

Appendix B Areas of Moderate Intensification

AMI2 Coulsdon South

AMI3 Waddon

AMI4 Purley East

AMI5 Purley/Kenley

AMI6 Selsdon

AMI7 South Croydon/Sanderstead

AMI8 Purley North

AMI9 Addiscombe (cluster of 2)

AMI10 Purley/Coulsdon

AMI11 Kenley Station

Site Name: Coulsdon South			
Site ID:	AMI02	Area (ha):	5.97
Proposed Use:	Mixed use.	Vulnerability Classification:	More Vulnerable

Flood Zones and Historic Flooding				
Flood Zone 1 (<0.1% AEP): 100%	Flood Zone 2 (0.1% AEP): 0%	Flood Zone 3 (1% AEP): 0%	Flood Zone 3b (5% AEP): 0%	Area Benefiting from Defences: 0%

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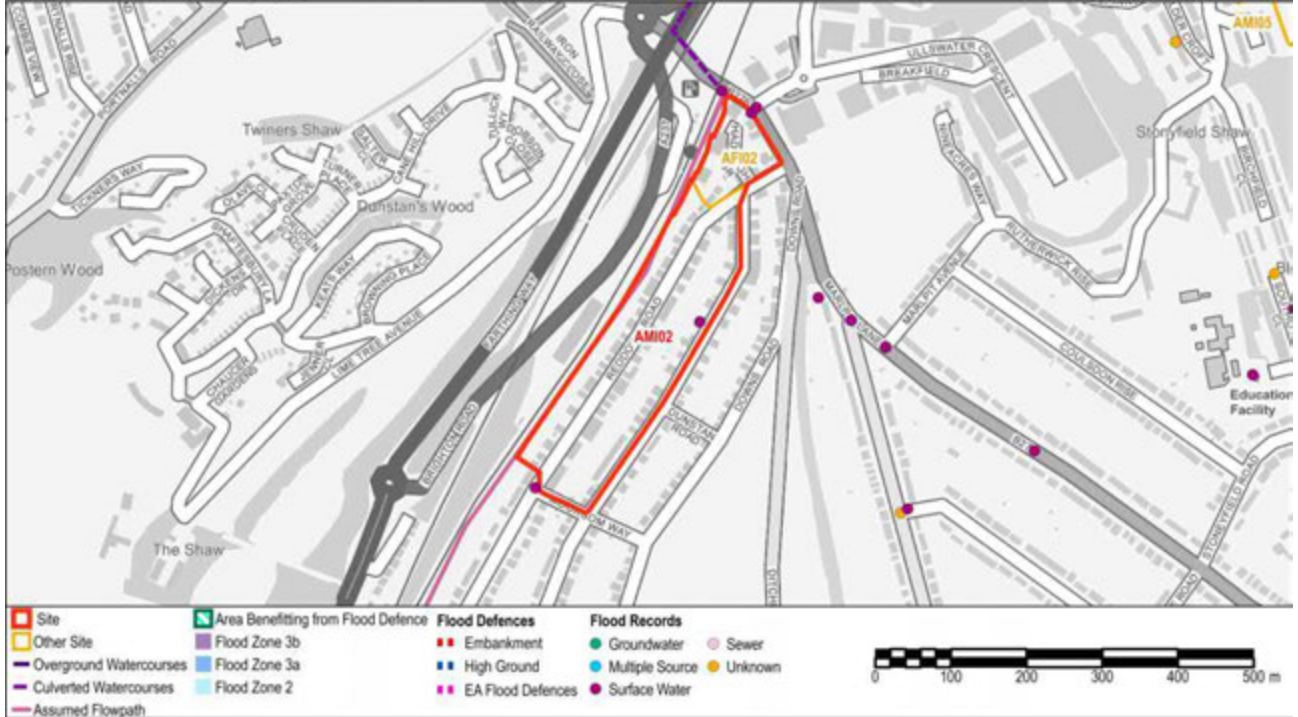


Figure 1 - Flood Zones and Flood Records

Flood Warning Area	None
Flood Records within 500m of the site:	Surface Water 15; Groundwater 0; Sewer 0; Multiple source 0; Unknown source 3

River Flooding

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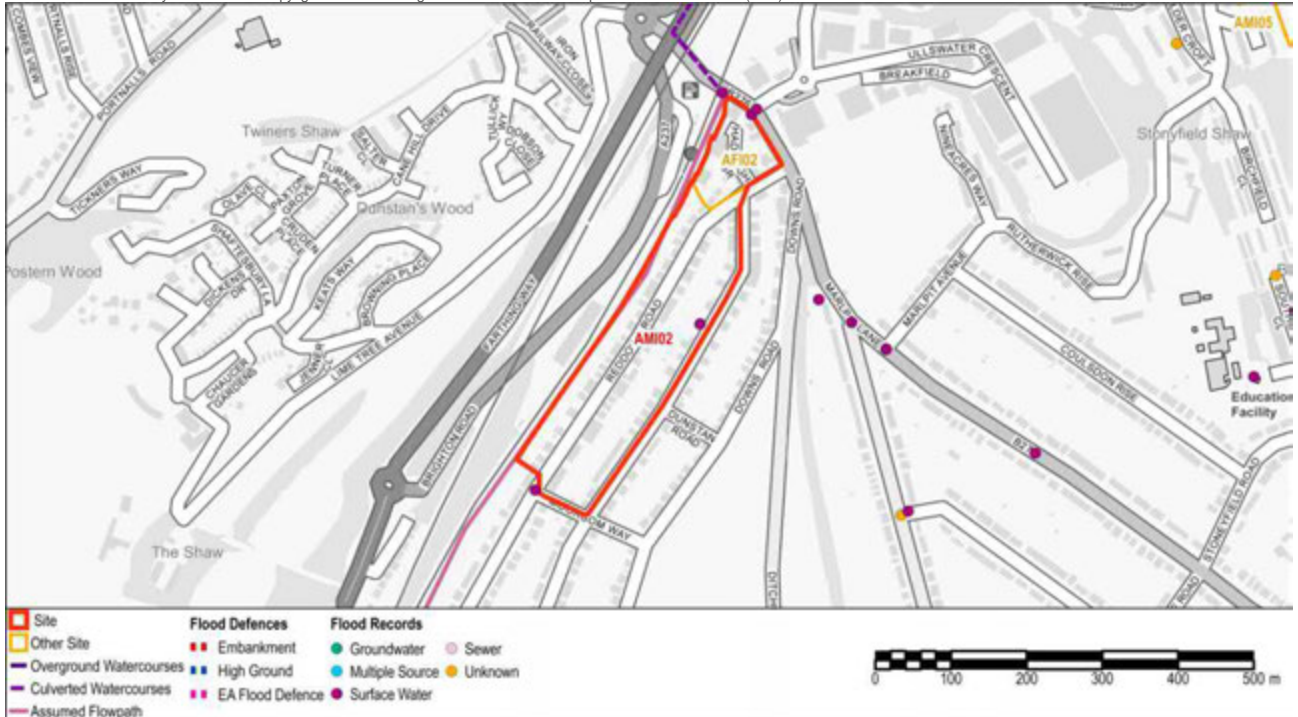


Figure 2 – River Wandle Maximum Flood Depth (1% AEP plus 35% climate change) Please note: Data does not extend to the extent of this figure.

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Site Name: Coulsdon South

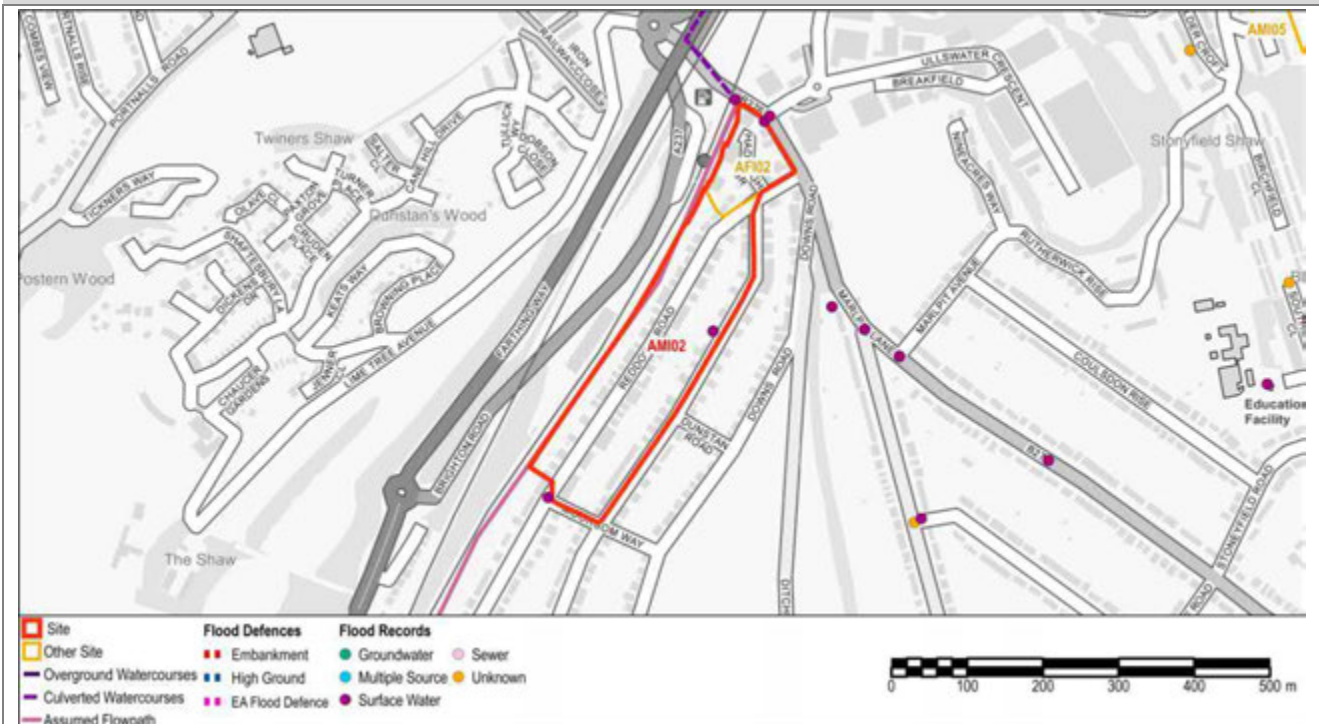


Figure 3 – River Wandle Maximum Flood Hazard (1% AEP plus 35% climate change) Please note: Data does not extend to the extent of this figure.

Surface Water Flooding	
Critical Drainage Area	Group8_035 - Marlpit Lane [Croydon]
Drainage Catchment	DC54

Site Name: Coulsdon South

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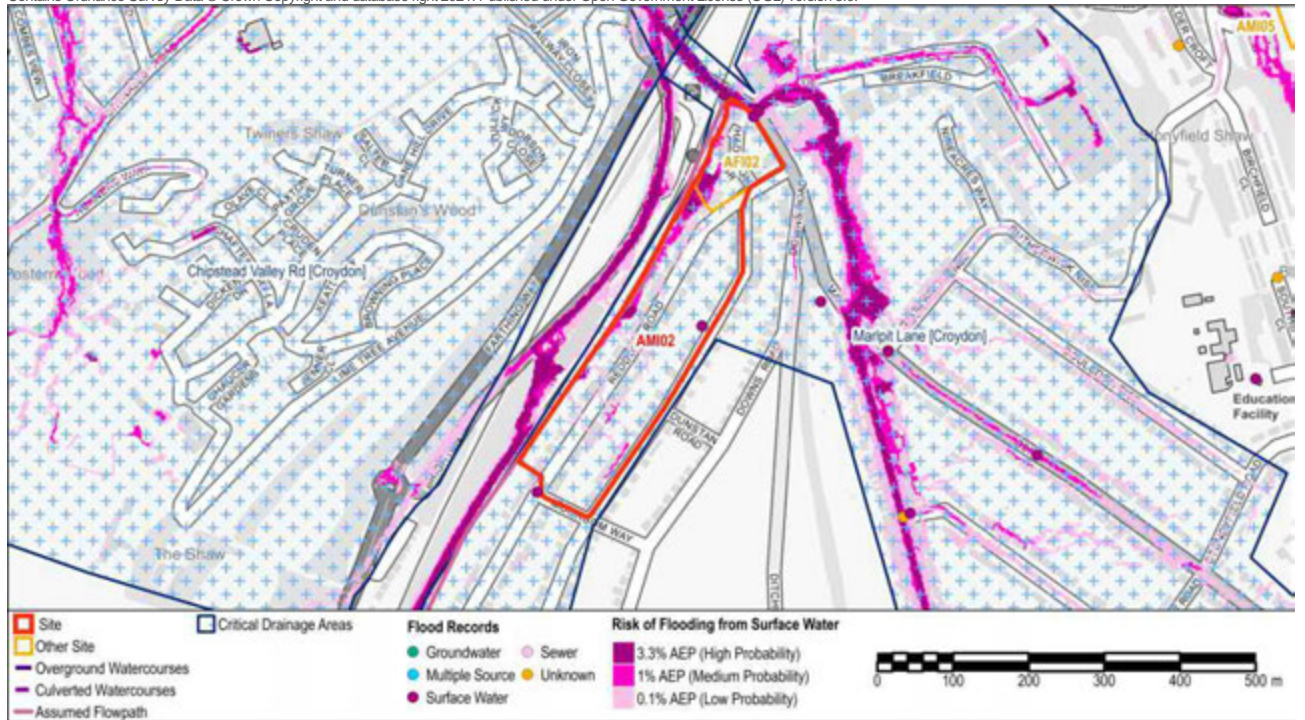


Figure 4 - Risk of Flooding from Surface Water (RoFSW) Flood Extents

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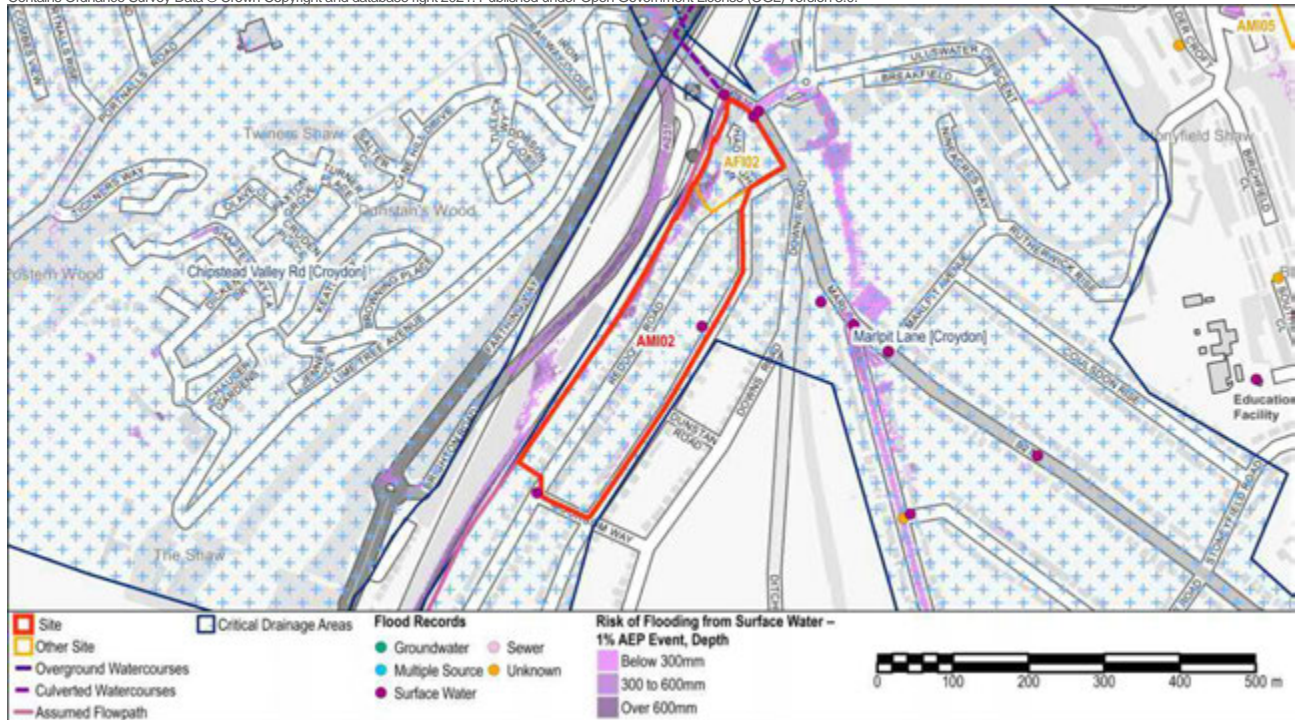
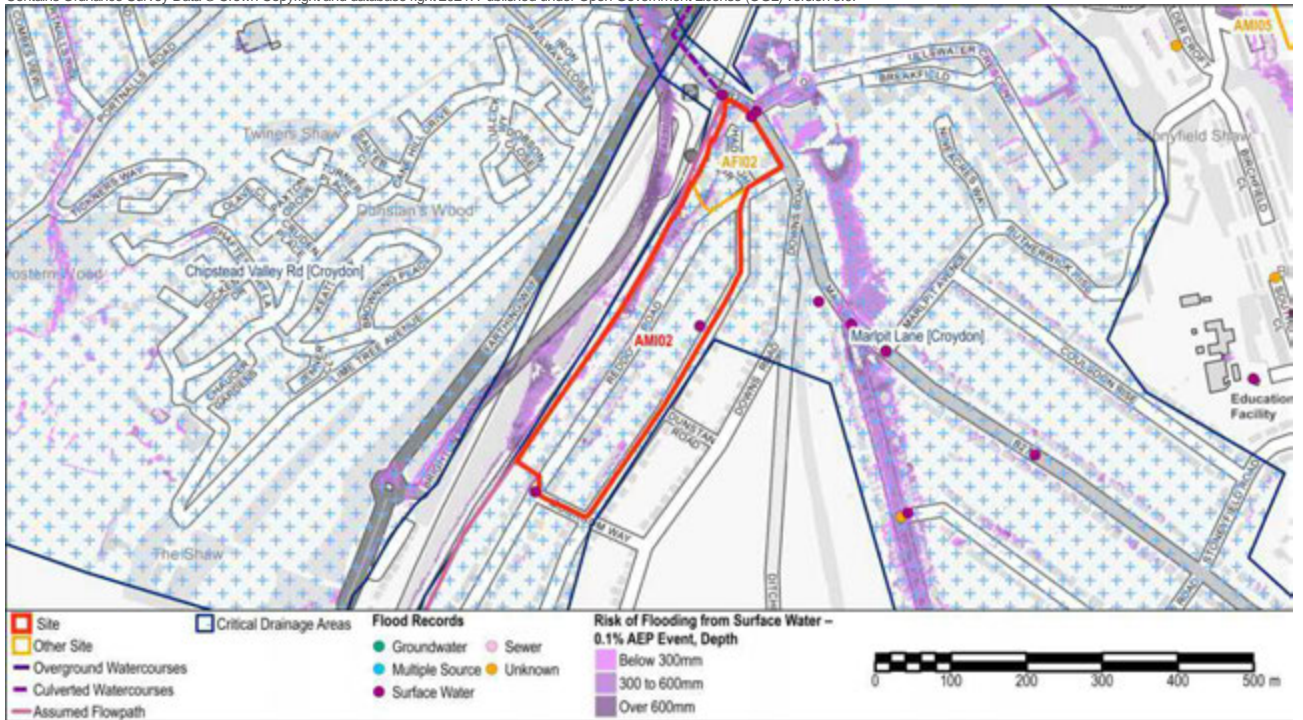


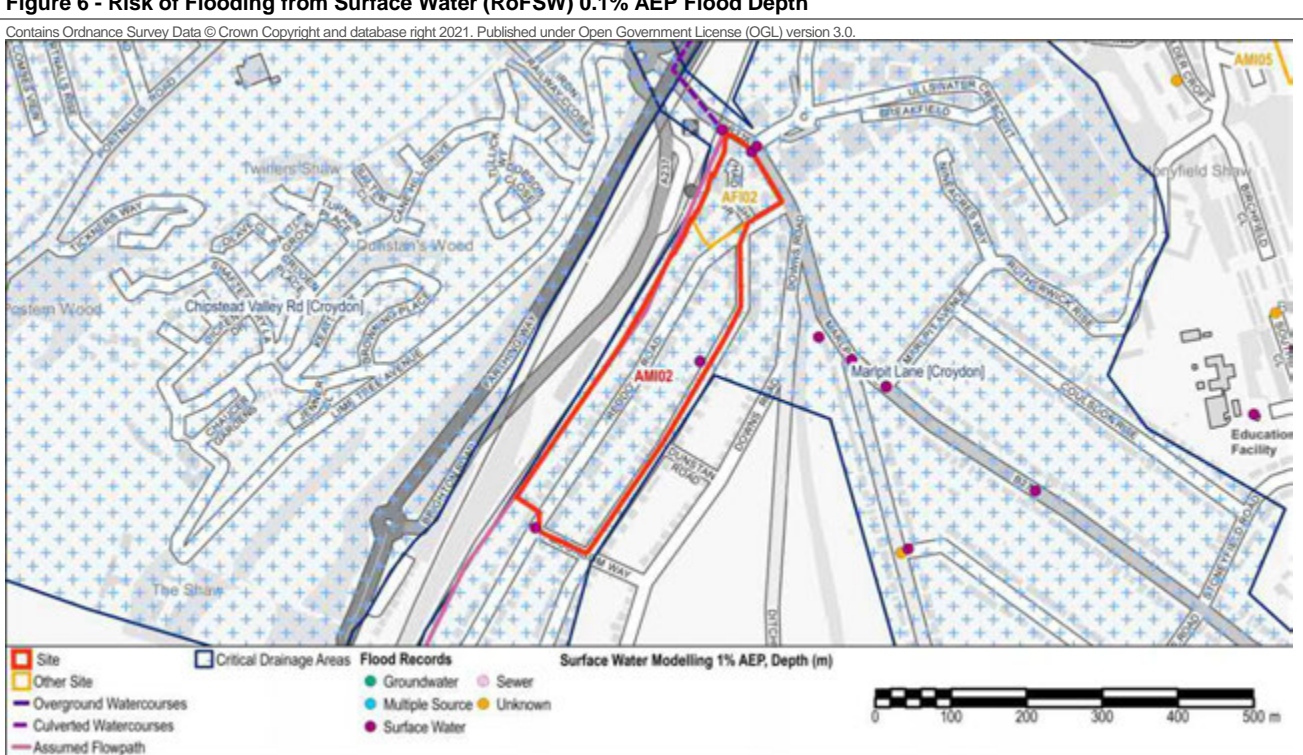
Figure 5 - Risk of Flooding from Surface Water (RoFSW) 1% AEP Flood Depth

Site Name: Coulsdon South

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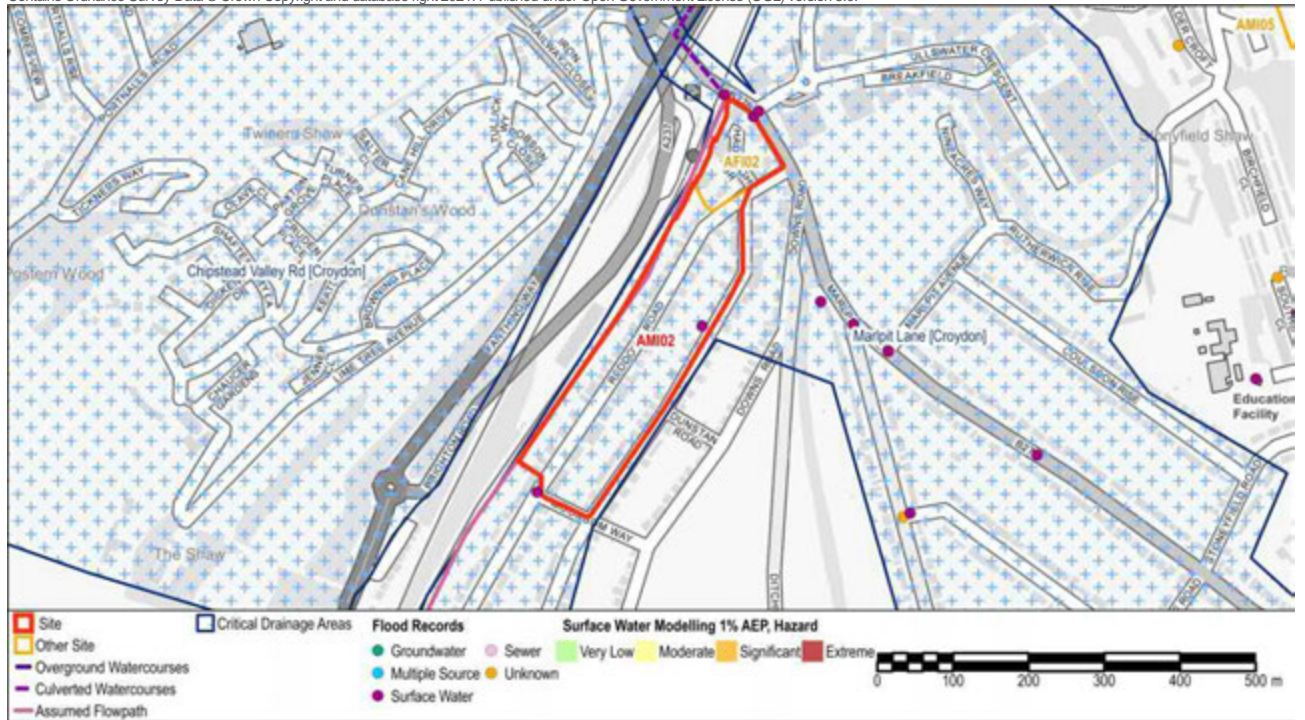


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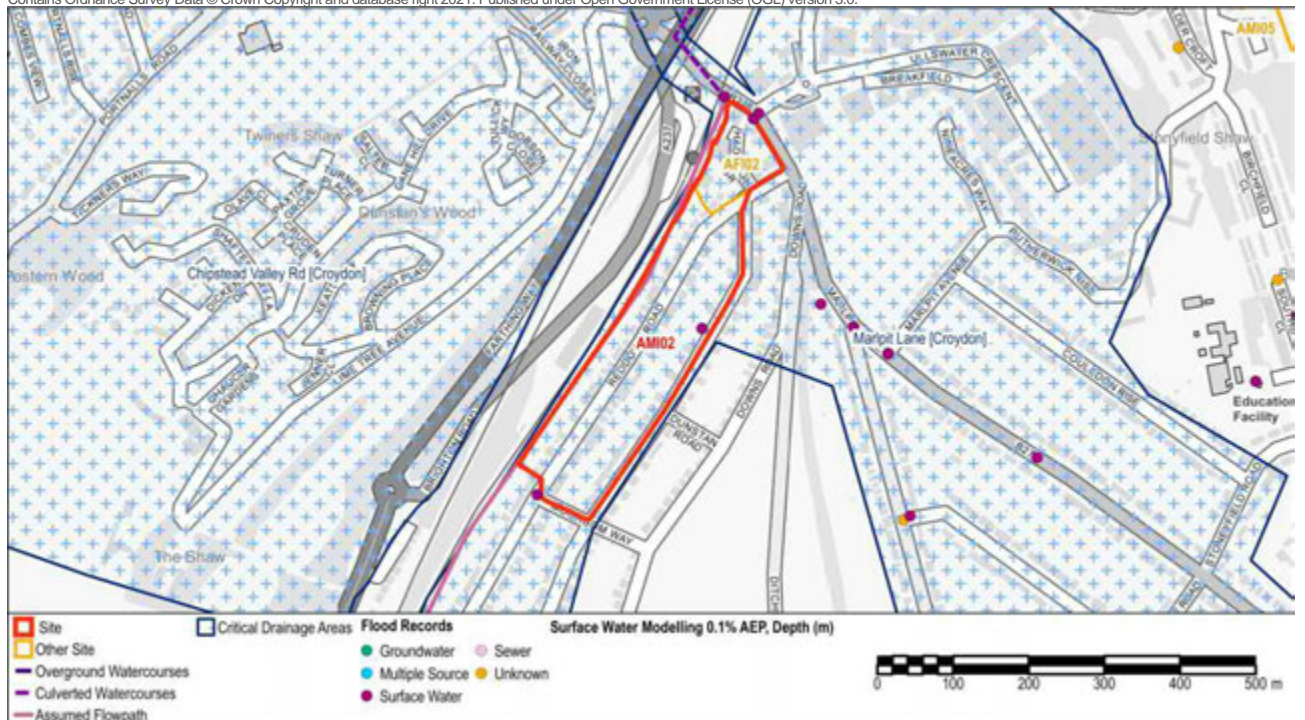


Site Name: Coulsdon South

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Site Name: Coulsdon South

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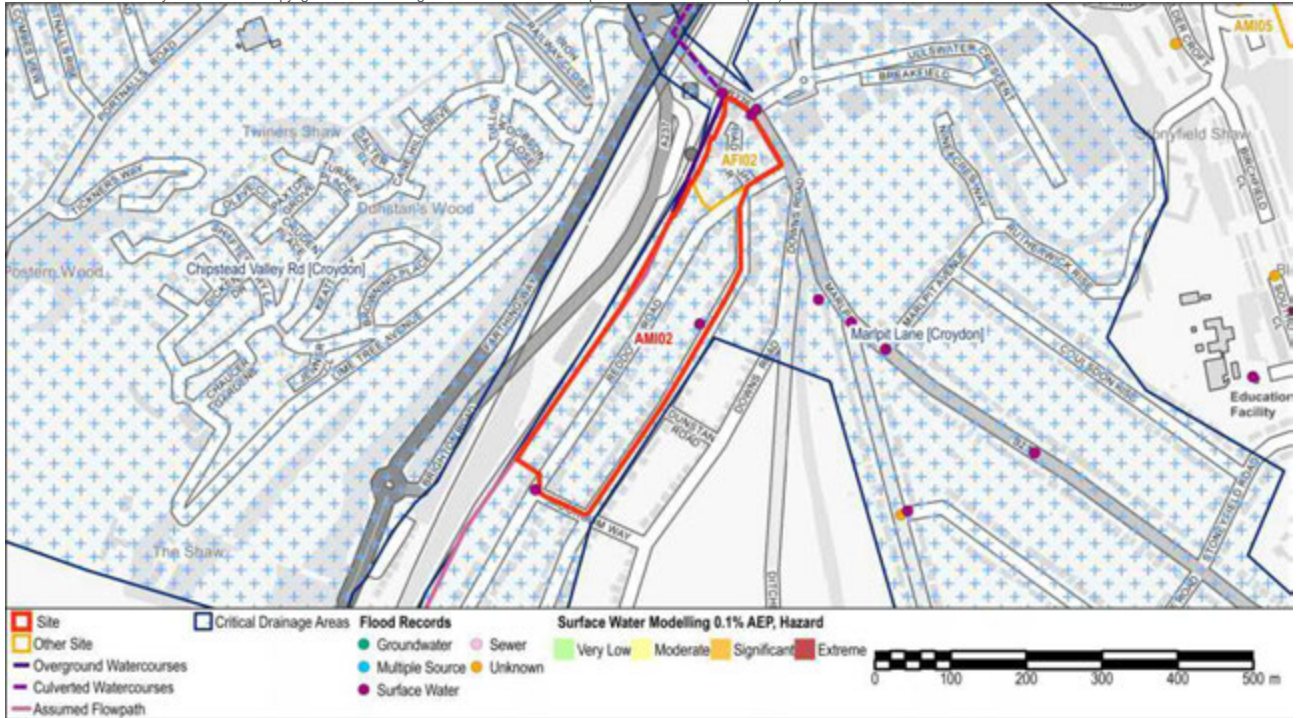


Figure 10 - Surface Water Modelling 0.1% AEP Flood Hazard Please note: Data does not extend to the extent of this figure.

Groundwater Flooding

Bedrock Geology	White Chalk Subgroup	Superficial Geology	-
Increased Potential for Elevated Groundwater	Yes		
Susceptibility to Groundwater Flooding (BGS)	Limited potential for groundwater flooding to occur, Potential for groundwater flooding of property situated below ground level, Potential for groundwater flooding to occur at surface		

Other Sources

Risk of flooding from reservoirs	The Long Term Flood Risk Map shows that the site is not at risk of flooding, in the event of a breach or failure of a reservoir.
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Summary

The site lies entirely (100%) within Flood Zone 1, low probability of river flooding.

The site lies within the Marlpit Lane CDA. There are five records of surface water flooding close to the site boundary, one to the south, one in the centre and three in the north. There are additional records of surface water flooding within 500m of the site.

The Risk of Flooding from Surface Water mapping shows that land adjacent to the railway line along the western boundary of the site are at risk of flooding to depths of over 600mm during a 0.1% AEP event, with areas to the south of the site reaching depths between 300-600mm. Surface water flooding is shown to occur along Chaldron Way, leading to Marlpit Lane and beneath the railway line and the A23 where there are historic records of flooding.

Site Specific Recommendations

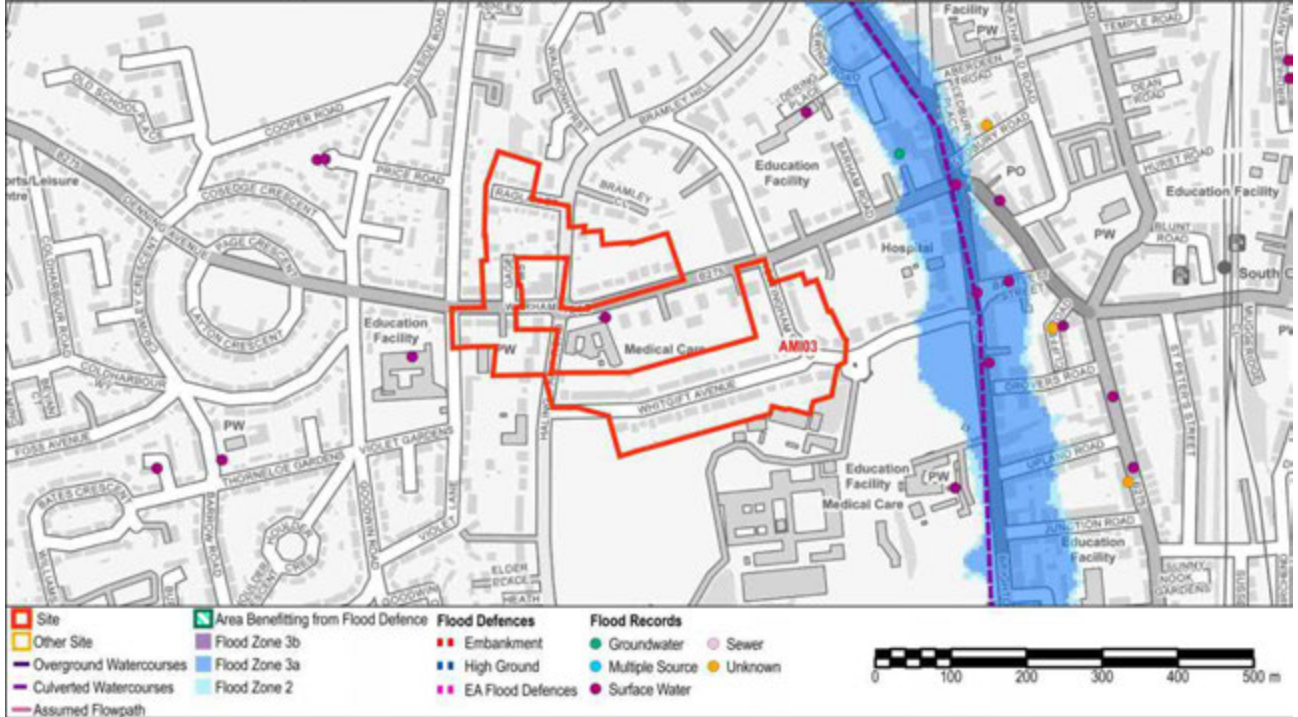
A range of proposed uses may be considered across this AMI. Given the location within Flood Zone 1, development is not subject to the application of the Exception Test. However, given the potential for surface water flooding in this area, steps should be taken to ensure that development is safe for its lifetime considering the impact of climate change, will not increase flood risk elsewhere, and where possible will reduce flood risk overall. To this end, the following recommendations are made throughout the AMI:

- Opportunities should be sought for providing strategic SuDS systems across multiple plots within the AMI.
- Development proposals should seek to restrict surface water runoff rates to greenfield rates; demonstrate sustainable approaches to the management of surface water making use of SuDS including green roofs, rainwater harvesting and other innovative technologies; and incorporate soft landscaping, planting, and impermeable surfacing.
- The RoFSW mapping shows that Marlpit Lane is at risk of surface water flooding. Development proposals within the AMI should consider provision of safe access/egress using alternative routes to the south.
- Flood resistance and resilience measures should be adopted within ground level developments to reduce potential damage during surface water flooding and enable rapid re-occupancy.
- This area is covered by the Environment Agency Flood Alert Area for Groundwater flooding in South East London (Areas at risk from Groundwater flooding including Caterham Bourne, Coulsdon Bourne, Beddington, Carshalton, Coulsdon, Kenley, Purley, South Croydon, Whyteleafe, Bromley, Bexley, and Lewisham). This service has a wide geographic coverage and does not give time-specific warnings.
- The risk of groundwater flooding and groundwater levels should be further assessed as part of a Site Investigation for specific development proposals within the AMI.

Site Name: Waddon			
Site ID:	AMI03	Area (ha):	7.93
Proposed Use:	Mixed use.	Vulnerability Classification:	More Vulnerable

Flood Zones and Historic Flooding				
Flood Zone 1 (<0.1% AEP): 100%	Flood Zone 2 (0.1% AEP): 0%	Flood Zone 3 (1% AEP): 0%	Flood Zone 3b (5% AEP): 0%	Area Benefiting from Defences: 0%

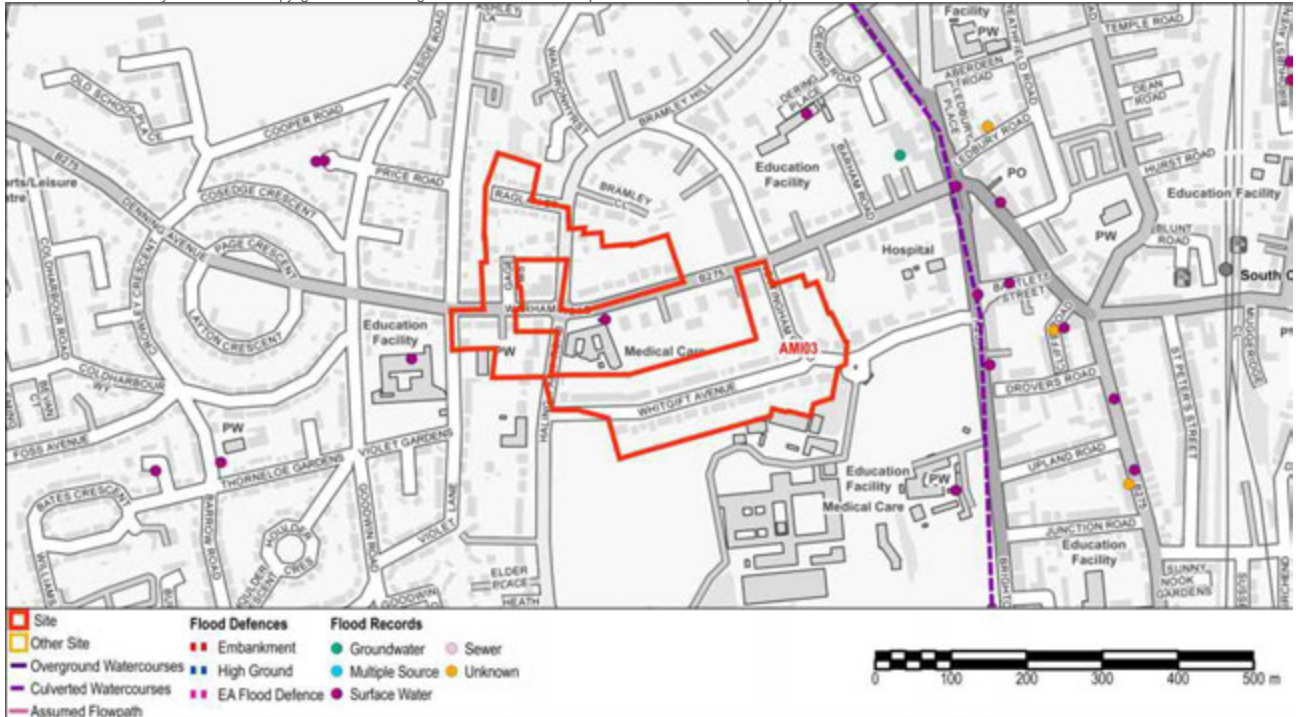
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Flood Warning Area	None
Flood Records within 500m of the site:	Surface Water 26; Groundwater 1; Sewer 0; Multiple source 0; Unknown source 5

River Flooding

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Site Name: Waddon

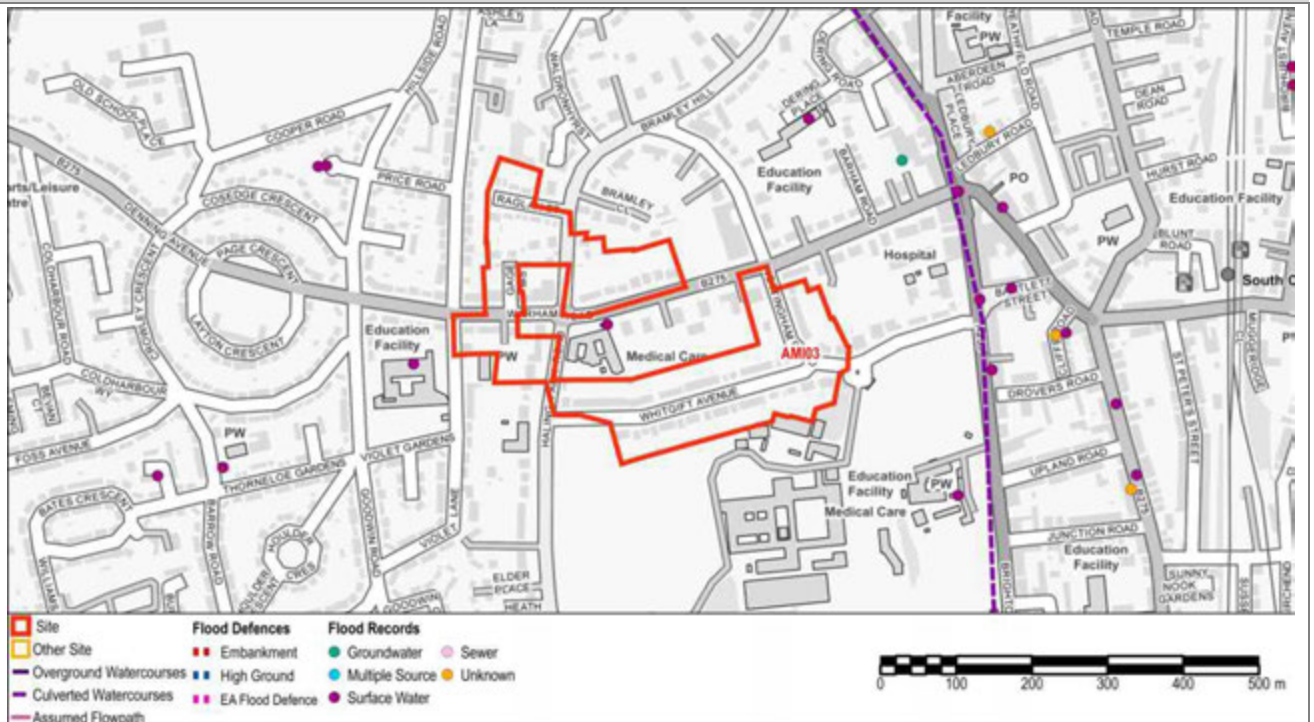


Figure 3 – River Wandle Maximum Flood Hazard (1% AEP plus 35% climate change) Please note: Data does not extend to the extent of this figure.

