Whitby Coastal Strategy provided by Scarborough Borough Council: Coastal flooding due to wave overtopping occurs regularly in this area, particularly at:</p> <ul style="list-style-type: none"> • Sandsend car park • Whitby West Cliff promenade • Whitby Harbour piers and extensions



	<p>Heading east from Sleights to Ruswarp the floodplain extends to the north with the B1410 and a small number of isolated farm properties located within Flood Zone 3. Here the extents for Flood Zones 2 and 3 are very similar.</p> <p>In Ruswarp, there are a number of properties along The Carrs and the High Street which are at flood risk. At the eastern side of Ruswarp the floodplain extends considerably to the north of the river however this area of land is unoccupied.</p> <p>As the River Esk flows east into Whitby the tidal influences will become greater than the fluvial influences. The flood risk in Whitby is assessed below from both the Fluvial Esk model and the Tidal Esk model.</p> <p>Fluvial Esk The floodplain extends out both east and west of the river with a number of properties at risk, including along Church Street to the east and along Pier Road, Hagersgate, St Ann's Staith and Langborne Road to the west.</p> <p>There are two areas where the floodplain extends a considerable distance from the river:</p> <ul style="list-style-type: none"> To the west just north of the railway station along Bagdale. There are several properties around the station at flood risk with the flow path mostly confined to the road as it heads west. At the confluence of Spital Beck and the River Esk affecting a number of properties along Spital Bridge. <p>Tidal Esk The tidal Esk model shows a similar floodplain to the fluvial model along the east of the river but a smaller floodplain to the west, with less properties shown to be at flood risk around the railway station. The tidal model shows a similar flood extent at the confluence with Spital Beck, with the floodplain extending a considerable distance to the west but does not show any flooding along Bagdale.</p>		<p>For the 1000-year event the risk here is relatively unchanged.</p> <p>Heading south from Teapot Hill at Sandsend towards the River Esk tributary at Whitby the flood risk is confined to the rural coastline and does not impact any roads or properties.</p> <p>At Whitby the coastal risk extends inland along the River Esk. The flood risk mostly remains confined to the channel but there is some risk around Whitby Station and Church Street where there are a number of properties at risk. There is also a large area of coastal risk to the north of Ruswarp, however, the area of risk is predominantly unoccupied with a small number of properties at coastal risk.</p> <p>East of the River Esk tributary, the flood risk is again confined to the rural coastline and does not impact any roads or properties.</p>	<p>There is low to high flood risk to the north of Whitby train station along Station Square and Bagdale, showing flood risk to several properties across all events.</p> <p>South of the A171, there are localised areas of low to high flood risk around properties on Shackleton Close and Mayfield Place.</p> <p>To the east of Whitby there is a surface water flow path heading southeast from Spital Vale towards Stainsacre, which passes through a number of residential streets resulting in low to high flood risk to properties on Fairfield Way and Enterprise Way.</p> <p>There is a large area of flood risk to the north of Ruswarp to the west of the River Esk where there is an area of low-lying land. However, the land here appears to be agricultural and does not impact upon any properties. Further south towards Ruswarp station there are several properties at low to medium flood risk.</p> <p>To the southwest of the area, there are a number of properties in Sleights along Linden Close that are at low flood risk, with a couple of properties at medium to high risk as well, although the flow paths are mostly confined to the road during these events. South of Sleights railway station, there is also low flood risk to a small number of properties along Beck Holme.</p>						<p>In November 2011, there was notable flooding on the east bank of Endeavour Wharf at Church Street.</p> <p>From Section 19 reports provided by North Yorkshire County Council Sleights experienced surface water flooding in November 2016 due to widespread rainfall. Obstructed and damaged culverts along the A169 meant surface water from the moors could not pass under the road and therefore flowed down the A169 into Sleights. The water transported material from the arrestor bed which blocked highway gully's and land drains in the village preventing water from draining away. Approximately eight homes in the village were flooded.</p> <p>From the EA's Recorded Flood Outlines Shapefile:</p> <ul style="list-style-type: none"> December 2013 – tidal flooding due to overtopping of defences along the River Esk around Whitby railway station causing flooding along Church Street on the east bank of the river and Langborne Road on the west bank of the river January 2017 – tidal flooding due to overtopping of defences at Sandsend affecting a small section of the A174 around East Row Beck. Defences were also overtopped along the River Esk causing flooding along Church Street on the east bank and along Pier Road on the west bank November 2019 – small area of coastal flooding along Pier Road <p>From Scarborough Borough Council's Incident Record:</p> <ul style="list-style-type: none"> June 2012 - flooding at East Row Sandsend, Whitby due to a diverted land drain September 2013 - Public sewer flooding along Lowdale Lane, Sleights November 2016 – Lowdale Farm, Sleights, flooding from Iburndale Beck April 2019 – external flooding of 20 holiday homes due to emergence of a groundwater spring
