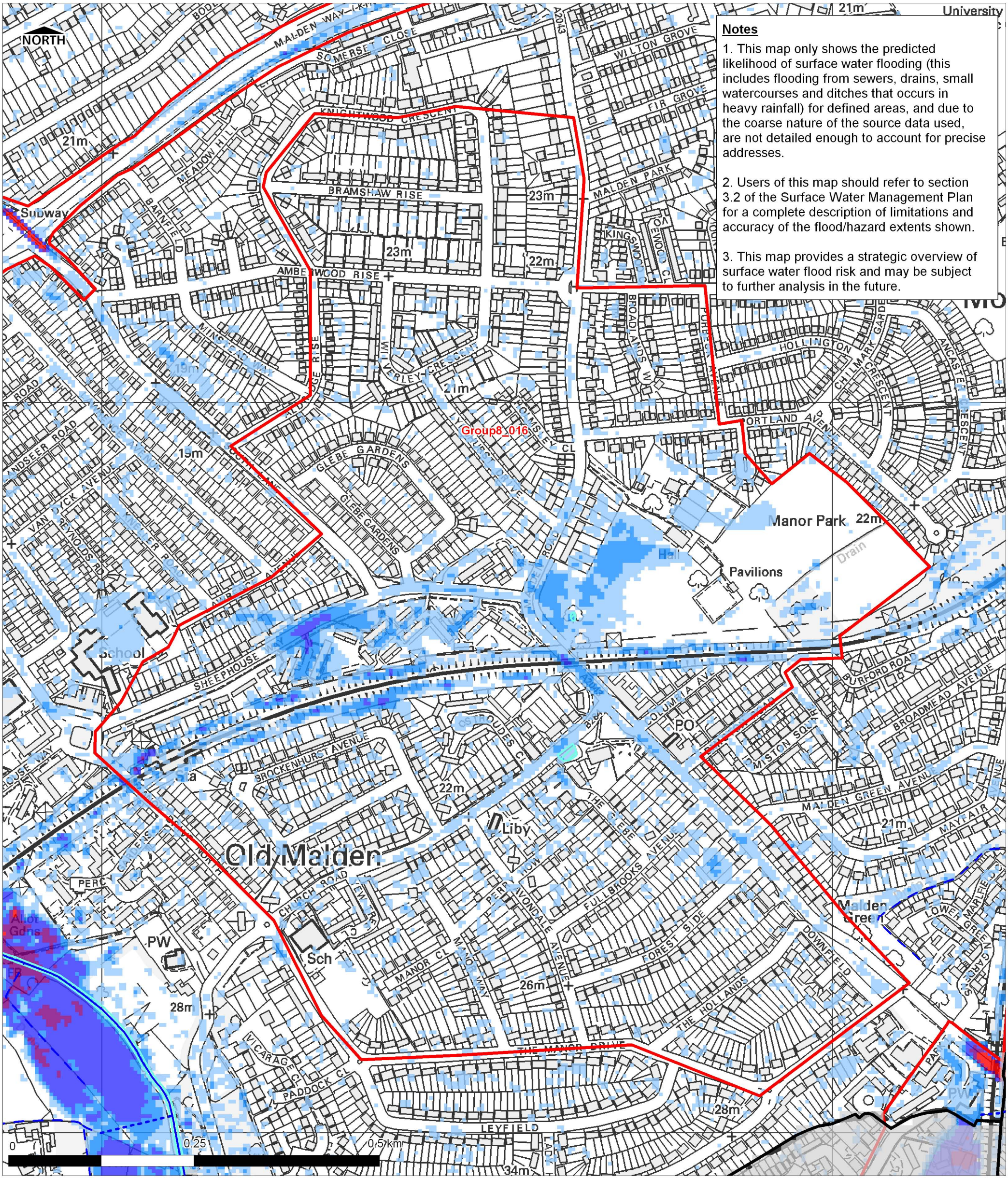
CDA 016 OLD MALDEN

3.8.28 CDA-016 is located in the east of the Borough. Surface water flows from the north and south towards the centre of this CDA where flooding is shown along Sheephouse Way and Malden Road, with peak depths experienced at the rail bridge crossing. A large extent of flooding within this CDA is contained within Manor Park.

3.8.29 Thames Water DG5 records identify the CDA as being located within a post code boundary with 1-5 records of sewer flooding (Figure D-5).

3.8.30 The CDA is not identified as being at risk of groundwater flooding, and the Environment Agency has no records of groundwater flooding at this location (Figure 3).

Summary Table – CDA 016 Old Malden		
LLFA	Royal Borough of Kingston upon Thames	
Flood Risk Categorisation:	Surface water, sewer flooding	
Property Count 1% AEP	• Approximately **539 non deprived households** are identified to be at risk of flooding to a **depth > 0.03m** • **0 non deprived** households with **basements** are identified to be at risk of flooding to a **depth > 0.03m**	• 0 **non deprived households** are identified to be at risk of flooding to a depth > 0.5m. • 0 **non deprived** households with **basements** are identified to be at risk of flooding to a depth >0.5m
	There are no deprived households identified as being at risk within the CDA	
Critical Infrastructure	There are no pieces of critical infrastructure identified within this CDA	
Validation	The Council do not have any records of surface water flooding at this location.	
Figures	Figure 3.8.9a – Surface Water Depth (1% AEP) Figure 3.8.9b – Surface Water Flood Hazard (1% AEP)	



THIS DRAWING MAY BE USED ONLY FOR THE PURPOSE INTENDED

Legend

- Borough Administrative Boundary
- Critical Drainage Area
- Permanent Water Bodies
- Main River
- Ordinary Watercourse
- Culverted Watercourse

Flood Depth

- <0.1m
- 0.1m to 0.25m
- 0.25m to 0.5m
- 0.5m to 1.0m
- 1.0m to 1.5m
- >1.5m

Royal Borough of Kingston upon Thames

Royal Kingston

Surface Water Management Plan

Scale at A3	Date	Drawn by	Approved by
1:5,000	20/07/2011	D.SKILTON	E.CRAVEN

Group8_016 (Old Malden)
Surface Water Depth (m)
1 in 100 Chance of rainfall event occuring in any given year (1% AEP)

