SDCC Rathcoole Housing Development

Environmental Impact Assessment Report (EIAR)
Chapter 10: Climate

South Dublin County Council (SDCC)

October 2026

Quality information

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10 Climate

10.1 Introduction

1.1.1 This appendix presents the full In-Combination Climate Change Impact Assessment

Appendix 10-2 ICCI

Table 10-1 ICCI assessment

Discipline / Receptor	Climate Hazard	Likelihood of Climate Hazard Occurring	Likely ICCIs Identified	Description of ICCI Considering Embedded Environmental Measures / Good Practice	Likelihood of ICCI Occurring	Consequence of ICCI	Significance	Possible Mitigation Measures
Cultural Heritage	Increased number of hot days	Moderate	Dust raised by construction has been identified as a potential impact which could create an effect upon the settings of recorded heritage assets especially the Designated Protected Structures located outside the scheme boundaries – Former Paper mill chimney (RPS 337) and mill pond and mill tail race (RPS 338). Extended dry spells caused by climate change would increase dust production during construction. This could combine with the normal levels of construction dust associated with the scheme to create additional effect upon the settings of the recorded heritage assets.	Cultural Heritage Assessment has determined that the recorded heritage assets are located within environments already subject to dust from ground traffic. Additionally, this consequence would be minimised as far as reasonably practical by measures required by the Outline Construction Environmental Management Plan. The magnitude of any impact to setting from construction dust would be not significant. During the construction phase, extended dry spells may cause increased dust. This could combine with the predicted construction dust to create further effect upon the settings of the recorded heritage assets. This increased dust would also be subject to measures required by the Outline Construction Environmental Management Plan.	Likely	Very Low	Negligible (NS)	Not significant, therefore no additional mitigation recommended.
Land, Soils & Geology	Increased intensity of extreme precipitation events; increase in mean winter rainfall	Moderate	Flash flooding during construction works when soils are exposed could lead to erosion of soils	Erosion of soil from flooding events during construction works will be mitigated by covering exposed soil and stockpiles and ensuring the timely reinstatement of hardstanding and vegetation to minimise the risk of soil erosion. Given the implementation of these mitigation measures, the consequence of this ICCI is considered minimal	Unlikely	Very Low	Negligible (NS)	Not significant, therefore no additional mitigation recommended.
		Moderate	Impacts on human health and controlled waters receptors in relation to the contamination of surface waters from accidental	Environmental measures are in place during construction to provide appropriate storage and handling of materials and products are in line with the Control of Pollution Regulations	Unlikely	Very Low	Negligible (NS)	Not significant, therefore no additional

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			spillages to the ground during construction	2001. This impact is possible, but the end use of the Project will be hardstanding and best practice measures will be in place should any spillages occur during operation. The consequence of this impact is considered to be minimal.				mitigation recommended.
		Moderate	Damage to newly installed infrastructure from aggressive ground conditions (such as sulphate attack on concrete) or swelling and shrinkage of ground during construction and operation could be exacerbated by climate change. Increased surface water flooding could increase potential for sulphate attack or lead to water clogging and corrosion of structures.	The Project will be designed in accordance with requirements of relevant Irish and European design standards. Detailed design will account for the ground type and water table level as well as projections of future flooding, calculated as part of the flood modelling assessment, that will feed into the design of below ground structures. Based on our current understanding the consequence of this ICCI is considered to be minimal. This ICCI will be reviewed during the EIAR. Mitigation may be proposed, if considered necessary, following any project refinements and further assessment as part of the EIAR.	Unlikely	Very Low	Negligible (NS)	Not significant, therefore no additional mitigation recommended.
	Drought/drier conditions	Moderate	Dry and windy conditions during construction could increase dust generation during construction	Mitigation measures included within the CoCP will include damping down to prevent the generation of dust, therefore the consequence of this ICCI is considered to be minimal.	Unlikely	Very Low	Negligible (NS)	Not significant, therefore no additional mitigation recommended.
	Increased temperatures	Moderate	Potential for increased volatisation of volatile organic compound (VOC) contamination under warmer temperatures	No significant VOC contamination has been identified at present based on previous land use. Ground investigation has been proposed and, if any VOC contamination is identified, then it will be mitigated/remediated. Based on our current understanding, the consequence of this ICCI is considered minimal. Ground investigation will be completed for the EIAR and will confirm the level of mitigation required, if considered necessary, and this ICCI classification	Unlikely	Very Low	Negligible (NS)	Not significant, therefore no additional mitigation recommended.