Surface Water Flooding

Critical Drainage Area	Group8_042 - South & Central Croydon [Croydon]
Drainage Catchment	DC37, DC39

Site Name: Waddon

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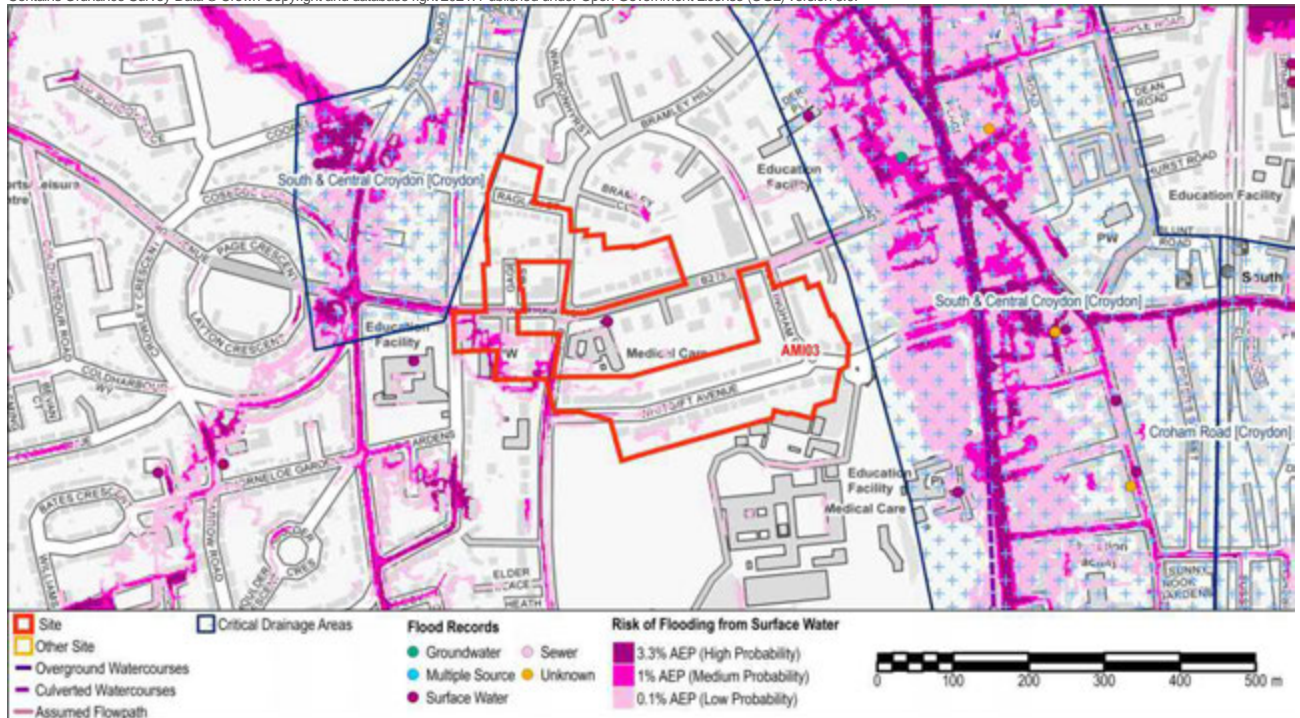


Figure 4 - Risk of Flooding from Surface Water (RoFSW) Flood Extents

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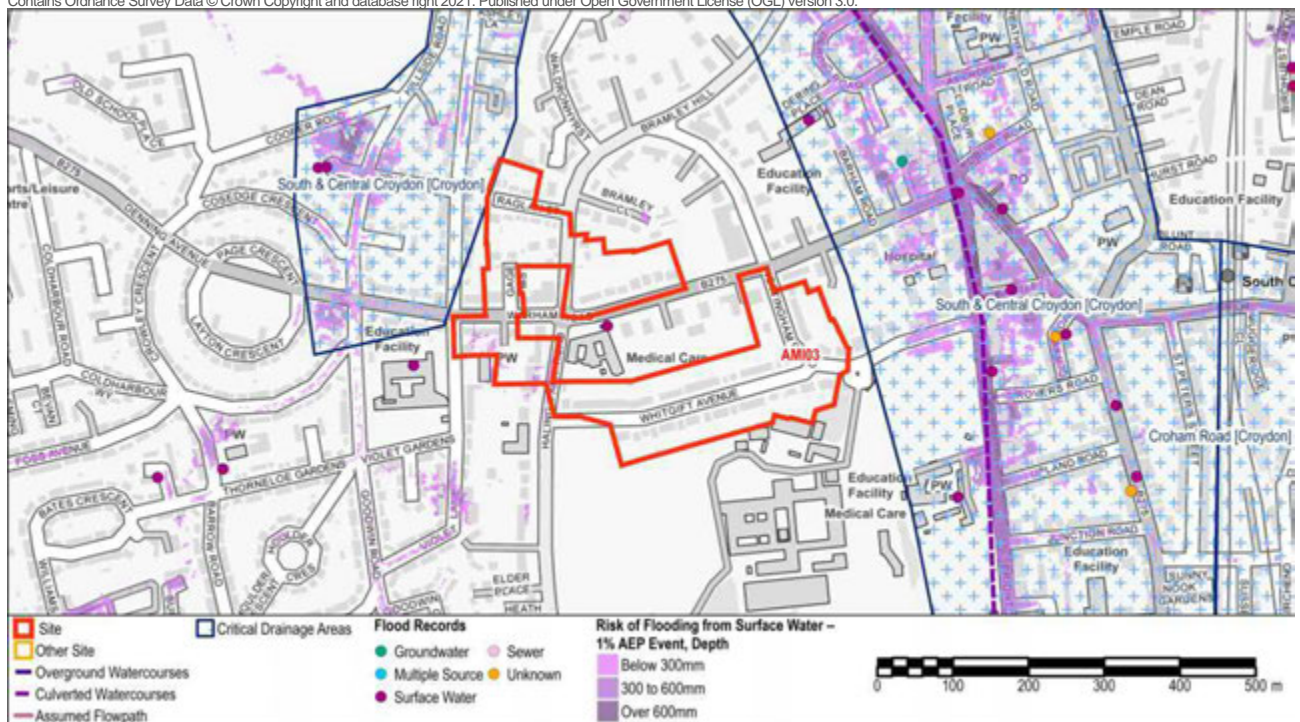


Figure 5 - Risk of Flooding from Surface Water (RoFSW) 1% AEP Flood Depth

Site Name: Waddon

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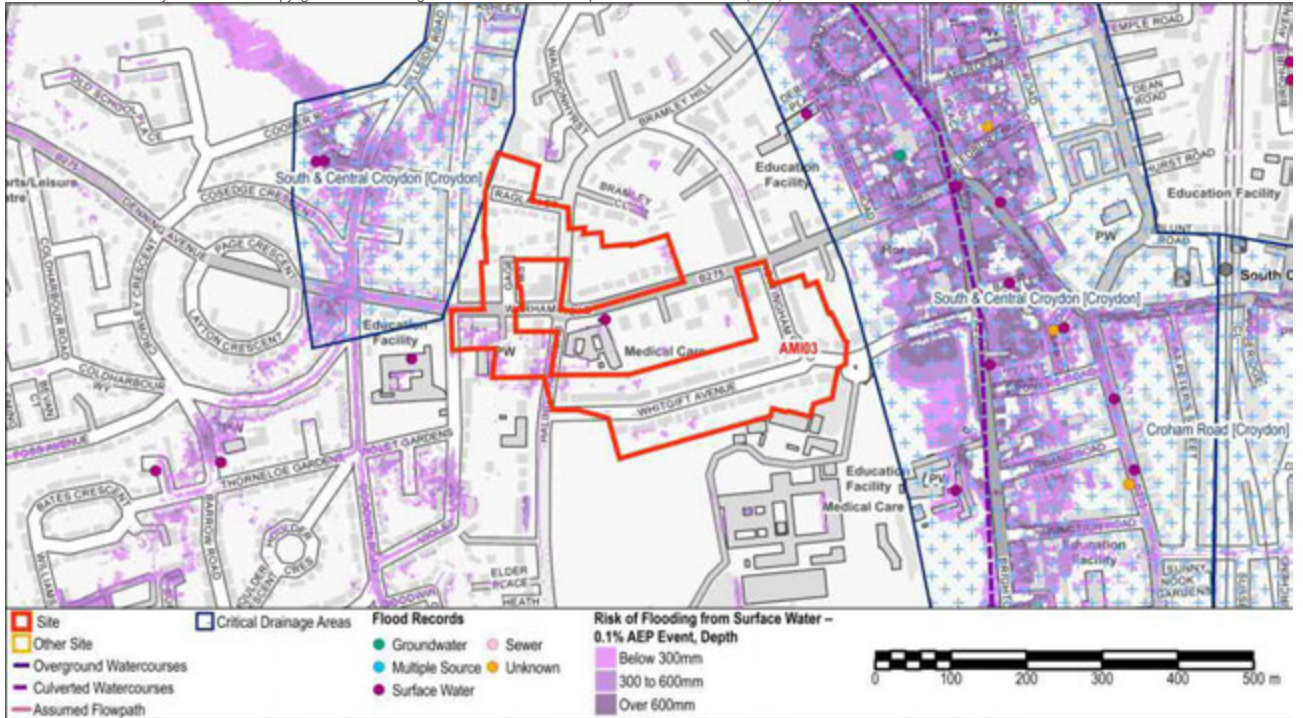


Figure 6 - Risk of Flooding from Surface Water (RoFSW) 0.1% AEP Flood Depth

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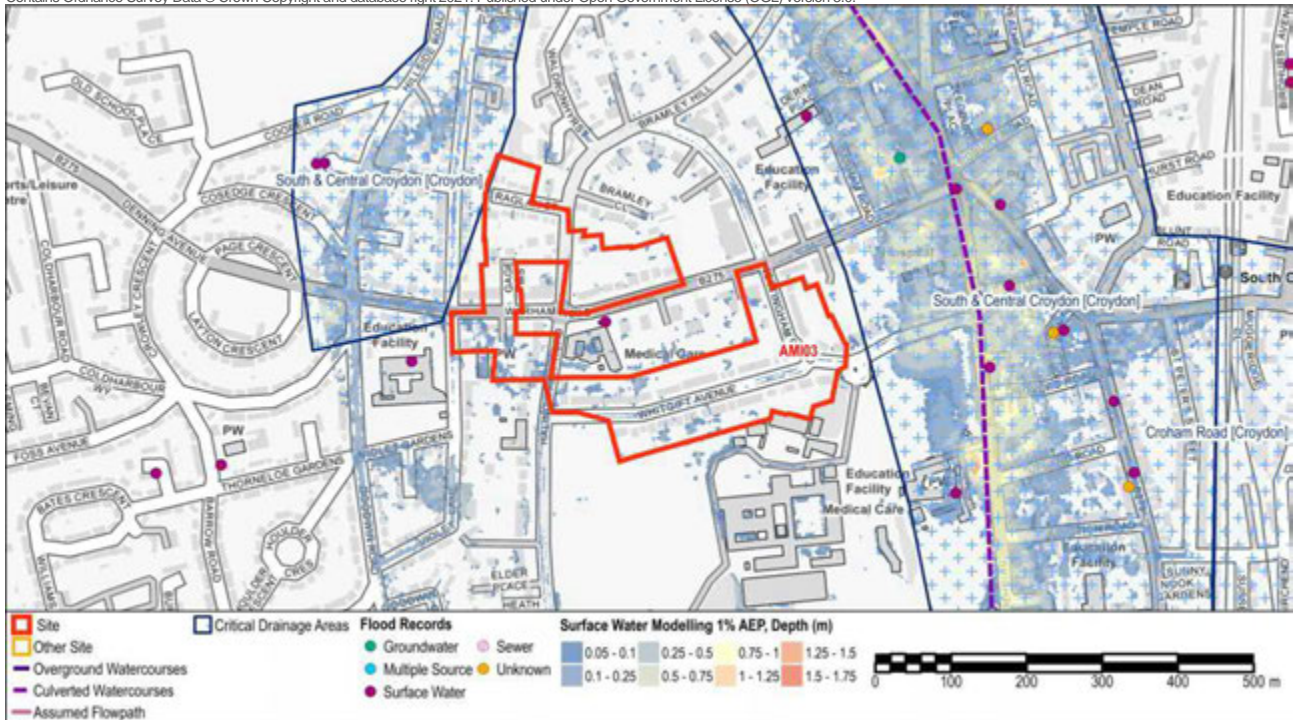


Figure 7 - Surface Water Modelling 1% AEP Flood Depth

Site Name: Waddon

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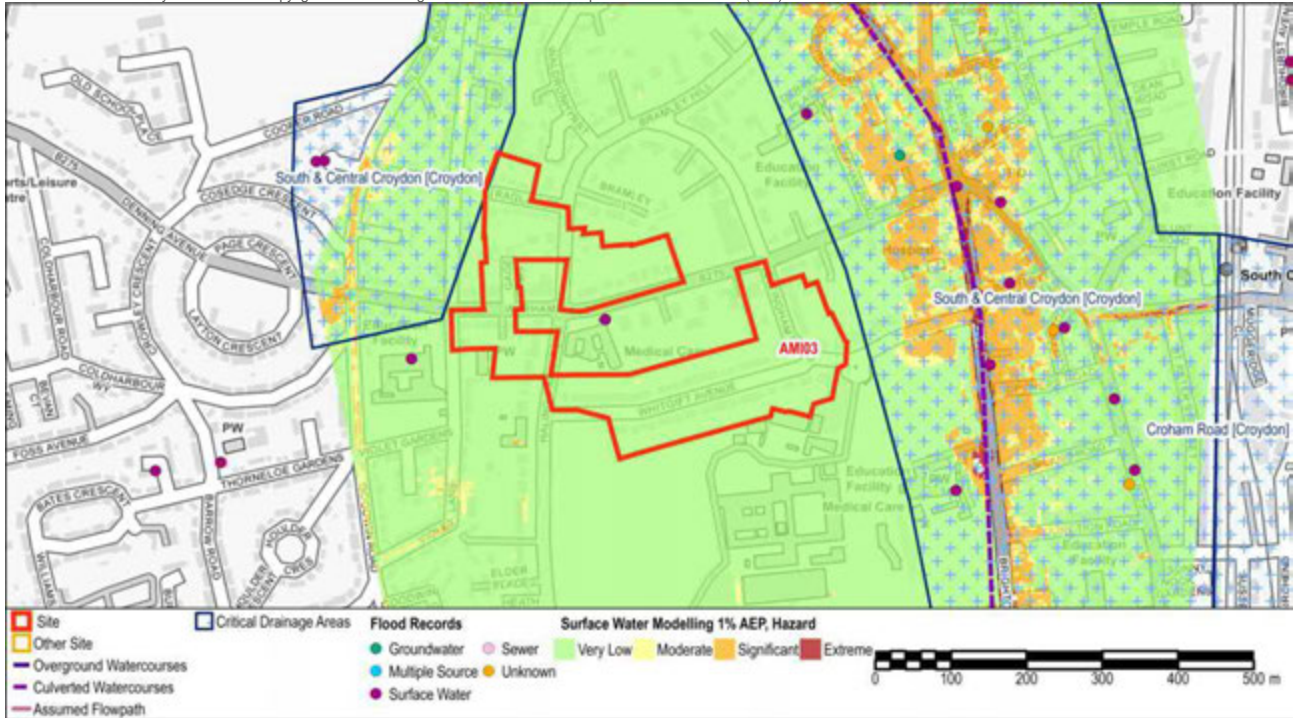


Figure 8 - Surface Water Modelling 1% AEP Flood Hazard

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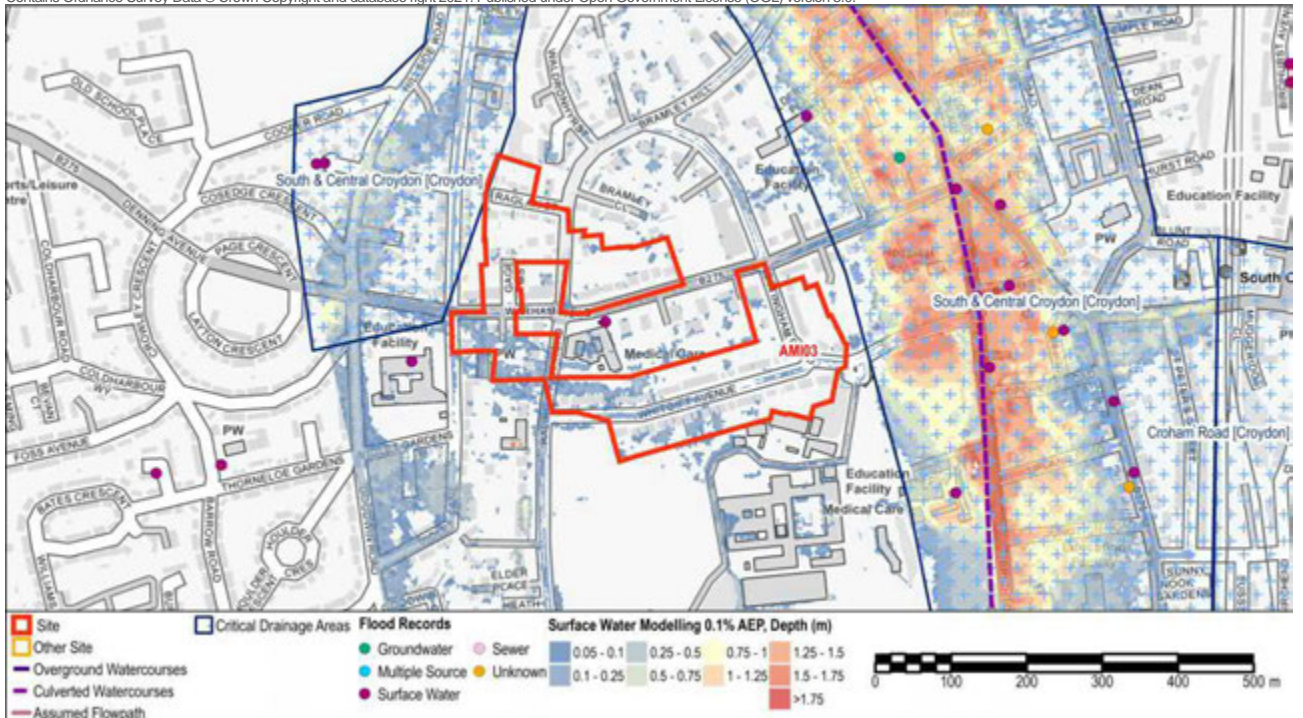


Figure 9 - Surface Water Modelling 0.1% AEP Flood Depth

Site Name: Waddon

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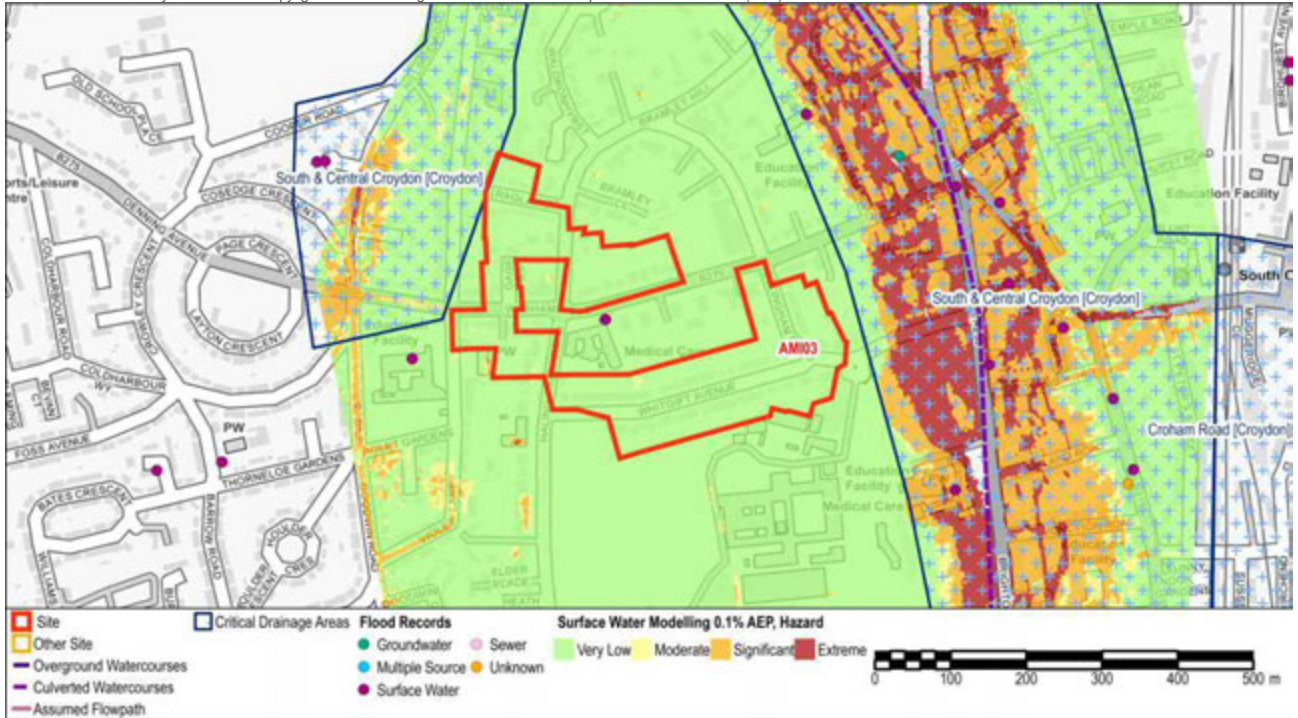


Figure 10 - Surface Water Modelling 0.1% AEP Flood Hazard

Groundwater Flooding

Bedrock Geology	White Chalk Subgroup	Superficial Geology	Sand And Gravel
Increased Potential for Elevated Groundwater		Yes	
Susceptibility to Groundwater Flooding (BGS)		Potential for groundwater flooding to occur at surface	

Other Sources

Risk of flooding from reservoirs	The Long Term Flood Risk Map shows that the site is not at risk of flooding, in the event of a breach or failure of a reservoir.
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Summary

The entire site (100%) is defined as Flood Zone 1, Low probability of river flooding.

The Risk of Flooding from Surface Water mapping shows that the south west of the site is at risk of flooding to depth of 300-600mm during a 1% AEP event. During the 0.1% AEP event, the risk of flooding in the south west increases to over 600mm, while in the north east, a small area is at risk of flooding to depths below 300mm.

Surface water modelling shows the site shows the majority of the site to reach depths <0.1m during a 1% AEP event with some areas reaching between 0.25-0.5m in the south west. In a 0.1% AEP event, flood risk in the south west increases to depths between 0.5-0.75m while the rest of the site remains <0.1m.

There are records of surface water flooding within 500m of the site. The site itself is not included within a CDA, although the CDA for South and Central Croydon is within close proximity.

Site Specific Recommendations

A range of proposed uses may be considered across this AMI. Given the location within Flood Zone 1, development is not subject to the application of the Exception Test. However, given the potential for surface water flooding in this area, steps should be taken to ensure that development is safe for its lifetime considering the impact of climate change, will not increase flood risk elsewhere, and where possible will reduce flood risk overall. To this end, the following recommendations are made throughout the AMI:

- Opportunities should be sought for providing strategic SuDS systems across multiple plots within the AMI.
- Development proposals should seek to restrict surface water runoff rates to greenfield rates; demonstrate sustainable approaches to the management of surface water making use of SuDS including green roofs, rainwater harvesting and other innovative technologies; and incorporate soft landscaping, planting, and impermeable surfacing.
- The RoFSW mapping shows that the main routes away from the site along the B275 are at risk of surface water flooding. Development proposals within the AMI should consider provision of safe access/egress using alternative routes at lower risk of surface water flooding.
- In areas at risk of surface water flooding, finished floor levels for More Vulnerable development should be raised 600mm above ground levels. Where surface water modelling is available within the AFI, finished floor levels may be set above the modelled flood level for the 1% AEP event, including a 300mm freeboard. Flood depths for the modelled 1% AEP event are shown in Figure 7.
- Finished floor levels do not need to be raised for Less Vulnerable development, however flood resilience measures should be adopted within these developments to reduce potential damage during flooding and enable rapid re-occupancy.
- This area is covered by the Environment Agency Flood Alert Area for Groundwater flooding in South East London (Areas at risk from Groundwater flooding including Caterham Bourne, Coulsdon Bourne, Beddington, Carshalton, Coulsdon, Kenley,

Site Name: Waddon

Purley, South Croydon, Whyteleafe, Bromley, Bexley, and Lewisham). This service has a wide geographic coverage and does not give time-specific warnings.

- The risk of groundwater flooding and groundwater levels should be further assessed as part of a Site Investigation for specific development proposals within the AMI.

Site Name: Purley East			
Site ID:	AMI04	Area (ha):	56.21
Proposed Use:	Mixed use.	Vulnerability Classification:	More Vulnerable

Flood Zones and Historic Flooding				
Flood Zone 1 (<0.1% AEP): 97%	Flood Zone 2 (0.1% AEP): 0.5%	Flood Zone 3 (1% AEP): 2.5%	Flood Zone 3b (5% AEP): 0%	Area Benefiting from Defences: 0%

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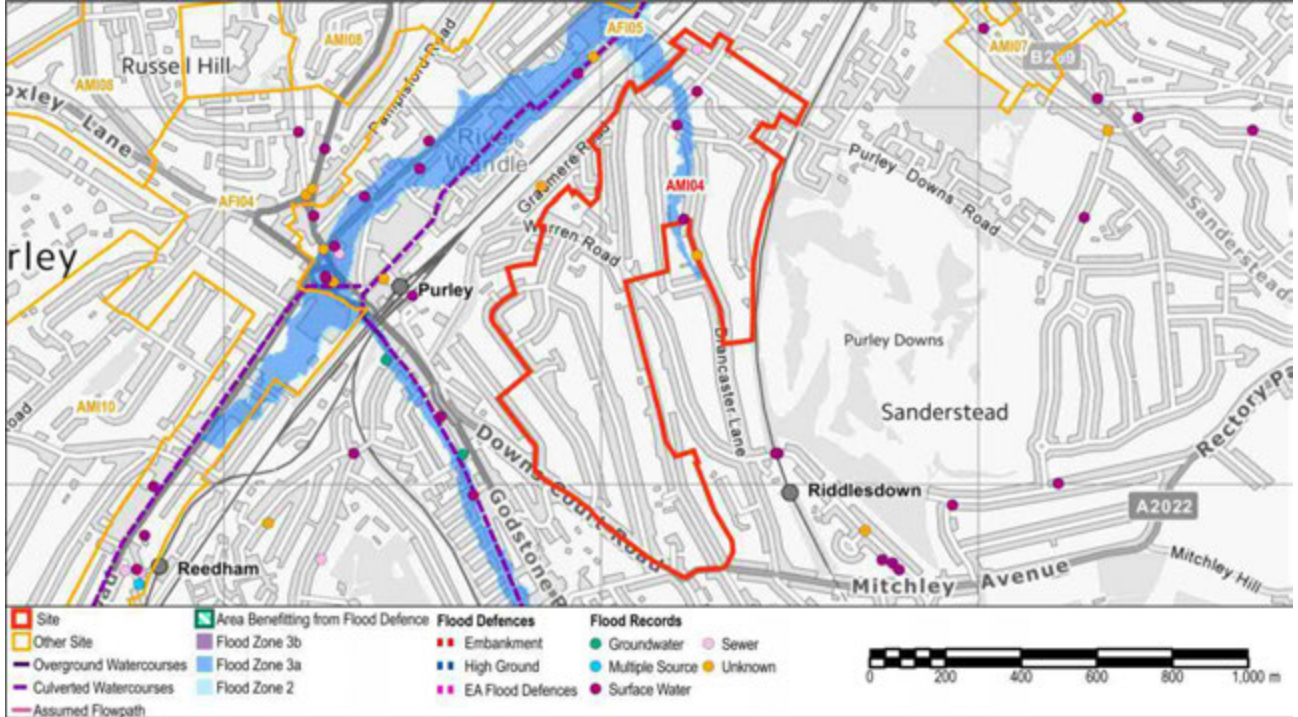


Figure 1 - Flood Zones and Flood Records

Flood Warning Area	None
Flood Records within 500m of the site:	Surface Water 31; Groundwater 4; Sewer 3; Multiple source 0; Unknown source 8

River Flooding

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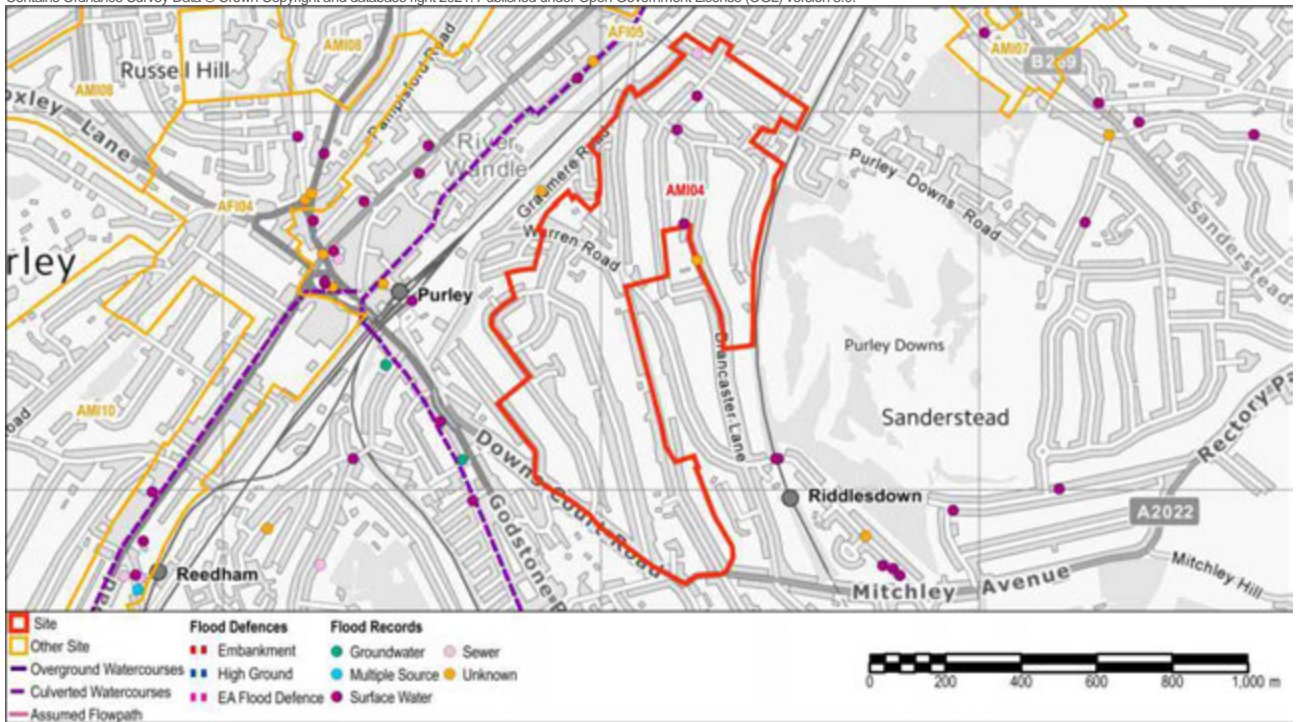


Figure 2 – River Wandle Maximum Flood Depth (1% AEP plus 35% climate change) Please note: Data does not extend to the extent of this figure.

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Site Name: Purley East

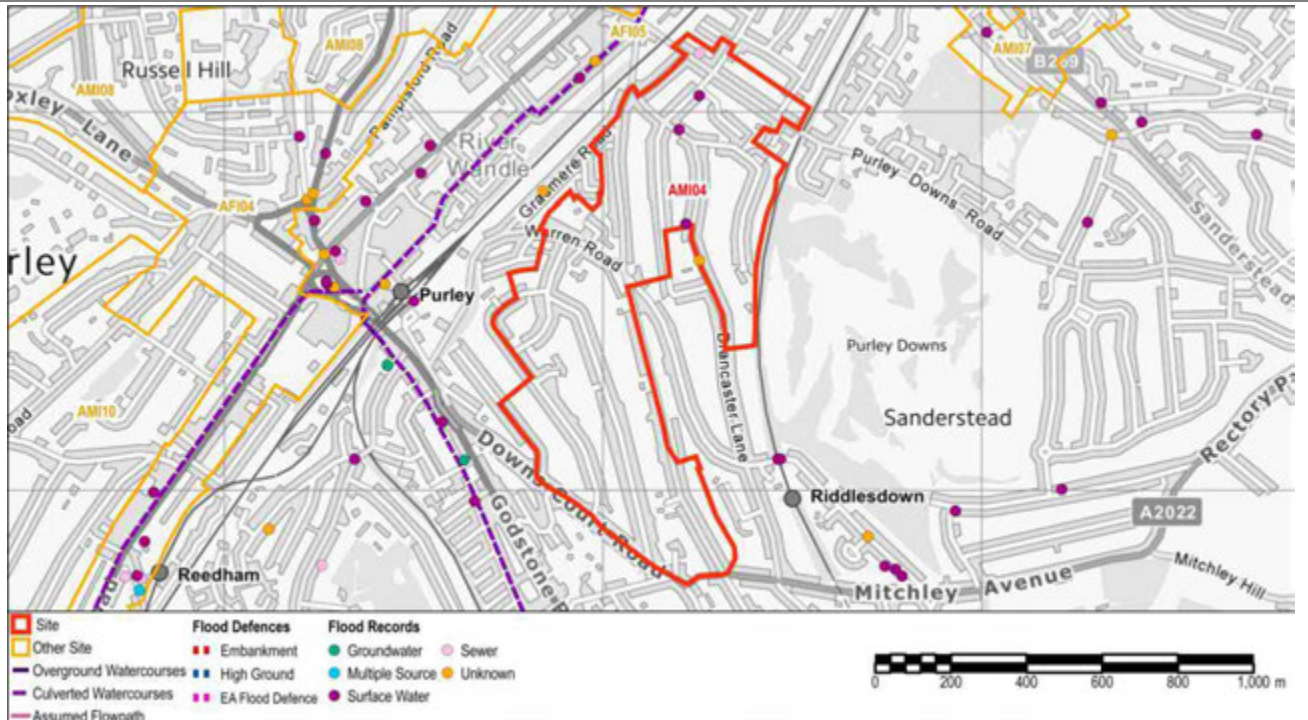
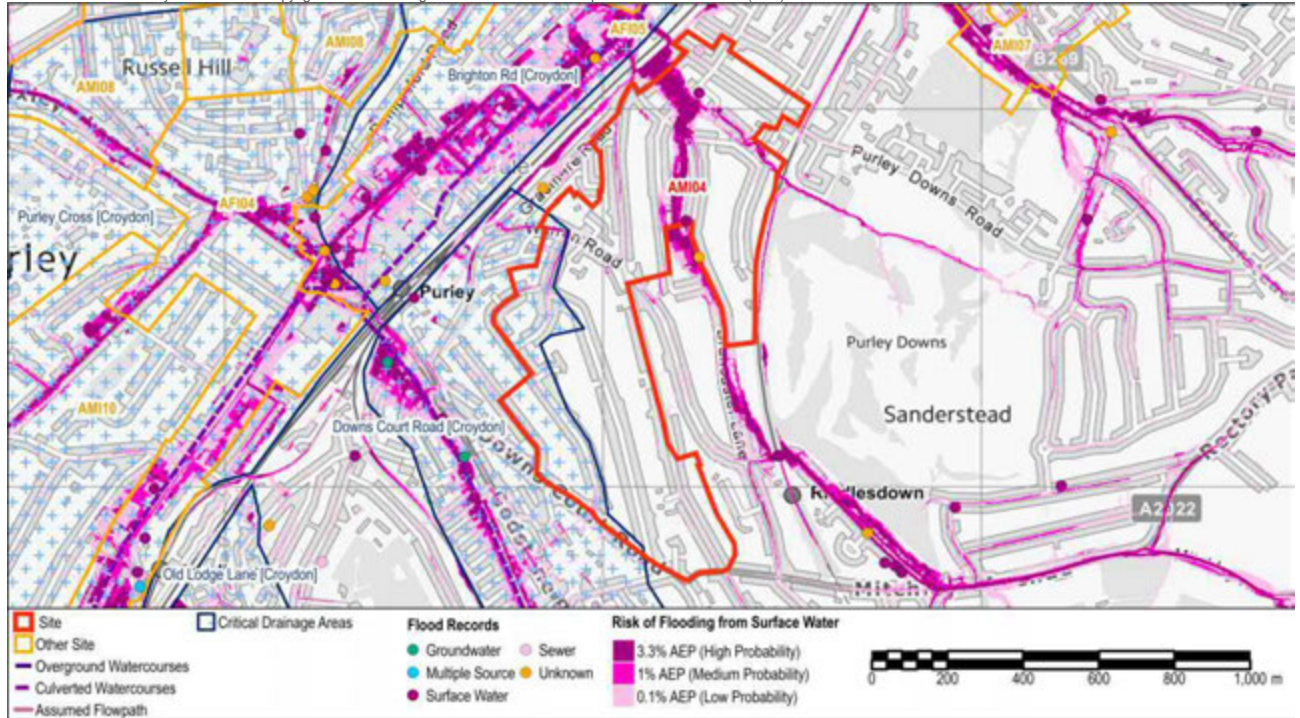


Figure 3 – River Wandle Maximum Flood Hazard (1% AEP plus 35% climate change) Please note: Data does not extend to the extent of this figure.