Consultants
CAPITA SYMONDS Flood Risk Management
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URS / Scott Wilson
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London
SW1P 1PL

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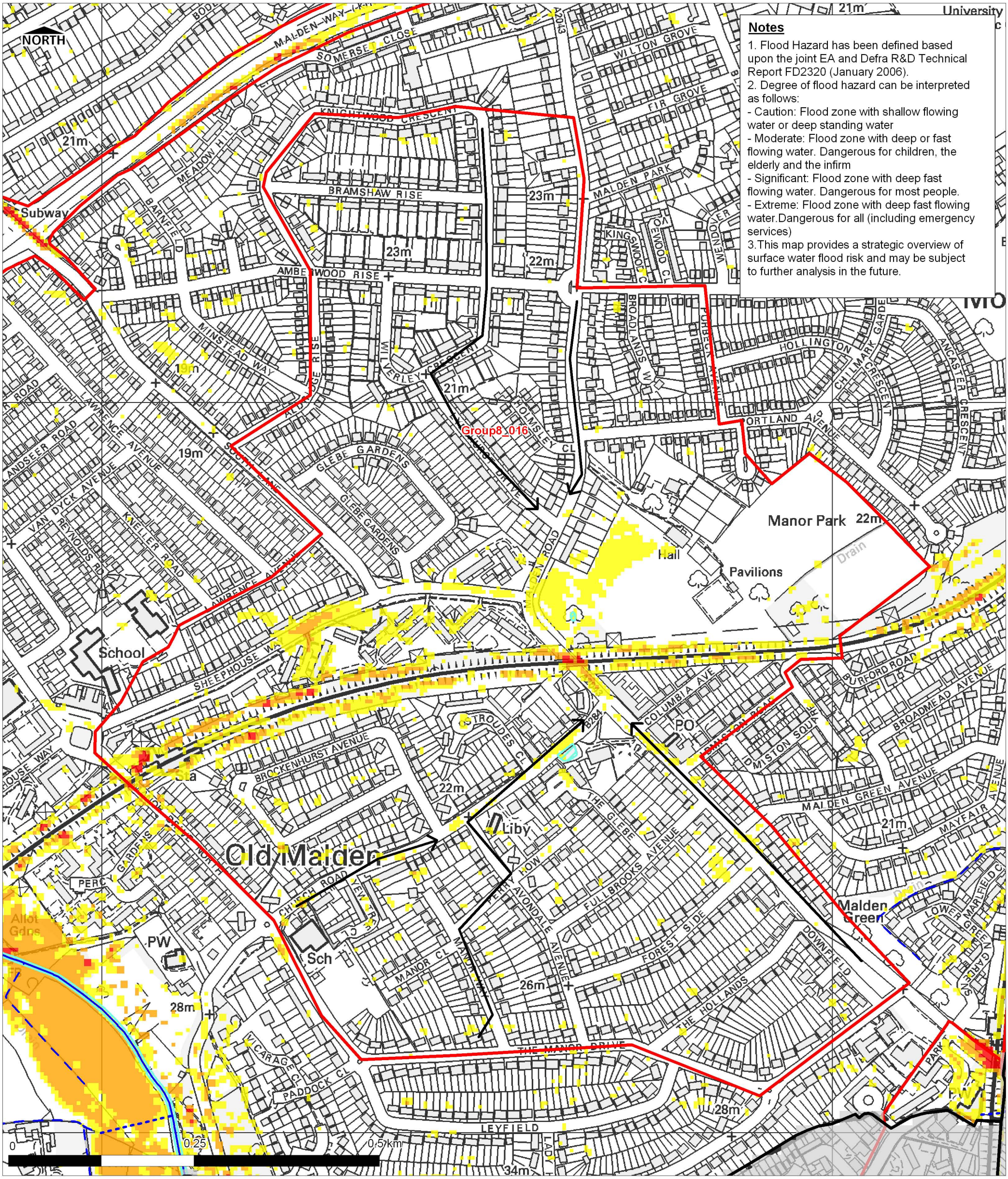
FIGURE 3.8.9a

Filepath: N:\Current Projects\D134785 D134786 DRAIN LONDON Tier 2\02 Group 8 (D134786)\05 GIS



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Royal Borough of Kingston upon Thames

Surface Water Management Plan

Group8_016 (Old Malden)
Surface Water Flood Hazard Rating
1 in 100 Chance of rainfall event occuring in any given year (1% AEP)

Consultants
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Flood Risk Management
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Thames Water
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Scale at A3	Date	Drawn by	Approved by
1:5,000	20/07/2011	D.SKILTON	E.CRAVEN

FIGURE 3.8.9b

Filepath: N:\Water\Current Projects\D134785 D134786 DRAIN LONDON Tier 2\02 Group 8 (D134786)\05 GIS