The East Coast (Scarborough, Filey and	Across the area the extents of Flood Zone 3 and Flood Zone 2 are shown to be similar and are generally confined to narrow floodplains along the	The EA AIMS dataset shows embankments on Scalby Beck providing protection	There is coastal risk along the eastern boundary of this area from the North Sea	There is a high-risk flow path through Burniston, following the path of Burniston Beck. Several properties and roads are within the high risk area with	✓	✓	✓	✓	None	From the Burniston, Cloughton & Quarry Becks Flood Alleviation Scheme – Phase 2 Report 2004



<p>surrounding villages)</p>	<p>watercourses due to the underlying topography.</p> <p>To the north of Scarborough, there is an area of flood risk between Peasholm Lake and the coast causing flood risk at the Burniston Road roundabout.</p> <p>Scalby Beck (Sea Cut) flows west to east across the centre of the area and its floodplain is mainly confined to the channel. There is a small area of flood risk to the south of Scalby Beck along Hackness Drive with several properties located in Flood Zone 2.</p> <p>Burniston Beck, and its tributaries (including Quarry Beck and Cloughton Beck), flow from north to south through the area, turning into Cow Wath Beck just upstream of its confluence with Scalby Beck. The floodplain is mainly confined to a narrow channel however there are some properties located in Flood Zone 3 along the western edge of Cloughton. There are also several properties along the eastern side of Burniston and at the junction of Coastal Road and Cross Drive that are in Flood Zone 3. Just upstream of the confluence with Scalby Beck, there are a couple of properties along Station Road located in Flood Zone 2.</p> <p>The River Hertford has its source near Muston and flows across the area from east to west until it flows under Spital Road (A64) and then joins the River Derwent near Haybridge Farm. The flood extent from the River Hertford is wide-reaching however most of the area at flood risk from this watercourse is rural and unoccupied. There are a couple of isolated farms that are shown to be at risk alongside a number of roads including Flotmanby Lane (A1039) at Muston, Filey Road and Carr Lane. There are also a couple of properties located in Flood Zone 2 on the east side of Muston.</p>	<p>to the properties just west of Scalby Road.</p>	<p>which was assessed using present day (2021) projection modelling.</p> <p>The area at risk is mostly unoccupied coastline, with no properties or other infrastructure at risk. However, there are a couple of areas where the flood risk encroaches inland causing flood risk to roads and properties for both the 200-year and 1000-year events including:</p> <ul style="list-style-type: none"> • Cleveland Way from Scalby Ness to Scarborough • Foreshore Road and Sandside, Scarborough, and several properties along these roads 	<p>many more properties at low to medium flood risk. South of Burniston there is a large area of high risk which includes a caravan park.</p> <p>There is a high-risk flow path through the centre of the area following the path of Scalby Beck. There are properties within the high-risk area to the south of Scalby along Scalby Road and Hackness Road, with further properties at low to medium risk along Hackness Gardens and Glynndale Drive. There are areas of localised flood risk across Scalby with several properties at risk, including along High Street, South Street and Low Street.</p> <p>There are many areas of low to high risk across Scarborough. Many of these flow paths are confined to the roads, particularly the high-risk flows, however there are several areas of properties at low to high flood risk including:</p> <ul style="list-style-type: none"> • Briardene Avenue, Thornville Avenue and Cleveland Avenue to the northwest • Trafalgar Square, Sandringham Street and Wrea Lane to the north • Between Longwestgate and Eastborough to the east • Around the junction of Westwood Road and Valley Road to the south • Along Stepney Road and Stepney Drive to the south west • Between Commercial Street and St John's Road to the west <p>There are many areas of low to high risk across Filey with many properties at flood risk. Key areas of flood risk include:</p> <ul style="list-style-type: none"> • High risk to several properties north of Scarborough Road and south of Filey field along roads including Sycamore Avenue and Thorn Tree Avenue. Further properties are at low to medium risk • High to low flood risk to several properties along Fir Tree Drive between Arndale Way and Church Cliff Drive • High to low flood risk to properties west of Muston Road (A1039) along Cawthorne Crescent and side streets • High to low flood risk to properties along South Crescent Road between Brooklands and Glen Gardens 						<p>provided by Scarborough Borough Council This report highlights five flood events that occurred from Cloughton, Quarry and Burniston Becks: June 2000, November 2000, August 2002, October 2002 and January 2003</p> <p>The August 2002 event was the most severe, causing flooding to land, houses and gardens due to insufficient channel capacity, blockages and surface runoff</p> <p>From Section 19 reports provided by North Yorkshire County Council Flooding caused by high intensity rainfall over a short duration led to flooding across North Yorkshire in August 2017, with Scarborough the most severely affected location. More water fell than the drainage network was able to cope with resulting in flooding across Scarborough with internal flooding to several residential and commercial properties alongside damage to infrastructure and the road network. Other instances of localised surface water flooding are reported to have occurred in August 2011 and December 2011.