	St Albans City and District Council Level 2 Strategic Flood Risk Assessment Detailed Site Summary Table
Site details	
Address	Affinity Water, 107 Holywell Hill Road St Albans
Area	1.22ha
Current land use	Pumping Station
Proposed land use	Residential
Flood Risk Vulnerability	More Vulnerable
Sources of flood risk	
Location of the site within the catchment	The site is located in central St Albans. The site lies within the area to the north of the A414, North Orbital Road and to the south of the A1081, London Road. The A5183 borders the western boundary of the site in addition to Nexus Court a residential flat unit and a nursery. The northern boundary borders residential housing with the River Ver bordering the site to the south and east. The River Ver covers a catchment of approximately 146 km2. The upper area of the catchment is mainly rural, and the lower mainly urban, as it flows through St Albans, where the site is located. The site is also within the wider Colne Management Catchment, which covers an area of 1,040 km^2.
Topography	Environment Agency 1m resolution LIDAR shows that topography varies across the site. The site is in a densely developed urban area as well as being covered in thick vegetation therefore the LIDAR data is unlikely to be representative of the actual site topography, this may have an impact on some of the flood risk datasets used in the assessment. The western area of the site consists of several buildings with elevations ranging from 76.2 to 77.1mAOD, with a low spot along the north boundary. The highest elevation within the site is located close to the centre of the site, just east of Nexus Court, with elevations reaching a maximum of 78.5mAOD. In the centre of the site there is an area of lower elevation reaching a minimum of 75.7mAOD. The eastern area of the site consists of a large area of mature trees with elevations between 75.8-76.8mAOD.
Existing drainage features	The River Ver runs along the sites southern and eastern boundaries. There are no other existing drainage features within the site that are visible on topographic mapping or aerial imagery. Given that the site is within the St Albans urban area, it is likely that the site is drained by the surface water drainage network.

Fluvial	**The proportion of site at risk FMFP:** FZ3b – 19% FZ3a – 31% FZ2 – 66% FZ1 – 34% The Flood Zone values quoted show the percentage of the site at flood risk from that particular Flood Zone/event, including the percentage of the site at flood risk at a higher risk zone. This is because the values quoted are the area covered by each Flood Zone/extent within the site boundary. For example: Flood Zone 2 includes Flood Zone 3. Flood Zone 1 is the remaining area outside Flood Zone 2 (FZ2+ FZ1 = 100%). **Available data:** The Environment Agency's Flood Zone mapping has been used in this assessment, alongside the River Ver (2019) 1D-2D hydraulic model received for this Level 2 SFRA. **Flood characteristics:** The site's southern and eastern boundaries are located within Flood Zone 3b (the 3.3%AEP event), in addition to an area in the centre of the site, due to the site's topography. The maximum flood depth within the site in this event is located within the centre of the site at 0.49m, the remaining areas to along the southern and eastern boundaries are <0.2m. Flow velocities within the site are <0.3m/s. The flood hazard is 'Very low' to 'Danger for most'. A larger area of the site is located within Flood Zone 3a (the 1% AEP event) affecting the centre and eastern areas of the site. Flood depths vary from <0.25m to between 0.50 to 0.75m located in the centre of the site. Flow velocities are typically <0.25m/s, reaching a maximum of between 0.50 and 1.00m/s along the southern boundary by the River Ver. The resulting flood hazard is 'Very low' to 'Danger for most'. Most of the site is located within Flood Zone 2 (the 0.1%AEP event), this includes the eastern half of the site as well as a large area in the west of the site where the current access road to the Affinity site is located. Flood depths vary across the site reaching a maximum of 0.79m in the centre of the site, the remaining depths area primarily <0.25m, with some deeper areas within the east of the site; between 0.25 to 0.50m. Flow velocities are mainly <0.41m/s, reaching a maximum of 1.26m/s by the current entrance to the site. The resulting flood hazard is 'Very low' to 'Danger for most'. The western area of the site and an area in the eastern side of the site is located within a Reduction in Risk of Flooding from Rivers and Sea due to Defences area. This is due to the Markyate flood storage area which is located approximately 14km upstream of the site. This means that some of the site is shown to benefit from defences (although may still be at some risk). The defended scenario with the flood storage area added was modelled and compared to the undefended model results. There was a slight reduction in flood extent between the 3.3%, 1%, and 0.1% AEP events. For the 3.3% AEP event, both scenarios had a flood extent that

	covered 19% of the site. For the 1% AEP event, the undefended flood extent covered 31% of the site, while the defended flood extent was slightly less at 30%. For the 0.1% AEP event, the defended scenario had a flood extent that covered 64% of the site, compared to 66% in the undefended scenario. The flood depths between the undefended and defended scenarios were similar, with the exception of a slightly larger area covered in a depth of less than 0.25 meters for the 1% and 0.1% AEP events. The areas unaffected by fluvial flooding include the area of higher elevation to the east of Nexus Court, a central section of the northern boundary and the northwestern corner of the site
Surface Water	**Proportion of site at risk (RoFSW):** **3.3% AEP** – 11% Max depth – 0.30 – 0.60m Max velocity – 0.25 – 0.50m/s **1% AEP** – 23% Max depth – 0.30 – 0.60m Max velocity – 0.50 – 1.00m/s **0.1% AEP** – 75% Max depth – 0.90 – 1.20 Max velocity – 1.00 – 2.00m/s **Available data:** The Environment Agency's Risk of Flooding from Surface Water (RoFSW) map has been used within this assessment. **Description of surface water flow paths:** During the 3.3% AEP event, there are several areas of ponding across the site as well as a flow path along the southern boundary. The maximum flood depths within the site are between 0.30 to 0.60m, this includes an area in the centre of the site and an area on the northwestern boundary. The remaining flood depths are primarily between 0.15 to 0.30m. Flow velocities as most of the surface water within the site is within areas of ponding is mainly <0.25m/s with a few small areas reaching a maximum of 0.25 to 0.50m/s. The flood hazard is 'Very low' to 'Danger for some'. During the 1% AEP event, there are several areas of ponding including at the current entrance, an area on the northwestern boundary and two areas in the eastern half of the site. In addition to a flow path along the southern boundary. The flood depths are mainly between 0.15 to 0.30m and 0.30 to 0.60m. Due to the ponding nature of the surface water flow velocities are primarily <0.25m/s with a few small areas reaching a maximum 0.50 to 1.00m/s. The flood hazard is 'Very low' to 'Danger for most'. The higher hazard rating is located within the centre of two of the areas of ponding. During the 0.1% AEP event, 75% of the site is affected by surface water flooding. Flood depths throughout the site vary from <0.15m to a maximum of 0.90 t0 1.20m. The flow velocities also vary from <0.25m/s to 1.00 to 2.00m/s, the smaller velocities located in the northwestern and

