

Appendix E – Summary of flood risk in Chelmsford

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

Area	Fluvial/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%		
River Chelmer including its tributaries - the Boreham Tributary and the Baddow Brook (Great Waltham, Broomfield, Chelmsford city centre (north and east), Springfield, Chelmer Village, Boreham, Great Baddow).	<p>The main fluvial flood risk comes from the River Chelmer and its tributaries. It rises near Hartford End in the north of the study area, and flows south passing through the main city centre of Chelmsford, then flows north-east. It exits the study area at the eastern most boundary of Chelmsford and Braintree. The Boreham Tributary rises just north of the Boreham bypass, and converges with the Chelmer south of Boreham, in the east of the study area. The Baddow Brook rises south of Great Baddow, and flows north where it converges with the Chelmer just west of the Chelmsford Bypass.</p> <p>In the north of the study area where the land use is mostly rural with some small towns like Great and Little Waltham, the flood plains are mainly confined to the channel due to topography, with some smaller streets and roads affected such as the end of Chelmer Avenue where few properties are in Flood Zone 2 and 3.</p> <p>As the river flows south, flooding effects the A1016, and some of the city surrounding the banks of the river is located in Flood Zones 2 and 3, such as near Waterloo Lane, and covering part of the eastern side of the Anglia Ruskin University campus. The most significant area of flood risk is where the River Can converges with the Chelmer around Kings Head Walk, affecting Wharf Road and the A1060 as the topography flattens across larger areas. East of the A138, there is a designated flood plain area that floods.</p> <p>As the river flows east several tributaries converge with the Chelmer where there is significant flood risk, such as the Baddow Brook, where the Chelmsford Water Recycling centre is located in Flood Zones 2 and 3 (located at Brookend). Flooding also affects the A12.</p> <p>Flood Zones 2 and 3 remain wide as the river flows north-east through the study area, however this land is mostly rural usage. There are some roads that are affected by flooding such as Church Road and Hammonds Road located northwest of Little Baddow.</p>	<p>Surface water in the area follows the topography, flowing downhill mainly following the path of the main watercourses and their tributaries and the roads in the area. The area is predominantly rural outside of Chelmsford City with relatively few assets at flood risk; however, there are also a number of built up areas including the City where there is a flood risk to properties and infrastructure:</p> <ul style="list-style-type: none"> Little Waltham – there is impoundment of low risk surface water along Main Road and along The Street and Wheelers Hill. The flow path extends down Roman Road and affects some properties surrounding this area. Broomfield – surface water flow paths in the low to high risk categories extend down the Main Road in Broomfield, where they branch off to the surrounding roads such as Jubilee Avenue, Court Road and Brookfield Road. The properties along these roads will be at risk of flooding. Chelmsford City (North and East) – in the north of the city there is significant surface water impoundment ranging from low to high risk categories along Broomfield Road, and extending down the avenues off this road, where the water flows eastward downhill towards the Chelmer. This includes flood risk to a significant amount of properties. In Springfield there are several flow paths that extend along the main roads and surrounding streets, these flow eastwards forming several low to medium risk flow paths across, for example, The Boswells School playing field. Residential areas impacted include those off Pump Lane, where surface water flows west forming flow paths along Lawn Lane. There is also significant impoundment of surface water along the railway line and Chelmer Road. Towards the centre of the city, surface water flooding is significant around the lower lying land near Bond Street, Waterloo Lane and Highbridge Road. There are significant low to high risk flow paths here, particularly around Springfield Park, flowing south to Chaucer Road Meadow and into the banks of the Chelmer. To the south of the Chelmer within the City, there are several significant high risk surface water flow path through Moulsham, flowing down the A1114, across Vicarage Road, to Roseberry Road, flowing north and inundating Lynmouth Gardens, eventually reaching the Chelmer. The other flows near Moulsham Lodge, down to the A1114 and north to the Chelmer. In Chelmer Village, there are several high to low risk surface water flow paths that converge. One of the more significant paths starts near Springfield Road, with significant ponding of