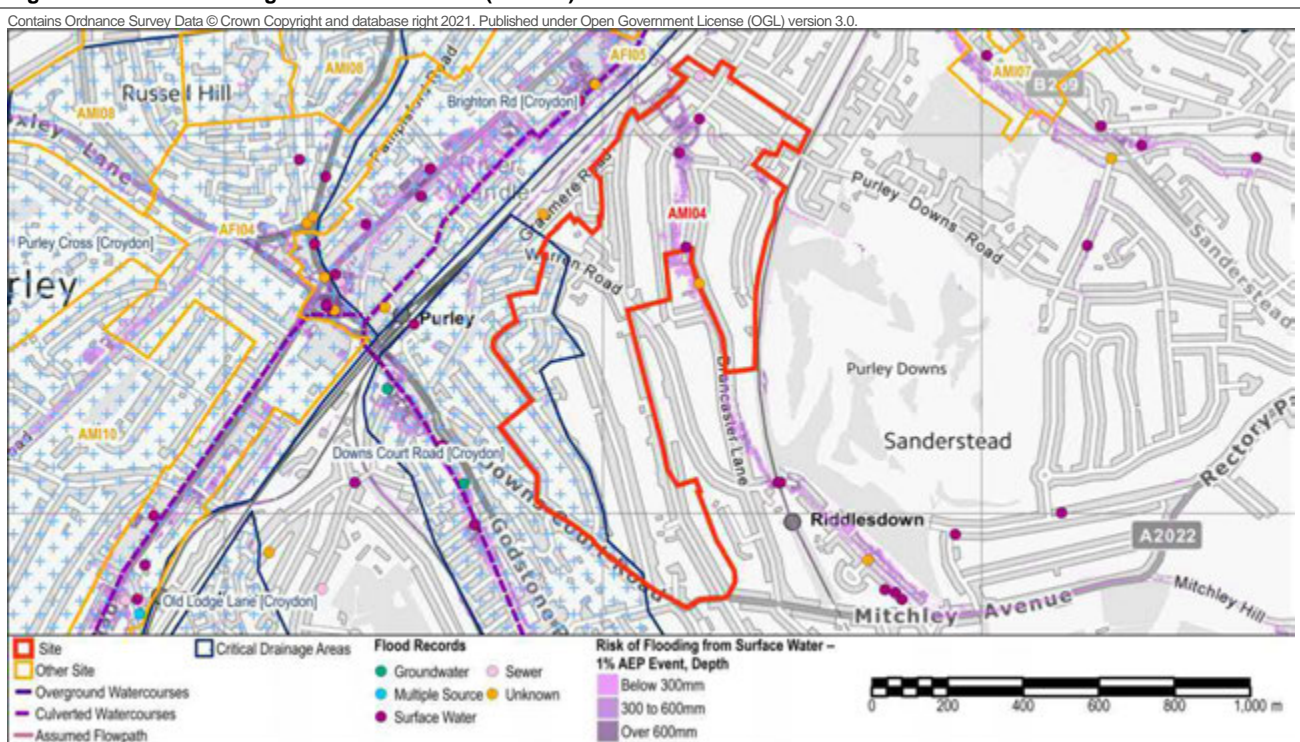
Surface Water Flooding	
Critical Drainage Area	Group8_038 - Downs Court Road [Croydon]
Drainage Catchment	DC39, DC46, DC56

Site Name: Purley East

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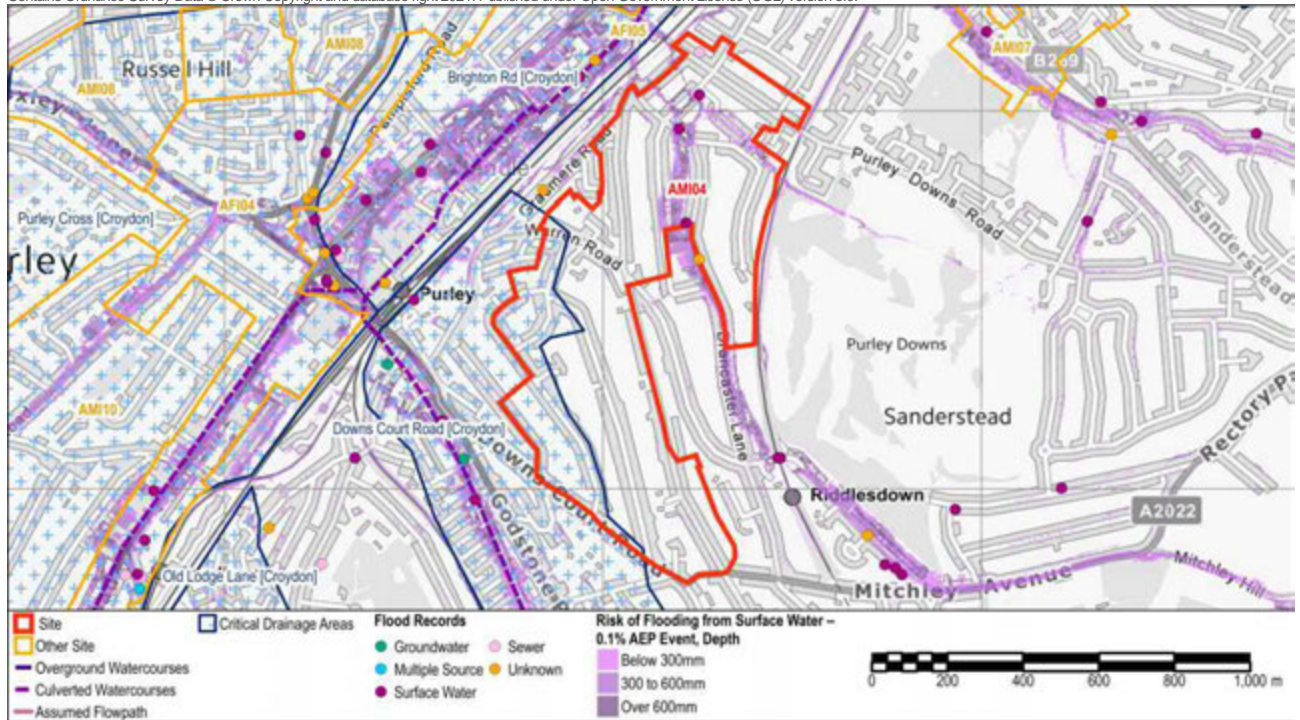


Figure 6 - Risk of Flooding from Surface Water (RoFSW) 0.1% AEP Flood Depth

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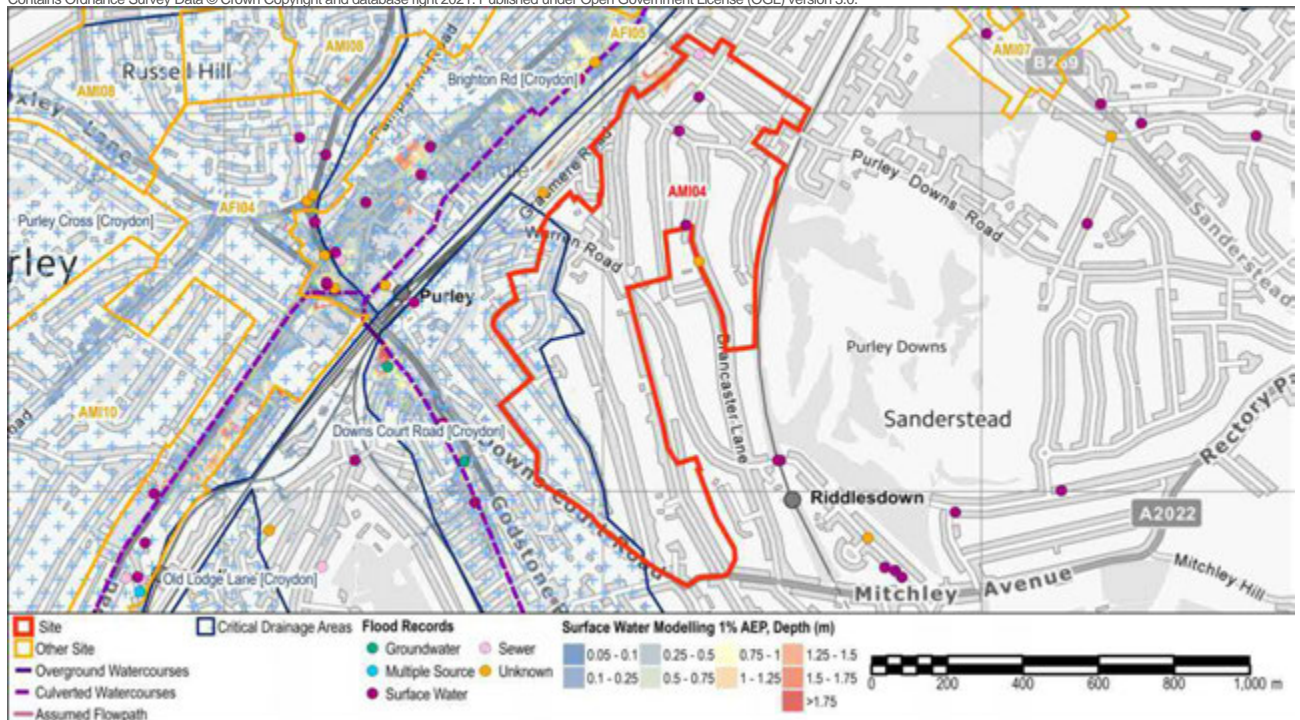
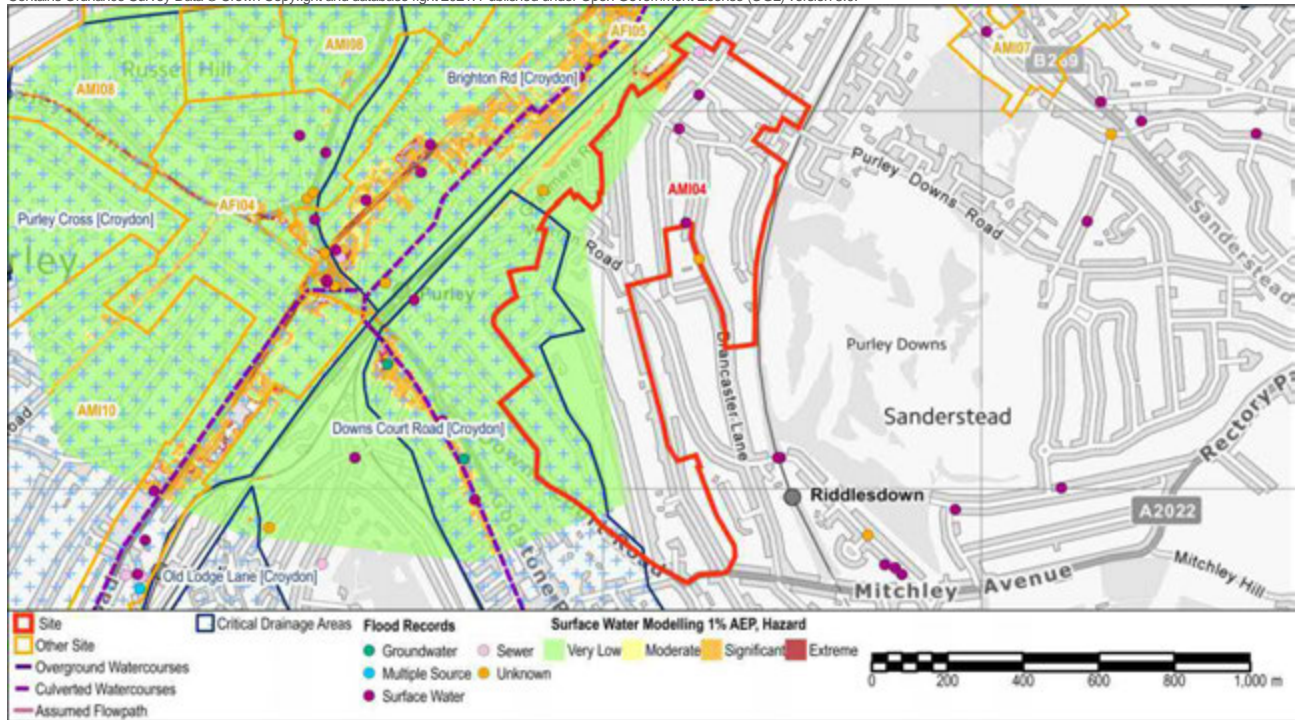


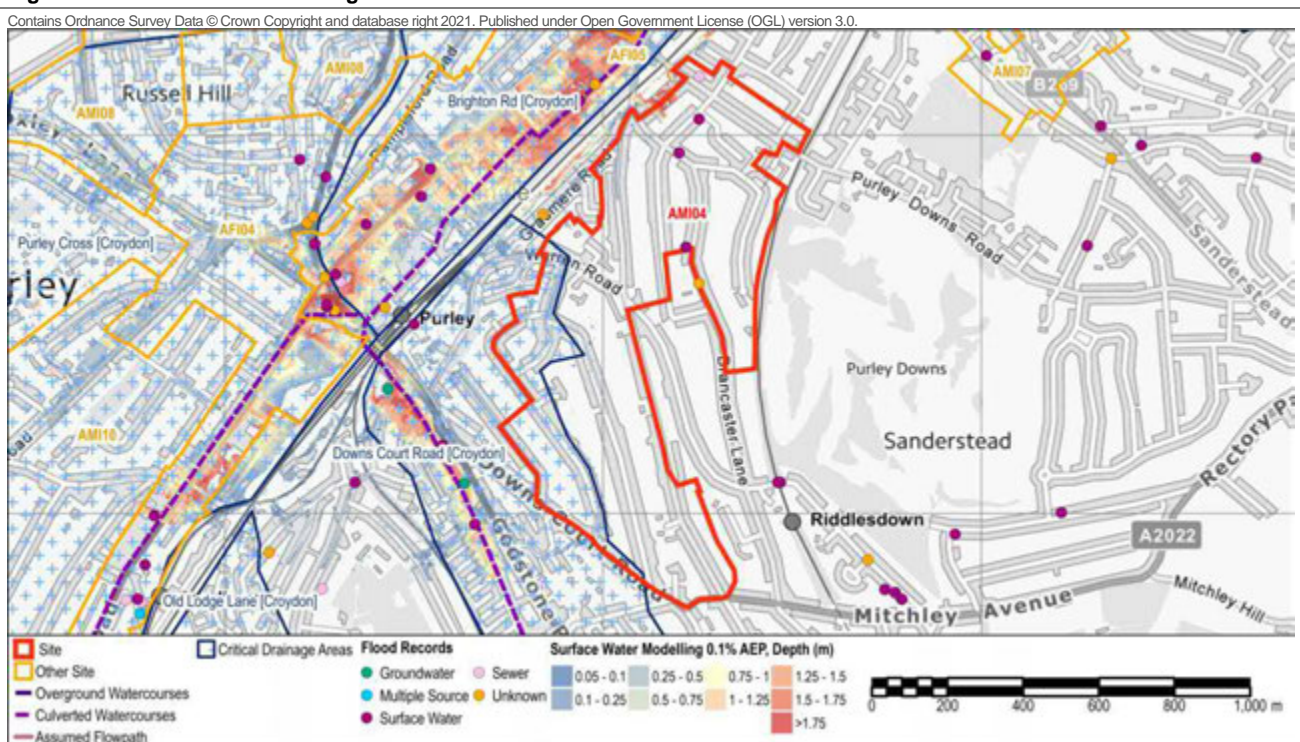
Figure 7 - Surface Water Modelling 1% AEP Flood Depth

Site Name: Purley East

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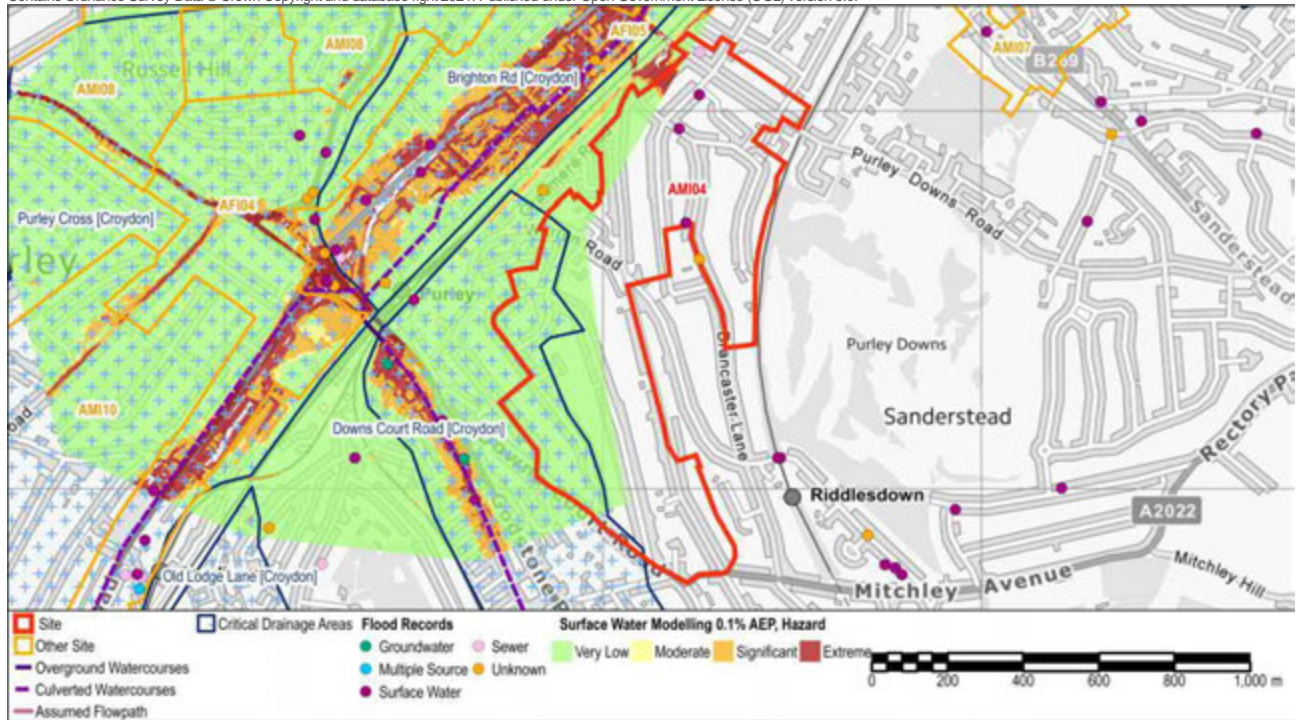


Figure 10 - Surface Water Modelling 0.1% AEP Flood Hazard

Groundwater Flooding

Bedrock Geology	White Chalk Subgroup	Superficial Geology	Sand And Gravel
Increased Potential for Elevated Groundwater	Yes		
Susceptibility to Groundwater Flooding (BGS)	Limited potential for groundwater flooding to occur, Potential for groundwater flooding of property situated below ground level, Potential for groundwater flooding to occur at surface		

Other Sources

Risk of flooding from reservoirs	The Long Term Flood Risk Map shows that the site is not at risk of flooding, in the event of a breach or failure of a reservoir.
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Summary

The majority of the site (97%) is defined as Flood Zone 1, Low probability of river flooding. There is an area of Flood Zone 3 from Brancaster Lane towards the railway line and Brighton Road.

The western edge of the AMI falls within the Downs Court Road CDA. There are records of surface water flooding throughout the AMI.

The Risk of Flooding from Surface Water mapping identifies the potential for surface water flooding to occur through Riddlesdown to the south east of the AMI and along Brancaster Lane towards Purley Downs Road. Flood depths of over 600mm are modelled to occur in some areas during both the 1% and 0.1% AEP events.

Site Specific Recommendations

A range of proposed uses may be considered across this AMI. The majority of the AMI is in Flood Zone 1, in which development is not subject to the application of the Exception Test. Where development is proposed in areas of Flood Zone 3, the Exception Test will need to be applied. The following recommendations are made throughout the AMI:

- Opportunities should be sought for providing strategic SuDS systems across multiple plots within the AMI.
- Development proposals should seek to restrict surface water runoff rates to greenfield rates; demonstrate sustainable approaches to the management of surface water making use of SuDS including green roofs, rainwater harvesting and other innovative technologies; and incorporate soft landscaping, planting, and impermeable surfacing.
- The RoFSW mapping shows that the main routes away from the site along the B275 are at risk of surface water flooding. Development proposals within the AMI should consider provision of safe access/egress using alternative routes at lower risk of surface water flooding.
- In areas at risk of surface water flooding, finished floor levels for More Vulnerable development should be raised 600mm above ground levels. Where surface water modelling is available within the AFI, finished floor levels may be set above the modelled flood level for the 1% AEP event, including a 300mm freeboard. Flood depths for the modelled 1% AEP event are shown in Figure 7.
- Finished floor levels do not need to be raised for Less Vulnerable development, however flood resilience measures should be adopted within these developments to reduce potential damage during flooding and enable rapid re-occupancy.
- This area is covered by the Environment Agency Flood Alert Area for Groundwater flooding in South East London (Areas at risk from Groundwater flooding including Caterham Bourne, Coulsdon Bourne, Beddington, Carshalton, Coulsdon, Kenley, Purley, South Croydon, Whyteleafe, Bromley, Bexley, and Lewisham). This service has a wide geographic coverage and does not give time-specific warnings.
- The risk of groundwater flooding and groundwater levels should be further assessed as part of a Site Investigation for specific development proposals within the AMI.

Site Name: Purley Kenley			
Site ID:	AMI05	Area (ha):	42.09
Proposed Use:	Mixed use.	Vulnerability Classification:	More Vulnerable

Flood Zones and Historic Flooding				
Flood Zone 1 (<0.1% AEP): 100%	Flood Zone 2 (0.1% AEP): 0%	Flood Zone 3 (1% AEP): 0%	Flood Zone 3b (5% AEP): 0%	Area Benefiting from Defences: 0%

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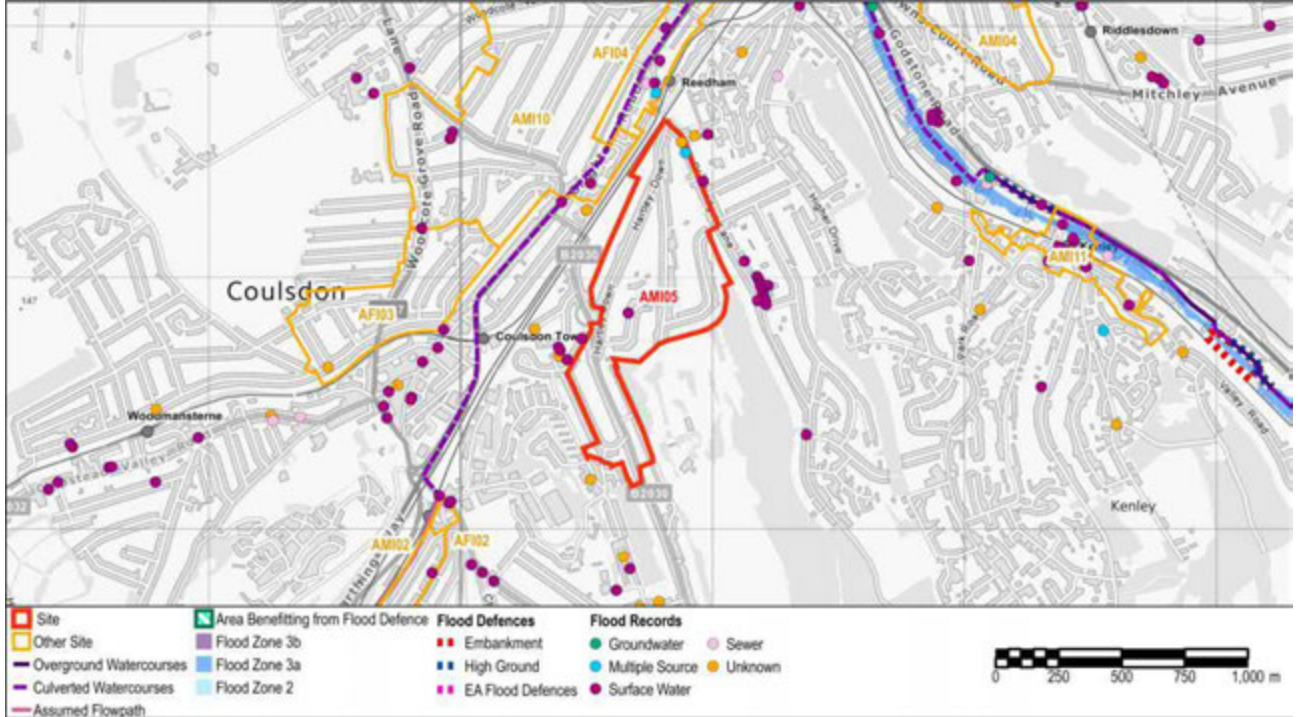


Figure 1 - Flood Zones and Flood Records

Flood Warning Area	None
Flood Records within 500m of the site:	Surface Water 30; Groundwater 0; Sewer 3; Multiple source 2; Unknown source 11

River Flooding

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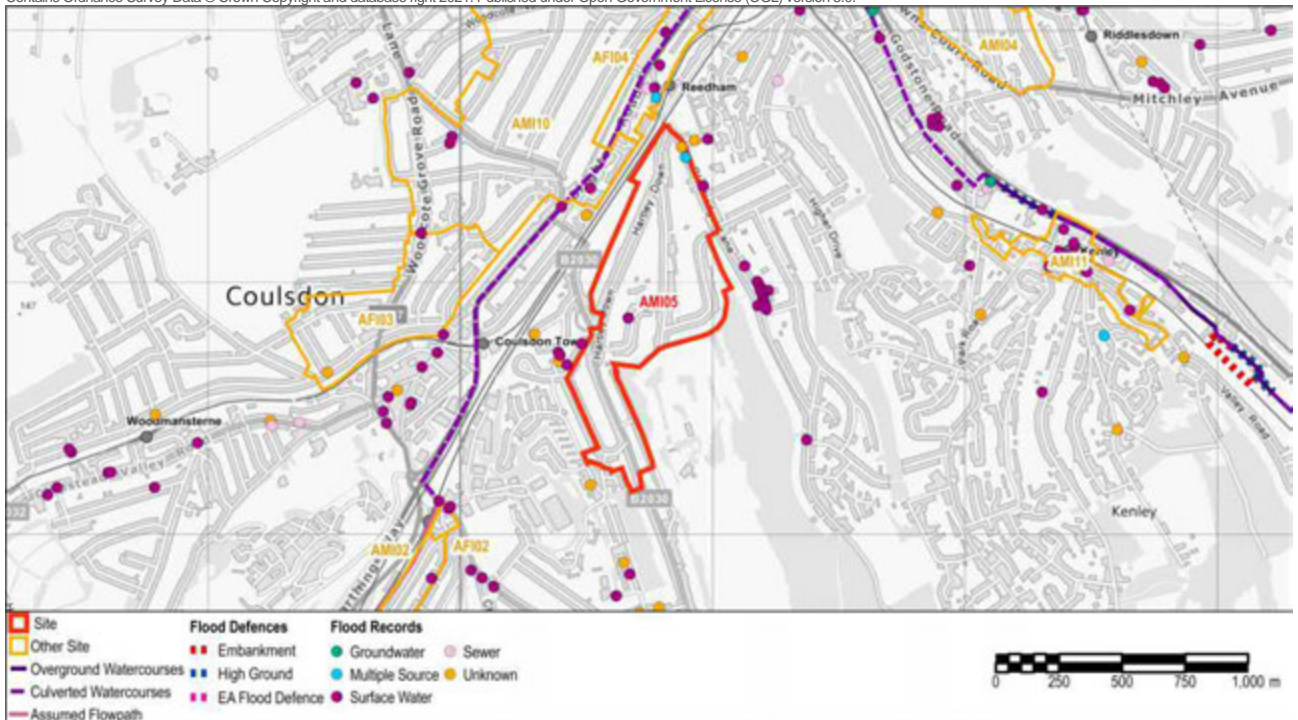


Figure 2 – River Wandle Maximum Flood Depth (1% AEP plus 35% climate change) Please note: Data does not extend to the extent of this figure.

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Site Name: Purley Kenley



Figure 3 – River Wandle Maximum Flood Hazard (1% AEP plus 35% climate change) Please note: Data does not extend to the extent of this figure.

Surface Water Flooding	
Critical Drainage Area	Group8_036 - Old Lodge Lane [Croydon]
Drainage Catchment	DC39, DC55

Site Name: Purley Kenley

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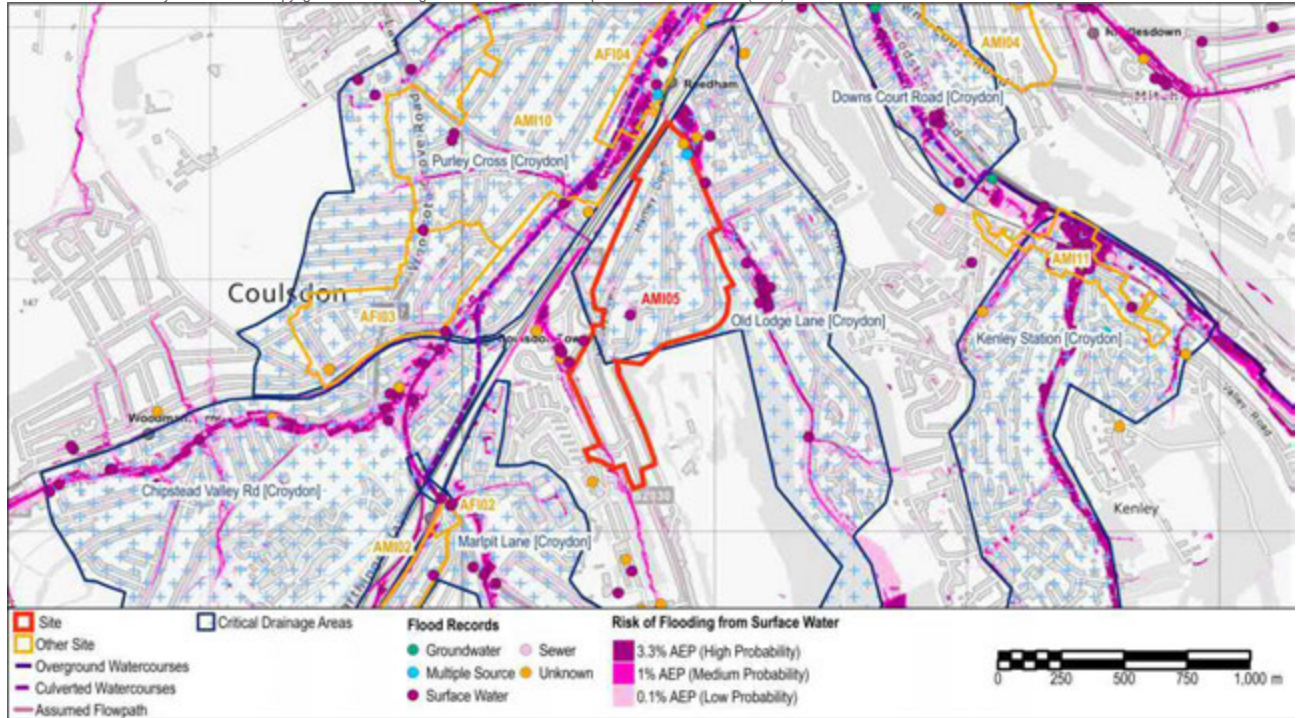


Figure 4 - Risk of Flooding from Surface Water (RoFSW) Flood Extents

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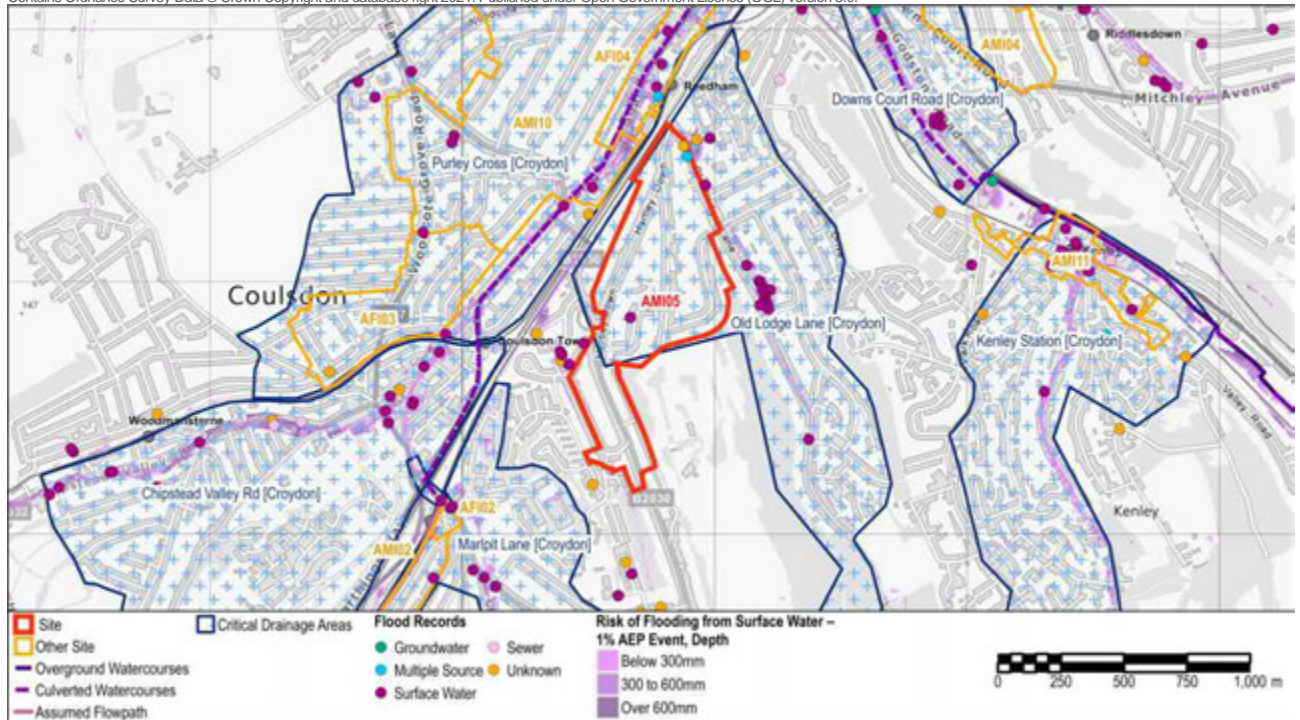


Figure 5 - Risk of Flooding from Surface Water (RoFSW) 1% AEP Flood Depth

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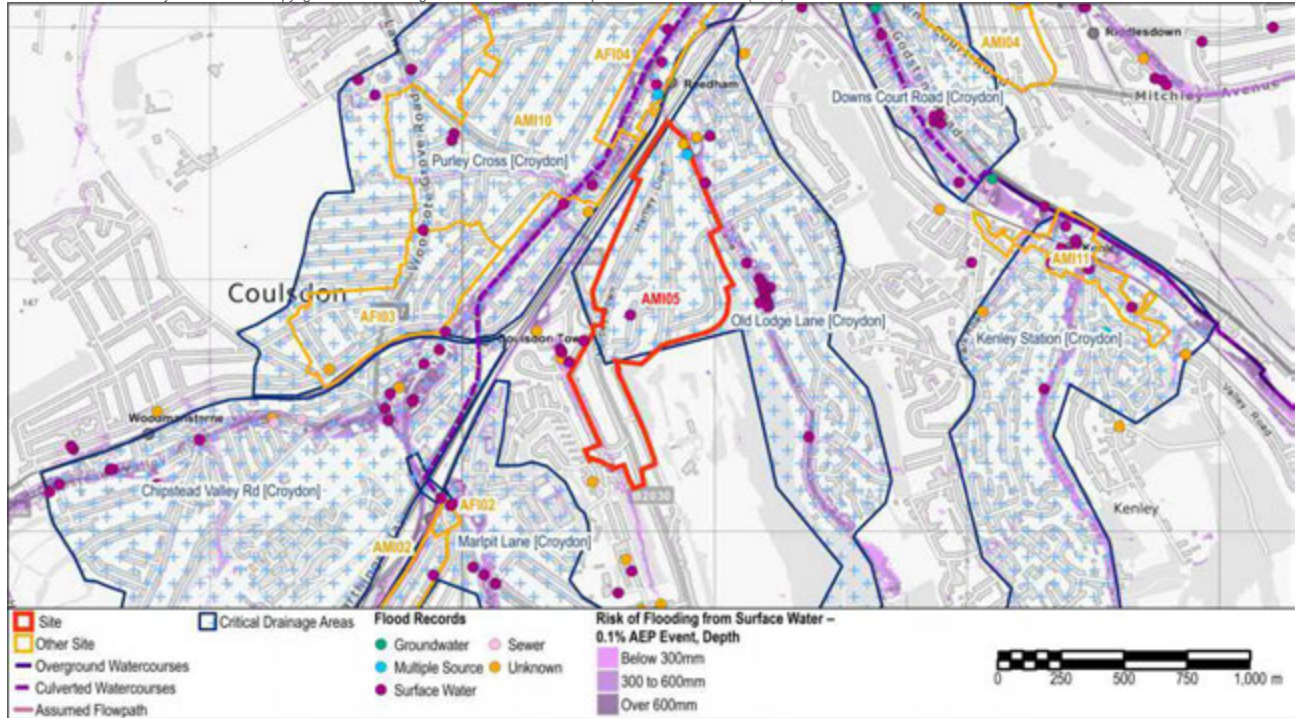


Figure 6 - Risk of Flooding from Surface Water (RoFSW) 0.1% AEP Flood Depth

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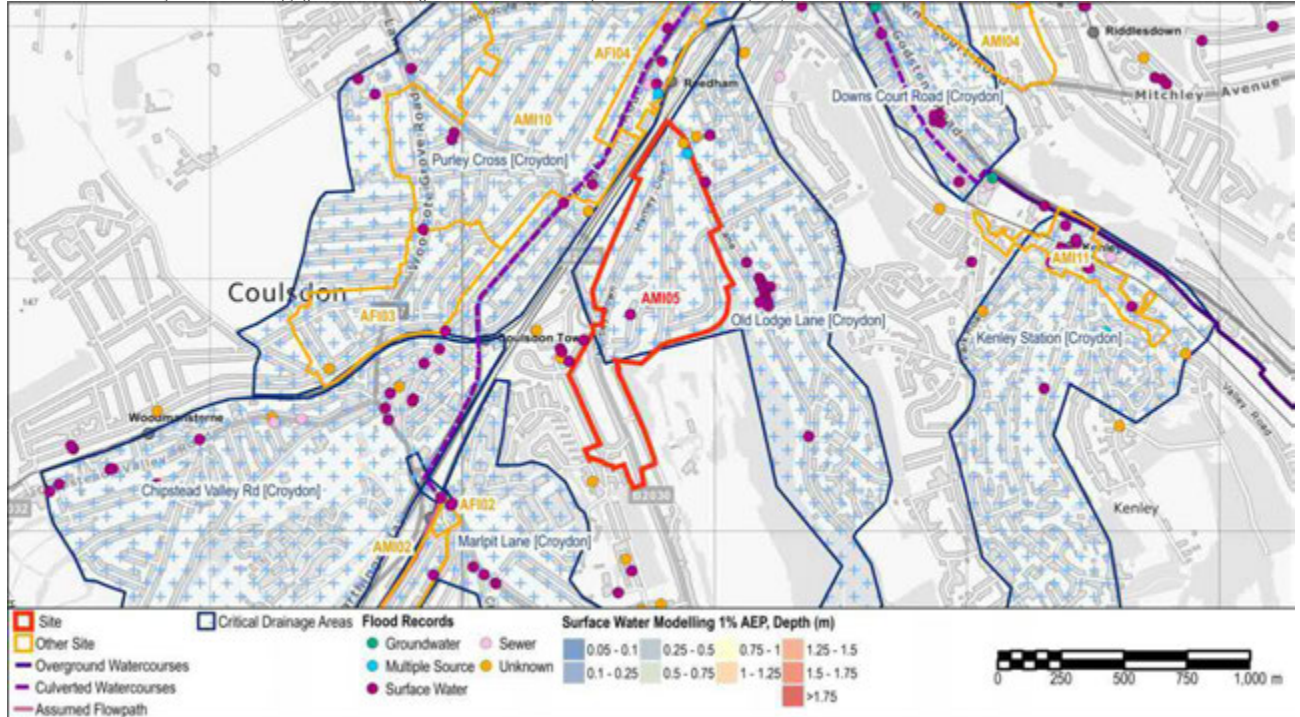
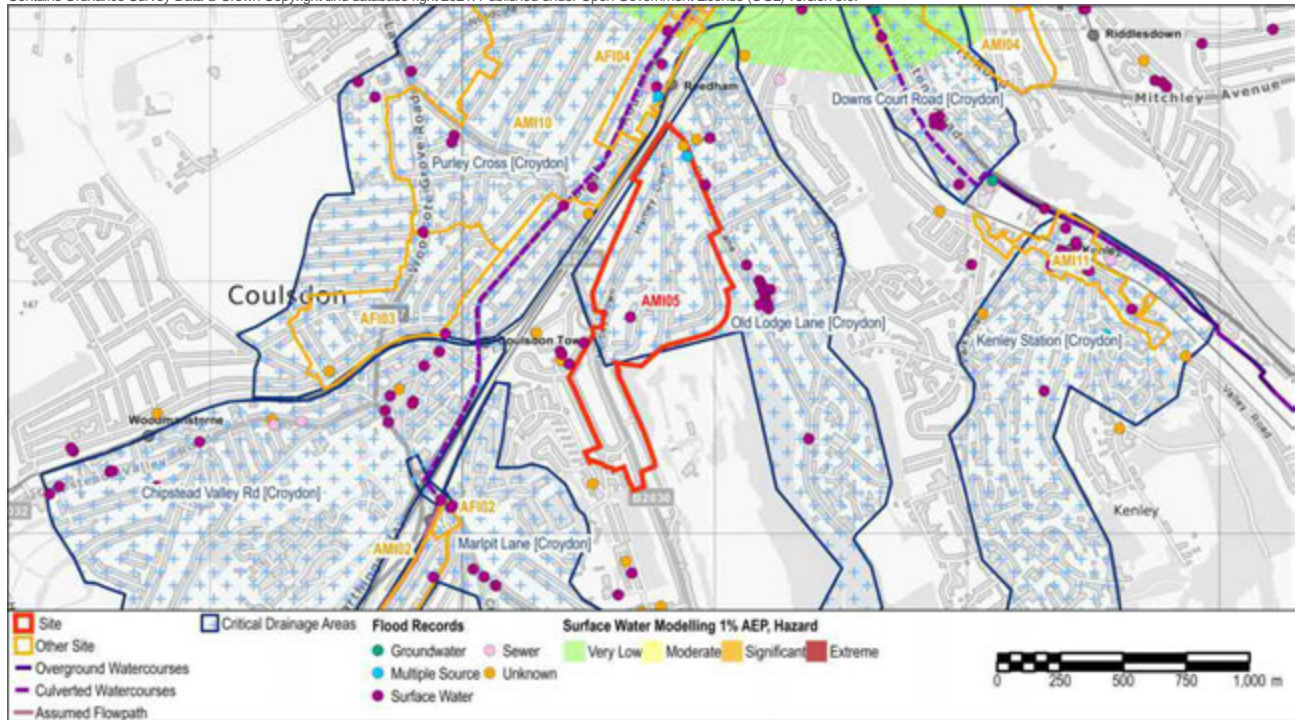