	northeastern areas of the site. The flood hazard is 'Very low' to 'Danger for all'. The unaffected areas include the areas of highest elevation within the site, the area east of Nexus Court, a small area in the east of the site, an area on the northern boundary and two areas in the west of the site where buildings are located. The risk of surface water flooding to the site is significant and careful consideration will need to be given to how the risk can be safely managed as part of a site-specific flood risk assessment.
Reservoir	The site is shown to be at risk of Dry Day and Wet Day reservoir flooding according to the Environment Agency's reservoir flood mapping. During the Wet Day scenario, flood risk is posed to the majority of the site from the Redbourn Road Reservoir managed and operated by Thames Water. During the Dry Day, small areas along the southern boundary in addition to an area in the centre of the site are at risk of flooding from Redbourn Road Reservoir. These reservoirs are deemed as high-risk, and in the very unlikely event that the reservoirs fail, it is predicted that there is a risk to life.
Groundwater	The JBA Groundwater mapping shows that the northern and western areas of the site, which constitute 63% of the site, are at high risk of groundwater emergence, as groundwater is within 0.025m of ground level. A small area (3%) in the western part of the site, has groundwater between 0.25m and 0.5m of ground level. An additional area (6%) in the western part of the site, has groundwater between 0.5m and 5m of ground level. The remaining 28% of the site, located in the eastern area, is not at risk from groundwater emergence. The risk form groundwater will need to be investigated further as part of a site-specific flood risk assessment and is likely to require ground investigations to confirm the risk.
Sewers	The site is located within a postcode area with 11 historic incidences of sewer flooding, according to the Thames Water Hydraulic Sewer Flood Risk Register.
Flood history	There are no flood incidents specifically identified within the site. However, there were two incidents reported in the western area adjacent to the site. According to Hertfordshire County Council and St Albans District Council, there have been two recorded incidences of flooding within 25m of the site. The dates and sources of flooding are recorded as: • 2018 – the exact date of the incident is unknown. Surface water flooding along the A5183 and the current access road into the site. • 2018 – the exact date of the incident is unknown. Surface water flooding to access road in addition to internal flooding of a nearby property.

Flood risk management infrastructure	
Defences	The Environment Agency AIMS dataset shows that upstream of the site there is a flood storage area upstream of the village of Markyate.
Residual risk	The site may be at residual risk from the River Ver overtopping due to a potential blockage at the downstream bridge on Cottonmill Lane. Additionally, if the upstream flood risk storage area were to fail. The residual risk to the site posed from a culvert blockage and storage failure must be considered in a site-specific Flood Risk Assessment.
Emergency planning	
Flood warning	The majority of the site is located in an Environment Agency Flood Warning and Flood Alert Area. It is located specifically within the following warning and alert areas: • 062WAF28Ver – covering the River Ver at Markyate flood warning area. • 062FWF28StAlbans – covering the River Ver at St Albans including Sopwell, Park Street and Frogmore flood warning area. • Redbourn and St. Albans flood alert area.
Access and egress	Access and egress to the site is currently via an access road off the A5183, Holywell Hill. The access route into the site is shown to be within Flood Zone 2 extent. In the 3.3% AEP surface water event, there is small surface water flow route along the A5183 which the access road into the site, however it will not impede access. During the 1% AEP surface water event, there is a larger surface flow route extending down the A5183, then east into the access road into the site. Flood depths of surface water along the A5183 are primarily <0.15m, and on the access road depths are between 0.15 to 0.30m. The associated velocities vary, reaching a maximum of 1.00 to 2.00m/s along the A5183 then mainly <0.25m/s along the access road. The flood hazard is 'Very low' to 'Danger for some', so vehicular access and egress is possible. During the 0.1% surface water event, the access and egress route is affected by surface water route from the north along the A5183 as well as from the west. Flood depths along the access road into the site reach a maximum depth of 0.60 to 0.90m, with a large area on the A5183 by the access road reaching 0.30 to 0.60m. Velocities along the A5183 reach a maximum of >1.20m/s, and on the access road into the site reach between 1.00 to 2.00m/s. The associated flood hazard is 'Danger for most', therefore vehicular access and egress is not possible. Developers will need to demonstrate safe access and egress in the 1% AEP event including an allowance for climate change. Given the significant

	flood depths and hazards associated with fluvial flooding on site, a flood waning and evacuation plan should be prepared for the site.
Dry Islands	The site is not located on a dry island.
Climate change	
Implications for the site	**Management Catchment: Colne Management Catchment** Increased storm intensities due to climate change may increase the extent, depth, velocity, hazard and frequency of both fluvial and surface water flooding. **Fluvial:** The latest climate change allowances have been applied to the River Ver (2019) hydraulic model to indicate the impact on fluvial flood risk. Flood Zone 3b extents with both the central and higher climate change allowances are available. The 3.33% AEP plus 21% climate change and 3.33% AEP plus 35% correspond to the central and higher allowances for peak river flow respectively. The flood extents for the climate change events affect a larger area of the site, specifically along the southern boundary and the eastern half of the site. Flood Zone 3b plus 21% climate change affects 26% of the site, with the maximum flood depth, velocity and hazard reaching 0.52m, and 0.43m/s. Flood Zone 3b plus 35% climate change affects 30% of the site. With the maximum flood depth, velocity and hazard reaching 0.55m, 0.46m/s and 'Danger for most'. For Flood Zone 3a (1% AEP) plus 35% climate change allowance the maximum flood depth, velocity and hazard reaches 0.70m, 0.60m/s and 'Danger for most'. For Flood Zone 2 (0.1%AEP event) plus 35% climate change allowance the maximum flood depth, velocity and hazard reaches 0.86m, 1.25m/s and 'Danger for all'. This shows that the site is somewhat sensitive to increases in fluvial flooding due to climate change **Surface Water:** The latest climate change allowances have been applied to the Risk of Flooding from Surface Water map to indicate the impact on pluvial flood risk. The 1% AEP plus 40% climate change corresponds to the 1% AEP upper end allowance for peak rainfall intensity for the 2070s epoch and is therefore the 'design event' scenario. In the 1% AEP plus 40% climate change event the flood extent is similar to that in the 0.1% AEP event, affecting most of the site. Flood depths remain similar to the 0.1% AEP with maximum flood depths reaching 0.95m with hazard classified at 'Danger for all' along the southern boundary. This shows that the site is somewhat sensitive to increases in pluvial flooding due to climate change. Development proposals at the site must address the potential changes associated with climate change and be designed to be safe for the

	intended lifetime. The provisions for safe access and egress must also address the potential increase in severity and frequency of flooding.
Requirements for surface water drainage and integrated flood risk management	

