	St Albans City and District Council Level 2 Strategic Flood Risk Assessment Detailed Site Summary Table
Site details	
Site Code	**M6**
Address	South of Harpenden Lane, Redbourn
Area	12.56 ha
Current land use	Mixed use – greenfield and commercial land.
Proposed land use	Residential
Flood Risk Vulnerability	More Vulnerable
Sources of flood risk	
Location of the site within the catchment	The site is located on the eastern edge of Redbourn. Redbourn High Street is located at the southern edge of the site and the A5183 is located to the eastern edge of the site. Further west, across the A5183 the majority of the land use is arable farmland. There are residential properties to the northwest and an industrial estate to the southwest. Harpenden Lane is situated to the north of the site. Currently a caravan park is situated on the site, centrally and has access from the A5183. The River Ver flows through the north and central part of the site. The site situated within the upper catchment of the River Ver, which covers a total catchment area of 146.351km2. The upper catchment where the site is situated is mainly rural, and the lower more urban, as it flows through St Albans. The River Ver is part of the wider Colne Management Catchment, which covers an area of 1,040km2.
Topography	Environment Agency 1m resolution LIDAR across the site shows the elevation varies. The elevations in the north of the site range between 94.7 – 95.0mAOD. The elevations then fall to the lowest elevation of 93.5mAOD in the centre of the site close to the banks of the River Ver. The highest elevation is in the southwest of the site in close proximity to the A5183, and south of the caravan park. Here the highest elevation is 108.23 mAOD.
Existing drainage features	The Environment Agency's Detailed River Network shows drainage features at this site are associated with the River Ver. The River Ver flows in a southerly direction for approximately 820m through the site. It enters the site under Harpenden Lane in the north and flows out in the south under High Street.

Fluvial	**The proportion of site at risk FMFP:** FZ3b – 8% FZ3a – 13% FZ2 – 29% FZ1 – 71% 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. Specifically using the undefended model outputs to create the model outlines. **Flood characteristics:** The area of the site where the River Ver runs through, in addition to an area in the southwest of the site are within Flood Zone 3b (the 3.3% AEP event). The flood depths within the river channel reach a maximum of 0.84m in the norther part of the site, with the remaining depths primarily <0.75m. In the southwestern area of the site south of Waterend Lane flood depths are mainly <0.25m with one area reaching between 0.25 to 0.50m. The flow velocities vary from <0.25m/s to a maximum between 0.50 and 1.00m/s, the higher velocities located within the river channel. The flood hazard is categorized as 'Very low' to 'Danger for Most'. A slight larger proportion of the site is located within Flood Zone 3a (1% AEP event), this includes a larger area to the south of Waterend Lane, in addition to a few areas of ponding either side of the river channel in the north of the site. Flood depths reach a maximum of 0.96m with the remaining depths within channel mainly between 0.50 to 0.75m. South of Waterend Lane the area of ponding reaches between 0.50 to 0.75m. The flow velocities in the channel are primarily between 0.50 to 1.00m/s and the areas of ponding around the channel <0.25m/s. The flood hazard is between 'Very low' to 'Danger for most'. The northern and central areas of the site in addition to the area along the southeastern boundary are located within Flood Zone 2 (the 0.1% AEP event). With large areas of ponding surrounding the main channel. The flood depths vary across the site, with depths within the river channel reaching a maximum of 1.16m close to the upstream end, the remaining depths within the river are mainly between 0.75 and 1.00m. The flood depth out of channel in the northern area of the site are <0.25m but in the southwestern area reaches a maximum of between 0.70 to 1.00m. Flow velocities are primarily <0.25m/s outside the main channel and reach

	between 0.50 to 1.00m/s within the river channel. The flood hazard varies from 'Very low' to 'Danger for all'. The area of the site along the River Ver is located within a Reduction in Risk of Flooding from Rivers and Sea due to Defences area. This is due to a flood storage area upstream of Markyate which is located approximately 7km upstream of the site. This means that some of the site is shown to benefit from defences (although may still be at some risk). This is reflected when comparing the defended vs undefended model results. During the defended scenarios 8% of the site is at risk of fluvial flooding during the 3.3% AEP event. In the 1% AEP defended event 9% of the site is affected by fluvial flooding and 25% of the site during the 0.1% AEP defended event.
Surface Water	**Proportion of site at risk (RoFSW):** **3.3% AEP** – 17% Max depth – 0.90-1.20m Max velocity – 1.00-2.00m/s **1% AEP** – 22% Max depth – 0.90-1.20m Max velocity – 1.00-2.00m/s **0.1% AEP** – 41% Max depth – >1.20m Max velocity – >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:** Risk of Flooding from Surface Water data for this site shows several flow paths in the 3.33%, 1% and 0.1% AEP events. The flow paths for each event are mostly associated with the River Ver channel. During the 3.3% AEP event, ponding occurs in the southwest of the site at depths of 0.90-1.20m and the velocities are mainly between 0.5 – 1.00 m/s. However, in a very small section velocities reach a maximum of 1.00-2.00 m/s. The flood depths within the river channel are primarily between 0.30 to 0.60m, with velocities ranging from <0.25m/s to maximum between 0.50 to 1.00 m/s. The flood hazard is 'Very low' to 'Danger for most', the higher hazard areas located within the river channel and in the southwest of the site. During the 1% AEP event, the extent of the ponding increases in the southwestern area. Maximum depths and maximum velocities are in a range of 0.90-1.20m and 1.00-2.00m/s, respectively. The surface water flow path along the river channel affects a wider area, in the channel in addition to either side of the channel. Flood depths are primarily between 0.30 to 0.60m, and velocities vary from between 0.25 to 0.5m/s to a