water near Coronation Park and Chelmer Road. This flows south-east through 	✓	✓	✓	✓	<ul style="list-style-type: none"> Handley Barns Farm Reservoir – Located south of the study area, outside Chelmsford, in the 'wet day' scenario the flood extent follows the path of the River Chelmer, where the flood outline is very similar to that of fluvial Flood Zone 2. It enters the study area along the River Wid, then Can, then flowing east out of the study area. It does not extend north past Chelmsford city centre. The 'dry day' scenario flood extent flows into the study area from the west, along the River Wid, Can and then along the Chelmer. This also does not extend north past the city centre. This flood extent is mainly confined to the immediate flood plains of the Chelmer, and mostly on the southern banks of the river. Mashbury Hall Farm Reservoir – Located along the River Can in the north-west of the study area, the wet day reservoir flood extent starts along the River Can near Farmbridge (where the reservoir is located), flowing south and meeting the River Chelmer, flowing east out of the study area. It also extends slightly down the River Wid near Writtle. This flood extent mimics Fluvial Flood Zone 2. The dry day flood extent extends less than the wet day, where it doesn't flow as far out of bank, just inundating the most topographically low areas. Sir Great Hughes Reservoir – Located along the Sandon Brook, the 'wet' and 'dry day' reservoir flood extents flow north following the Sandon Brook to where it meets the Chelmer, then flows east out of the study area. The 'wet day' flood extent expands widely onto the low topography areas of the Chelmer flood plain, and also extends further west upstream. The 'dry day' flood extent does not extend west and not as wide, mostly extending out of bank on the southern side of the river. Hanningfield Reservoir – Located in the south of the study area, along the Sandon Brook. The 'wet day' and 'dry day' flood extents follow the Sandon Brook and River Chelmer. Most of the southern and eastern low lying areas of the study area are at risk of this reservoir flooding. They extend out very widely out of bank inundating a lot of the area near West Hanningfield, extending slightly north upstream of the Sandon Brook. The area most at flood risk is where the Sandon Brook converges with the Chelmer around the east of Chelmer Village. Both flood outlines also extend upstream of the Chelmer, into the city centre. Chignal Hall Farm Reservoir – Located in the north-west of the study area along the River Can, the 'wet day' and 'dry day' flood extents follow the path of the River Can, flowing south east to follow the path of the Chelmer and east outside of the study area. The 'wet day' flood outline is similar to that of flood zone two, where the city centre is most at risk. The flooding extends widely out of bank to the east of Chelmer village into the rural areas to the east. The 'dry day' flood extent is mostly 	<p>From the EA's Recorded Flood Outlines Shapefile:</p> <ul style="list-style-type: none"> January 2001 – Main river flooding from the Chelmer, further details are not recorded. Flooding occurring in Little Waltham along the Street. January 1947 – Main river flooding from the Chelmer, further details are not recorded. Flooding extends along the whole length of the Chelmer throughout the study area, overtopping both banks.

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			<25%	>=25% <50%	>=50% <75%	>=75%		
		<p>Chelmer Village and across the Green, extending down Chelmer Village Lane and surrounds. This effects several properties in the surrounding streets such as Ashton Place and Palmers Court, eventually flowing down to the Chelmsford Water Recycling Centre and ponding there due to topographic lows.</p> <ul style="list-style-type: none"> Boreham and surrounds - There are several low to high risk surface water flow paths originating in Boreham, and flowing south due to topography which is dominated by the Boreham tributary, where surface water is channelled and follows in its path. Several residential streets are affected including The Larchers, St. Andrews Road and Church Road. Further south, surface water ponds in topographical lows of the Chelmer floodplains, and flow paths extend down nearby roads, including Church Road. Great Baddow - There are several high and low risk surface water flow paths due to surface water impoundment along Beehive Lane, which flow north-eastwards channelled by the topography of the Baddow Brook and its tributaries. This affects the surrounding residential areas such as Rothmans Avenue, Larkrise Primary School and Galleywood Road. Several of the flow paths originate further south at Galleywood, and are channelled by topography dominated by the Baddow Brook and extending down the roads to Great Baddow. 					confined to the lowest topography areas of the Chelmer flood plain.	
