

M5 Junction 10 Improvements Scheme

Environmental Management Plan Annex B.~~10~~6a Severe Weather Plan TR010063 – APP 9.25

Regulation 5 (2) (q)

Planning Act 2008

Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

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Environmental Management Plan

Annex B.10-6a Severe Weather Plan

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B6a. Severe Weather Plan

B6a.1. Introduction

Purpose

- B6a.1.1. This document forms Annex B.40-6a of the Environmental Management Plan (EMP) (Application document TR010063/APP/7.3). Annex B.40-6a is a Severe Weather Plan (SWP) (1st iteration) for the M5 Junction 10 Improvements Scheme (the Scheme), and forms part of Annex B.6 Emergency Preparedness and Response Plan (1st iteration). This SWP (1st iteration) will be updated by the appointed Principal Contractor (PC) into a SWP (2nd iteration), as required by Requirement 3 of the DCO, prior to commencement of works.
- B6a.1.2. The purpose of this SWP is to detail the procedures to be followed in the event of a severe weather event.
- B6a.1.3. This is a live document based on the Contractor's HSE Emergency Preparedness Response plan STD-HSS-H04 and will be reviewed and updated as required as the Scheme progresses.

Structure of the severe weather plan

- B6a.1.4. This SWP includes:
- Section B40B6a.1: provides an introduction, description of the purpose of this document and roles and responsibilities in its implementation.
 - Section B40B6a.2: provides a site risk assessment for the potential impacts of a severe weather event.
 - Section B40B6a.3: provides an emergency response plan (ERP) to be followed in a severe weather event.
 - Section B40B6a.4: confirms the follow-on activities to be completed after a severe weather event.

Project team roles and responsibilities

- B6a.1.5. Key roles and those responsible are summarised in Table B 406a-1 below:

Table B 6a-1 Operational ERP Roles and Responsibilities During Construction

Position	Name and Contact Number	Responsibility
Client Project Manager	GCC	Approval of methods and procedures implemented by the Principal Contractor
Principal Contractor Project Manager	TBC	Approval for sign-off of the SWP for the relevant phase of works. Ensures that all controls specified are implemented by employees and sub-contractors. Ensures the Principal Contractor always has sufficient appropriately trained staff on site to ensure the effective implementation of the SWP.
Principal Contractor	TBC	Ensures a suitably robust SWP is prepared and up to date.

Position	Name and Contact Number	Responsibility
Health & Safety Manager		<p>Ensures the potential risks from severe weather events have been suitably addressed.</p> <p>Ensures any construction phase severe weather event health and safety mitigation requirements (including emergency plans) are implemented correctly, briefed to all site personnel and information handed to sub-contractors.</p> <p>Ensures the relevant information is displayed on notice boards around the site.</p> <p>Ensures all parties working on the site are Site Inducted and briefed on the likelihood of severe weather events.</p> <p>Ensures all Task Briefings are in line with the severe weather Emergency Response Plan.</p> <p>Carries out emergency drills and checking of equipment every 6 months, where relevant / required.</p>
Principal Contractor Environmental Manager	TBC	<p>Ensures the SWP suitably considers environmental risk in severe weather events.</p> <p>Ensures any construction phase severe weather event environmental mitigation requirements (including emergency plans) are implemented correctly, briefed to all site personnel and information handed to sub-contractors.</p>
Section Works Manager	TBC	<p>Act as a point of contact for the gangers and foreman.</p> <p>Pass information up the line to the Section PM.</p> <p>Secure the area, run roll call for the area and get all staff out of the exclusion zones to a safe location.</p>
Subcontractors	TBC	<p>Provide the Principal Contractor with any information relating to their work that might affect health and safety. This will include information relevant to any changes in site practices or site conditions that may impact on potential risk from severe weather events.</p> <p>Comply with directions from the Principal Contractor's SWP and attend briefings when required.</p> <p>Produce relevant documentation such as a Safe System of Work (SSOW) taking into account the ERP requirements for the site, to be checked by the Principal Contractor to ensure they are adequate.</p> <p>All employers with employees working on or visiting the site when there is a reasonably foreseeable risk of a severe weather event will receive a site induction which will include a briefing of the risks and the ERP process.</p>

B6a.2. Site risk assessment

Storm / severe rain event

- B6a.2.1. The Scheme has a number of surface-controlled water features and flood risk areas within and immediately adjacent to it. These are presented in Appendix A.
- B6a.2.2. The current public highways have surface water drainage assets incorporated to facilitate removal of surface water.