Broad-scale assessment of potential SuDS	**Geology & Soils**
	• Geology at the site consist of:
	  ○ Bedrock – Bedrock geology of the site is Lewes Nodular Chalk Formation and Seaford Formation – Chalk. A type of sedimentary bedrock.
	  ○ Superficial deposits – The superficial deposits consist of Alluvium – Caly, silt sand and gravel.
	• Soils at the site consist of:
	  ○ Loamy and clayey floodplain soils with naturally high groundwater
	
	Sustainable Drainage Systems (SuDS)
	• Groundwater levels for most of the site are indicated to be at or very near (within 0.025m) ground level and there is a risk of groundwater flooding at the surface which may flow to and pool within topographic low spots. Detention and attenuation features should be designed to prevent groundwater ingress from impacting hydraulic capacity and structural integrity. Additional site investigation work may be required to support the detailed design of the drainage system. This may include groundwater monitoring to demonstrate that a sufficient unsaturated zone has been provided above the highest occurring groundwater level. Below ground development such as basements are not appropriate at this site.
	• BGS data indicates that the underlying geology is chalk with superficial deposits of alluvium which is likely to be free draining. This should be confirmed through infiltration testing, with the use of infiltration maximised as much as possible in accordance with the SuDS hierarchy.
	• The entire site is mostly located within Groundwater Source Protection Zone 1 (SPZ) and infiltration techniques may not appropriate for anything other than clean roof drainage. If infiltration is proposed for anything other than clean roof drainage a hydrogeological risk assessment should be undertaken, to ensure that the system does not pose an unacceptable risk to the source of supply. Proposed SuDS should be discussed with relevant stakeholders (St Albans City and District Council, Hertfordshire County Council and the Environment Agency) at an early stage to understand possible opportunities and constraints. The Groundwater Source Protection Zone guidance is currently undergoing a review; therefore, developers should ensure they are using the latest guidance available.
	• The site is not located within a historic landfill site.
	• Proposed attenuation features such as basins, ponds and tanks should be located outside of Flood Zone 3 to avoid the potential risks to the hydraulic capacity or structural integrity of these features.

	Surface water outfalls that discharge into the River Ver may be susceptible to surcharging locking due to water levels in the River Ver. The impacts of flood flows will need to be considered in terms of the attenuation storage requirements of the site and placement of the outfalls. • Surface water discharge rates should not exceed pre-development discharge rates for the site and should be designed to be as close to greenfield runoff rates as reasonably practical in consultation with the LLFA. It may be possible to reduce site runoff by maximising the permeable surfaces on site using a combination of permeable surfacing and soft landscaping techniques. • The Risk of Flooding from Surface Water (RoFSW) mapping indicates the presence of surface water flow paths during the 3.3%, 1% and 0.1% AEP events. Existing flow paths should be retained and integrated with blue-green infrastructure and public open space. • If it is proposed to discharge runoff to a watercourse or sewer system, the condition and capacity of the receiving watercourse or asset should be confirmed through surveys and the discharge rate agreed with the asset owner.
Opportunities for wider sustainability benefits and integrated flood risk management	• Implementation of SuDS at the site could provide opportunities to deliver multiple benefits including volume control, water quality, amenity and biodiversity. This could provide wider sustainability benefits to the site and surrounding area. Proposals to use SuDS techniques should be discussed with relevant stakeholders ((St Albans City and District Council, Hertfordshire County Council (LLFA) and the Environment Agency) at an early stage to understand possible constraints. • Development at this site should not increase flood risk either on or off site. The design of the surface water management proposals should take into account the impacts of future climate change over the projected lifetime of the development • Opportunities to incorporate filtration techniques such as filter strips, filter drains and bioretention areas must be considered. Consideration should be made to the existing condition of receiving waterbodies and their Water Framework Directive objectives for water quality. The use of multistage SuDS treatment will clean and improve water quality of surface water runoff discharged from the site and reduce the impact on receiving water bodies. • Opportunities to incorporate source control techniques such as green roofs, permeable surfaces and rainwater harvesting must be considered in the design of the site. • The potential to utilise conveyance features such as swales to intercept and convey surface water runoff should be considered. Conveyance features should be located on common land or public open space to facilitate ease of access. Where slopes are >5%, features should follow contours or utilise check dams to slow flows

NPPF and planning implications	
Exception Test requirements	The Local Authority will need to confirm that the Sequential Test has been carried out in line with national guidelines. The Sequential Test will need to be passed before the Exception Test is applied. The NPPF classifies residential development as 'More Vulnerable'. The Exception test is required for this site as it is within Flood Zones 2, 3a, and 3b and the development type is 'More Vulnerable'. 'More Vulnerable' development is not permitted within Flood Zone 3b.

Requirements and guidance for site-specific Flood Risk Assessment	**Flood Risk Assessment:**
	• At the planning application stage, a site-specific FRA will be required as the site is:
	  ○ Within fluvial flood zones 2, 3a, and 3b
	  ○ Greater than one hectare
	  ○ At risk of other sources of flooding (surface water, groundwater, and reservoir)
	• All sources of flooding should be considered as part of a site-specific FRA. Ground investigations are likely to be necessary to confirm the risk from groundwater flooding to the site.
	• Consultation with the St Albans City and District Council, Hertfordshire County Council, Thames Water and the Environment Agency should be undertaken at an early stage.
	• Any FRA should be carried out in line with the National Planning Policy Framework (NPPF); Flood Risk and Coastal Change Planning Practice Guidance (PPG); St Albans City and District Council's Local Plan Policies and Hertfordshire County Council's Guidance for Developers.
	• The development should be designed with mitigation measures in place where required.
	