	maximum of between 0.50 to 1.00m/s. The flood hazard classified as 'Very low' to 'Danger for most'. During the 0.1% AEP event, most of the western side of the site of the site is affected by surface water. The extent of ponding in the southwestern area of the site increases. The flood depths and velocities associated with the area of ponding also increases. Maximum depths increase to >1.20m, with a very small section surface water velocities reaching a maximum of >2.00 m/s. The surface water flow path along the river channel affects a large area, extending over both riverbanks. Within the river channel, depths reach a maximum of 0.60 to 0.90m, while the remaining depths are between 0.30 to 0.90m. The areas of surface water either side of the river channel have depths primarily between 0.30 to 0.60m, with varying velocities from 0.25-0.5m/s to 0.50-1.00m/s. The flood hazard is 'Very low' to 'Danger for all'. The area categorized as 'Danger for all' is located in the southwestern area of the site.
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 affects the eastern half of the site, covering 34% of the area, specifically around where the River Ver runs through the site. The reservoir risk is from the Markyate Flood Storage Area, which is managed and operated by the Environment Agency 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 site is at high risk of ground water flooding as 51% of the site has ground water levels at below 0.25m below the grounds surface. This high-risk region is located in the western part of the site. A thin band, making up 12% of the overall site and located centrally has ground water levels at 0.25m-0.5m. To the eastern part of the site, making up 37% of the site has ground water level between 0.5 – 5m.
Sewers	The site is located within a postcode area with 18 historic incidences of sewer flooding, according to the Thames Water Hydraulic Sewer Flood Risk Register.
Flood history	There are no reported flood incidents reported by the Environment Agency, St Albans District Council or Hertfordshire County Council within the site.
Flood risk management infrastructure	
Defences	The Environment Agency AIMS dataset shows that the site is protected by the Flood Storage Area upstream of Markyate.
Residual risk	There is a residual risk at this site and thus a site-specific risk assessment is recommended to investigate these potential risks further. The River Ver enters the site at the northern boundary and flows underneath Harpenden

	Lane. At the southern boundary the river leaves the site and flows underneath High Street. In the event of a blockage to the flows under the bridge flood risk could increase. The site is also at risk if the Flood Storage Area upstream of Markyate was 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 site is partially covered by modelled data in the Environment Agency's Flood Warning Service. The site is covered by the River Ver in Hertfordshire 062WAF28Ver Flood Alert Area and River Ver at Redbourn 062FWF28Redbourn Flood Warning Area.
Access and egress	Access and egress to the site is currently via High Street and the A5183 which is currently used for a caravan site. Safe access could be obtained via the A5183 as no surface water flooding occurs during the 3.3%, 1% and 0.1% AEP events. Thus, providing a safe access and egress route to the site. The resulting flood hazard is 'Very Low', therefore vehicular and pedestrian access is still possible via this route. Additionally, the fluvial flooding does not affect the current access and egress route.
Dry Islands	The site is not located on a dry island.
Climate change	
Implications for the site	**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. The 3.33% AEP (Flood Zone 3b) plus 35% corresponds to the higher allowance for peak river flow. The maximum flood depth, velocity and hazard recorded within the site are 0.86m, 0.95m/s and 'Danger for most', all located within the river channel. The area of ponding in the southwest of the site reaches a maximum depth, velocity and hazard of 0.53m, 0.56m/s and 'Danger for most'. During the 1% AEP (Flood Zone 3a) plus 35% climate change allowance the maximum flood depths, velocity and hazard is 1.10m, 1.22m/s and 'Danger for most', again located within the River Ver channel. In the southwest the area of ponding had a maximum flood depth, velocity and hazard of 0.84m, 0.60m/s and 'Danger for most'.

	In the 0.1% AEP event (Flood Zone 2) plus 35% climate change allowance the maximum flood depth, velocity and hazard are located within the river channel with results of 1.24m, 1.62m/s 'Danger for all'. The ponding in the southwest of the site reaches a maximum flood depth, velocity and hazard of 1.17m, 1.08m/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 also 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. Therefore, the site remains unaffected by surface water flooding. The surface water flow path reaches a maximum depth of approximately 1.6m and velocities of 1.20m/s.
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 Sussex White Chalk Formation. This is a sedimentary bedrock.
	  ○ Superficial deposits – The superficial deposits of the site are comprised of River Terrace Deposits of sand and gravel This is a sedimentary superficial deposit.
	• Soils at the site consist of:
	  ○ Freely draining slightly acid but base-rich soils
	
	Sustainable Drainage Systems (SuDS)
	• Groundwater levels are indicated to be below 0.25m ground level in over 50% of the site, and between 0.5 and 5m below ground level in other regions of the site.
	• The site is considered to be highly susceptible to groundwater flooding. Groundwater flooding could occur at the surface which may flow to and pool within topographic low spots during very wet winters. 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 which is likely to be free draining. This should be confirmed through infiltration testing, and groundwater monitoring throughout a winter period.