River Can and Chignall Brook (Good Easter, Farmbridge End, Chignall St James, Chignall Smealy, Melbourne, Chelmsford city centre (west), Moulsham).	<p>The main fluvial flood risk here comes from the River Can and its tributaries. The Can enters Chelmsford City Council's Administrative Area from the west, and joins the Chelmer to the east of the City centre. The Chignall Brook rises at Chignall Smealy, and flows south to converge with the Can near West Admirals Park, just south of Melbourne.</p> <p>In the west of the study area where the land use is mostly rural with some small towns like Farmbridge End and Chignall Smealy, the flood plains of the Can and Chignall Brook are mainly confined to the channel due to topography, with some smaller streets and roads affected such as Farmbridge End Road where few properties are in Flood Zone 2 and 3.</p> <p>Where the Can and Chignall Brook converge, there is more significant flood risk. Here the extents of Flood Zone 2 and 3 are greater due to the flattened topography. The areas most at risk are Admirals Park, Roxwell Avenue, Beaches' Drive and the properties at Windley Tye. Further downstream, Flood Zone 2 extends further south, affecting Beeches Road, across to New Writtle Street and surround, extending to Essex Cricket Ground and the</p>	<p>Surface water in the area follows the topography, flowing downhill mainly following the path of the main watercourses and their tributaries and the roads in the area. The area is predominantly rural outside of Chelmsford City 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"> Chignall St. James - There is impoundment of high to low risk surface water along Mashbury Road, which flows west to the Can, and east to the Chignall Brook. Melbourne - There are several high and low risk surface water flow paths due to surface water impoundment near Melbourne Park, that flow south affecting Melbourne Avenue, down to Chignall Road, affecting many nearby surrounding residential streets, eventually being channelled into the Chignall Brook. Other flow paths exist near Newlands Spring, and again flow south-west near Nickleby Road. There is a significant high risk surface water flow path down Patching Hall Lane to the B1008. Other low to high risk surface water flow paths are impounded along Kings Road and flow south to be channelled by topography into the Can. Moulsham - In the west of Moulsham, there are several high to low risk surface water flow paths due to low lying topography, located near the Can. 	✓	✓	✓	✓	<ul style="list-style-type: none"> Margaretting Hall Reservoir - Located outside of the study area, the wet and dry day flood extents follow the path of the River Wid, flowing north to the convergence with the River Can. The 'dry day' flood extent is restricted to the channel of the Can. However, the 'wet day' flood outline extends out of bank and onto the low lying topography near the Can. This flood outline mimics fluvial Flood Zone 2. The 'wet day' flood extent also extends slightly upstream of the Can and Chignall Brook. Most of the flood risk is where the Wid converges with the Can, and where the Can converges with the Chelmer, where the greatest flood risk is to Moulsham and the city centre of Chelmsford. Chignall Hall Farm Reservoir - Located in the north-west of the study area along the River Can near Chignall St. James, both the 'wet' and 'dry day' flood extents follow the path of the Can. The 'wet day' flood outline extends slightly further out onto the low lying land around the Can's flood plains, further out than the 'dry day' flood extent. Handley Barns Farm - Located south of the study area, outside Chelmsford, the 'wet' and 'dry day' flood outlines follow the path of the River Wid, and flows north to the converge and then follows the river Can outline, and down the Chelmer. The 'dry day' flood outline extends slightly over the low-lying land surrounding the Can, however the 'wet day' flood outline mimics that of Fluvial Flood Zone 2. Most of the 	There are no recorded flood outlines (EA's recorded flood outline map).

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	<p>roundabout and roads to the south of where the river converges with the Chelmer near Moulsham.</p> <p>The areas to the north (Southern Melbourne) affected by flooding where Flood Zone 2 and 3 extend out of back from the Can are those around Prykes Drive and Hardy Close, across to Central Park and the A1060.</p>	<p>For example, flowing south from Forest Drive, to Ravensbourne Drive and extending across Ashford Road to Westlands Community Primary School and across to Canuden Road. These flow south and the water is impounded along Beeches Road, flooding the allotments and eventually being channelled into the Can. There is significant impoundment of water along the A1016, down the railway line, and also down the A1114 in the east of Moulsham. This flow path extends down Moulsham Street. There is another low to high risk flow path that extends down Vicarage Road, affecting the surrounding properties of St. Michaels Road, Rosemary Road and down to the A138. There are other high risk surface water flow paths in the south of Moulsham near Linnet Drive, through Moulsham Lodge down Gloucester Avenue and to the A1114. This also ponds around Moulsham High School.</p> <ul style="list-style-type: none"> Chelmsford City (west) – There is significant impoundment of water along the railway line. There are some smaller low to high risk surface water flow paths extending down Parkway Road and Hatchford Lane. Low risk surface water flows down Primrose Hill, and south down Wheatfield Way flowing down to the Can due to the low topography. High to low risk surface water floods the low-lying ground south of Prykes Drive, affecting the Fire Station. 					<p>flood risk is where the Wid converges with the Can, and where the Can converges with the Chelmer.</p> <ul style="list-style-type: none"> Mashbury Hall Farm Reservoir – Located along the River Can in the north-west of the study area, the 'dry' and 'wet day' flood outlines follow the path of the River Can and down the Chelmer, then out of the study area. The 'dry day' flood outline is similar to that of Fluvial Flood Zone 3, where the main areas of flood risk are located within Chelmsford and where the Can converges with the Chelmer, due to the low lying land of the Can's flood plains. The 'wet day' flood outline extends out further than the 'dry day', which looks very similar to fluvial flood Zone 2, where the greatest flood risk is to Moulsham and the city centre of Chelmsford. 	