	Guidance for site design and making development safe:
	• The developer will need to show, through an FRA, that future users of the development will not be placed in danger from flood hazards throughout its lifetime. It is for the applicant to show that the development meets the objectives of the NPPF's policy on flood risk. For example, how the operation of any mitigation measures can be safeguarded and maintained effectively through the lifetime of the development. (Para 048 Flood Risk and Coastal Change PPG).
	• This development is proposed within Flood Zone 3b extent- careful consideration will need to be given to flood resistance and resilience measure and an appropriate Flood Warning and Evacuation Plan will be essential. Most forms of built development are not appropriate within Flood Zone 3b.
	• The risk from surface water flow routes should be quantified as part of a site-specific FRA, including a drainage strategy, so runoff magnitudes from the development are not increased by development

	across any ephemeral surface water flow routes. A drainage strategy should help inform site layout and design to ensure runoff rates are as close as possible to greenfield rates.
	• Planning permission is required to surface more than 5 square metres of unpaved ground using a material that cannot absorb water.
	• Arrangements for safe access and egress will need to be demonstrated for the 0.1% AEP surface water event and 1% AEP plus climate change, using the depth, velocity, and hazard outputs. Given the close proximity of the site to the River Ver, and the significant flood risk posed, a flood warning and evacuation plan should be prepared for the site.
	• Should built development be proposed within the 1% AEP surface water flood extent, careful consideration will need to be given to flood resistance and resilience measures.
	• Mitigation for seasonal high groundwater levels must be considered (for example by raising finished floor levels to an appropriate height above ground level).
	• Due to the high groundwater flood risk for most of the site, basements are not advised.
	• The design of SuDS schemes must consider the seasonally high groundwater table. Infiltration techniques may be ineffective and may pose a pollution risk. SuDS may need to be shallow and take up larger areas. Above ground conveyance and attenuation can be used but care must be taken that groundwater does not enter the SuDS feature and reduce the storage capacity and structural integrity of the design.
	• Flood resilience and resistance measures should be implemented where appropriate during the construction phase, e.g. raising of floor levels. These measures should be assessed to make sure that flooding is not increased elsewhere.
	  ○ raise them as much as possible
	  ○ include extra flood resistance and resilience measures.
	• Other examples of flood resistance and resilience measures include:
	  ○ using flood resistant materials that have low permeability to at least 600mm above the estimated flood level
	  ○ making sure any doors, windows or other openings are flood resistant to at least 600mm above the estimated flood level
	  ○ by raising all sensitive electrical equipment, wiring and sockets to at least 600mm above the estimated flood level.

Key messages

The site is at significant risk of flooding from fluvial, surface water and groundwater surfaces, and may be at residual risk from the failure of flood alleviation measures upstream. The Exception Test will be required for this site, and St Albans City and District Council will need to carefully consider the benefits of developing the site against the significant risks. Development may be possible provided the flood risk part of the Exception Test can be satisfied as below:

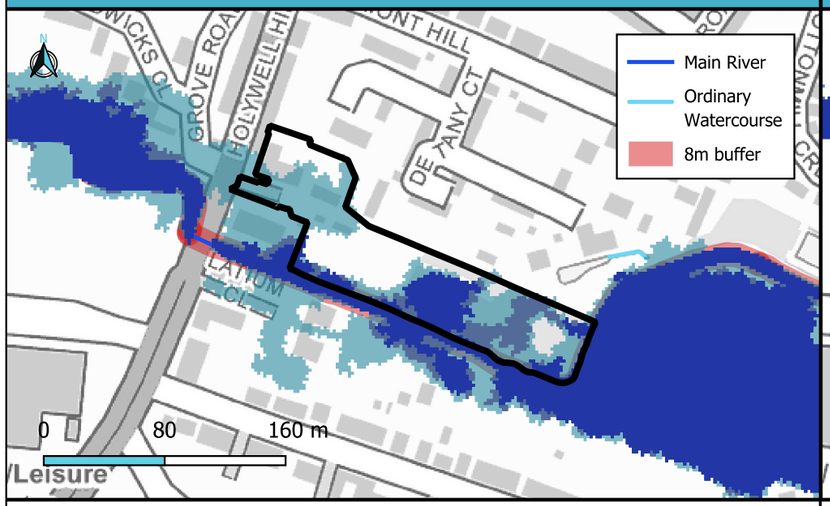
- A site-specific FRA demonstrates that the site is not at an increased risk of flooding in the future, that site users will be safe throughout the lifetime of the development, and that development of the site does not increase the risk of surface water flooding on the site and to neighbouring areas.
- The area along the southern boundary, and in the centre of the site located in Flood Zone 3b is left undeveloped.
- Development is steered away from the area of fluvial flood risk in southern and central areas of the site and the small flow paths/areas of surface water ponding.
- A carefully considered and integrated flood resilient and sustainable drainage design is put forward, with development steered away from the areas identified to be at risk of surface water flooding across the site.
- Safe access and egress can be demonstrated in the fluvial and surface water plus climate change events. This includes measures to reduce flood risk along these routes such as raising access, but not displacing floodwater elsewhere. Given the significant risk to the site and close proximity to the watercourse, a flood warning and evacuation plan should be prepared for the site.
- If flood mitigation measures are implemented then they are tested to check that they will not displace water elsewhere (for example, if land is raised to permit development on one area, compensatory flood storage will be required in another).

Mapping Information	
Flood Zones	Flood Zones 2 and 3a have been taken from the Environment Agency's Flood Map for Planning mapping. Flood Zone 3b has been created from the River Ver (2019) hydraulic model.
Climate change	The most recent uplifts have been applied to the River Ver (2019) hydraulic model to understand the impacts on fluvial flood risk.
Fluvial depth, velocity and hazard mapping	Depth, velocity, and hazard data was derived from the River Ver (2019) hydraulic model.
Surface Water	The Environment Agency's Risk of Flooding from Surface Water dataset has been used for this assessment. The latest climate change allowances have been applied to the RoFSW map to indicate the impact on pluvial flood risk.
Surface water depth, velocity and hazard mapping	The surface water depth, velocity, and hazard mapping for the 3.3%, 1% and 0.1% AEP events (considered to be high, medium, and low risk) have been taken from Environment Agency's RoFSW.