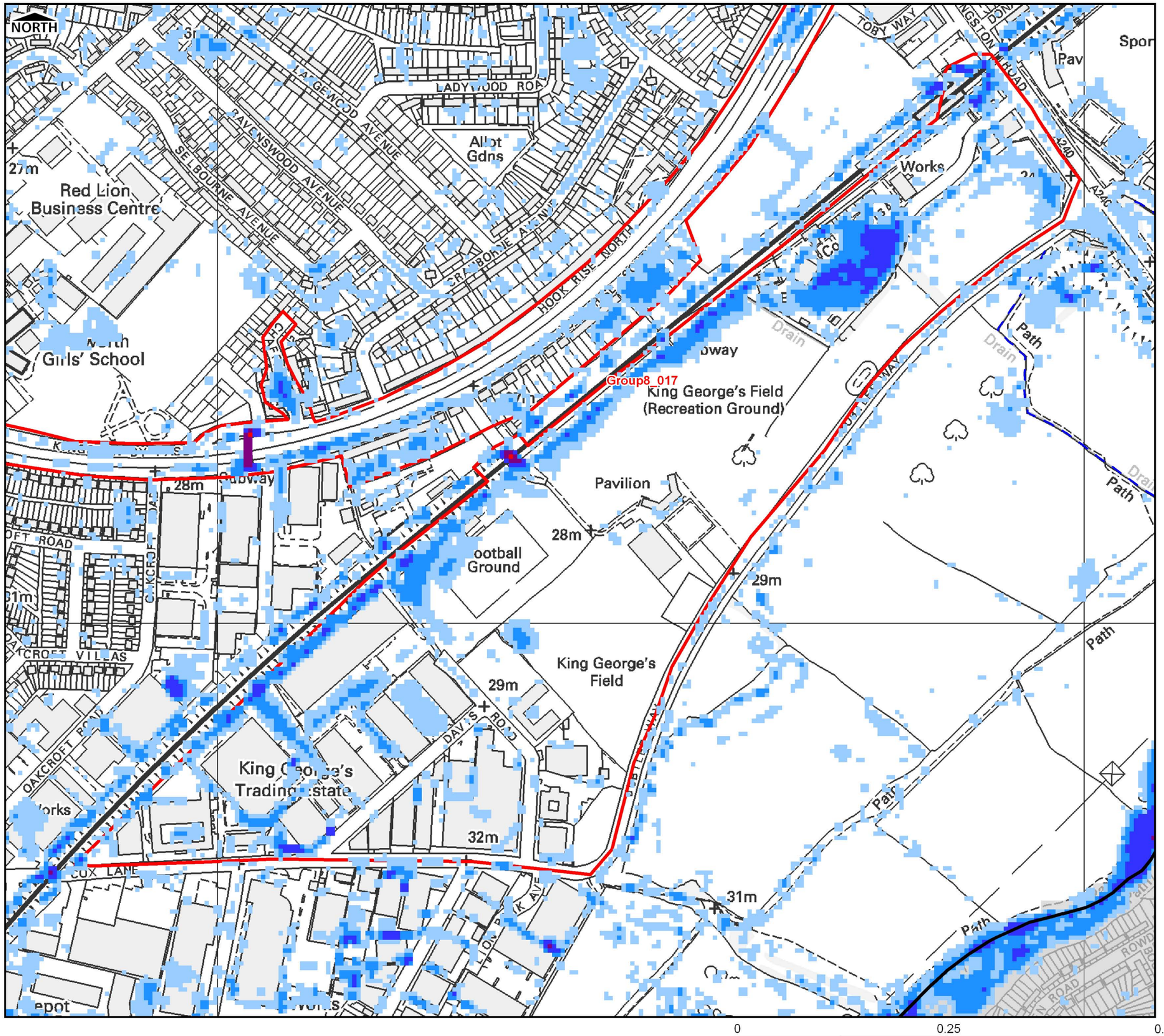
CDA 017 KING GEORGE'S TRADING ESTATE

3.8.31 This CDA is located towards the south of the Borough and contains the King George Trading Estate. Surface water from the Trading Estate flows in a north westerly direction and pluvial modelling has identified pooling behind the rail embankment. The Bus Depot located on Kingston Road is shown to be located within a LFRZ.

3.8.32 The Borough does not have any records of flooding at this location and the CDA is not identified as an area prone to flooding by Network Rail. The surface water drainage network within the Trading Estate is privately owned and maintained, connecting to Thames Water's network in Cox Lane.

3.8.33 The CDA is identified as being at risk of elevated groundwater levels, however the Environment Agency do not have any records of groundwater flooding at this location. Thames Water DG5 records show 11-20 records of sewer flooding in the local post code area.

Summary Table – CDA 017 King Georges Trading Estate		
LLFA	Royal Borough of Kingston upon Thames	
Flood Risk Categorisation:	Surface water, sewer flooding	
Property Count 1% AEP	• **1 non deprived households** are identified to be at risk of flooding to a **depth > 0.03m** • **0 non deprived** households with **basements** are identified to be at risk of flooding to a **depth > 0.03m**	• 0 **non deprived households** are identified to be at risk of flooding to a depth > 0.5m. • 0 **non deprived** households with **basements** are identified to be at risk of flooding to a depth >0.5m
	There are no deprived households identified as being at risk within the CDA	
Critical Infrastructure	There are no pieces of critical infrastructure located within this CDA	
Validation	The Council do not have any records of flooding at this location	
Assumptions / Comments	The low property count reflects that this CDA contains light industrial uses rather than residential property.	
Figures	Figure 3.8.10a – Surface Water Depth (1% AEP) Figure 3.8.10b – Surface Water Flood Hazard (1% AEP)	



THIS DRAWING MAY BE USED ONLY FOR THE PURPOSE INTENDED

- Borough Administrative Boundary
- Critical Drainage Area
- Permanent Water Body
- Main River
- Ordinary Watercourse
- Culverted Watercourse

Flood Depth

- <0.1m
- 0.1m to 0.25m
- 0.25m to 0.5m
- 0.5m to 1.0m
- 1.0m to 1.5m
- >1.5m

Notes

1. This map only shows the predicted likelihood of surface water flooding (this includes flooding from sewers, drains, small watercourses and ditches that occurs in heavy rainfall) for defined areas, and due to the coarse nature of the source data used, are not detailed enough to account for precise addresses.
2. Users of this map should refer to section 3.2 of the Surface Water Management Plan for a complete description of limitations and accuracy of the flood/hazard extents shown.
3. This map provides a strategic overview of surface water flood risk and may be subject to further analysis in the future.

Royal Borough of Kingston upon Thames

Surface Water Management Plan

Scale at A3	Date	Drawn by	Approved by
1:4,500	20/07/11	A.HARRIS	J.ROBINSON

Group8_017 (King George Trading Estate)
Surface Water Depth (m)
1 in 100 Chance of rainfall event occuring in any given year (1% AEP)

Consultants
CAPITA SYMONDS Flood Risk Management
Scott Wilson
URS / Scott Wilson
6 - 8 Greencoat Place
London
SW1P 1PL