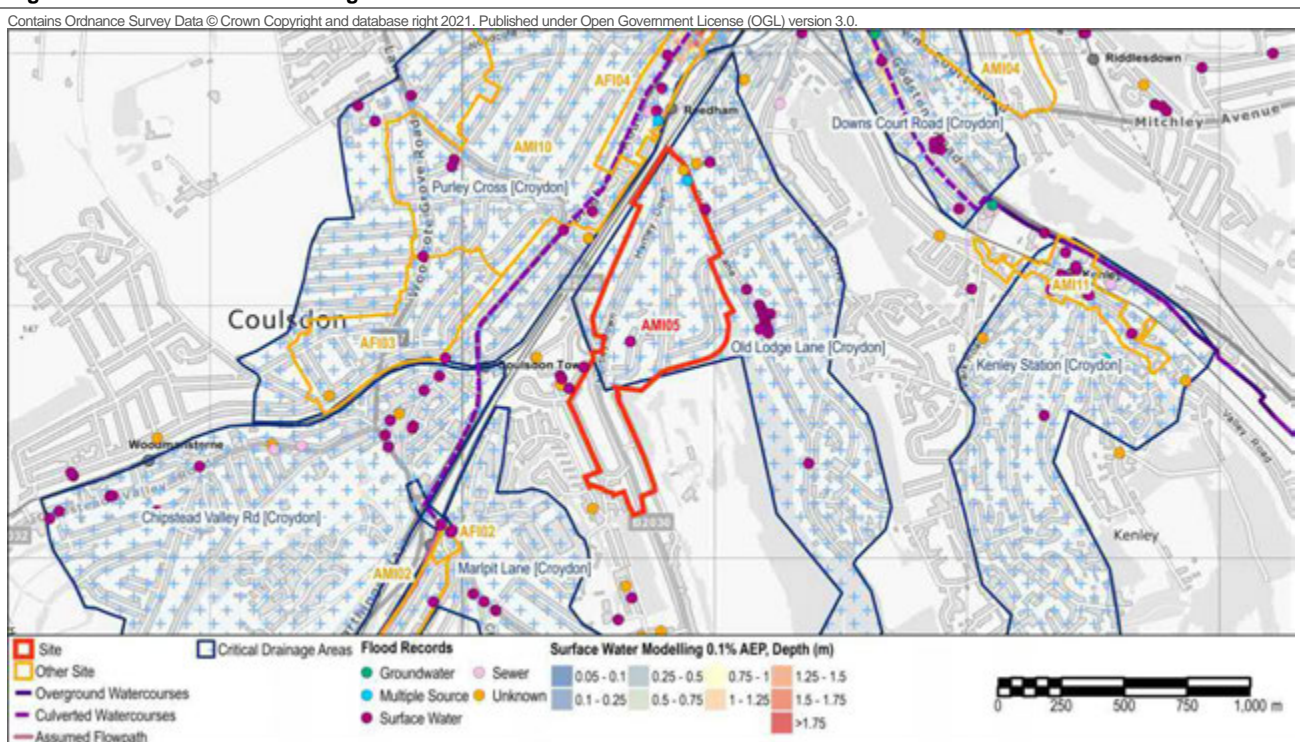
Figure 7 - Surface Water Modelling 1% AEP Flood Depth

Site Name: Purley Kenley

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Site Name: Purley Kenley

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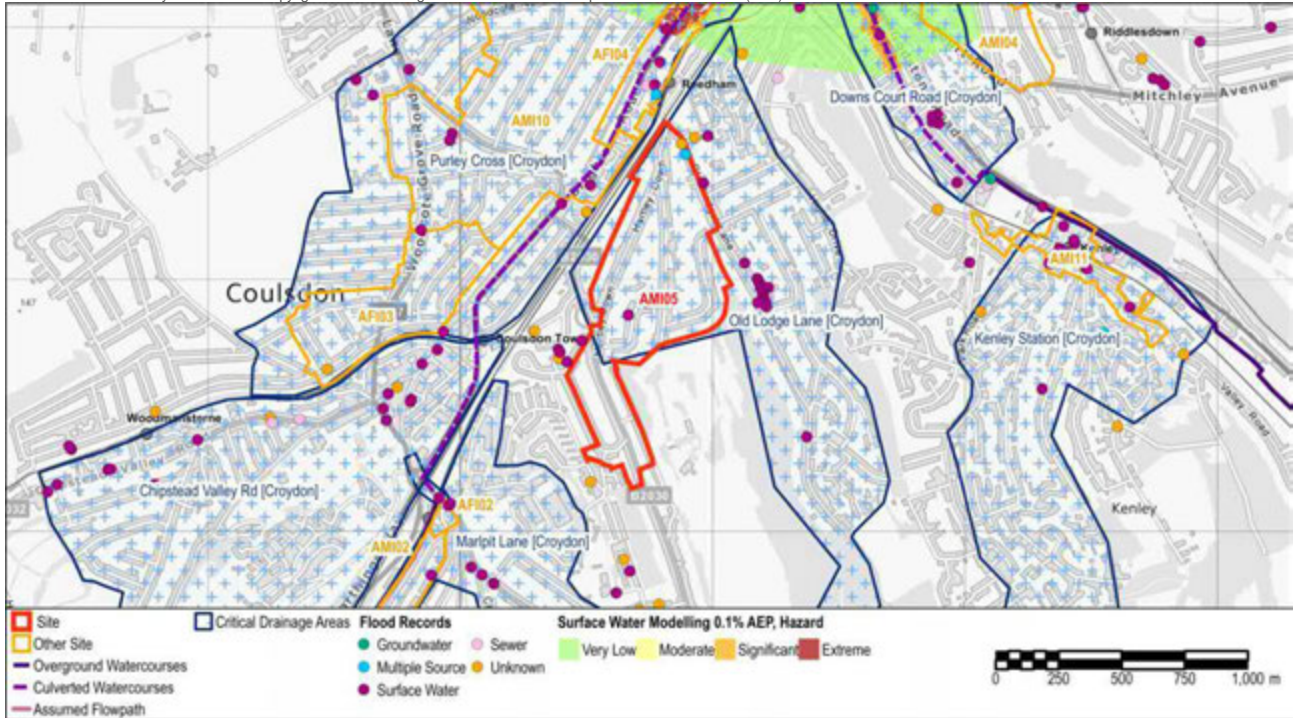


Figure 10 - Surface Water Modelling 0.1% AEP Flood Hazard

Groundwater Flooding

Bedrock Geology	White Chalk Subgroup	Superficial Geology	-
Increased Potential for Elevated Groundwater		Yes	
Susceptibility to Groundwater Flooding (BGS)		Limited potential for groundwater flooding to occur, Potential for groundwater flooding of property situated below ground level, Potential for groundwater flooding to occur at surface	

Other Sources

Risk of flooding from reservoirs	The Long Term Flood Risk Map shows that the site is not at risk of flooding, in the event of a breach or failure of a reservoir.
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Summary

This entire site (100%) is defined as Flood Zone 1, Low probability of river flooding. The majority of the site lies within the Old Lodge Lane CDA.
 The AMI is not covered by the Arcadis surface water modelling study.
 The Risk of Flooding from Surface Water mapping shows risk of flooding at depths below 300mm during a 1% AEP event along Old Lodge Lane which runs through the centre of the site from south to north. During a 0.1% AEP event, flood risk along Old Lodge Lane increases to depths between 300-600mm, while a small area in the south is at risk of flooding below 300mm.
 There are 30 records of surface water flooding within 500m of the site boundary.

Site Specific Recommendations

A range of proposed uses may be considered across this AMI. Given the location within Flood Zone 1, development is not subject to the application of the Exception Test. However, given the potential for surface water flooding in this area, steps should be taken to ensure that development is safe for its lifetime considering the impact of climate change, will not increase flood risk elsewhere, and where possible will reduce flood risk overall. To this end, the following recommendations are made throughout the AMI:

- Opportunities should be sought for providing strategic SuDS systems across multiple plots within the AMI.
- Development proposals should seek to restrict surface water runoff rates to greenfield rates; demonstrate sustainable approaches to the management of surface water making use of SuDS including green roofs, rainwater harvesting and other innovative technologies; and incorporate soft landscaping, planting, and impermeable surfacing.
- The RoFSW mapping shows that the main routes through the AMI are at risk of surface water flooding. Development proposals within the AMI should consider provision of safe access/egress using alternative routes at lower risk of surface water flooding.
- Flood resistance and resilience measures should be adopted within ground level developments to reduce potential damage during surface water flooding and enable rapid re-occupancy.
- The risk of groundwater flooding and groundwater levels should be further assessed as part of a Site Investigation for specific development proposals within the AMI.

Site Name: Selsdon			
Site ID:	AMI06	Area (ha):	10.78
Proposed Use:	Mixed use.	Vulnerability Classification:	More Vulnerable

Flood Zones and Historic Flooding				
Flood Zone 1 (<0.1% AEP): 100%	Flood Zone 2 (0.1% AEP): 0%	Flood Zone 3 (1% AEP): 0%	Flood Zone 3b (5% AEP): 0%	Area Benefiting from Defences: 0%

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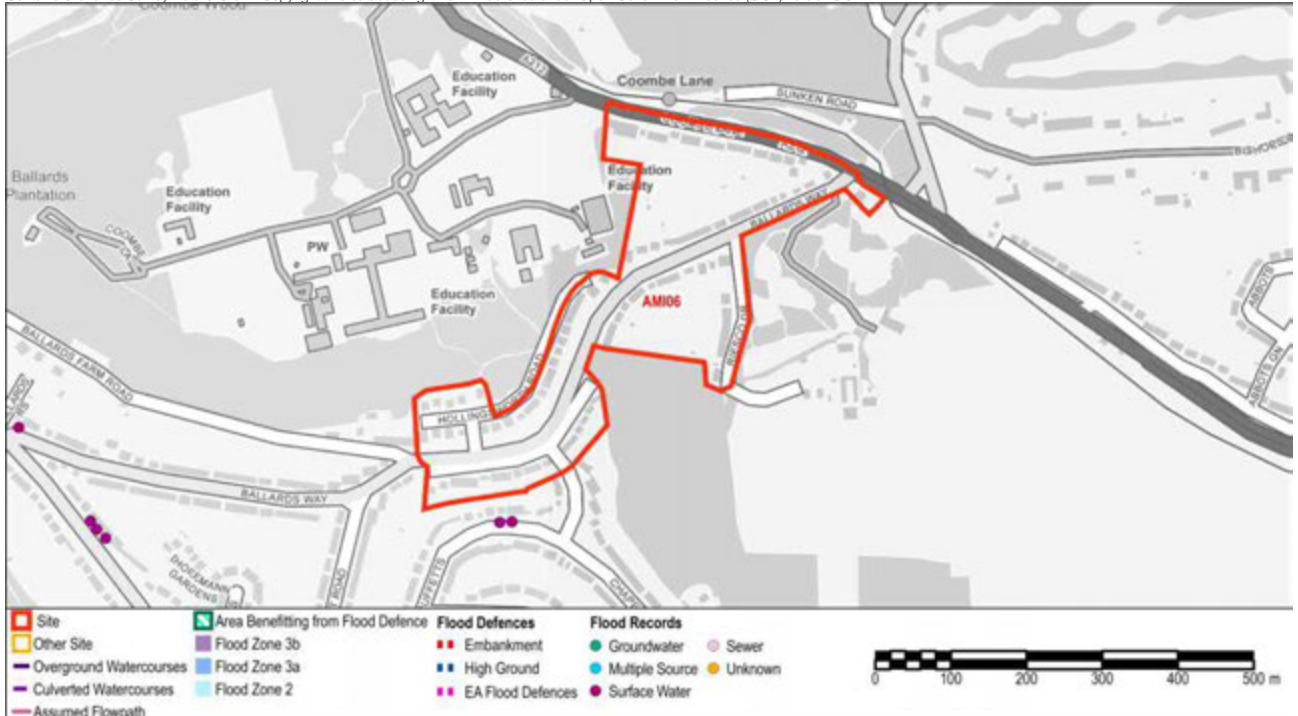


Figure 1 - Flood Zones and Flood Records

Flood Warning Area	None
Flood Records within 500m of the site:	Surface Water 5; Groundwater 0; Sewer 0; Multiple source 0; Unknown source 0

River Flooding

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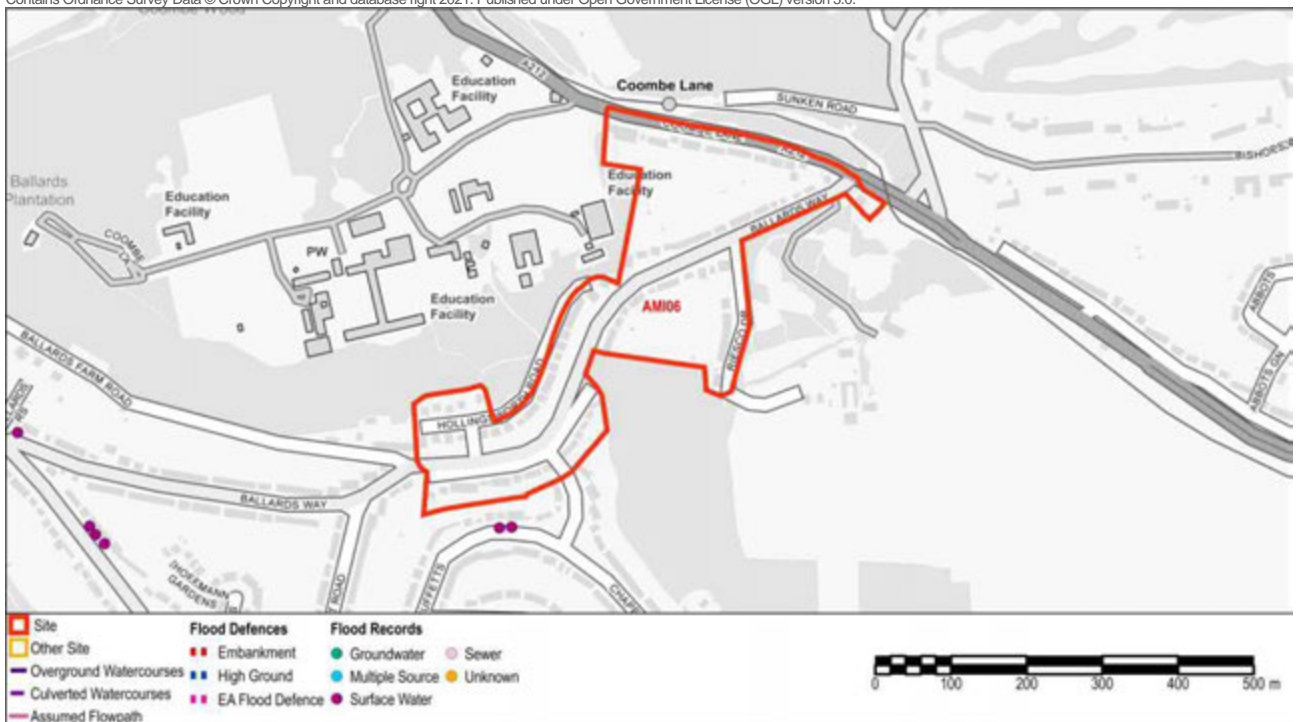


Figure 2 – River Wandle Maximum Flood Depth (1% AEP plus 35% climate change) Please note: Data does not extend to the extent of this figure.

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Site Name: Selsdon

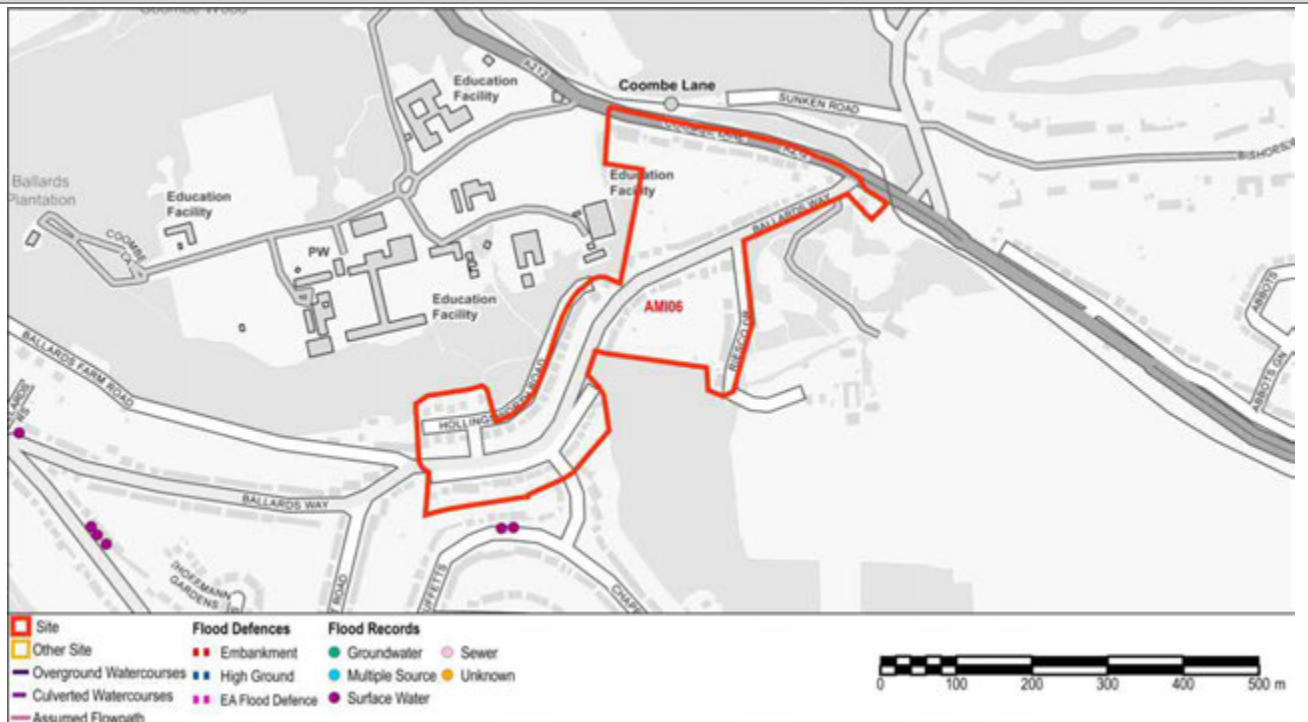


Figure 3 – River Wandle Maximum Flood Hazard (1% AEP plus 35% climate change) Please note: Data does not extend to the extent of this figure.

Surface Water Flooding

Critical Drainage Area	Group8_044 - Croham Road [Croydon]
Drainage Catchment	DC39, DC40, DC42, DC44

Site Name: Selsdon

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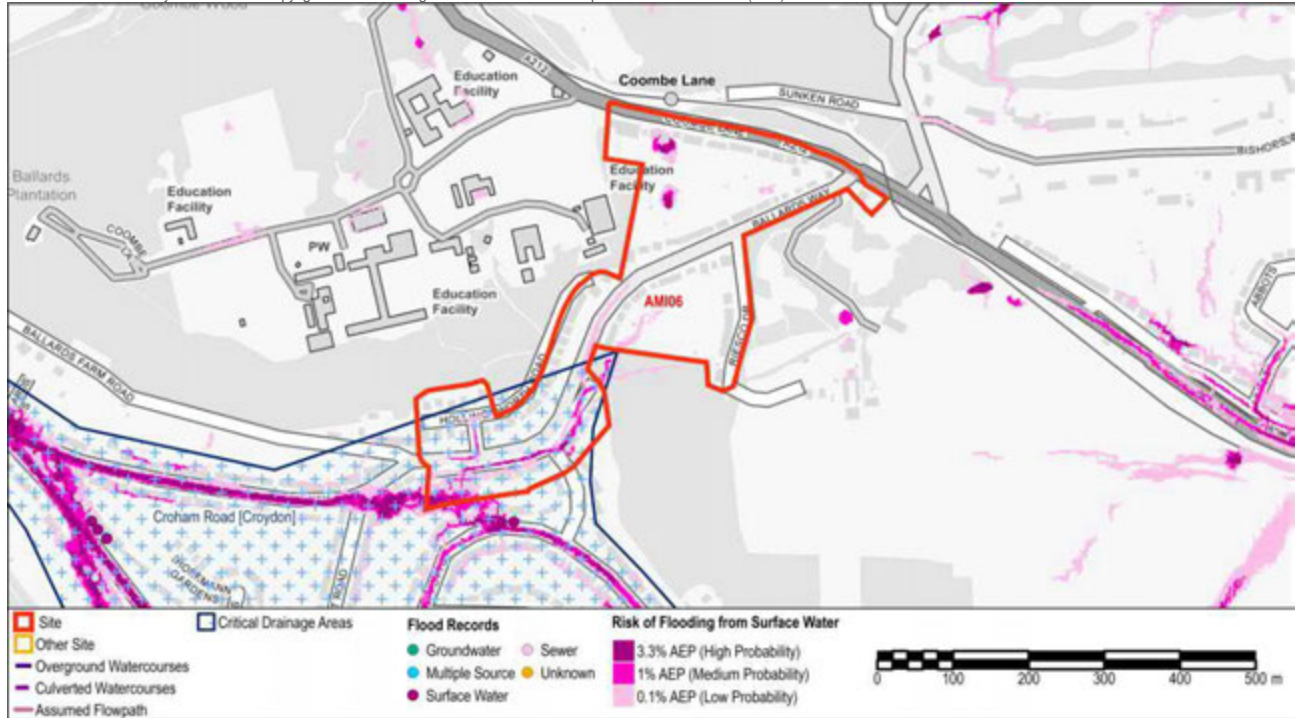


Figure 4 - Risk of Flooding from Surface Water (RoFSW) Flood Extents

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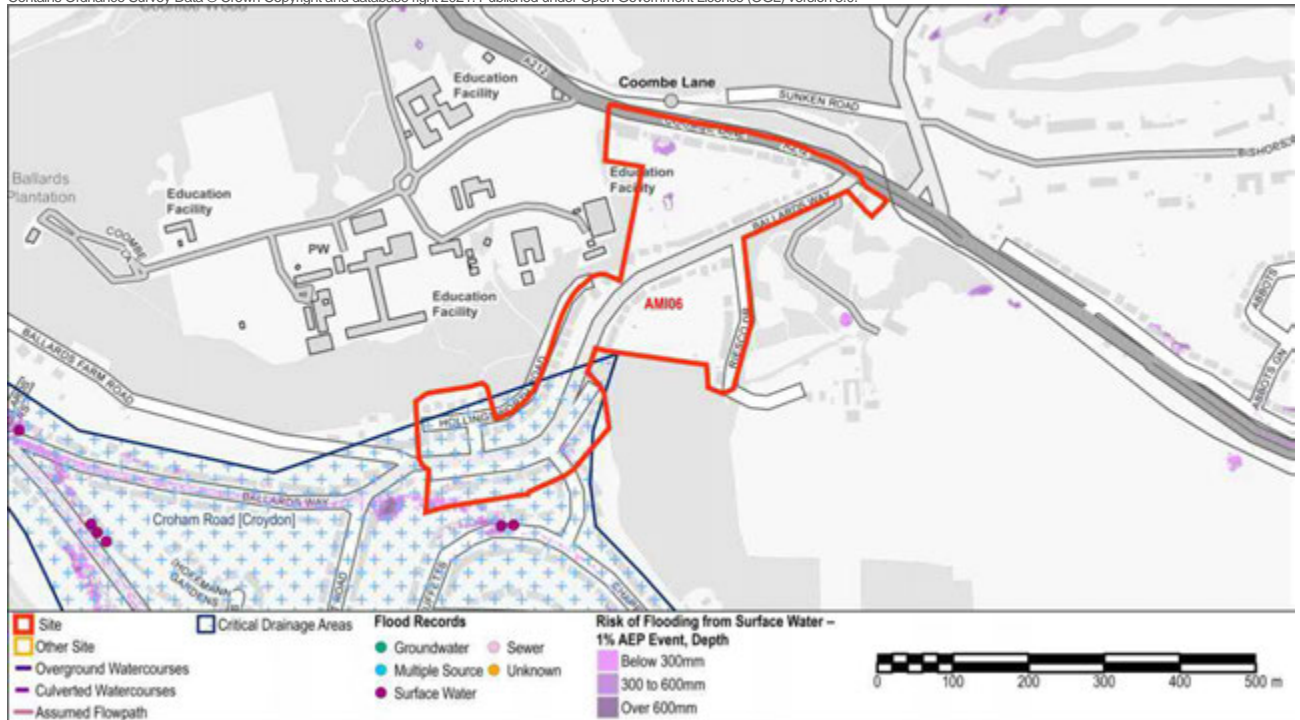


Figure 5 - Risk of Flooding from Surface Water (RoFSW) 1% AEP Flood Depth

Site Name: Selsdon

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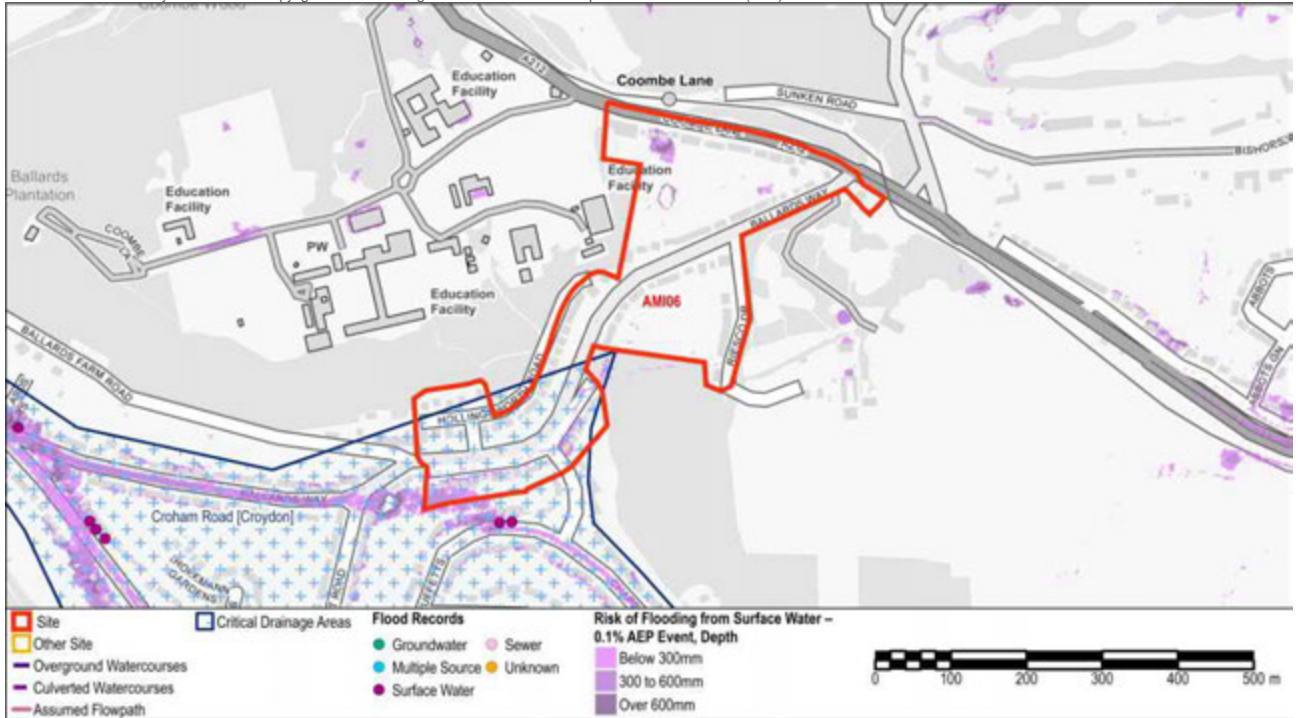


Figure 6 - Risk of Flooding from Surface Water (RoFSW) 0.1% AEP Flood Depth

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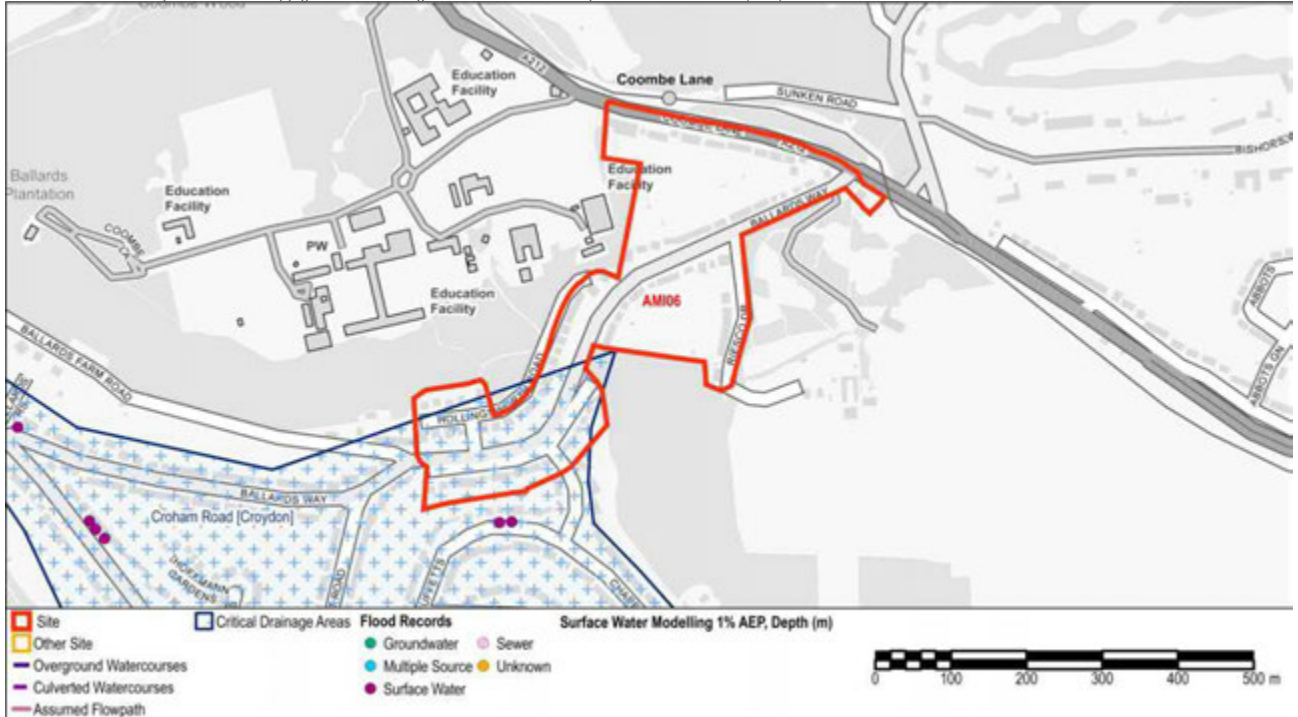
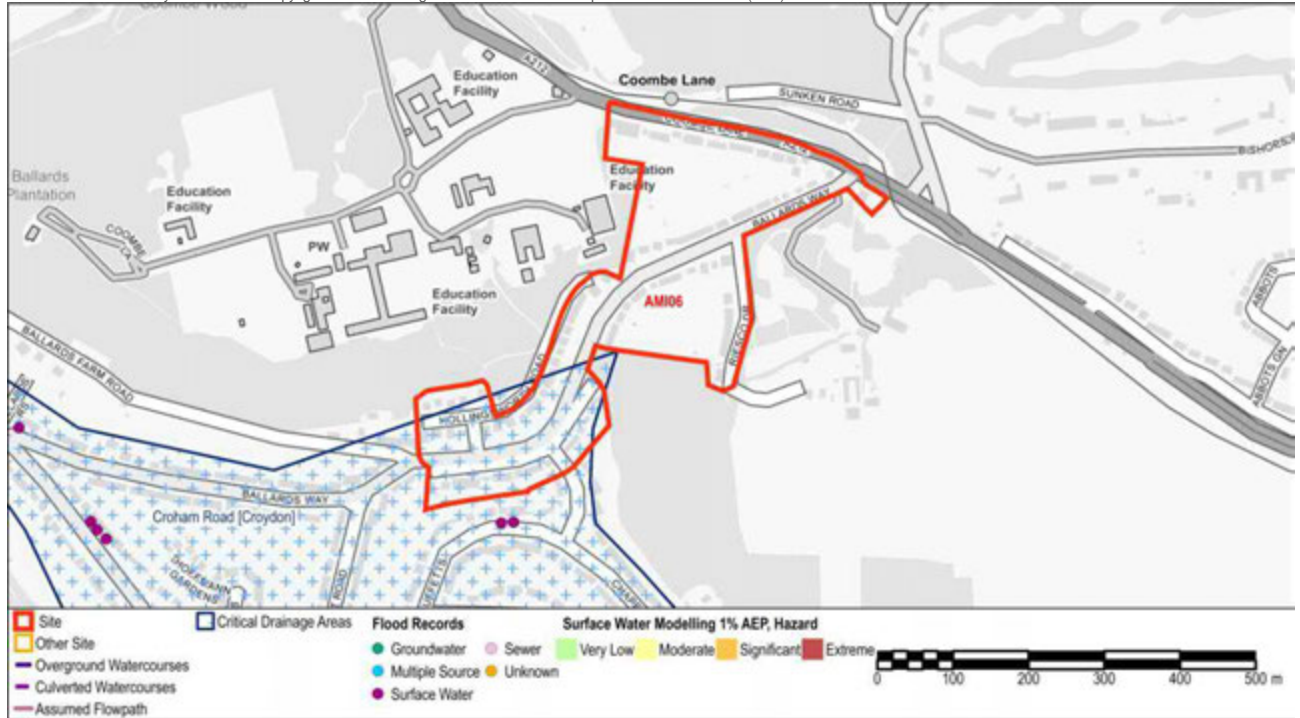


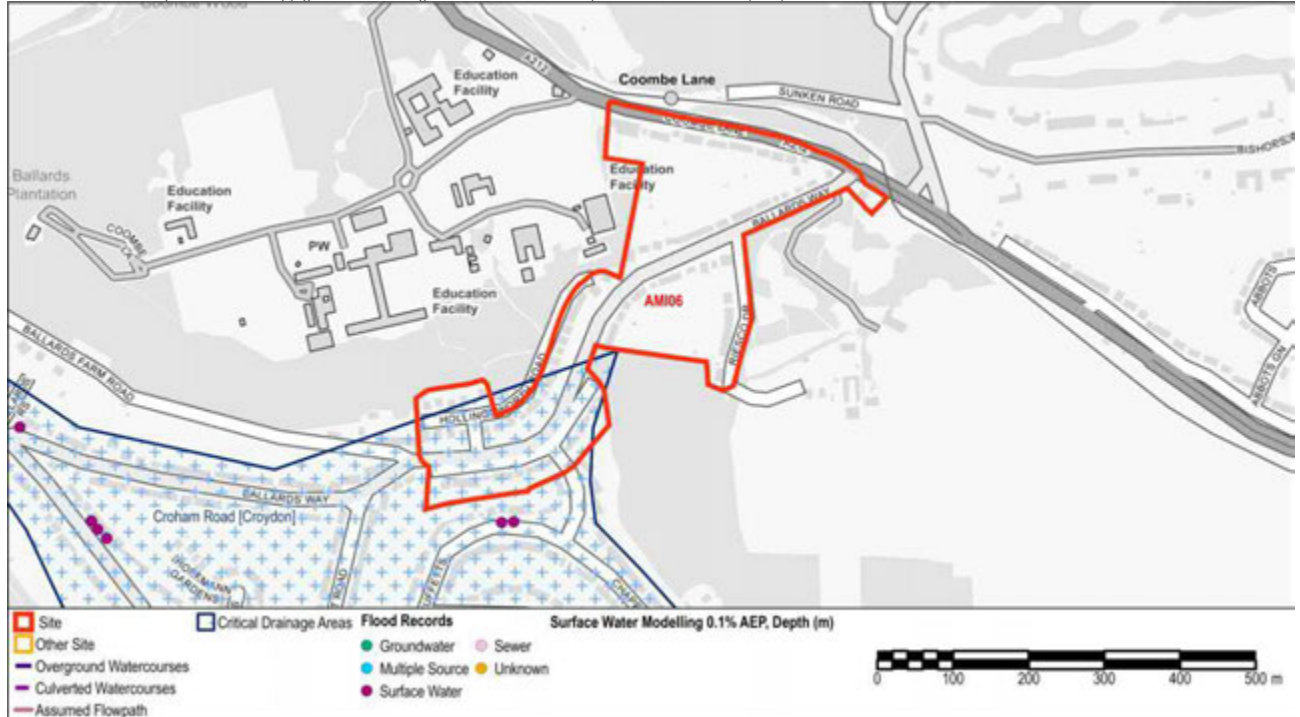
Figure 7 - Surface Water Modelling 1% AEP Flood Depth Please note: Data does not extend to the extent of this figure.

Site Name: Selsdon

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Site Name: Selsdon

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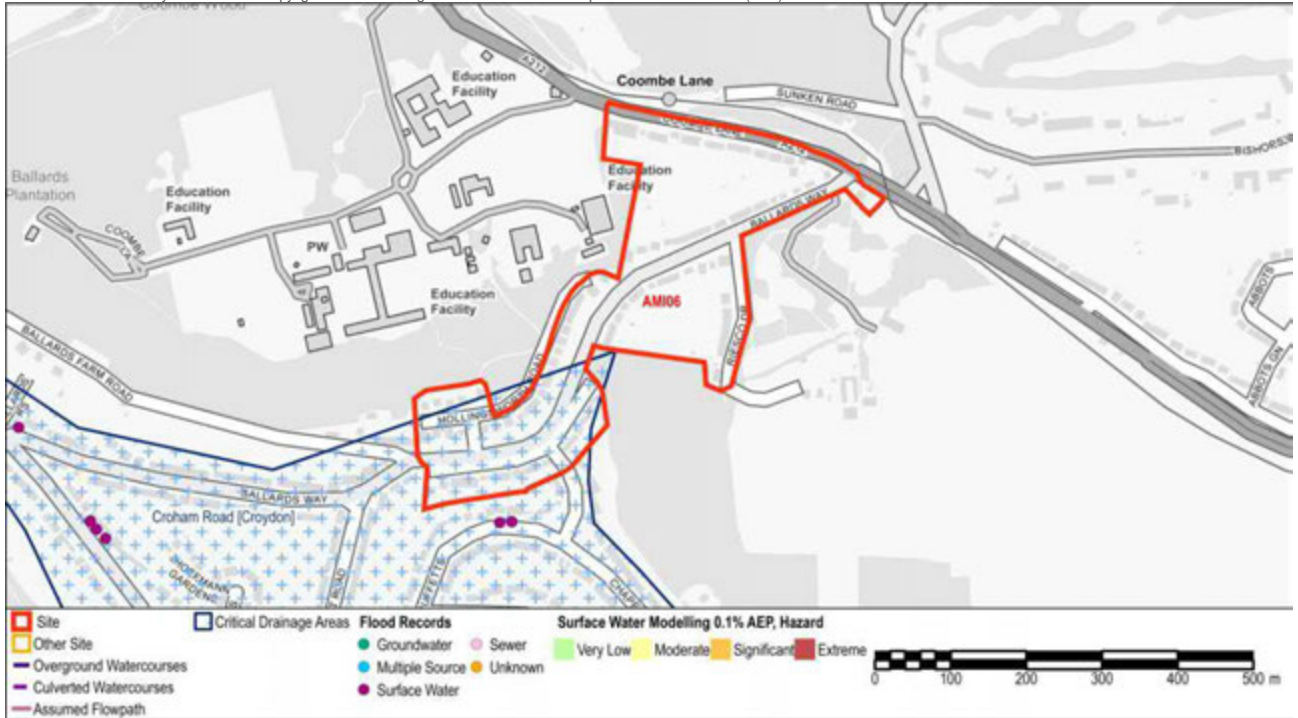


Figure 10 - Surface Water Modelling 0.1% AEP Flood Hazard Please note: Data does not extend to the extent of this figure.

Groundwater Flooding

Bedrock Geology	Lambeth Group, Thames Group, White Chalk Subgroup	Superficial Geology	-
Increased Potential for Elevated Groundwater			No
Susceptibility to Groundwater Flooding (BGS)			Limited potential for groundwater flooding to occur, Potential for groundwater flooding to occur at surface

Other Sources

Risk of flooding from reservoirs	The Long Term Flood Risk Map shows that the site is not at risk of flooding, in the event of a breach or failure of a reservoir.
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Summary

The entire site (100%) is defined as Flood Zone 1, Low probability of river flooding. The south west of the site is situated within the Croham Road CDA.

This AMI is not covered by the Arcadis surface water modelling study.

The Risk of Flooding from Surface Water mapping shows a flowpath that passes through the south of the AMI towards Ballards Way and The Ruffetts. There is a risk of flooding to depths up to 300mm during a 1% AEP event, increasing to 300-600mm during a 0.1% AEP event.

There are no flood records within this AMI.