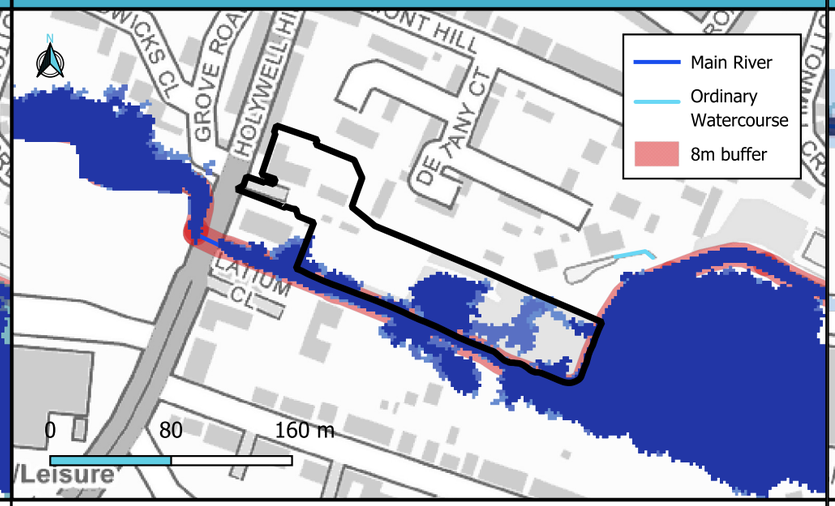
Site Reference	
Site Name	Affinity Water, 107 Holywell Hill Road St Albans

St Albans District Council
Strategic Flood Risk Assessment
Level 2 Detailed Site Summary

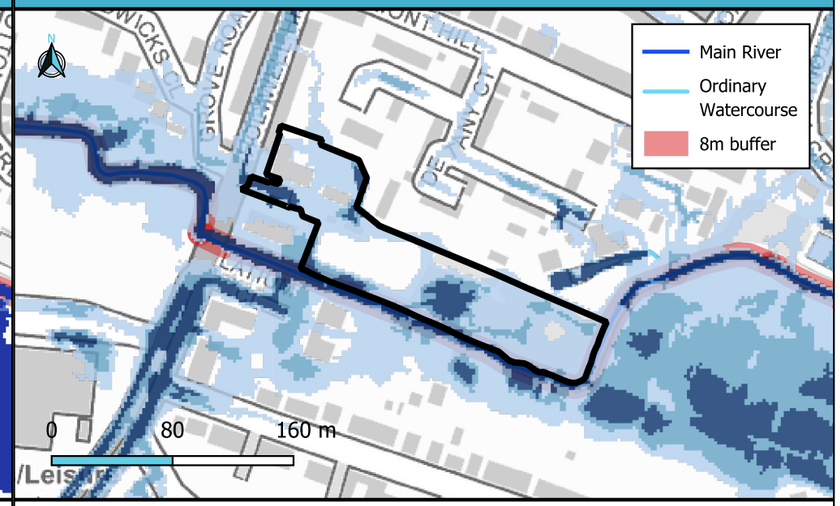
Flood Zone Map (present day)



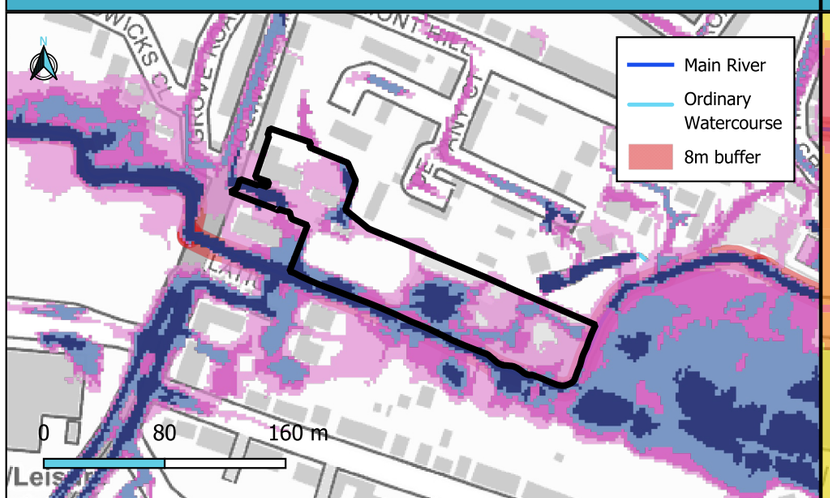
Flood Zone 3b + Climate Change



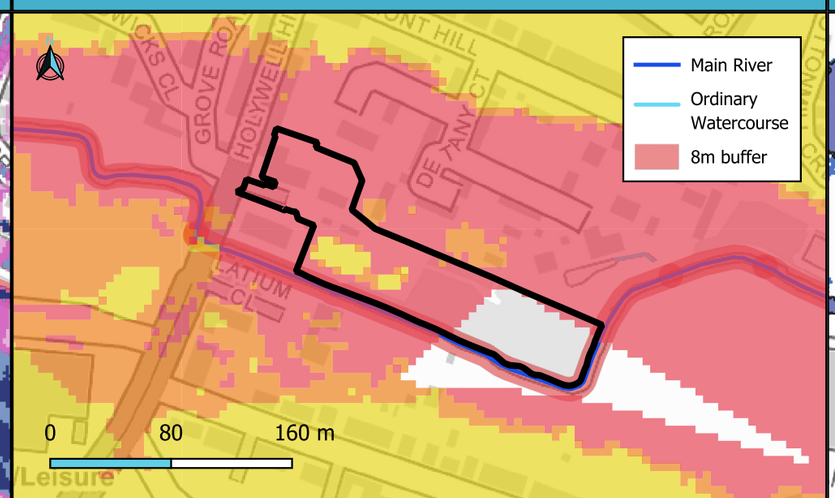
Surface Water Map (RoFSW)