Discipline / Receptor	Climate Hazard	Likelihood of Climate Hazard Occurring	Likely ICCIs Identified	Description of ICCI Considering Embedded Environmental Measures / Good Practice	Likelihood of ICCI Occurring	Consequence of ICCI	Significance	Possible Mitigation Measures
				will therefore be reviewed during the EIAR .				
Noise and Vibration	Not expecting any significant impacts as a result of the development.						NS	
Water and hydrology Surface Water: WFD River Drinking waterbodies Groundwater: WFD ground water body	Increase in mean summer air temperature/ Increase drought due to decrease of rainfall	Almost certain	Water Demand: Should a prolonged drought occur, there may be reduced water to supply the Proposed Development	Reduced availability of water could limit operation of the Proposed Development. It is expected that in operation, the Proposed Development will require up to 53,055 l/d of clean water for 130 units, this is based on Uisce Éireann's Code of Practice for Water Infrastructure. Climate change is expected to influence weather conditions, such as frequency of droughts and extreme events such as storms, and is likely to affect habitats and species, water availability for supply and water demand and water quality. The Regional Water Resources Plan for the Eastern and Midlands (Study Area 9) by Uisce Éireann states that the delivery of their Preferred Approach will secure all of the supplies in the area to 2044 in terms of Quality, Quantity, Sustainability and Resilience. This will allow their existing level of service to be maintained while facilitating growth and in long term will improve resilience in the network and improve the security and reliability of water supply to the Greater Dublin Area. This suggests that there should be sufficient resources within the network to accommodate the Proposed Development's water demand. Uisce Éireann have confirmed water supply to the Proposed Development is feasible without any public network upgrades.	Unlikely	Low	Minor (NS)	Not significant, therefore no additional mitigation recommended.

Discipline / Receptor	Climate Hazard	Likelihood of Climate Hazard Occurring	Likely ICCIs Identified	Description of ICCI Considering Embedded Environmental Measures / Good Practice	Likelihood of ICCI Occurring	Consequence of ICCI	Significance	Possible Mitigation Measures
Water and hydrology Flood Risk (site workers, infrastructure and downstream receptors)	Increase in Winter rainfall	Almost certain	Operation: Increased precipitation can impact the frequency and duration of flooding (e.g. fluvial, surface water, artificial sources, groundwater and drainage infrastructure), if capacity of river channels or drainage infrastructure is exceeded.	With regards to fluvial flooding, floodinfo.ie provides future scenario online mapping, which indicates that there are flooding risks associated with the unnamed non-WFD water body through the Site, as well as the Crockshane Stream, located along the southern perimeter of the Site. A 30% climate change model is available for viewing, which highlights further flooding events throughout the Site and on the south-east corner of the existing Rathcoole Park. Therefore, based on the material reviewed as part of the Stage 2 Flood Risk Assessment and the analysis undertaken, it was concluded that parts of the Site are classified as Flood Zone A (high probability of flooding where the probability of flooding is greatest (greater than 1% or 1 in 100 for river flooding and 0.5% or 1 in 200 for coastal flooding)).	Very Likely	Medium	Moderate (NS)	Not significant, therefore no additional mitigation recommended.
Water and hydrology Flood Risk (site workers, infrastructure and downstream receptors)	Sea level rise	Almost certain	Increased sea level rise unlikely to lead to flooding to the Proposed Development due to distance from the shore.	Based on the information reviewed, AECOM have concluded that there is no risk associated with coastal flooding for this site.	Very Unlikely	Very Low	Negligible (NS)	Not significant, therefore no additional mitigation recommended.
Water and hydrology Surface Water: (River / Transitional WFD waterbody)	Increase in Winter rainfall	Almost certain	Operation: Increased precipitation can impact peak discharge rates for surface water runoff, which can impact receiving waterbodies (receptors) if the capacity of the drainage infrastructure is exceeded in extreme events. There is potential for the Camac_020 and Coolmine Stream to receive untreated and polluted water. This could	The impact of climate change on expected flows should be accommodated in the design of drainage infrastructure to ensure appropriate attenuation and storage for anticipated flow. With regards to fluvial flooding, floodinfo.ie provides future scenario online mapping, which indicates that there are flooding risks associated with the Coolmine Stream through the Site, as well as the Crockshane Stream,	Very Likely	Medium	Moderate (NS)	Not significant, therefore no additional mitigation recommended.

