

Area	Fluvial and Tidal Flood Risk	Existing Defences	Surface water flood risk	GeoSmart Groundwater flood risk				Reservoir inundation risks	Historic, recorded flood events
				High	Mod-erate	Low	Neg-ligible		
Stratford and West Ham	<p>The Environment Agency's Flood Map for Planning (FMfP) shows significant flood risk to the area. 40.5% of the area is within Flood Zone 2 (between 1% and 0.1% annual chance of flooding from rivers and sea) and 27.3% is within Flood Zone 3 (1% or more annual chance of flooding from rivers or 0.5% or more annual chance of flooding from the sea). The EA's FMfP ignores the presence of flood defences so it is unlikely to be representative of actual flood risk across all of the area.</p> <p>The west and south of Stratford and West Ham is the area at the greatest fluvial flood risk due to the presence of the River Lea and the Bow Back Rivers such as the Waterworks River and the Three Mills Wall River.</p> <p>The 2014 River Lee hydraulic model does not show any significant flooding within the Stratford and West Ham area during the 1% AEP defended event. During the 0.1% AEP defended event, certain of areas of Stratford and West Ham are flooded. The main flood risk areas are the overground railway lines</p>	<p>Walls, embankments, engineered high ground and natural high ground along the River Lea, and the Bow Back Rivers, on both sides.</p>	<p>Surface water flood risk across the London Borough of Newham is extensive. Users should refer to Appendix A mapping for more detail on which areas have the greatest risk of flooding from surface water.</p> <p>As part of the Newham Surface Water Management Plan (2019) direct rainfall modelling was undertaken across the entire borough. Areas identified to be at more significant surface water flood risk have been designated as 'Critical Drainage Areas' (CDA's). 13 CDA's were identified in the London Borough of Newham.</p> <p>Within Stratford and West Ham there are four CDA's:</p> <ul style="list-style-type: none"> <li>Group4_031: Jubilee line at West Ham Stn</li> <li>Group4_040: District line between West Ham and Plaistow where it passes beneath the Northern Outfall Sewer</li> <li>Group4_050: Great Eastern Main line (as referred to as the National Express East Anglia Railway in the 2019 SWMP) from</li> </ul>		✓	✓	✓	<p><b>Reservoirs where the 'Dry Day' extent impacts the area:</b></p> <ul style="list-style-type: none"> <li><b>Banbury, London Borough of Waltham Forest</b> - Flood extent affects parts of the Olympic Park, Alfred's Meadow and the Waterglades east of the River Lea. Flooding also affects the areas on either side of Stratford Stn between the Greenway and Plaistow Rd. Jack Clow Rd are Tom Nolan Rd are also affected.</li> <li><b>High Maynard, London Borough of Waltham Forest</b> - Flood extent is very similar to that of Banbury Reservoir. There is additional flooding to Zinc St, Sugar House Ln, Carpet St, Soapmaker Mews and Botanical Mews.</li> <li><b>King George V, London Borough of Enfield</b> – Flood extent affects the majority of Stratford and West Ham, west of the A112. North of Stratford Stn flooding is mainly contained to railway lines, the Bow Back Rivers and River Lea.</li> <li><b>Lockwood, London Borough of Waltham Forest</b> – Flood extent mainly affects the area south of Stratford Stn between the Greenway and A112. Parts of the Olympic Park, Alfred's Meadow and the Waterglades are affected. Stratford Int'l DLR stn, Abbey Ln, Claypole Rd, Britten Crt, Zinc St, Sugar House Ln, Carpet St, Soapmaker Mews and Botanical Mews are also affected.</li> <li><b>Walthamstow No.4/No.5, Warwick East &amp; West Warwick, London Borough of Waltham Forest</b> – Flood extent affects parts of the Olympic Park, Alfred's Meadow and the Waterglades, east of the River Lea.</li> </ul>	<p><b>From the EA's Recorded Flood Outlines shapefile:</b></p> <ul style="list-style-type: none"> <li><b>06 March Spring 1947</b>- fluvial flooding due to channel capacity exceedance (no raised defences) along the River Lea at Stratford and West Ham.</li> <li><b>EA 06 May Spring 2020</b>- fluvial flooding due to operational failure/breach of defence along the River Lea at East London Science School.</li> <li><b>EA January Winter 2021</b>- flood source and cause unknown at Warton Road, Stratford.</li> </ul> <p><b>From the Canal and River Trust's data records:</b></p> <ul style="list-style-type: none"> <li>The only recorded overtopping event in the Newham borough occurred in the Stratford and West Ham area in 2013. Due to high spring tides, Bow Creek overtopped the riverbank at Bow Lock and at Three Mills Lock on 4/11/2013.</li> </ul> <p><b>From Newham Council Flooding Incidents</b></p>