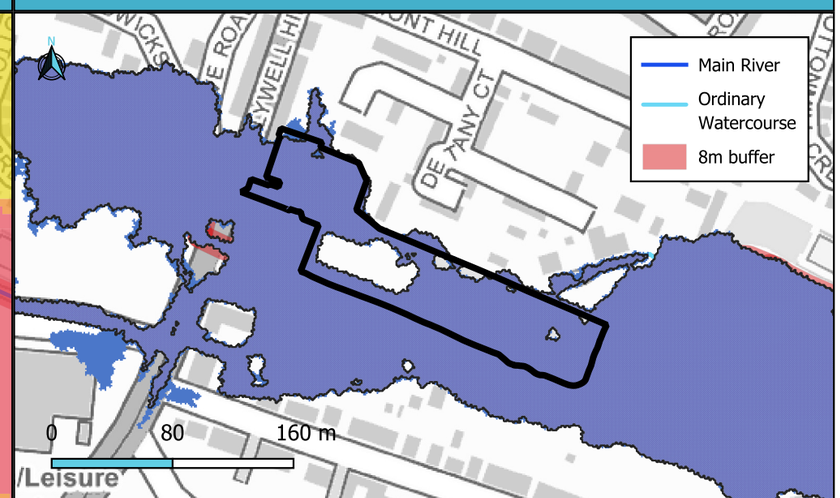
Surface Water Map + Climate Change



Groundwater (Gw) Flood Risk 1% AEP



Reservoir Flood Risk



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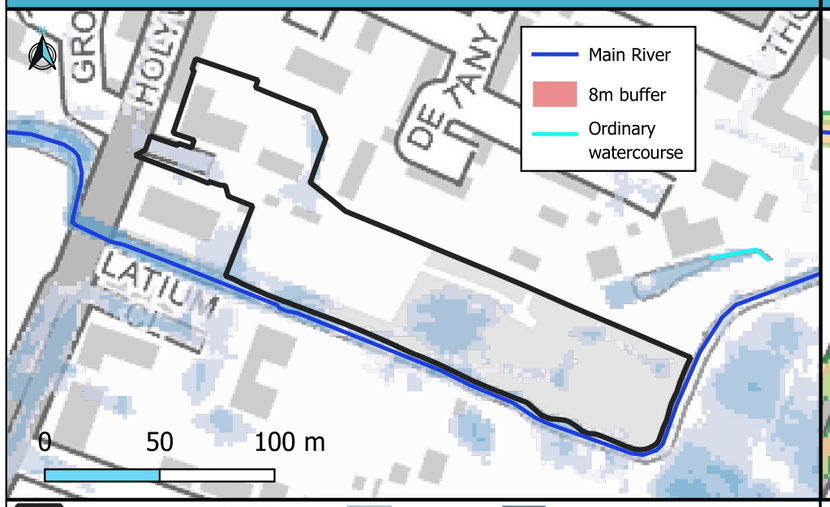
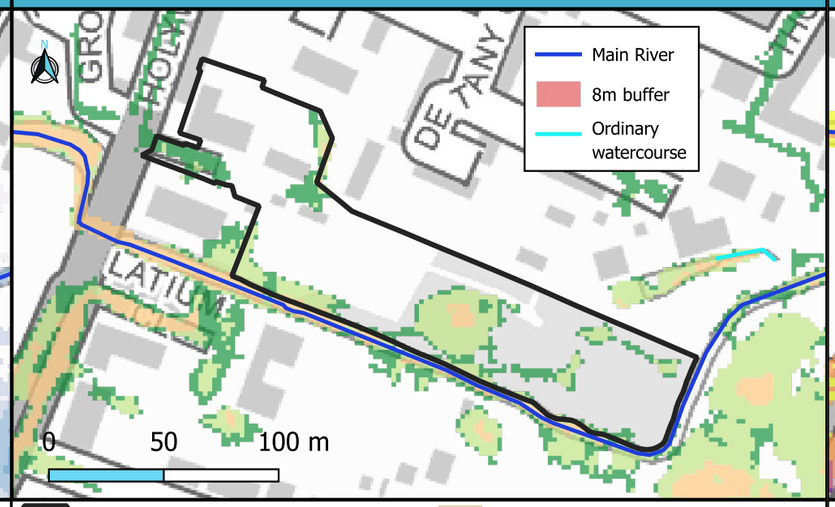
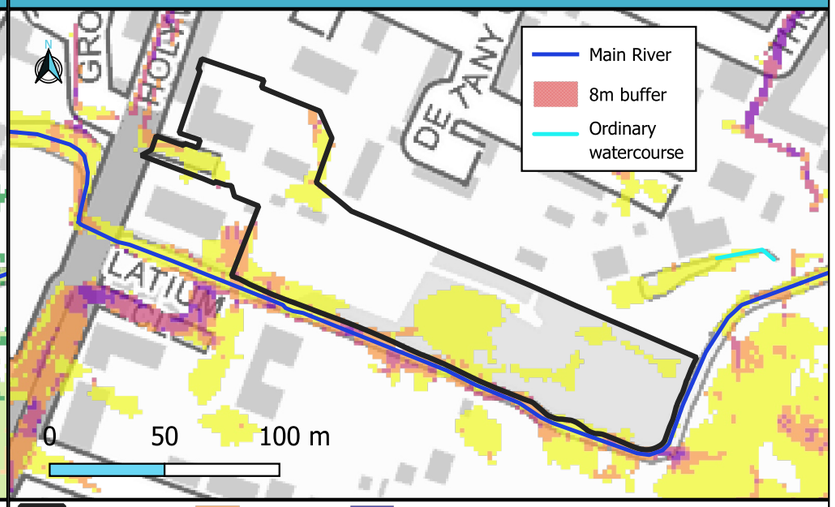
RoFSW Max Depth - 1% AEP