- B6a.2.3. The proposed West Cheltenham Link Road and M5 southbound on slip are proposed to be constructed within an existing flood plain.
- B6a.2.4. There are a number of residential properties adjacent to the site which could be at risk of surface watercourse flooding. These are presented in Appendix A.
- B6a.2.5. The Principal Contractor will be updating the flood modelling produced during preliminary design through detailed design development and construction planning to ensure that suitable flood compensation is provided to mitigate works within the flood plain, such as temporary works, material storage, and embankment construction. The Environment Agency and Lead Local Flood Authority will be consulted throughout this process.
- B6a.2.6. Based on historic weather data, the likelihood of a storm / severe rain event sufficient to warrant full evacuation occurring within the construction programme is considered to be low risk. However, the potential implications of such an event, in terms of health and safety and environment, are considered to be high risk.

Severe heat event

- B6a.2.7. There is no legal maximum working temperature in the UK. However, due to the labour intensive nature of construction and the requirement for six-point PPE, including full sleeves and trousers for Highways work, there is a high risk of heat stress in a severe heat event.
- B6a.2.8. Furthermore, construction of the Scheme is likely to be exposed, with very little to no provision of natural shade, particularly on the new embankments for the gyratory and the West Cheltenham Link Road.
- B6a.2.9. Based on historic weather data, the likelihood of a severe heat event occurring within the construction programme is considered to be medium risk. The potential implications of such an event in terms of health and safety and environment, are also considered to be medium risk.
- B6a.2.10. During the construction phase, particularly earthworks, severe heat events may increase airborne dust levels. There are a number of private residential properties which could be affected by severe heat impacts within the project boundary. These are shown in Appendix B.

Severe cold or snow event

- B6a.2.11. There is no legal minimum working temperature in the UK. However, due to the nature of construction, there is a risk of hypothermia or frost bite in a severe cold (including frost or snow) event.
- B6a.2.12. Furthermore, construction of the Scheme is likely to be exposed, with very little to no provision of natural shelter.
- B6a.2.13. Based on historic weather data, the likelihood of a severe cold event occurring within the construction programme is considered to be medium risk. The potential implications of such an event in terms of health and safety and environment, are considered to be low risk.

Severe wind event

- B6a.2.14. There is no legal maximum working wind speed in the UK, although lift-plans should advise on the maximum safe wind speed for lifting activities.
- B6a.2.15. High winds may cause challenges to lifting operations as well as storage of materials.
- B6a.2.16. Based on historic weather data, the likelihood of a severe wind event occurring within the construction programme is considered to be medium risk. The potential implications of such an event in terms of health and safety and environment, are also considered to be medium risk.

B6a.2.17. During the construction phase, particularly earthworks, severe wind events may increase airborne dust levels. There are a number of private residential properties which could be affected by severe heat impacts within the project boundary. These are shown in Appendix B.

Emergency contacts

B6a.2.18. Emergency contact details are provided below.

B6a.2.19. Table B 406a-2 will be updated prior to construction.