</p> <p>Areas along the sea front at Scarborough have previously been affected by tidal flooding in December 2013, January 2017 and March 2018.</p> <p>Peasholm Lake has overtopped twice (July 2007 and July 2012) resulting in flooding of the surrounding area.</p> <p>Heavy rainfall during the 2015 Boxing Day floods caused flooding in Scalby, Eastfield and Cayton Bay.</p> <p>From the EA's Recorded Flood Outlines Shapefile:</p> <ul style="list-style-type: none"> • Autumn 2000 – overtopping of the River Hertford downstream of the A64 • December 2013 – tidal flooding due to overtopping of defences along North Bay affecting Royal Albert Drive and along South Bay affecting Foreshore Road and Sandside • January 2017 – tidal flooding due to overtopping of defences along North Bay affecting Royal Albert Drive and along South Bay
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										<p>affecting Foreshore Road and Sandside</p> <p>From Scarborough Borough Council's Incident Record:</p> <ul style="list-style-type: none"> • June 2013 – surface water flooding in Cloughton due to a track alteration • August 2017 – flooding along Hackness Road, Scarborough following heavy rainfall • March 2018 – Edgehill Road, Scarborough, flooding due to a blocked debris screen on a surface water sewer • 2004-2015 – internal flooding of properties in Hunmanby Gap due to runoff from adjacent agricultural land • April 2012 – Scalby Hayes, Scarborough flooded externally due to surface water
Rural south east (Gypsey Race)	<p>The Gypsey Race flows west to east across the south-east of the study area. This area consists of steep slopes with clearly defined flow routes and Flood Zones 2 and 3 are generally confined to narrow channels along the Gypsey Race and other clearly defined flow routes.</p> <p>This area is rural and as such there is limited flood risk to infrastructure and properties, however, there are several properties located within close proximity of the Gypsey Race and at flood risk:</p> <ul style="list-style-type: none"> • At the source of the Gypsey Race at Duggleby there are several properties located within Flood Zone 3. • There are a small number of properties at Kirkby Grindalythe located within Flood Zone 3. • There are several properties in West Lutton, East Lutton, Helperthorpe and Weaverthorpe located in Flood Zone 3, with continual flood risk along the road connecting these villages. • Along the course of the Gypsey Race there are also a few isolated properties that are located within Flood Zone 3. 	None	None	<p>In this rural area, surface water typically flows downhill from higher ground into the Gypsey Race. As such, the properties at risk of surface water flooding are largely the same as those at risk of fluvial flooding, however, there are a few key areas where this differs:</p> <ul style="list-style-type: none"> • There is a low risk surface water flow path flowing south to north towards Kirby Grindalythe with several properties at low flood risk. • There is a low to medium risk flow path from north to south down the B1249 towards Foxholes with a small number of properties at low to medium flood risk. 	✓	✓	✓		None	
Malton and Norton-on-Derwent	<p>The River Derwent flows northeast to southwest between the towns of Malton (to the north) and Norton-on-Derwent (to the south). Flood Zone 3 encompasses a large number of properties in Old Malton, along Town Street, Castlegate and Lascelles Lane. In Malton there are a number of properties in Flood Zone 3 along</p>	The EA Aims dataset shows there is a flood wall on the Malton (north) side of the River Derwent which extends east from the Railway Street bridge to the top of Sheepfoot	None	<p>There are limited areas of high flood risk across Norton and Malton, with small areas of pooling predominantly confined to roads or areas of unoccupied land.</p> <p>These localised areas of pooling increase in size for medium flood risk. There are several properties at risk, particularly around the junction of</p>	✓		✓	✓	None	<p>From information on the Malton, Norton and Old Malton Flood Alleviation Scheme available from</p> <p>https://www.northyorks.gov.uk/</p> <p>Since the November 2012 event, flooding issues occurring in Malton</p>