Site Specific Recommendations

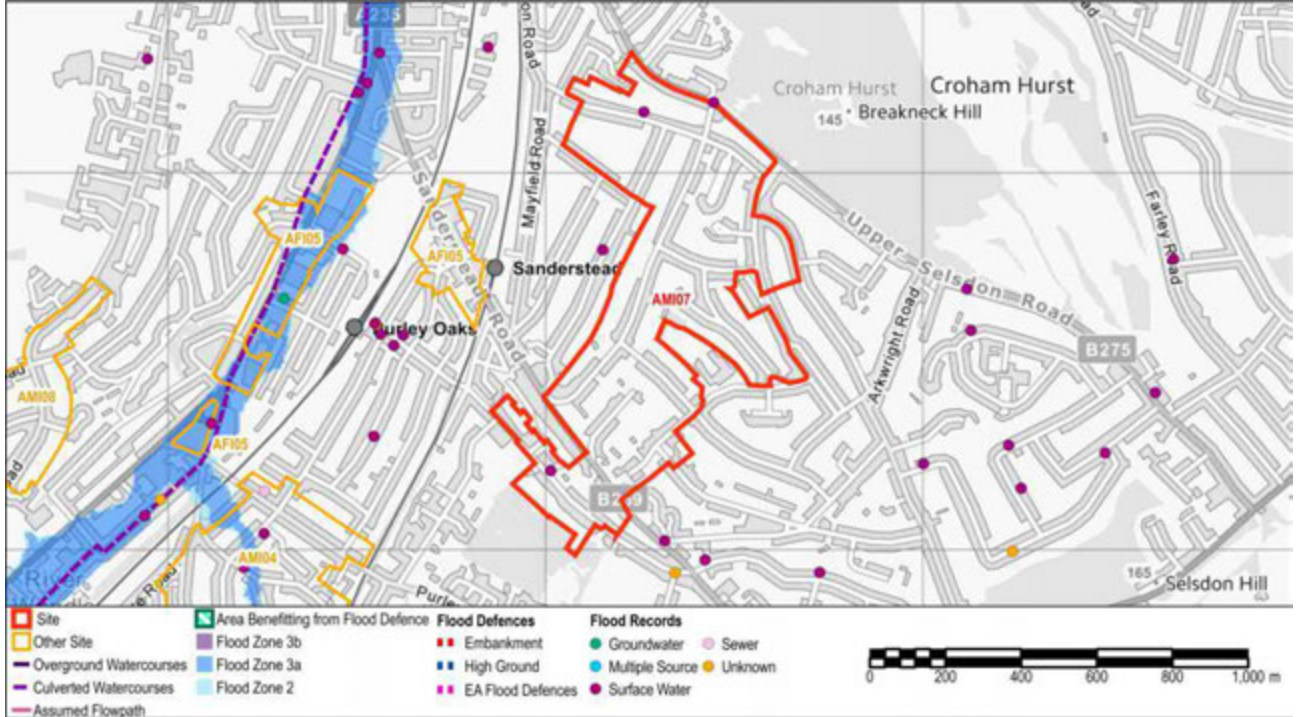
A range of proposed uses may be considered across this AMI. Given the location within Flood Zone 1, development is not subject to the application of the Exception Test. However, given the potential for surface water flooding in this area, steps should be taken to ensure that development is safe for its lifetime considering the impact of climate change, will not increase flood risk elsewhere, and where possible will reduce flood risk overall. To this end, the following recommendations are made throughout the AMI:

- Opportunities should be sought for providing strategic SuDS systems across multiple plots within the AMI.
- Development proposals should seek to restrict surface water runoff rates to greenfield rates; demonstrate sustainable approaches to the management of surface water making use of SuDS including green roofs, rainwater harvesting and other innovative technologies; and incorporate soft landscaping, planting, and impermeable surfacing.
- The RoFSW mapping shows that the main routes through the AMI are at risk of surface water flooding. Development proposals within the AMI should consider provision of safe access/egress using alternative routes at lower risk of surface water flooding.
- Flood resistance and resilience measures should be adopted within ground level developments to reduce potential damage during surface water flooding and enable rapid re-occupancy.
- The risk of groundwater flooding and groundwater levels should be further assessed as part of a Site Investigation for specific development proposals within the AMI.

Site Name: South Croydon Sanderstead			
Site ID:	AMI07	Area (ha):	46.25
Proposed Use:	Mixed use.	Vulnerability Classification:	More Vulnerable

Flood Zones and Historic Flooding				
Flood Zone 1 (<0.1% AEP): 100%	Flood Zone 2 (0.1% AEP): 0%	Flood Zone 3 (1% AEP): 0%	Flood Zone 3b (5% AEP): 0%	Area Benefiting from Defences: 0%

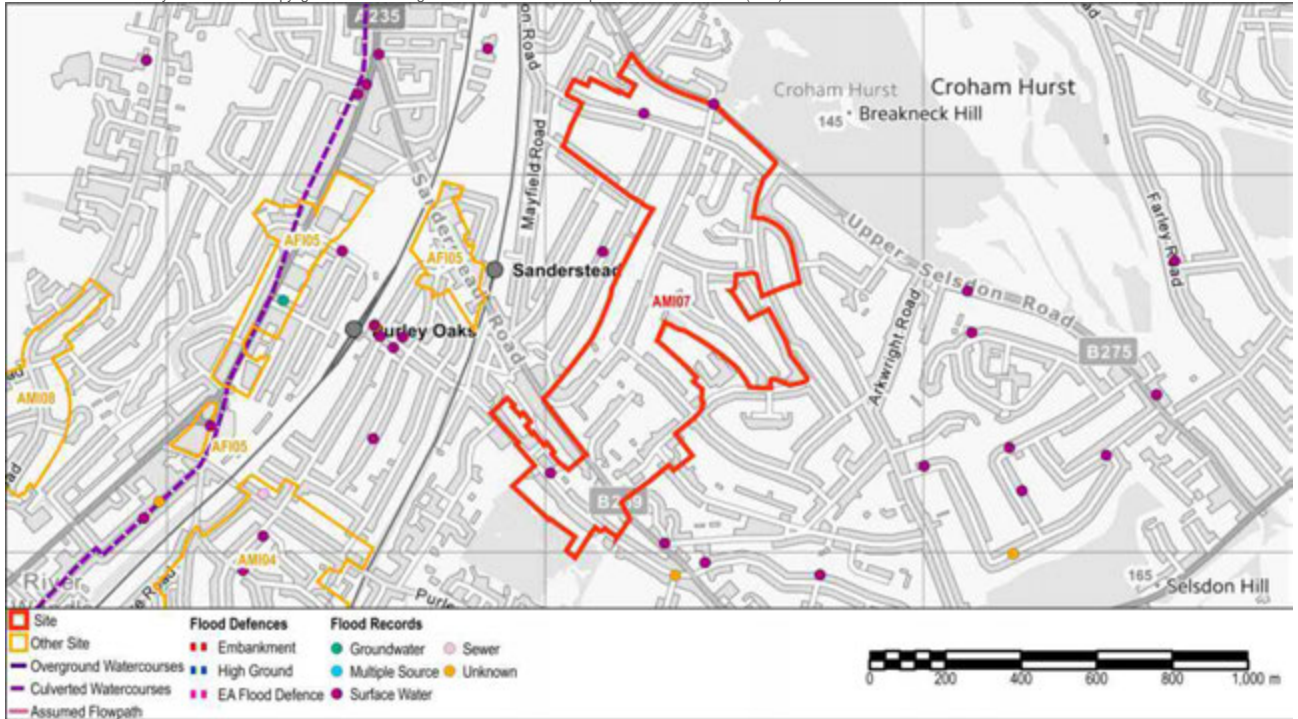
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Flood Warning Area	None
Flood Records within 500m of the site:	Surface Water 21; Groundwater 0; Sewer 0; Multiple source 0; Unknown source 3

River Flooding

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Site Name: South Croydon Sanderstead

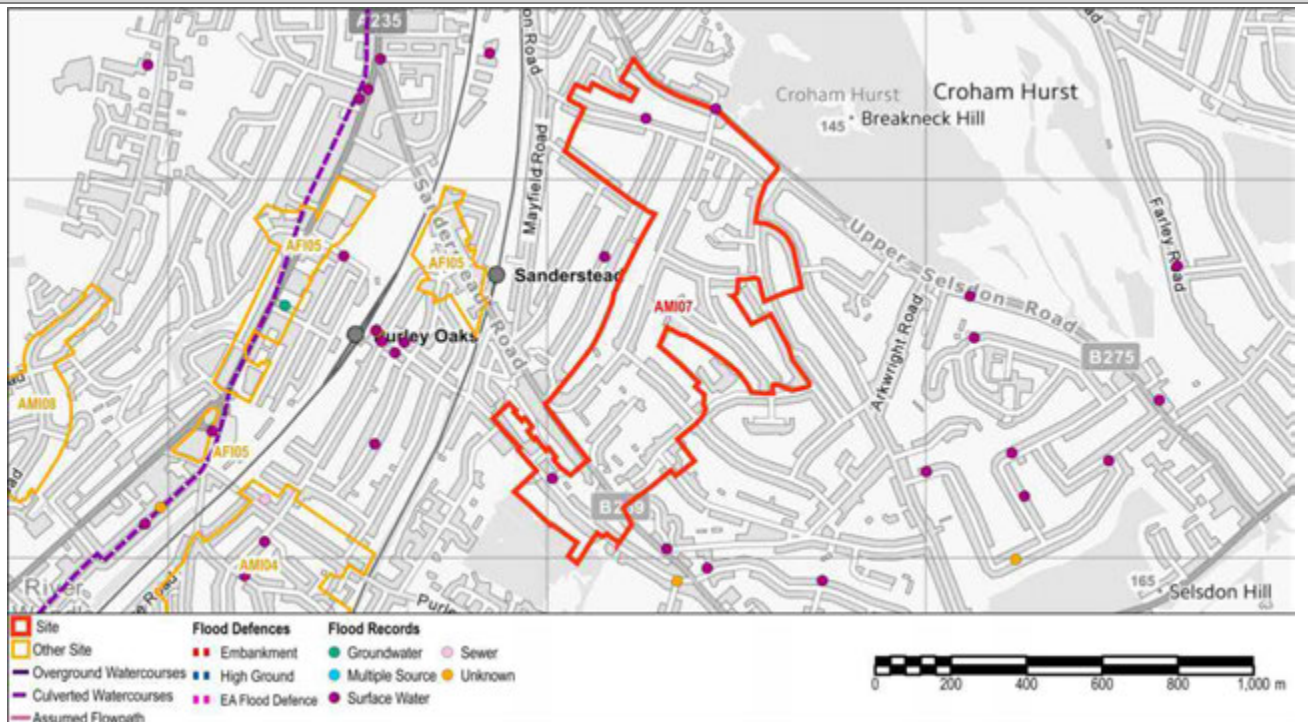


Figure 3 – River Wandle Maximum Flood Hazard (1% AEP plus 35% climate change) Please note: Data does not extend to the extent of this figure.

Surface Water Flooding

Critical Drainage Area	Group8_043 - Carlton Road & Industrial Estate [Croydon]
Drainage Catchment	DC45, DC46

Site Name: South Croydon Sanderstead

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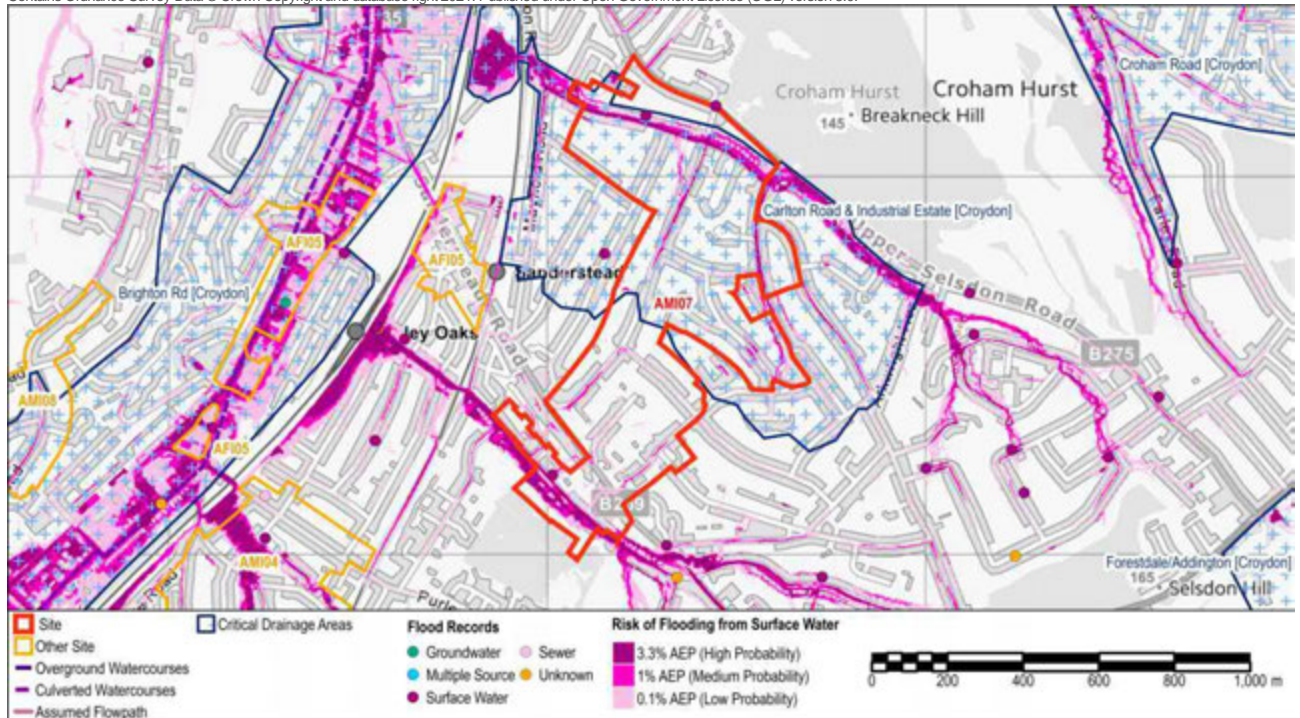


Figure 4 - Risk of Flooding from Surface Water (RoFSW) Flood Extents

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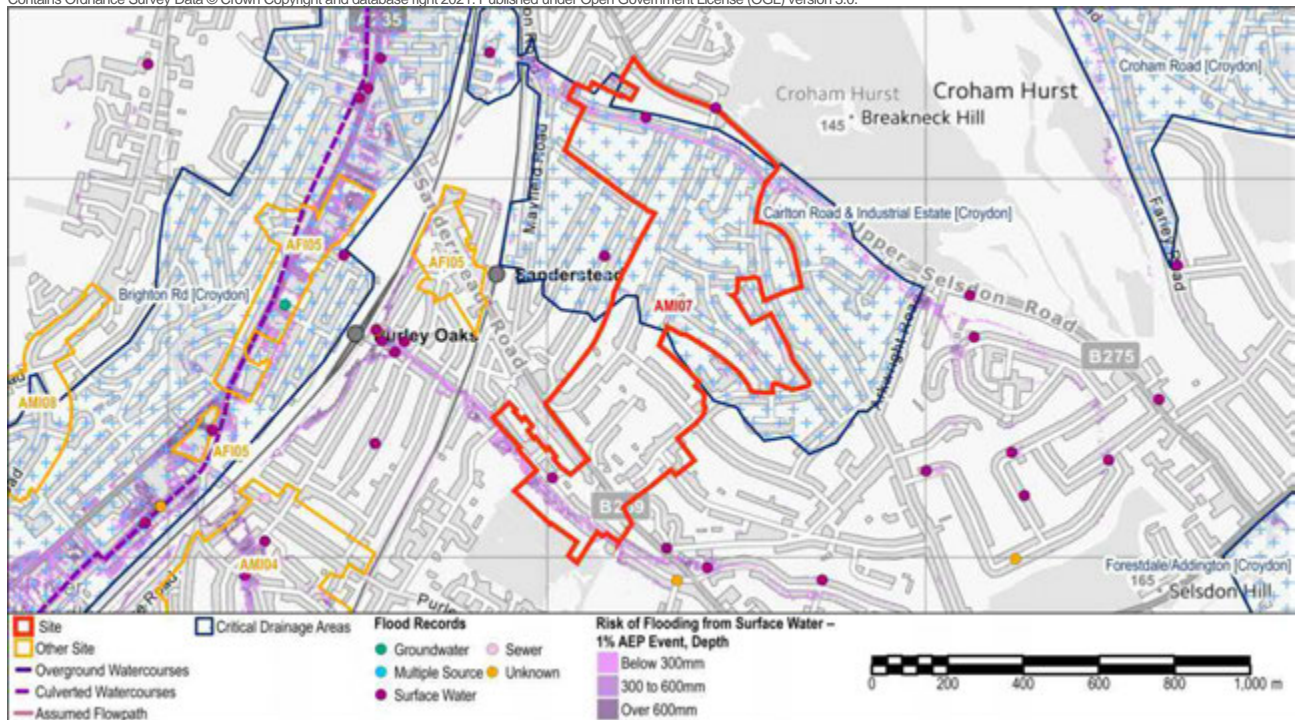


Figure 5 - Risk of Flooding from Surface Water (RoFSW) 1% AEP Flood Depth

Site Name: South Croydon Sanderstead

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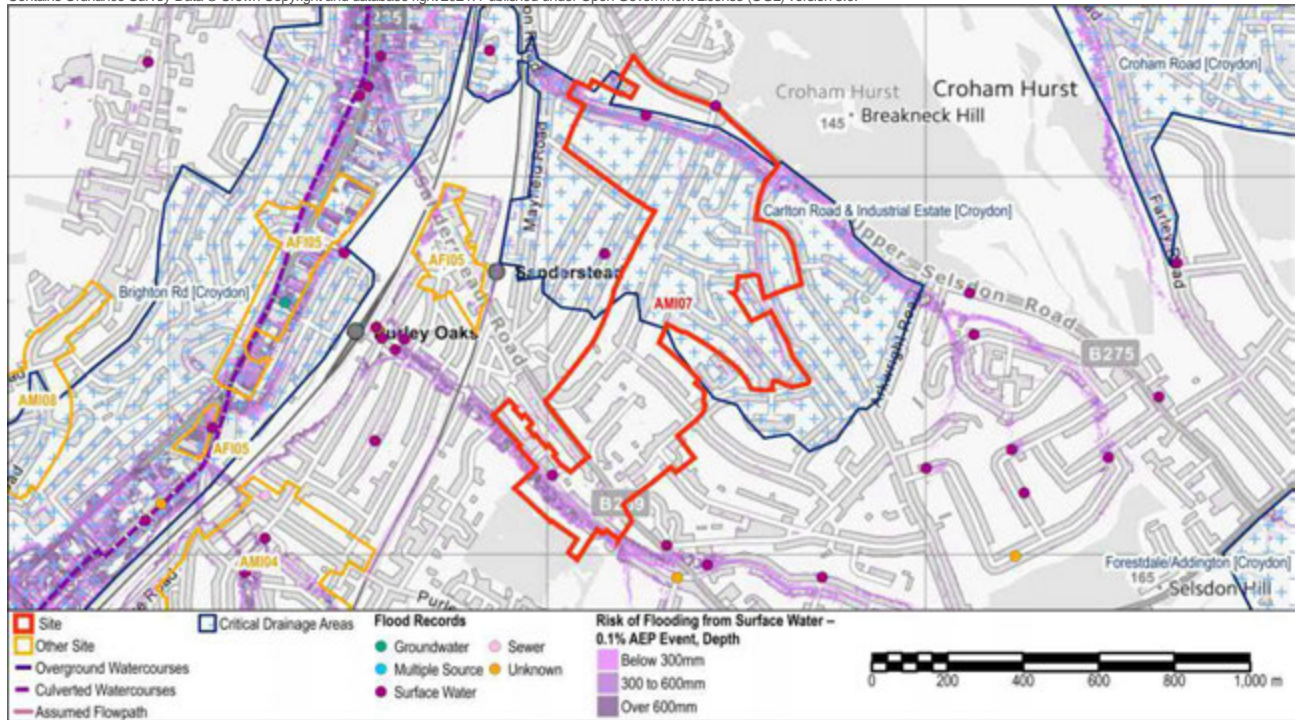


Figure 6 - Risk of Flooding from Surface Water (RoFSW) 0.1% AEP Flood Depth

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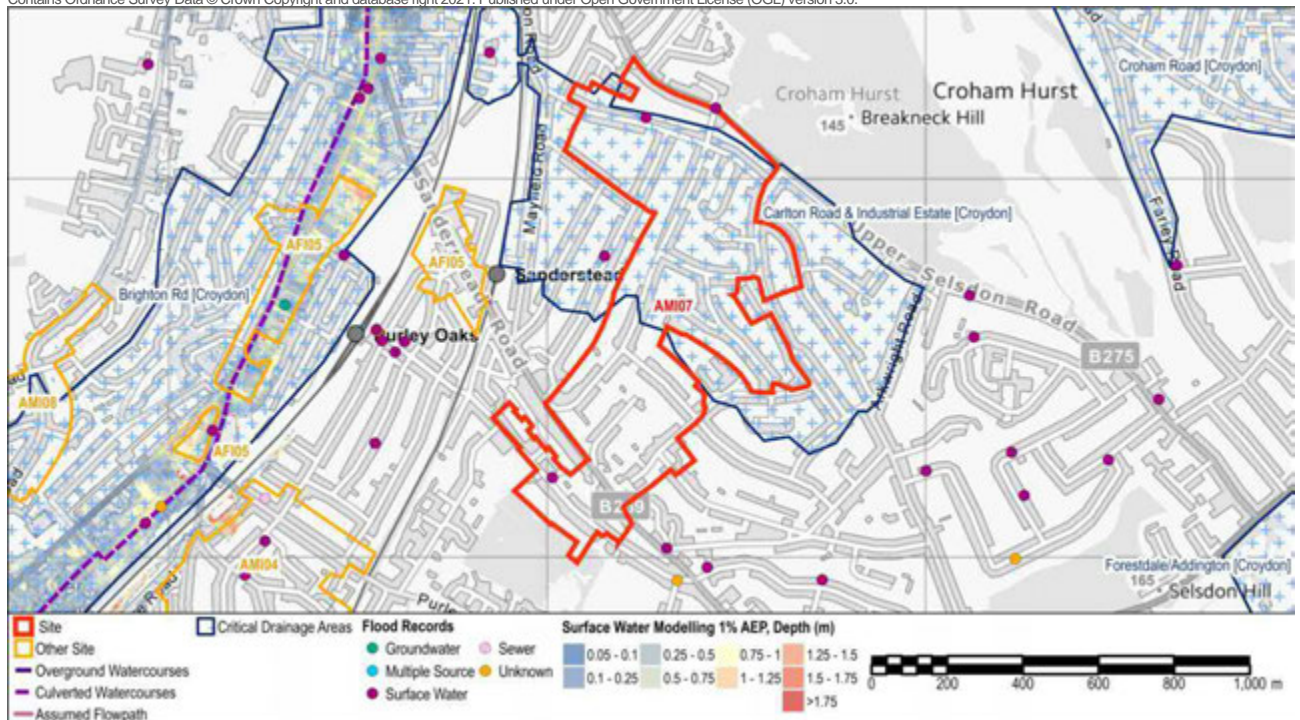


Figure 7 - Surface Water Modelling 1% AEP Flood Depth

Site Name: South Croydon Sanderstead

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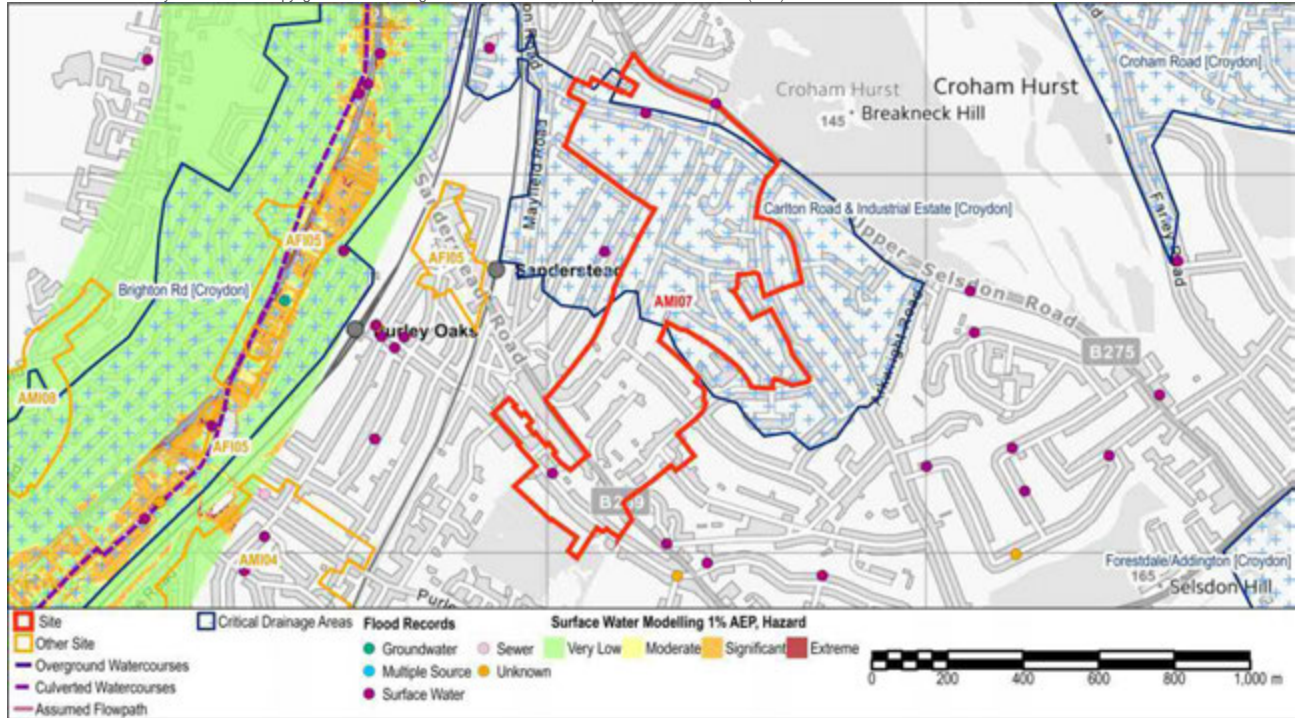


Figure 8 - Surface Water Modelling 1% AEP Flood Hazard

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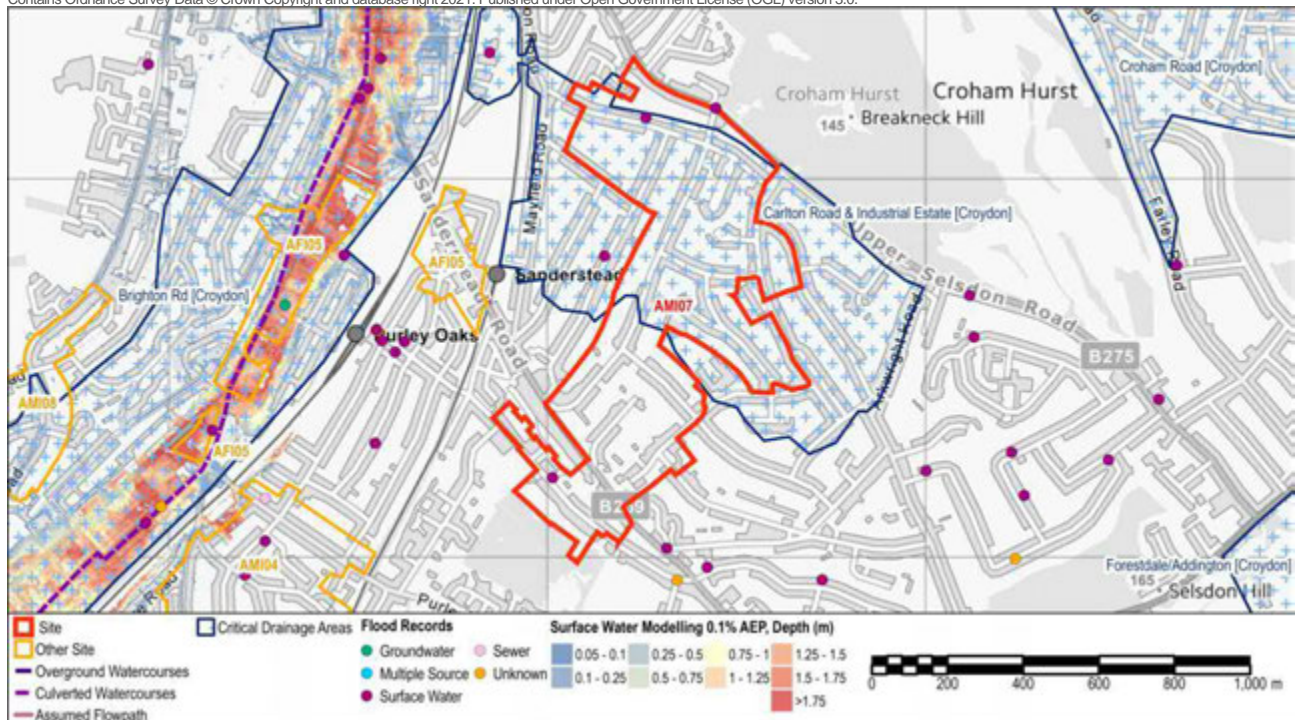


Figure 9 - Surface Water Modelling 0.1% AEP Flood Depth

Site Name: South Croydon Sanderstead

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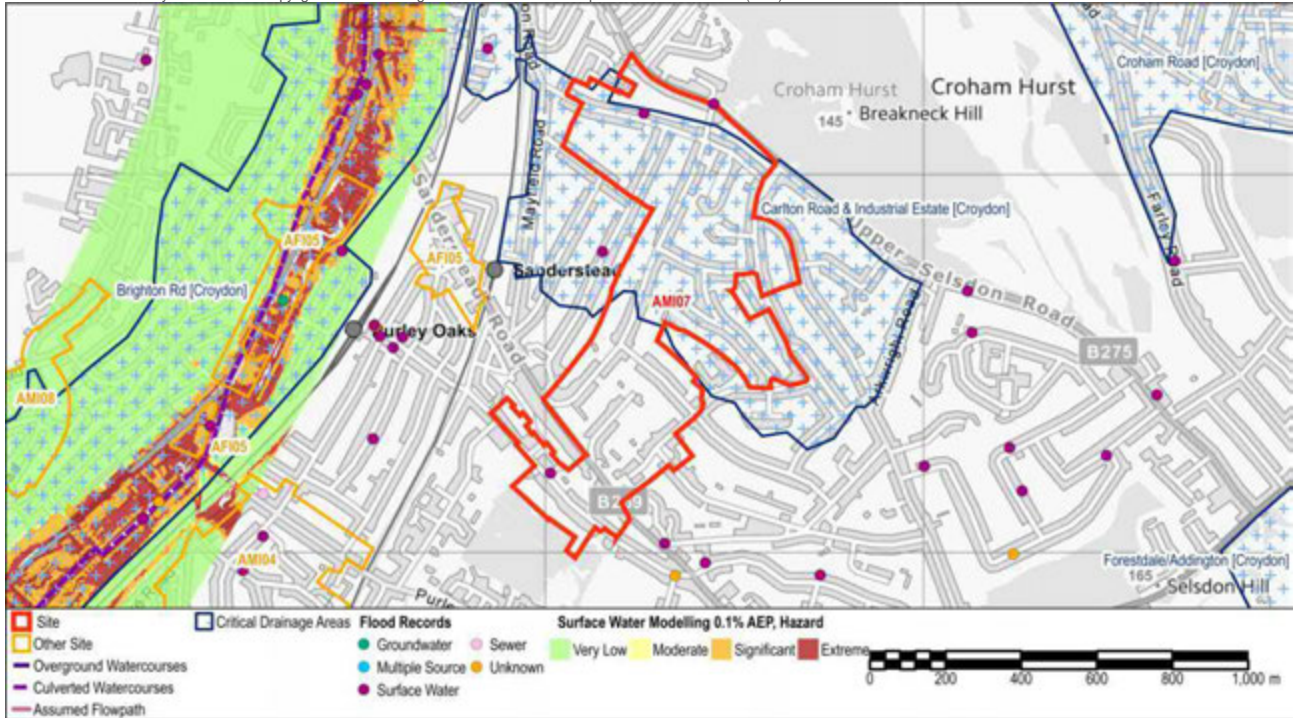


Figure 10 - Surface Water Modelling 0.1% AEP Flood Hazard

Groundwater Flooding

Bedrock Geology	White Chalk Subgroup	Superficial Geology	-
Increased Potential for Elevated Groundwater	Yes		
Susceptibility to Groundwater Flooding (BGS)	Limited potential for groundwater flooding to occur, Potential for groundwater flooding of property situated below ground level, Potential for groundwater flooding to occur at surface		

Other Sources

Risk of flooding from reservoirs	The Long Term Flood Risk Map shows that the site is not at risk of flooding, in the event of a breach or failure of a reservoir.
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Summary

The entire site (100%) is defined as Flood Zone 1, Low probability of river flooding.

The AMI is not covered by the Arcadis surface water modelling study; however, the Risk of Flooding from Surface Water mapping identifies significant surface water flowpaths through the AMI along Essenden Road (in the north) and Purley Oaks Road (in the south). During a 0.1% AEP event, modelled flood depths of > 600mm are predicted to occur along both roads.

The centre of the site lies within the Carlton Road & Industrial State CDA. There are three records of surface water flooding within the site boundary, one to the south and two in the north.

Site Specific Recommendations

A range of proposed uses may be considered across this AMI. Given the location within Flood Zone 1, development is not subject to the application of the Exception Test. However, given the potential for surface water flooding in this area, steps should be taken to ensure that development is safe for its lifetime considering the impact of climate change, will not increase flood risk elsewhere, and where possible will reduce flood risk overall. To this end, the following recommendations are made throughout the AMI:

- Opportunities should be sought for providing strategic SuDS systems across multiple plots within the AMI.
- Development proposals should seek to restrict surface water runoff rates to greenfield rates; demonstrate sustainable approaches to the management of surface water making use of SuDS including green roofs, rainwater harvesting and other innovative technologies; and incorporate soft landscaping, planting and impermeable surfacing.
- The RoFSW mapping shows that the main routes through the AMI are at risk of surface water flooding. Development proposals within the AMI should consider provision of safe access/egress using alternative routes at lower risk of surface water flooding.
- Flood resistance and resilience measures should be adopted within ground level developments to reduce potential damage during surface water flooding and enable rapid re-occupancy.
- The risk of groundwater flooding and groundwater levels should be further assessed as part of a Site Investigation for specific development proposals within the AMI.

Site Name: Purley North			
Site ID:	AMI08	Area (ha):	40.62
Proposed Use:	Mixed use.	Vulnerability Classification:	More Vulnerable

Flood Zones and Historic Flooding				
Flood Zone 1 (<0.1% AEP): 100%	Flood Zone 2 (0.1% AEP): 0%	Flood Zone 3 (1% AEP): 0%	Flood Zone 3b (5% AEP): 0%	Area Benefiting from Defences: 0%

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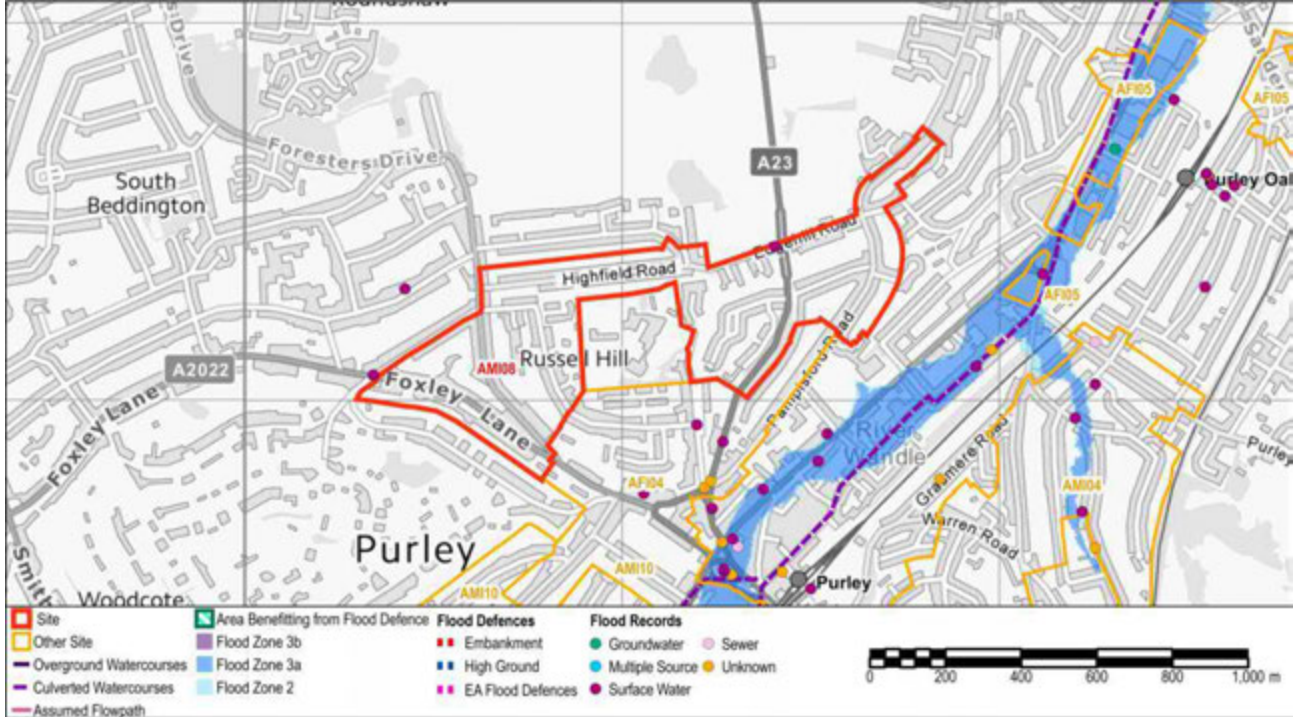


Figure 1 - Flood Zones and Flood Records

Flood Warning Area	None
Flood Records within 500m of the site:	Surface Water 15; Groundwater 1; Sewer 2; Multiple source 0; Unknown source 8

River Flooding

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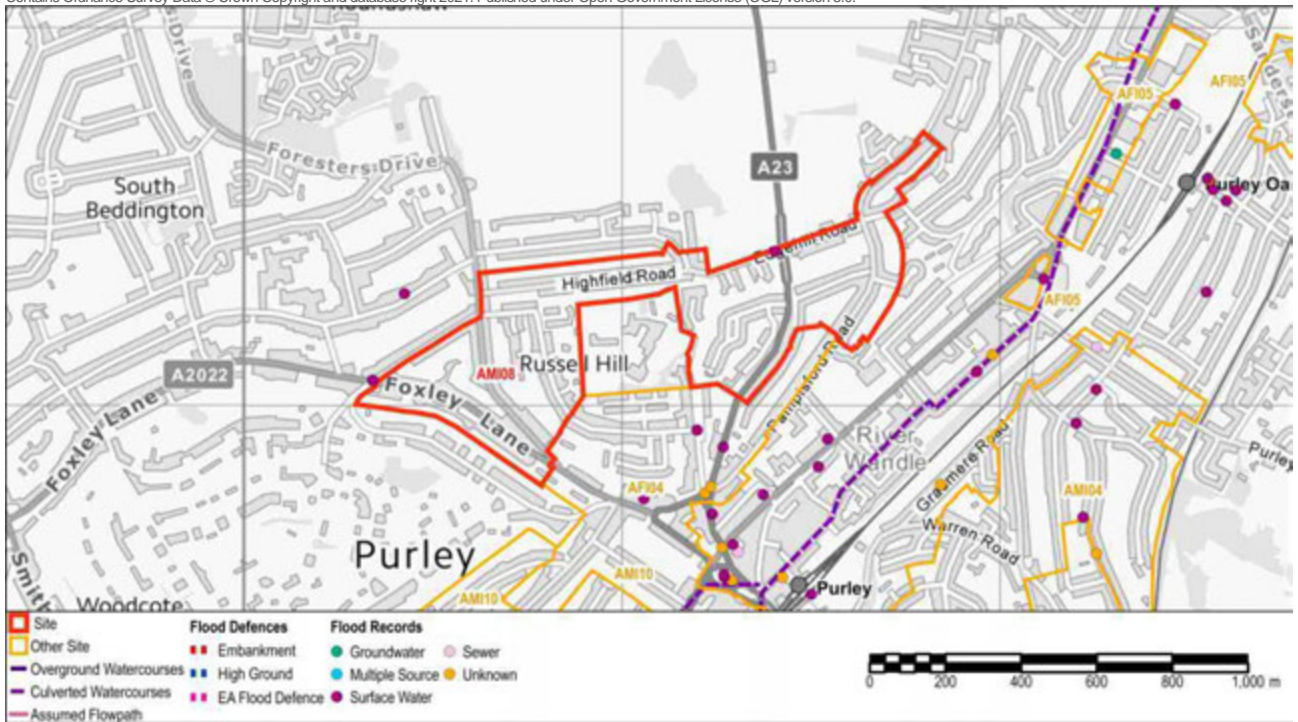


Figure 2 – River Wandle Maximum Flood Depth (1% AEP plus 35% climate change) Please note: Data does not extend to the extent of this figure.

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Site Name: Purley North

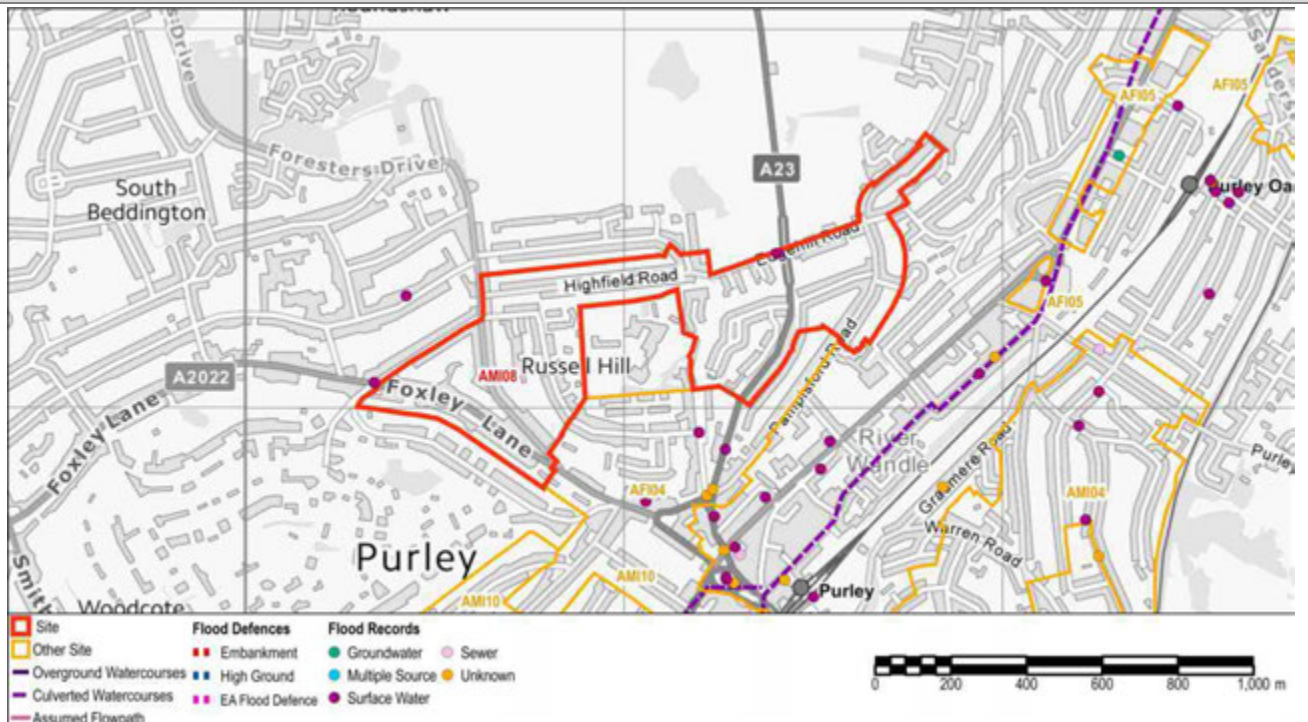


Figure 3 – River Wandle Maximum Flood Hazard (1% AEP plus 35% climate change) Please note: Data does not extend to the extent of this figure.