	• The whole site is located within Groundwater Source Protection Zone 3. Proposed SuDS should be discussed with relevant stakeholders (St Albans City and District Council, Hertfordshire Council (LLFA) 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. • 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/tide 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 the existing greenfield runoff rates for the site. Opportunities to further reduce discharge rates should be considered and agreed 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 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 because there is significant fluvial flood risk within all flood zones at the eastern side of the site 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 form groundwater flooding to the site.
	• Consultation with St Albans City and District Council, Hertfordshire County Council (Lead Local Flood Authority), 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.
	• 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.
	• As the River Ver runs through the site, 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, reservoir and groundwater flooding, 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 around the River Ver and the area in the southwest 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 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.
- A site-specific Surface Water Drainage Strategy, and SuDS maintenance and management plan is submitted along with the FRA.
- 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

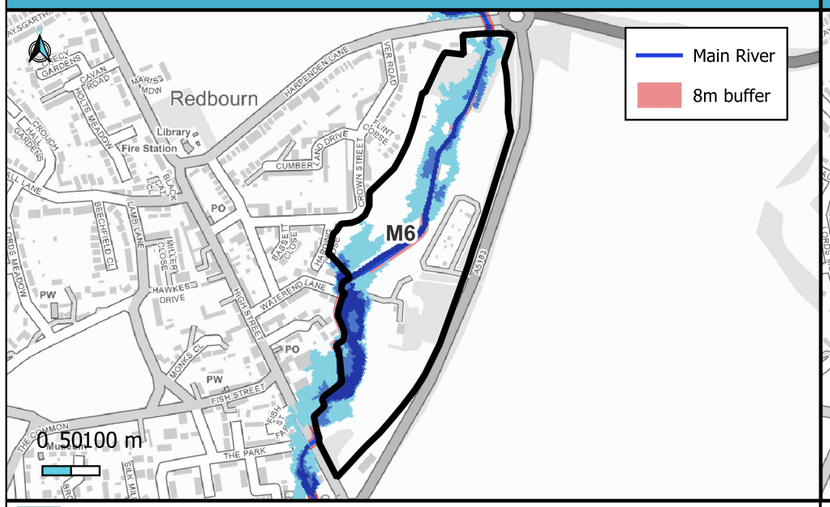
Flood Zones	Flood Zones 2 and 3a have been taken from the Environment Agency's Flood Map for Planning mapping. Flood Zone 3b has been created from the River Ver (2019) hydraulic model.
Climate change	The most recent uplifts have been applied to the River Ver (2019) hydraulic model to indicate the impacts 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 Environment Agency's 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	M6
Site Name	South of Harpenden Lane, Redbourn, AL3 7RQ

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

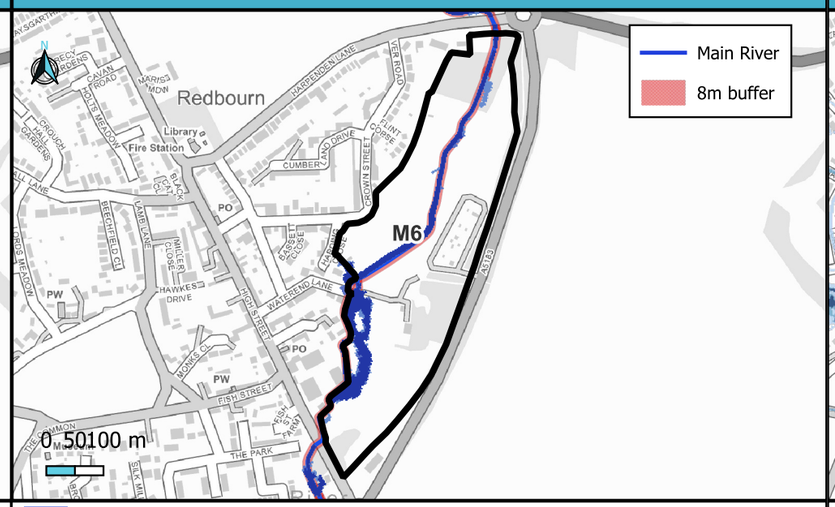
Flood Zone Map (present day)



- Flood Zone 2 (Between 1% and 0.1% AEP)
- Flood Zone 3a (Between 3.33% and 1% AEP)
- Flood Zone 3b (Less than 3.33% AEP)