Table B 6a-2 Emergency Contacts

Name	Role and Company	Telephone No.
N/A	Emergency Services	TBC
TBC	Senior Project Manager Gloucestershire County Council	TBC
TBC	Project Director Principal Contractor	TBC
TBC	Senior Works Manager Principal Contractor	TBC
TBC	Health & Safety Manager Principal Contractor	TBC
TBC	M5 Section Project Manager Principal Contractor	TBC
TBC	A4019 Section Project Manager Principal Contractor	TBC
TBC	Link Road Section Project Manager Principal Contractor	TBC

B6a.3. Emergency response plan

Preparedness for a severe weather event

B6a.3.1. During detailed design and construction planning, the following will be carefully considered to mitigate the impact of a storm / severe rain event:

- Material storage and stockpile locations within and adjacent to the flood plain. In particular, the location, accessibility and ease of removal of COSHH in a flood event.
- Temporary works designs with respect to the potential for impounding flood waters.
- Construction works and temporary works within the river with regards to ease of removal or requirement for sacrificial works.

Further information regarding these items will be provided in the SWP 2nd iteration.

B6a.3.2. During construction, the Principal Contractor's site management team are responsible for reviewing and monitoring the weather forecast. This is normal practice for any construction project as programmed works, such as earthworks or crane lifts, are constrained by specific weather conditions. The site management team should therefore be aware of any extreme weather events that are forecast.

- B6a.3.3. This knowledge shall be shared with the wider site team through Toolbox talks and pre-start briefings. Notices shall also be displayed on notice boards.
- B6a.3.4. Prior to the Scheme commencing the Principal Contractor will consult with the Emergency Services, the local authority, the Environment Agency and other key stakeholders concerning emergency arrangements.
- B6a.3.5. The site team shall also ensure that necessary mitigation measures are in place in advance of the extreme weather, for example:
- Storm / severe rain event: availability of suitable PPE such as waterproof jackets and trousers and wellington boots.
 - Severe heat event: hydration stations at appropriate frequencies with sufficient water supplies, suitable and sufficient supply of sunscreen.
 - Severe cold or snow event: availability of suitable PPE such as gloves with thermal properties and thermal safety helmet liners.
 - Severe wind event: hoarding securely fixed or dismantled, loose or lightweight materials securely fixed or relocated, planned crane lifts re-programmed.
- B6a.3.6. The site management team will be responsible for monitoring weather conditions and their development to ensure the safety and wellbeing of the workforce.
- B6a.3.7. Works within ordinary watercourses, within 8m of the main river or elevating levels in a flood plain, will have prior approval by the Lead Local Flood Authority or the Environment Agency.

Storm / severe rain event

- B6a.3.8. The site management will register with the EA Flood Warning Service.
- B6a.3.9. If the weather forecast or EA flood warning suggests that a storm or severe rain event is likely to cause flooding in the locality of the works, the Section Project Managers shall ensure that the works areas are made safe:
- COSHH storage will be located outside the flood plain and 20m from surface water features, where reasonably practicable. Where stored within the flood plain, they will be removed from the flood plain to a safe location on higher ground.
 - Where reasonably practicable, material storage will be sited outside the flood plain. If this is not possible, materials will be stored as far from the footprint of the watercourse as possible, at the edge of flood plain. Appropriate gaps will be left between stockpiles.
 - In the event of an EA flood warning, and where appropriate and reasonably practicable, materials stored close to water features and within floodplains will be relocated to a safe location on higher ground.
 - Where reasonably practicable, temporary works arrangements will be reviewed and amended, as required, to minimise risk of impounding flood waters.
 - Works within watercourses will cease and, where appropriate and reasonably practicable, temporary works removed, to be stored in a safe location on higher ground.
 - Discharge activities to cease, and, where reasonably practicable, equipment removed to be stored in a safe location on higher ground. Only recommence once surface flooding has receded and levels within watercourses have reduced.
- B6a.3.10. Site works may continue if it is safe to do so.