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FIGURE 3.8.10a

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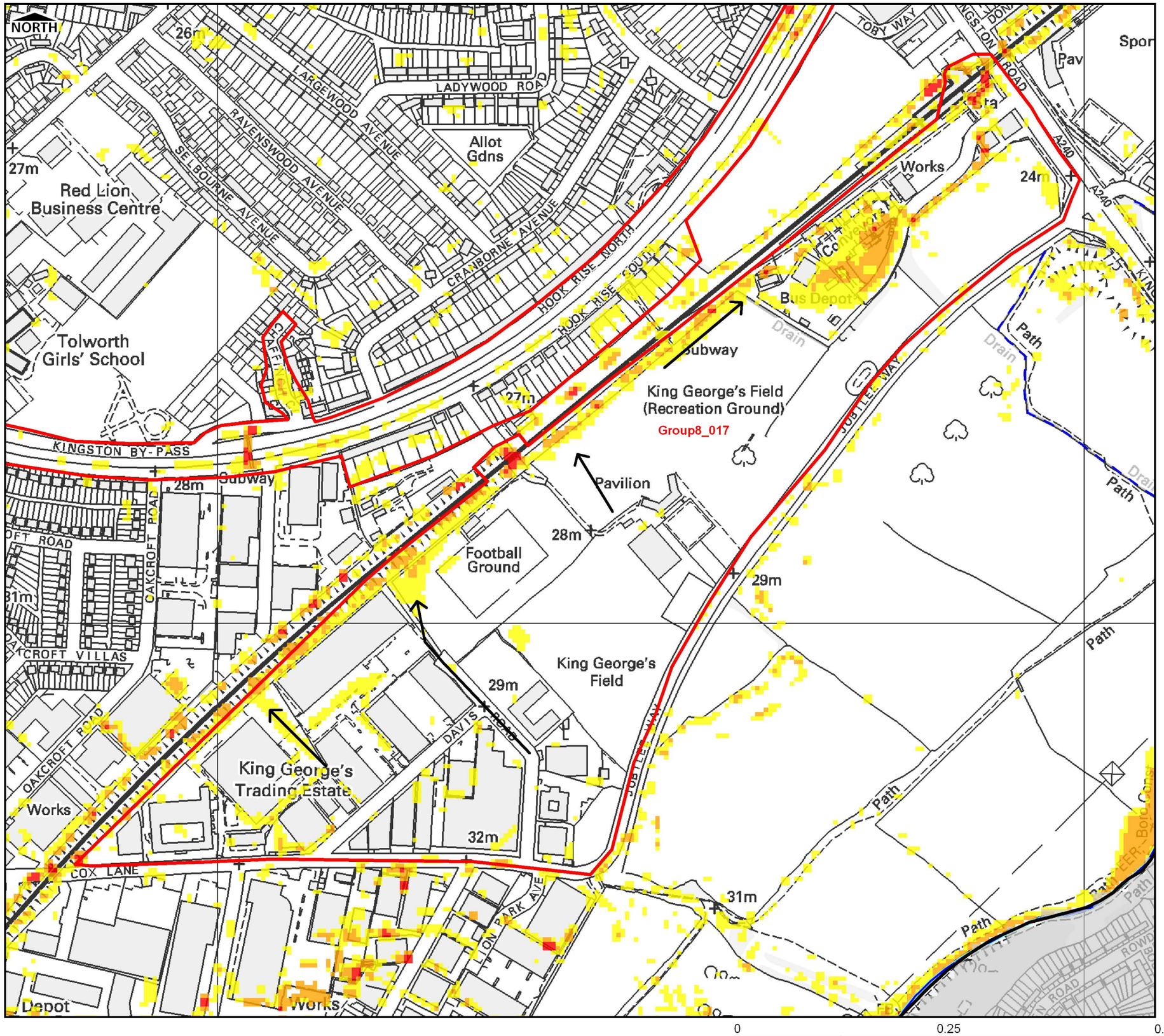

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Borough Administrative Boundary
Critical Drainage Area
Permanent Water Body
Main River
Ordinary Watercourse
Culverted Watercourse

Flood Hazard

- <0.75 Caution (Very low hazard)
- 0.75 - 1.25 Moderate (Danger for some)
- 1.25 - 2.0 Significant (Danger for most)
- <2.0 Extreme (Danger for all)

Flow Direction Arrows

Notes

1. Flood Hazard has been defined based upon the joint EA and Defra R&D Technical Report FD2320 (January 2006).
2. Degree of flood hazard can be interpreted as follows:
- Caution: Flood zone with shallow flowing water or deep standing water
- Moderate: Flood zone with deep or fast flowing water. Dangerous for children, the elderly and the infirm
- Significant: Flood zone with deep fast flowing water. Dangerous for most people.
- Extreme: Flood zone with deep fast flowing water. Dangerous for all (including emergency services)
3. This map provides a strategic overview of surface water flood risk and may be subject to further analysis in the future.

Royal Borough of Kingston upon Thames

Surface Water Management Plan

Scale at A3	Date	Drawn by	Approved by
1:4,500	20/07/11	A.HARRIS	J.ROBINSON

Group8_017 (King George Trading Estate)
Surface Water Flood Hazard Rating
1 in 100 Chance of rainfall event occuring in any given year (1% AEP)

Consultants
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London
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FIGURE 3.8.10b