Site boundary
- Site boundary
- Other sites

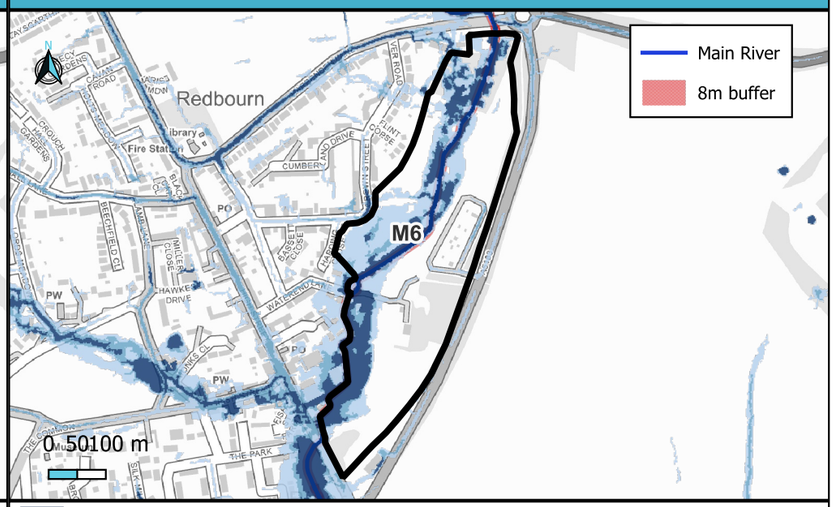
Flood Zone 3b + Climate Change



- Flood Zone 3b + 21% (Central allowance)
- Flood Zone 3b + 35% (Higher allowance)
- Flood Zone 3b

Site boundary
- Site boundary
- Other sites

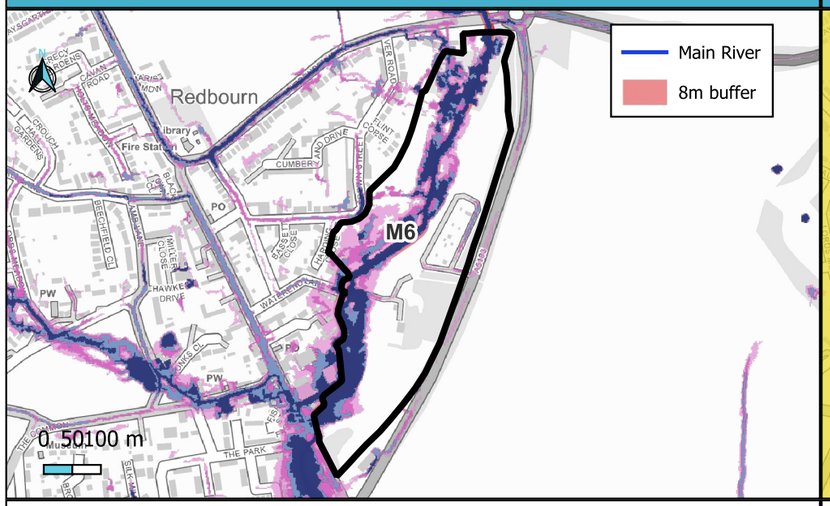
Surface Water Map (RoFSW)



- RoFSW 1 in 30-year (3.33% AEP)
- RoFSW 1 in 100-year (1% AEP)
- RoFSW 1 in 1000-year (0.1% AEP)

Site boundary
- Site boundary
- Other sites

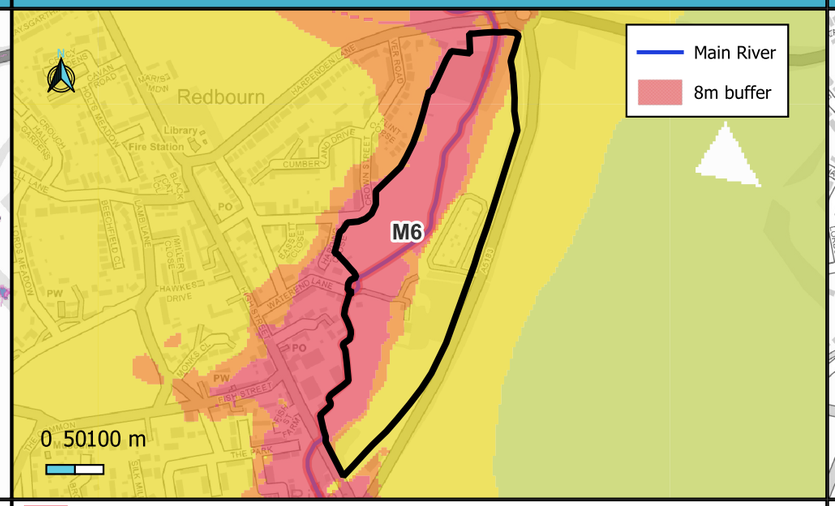
Surface Water Map + Climate Change



- RoFSW 1 in 30-year (3.33% AEP)
- RoFSW 1 in 30-year (3.33% AEP) plus 40%
- RoFSW 1 in 100-year (1% AEP)
- RoFSW 1 in 100-year 1% AEP plus 40%