- B6a.3.11. The site management team shall be responsible for monitoring weather conditions and the wellbeing of the workforce. All section works managers shall report to the Section Project Manager regarding the rain conditions and ground water levels.
- B6a.3.12. If the Section Project Manager, in liaison with the Health and Safety Manager, considers rainfall and water levels to pose a risk to the workforce health and safety, for example due to reduced visibility or increased risk of slips, trips or falls, they shall communicate to all section works managers that works shall cease immediately, all working areas shall be made safe, and all personnel shall make their way safely to the main site compound or section compound.
- B6a.3.13. The Section Project Manager shall inform the Principal Contractor Project Director and Gloucestershire County Council Senior Project Manager of their decision.
- B6a.3.14. The Section Project Manager and Health and Safety Manager shall continue to review the weather conditions and recommence works when safe to do so.
- B6a.3.15. Groundwater pumping activities may only recommence once the storm event has passed and water levels have dropped to an acceptable level.
- B6a.3.16. Please refer to Annex B.7 Pollution prevention and control management plan for the proposed pollution prevention and compensation measures during construction.

Severe heat events

- B6a.3.17. The site management team shall be responsible for monitoring weather conditions and the wellbeing of the workforce. All Section Works Managers shall report to the Section Project Manager regarding on site temperatures and workforce exposure and wellbeing.
- B6a.3.18. If the Section Project Manager, in liaison with the Health and Safety Manager, considers there to be a potential risk of heat stress in their workforce, they shall communicate to all section works managers that works shall cease immediately, all working areas shall be made safe, and all personnel shall make their way safely to the main site compound or section compound.
- B6a.3.19. The Section Project Manager shall inform the Principal Contractor Project Director and Gloucestershire County Council Senior Project Manager of their decision.
- B6a.3.20. The Section Project Manager and Health and Safety Manager shall continue to review the weather conditions and recommence works when safe to do so.
- B6a.3.21. Please refer to Annex B.4 Air Quality Management Plan for the proposed control measures for air quality, including dust, during construction.

Severe cold or snow event

- B6a.3.22. The site management team shall be responsible for monitoring weather conditions and the wellbeing of the workforce. All Section Works Managers shall report to the Section Project Manager regarding on site temperatures and workforce exposure and wellbeing.
- B6a.3.23. If the Section Project Manager, in liaison with the Health and Safety Manager, considers there to be a potential risk of hypothermia or frost bite in their workforce, they shall communicate to all section works managers that works shall cease immediately, all working areas shall be made safe, and all personnel shall make their way safely to the main site compound or section compound.
- B6a.3.24. The Section Project Manager shall inform the Principal Contractor Project Director and Gloucestershire County Council Senior Project Manager of their decision.
- B6a.3.25. The Section Project Manager and Health and Safety Manager shall continue to review the weather conditions and recommence works when safe to do so.

Severe wind events

- B6a.3.26. The site management team shall be responsible for monitoring weather conditions and the wellbeing of the workforce. All Section Works Managers shall report to the Section Project Manager regarding on windspeeds and workforce exposure and wellbeing.
- B6a.3.27. If the Section Project Manager, in liaison with the Health and Safety Manager, considers there to be an unacceptable increase in health and safety risk as a result of high winds, they shall communicate to all section works managers that works shall cease immediately, all working areas shall be made safe, and all personnel shall make their way safely to the main site compound or section compound.
- B6a.3.28. The Section Project Manager shall inform the Principal Contractor Project Director and Gloucestershire County Council Senior Project Manager of their decision.
- B6a.3.29. The Section Project Manager and Health and Safety Manager shall continue to review the weather conditions and recommence works when safe to do so.
- B6a.3.30. Please refer to Annex B.4 Air Quality Management Plan for the proposed control measures for air quality, including dust, during construction.