## E Summary of flood risk in the London Borough of Newham by Policy Area

Area	Fluvial and Tidal Flood Risk	Existing Defences	Surface water flood risk	GeoSmart Groundwater flood risk				Reservoir inundation risks	Historic, recorded flood events
				High	Moderate	Low	Negligible		
	<p>and Docklands Light Rail (DLR) in the area. Lea Junction, a triangular area of grass between three railway lines, just north of Carpenters Road is also in the 0.1% AEP flood extent (see Appendix A). The River Lee model shows one area of flooding to the west of Temple Mills Lane towards Villiers Gardens. Another area in the flood extent is the land between the Three Mills River and the River Lea, south of the High Street/A118. The roads affected include Carpet Street, Sugar House Lane, Botanical Mews, Copperworks Wharf, Zinc Street and Hunt's Lane. The south west corner of Three Mills Studio, in the south of Stratford is also in the 0.1% AEP flood extent. In 2017 a breach model of the River Thames model outputs represent the maximum likely extent, depth, level and hazard of flooding that could be achieved if an individual breach of the Thames Tidal Defence line was to occur at any point. During the 2005 epoch modelled, if a breach was to occur, the flood extent could reach the south of Stratford, specifically the area south of the High Street/A118 and east of the DLR. The tidal Thames flooding which has</p>		<p>Stratford, through Forest Gate Stn and Manor Park</p> <ul style="list-style-type: none"> <li>Group4_051: Central line through Stratford Stn</li> </ul> <p>Further information on CDA's can be found in the 2019 London Borough of Newham Surface Water Management Plan available <a href="#">online</a>.</p>					<ul style="list-style-type: none"> <li><b>William Girling, London Borough of Enfield</b> – Flood extent is very similar to that of King George V reservoir. North of Stratford Stn there is additional flooding to Prospect Row, Forrester Way, Leyton Rd, Whitear Walk, Simons Walk, Dorset Place and Alma St.</li> </ul> <p><b>Reservoirs which only flood the area during the 'Wet Day' scenario:</b></p> <ul style="list-style-type: none"> <li><b>Highams Park Lane, London Borough of Waltham Forest</b> – Flood extent affects parts of the Olympic Park, Alfred's Meadow and the Waterglades, east of the River Lea. Prospect Row, Stratford Int'l Stn (and DLR), parts of High Meads Loop and Lea Valley lines are also affected.</li> <li><b>Queen Elizabeth II, Surrey</b> – Flood extent affects most of Stratford and West Ham south of Stratford Stn and west of the A112. There is also some flooding west of Plaistow Rd (A112) from Gillman Drive to Valetta Grove.</li> <li><b>Stoke Newington East and West, London Borough of Hackney</b> – Flood extent affects the majority of Stratford and West Ham, west of the A112. North of Stratford Stn flooding is mainly contained to railway lines, the Bow Back Rivers and River Lea.</li> <li><b>Wraysbury, Surrey</b> - Flood extent is very similar to that of Queen Elizabeth II reservoir.</li> <li><b>See Appendix A for more detailed flood extents for each of the reservoirs affecting Newham.</b></li> </ul>	<p><b>shapefile:</b></p> <ul style="list-style-type: none"> <li><b>Number of incidents:</b> 8</li> <li><b>Cause of incidents:</b> surface water flooding and blocked gullies.</li> </ul> <p>See Appendix A for more detailed mapping.</p>

## E Summary of flood risk in the London Borough of Newham by Policy Area

Area	Fluvial and Tidal Flood Risk	Existing Defences	Surface water flood risk	GeoSmart Groundwater flood risk				Reservoir inundation risks	Historic, recorded flood events
				High	Moderate	Low	Negligible		
	a hazard rating of 'Danger for all' is limited to the Abbey Mills waterworks, west of Abbey Creek and also parts of Abbey Lane, Abbotsbury Lane, Abbotsbury Close and Britten Court. Mapping showing these flood extents can be seen in Appendix A.								