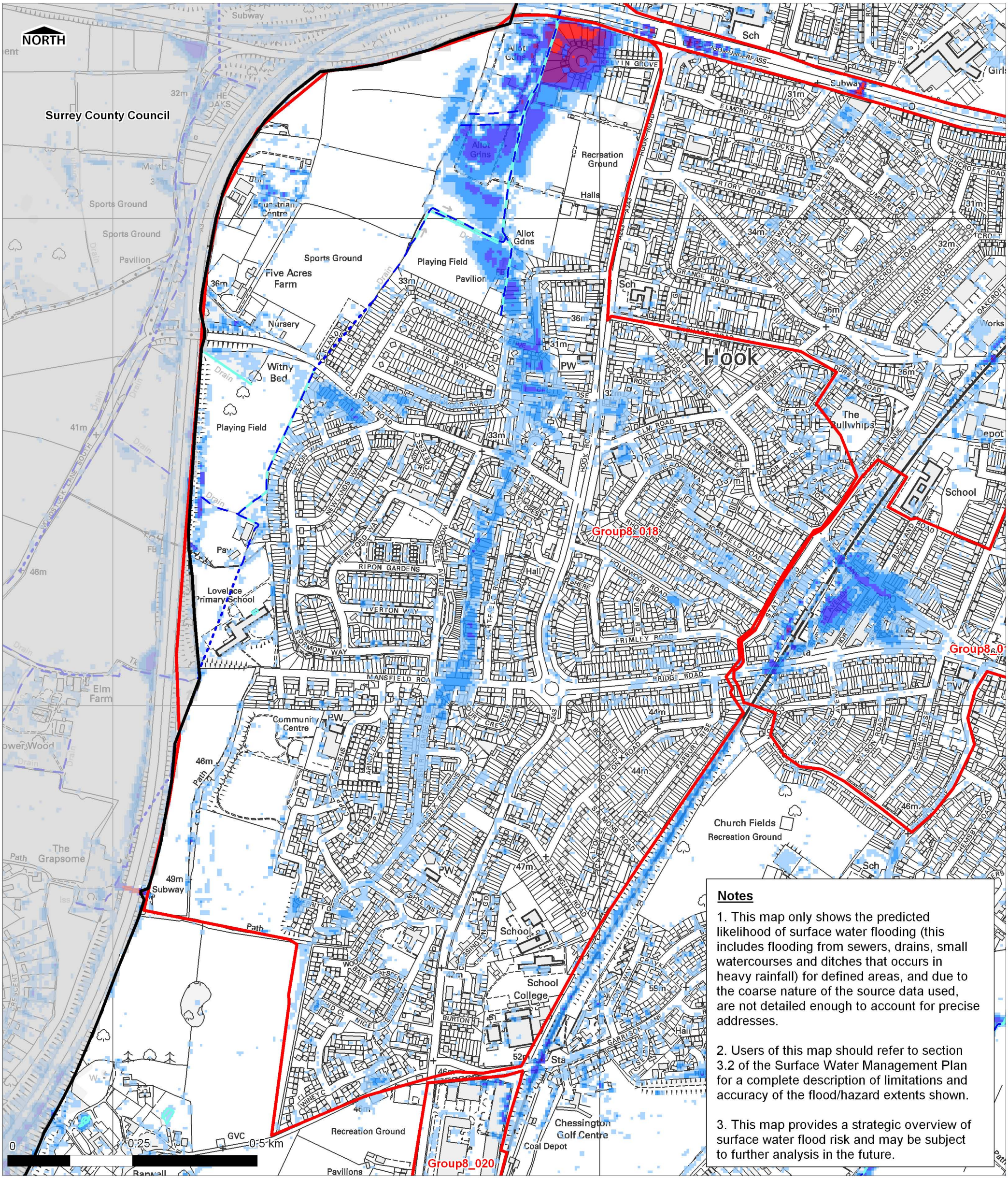
CDA 018 HOOK KELVIN GROVE

3.8.34 This CDA is located in the south west of the Borough, within the upper catchment of the Surbiton Stream. The north of the CDA including part of Kelvin Grove is located within the Environment Agency Flood Zone 3 outline. Pluvial modelling has also identified three overland flow paths leading towards drainage channels in the playing fields located to the north. These include Sussex Gardens/Hartfield Road to the south, Clayton and Selwood Road to the west and Moorfield/Elm Road to the east.

3.8.35 The Royal Borough of Kingston upon Thames do not have any records of flooding at this location, however it is known to be situated at a topographical low point. Historical records show existence of a drainage ditch shown to be located within the LFRZ. Thames Water records show a CSO outfall to the Surbiton Stream within the southern extent of the CDA at Barwell Court. The Royal Borough of Kingston upon Thames is aware of flooding problems in fields near to Woodall Close where there is a grate and culvert feature in the vicinity of the Thames Water CSO outfall. Thames Water DG5 records show 11-20 records of sewer flooding in the north of the CDA and 6-10 sewer flooding records in the south of the CDA (Figure D-5).

3.8.36 The centre of the CDA is identified as having an increased potential for groundwater flooding, however the Environment Agency only has one record of groundwater flooding at this location.

Summary Table – CDA 018 Hook, Kelvin Grove		
LLFA	Royal Borough of Kingston upon Thames	
Flood Risk Categorisation:	Surface water, sewer flooding, groundwater flooding (1 record)	
Property Count 1% AEP	• Approximately **1698 non deprived households** are identified to be at risk of flooding to a **depth > 0.03m** • Approximately **7 non deprived** households with **basements** are identified to be at risk of flooding to a **depth > 0.03m**	• 16 **non deprived households** are identified to be at risk of flooding to a depth > 0.5m. • 0 **non deprived** households with **basements** are identified to be at risk of flooding to a depth >0.5m
	There are no deprived households identified as being at risk within the CDA	
Critical Infrastructure	There is an electricity substation located in the south of the CDA on Orchid Close. The western boundary of the CDA is the A3, the western boundary is in part identified by the London Waterloo rail link	
Validation	The Council have known flooding problems in fields near to Woodall Close where there is a grate and culvert feature in the vicinity of the Thames Water CSO outfall	
Figures	Figure 3.8.11a – Surface Water Depth (1% AEP) Figure 3.8.11b – Surface Water Flood Hazard (1% AEP)	



Notes

1. This map only shows the predicted likelihood of surface water flooding (this includes flooding from sewers, drains, small watercourses and ditches that occurs in heavy rainfall) for defined areas, and due to the coarse nature of the source data used, are not detailed enough to account for precise addresses.

2. Users of this map should refer to section 3.2 of the Surface Water Management Plan for a complete description of limitations and accuracy of the flood/hazard extents shown.

3. This map provides a strategic overview of surface water flood risk and may be subject to further analysis in the future.