Appendices



Appendix A. Key Figures

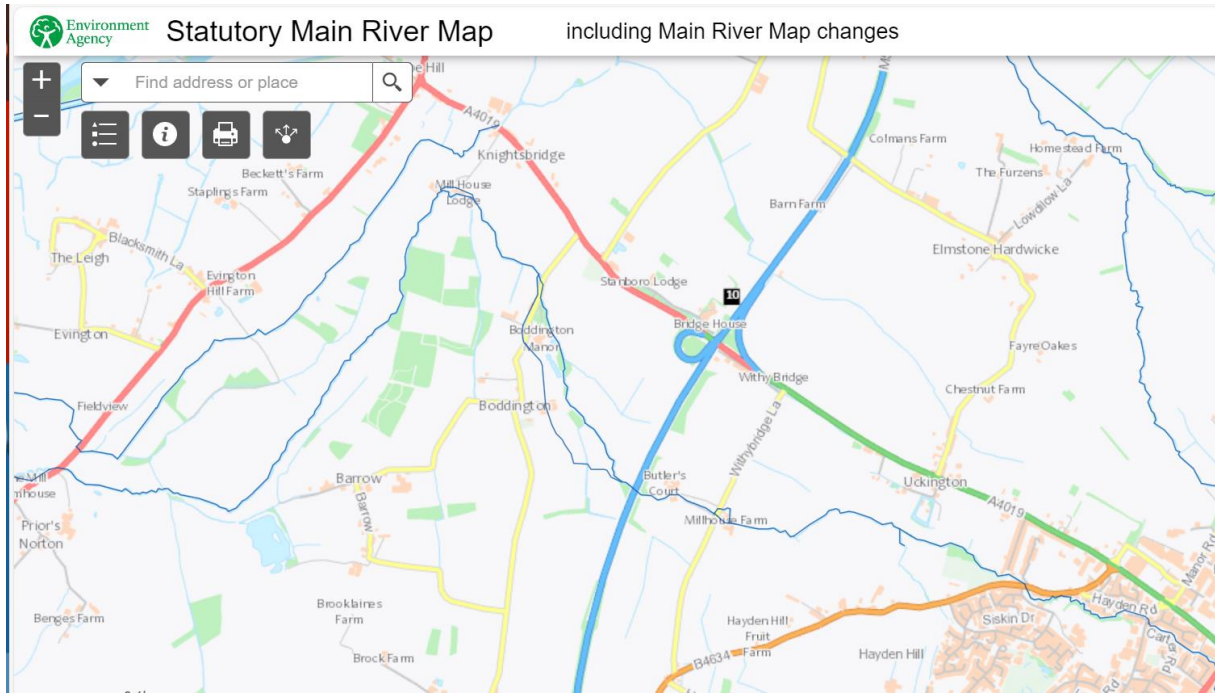


Figure B 6a-1 – Environment Agency main river map