Area	Fluvial and Tidal Flood Risk	Existing Defences	Surface water flood risk	GeoSmart Groundwater flood risk				Reservoir inundation risks	Historic, recorded flood events
				High	Moderate	Low	Negligible		
Urban Newham	<p>The Environment Agency's Flood Map for Planning (FMfP) shows flooding to the east and south of the area. 20.0% of the area is within Flood Zone 2 (between 1% and 0.1% annual chance of flooding from rivers and sea) and 11.7% is within Flood Zone 3 (1% or more annual chance of flooding from rivers or 0.5% or more annual chance of flooding from the sea) The EA's FMfP ignores the presence of flood defences so it is unlikely to be representative of actual flood risk across all of the area.</p> <p>The east of Urban Newham has the greatest fluvial flood risk due to the presence of the River Roding.</p> <p>The 2018 Lower Roding hydraulic model does not show any significant flooding within the Urban Newham area during the 1% AEP baseline defended scenario. The only area where water leaves the channel is at Ilford Golf Club, flooding the southern part of the golf course between the Roding and Alders Brook. During the 0.1% AEP baseline scenario, parts of eastern and western Urban Newham are predicted to flood. This flood extent</p>	<p>Walls, embankments, natural high ground and engineered high ground along the River Roding, Alders Brook and an ordinary watercourse/drain surrounding Newham Central Depot.</p>	<p>Surface water flood risk across the London Borough of Newham is extensive. Users should refer to Appendix A mapping for more detail on which areas have the greatest risk of flooding from surface water.</p> <p>As part of the Newham Surface Water Management Plan (2019) direct rainfall modelling was undertaken across the entire borough. Areas identified to be at more significant surface water flood risk have been designated as 'Critical Drainage Areas' (CDA's). 13 CDA's were identified in the London Borough of Newham.</p> <p>Within Urban Newham there are eight CDA's:</p> <ul style="list-style-type: none"> <li>Group4_033: Gainsborough Avenue, Little Ilford</li> <li>Group4_034: Charlemont Road, East Ham</li> <li>Group4_035: Humberstone Road and New City Road, Newham</li> <li>Group4_037: Beaumont Road, Kent Street in Plaistow</li> <li>Group4_038: London Overground Railway line near Woodgrange</li> </ul>		✓	✓	✓	<p><b>Reservoirs where the 'Dry Day' extent impacts the area:</b></p> <ul style="list-style-type: none"> <li><b>Berners Hall Farm, Epping Forest District</b> - Flood extent affects the North Thames Gas Board Sports Ground, the perimeter of Newham Central Depot, the allotments at Folkestone Rd and Gooseley Playing Field.</li> <li><b>Heronry Pond Wanstead Park, London Borough of Redbridge</b> - Flood extent affects Bridle Path Allotments and Langdon Academy playing fields.</li> <li><b>King George V, London Borough of Enfield</b> – Flood extent affects Newham Way, the south of Prince Regent Ln and land to the west of Prince Regent Ln/south of Palmer Rd.</li> <li><b>Perch Pond Wanstead, London Borough of Redbridge</b> – Flood extent affects Bridle Path Allotments.</li> <li><b>William Girling, London Borough of Enfield</b> – Same flood extent as King George V reservoir but with further flooding along Newham Way.</li> </ul> <p><b>Reservoirs where the 'Wet Day' extent impacts the area:</b></p> <ul style="list-style-type: none"> <li><b>Banbury, London Borough of Waltham Forest</b> – Flood extent affects areas on either side of the High St in Plaistow, the District and Hammersmith &amp; City lines and the London, Tilbury and Southend Railway line. Land between Newham Way and the Greenway as well as the area west of North Circular Rd, from the Beckton Roundabout to the Fenchurch St and Shoeburyness Line railway are also affected.</li> <li><b>Basin Lake Wanstead, London Borough of Redbridge</b>- Flood extent similar to that</li> </ul>	<p><b>From the EA's Recorded Flood Outlines shapefile:</b></p> <ul style="list-style-type: none"> <li><b>06 December Winter 2000</b>- surface water flooding at North Thames Gas Board Sports Ground/Leigh Road Sports Ground and the greenfield land south of Watson Avenue.</li> <li><b>TTD_FEO_1928</b>- fluvial flooding due to overtopping of defences along the River Roding (in 1928) along North Circular Rd and Highbridge Rd.</li> <li><b>06 September Summer 1987</b>- fluvial flooding due to channel capacity exceedance (no raised defences) along the River Roding at Alfred's Way near the Beckton Roundabout and some of the allotments near Gooseley Ln.</li> </ul> <p><b>From Newham Council Flooding Incidents shapefile:</b></p> <ul style="list-style-type: none"> <li><b>Number of incidents:</b> 51</li> <li><b>Cause of incidents:</b> surface water flooding, groundwater flooding, blocked gullies, sewer flooding</li> </ul> <p>See Appendix A for more</p>