THIS DRAWING MAY BE USED ONLY FOR THE PURPOSE INTENDED

Legend

- Borough Administrative Boundary
- Critical Drainage Area
- Permanent Water Bodies
- Main River
- Ordinary Watercourse
- Culverted Watercourse

Flood Depth

- <0.1m
- 0.1m to 0.25m
- 0.25m to 0.5m
- 0.5m to 1.0m
- 1.0m to 1.5m
- >1.5m

Royal Borough of Kingston upon Thames

Surface Water Management Plan

Group8_008 (Hook/Kelvin Grove)
Surface Water Depth (m)
1 in 100 Chance of rainfall event occuring in any given year (1% AEP)

Consultants
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Scale at A3	Date	Drawn by	Approved by
1:7,500	20/07/2011	D.SKILTON	E.CRAVEN

FIGURE 3.8.11a

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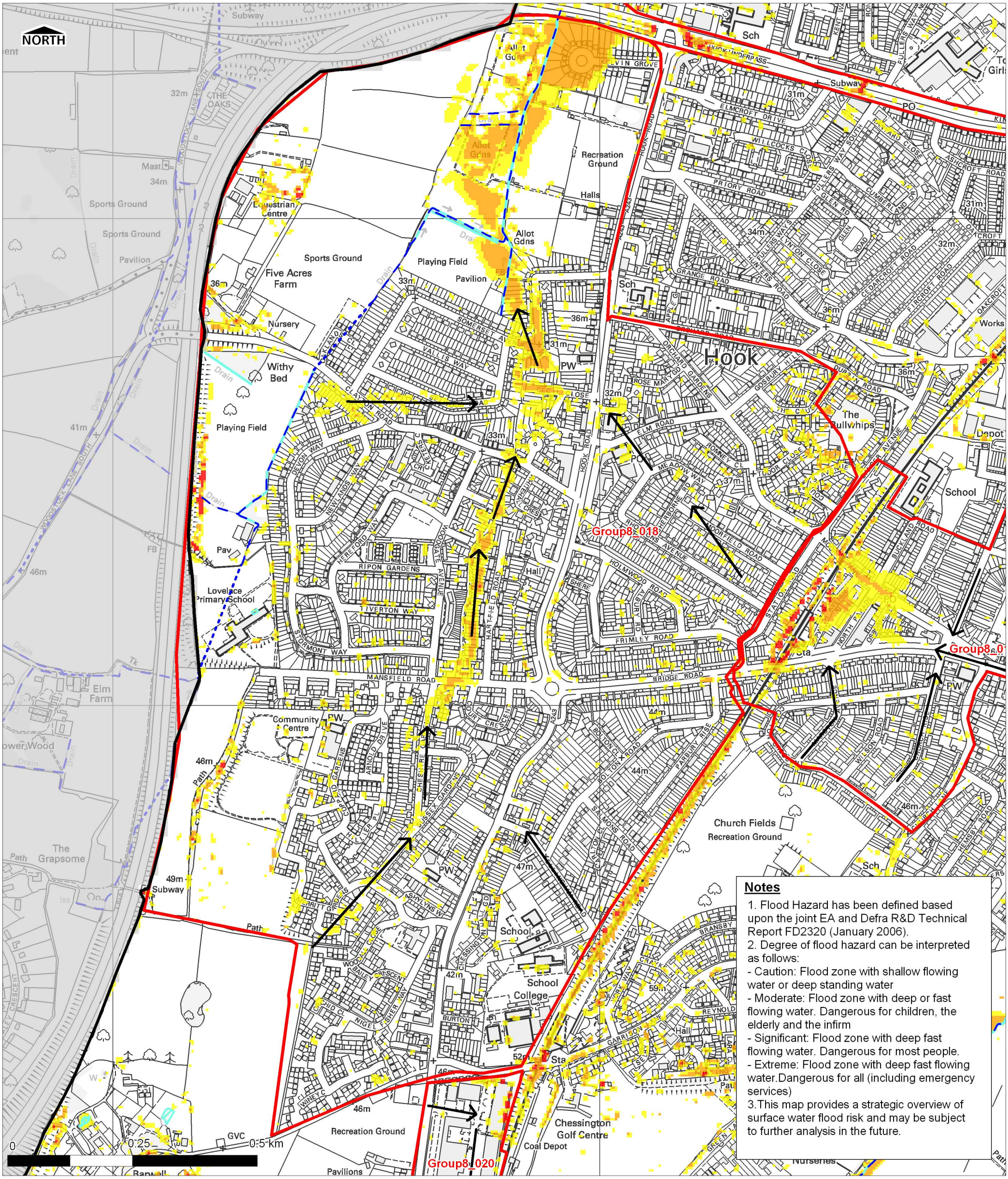

THIS DRAWING MAY BE USED ONLY FOR THE PURPOSE INTENDED

Legend

- Borough Administrative Boundary
- Critical Drainage Area
- Permanent Water Bodies
- Main River
- Ordinary Watercourse
- Culverted Watercourse
- Flow Direction Arrows

Flood Hazard

- <0.75 Caution (Very low hazard)
- 0.75 - 1.25 Moderate (Danger for some)
- 1.25 - 2.0 Significant (Danger for most)
- <2.0 Extreme (Danger for all)

Royal Borough of Kingston upon Thames

Surface Water Management Plan

Group8_018 (Hook/Kelvin Grove)
Surface Water Flood Hazard Rating
1 in 100 Chance of rainfall event occuring in any given year (1% AEP)

Consultants
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Scale at A3	Date	Drawn by	Approved by
1:7,500	20/07/2011	D.SKILTON	E.CRAVEN