Surface Water Flooding

Critical Drainage Area	Group8_040, Group8_041 - Brighton Rd [Croydon], Purley Cross [Croydon]
Drainage Catchment	DC37, DC39, DC47

Site Name: Purley North

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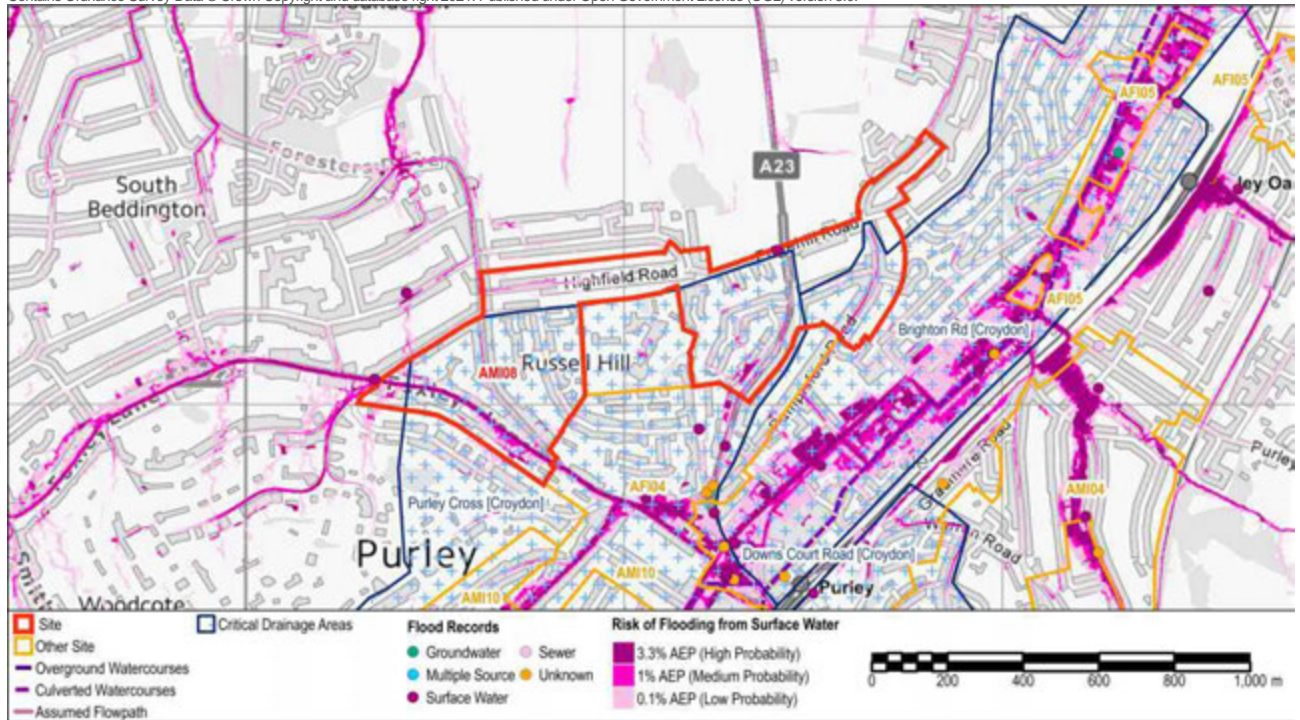


Figure 4 - Risk of Flooding from Surface Water (RoFSW) Flood Extents

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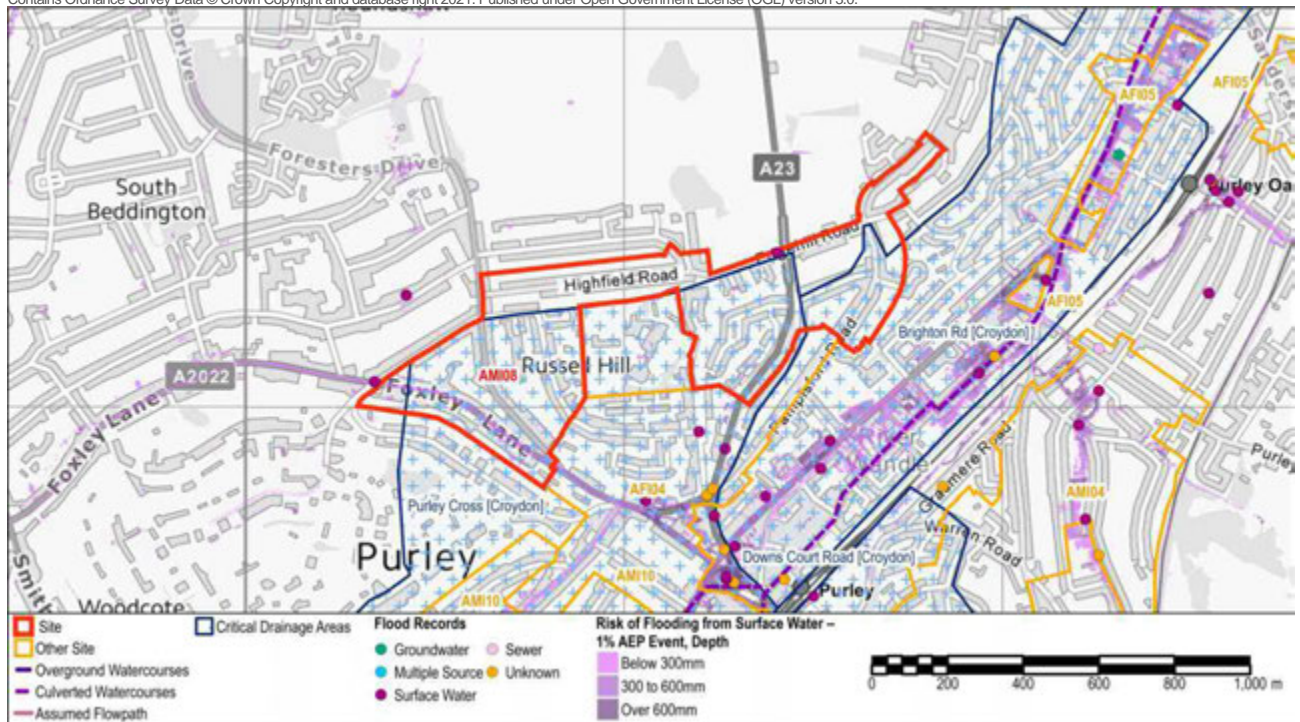


Figure 5 - Risk of Flooding from Surface Water (RoFSW) 1% AEP Flood Depth

Site Name: Purley North

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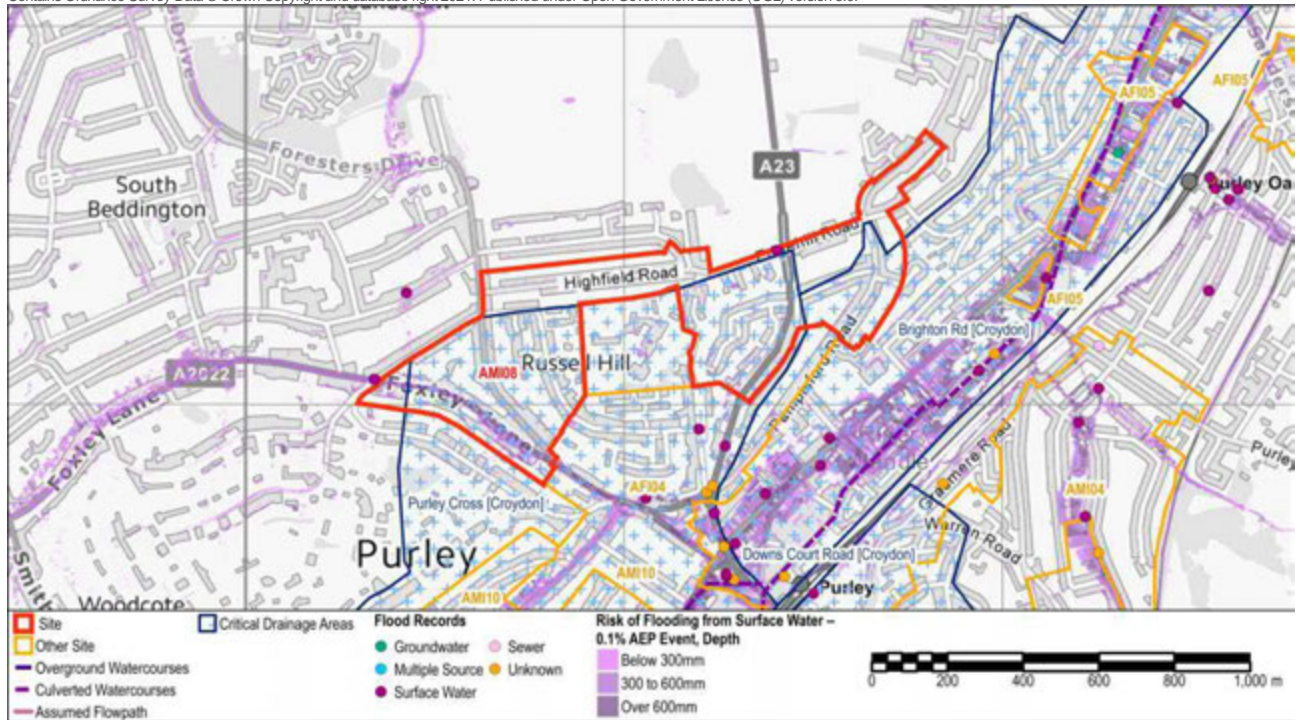


Figure 6 - Risk of Flooding from Surface Water (RoFSW) 0.1% AEP Flood Depth

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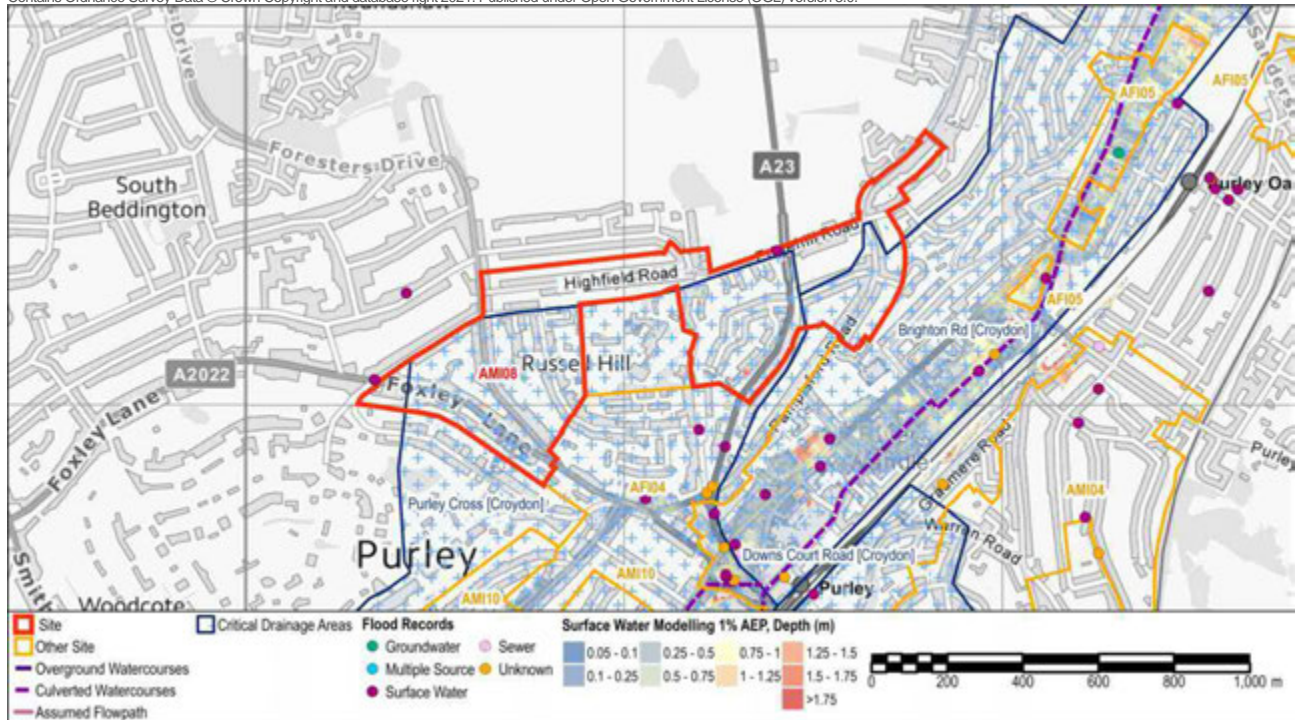
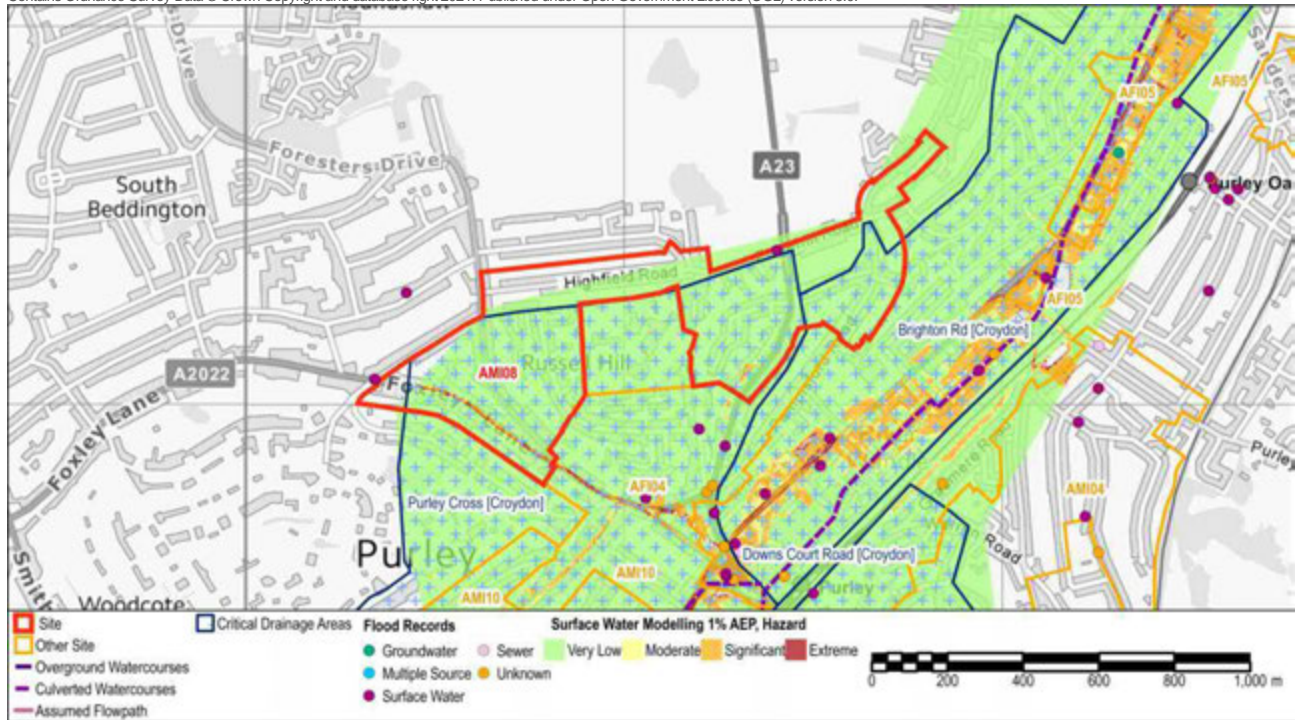


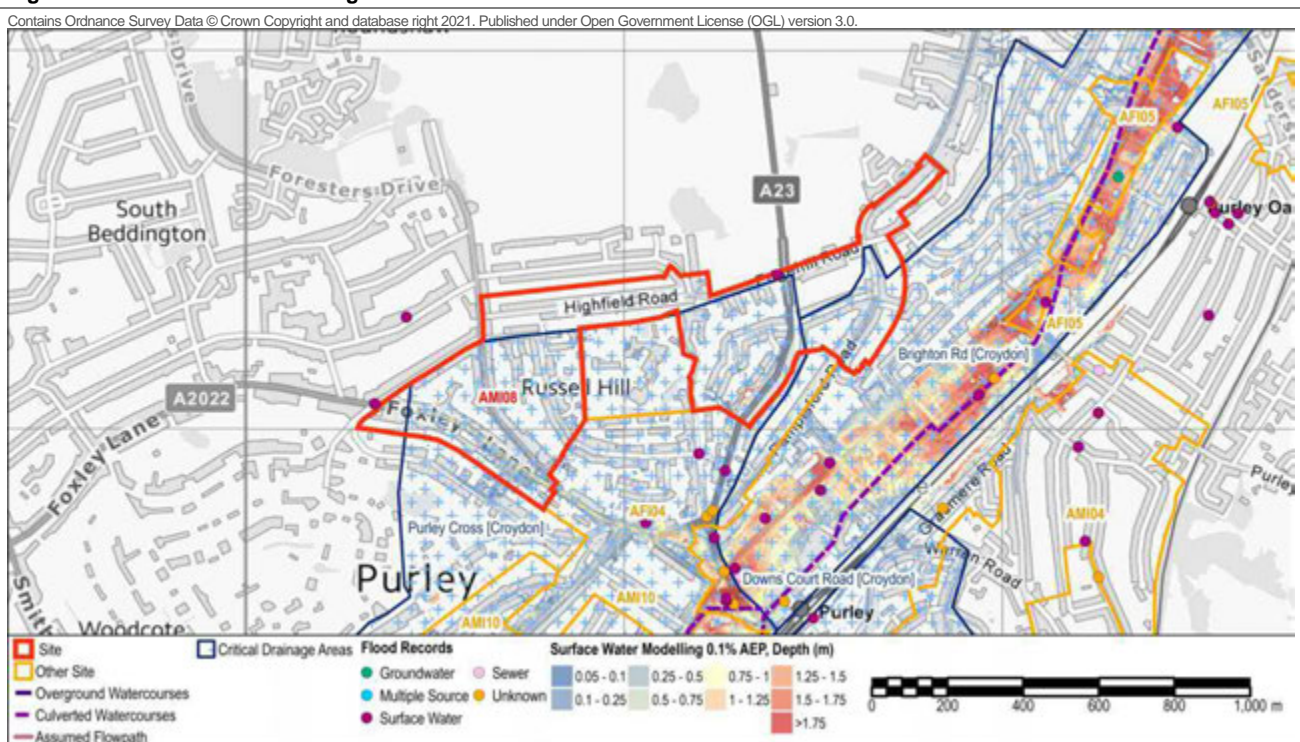
Figure 7 - Surface Water Modelling 1% AEP Flood Depth

Site Name: Purley North

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Site Name: Purley North

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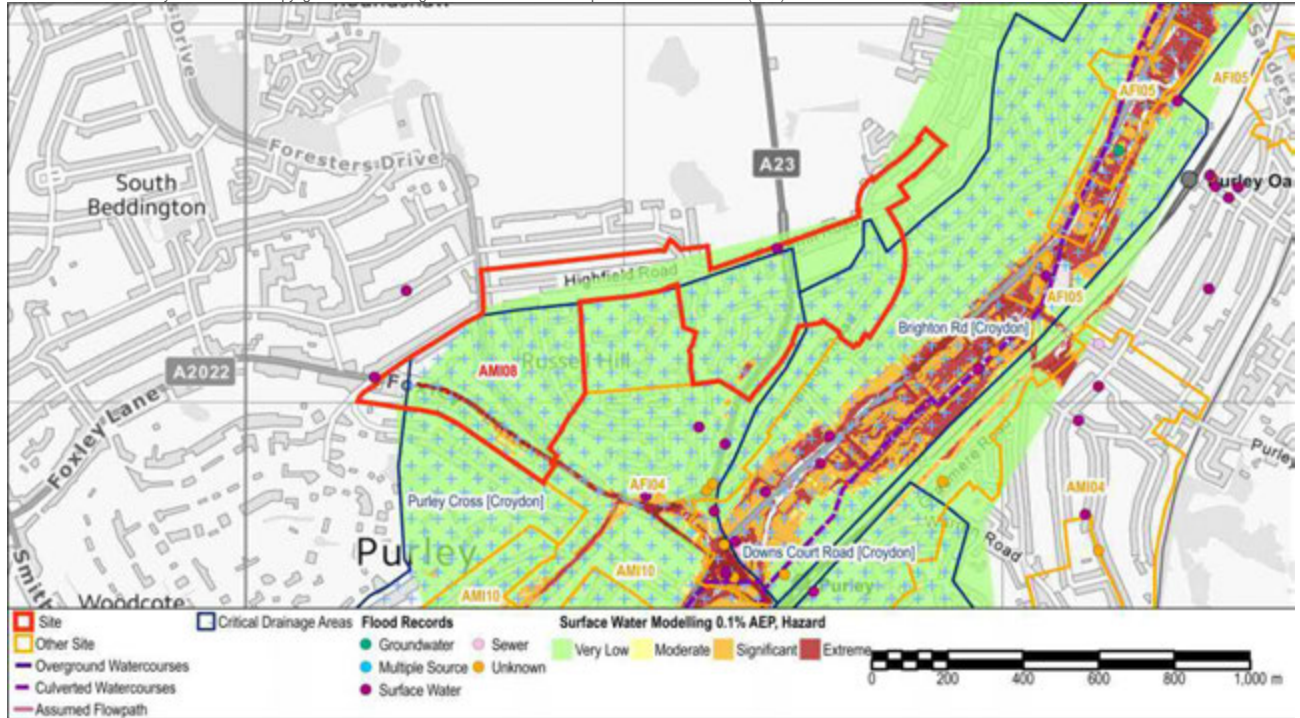


Figure 10 - Surface Water Modelling 0.1% AEP Flood Hazard

Groundwater Flooding

Bedrock Geology	White Chalk Subgroup	Superficial Geology	-
Increased Potential for Elevated Groundwater	Yes		
Susceptibility to Groundwater Flooding (BGS)	Limited potential for groundwater flooding to occur, Potential for groundwater flooding of property situated below ground level, Potential for groundwater flooding to occur at surface		

Other Sources

Risk of flooding from reservoirs	The Long Term Flood Risk Map shows that the site is not at risk of flooding, in the event of a breach or failure of a reservoir.
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Summary

The entire site (100%) is defined as Flood Zone 1, Low probability of river flooding.

The site lies within the Purley Cross CDA and the Brighton Road CDA. There are records of surface water flooding within the AMI and surrounding area.

The Risk of Flooding from Surface Water mapping shows there are a number of areas at particular risk of surface water flooding in the AMI including Foxley Lane, Plough Lane, Highfield Road, Purley Way and Pampisford Road. These areas are at risk of flooding to depths over 600mm during a 1% AEP event.

This area drains towards the Brighton Road which is shown to be at significant risk of surface water flooding, with hazard ratings of Significant and Extreme.

Site Specific Recommendations

A range of proposed uses may be considered across this AMI. Given the location within Flood Zone 1, development is not subject to the application of the Exception Test. However, given the potential for surface water flooding in this area, steps should be taken to ensure that development is safe for its lifetime considering the impact of climate change, will not increase flood risk elsewhere, and where possible will reduce flood risk overall. To this end, the following recommendations are made throughout the AMI:

- Opportunities should be sought for providing strategic SuDS systems across multiple plots within the AMI.
- Development proposals should seek to restrict surface water runoff rates to greenfield rates; demonstrate sustainable approaches to the management of surface water making use of SuDS including green roofs, rainwater harvesting and other innovative technologies; and incorporate soft landscaping, planting, and impermeable surfacing.
- The RoFSW mapping shows that some of the main routes through the AMI are at risk of surface water flooding. Development proposals within the AMI should consider provision of safe access/egress using alternative routes at lower risk of surface water flooding.
- In areas at risk of surface water flooding, finished floor levels for More Vulnerable development should be raised 600mm above ground levels. Where surface water modelling is available within the AFI, finished floor levels may be set above the modelled flood level for the 1% AEP event, including a 300mm freeboard. Flood depths for the modelled 1% AEP event are shown in Figure 7.
- Finished floor levels do not need to be raised for Less Vulnerable development, however flood resilience measures should be adopted within these developments to reduce potential damage during flooding and enable rapid re-occupancy.
- The risk of groundwater flooding and groundwater levels should be further assessed as part of a Site Investigation for specific development proposals within the AMI.

Site Name: Addiscombe			
Site ID:	AMI09	Area (ha):	22.18
Proposed Use:	Mixed use.	Vulnerability Classification:	More Vulnerable

Flood Zones and Historic Flooding				
Flood Zone 1 (<0.1% AEP): 100%	Flood Zone 2 (0.1% AEP): 0%	Flood Zone 3 (1% AEP): 0%	Flood Zone 3b (5% AEP): 0%	Area Benefiting from Defences: 0%

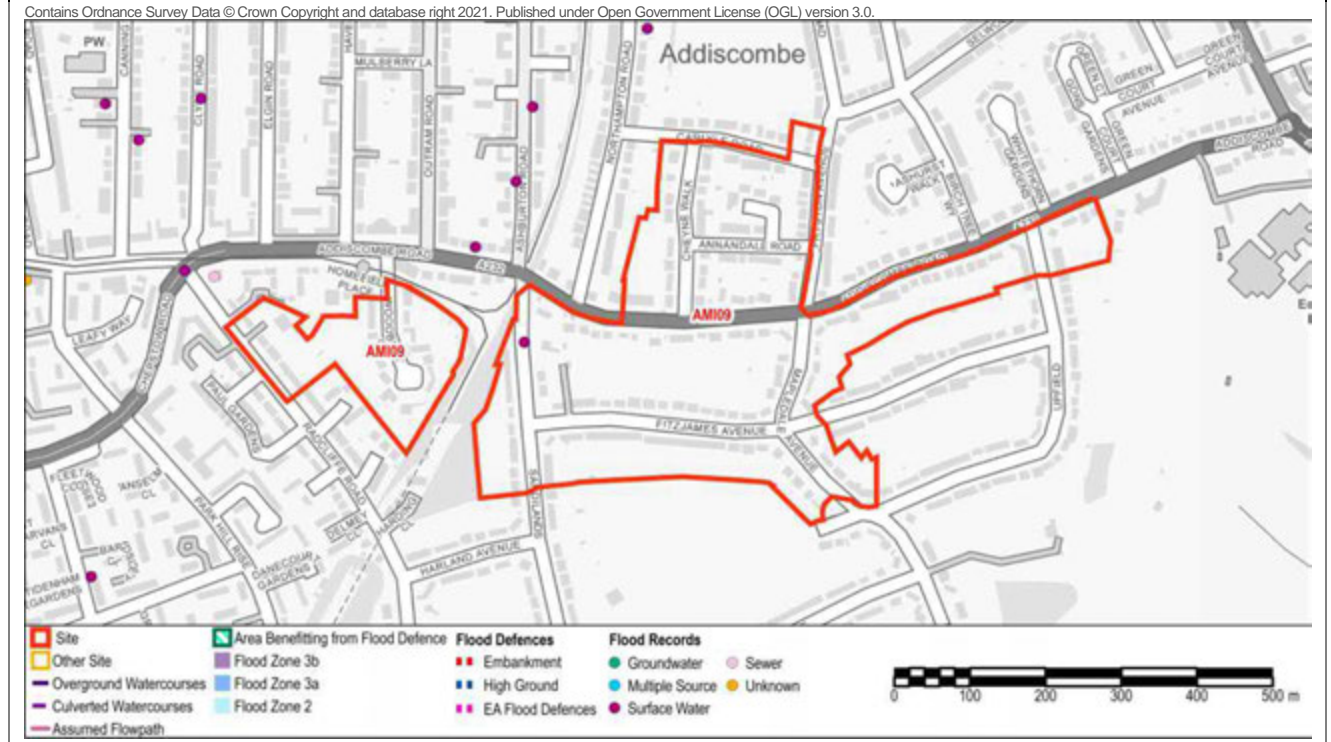


Figure 1 - Flood Zones and Flood Records

Flood Warning Area	None
Flood Records within 500m of the site:	Surface Water 12; Groundwater 1; Sewer 2; Multiple source 0; Unknown source 2

River Flooding

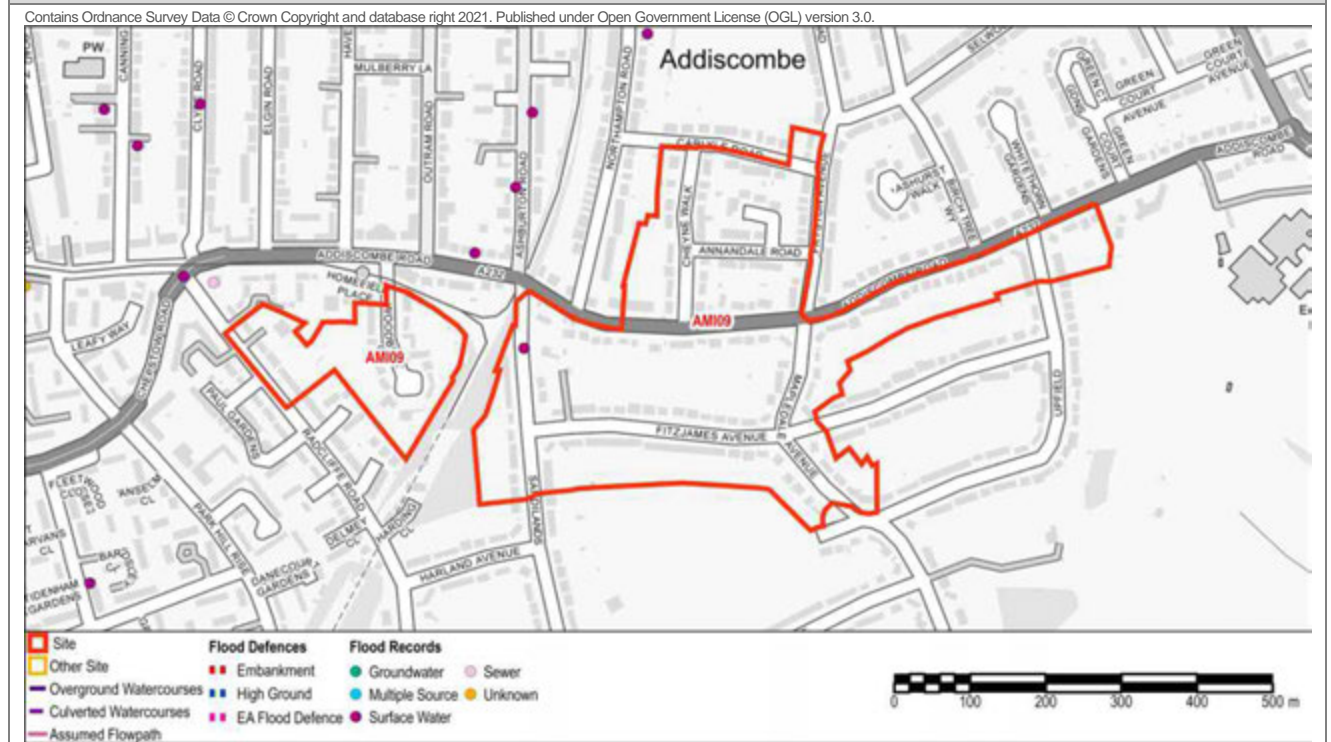


Figure 2 – River Wandle Maximum Flood Depth (1% AEP plus 35% climate change) Please note: Data does not extend to the extent of this figure.

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Site Name: Addiscombe

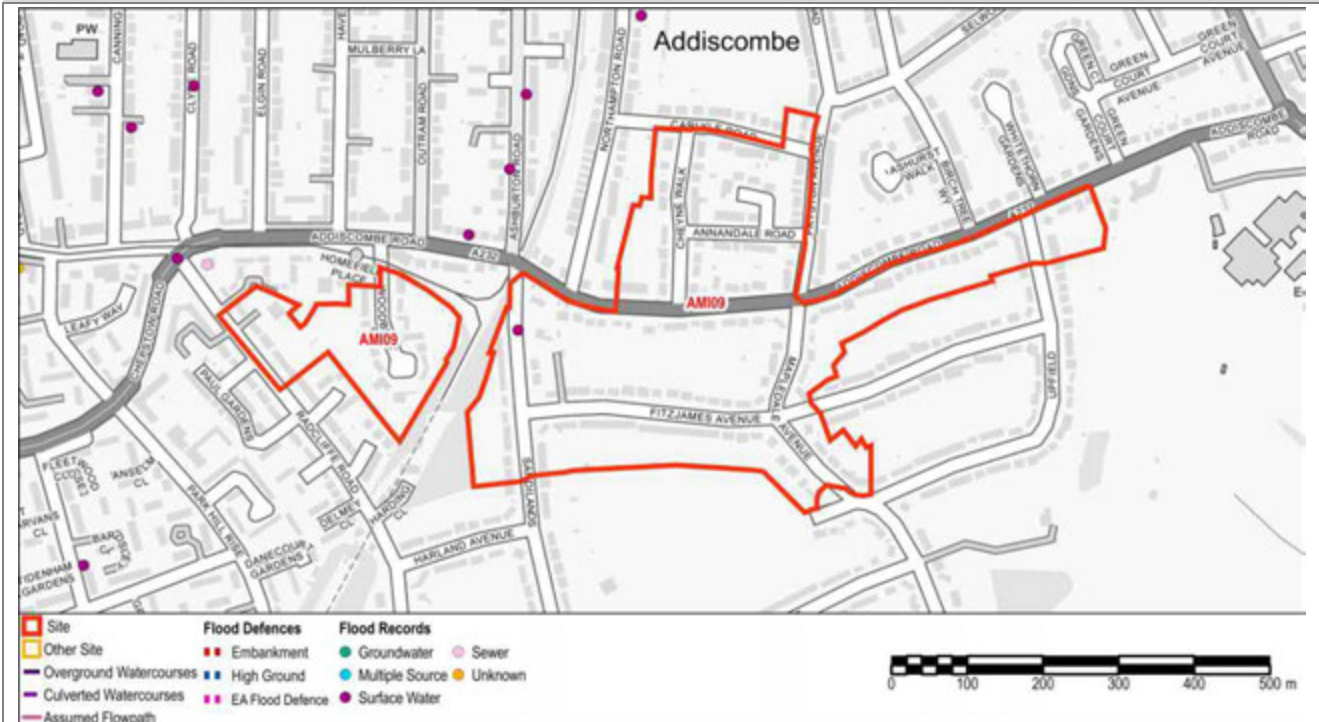


Figure 3 – River Wandle Maximum Flood Hazard (1% AEP plus 35% climate change) Please note: Data does not extend to the extent of this figure.

Surface Water Flooding	
Critical Drainage Area	None - None
Drainage Catchment	DC22, DC40

Site Name: Addiscombe

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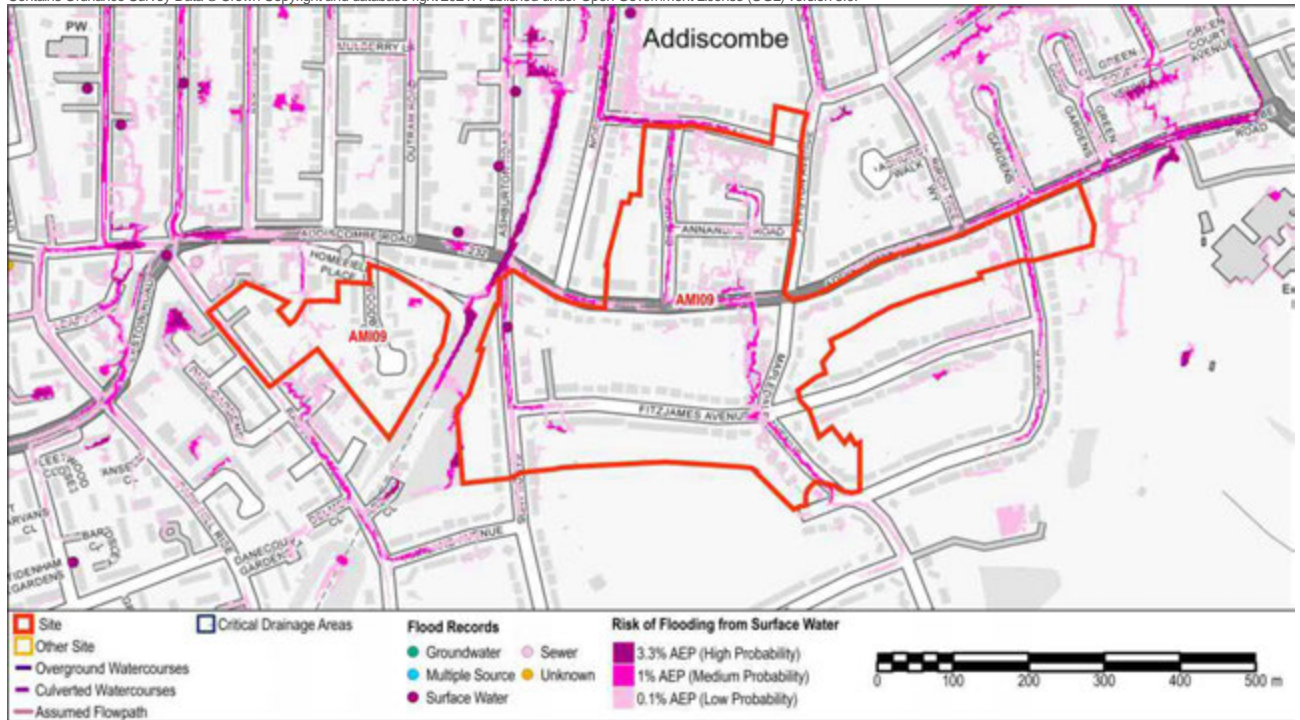


Figure 4 - Risk of Flooding from Surface Water (RoFSW) Flood Extents

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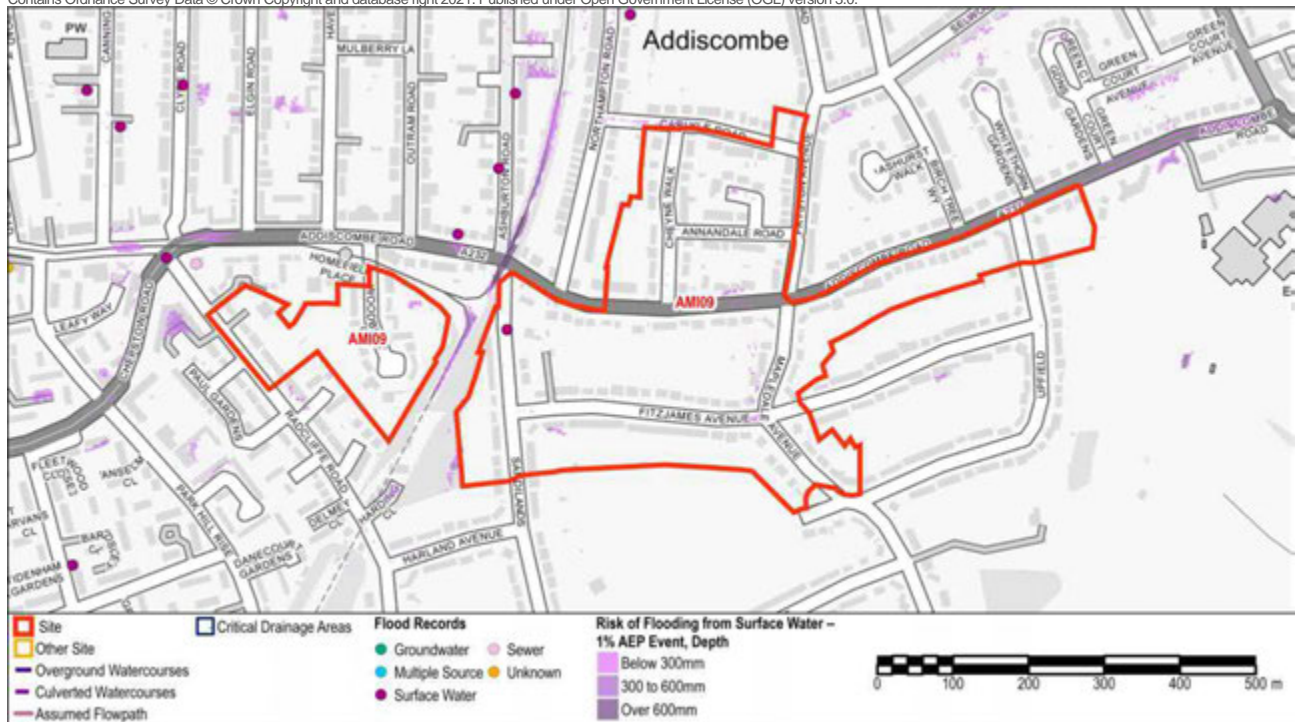


Figure 5 - Risk of Flooding from Surface Water (RoFSW) 1% AEP Flood Depth

Site Name: Addiscombe

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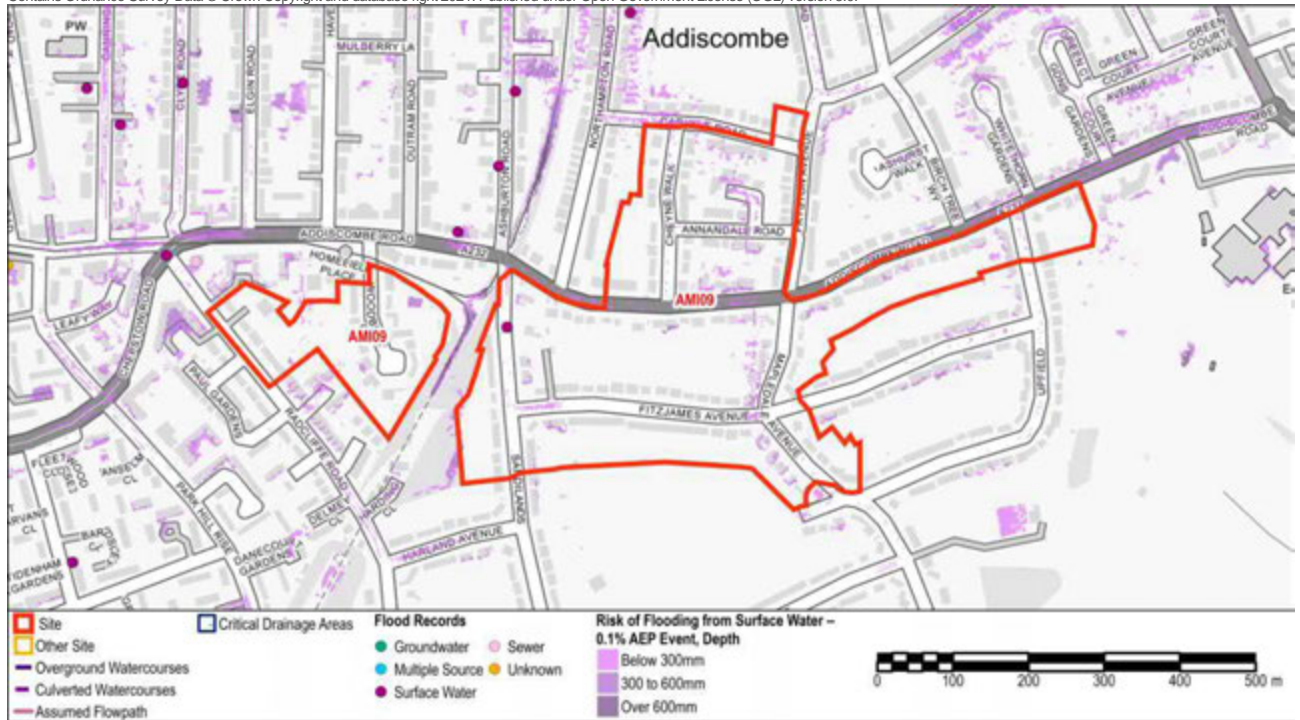


Figure 6 - Risk of Flooding from Surface Water (RoFSW) 0.1% AEP Flood Depth

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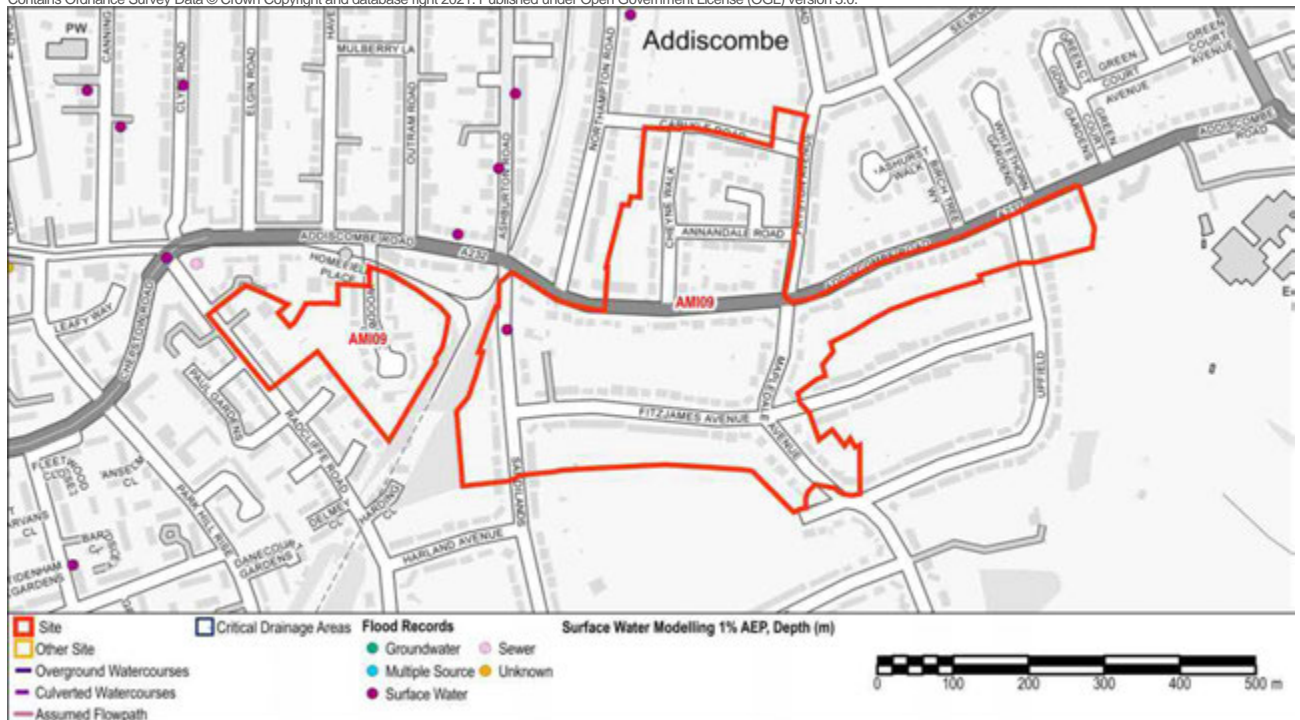


Figure 7 - Surface Water Modelling 1% AEP Flood Depth Please note: Data does not extend to the extent of this figure.