## E Summary of flood risk in the London Borough of Newham by Policy Area

Area	Fluvial and Tidal Flood Risk	Existing Defences	Surface water flood risk	GeoSmart Groundwater flood risk				Reservoir inundation risks	Historic, recorded flood events
				High	Moderate	Low	Negligible		
	<p>largely aligns with the EA's FMfP Flood Zone 3. The area where the Lower Roding model 0.1% AEP flood extent is greater than the FMfP Flood Zone 3 is in Little Ilford in the north eastern corner of Urban Newham. In this area, the Lower Roding model shows further flooding to Dersingham Ave, Warrior Sq, Mariner Rd, Grantham Rd, Romford Rd, Aldersbrook Ln, Lugg Approach and Little Ilford Park. (see Appendix A).</p> <p>The 2017 Thames Downriver breach model shows that during the 2005 epoch, if a breach were to occur, during a 0.5% AEP event, the flood extent could reach Cuckold Haven Nature Reserve and part of Alfred's Way, south east of the nature reserve. If a 0.1% AEP event were to take place, and a breach of the Thames occurred, flooding could also affect parts of North Circular Rd and Barking Rd to the west of the River Roding. The hazard rating of this flooding is 'Danger for all' at Cuckold Haven Nature Reserve and Alfred's Way and 'Danger for most' at North Circular Rd.</p> <p>The 2017 Thames Upriver breach model shows that during the 2005 epoch, if a</p>		<p>Park Stn</p> <ul style="list-style-type: none"> <li>Group4_039: A13 underpass beneath Prince Regent Lane (A112), Newham</li> <li>Group4_040: District line between West Ham and Plaistow where it passes beneath the Northern Outfall Sewer</li> <li>Group4_050: Great Eastern Main line from Stratford, through Forest Gate Stn and Manor Park</li> </ul> <p>Further information on CDA's can be found in the 2019 London Borough of Newham Surface Water Management Plan available <a href="#">online</a></p> <p>There are two surface water models covering this Policy Area. See Appendix A for more detailed mapping.</p>					<p>of Banbury reservoir but with further flooding in East Ham, north of the Greenway and in Little Ilford, north of the railway. Unlike the Banbury reservoir, flooding does not affect the Plaistow area.</p> <ul style="list-style-type: none"> <li><b>Chigwell Raw Water, Epping Forest District</b> – Flood extent affects the area west of North Circular Rd, from the northern border of Newham to the green area south of Watson Ave.</li> <li><b>Eagle Pond, London Borough of Redbridge</b> – Flood extent affects parts of Little Ilford- the Bridle Path Allotments, the edge of the City of London (CoL) Cemetery and the area between North Circular Rd and Dersingham Ave.</li> <li><b>High Maynard, London Borough of Waltham Forest</b> Flood Extent affects part of Newham Way and the area north of Newham Way up to Newham Sixth Form College on the west side of Prince Regent Ln and up to Torrence MacMillan Stadium on the east side of Prince Regent Ln.</li> <li><b>Lockwood, London Borough of Waltham Forest</b> – Flood extent affects Newham Way and the area north, extending up to around Clacton Rd in the west of Urban Newham and up to around Central Park/Newham Central Depot in the east of Urban Newham.</li> <li><b>Ornamental Water Wanstead Park, London Borough of Redbridge</b> – Flood extent affects the area west of North Circular Rd from the CoL Cemetery, extending south to Newham Way/the Greenway and west to around Angus Rd.</li> <li><b>Valentines Park Lane, London Borough of Redbridge</b> – Flood extent similar to that of Chigwell Raw Water reservoir but with further flooding south of Watson Ave, extending to Langdon Academy.</li> <li><b>Walthamstow No 4, Walthamstow No 5 and Warwick East, London Borough of</b></li> </ul>	<p>detailed mapping.</p>

## E Summary of flood risk in the London Borough of Newham by Policy Area

Area	Fluvial and Tidal Flood Risk	Existing Defences	Surface water flood risk	GeoSmart Groundwater flood risk				Reservoir inundation risks	Historic, recorded flood events
				High	Moderate	Low	Negligible		
	breach were to occur, the maximum flood extent could reach Newham Way at the south of Urban Newham. This flooding could stop around Noel Rd. Flooding could also occur in the south west corner of Urban Newham. The roads affected include Denmark St, Caraway Close, Cranely Rd, Brock Rd, Selby Rd, Chadwin Rd, Holborn Rd, Egham Rd, Botha Rd, Alliance Rd, Chalk Rd, Salomons Rd, Prince Regent Ln, Maybury Rd, Bennett Rd, Barclay Rd and parts of Newham Leisure Centre grounds. This flooding would have a hazard rating of 'Danger for some' and 'Danger for most' with a very small area of 'Danger for all' on Newham Way.							<p><b>Waltham Forest</b> – Flood extent similar to that of High Maynard reservoir but flooding extends slightly further north and east.</p> <ul style="list-style-type: none"> <li><b>Wraysbury, Spelthorne District</b> - Flood extent similar to Walthamstow No 4/5 and Warwick East but flooding extends further north again</li> <li><b>Queen Elizabeth II, Surrey</b> - Flood extent is very similar to that of Walthamstow No 4 reservoir.</li> </ul> <p><b>See Appendix A for more detailed flood extents for each of the reservoirs affecting Newham.</b></p>	