<p>River Wid, Sandy Brook, and its unnamed tributary to the west (Margaretting, Widford, Writtle and Westlands).</p>	<p>The main fluvial flood risk here comes from the River Wid and its tributaries. The Wid enters the study area to the south-west, and flows north to join the Can near Admirals Park, west of the city centre. There is an unnamed tributary that rises west near Birch Spring, which flows east near Margaretting to join the Wid. The Sandy Brook rises near Margaretting Road and converges with the Wid just west of the Widford Industrial Estate.</p> <p>In the south of the study area where the land use is mostly rural with some small towns Margaretting and Margaretting Tye, the flood plains of the upper Wid are mainly confined to the channel and immediate flood plain due to topography, with some smaller streets and roads affected such as Maldon Road where few properties are in Flood Zone 2 and 3.</p> <p>As the Wid flows downstream, flooding effects Chelmsford Road and Bridge Street near Writtle, affecting a few properties in closest proximity to the river, however not many properties are affected as the land use around the Wid remains mostly rural.</p>	<p>Surface water in the area follows the topography, flowing downhill mainly following the path of the main watercourses and their tributaries and the roads in the area. The area is predominantly rural with relatively few assets at flood risk; however, there are also a number of smaller built up areas where there is a flood risk to properties and infrastructure:</p> <ul style="list-style-type: none"> Margaretting and Margaretting Tye – There a few low to high risk surface water flow paths through Margaretting. Impoundment of water occurs along the A12, and flows down Main Road. This branches off, one down Maldon Road, and the other through rural land, where the flow paths meet and the surface water ponds west of the railway line. Writtle - There is significant impoundment of low to high risk surface water along Ongar Road in Writtle, which flows north and is channelled by topography to the Can. There is impoundment of water along Home Mead, and flows east across Pump and Church Lanes affecting properties and the Christian Centre, to eventually be impounded by either Bridge Street to meet the Wid, or flow further north along Lawford Lane to the Can. Another flow path exists along Lodge Road, to Romans Way affecting the nearby streets and properties. 	✓	✓	✓	✓	<ul style="list-style-type: none"> Handley Barns Farm Reservoir – Located south of the study area, outside Chelmsford, the 'wet' and 'dry day' flood outlines follow the path of the River Wid and flows north. The 'dry day' flood extent is mostly restricted to the immediate low-lying flood plains of the Wid. However, the 'wet day' flood outline extends out of bank and onto the low lying topography near the Wid. This flood outline is slightly wider than that of fluvial Flood Zone 2. Mashbury Hall Reservoir – Located along the River Can in the north-west of the study area, the 'dry' and 'wet day' flood outlines follow the path of the River Can and extend slightly upstream to near Writtle up the River Wid in the 'wet day' scenario. The 'dry day' scenario outline only extends to near the Writtle University College Sports Ground. Chignall Hall Farm Reservoir – Located in the north-west of the study area along the River Can near Chignall St. James, the 'dry' and 'wet day' flood outlines follow the path of the River Can and extend slightly upstream to near Writtle up the River Wid in the 'wet day' scenario. The 'dry day' scenario outline only extends to near the Writtle University College Sports Ground. Margaretting Hall Reservoir – Located outside of the study area, the wet and dry day flood extents follow the path of the River Wid, flowing north to the convergence with the River Can. The 'dry day' flood extent is mostly restricted to the immediate low-lying flood plains of the Wid. However, the 'wet day' flood outline extends out of bank and onto the low lying topography near the Wid. 	<p>There are no recorded flood outlines (EA's recorded flood outline map).</p>

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			<25%	>=25% <50%	>=50% <75%	>=75%		
							This flood outline is slightly wider than that of fluvial Flood Zone 2.	