Site Name: Addiscombe

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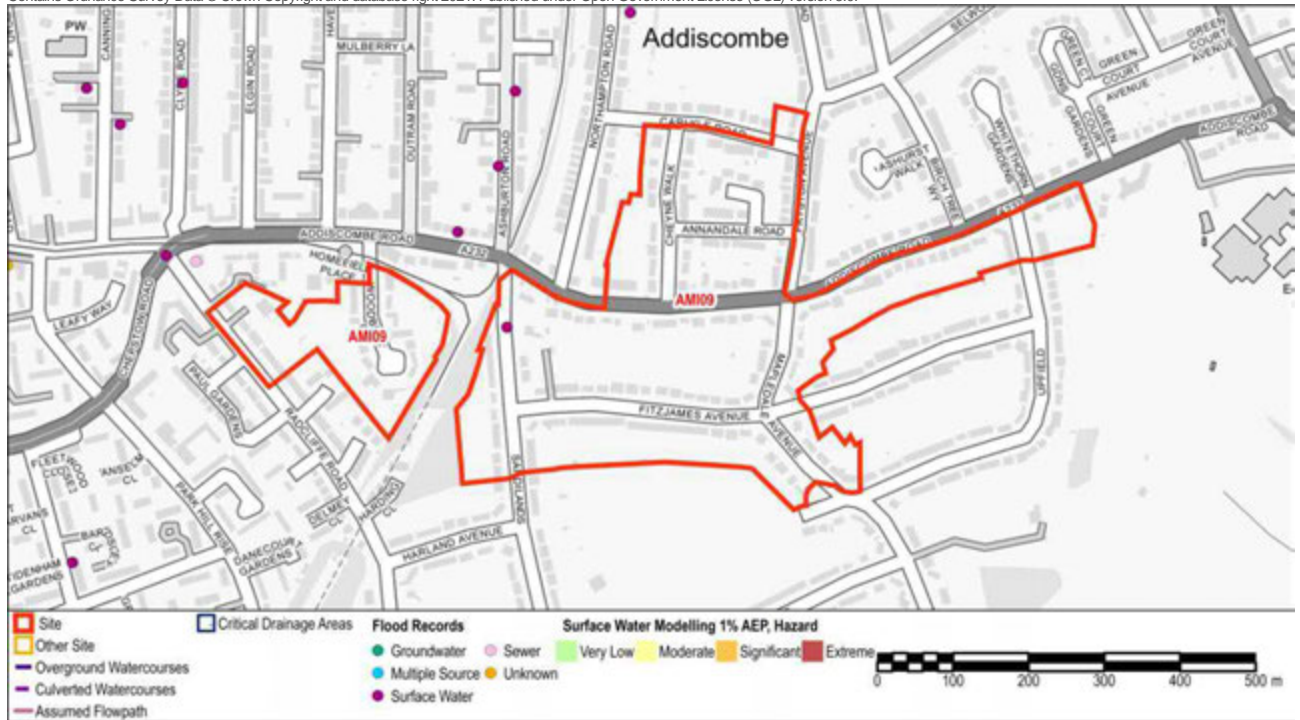


Figure 8 - Surface Water Modelling 1% AEP Flood Hazard Please note: Data does not extend to the extent of this figure.

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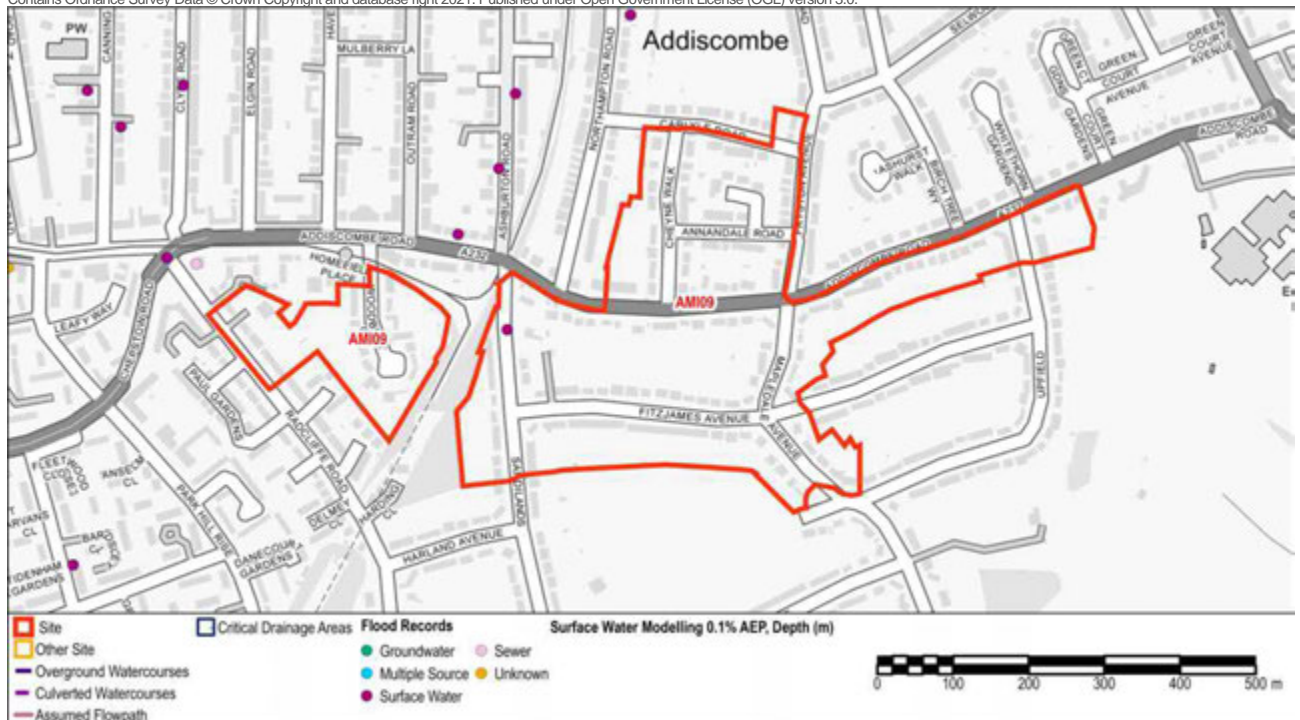


Figure 9 - Surface Water Modelling 0.1% AEP Flood Depth Please note: Data does not extend to the extent of this figure.

Site Name: Addiscombe

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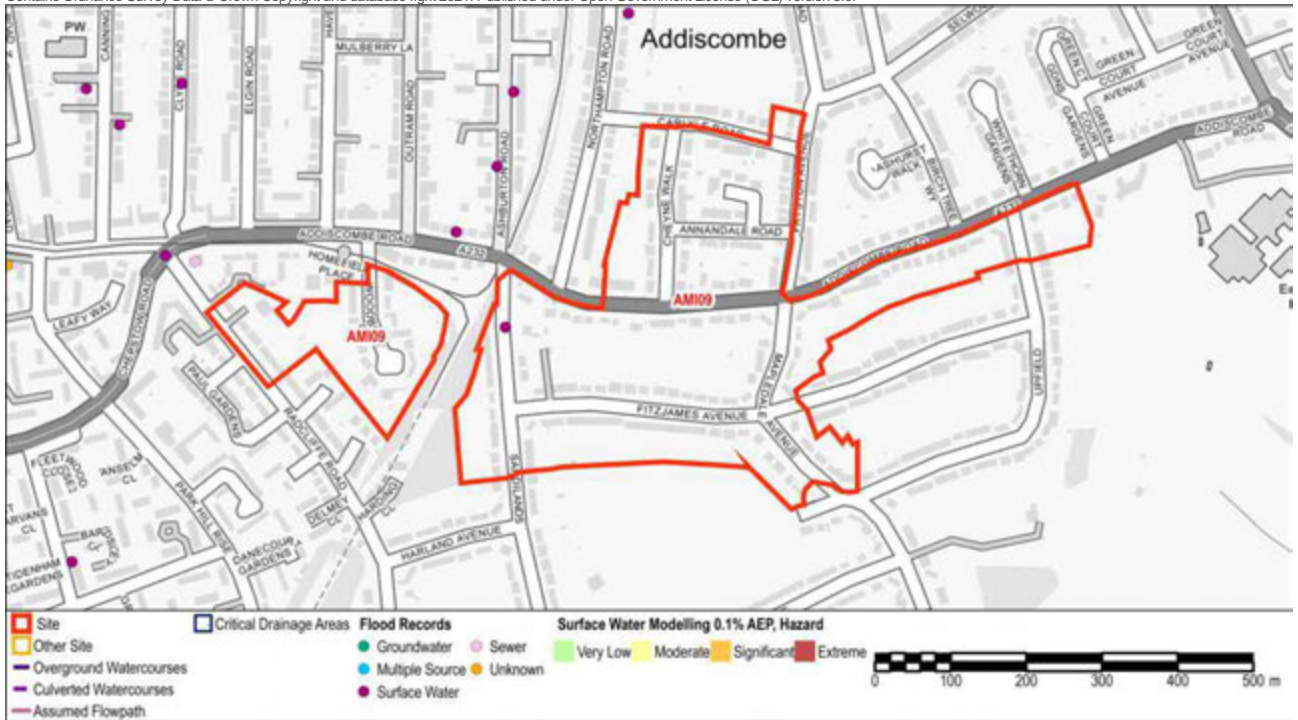


Figure 10 - Surface Water Modelling 0.1% AEP Flood Hazard Please note: Data does not extend to the extent of this figure.

Groundwater Flooding

Bedrock Geology	Thames Group	Superficial Geology	-
Increased Potential for Elevated Groundwater	No		
Susceptibility to Groundwater Flooding (BGS)	Limited potential for groundwater flooding to occur, Potential for groundwater flooding of property situated below ground level		

Other Sources

Risk of flooding from reservoirs	The Long Term Flood Risk Map shows that the site is not at risk of flooding, in the event of a breach or failure of a reservoir.
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Summary

The entire site (100%) is defined as Flood Zone 1, Low probability of river flooding.

The site does not lie within a CDA. The Risk of Flooding from Surface Water mapping shows a number of the roads in the AMI are at risk of surface water flooding such as Cheyne Walk, Annandale Road, Mapledale Avenue and Sandlands.

Site Specific Recommendations

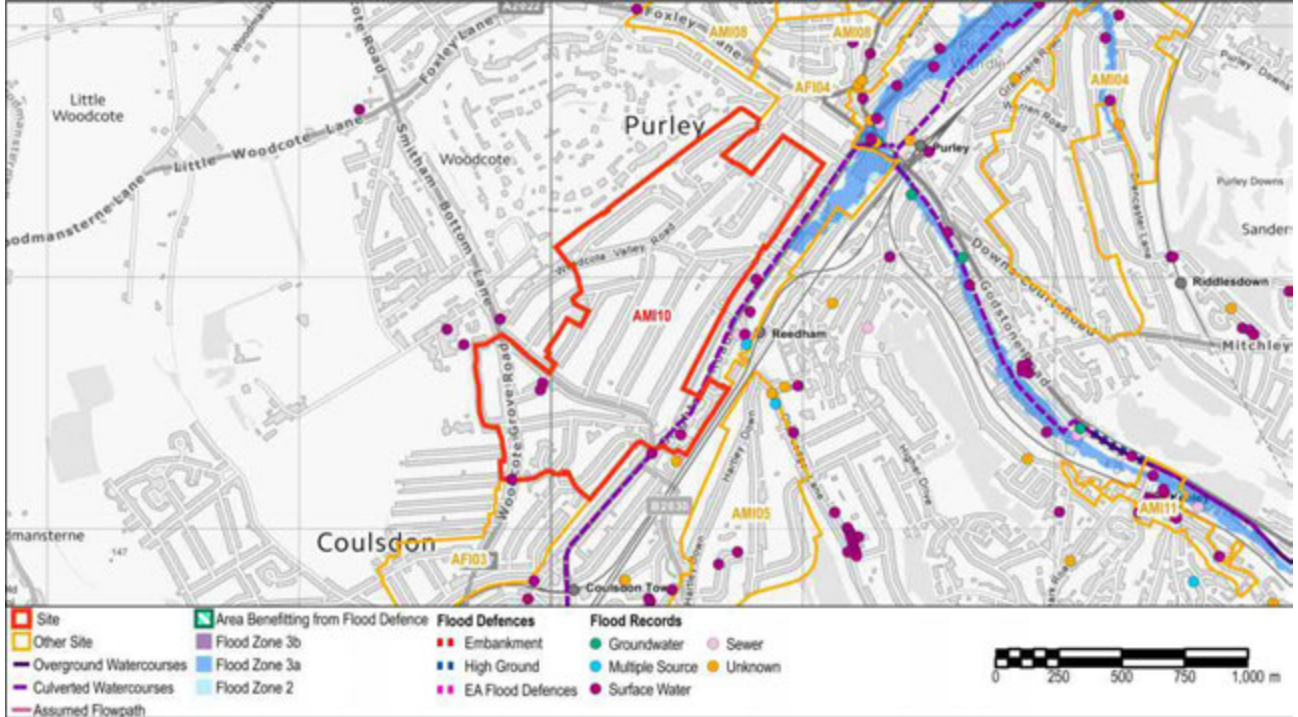
A range of proposed uses may be considered across this AMI. Given the location within Flood Zone 1, development is not subject to the application of the Exception Test. However, given the potential for surface water flooding in this area, steps should be taken to ensure that development is safe for its lifetime considering the impact of climate change, will not increase flood risk elsewhere, and where possible will reduce flood risk overall. To this end, the following recommendations are made throughout the AMI:

- Opportunities should be sought for providing strategic SuDS systems across multiple plots within the AMI.
- Development proposals should seek to restrict surface water runoff rates to greenfield rates; demonstrate sustainable approaches to the management of surface water making use of SuDS including green roofs, rainwater harvesting and other innovative technologies; and incorporate soft landscaping, planting, and impermeable surfacing.
- Flood resistance and resilience measures should be adopted within ground level developments to reduce potential damage during surface water flooding and enable rapid re-occupancy.
- The risk of groundwater flooding and groundwater levels should be further assessed as part of a Site Investigation for specific development proposals within the AMI.

Site Name: Purley Coulsdon			
Site ID:	AMI10	Area (ha):	95.2
Proposed Use:	Mixed use.	Vulnerability Classification:	More Vulnerable

Flood Zones and Historic Flooding				
Flood Zone 1 (<0.1% AEP): 100%	Flood Zone 2 (0.1% AEP): 0%	Flood Zone 3 (1% AEP): 0%	Flood Zone 3b (5% AEP): 0%	Area Benefiting from Defences: 0%

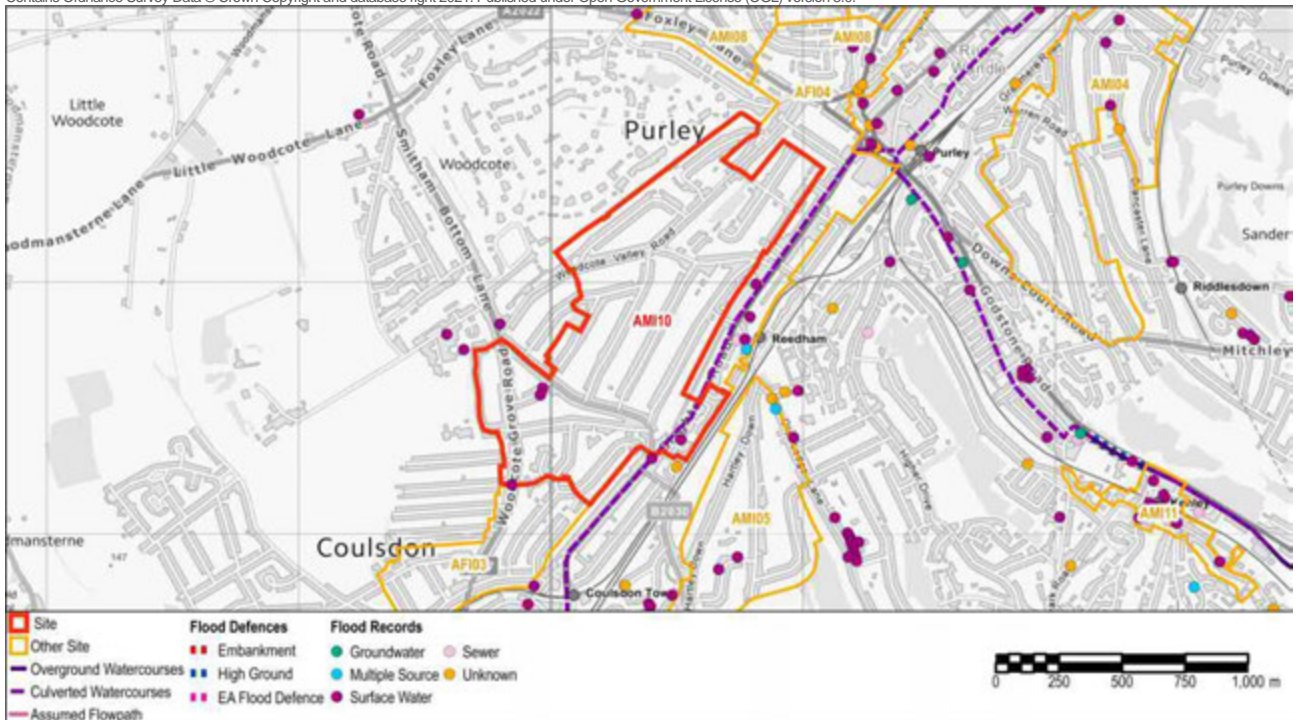
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Flood Warning Area	None
Flood Records within 500m of the site:	Surface Water 31; Groundwater 1; Sewer 4; Multiple source 2; Unknown source 12

River Flooding

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Site Name: Purley Coulsdon

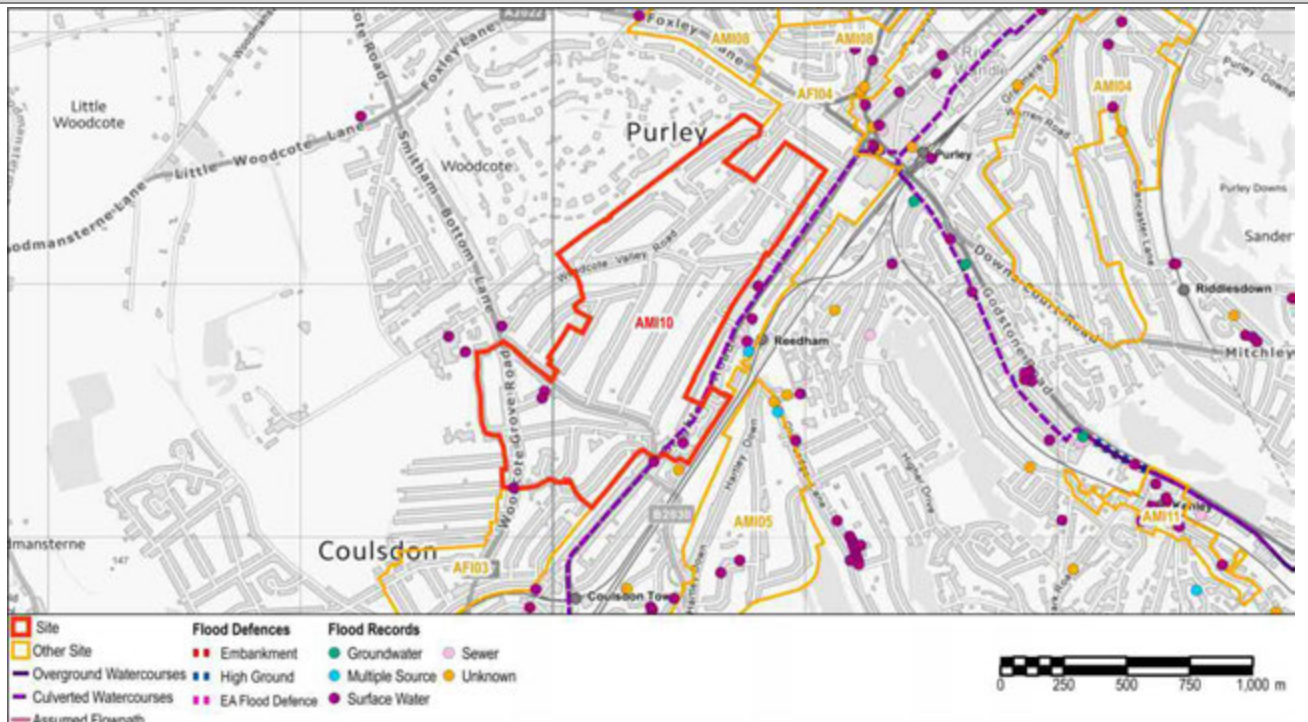


Figure 3 – River Wandle Maximum Flood Hazard (1% AEP plus 35% climate change) Please note: Data does not extend to the extent of this figure.

Surface Water Flooding

Critical Drainage Area	Group8_040 - Purley Cross [Croydon]
Drainage Catchment	DC39, DC47

Site Name: Purley Coulsdon

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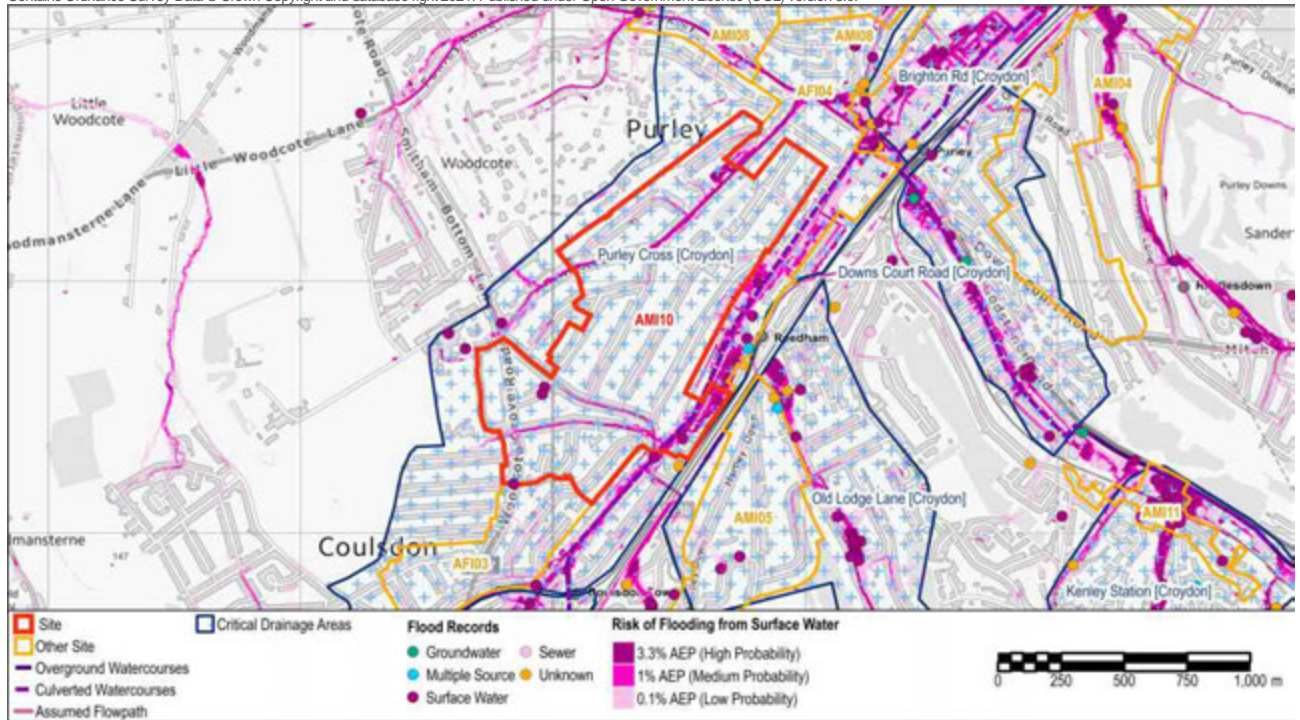


Figure 4 - Risk of Flooding from Surface Water (RoFSW) Flood Extents

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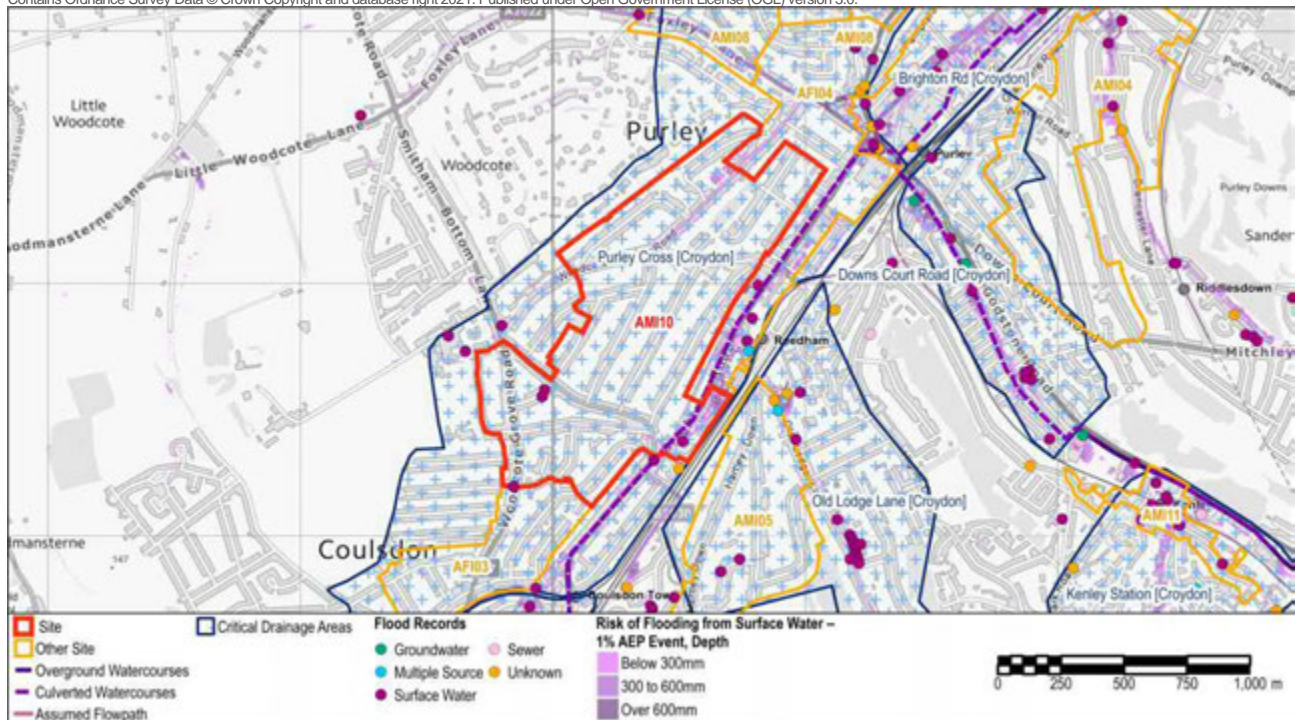


Figure 5 - Risk of Flooding from Surface Water (RoFSW) 1% AEP Flood Depth

Site Name: Purley Coulsdon

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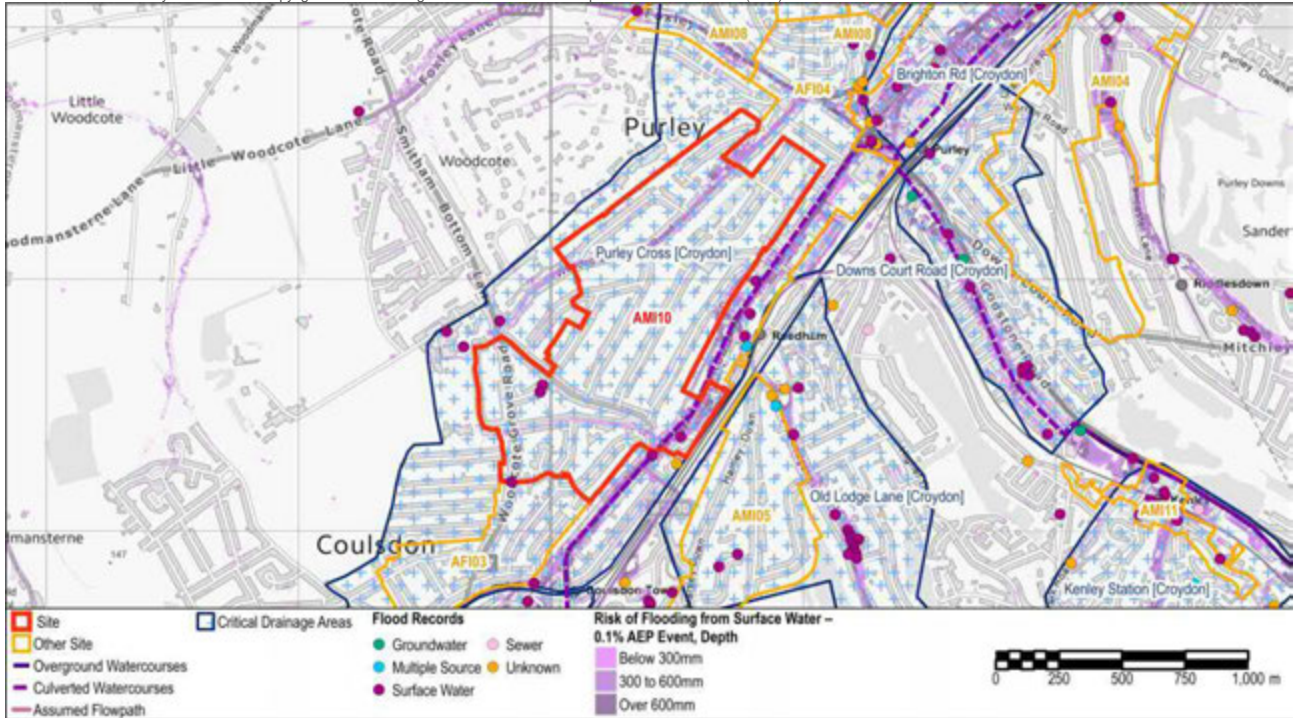


Figure 6 - Risk of Flooding from Surface Water (RoFSW) 0.1% AEP Flood Depth

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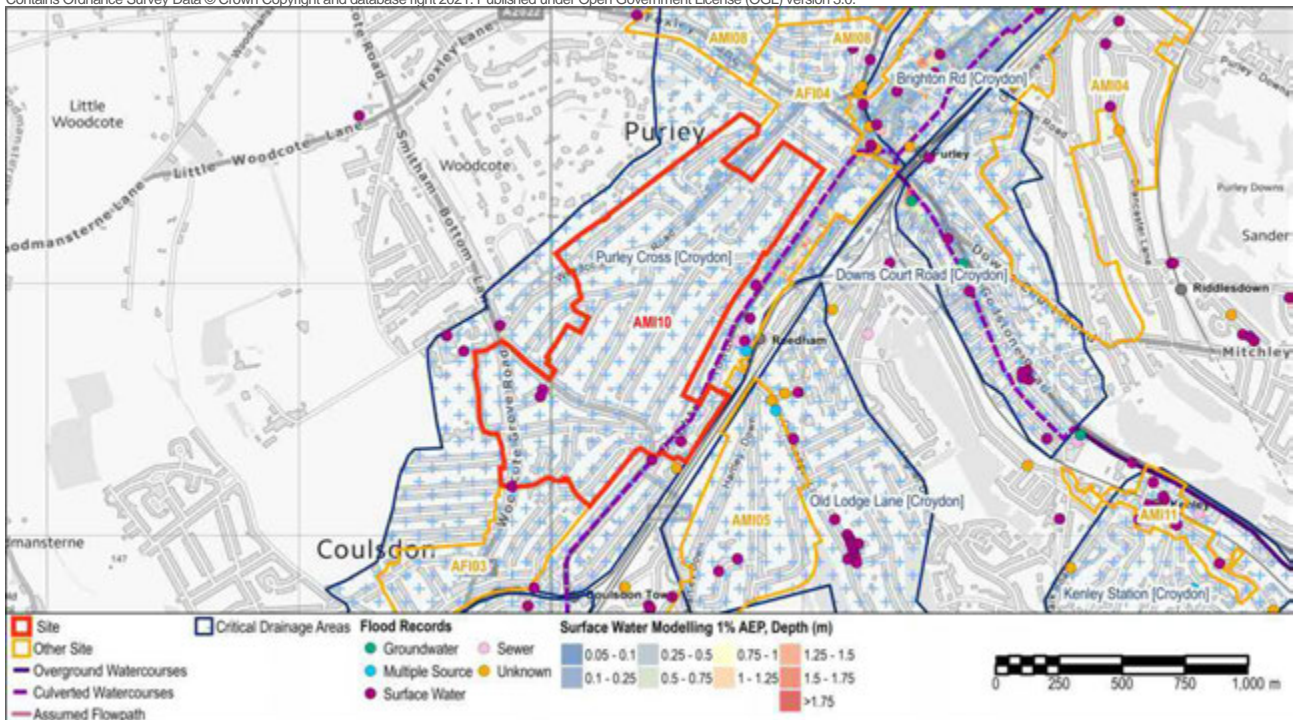


Figure 7 - Surface Water Modelling 1% AEP Flood Depth

Site Name: Purley Coulsdon

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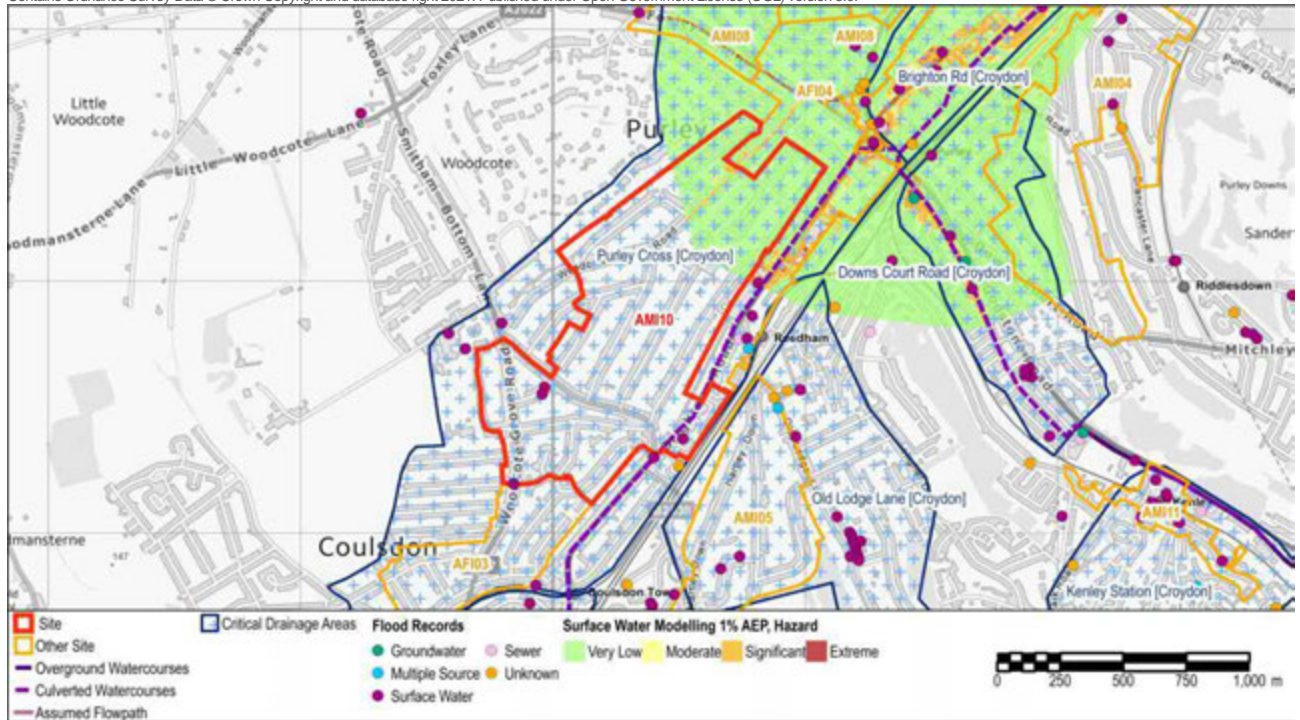