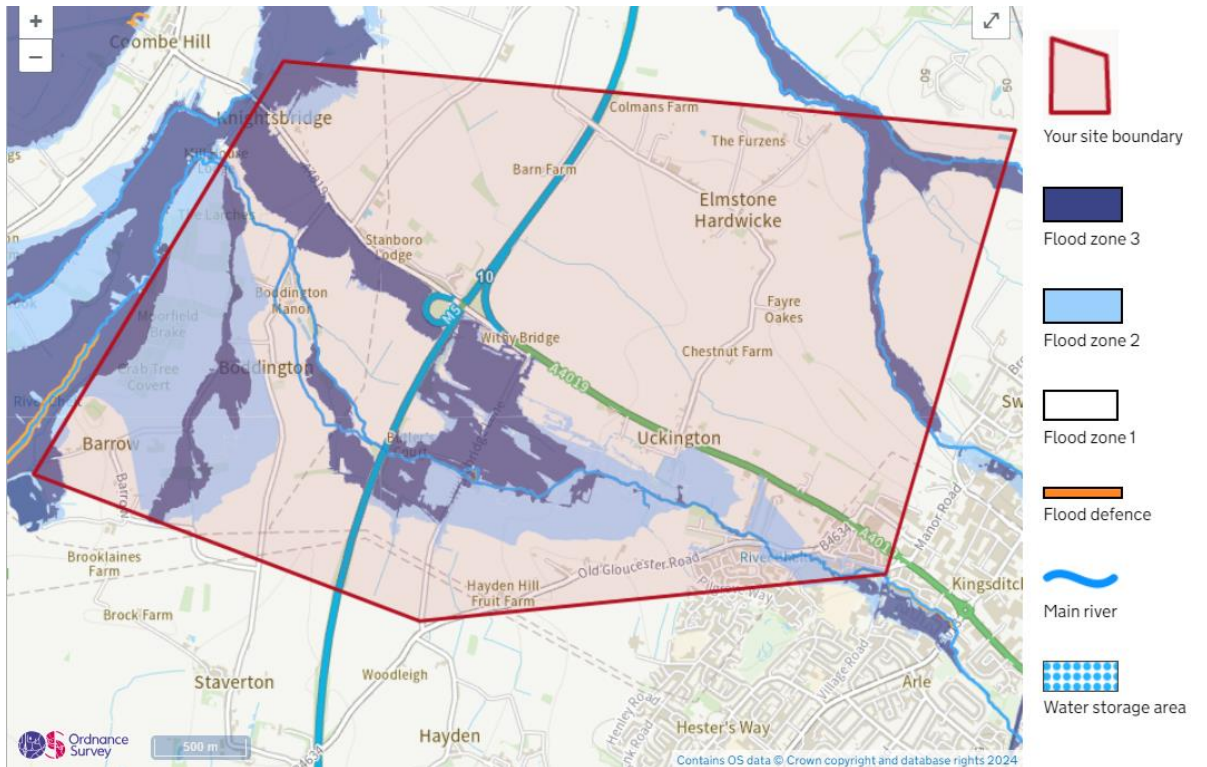


Figure B 6a-2 - Environment Agency flood zones

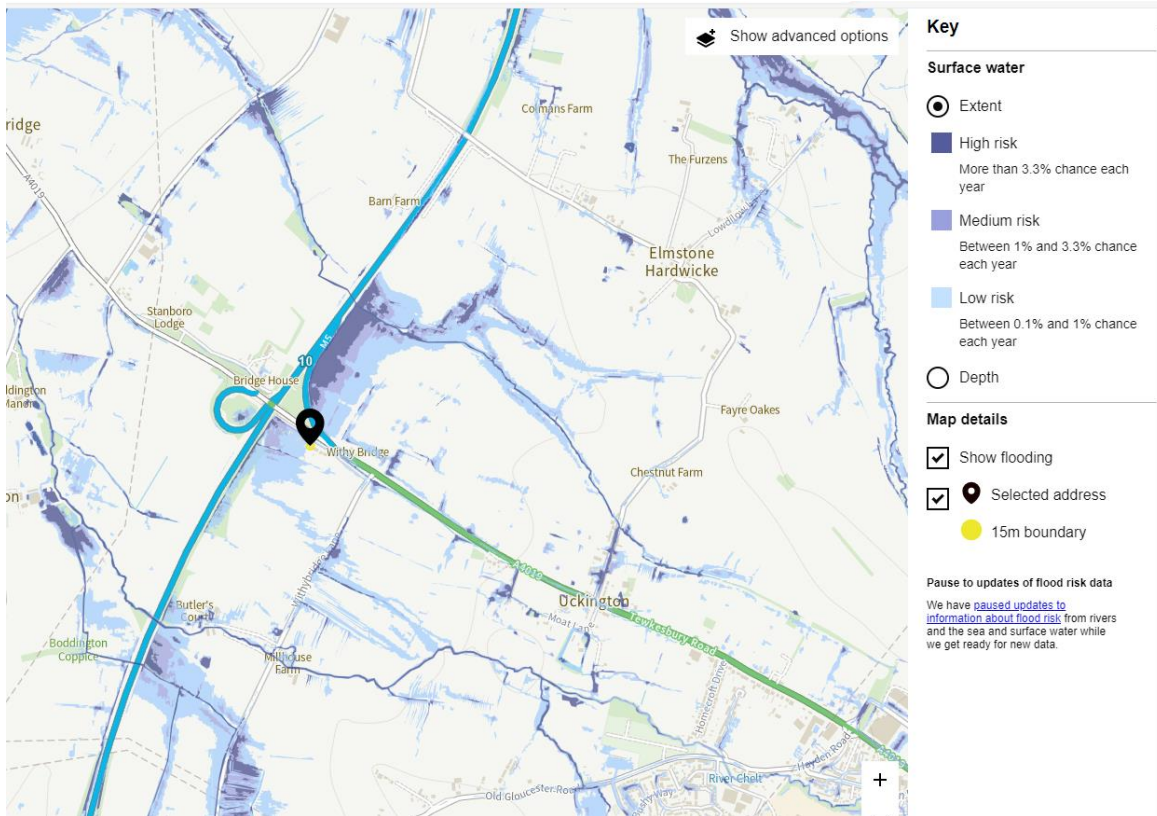


Figure B 6a-3 - Environment Agency surface water flooding