Roxwell Brook, Newland Brook and Ewson's Brook (Newland, Roxwell, Boyton Cross).	<p>The main fluvial flood risk here comes from Ewson's Brook, Roxwell Brook, and Newland Brook, which are tributaries of the River Can. Ewson's Brook rises just outside the south-west of the study area and flows north where it converges with the Roxwell Brook. The Roxwell Brook rises to the west, outside of the study area, flowing north-east past Roxwell to converge with the River Can just north of Writtle. The Newland Brook rises to the north-west outside of the study area, flowing east past Newland Hall, and then south past Boyton Cross to converge with the Roxwell Brook just east of Roxwell.</p> <p>The land use to the west and south-west of the study area is mostly rural with small settlements. The flood plains of the Brooks are mainly confined to the banks of the watercourses and the immediate low-lying flood plains. At Boyton Cross, Flood Zones 2 and 3 of the Newland Brook affect Boyton Cross Lane.</p> <p>Along the Roxwell Brook, Flood Zones 2 and 3 put the Street at risk in Roxwell, including the Memorial Hall which is at risk of flooding.</p>	<p>Surface water in the area follows the topography, flowing downhill mainly following the path of the main watercourses and their tributaries and the roads in the area. The area is predominantly rural with relatively few assets at flood risk; however, there are also a number of smaller built up areas where there is a flood risk to properties and infrastructure:</p> <ul style="list-style-type: none"> Radley Green – There are two low to high risk surface water flow paths that flow north to the Roxwell Brook. This presents surface water flood risk to Radley Green Road. Roxwell – There is a low risk surface water flow path due to impoundment of water along St. Michaels Drive and Church Green and Green Lane, these follow topography and eventually flow north to be channelled by the Roxwell Brook. There is also a medium to low surface water flow path that flows through the land occupied by Roxwell Primary School. Boyton Cross – There is a low risk surface water flow path due to impoundment of water on Boyton Cross Lane. This is then channelled into the Newland Brook following topography. 	✓	✓	✓	✓	<ul style="list-style-type: none"> Chignall Hall Farm Reservoir - Located in the north-west of the study area along the River Can near Chignall St. James, the 'dry' and 'wet day' flood outlines follow the path of the River Can and extend slightly upstream of the Roxwell Brook where they converge, just past Reed's Farm Estate. Mashbury Hall Farm Reservoir - Located along the River Can in the north-west of the study area, the 'dry' and 'wet day' flood outlines follow the path of the River Can and extend slightly upstream of the Roxwell Brook where they converge, just past Reed's Farm Estate. 	There are no recorded flood outlines (EA's recorded flood outline map).

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Sandon Brook and Sandon Brook East (Sandon, Bicknare, Howe Green, West Hanningfield, Danbury, Little Baddow).	<p>The main fluvial flood risk here comes from the Sandon Brook, including the Sandon Brook East. The Sandon Brook rises near Ramsden Heath in the south of the study area, and flows north to converge with the Chelmer near Church Road. The Sandon Brook East rises outside of the study area to the east. It flows west to converge with the Sandon Brook at Woodhill Road near Sandon Lodge Farm.</p> <p>The land use to the east and south of the study area is mostly rural, with some small village centres and the larger town of South Woodham Ferrers. The flood plains of the Brooks are mainly confined to the banks of the river and immediate low-lying flood plains. Flood Zones 2 and 3 mostly affect some smaller roads, including Ship Road near West Hanningfield, Hawkswood Road, and Southend/Main. In Bicknare, flooding minorly effects Bicknare road.</p>	<p>Surface water in the area follows the topography, flowing downhill mainly following the path of the main watercourses and their tributaries and the roads in the area. The area is predominantly rural with relatively few assets at flood risk; however, there are also a number of smaller built up areas where there is a flood risk to properties and infrastructure:</p> <ul style="list-style-type: none"> West Hanningfield – There is a low to medium risk surface water flow path due to impoundment of water along Helmons Lane, along Church Road and Middlemead. This then follows topography to be channelled into the Sandon Brook. Howe Green – There is a low to high risk surface water flow path due to impoundment of water