Site boundary
- Site boundary
- Other sites

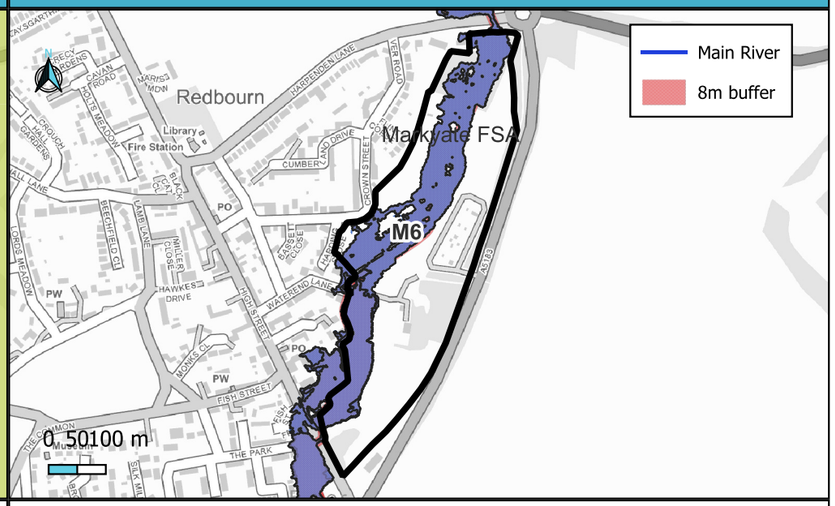
Groundwater (Gw) Flood Risk 1% AEP



- GW levels <0.025m below ground
- GW levels 0.025m to 0.5m below ground
- GW levels 0.5 to 5m below ground
- GW levels atleast 5m below ground

Site boundary
- Site boundary
- Other sites

Reservoir Flood Risk



- Reservoir 'Dry Day' flood extent
- Reservoir 'Wet Day' flood extent

Site boundary
- Site boundary
- Other sites

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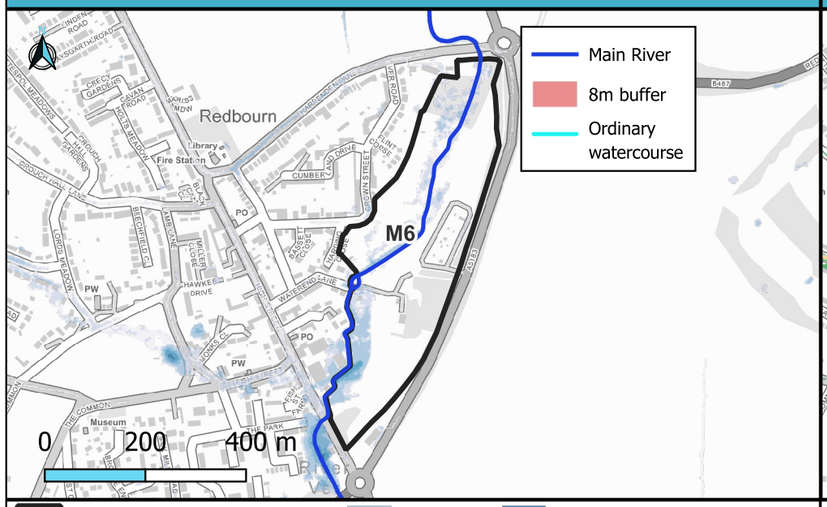
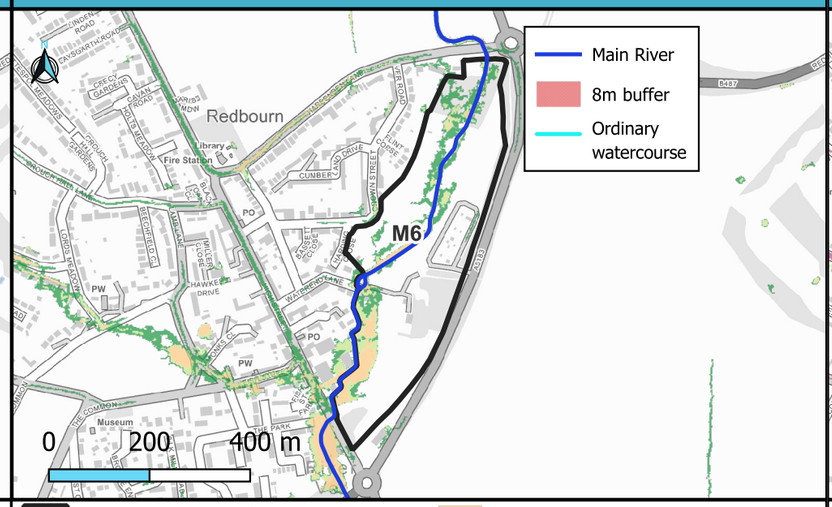
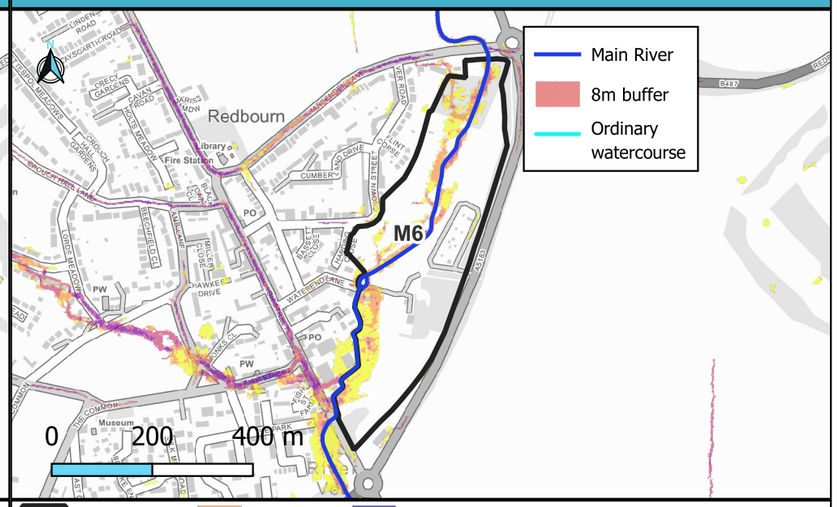
RoFSW Max Depth - 1% AEP