Discipline / Receptor	Climate Hazard	Likelihood of Climate Hazard Occurring	Likely ICCIs Identified	Description of ICCI Considering Embedded Environmental Measures / Good Practice	Likelihood of ICCI Occurring	Consequence of ICCI	Significance	Possible Mitigation Measures
			lead to a deterioration in water quality.	located along the southern perimeter of the Site. A 30% climate change model is available for viewing, which highlights further flooding events throughout the Site and on the south-east corner of the existing Rathcoole Park. Therefore, based on the material reviewed as part of the Stage 2 Flood Risk Assessment and the analysis undertaken, it was concluded that the Site is classified as Flood Zone A (high probability of flooding where the probability of flooding is greatest (greater than 1% or 1 in 100 for river flooding and 0.5% or 1 in 200 for coastal flooding)).				
Water and hydrology Groundwater Aquifers (WFD groundwater body)	Increase in Winter rainfall	Almost certain	Construction: An increase in groundwater level increases the possibility of groundwater levels rising closer to the ground surface/ interacting with potential contamination within superficial deposits (Till, gravels or alluvium) which would otherwise not be encountered. This would increase the likelihood of potential impact on groundwater quality. Additionally, increased groundwater level may increase the requirement for groundwater management measures. This would increase the likelihood of potential impact on groundwater quantity especially where groundwater interacts with GWDTE's in the vicinity of the Proposed Development.	During construction, groundwater quality and quantity may be temporarily adversely affected due to potential ground disturbance/ dewatering. The potential rise in groundwater level, may require additional dewatering considerations, which may decrease groundwater quality through mobilising existing contamination and groundwater quantity through lowering of the groundwater table. However, an appropriate dewatering strategy would be developed to minimise the risk. Additionally, impacts due to climate change are unlikely to be significant during the construction period.	Very Unlikely	Medium	Negligible (NS)	Not significant, therefore no additional mitigation recommended.
Water and hydrology	Increase in Winter rainfall	Almost certain	Operation: An increase in groundwater level increases the possibility of groundwater	Contamination which may be encountered during construction will have been remediated or mitigated an	Unlikely	Low	Minor (NS)	Not significant, therefore no additional

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Groundwater Aquifers (WFD groundwater body)			levels rising closer to the ground surface/ mixing with potential contamination within superficial deposits (Till, gravels or alluvium) which would otherwise not be encountered. This would increase the likelihood of potential impact on groundwater quality.	appropriate extent. Maintenance and operation of the Proposed Development will be in accordance with environmental legislation, good practice and as dictated by the statutory bodies. Therefore, it is unlikely that there will be an increased risk to groundwater quality in the event that groundwater levels rise.				mitigation recommended.
Water and hydrology GWDTE (Calcareous springs)	Increase in Winter rainfall	Almost certain	Operation: Increased precipitation in combination with elevated groundwater recharge may increase discharge at calcareous springs, which could lead to potential localised groundwater flooding during prolonged wet periods.	Incorporation of monitoring and adaptative groundwater management measures, adverse climate change effects are not anticipated.	Unlikely	Low	Minor (NS)	Not significant, therefore no additional mitigation recommended.
Material Assets (Utilities) / Water Infrastructure	Extreme rainfall & Drought	Possible	Changes in precipitation, including extreme rainfall events and drought may impact water availability for potable water and foul water infrastructure, or overwhelm surface water drainage due to the impacts of the Proposed Development.	Best practice measures during construction will reduce the impact of surface water flooding during the construction phase. The size of this development is unlikely to significantly impact surrounding water infrastructure.	Unlikely	Low	Minor (NS)	Not significant, therefore no additional mitigation recommended.
Material Assets (Utilities) / Electricity Infrastructure)	Extreme heat	Likely	Increases in extreme heat events and heatwaves may place increased demand on electricity infrastructure, combined with the increased load of the Proposed Development, this may lead to more likely faults within electricity infrastructure.	No additional mitigation is recommended beyond regular inspection and maintenance of electrical infrastructure to reduce the likelihood of failure within the system.	Unlikely	Low	Minor (NS)	Not significant, therefore no additional mitigation recommended.
Air Quality	Extreme Heat / Drought	Possible	Dry conditions can lead to an increase in dust generated on-stie during construction. This may cause damage to construction materials and	The construction environmental management plan will include measures to manage dust during construction. It is considered unlikely to be a significant impact.	Unlikely	Low	Minor (NS)	Not significant, therefore no additional mitigation recommended.

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			equipment or delay the construction programme					