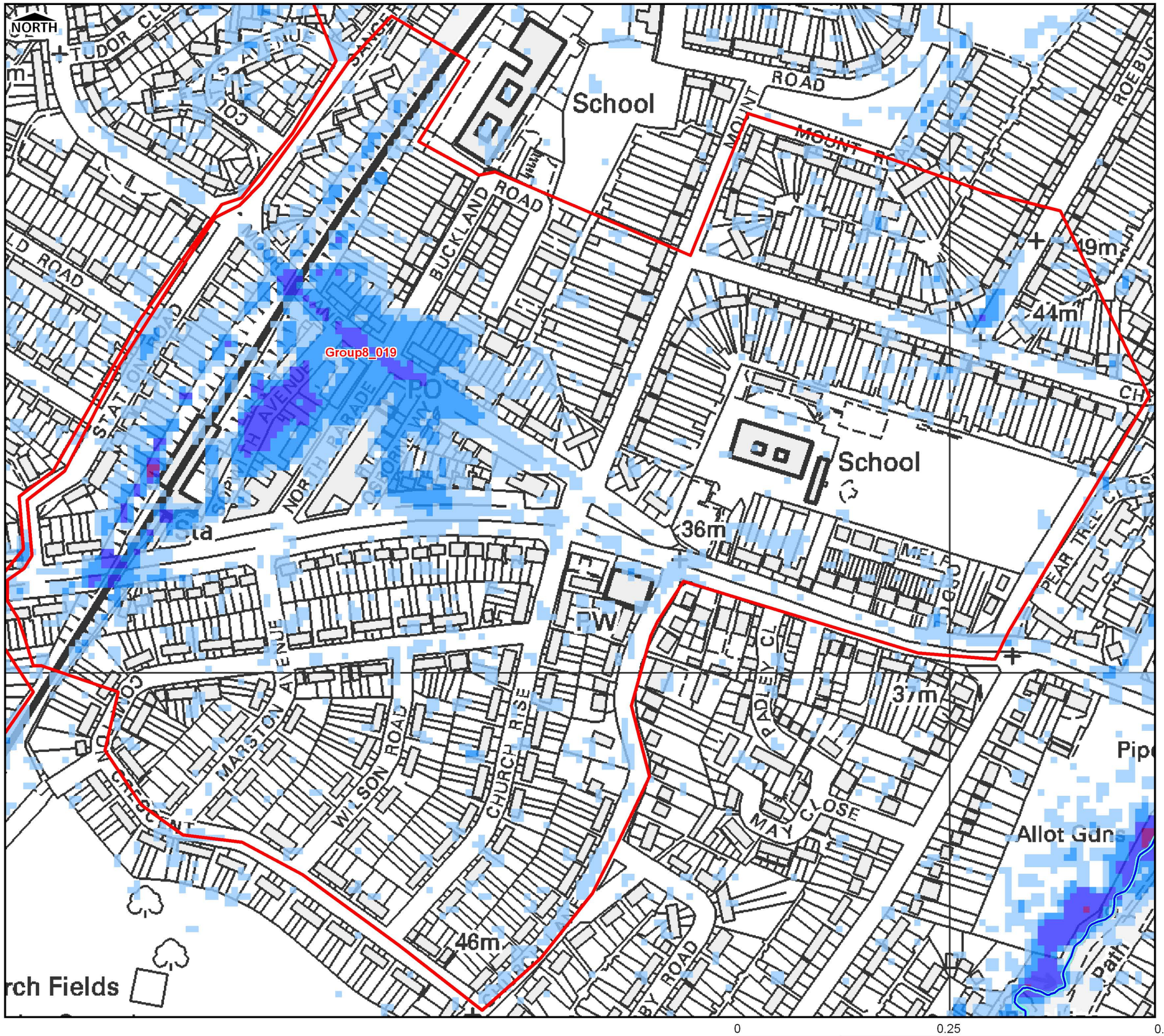
FIGURE 3.8.11b

Filepath: N:\Water\Current Projects\D134785 D134786 DRAIN LONDON Tier 2\02 Group 8 (D134786)\05 GIS

CDA 019 CHESSINGTON NORTH STATION

3.8.37 This CDA is located in a topographical low point associated with the rail embankment. Surface Water from the south, north and east flows towards the railway embankment where water pools in the highway at Moor Lane and Bridge Road. The Royal Borough of Kingston upon Thames has no records of flooding at this location. The CDA is not identified to be in an area at increased potential for groundwater flooding. Thames Water records show 6-10 records of sewer flooding in the south of the Borough.

Summary Table – CDA 019 Chessington North Station		
LLFA	Royal Borough of Kingston upon Thames	
Flood Risk Categorisation:	Surface water, sewer flooding	
Property Count 1% AEP	• Approximately **399 non deprived households** are identified to be at risk of flooding to a **depth > 0.03m** • **0 non deprived** households with **basements** are identified to be at risk of flooding to a **depth > 0.03m**	• 0 **non deprived households** are identified to be at risk of flooding to a depth > 0.5m. • 0 **non deprived** households with **basements** are identified to be at risk of flooding to a depth >0.5m
	There are no deprived households identified as being at risk within the CDA	
Critical Infrastructure	There is one piece of critical infrastructure located within this CDA, being an electricity substation on Compton Crescent	
Validation	The Council has no record of flooding at this location.	
Figures	Figure 3.8.12a – Surface Water Depth (1% AEP) Figure 3.8.12b – Surface Water Flood Hazard (1% AEP)	



THIS DRAWING MAY BE USED ONLY FOR THE PURPOSE INTENDED

- Borough Administrative Boundary
- Critical Drainage Area
- Permanent Water Body
- Main River
- Ordinary Watercourse
- Culverted Watercourse

Flood Depth

- <0.1m
- 0.1m to 0.25m
- 0.25m to 0.5m
- 0.5m to 1.0m
- 1.0m to 1.5m
- >1.5m

Notes

1. This map only shows the predicted likelihood of surface water flooding (this includes flooding from sewers, drains, small watercourses and ditches that occurs in heavy rainfall) for defined areas, and due to the coarse nature of the source data used, are not detailed enough to account for precise addresses.
2. Users of this map should refer to section 3.2 of the Surface Water Management Plan for a complete description of limitations and accuracy of the flood/hazard extents shown.
3. This map provides a strategic overview of surface water flood risk and may be subject to further analysis in the future.

Royal Borough of Kingston upon Thames

Surface Water Management Plan

Scale at A3	Date	Drawn by	Approved by
1:3,000	20/07/11	D.SKILTON	J.ROBINSON

Group8_019 (Chessington North Station)
Surface Water Depth (m)
1 in 100 Chance of rainfall event occuring in any given year (1% AEP)

Consultants
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London
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FIGURE 3.8.12a