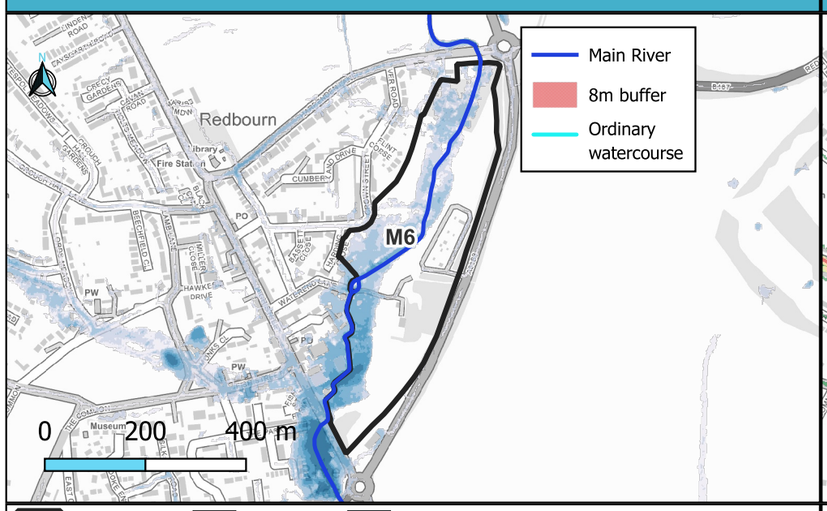
RoFSW Max Hazard - 1% AEP



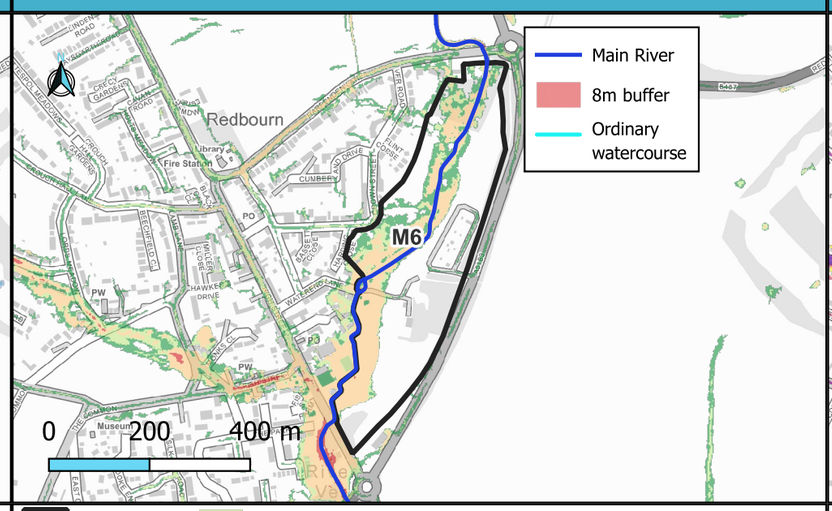
RoFSW Max Velocity - 1% AEP



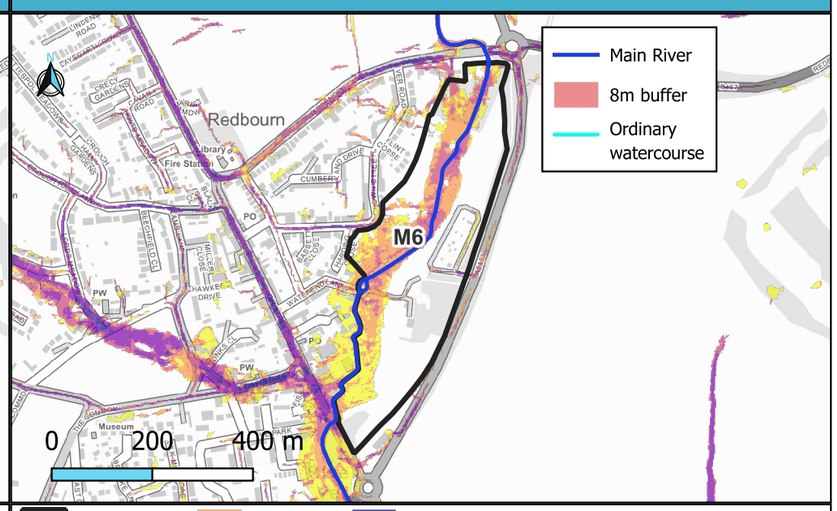
RoFSW Max Depth - 1% AEP + 40% CC



RoFSW Max Hazard - 1% AEP + 40% CC



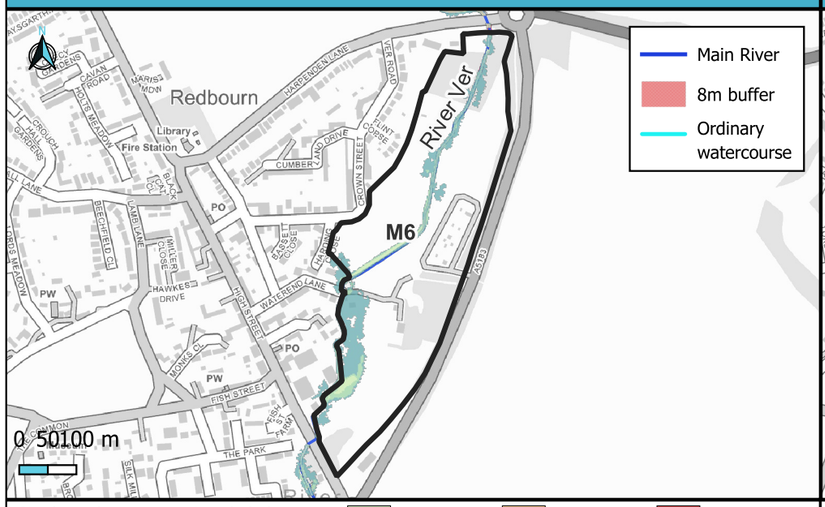
RoFSW Max Velocity - 1% AEP + 40% CC



Site Reference	M6
Site Name	South of Harpenden Lane, Redbourn, AL3 7RQ