Figure 8 - Surface Water Modelling 1% AEP Flood Hazard

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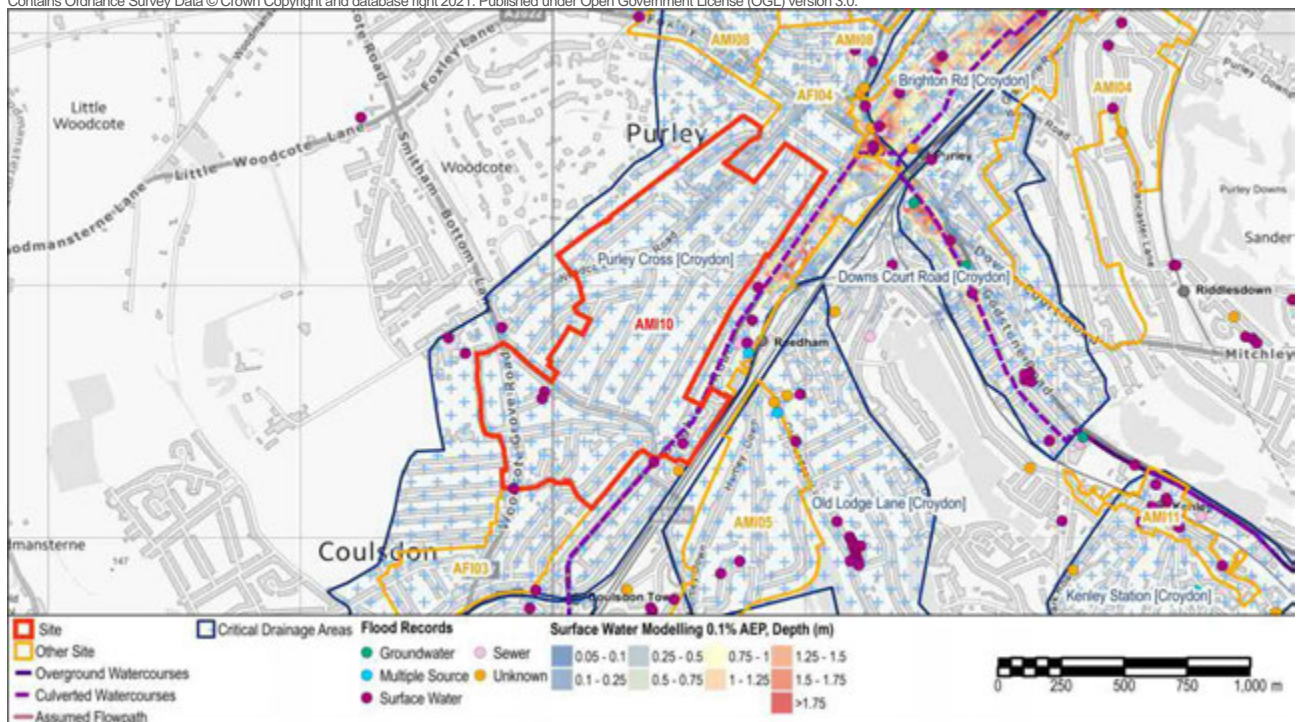


Figure 9 - Surface Water Modelling 0.1% AEP Flood Depth

Site Name: Purley Coulsdon

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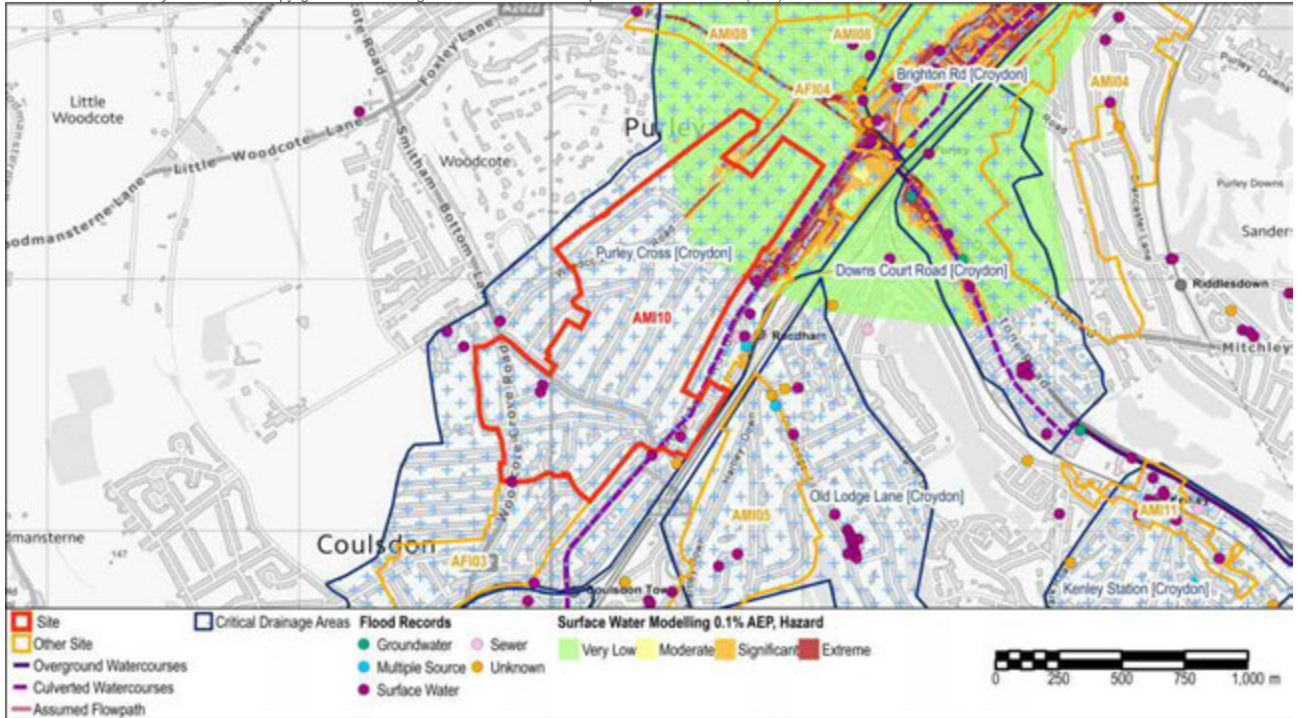


Figure 10 - Surface Water Modelling 0.1% AEP Flood Hazard

Groundwater Flooding

Bedrock Geology	White Chalk Subgroup	Superficial Geology	-
Increased Potential for Elevated Groundwater	Yes		
Susceptibility to Groundwater Flooding (BGS)	Limited potential for groundwater flooding to occur, Potential for groundwater flooding of property situated below ground level, Potential for groundwater flooding to occur at surface		

Other Sources

Risk of flooding from reservoirs	The Long Term Flood Risk Map shows that the site is not at risk of flooding, in the event of a breach or failure of a reservoir.
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Summary

The entire site (100%) is defined as Flood Zone 1, Low probability of river flooding. The AMI lies within the Purley Cross CDA. On the eastern edge of the AMI is the Brighton Road, beneath which is a culverted watercourse. The local topography drains to this natural valley.

The Risk of Flooding from Surface Water mapping identifies areas of particular surface water flood risk along The Vale, Brighton Road, Woodcote Valley Road. There are multiple records of flooding in the AMI and surrounding area.

Site Specific Recommendations

A range of proposed uses may be considered across this AMI. Given the location within Flood Zone 1, development is not subject to the application of the Exception Test. However, given the potential for surface water flooding in this area, steps should be taken to ensure that development is safe for its lifetime considering the impact of climate change, will not increase flood risk elsewhere, and where possible will reduce flood risk overall. To this end, the following recommendations are made throughout the AMI:

- Opportunities should be sought for providing strategic SuDS systems across multiple plots within the AMI.
- Development proposals should seek to restrict surface water runoff rates to greenfield rates; demonstrate sustainable approaches to the management of surface water making use of SuDS including green roofs, rainwater harvesting and other innovative technologies; and incorporate soft landscaping, planting, and impermeable surfacing.
- The RoFSW mapping shows that some of the main routes through the AMI are at risk of surface water flooding. Development proposals within the AMI should consider provision of safe access/egress using alternative routes at lower risk of surface water flooding.
- In areas at risk of surface water flooding, finished floor levels for More Vulnerable development should be raised 600mm above ground levels. Where surface water modelling is available within the AFI, finished floor levels may be set above the modelled flood level for the 1% AEP event, including a 300mm freeboard. Flood depths for the modelled 1% AEP event are shown in Figure 7.
- Finished floor levels do not need to be raised for Less Vulnerable development, however flood resilience measures should be adopted within these developments to reduce potential damage during flooding and enable rapid re-occupancy.
- The risk of groundwater flooding and groundwater levels should be further assessed as part of a Site Investigation for specific development proposals within the AMI.

Site Name: Kenley Station			
Site ID:	AMI11	Area (ha):	8.77
Proposed Use:	Mixed use.	Vulnerability Classification:	More Vulnerable

Flood Zones and Historic Flooding				
Flood Zone 1 (<0.1% AEP): 91%	Flood Zone 2 (0.1% AEP): 1%	Flood Zone 3 (1% AEP): 8%	Flood Zone 3b (5% AEP): 0%	Area Benefiting from Defences: 0%

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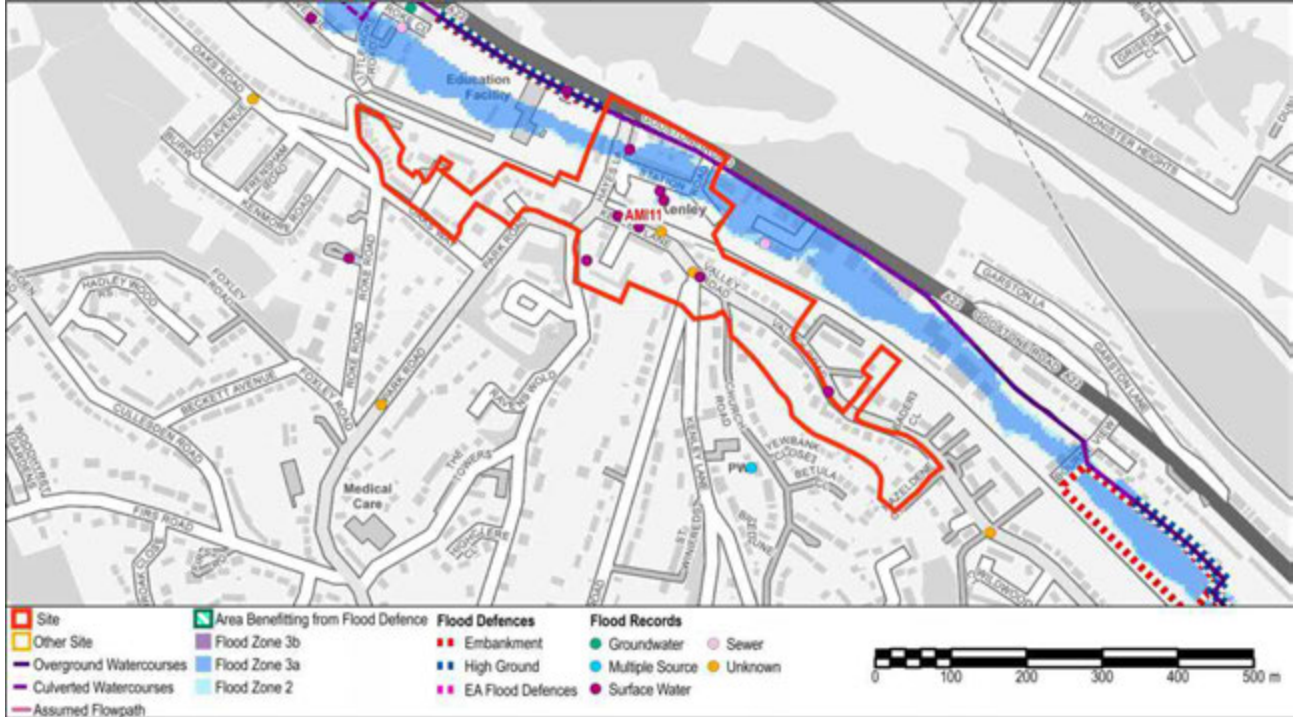


Figure 1 - Flood Zones and Flood Records

Flood Warning Area	None
Flood Records within 500m of the site:	Surface Water 16; Groundwater 1; Sewer 2; Multiple source 1; Unknown source 7

River Flooding

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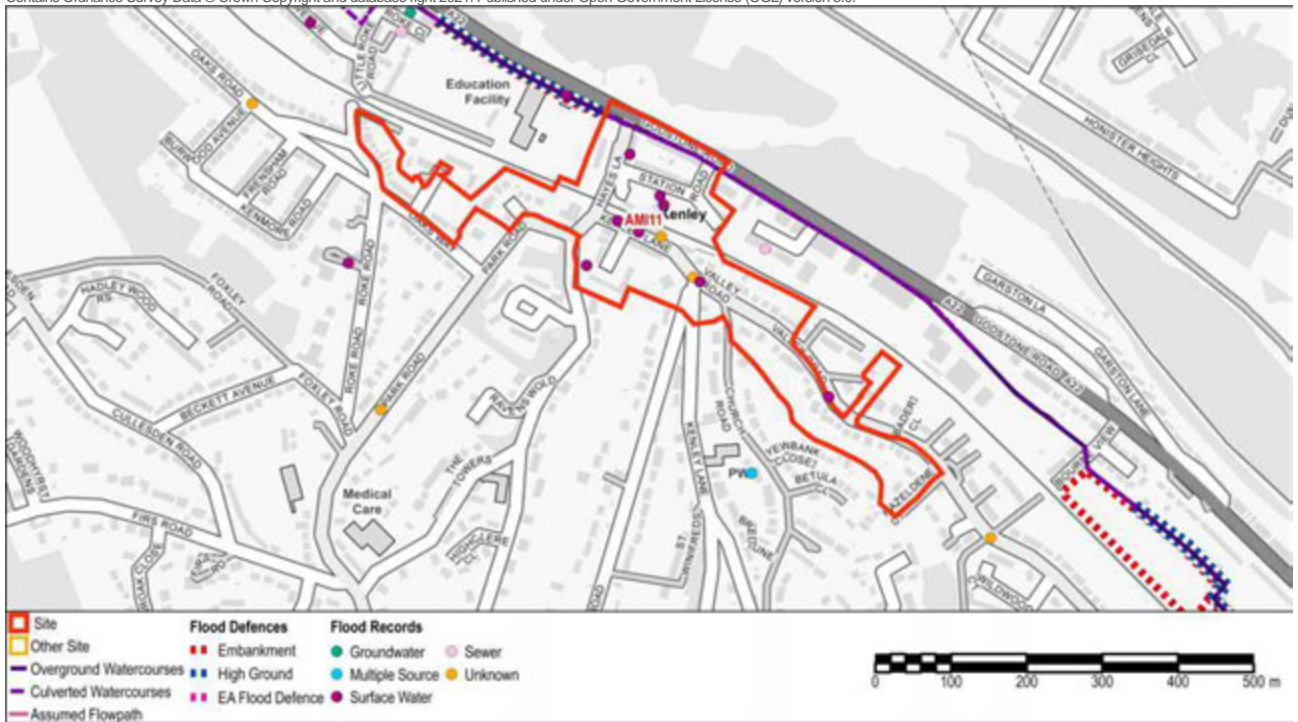


Figure 2 – River Wandle Maximum Flood Depth (1% AEP plus 35% climate change) Please note: Data does not extend to the extent of this figure.

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Site Name: Kenley Station

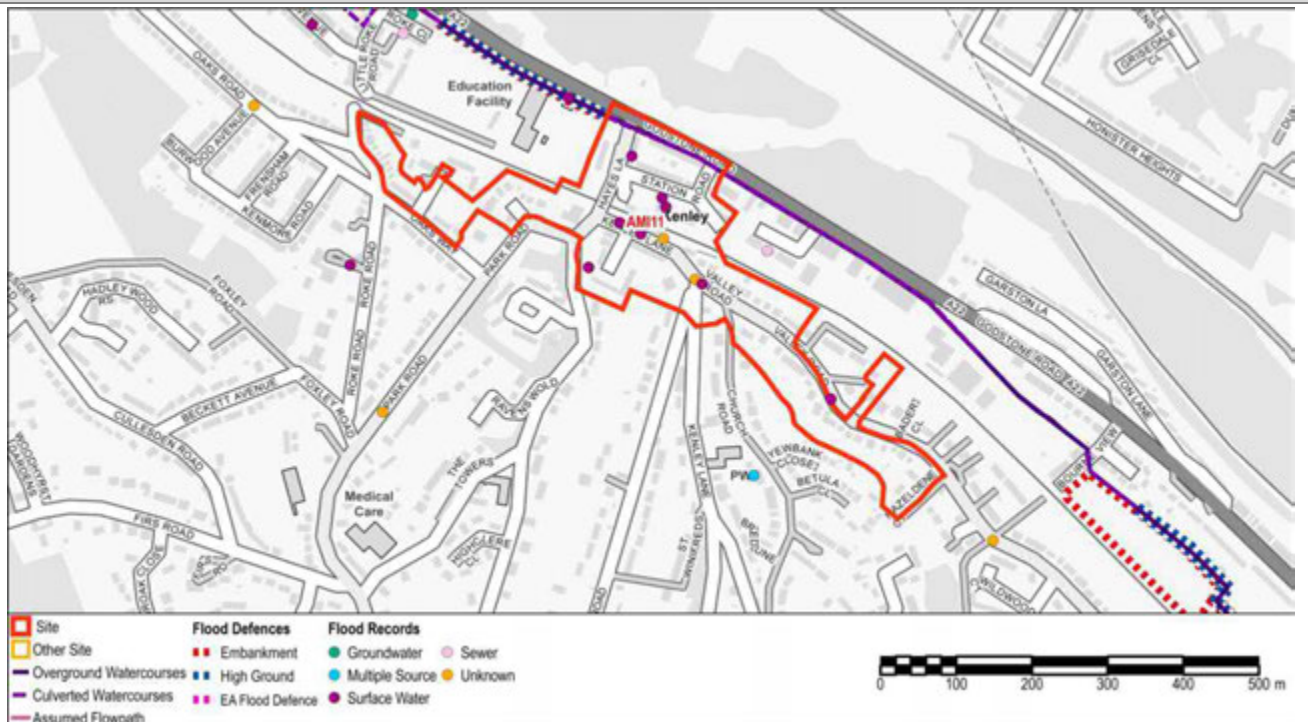


Figure 3 – River Wandle Maximum Flood Hazard (1% AEP plus 35% climate change) Please note: Data does not extend to the extent of this figure.

Surface Water Flooding

Critical Drainage Area	Group8_037 - Kenley Station [Croydon]
Drainage Catchment	DC56

Site Name: Kenley Station

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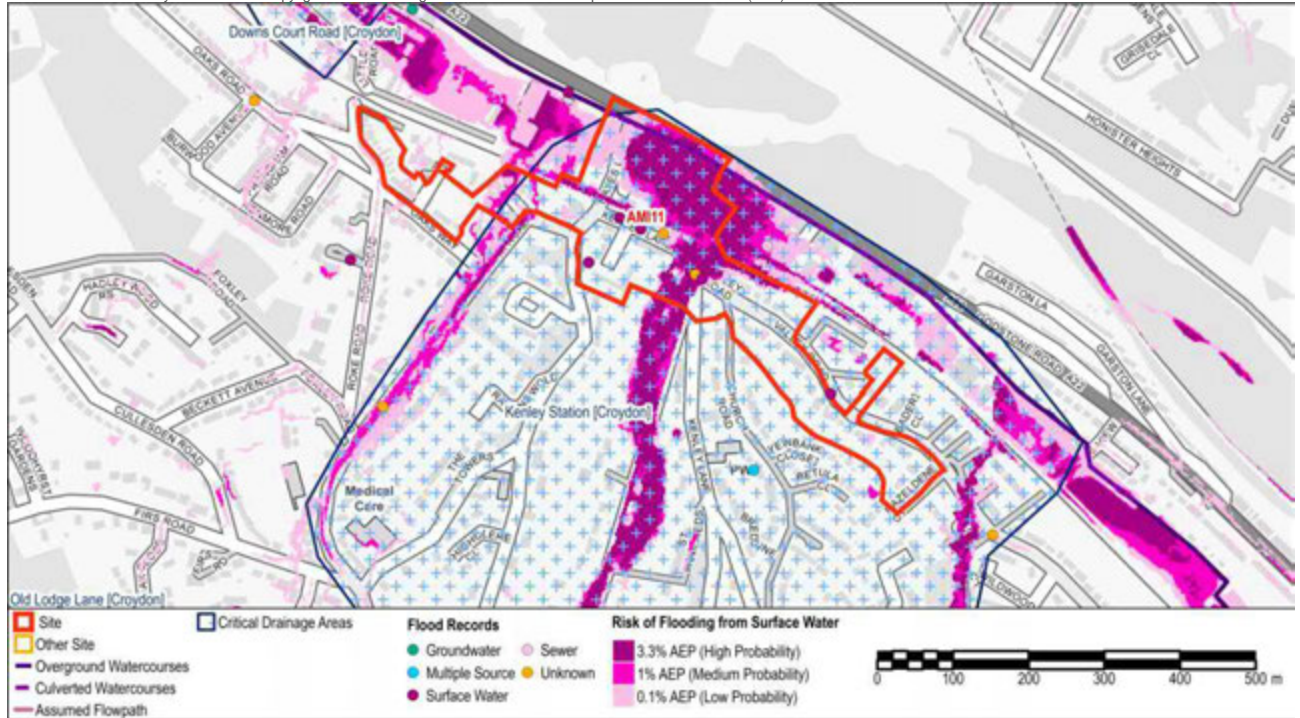


Figure 4 - Risk of Flooding from Surface Water (RoFSW) Flood Extents

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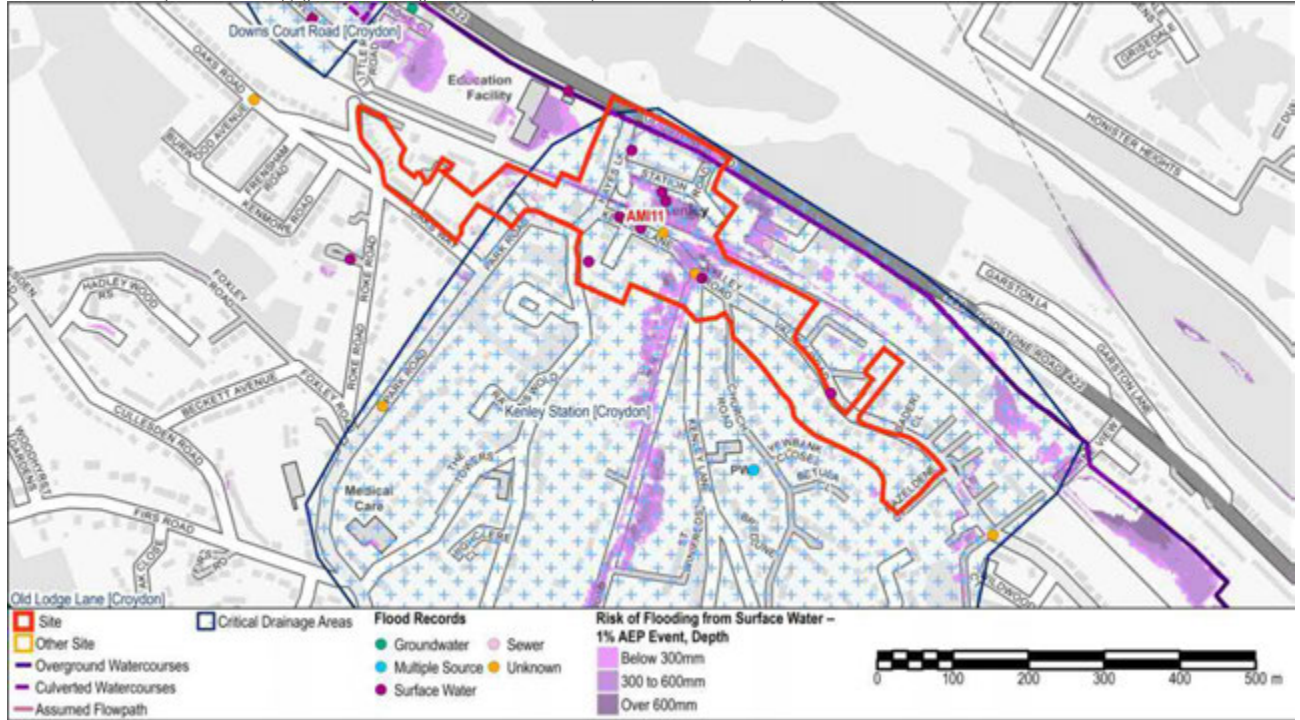
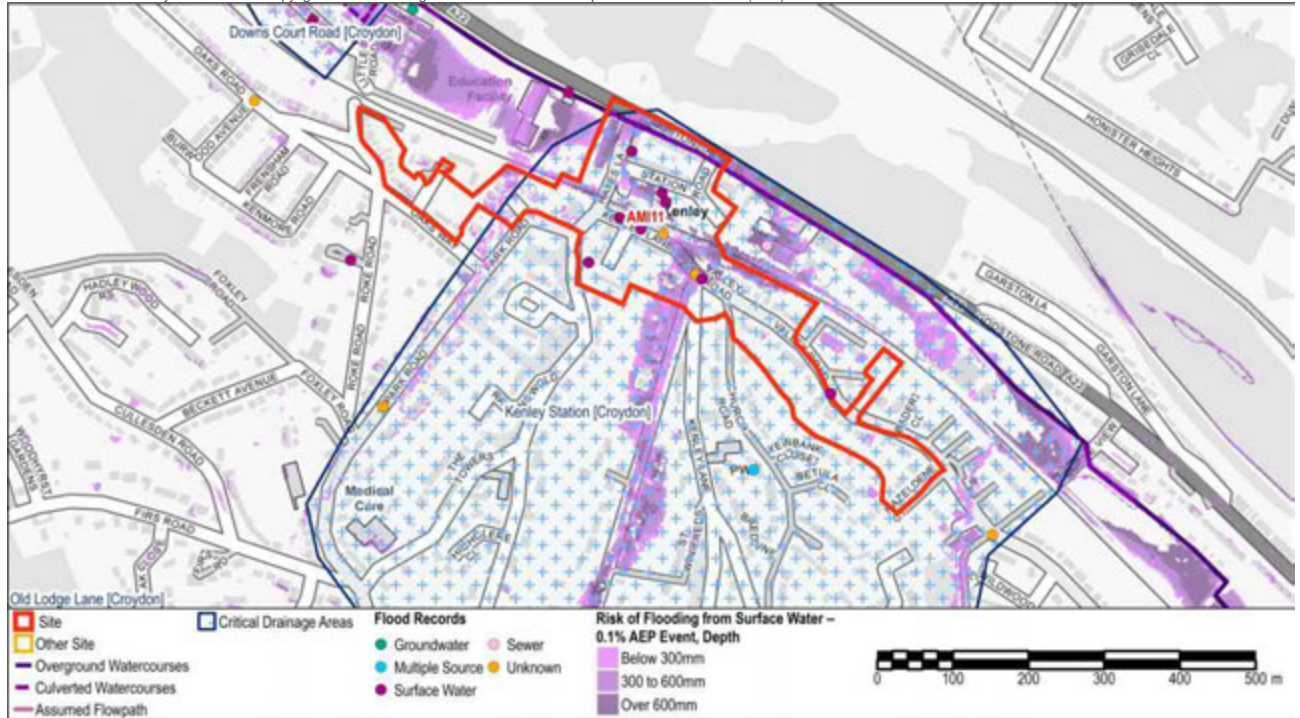


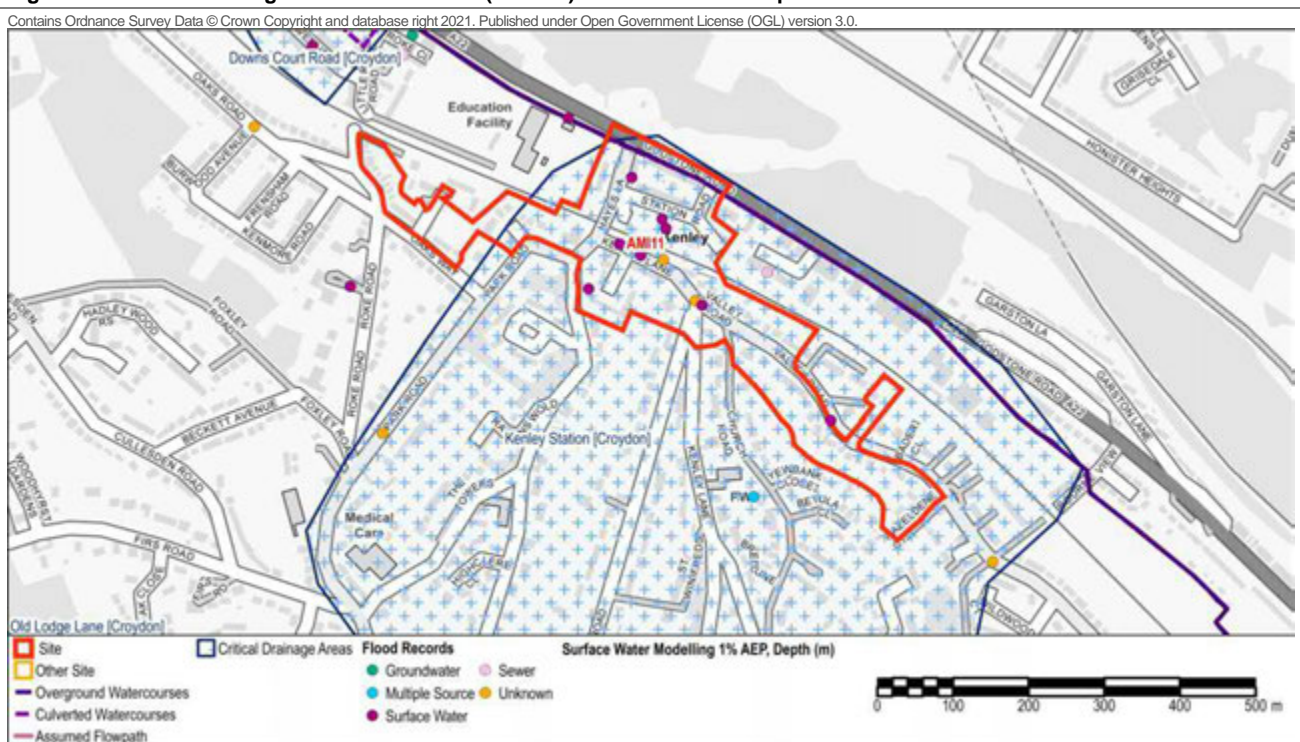
Figure 5 - Risk of Flooding from Surface Water (RoFSW) 1% AEP Flood Depth

Site Name: Kenley Station

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Site Name: Kenley Station

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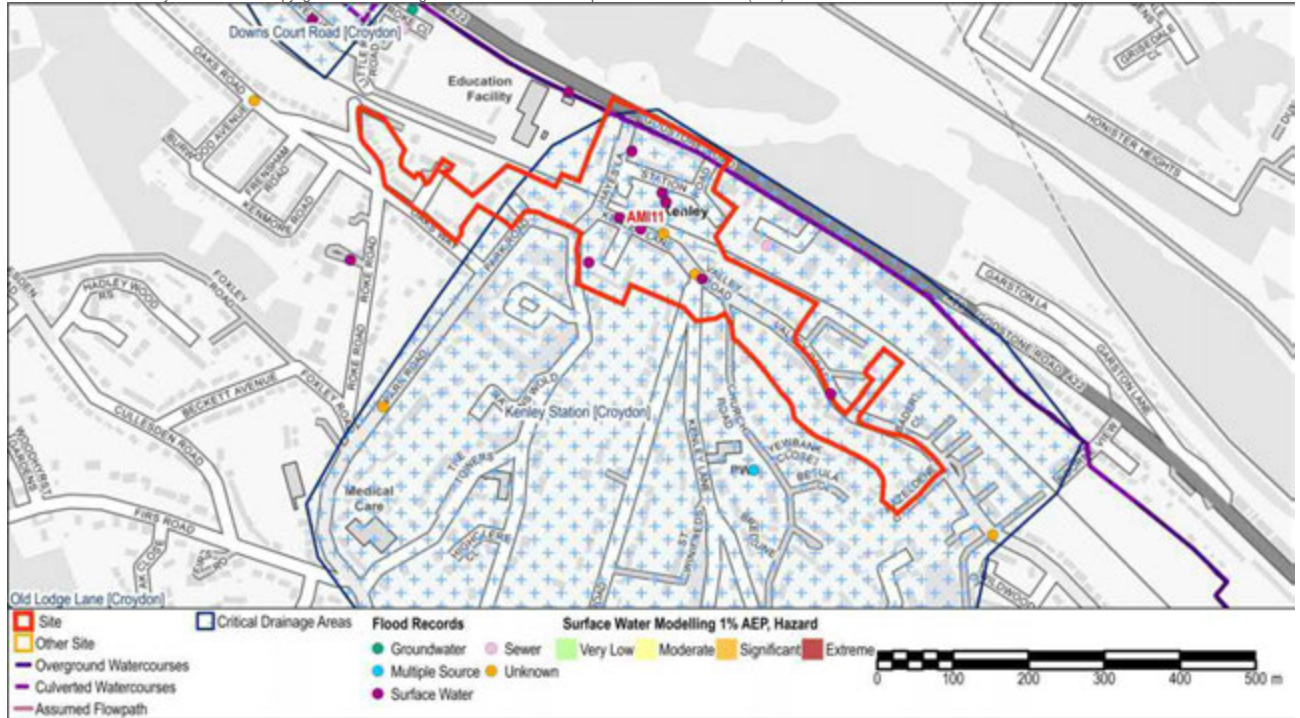


Figure 8 - Surface Water Modelling 1% AEP Flood Hazard Please note: Data does not extend to the extent of this figure.

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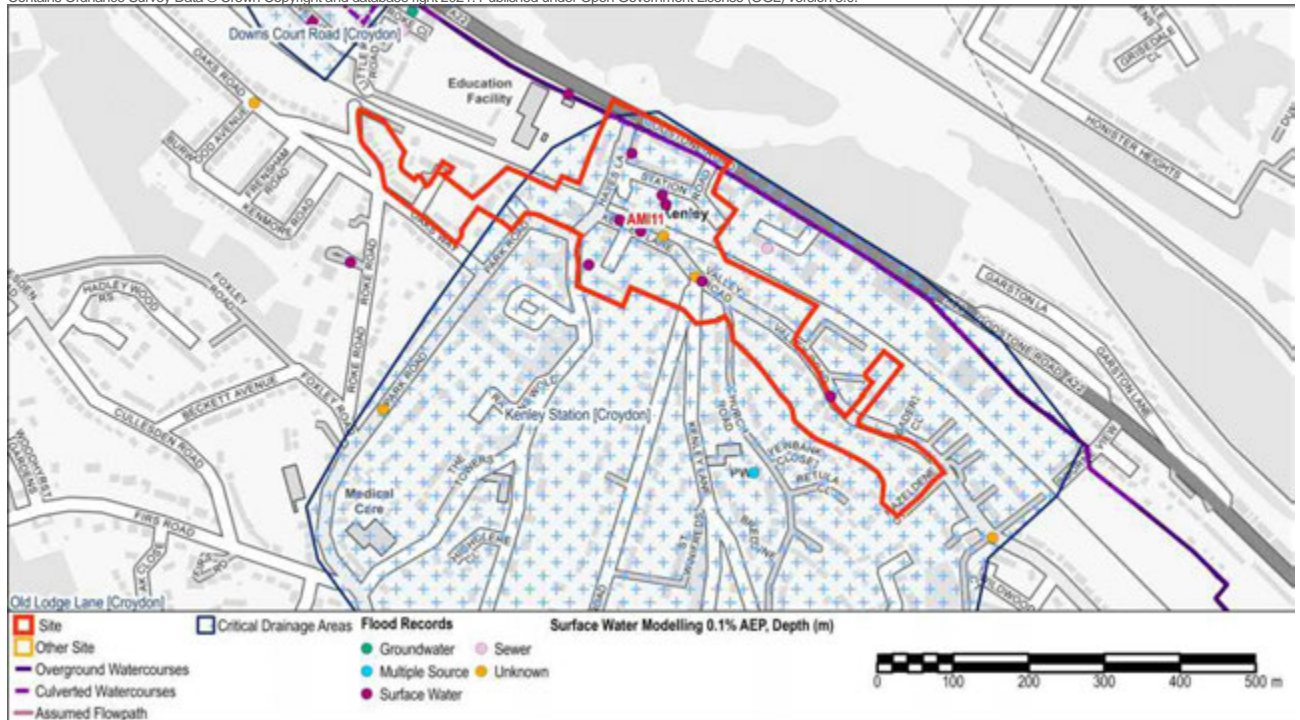


Figure 9 - Surface Water Modelling 0.1% AEP Flood Depth Please note: Data does not extend to the extent of this figure.

Site Name: Kenley Station

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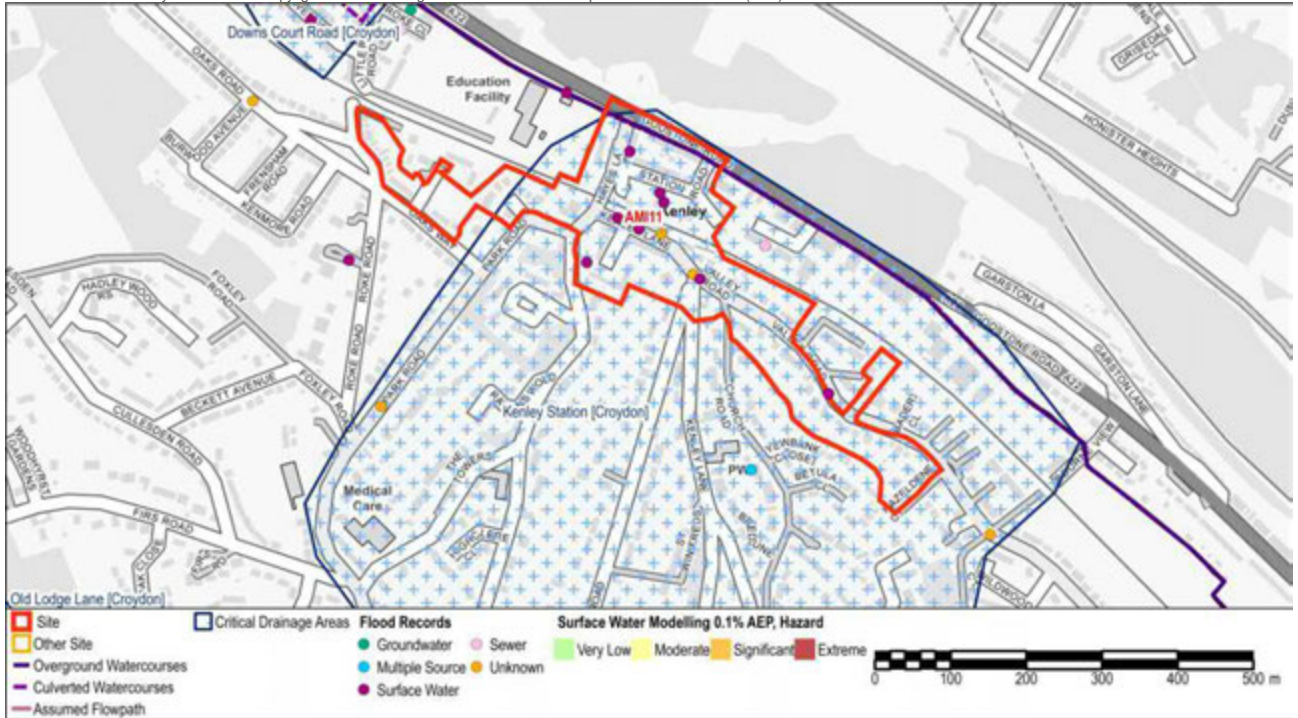


Figure 10 - Surface Water Modelling 0.1% AEP Flood Hazard Please note: Data does not extend to the extent of this figure.

Groundwater Flooding

Bedrock Geology	White Chalk Subgroup	Superficial Geology	Diamicton
Increased Potential for Elevated Groundwater	Yes		
Susceptibility to Groundwater Flooding (BGS)	Potential for groundwater flooding to occur at surface		

Other Sources

Risk of flooding from reservoirs	The Long Term Flood Risk Map shows that the site is not at risk of flooding, in the event of a breach or failure of a reservoir.
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Summary

The entire AMI (100%) is defined as Flood Zone 1, Low probability of river flooding.

The majority of the AMI lies within the Kenley Station CDA.

The AMI is not covered by the Arcadis surface water modelling. The Risk of Flooding from Surface Water mapping shows that the local area is particularly susceptible to surface water flooding which drains to the course of the Caterham Bourne and ponds in the station car park adjacent to Godstone Road. Welcomes Road and Park Road are particularly affected by surface water flooding. Depths of between 300-600mm are modelled to occur during a 1% AEP event. Flood risk increases in these areas during a 0.1% AEP event, reaching depths over 600mm.

There are 16 records of surface water flooding within 500m of the AMI.

Site Specific Recommendations

A range of proposed uses may be considered across this AMI. Given the location within Flood Zone 1, development is not subject to the application of the Exception Test. However, given the potential for surface water flooding in this area, steps should be taken to ensure that development is safe for its lifetime considering the impact of climate change, will not increase flood risk elsewhere, and where possible will reduce flood risk overall. To this end, the following recommendations are made throughout the AMI:

- Opportunities should be sought for providing strategic SuDS systems across multiple plots within the AMI.
- Development proposals should seek to restrict surface water runoff rates to greenfield rates; demonstrate sustainable approaches to the management of surface water making use of SuDS including green roofs, rainwater harvesting and other innovative technologies; and incorporate soft landscaping, planting, and impermeable surfacing.
- Flood resistance and resilience measures should be adopted within ground level developments to reduce potential damage during surface water flooding and enable rapid re-occupancy.
- The RoFSW mapping shows that some of the main routes through the AMI are at risk of surface water flooding. Development proposals within the AMI should consider provision of safe access/egress using alternative routes at lower risk of surface water flooding.
- The risk of groundwater flooding and groundwater levels should be further assessed as part of a Site Investigation for specific development proposals within the AMI.