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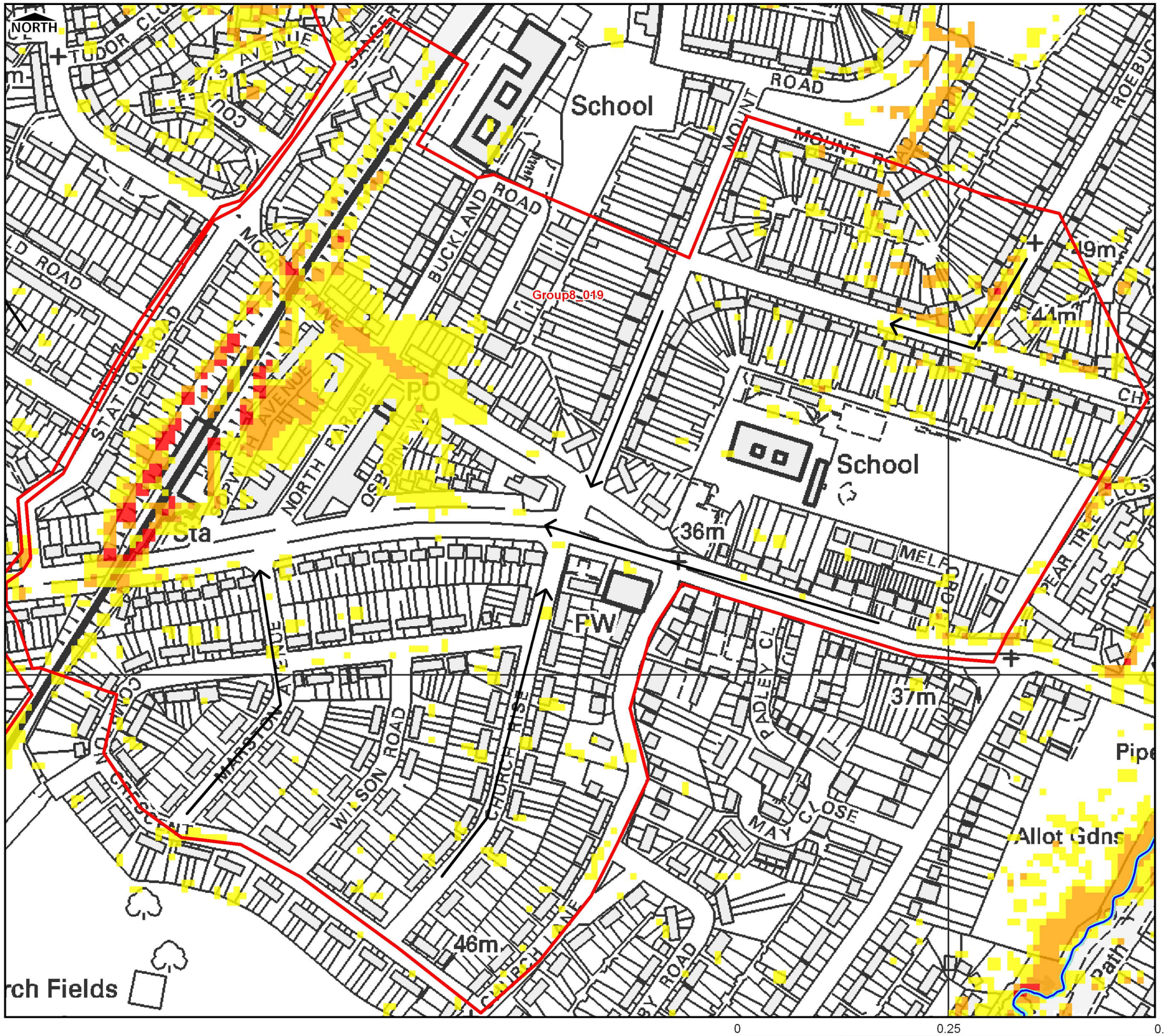

THIS DRAWING MAY BE USED ONLY FOR THE PURPOSE INTENDED

- Borough Administrative Boundary
- Critical Drainage Area
- Permanent Water Body
- Main River
- Ordinary Watercourse
- Culverted Watercourse

Flood Hazard

- <0.75 Caution (Very low hazard)
- 0.75 - 1.25 Moderate (Danger for some)
- 1.25 - 2.0 Significant (Danger for most)
- <2.0 Extreme (Danger for all)

→ Flow Direction Arrows

Notes

1. Flood Hazard has been defined based upon the joint EA and Defra R&D Technical Report FD2320 (January 2006).
2. Degree of flood hazard can be interpreted as follows:
- Caution: Flood zone with shallow flowing water or deep standing water
- Moderate: Flood zone with deep or fast flowing water. Dangerous for children, the elderly and the infirm
- Significant: Flood zone with deep fast flowing water. Dangerous for most people.
- Extreme: Flood zone with deep fast flowing water. Dangerous for all (including emergency services)
3. This map provides a strategic overview of surface water flood risk and may be subject to further analysis in the future.

Royal Borough of Kingston upon Thames

Surface Water Management Plan

Scale at A3	Date	Drawn by	Approved by
1:3,000	20/07/11	D.SKILTON	J.ROBINSON

Group8_019 (Chessington North Station)
Surface Water Flood Hazard
1 in 100 Chance of rainfall event occuring in any given year (1% AEP)

Consultants
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FIGURE 3.8.12b

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CDA 020 BARWELL BUSINESS PARK

3.8.38 Pluvial modelling has identified the Business Park to be at greater risk of flooding than the surrounding land. Surface water from the Leatherhead Road flows through the Business Park entrance and pools at the rear of the Park, adjacent to the railway embankment. At this location the surface water sewers are culverted underneath the railway embankment in two pipes 375mm and 610mm (Thames Water data) which outfall to the Bonesgate Stream to the east. Thames Water records show 6-10 records of sewer flooding in the south of the Borough. The CDA is not identified to be in an area at increased potential for groundwater flooding.

Summary Table – CDA 020 Barwell Business Park		
LLFA	Royal Borough of Kingston upon Thames	
Flood Risk Categorisation:	Surface water, sewer flooding	
Property Count 1% AEP	• **0 non deprived households** are identified to be at risk of flooding to a **depth > 0.03m** • **0 non deprived** households with **basements** are identified to be at risk of flooding to a **depth > 0.03m**	• 0 **non deprived households** are identified to be at risk of flooding to a depth > 0.5m. • 0 **non deprived** households with **basements** are identified to be at risk of flooding to a depth >0.5m
	There are no deprived households identified as being at risk within the CDA	
Critical Infrastructure	There is no critical infrastructure within this CDA	
Validation	The council has no records of flooding at this location	
Assumptions / Comments	Property counts are 0 as the CDA is located at a business park, 20 commercial properties are identified as potentially being at risk of surface water flooding (see Table 3-2)	
Figures	Figure 3.8.13a – Surface Water Depth (1% AEP) Figure 3.8.13b – Surface Water Flood Hazard (1% AEP)	