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

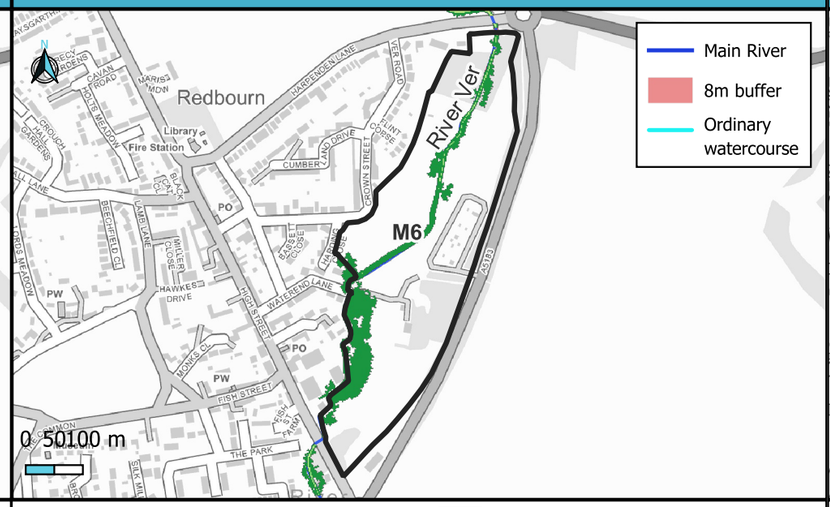
Max Fluvial Flood Depth (m) - 1% AEP



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

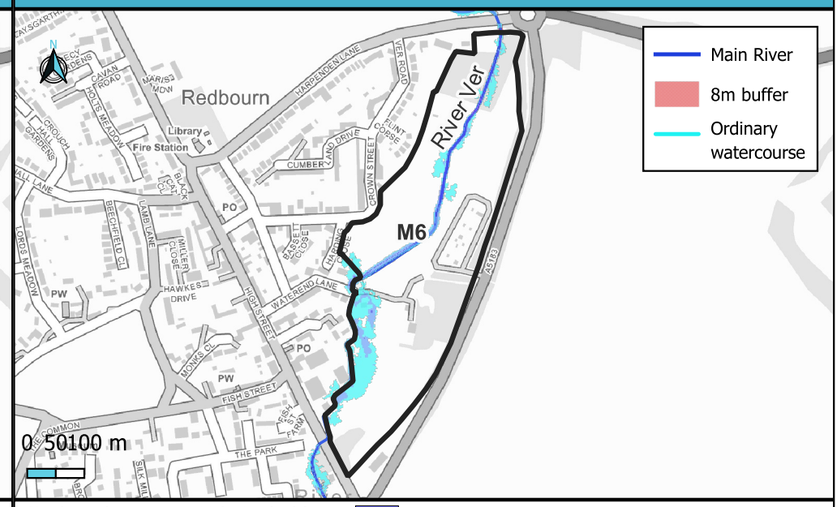
Max Fluvial Flood Hazard - 1% AEP



Site boundary
Site boundary
Other sites

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

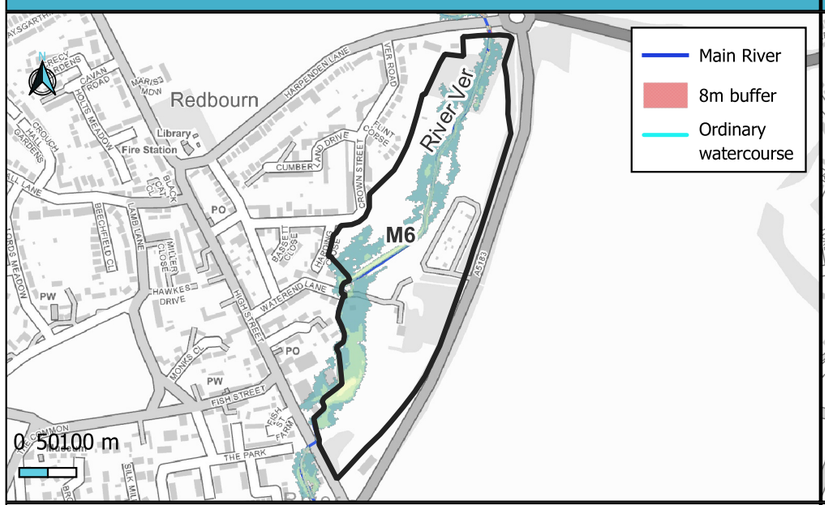