	<p>Castlegate. In Norton there are many properties at flood risk along roads including Norton Road, Church Street and St Nicholas Street.</p> <p>There are also areas of wider floodplains and increased flood risk where Mill Beck and Priorpot Beck flow into the Derwent from the Norton (south) side. Along Priorpot Beck there is a large difference in the flood zones, with many more properties located in Flood Zone 2 than in Flood Zone 3. This particularly affects properties to the south of the Beck, including some along Maudon Grove, Priorpot Lane and Westfield Way.</p> <p>To the south of Malton there are a number of properties to the south of the York Road located in Flood Zone 2.</p>	<p>Hill, offering protection to properties along Castlegate and Sheepfoot Hill.</p> <p>There are also a series of flood walls and embankments on the Norton (south) side of the River Derwent which extend from Welham Hall Farm to the south of Norton up to Westfield Way offering protection to properties south of the river.</p> <p>There is also an embankment along the north of the River Derwent in Old Malton offering protection to properties along Lascelles Lane and Town Street.</p>		<p>Westgate and Town Street in Old Malton and in the residential area south of Priorpot Beck in Norton.</p> <p>The area of low flood risk is considerably greater with clear flow paths along a number of roads including:</p> <ul style="list-style-type: none"> • B1257 (Newbiggin, Wheelgate and Castlegate), Malton • B1248 (Yorkersgate and Old Maltongate), Malton • Wood Street, Norton • Many smaller residential roads <p>Significant areas of surface water flood risk to properties include:</p> <ul style="list-style-type: none"> • The residential area south of Priorpot Beck with properties at low to medium risk along Fletton Road, Brindle Way, Priopot Way and Toisland View • The residential area south of Wood Street with properties at low to medium risk • Properties in north Malton along Showfield Lane and Ryngwood Drive 						<p>and Norton are caused by 'flood-locking' where high river levels prevent the drainage systems flowing into the rivers.</p> <p>From the EA's Recorded Flood Outlines Shapefile:</p> <ul style="list-style-type: none"> • March 1999 – fluvial flooding due to overtopping of defences along the length of the River Derwent • Autumn 2000 – fluvial flooding due to overtopping of defences along the length of the River Derwent • December 2015 – fluvial flooding due to overtopping of the River Derwent from Espersykes down to Low Hutton • February 2020 (Storm Dennis) – fluvial flooding due to channel capacity exceedance along the River Derwent around Castlegate bridge and to the east of Old Malton
<p>Rural south-west (lower reaches of the River Derwent)</p>	<p>Downstream of Malton and Norton-on-Derwent the River Derwent continues to flow in a south/south-westerly direction. It has several tributaries including Menethorpe Beck, Whitecarr Beck, Leppington Beck and Pasture Beck. Flood Zones 2 and 3 are generally confined to a relatively narrow floodplain along the River Derwent and its tributaries.</p> <p>This area is predominantly rural with most of the flood risk confined to unoccupied land or along small roads/tracks.</p> <p>Downstream there are several properties in Stamford Bridge located in Flood Zones 2 and 3, however, this area lies predominantly outside of the Scarborough Borough and Ryedale area.</p>	<p>The EA AIMS dataset shows there is an embankment along the eastern bank of the River Derwent at Scrayingham and Bridge End Fields.</p>	<p>None</p>	<p>In this rural area, surface water typically flows from higher ground into the smaller watercourses and downhill into the River Derwent. There are some localised areas of surface water pooling around isolated farmhouses.</p> <p>There is a considerable area of pooling at Scrayingham with several properties at high flood risk.</p> <p>There is also a clear flow path along Steelmoor Lane at Barton-le-Willows. The medium to high risk flow path is confined to the road, but a small number of properties are at low flood risk.</p> <p>Other areas with several properties at surface water flood risk include:</p> <ul style="list-style-type: none"> • Whitwell-on-the-Hill where there is a low to high risk flow path along the main street with several properties at low flood risk and a couple at high flood risk with a few areas of surface water pooling. • Northwest of Welburn along Chestnut Avenue where there is a low to high risk flow path with a couple of properties at medium flood risk. There are also a number of properties at low flood risk further west along Chanting Hill Close and the adjacent residential streets. 	<p>✓</p>	<p>✓</p>	<p>✓</p>	<p>✓</p>	<p>Castle Howard Great Lake – follows the route of Mill Hills Beck and then Cram Beck downhill to the River Derwent. Extent includes the Castle Howard Lakeside Holiday Park and a small number of properties in Low Gaterley and Crambeck.</p>	<p>From the EA's Recorded Flood Outlines Shapefile:</p> <ul style="list-style-type: none"> • February 1991 – fluvial flooding due to the overtopping of defences along the River Derwent downstream of Malton • March 1999 – fluvial flooding due to the overtopping of defences along the length of the River Derwent • Autumn 2000 – fluvial flooding due to the overtopping of defences along the length of the River Derwent • December 2015 – fluvial flooding due channel capacity exceedance along the River Derwent from Espersykes down to Low Hutton • February 2020 (Storm Dennis) – fluvial flooding due to channel capacity exceedance along parts of the lower River Derwent. There was also an overtopping of the defences along the east bank of the River Derwent just upstream of its confluence with Howl Beck