Area	Fluvial and Tidal Flood Risk	Existing Defences	Surface water flood risk	GeoSmart Groundwater flood risk				Reservoir inundation risks	Historic, recorded flood events
				High	Moderate	Low	Negligible		
Custom House and Canning Town	<p>The Environment Agency's Flood Map for Planning (FMfP) shows significant flood risk to the area. 82.0% of the area is within Flood Zone 2 (between 1% and 0.1% annual chance of flooding from rivers and sea) and 64.1% is within Flood Zone 3 (1% or more annual chance of flooding from rivers or 0.5% or more annual chance of flooding from the sea). The EA's FMfP ignores the presence of flood defences so it is unlikely to be representative of actual flood risk across all of the area.</p> <p>The River Thames represents the greatest flood risk to the Custom House and Canning Town policy area. The River Lea/Bow Creek borders the area to the west.</p> <p>The 2014 River Lee hydraulic model does not show any flooding within the Custom House and Canning Town area during the 1% AEP defended event or during the 0.1% AEP defended event. Water remains in the channel during both of these events.</p> <p>The 2017 Thames Downriver breach model shows that during the</p>	<p>Walls, embankments, and engineered high ground along the River Lea/Bow Brook and walls along the River Thames.</p>	<p>Surface water flood risk across the London Borough of Newham is extensive. Users should refer to Appendix A mapping for more detail on which areas have the greatest risk of flooding from surface water.</p> <p>As part of the Newham Surface Water Management Plan (2019) direct rainfall modelling was undertaken across the entire borough. Areas identified to be at more significant surface water flood risk have been designated as 'Critical Drainage Areas' (CDA's). 13 CDA's were identified in the London Borough of Newham.</p> <p>Within Custom House and Canning Town there are three CDA's:</p> <ul style="list-style-type: none"> <li>Group4_031: Ponding at lowest point along tracks. SW water flowing in a southerly direction.</li> <li>Group4_032: Water ponding in low points in underpass and access roads</li> <li>Group4_039: Ponding at low point along the A13. Runoff from surrounding ground to the north and south prevented by noise</li> </ul>		✓	✓	✓	<p><b>Reservoirs where the 'Dry Day' extent impacts the area:</b></p> <ul style="list-style-type: none"> <li><b>Banbury, London Borough of Waltham Forest</b> – Flood extent affects the area west of Manor Rd and north of Newham Way. The Jubilee line from West Ham Stn to Jubilee line Headhouse are also affected.</li> <li><b>High Maynard, London Borough of Waltham Forest</b> - Flood extent is very similar to that of Banbury reservoir.</li> <li><b>King George V, London Borough of Enfield</b> - Flood extent affects most of the area. The Royal docks, Prologis Business Park, Bromley-by-Bow Gasholders and streets either side of Balsam St are not in the flood extent.</li> <li><b>Lockwood, London Borough of Waltham Forest</b> - Flood extent is very similar to that of Banbury reservoir.</li> <li><b>William Girling, London Borough of Enfield</b> - Flood extent is very similar to that of King George V reservoir.</li> </ul> <p><b>Reservoirs where the 'Wet Day' extent impacts the area:</b></p> <ul style="list-style-type: none"> <li><b>Banbury, London Borough of Waltham Forest</b> - Flood extent affects most of the area. Limmo Peninsula, parts of Western Gateway, Prologis Business Park, South Crescent, Bromley PRS, north Balsam St, Grange Rd, Liddon Rd and Newman Rd are unaffected by flooding.</li> <li><b>High Maynard, London Borough of Waltham Forest</b>- Flood extent is similar to that of Banbury reservoir but slightly smaller. Bromley-by-Bow Gasholders, more roads on either side of Balsam St and ExCel are among areas unaffected by the flood extent.</li> </ul>	<p><b>From the EA's Recorded Flood Outlines shapefile:</b></p> <ul style="list-style-type: none"> <li><b>06 March Spring 1947</b>- fluvial flooding due to channel capacity exceedance (no raised defences) along the River Lea/Bow Creek at Bidder St and Silvertown Way.</li> <li><b>January Winter 1953</b>- fluvial flooding due to channel capacity exceedance (no raised defences) at Stephenson St, the Jubilee line and a large area between Newham Way and Victoria Dock Rd.</li> <li><b>TTD_FEO_1953</b>- sea flooding due to overtopping of defences at the Jubilee line, Silvertown Way and a large area between Newham Way and Victoria Dock Rd.</li> </ul> <p><b>From Newham Council Flooding Incidents shapefile:</b></p> <ul style="list-style-type: none"> <li><b>Number of incidents:</b> 5</li> <li><b>Cause of incidents:</b> surface water flooding, groundwater flooding, blocked gullies, sewer flooding</li> </ul> <p>See Appendix A for more detailed mapping.</p>

## E Summary of flood risk in the London Borough of Newham by Policy Area

Area	Fluvial and Tidal Flood Risk	Existing Defences	Surface water flood risk	GeoSmart Groundwater flood risk				Reservoir inundation risks	Historic, recorded flood events
				High	Moderate	Low	Negligible		
	<p>2005 epoch, if a breach were to occur, during a 0.5% AEP or 0.1% AEP event, the flood extent would reach the Royal Docks. The Good Hotel and Sunborn Hotel (inside the dock) could be affected during these events.</p> <p>The 2017 Thames Upriver breach model shows that during the 2005 epoch, if a breach were to occur, the maximum flood extent could be very similar to the FMfP FZ2, so would cover roughly 82.0% of the Custom House and Canning Town policy area.</p>		<p>walls.</p> <p>Further information on CDA's can be found in the 2019 London Borough of Newham Surface Water Management Plan available <a href="#">online</a></p> <p>There is a surface water model covering this Policy Area. See Appendix A for more detailed mapping.</p>					<ul style="list-style-type: none"> <li>• <b>King George V &amp; William Girling, London Borough of Enfield and Lockwood, London Borough of Waltham Forest</b> – Flood extent is very similar to that of Banbury reservoir.</li> <li>• <b>Walthamstow No 4/5 &amp; Warwick East, London Borough of Waltham Forest</b> – Flood extent is very similar to that of High Maynard reservoir. Additional flooding to New Barn St, Gardner Rd, Adine Rd, Kelland Rd, South Crescent, Electra Business Park and Greencore Group is present.</li> <li>• <b>Queen Elizabeth II &amp; Wraysbury, Surrey</b> – Flood extent is similar to that of Walthamstow No 4/5. There is some additional flooding to North Crescent, Whitewest Rd, Grange Rd, Grant St, Turnstone Cl and ExCel.</li> <li>• <b>West Warwick, London Borough of Waltham Forest</b> – Flood extent affects the north of Canning Town, mostly east of the Jubilee line but Twelvetrees Park, West Ham Bus Garage, West Ham Substation and other parts of Stephenson St are also affected. The flood extent stops around Star Park in the west and Chargeable Ln in the east.</li> <li>• <b>See Appendix A for more detailed flood extents for each of the reservoirs affecting Newham.</b></li> </ul>	