Max Fluvial Flood Velocity (m/s) - 1% AEP



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

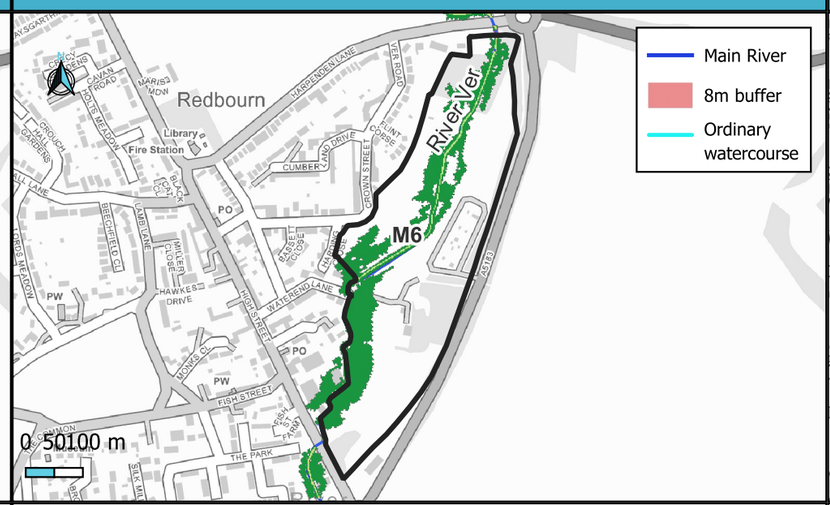
Max Fluvial Flood Depth - 1% AEP +35% CC



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

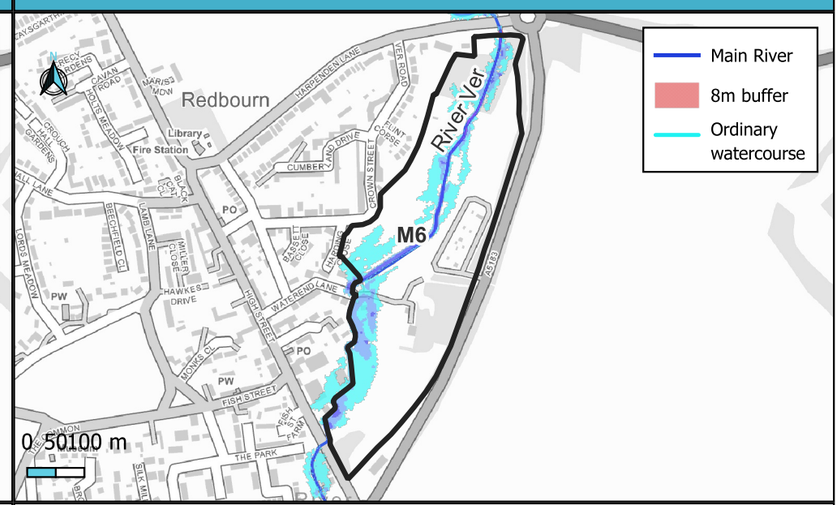
Max Fluvial Flood Hazard - 1% AEP +35% CC



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