

Appendix 7.1 Inter-related climate change effects

ES Topic	Climate Hazard	Potential Inter-Related Effect	Receptor Affected	Effect on Sensitivity or Impact Pathway	Timeframe	Assessment
Ecology and Biodiversity	Increased summer temperatures and reduced summer rainfall	Drought stress on newly established habitats; slower realisation of BNG targets	Habitats and species within and adjacent to the site	Increased receptor sensitivity — newly planted habitats more vulnerable to development-related hydrological changes	Medium to long term (2040s onwards)	Does not alter significance conclusions. Species selection and landscape management should account for projected conditions.
Ecology and Biodiversity	Milder winters, longer growing seasons	Extended establishment periods for planting; potential shift in species composition	Habitats and species	Modified baseline — changed growing conditions may alter habitat character over time	Long term	Does not alter significance conclusions. May provide some benefit to habitat establishment rates.
Water Environment and Flood Risk	Increased winter precipitation intensity	Greater surface water flood risk; increased runoff volumes and peak flows	Site occupants, surrounding properties, watercourses	Modified impact pathway. Climate change increases magnitude of flood events beyond present-day baseline	Medium to long term	Addressed through SuDS design with EA climate change allowances. Does not alter significance conclusions.
Water Environment and Flood Risk	Reduced summer rainfall, prolonged dry periods	Low flow conditions in local watercourses; reduced dilution capacity	Watercourses and aquatic ecology	Increased receptor sensitivity. Reduced baseline flows increase sensitivity to any development-related discharges	Medium to long term	Does not alter significance conclusions. Water efficiency measures reduce demand on local supplies.
Landscape and Visual	Summer drought and heatwave events	Reduced viability of landscape planting; loss of visual screening	Visual receptors, site occupants	Increased receptor sensitivity. Landscape mitigation may be less effective if planting fails to establish	Medium to long term	Does not alter significance conclusions. Drought-tolerant species selection recommended.
Transport and Air Quality	Higher summer temperatures	Increased ground-level ozone formation in presence of NOx from traffic	Site occupants, adjacent residents	Modified impact pathway. Climate conditions amplify pollutant effects from traffic	Medium to long term	Fleet electrification expected to substantially reduce precursor emissions, offsetting this effect. Does not alter significance conclusions.
Human Health	Increased frequency and intensity of heatwaves	Overheating risk to residents, particularly vulnerable groups	Future occupants	Increased receptor sensitivity. Occupants more exposed to thermal discomfort and health risks	Medium to long term (increasing through lifetime)	Addressed through Approved Document O compliance and passive design measures. Does not alter significance conclusions.

Human Health	Increased intensity of rainfall events	Increased risk of surface water flooding to properties and access routes	Future occupants, emergency access	Modified impact pathway. More frequent intense events increase exposure	Medium to long term	Addressed through drainage strategy with climate change allowances. Does not alter significance conclusions.
Ground Conditions and Contamination	Extended dry periods followed by intense rainfall	Increased risk of shrink-swell clay movement; potential mobilisation of contaminants through changed groundwater levels	Building foundations, occupants	Modified impact pathway. Changed wetting/drying cycles may increase ground movement	Long term	Foundation design should account for projected ground conditions. Does not alter significance conclusions.
Noise and Vibration	No material inter-relationship identified	—	—	—	—	Climate change is not anticipated to materially alter noise-related impacts or receptor sensitivity.