Area	Fluvial and Tidal Flood Risk	Existing Defences	Surface water flood risk	GeoSmart Groundwater flood risk				Reservoir inundation risks	Historic, recorded flood events
				High	Moderate	Low	Negligible		
Beckton and Royal Docks	<p>The Environment Agency's Flood Map for Planning (FMfP) shows significant flood risk to the area. 89.4% of the area is within Flood Zone 2 (between 1% and 0.1% annual chance of flooding from rivers and sea) and 78.2% is within Flood Zone 3 (1% or more annual chance of flooding from rivers or 0.5% or more annual chance of flooding from the sea). The EA's FMfP ignores the presence of flood defences so it is unlikely to be representative of actual flood risk across all of the area.</p> <p>The River Thames represents the greatest flood risk to the Beckton and Royal Docks policy area. The Thames and River Roding/Barking Creek form the eastern boundary of the area.</p> <p>The 2018 Lower Roding model does not show any flooding within the Beckton and Royal Docks area during the 3.3% AEP defended event or during the 1% AEP defended event. Water remains in the channel during both of these events.</p> <p>During the 0.1% AEP defended event, the north of the area is impacted by flooding. This flood extent covers land west of Beckton</p>	<p>Walls, embankments and engineered high ground along the River Roding/Barking Creek. Walls along the River Thames. The Barking Creek Barrier is located at the confluence of the River Roding and the Thames.</p>	<p>Surface water flood risk across the London Borough of Newham is extensive. Users should refer to Appendix A mapping for more detail on which areas have the greatest risk of flooding from surface water.</p> <p>As part of the Newham Surface Water Management Plan (2019) direct rainfall modelling was undertaken across the entire borough. Areas identified to be at more significant surface water flood risk have been designated as 'Critical Drainage Areas' (CDA's). 13 CDA's were identified in the London Borough of Newham.</p> <p>There are not any CDA's within the Beckton and Royal Docks policy area. Further information on CDA's can be found in the 2019 London Borough of Newham Surface Water Management Plan available <a href="#">online</a>.</p> <p>There is a surface water model covering this Policy Area. See Appendix A for more detailed mapping.</p>		✓	✓	✓	<p><b>Reservoirs where the 'Dry Day' extent impacts the area:</b></p> <ul style="list-style-type: none"> <li>• <b>Berners Hall Farm, Essex</b> – Flood extent affects the land north of/behind Beckton Triangle Retail Park, the land inside Beckton Roundabout and the land surrounding the playing fields on Jenkins Ln.</li> <li>• <b>King George V, London Borough of Enfield</b> – Flood extent affects a large amount of Beckton between the policy area boundary and Woolwich Manor Way to the east and Royal Albert Way to the south. Winsor Terrace is also affected.</li> <li>• <b>William Girling, London Borough of Enfield</b> – Flood extent is very similar to that of King George V reservoir.</li> </ul> <p><b>Reservoirs where the 'Wet Day' extent impacts the area:</b></p> <ul style="list-style-type: none"> <li>• <b>Banbury, London Borough of Waltham Forest</b> – Flood extent affects a large amount of the policy area. The unaffected areas between the western boundary of the policy area and Royal Docks Rd are 'Beckton Alps' and the area between Woolwich Manor Way, the DLR line and Royal Docks Rd. East of Royal Docks Rd, eastern parts of the STW and WTW are also unaffected. Land east of Armada Way, between Hornet Road Roundabout and Magellan Boulevard is also unaffected.</li> <li>• <b>King George V, London Borough of Enfield</b> – Flood extent west of Royal Docks Rd is very similar to that of Banbury reservoir. East of Royal Docks Rd, the flood extent affects parts of Beckton Creekside and Beckton STW as well as the former Beckton Gas Works.</li> </ul>	<p><b>From the EA's Recorded Flood Outlines shapefile:</b></p> <ul style="list-style-type: none"> <li>• <b>06 September Summer 1987</b>- fluvial flooding due to channel capacity exceedance (no raised defences) along the River Roding at Alfred's Way, Jenkins Ln, Spur Ln and Power League 5 A Side Football pitch and the land behind it.</li> <li>• <b>TTD_FEO_1928</b>- fluvial flooding due to overtopping of defences along the River Roding. There is a small area of flooding at the Northern Lagoon Walkway.</li> </ul> <p><b>From Newham Council Flooding Incidents shapefile:</b></p> <ul style="list-style-type: none"> <li>• <b>Number of incidents:</b> 2</li> <li>• <b>Cause of incidents:</b> surface water and sewer flooding.</li> </ul> <p>See Appendix A for more detailed mapping.</p>