along Southend Road and Chalklands, affecting some residential properties. This then follows topography and flows south to be channelled into the Sandon Brook. Sandon – There is impoundment of low to high risk surface water along Woodhill Road and Halls Lane. There is also a flow path of low risk surface water near the School Sports Ground. Bicknare – There is a low to high risk surface water flow path affecting Alederbury Lea and surrounds, this then flows south presenting flood risk to Thrift Wood and Priory Lane down to Priory Road, to eventually follow topography and be channelled into the Sandon Brook East. This will affect several residential properties around these roads. Danbury – There are several low to high risk flow paths that cause impoundment of water along several of the roads in the west of Danbury, such as along Hyde Lane, Capons Lane and Mail Lane, including extending across the surrounding smaller residential streets and putting a number of properties in the area at risk of surface water flooding. In the north of Danbury, there are low to high risk surface water flow paths due to impoundment of water along roads, that then follow topography to be channelled into the surrounding unnamed tributaries. The roads and areas at risk include Bevedere, Hopping Jacks Lane, Armstrong Close and Russell Lane. 	✓	✓	✓	✓	<ul style="list-style-type: none"> Mashbury Hall Reservoir - Located along the River Can in the north-west of the study area, the 'dry' and 'wet day' flood outlines follow the path of the River Can, extending along to the Chelmer. The 'wet day' flood outline extends slightly upstream of the Sandon Brook to Hurrells Lane. Hanningfield Reservoir - Located in the south of the study area, along the Sandon Brook (upstream). The 'wet day' and 'dry day' flood extents follow the Sandon Brook to the River Chelmer. The flood outlines also extend upstream and north of the reservoir to Ramsden Heath. The flood extents spread out widely onto the flood plain, past the fluvial Flood Zone 2 and 3 extents, due to the size of the reservoir. The flooding extends slightly upstream of the unnamed tributaries of the Sandon Brook, and also up the Sandon Brook East, nearly reaching Woodhill Common Lane. Great Sir Hughes Reservoir - Located along the Sandon Brook, the 'wet' and 'dry day' reservoir flood extents flow north following the Sandon Brook to where it meets the Chelmer, then flows east out of the study area. The 'wet day' flood extent expands widely onto the low topography areas of the Sandon Brook flood plain, extending out further over fluvial Flood Zone 2. It also extends slightly upstream into the unnamed tributaries of the Sandon Brook. Chignall Hall Farm Reservoir - Located in the north-west of the study area along the River Can near Chignall St. James, the 'dry' and 'wet day' flood outlines follow the path of the River Can and extend to the Chelmer. The 'wet day' flood outline extends slightly upstream of the Sandon Brook to Hurrells Lane. 	There are no recorded flood outlines (EA's recorded flood outline map).
Rettendon and Fenn Brooks and River Crouch (Rettendon, Coalhill, South Woodham Ferrers, Battlesbridge)	<p>The main fluvial flood risk here comes from the River Crouch and its tributaries – the Rettendon and Fenn Brooks. The Rettendon Brook rises near Coalhill, and flows east, where it is named the Fenn Brook around the west of South Woodham Ferrers. This then flows south to converge with the River Crouch at the southern boundary of the study area. The River Crouch flows west to east and is parallel to the southern study area boundary from Wickford, through Battlesbridge and out of the area.</p> <p>The land use to the east and south of the study area is mostly rural, with some small towns</p>	<p>Surface water in the area follows the topography, flowing downhill mainly following the path of the main watercourses and their tributaries and the roads in the area. The area 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"> Battlesbridge – Due to the low topography of the area, low risk surface water ponds around the area. This affects most of Hawk Hill and Hawk Lane, and is impounded along the railway line. South Woodham Ferrers – Due to the low topography of the area around the middle of the area, low to high risk surface water ponds and forms flow paths from the William de Ferrers 	✓	✓	✓	✓	<p>There are no reservoir flood outlines that exist in this area.</p>	<p>From the EA's Recorded Flood Outlines Shapefile:</p> <ul style="list-style-type: none"> January 1953 – Tidal flooding due to overtopping of defences extending down the River Crouch and up the Fenn Brook.