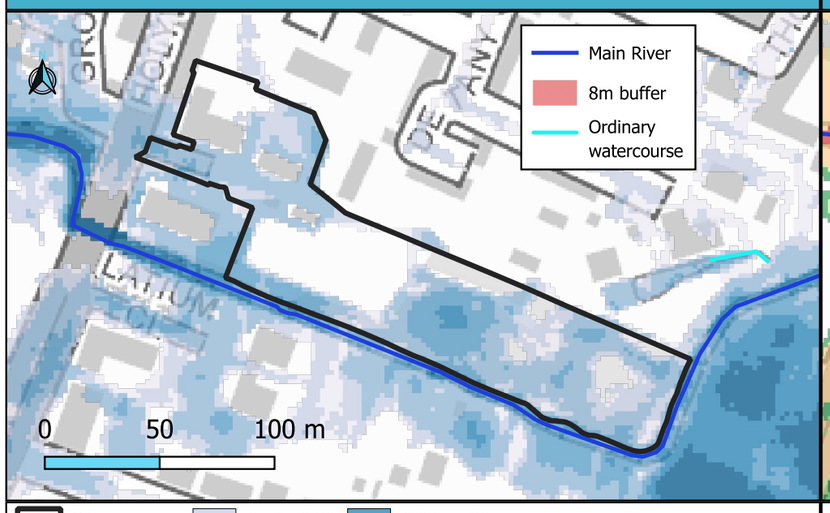
RoFSW Max Hazard - 1% AEP



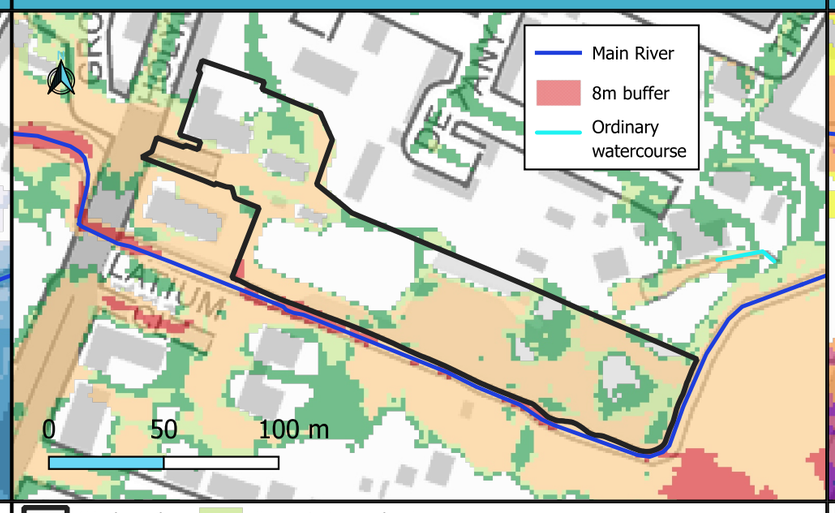
RoFSW Max Velocity - 1% AEP



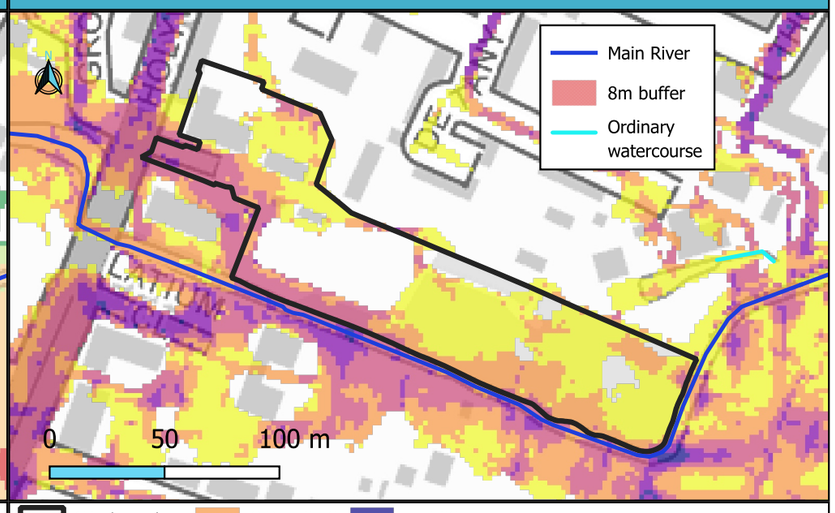
RoFSW Max Depth - 1% AEP + 40% CC



RoFSW Max Hazard - 1% AEP + 40% CC



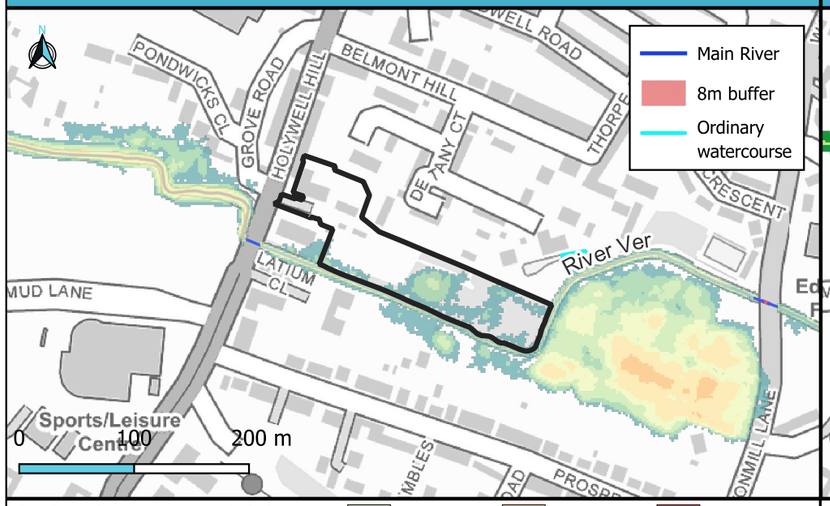
RoFSW Max Velocity - 1% AEP + 40% CC



Site Reference	
Site Name	Affinity Water, 107 Holywell Hill Road St Albans

St Albans District Council
Strategic Flood Risk Assessment
Level 2 Detailed Site Summary

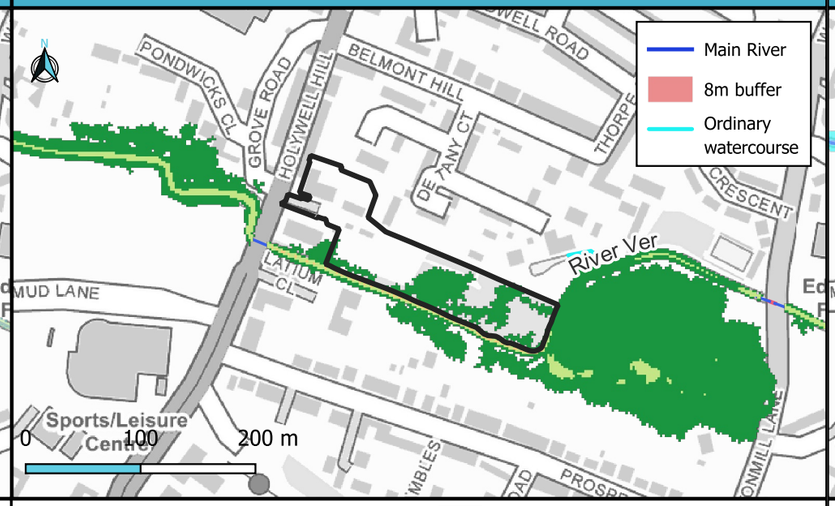
Max Fluvial Flood Depth (m) - 1% AEP



Site boundary
Site boundary
Other sites

Depth (m)
<= 0.25
0.25 - 0.50
0.50 - 0.75
0.75 - 1.00
1.00 - 1.25
1.25 - 1.50
1.50 - 1.75
1.75 - 2.00
> 2.00