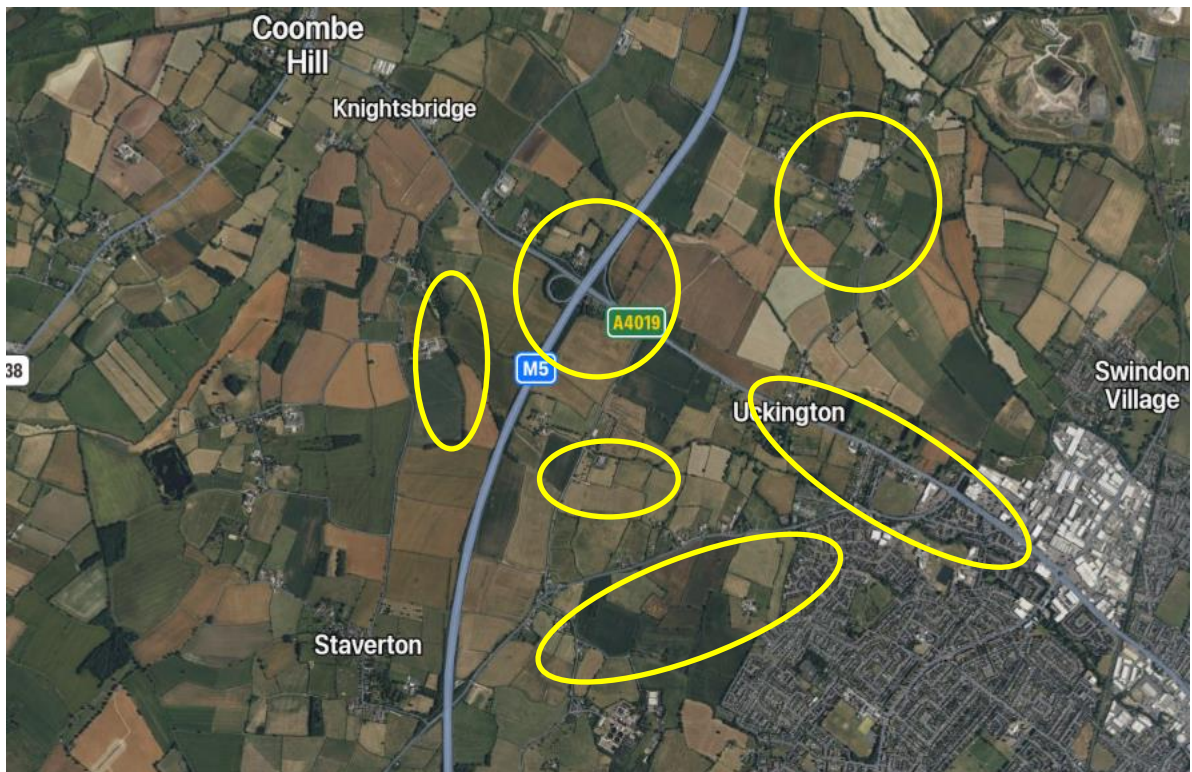


Figure B 6a-4 - Residential properties adjacent to the Scheme

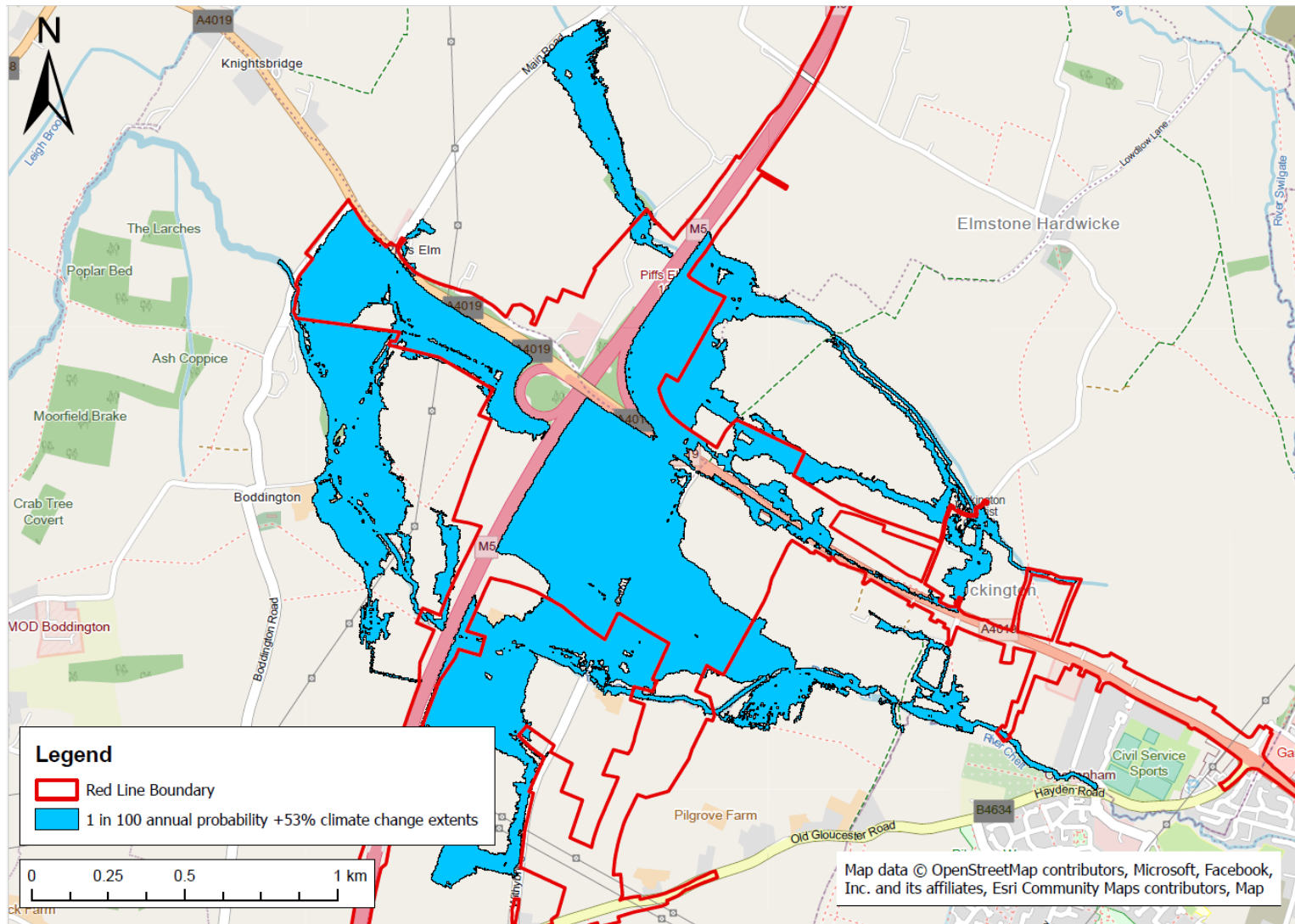


Figure B 6a-5 - Extent of flooding in 1 in 100-year storm event, without Scheme in place

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