## E Summary of flood risk in the London Borough of Newham by Policy Area

Area	Fluvial and Tidal Flood Risk	Existing Defences	Surface water flood risk	GeoSmart Groundwater flood risk				Reservoir inundation risks	Historic, recorded flood events
				High	Moderate	Low	Negligible		
	<p>Sewage Treatment Works, between Newham Way/Alfred's Way and the Greenway/Hornet Way.</p> <p>The 2017 Thames Downriver breach model shows that during the 2005 epoch, if a breach were to occur, during a 0.5% AEP event, the flood extent could affect the eastern border of the area. Land to the east and north of Armada Way (Gallions Reach Shopping Park, Gemini Business Park, Beckton Activated Sludge Plant) as well as parts of Thames Gateway Water Treatment Works are within the modelled flood extent. During the 0.1% AEP event, the flood extent could additionally impact Newham Showcase Cinema car park.</p> <p>The 2017 Thames Upriver breach model shows that during the 2005 epoch, if a breach were to occur, the maximum flood extent could impact the west of the policy area. The modelled flood extent affects roads east of Swan Approach and Linton Gardens, with the greatest extent reaching Hadleigh Walk.</p>							<ul style="list-style-type: none"> <li>• <b>Wraysbury, Surrey</b> – Flood extent is similar to that of King George V reservoir.</li> <li>• <b>Willaim Girling, London Borough of Enfield</b> – Flood extent is similar to that of King George V reservoir but there is additional flooding at Gallions Reach Shopping Park.</li> <li>• <b>Lockwood, London Borough of Waltham Forest</b> – Flood extent is similar to that of Banbury reservoir but there is additional flooding at Beckton STW.</li> <li>• <b>Basin Lake &amp; Ornamental Water, Wanstead, London Borough of Redbridge</b> – Flood extent affects the majority of the policy area north of the Greenway in the west and the STW in the west.</li> <li>• <b>Berners Hall Farm, Essex</b> – Flood extent is similar to that of Basin Lake, Wanstead.</li> <li>• <b>High Maynard, London Borough of Waltham Forest</b> – Flood extent affects the west of the policy area from the western boundary east towards Evelyn Denington Rd in the north and Boulwood Rd in the south.</li> <li>• <b>Walthamstow No.4/5 &amp; Warwick East reservoir, London Borough of Waltham Forest</b> – Flood extents affect the majority of the policy area west of Woolwich Manor Way. Parts of Beckton Retail Park and the DLR at Beckton are also affected.</li> <li>• <b>Queen Elizabeth II, Surrey</b> – Flood extent is similar to that of Walthamstow No.4/5/Warwick East. There is additional flooding between Woolwich Manor Way and Royal Docks Rd at Beckton Retail Park and London Industrial Estate.</li> <li>• <b>See Appendix A for detailed flood</b></li> </ul>	

## E Summary of flood risk in the London Borough of Newham by Policy Area

Area	Fluvial and Tidal Flood Risk	Existing Defences	Surface water flood risk	GeoSmart Groundwater flood risk				Reservoir inundation risks	Historic, recorded flood events
				High	Mod-erate	Low	Neg-ligible		
								extents for each of the reservoirs affecting Newham.	