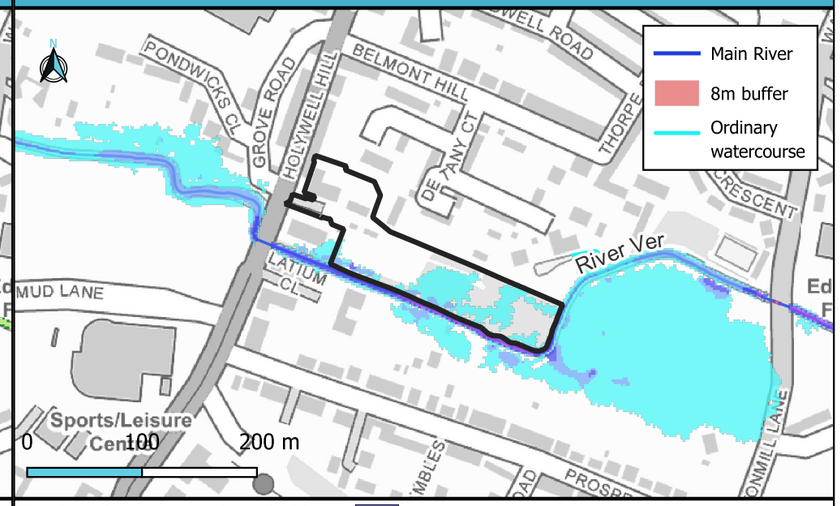
Max Fluvial Flood Hazard - 1% AEP



Site boundary
Site boundary
Other sites

Hazard
<= 0.75: Low
0.75 - 1.25: Moderate
1.25 - 2.00: Significant
> 2.00: Extreme

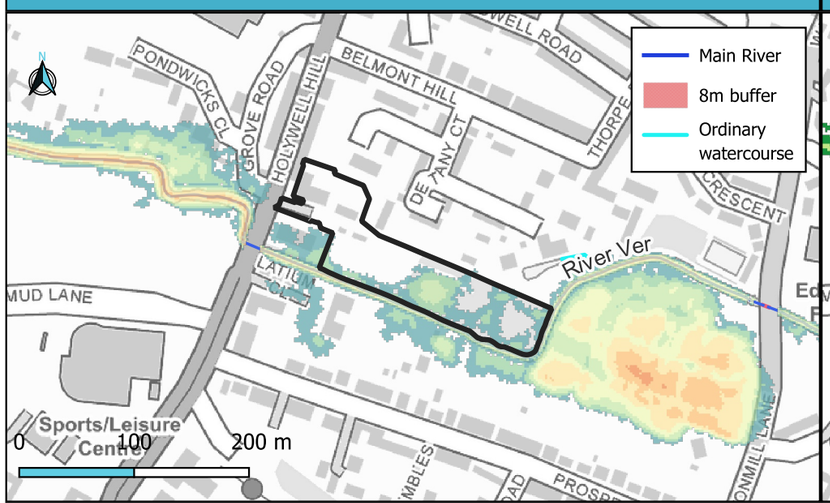
Max Fluvial Flood Velocity (m/s) - 1% AEP



Site boundary
Site boundary
Other sites

Velocity (m/s)
<= 0.25
0.25 - 0.50
0.50 - 1.00
1.00 - 2.00
> 2.00

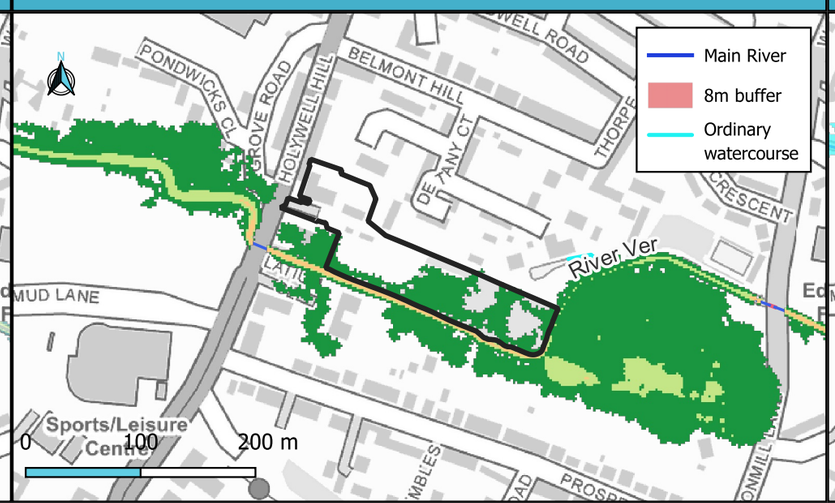
Max Fluvial Flood Depth - 1% AEP +35% CC



Site boundary
Site boundary
Other sites

Depth (m)
<= 0.25
0.25 - 0.50
0.50 - 0.75
0.75 - 1.00
1.00 - 1.25
1.25 - 1.50
1.50 - 1.75
1.75 - 2.00
> 2.00

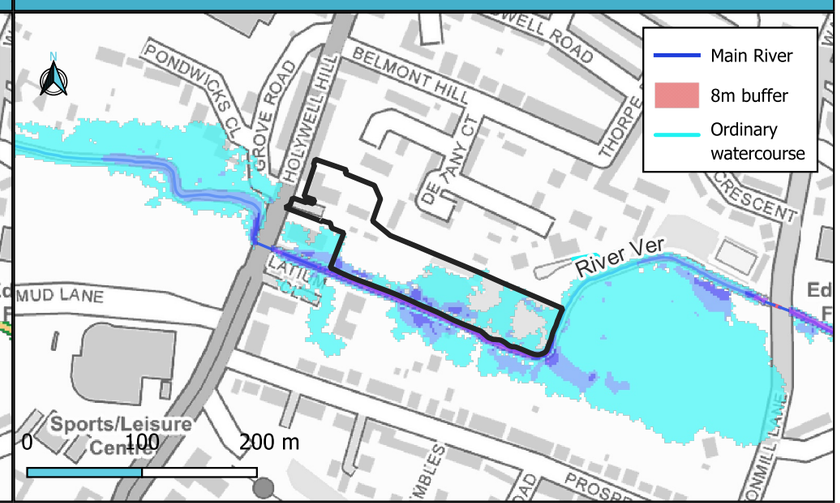
Max Fluvial Flood Hazard - 1% AEP +35% CC



Site boundary
Site boundary
Other sites

Depth (m)
<= 0.75: Low
0.75 - 1.25: Moderate
1.25 - 2.00: Significant
> 2.00: Extreme

Max Fluvial Flood Velocity - 1% AEP +35% CC



Site boundary
Site boundary
Other sites

Velocity (m/s)
<= 0.25
0.25 - 0.50
0.50 - 1.00
1.00 - 2.00
> 2.00