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	<p>and village centres. Flood Zone 2 of the River Crouch effects most of Battlesbridge, including Hawk Hill and Maltings Road, extending out onto the low topography land.</p> <p>A lot of the fluvial flood risk is where the Fenn converges with the River Crouch. The flood plain is wide, and Flood Zone 2 extends out onto the Marsh Farm animal adventure park, and across the low-lying areas of South Woodham Ferrers. This includes Hullbridge Road, Inchbonnie Road and the surrounding residential areas. It also puts the William de Ferrers School at risk.</p> <p>The Flood Zones of the Rettendon Brook are confined to the narrow banks of the river.</p> <p>The River Crouch and it's tributary Rettendon/Fenn Brook are tidal. Despite close proximity to the floodplain, the Environment Agency's 2018 Crouch Coastal Model indicates that the risk to the town of South Woodham Ferrers is relatively low, with the 0.1% AEP tidal flood extent in the 2125 epoch higher central scenario just reaching the edge of the town and affecting very few properties. There is an embankment to the west of the town which provides some benefit, and the undefended model outputs suggest that properties in the vicinity of Clements Green Road and the central shopping area of the town may be at risk in the event of a breach during the 0.1% AEP event, although the majority of the town remains unaffected.</p> <p>The area of Battlesbridge north of the Crouch is shown not be at risk in the present day 0.1% AEP event, although it may be at risk in future. The south of the town is at risk from tidal flooding in the present day 1% AEP scenario, although this is outside of Chelmsford City Council's Administrative Area.</p> <p>With the exception of a caravan park at Hayes Chase, the remainder of the area within the study area at tidal flood risk is undeveloped land.</p>	<p>School. Several flow paths branch off down the roads nearby such as Clements Green Lane and Inchbonnie Road, affecting the surrounding residential areas such as Guy Farms Road. The flow path extends south putting areas such as Little Croft, Hull Bridge Road and the play space near Drywoods at high to low surface water flood risk. This is then channelled south by topography to the Fenn Brook. Surface water is also impounded along Broughton Road and down to the River Crouch. There is also surface water impoundment along the railway line, where low to high risk surface water impoundment occurs on the roads surrounding the railway.</p> <ul style="list-style-type: none"> • Rettendon – There is some low to medium risk surface water impoundment along the Main Road and Meadow Road in Rettendon. 						

Area	Fluvial/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%		
River Ter and Straw Brook (Great Leighs, Little Leighs)	<p>The main fluvial flood risk here comes from the River Ter and its tributary – the Straw Brook. The River Ter rises out of the north of the study area, flowing south across the north-eastern corner of the study area. The Straw Brook is a small tributary of the Ter and converges with the Ter near Goodmans Lane.</p> <p>The River Ter fluvial Flood Zones are confined to the banks of the river and immediate flood plain areas. There are some roads at risk of fluvial flooding, due to the rural nature of the land use in this area, there is less risk to properties. This roads include Goodmans Lane, Church Lane and Littley Green Lane.</p>	<p>Surface water in the area follows the topography, flowing downhill mainly following the path of the main watercourses and their tributaries and the roads in the area. The area is predominantly rural with relatively few assets at flood risk; however, there are also a few smaller built up areas where there is a flood risk to properties and infrastructure:</p> <ul style="list-style-type: none"> Great Leighs – There are a couple of low to high surface water flow paths due to impoundment of water along Main Road and Boreham Road. This affects Brickburns and the surrounding smaller residential roads. This water then follows topography to be channelled into the unnamed tributaries of the River Ter, or the Ter itself. 	✓	✓	✓		<ul style="list-style-type: none"> Lavender Leighs Lower Reservoir – Located in the north-east of the study area, close to the border of Uttlesford and Chelmsford, it is located on the Ter. The 'wet' and 'dry day' flood outlines follow the path of the Ter downstream, flowing out of the area. The flood outlines extend further out onto the flood plains of the River than the fluvial Flood Zones. Lodge Leighs Upper Reservoir - Located in the north-east, just outside of the study area, close to the border of Uttlesford and Chelmsford, it is located on the Ter. The 'wet' and 'dry day' flood outlines follow the path of the Ter downstream, flowing out of the area. The flood outlines extend further out onto the flood plains of the River than the fluvial Flood Zones. 	There are no recorded flood outlines (EA's recorded flood outline map).