Area	Fluvial and Tidal Flood Risk	Existing Defences	Surface water flood risk	GeoSmart Groundwater flood risk				Reservoir inundation risks	Historic, recorded flood events
				High	Mod-erate	Low	Neg-ligible		
Royal Docks	<p>The Environment Agency's Flood Map for Planning (FMfP) shows significant flood risk to the area. 99.4% of the area is within Flood Zone 2 (between 1% and 0.1% annual chance of flooding from rivers and sea) and 98.0% is within Flood Zone 3 (1% or more annual chance of flooding from rivers or 0.5% or more annual chance of flooding from the sea). The EA's FMfP ignores the presence of flood defences so it is unlikely to be representative of actual flood risk across all of the area.</p> <p>The River Thames represents the greatest flood risk to the Royal Docks policy area.</p> <p>The 2017 Thames Downriver breach model shows that during the 2005 epoch, if a breach were to occur, during a 0.5% AEP event, the flood extent could affect a large amount of the area. Areas which are not within the flood extent include London City</p>	<p>Walls along the River Thames. The Thames Barrier is located within the Royal Docks policy area.</p>	<p>Surface water flood risk across the London Borough of Newham is extensive. Users should refer to Appendix A mapping for more detail on which areas have the greatest risk of flooding from surface water.</p> <p>As part of the Newham Surface Water Management Plan (2019) direct rainfall modelling was undertaken across the entire borough. Areas identified to be at more significant surface water flood risk have been designated as 'Critical Drainage Areas' (CDA's). 13 CDA's were identified in the London Borough of Newham.</p> <p>Within the Royal Docks policy area there are two CDA's:</p> <ul style="list-style-type: none"> <li>Group4_036: Water ponding in low points around</li> </ul>		✓	✓	✓	<p><b>Reservoirs where the 'Dry Day' extent impacts the area:</b></p> <ul style="list-style-type: none"> <li><b>King George V, London Borough of Enfield</b> – Flood extent affects London City Airport, Hartmann Rd, Albert Rd, Connaught Rd, the Elizabeth line, Parker St, Wythes Rd, Drew Rd, Saville Rd, Leonard St and Newland St.</li> <li><b>William Girling, London Borough of Enfield</b> – Flood extent affects a large amount of the policy area. North of Silvertown Rd/North Woolwich Rd/Albert Rd, land between Evelyn Rd and Mill Rd is affected. Charles St and Oriental Rd area also affected. The streets between Connaught Rd/Albert Rd and the DLR line are affected. South of Silvertown Rd/North Woolwich Rd/Albert Rd, Royal Victoria Gardens, Store Rd, Henley Rd, Tate and Lyle Sugar Refinery, Thames Road Industrial Estate and the streets between Bell Ln in the west and Royal Crescent Ave in the east are affected.</li> </ul> <p><b>Reservoirs where the 'Wet Day' extent impacts the area:</b></p> <ul style="list-style-type: none"> <li><b>Banbury, London Borough of Waltham Forest</b> – Flood extent affects the majority of the area. Areas unaffected are London City Airport runway and all terminals other</li> </ul>	<p><b>From the EA's Recorded Flood Outlines shapefile:</b></p> <ul style="list-style-type: none"> <li><b>06 March Spring 1947-</b> fluvial flooding due to channel capacity exceedance (no raised defences) flooding in Silvertown. Flood extent covers buildings on North Woolwich Rd, Evelyn Rd, Hanameel St, Bokey St, Fort St, Mill Rd and Silvertown Way were also flooded.</li> <li><b>TTD_FEO_1928-</b> fluvial flooding due to overtopping of defences Flood extent covers Pier Rd, Swingbridge Cl (and Woolwich Reach) and the south of Royal Victoria Gardens.</li> </ul> <p><b>From Newham Council Flooding Incidents shapefile:</b></p> <ul style="list-style-type: none"> <li><b>Number of incidents: 0</b></li> </ul>

## E Summary of flood risk in the London Borough of Newham by Policy Area

Area	Fluvial and Tidal Flood Risk	Existing Defences	Surface water flood risk	GeoSmart Groundwater flood risk				Reservoir inundation risks	Historic, recorded flood events
				High	Moderate	Low	Negligible		
	<p>Airport, Thames Barrier Park, parts of Galleons Point, Hartmann Rd from Woolwich Manor Way to London City Airport drop-off area, the Dockyards, Silvertown Quays, Wesley Ave/Hanover Ave (and the streets on either side), the southern half of Royal Wharf, Waterside Park and Wards Wharf Approach. During the 0.1% event, the flood extent could additionally impact Felixstowe Court, Fishguard Way, Grimsby Grove, Swansea Court, Inverness Mews and Hull Place.</p> <p>The 2017 Thames Upriver breach model shows that during the 2005 epoch, if a breach were to occur, the maximum flood extent could impact the would be similar to the downriver breach 0.5% AEP event. However, the flood extent is smaller in some areas. Parts of North Woolwich, Albert Island, Thames Rd Industrial Estate, Standard Industrial Estate and Pier Rd are also not within the flood extent of this event.</p>		<p>buildings</p> <ul style="list-style-type: none"> <li>Group 4_053: Overland flow from higher ground to the west, north and east ponding at the lowest point in the catchment</li> </ul> <p>Further information on CDA's can be found in the 2019 London Borough of Newham Surface Water Management Plan available <a href="#">online</a>.</p> <p>There is a surface water model covering this Policy Area. See Appendix A for more detailed mapping.</p>					<p>than 21, 22, 23 and 24, Albert Island, Galleons Point, Wesley Ave, part of Silvertown Quays, part of Thames Barrier Park and southern parts of Royal Wharf.</p> <ul style="list-style-type: none"> <li><b>William Girling, London Borough of Enfield</b> – Flood extent is similar to that of Banbury reservoir. However, there is additional flooding to London City Airport's Runway.</li> <li><b>King George V, London Borough of Enfield</b> - Flood extent is similar to that of Banbury reservoir but London City Airport terminals 21, 22, 23 and 24 are also unaffected in this reservoir flood extent.</li> <li><b>Lockwood, London Borough of Waltham Forest</b> – Flood extent affects the majority of the policy area. Unaffected areas are Thames Barrier Park and Galleons Park.</li> <li><b>Walthamstow No.4/5 &amp; Warwick East, London Borough of Waltham Forest</b> – Flood extents are similar to that of the 'dry day' scenario flood extent from William Girling reservoir (described above). However, the flood extent does not cover the Royal Victoria Gardens or the roads north of them.</li> <li><b>See Appendix A for detailed flood extents for each of the reservoirs affecting Newham.</b></li> </ul>	