

King's Lynn and West Norfolk Borough Strategic Flood Risk Assessment Level 2 Community Level Guidance Tables

Completed by	JBA consulting
Date	March 2019
Author	Freyja Scarborough
Reviewer / Sign-off	Hannah Coogan
Version Number	Version 2.0

Level 2 Community Level Guidance Tables

Community details	Community	Hunstanton			
	Flood Risk Summary	Highest risk flooding mechanism	Surface Water		
		Most likely source of flooding	Surface Water		
Sources of flood risk	Existing drainage features	<ul style="list-style-type: none"> Coastal boundary at the west of the community. There are no existing drainage features within the community. There are two identified drains to the south of the community. 			
	Fluvial	No			
	Tidal/ coastal	Flood Zone 3b – very minor impact on western boundary.			
	Surface Water	Small impact from 3.3% AEP event. More significant impact in 1% and 0.1% AEP events.			
	Residual Risk	Yes small influence from the Great Ouse on the western community boundary.			
	IDB watercourse present?	No			
	Flood history	<ul style="list-style-type: none"> Coastal flooding in 1953, 1978 and 2013 Norfolk County Council flood records have shown evidence of internal flooding in Hunstanton: <ul style="list-style-type: none"> Occurring on 14th August 2014. No mechanism of flooding recorded. On 7th January 2016. No mechanism of flooding recorded. An internet search provided textural and visual evidence of flooding: <ul style="list-style-type: none"> On 27th July 2018 from a large rainfall event. Hunstanton seafront flooded in December 2013, as a result of a storm surge and breached sea defences. Hunstanton Sealife Sanctuary was severely damaged. In the event of 1978 it is reported that hundreds of caravans at Hunstanton were overturned. There are records of sewer flooding in this community in 2014 and 2015. 			
Flood risk management infrastructure	Defences	Defence Type	Flooding Type	Standard of Protection	Condition
		Embankment (x2)	Coastal	50	3 (Fair)
		Wall (x3)	Coastal	100	3 (Fair)

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		<ul style="list-style-type: none"> The area benefitting from defences information does not extend into this community Repairs and improvements were made to Hunstanton Sea Front following storm damage in December 2013. This includes: <ul style="list-style-type: none"> Emergency repairs to the promenade New flood gates to the promenade The Environment Agency report that defences in the south of Hunstanton help to reduce the risk of flooding to 642 residential properties and around 3,500 caravans and holiday homes. During the December 2013 tidal surge, these flood defences helped reduce the impact of flooding. It is recorded by the Environment Agency that: 'the shingle banks south of Hunstanton have to rebuilt every year to repair the erosion that has taken place over autumn and winter. This beach recycling is the most sustainable way to protect the coast at this location'. 75% of the costs of beach recharge works have been committed by the 'East Wash Community Interest Company'. 	
Opportunities for sustainable development	Asset management	<p>Schemes following on from the Wash East Coastal Management Strategy are currently under construction to protect 280 households as part of the Environment Agency pipeline of works. The Strategy confirms that it is sustainable to hold the line for the short and medium term. It has also confirmed that it is preferable to continue with the existing balance of hard and soft defences in this area, including maintaining the existing groynes. In the longer term, continued beach recycling may not be sustainable, for economic, social or environmental reasons. The Strategy has developed an 'adaptable' approach to the future management of this coastline which does not preclude any future opportunities to further improve the standard of protection - dependent on available funding. The Strategy identifies the need for the authorities and the community to work together to fund the on-going maintenance of the defences.</p>	

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	Capital investment policy and regeneration	<p>The Hunstanton Coastal Management Plan will set out the road map to deliver the Shoreline Management Plan policy for the Hunstanton frontage over the next 100 years, and will include:</p> <ul style="list-style-type: none"> • Managing cliff erosion and • Managing and maintaining the existing coastal defences throughout the Promenade <p>A revised masterplan for Hunstanton's Southern Seafront is currently being prepared to assess the feasibility (development potential and viability) for mixed use redevelopment, options for public realm, vacant sites and underutilised sites within the study area. It is broken down into 3 parts:</p> <ul style="list-style-type: none"> • southern seafront sites behind the sea defence • public realm enhancements and use of the promenade over and above its role as a sea defence • the feasibility of a marine lake to retain water and provide an extended offer <p>Capital works following both of these projects should inform future developments in the town.</p>	
	Higher level policy	<p>The overall intention in the Wash Shoreline Management Plan 2 for this Policy Development Zone is to sustain the viability of Hunstanton Town as a tourist resort and regional commercial centre. This requires sustaining the promenade and the seafront. Therefore, the policy is to hold the shoreline defences where they are now.</p> <p>CFMP/ SMP policies set the high level and strategic direction for flood risk and coastal change management. There is no guarantee that funding will be available from national, regional or local sources to implement the policy. More detailed strategy and scheme work considers funding needs and availability at a community level.</p>	
	Flood warning	<ul style="list-style-type: none"> • The community is partially covered by the 'Precautionary Evacuation Notice area at Hunstanton' Flood Warning Area. • The community is partially covered by the 'Coast from Hunstanton to north of King's Lynn' Environment Agency Flood Alert area. 	
	Access and egress	<ul style="list-style-type: none"> • All access and egress routes are possible during tidal events. • Surface water flooding may cause problems with access and egress. 	
	Implications for the community	<ul style="list-style-type: none"> • There is a small increase in the impact of surface water when taking into account the future effects of climate change. • Small additional impact from tidal flooding due to climate change on the western community boundary. 	

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Requirements for drainage control and impact mitigation	Broad scale assessment of possible SuDS	Bedrock Geology	Chalk, sandstone and mudstone.
		Superficial Geology	No data available
		Soil Type	Impeded drainage.
		Groundwater Source Protection Zone	No
		Historic Landfill Site	No
		<ul style="list-style-type: none"> Further investigation of SuDS on a site specific basis due to the variety or levels of risk from groundwater identified for this community in the Areas Susceptible to Groundwater Flooding dataset. Source control techniques are likely to be suitable for this community. Infiltration techniques will be suitable providing there are areas of the site not at high or medium ground water flood risk. Detention features may be feasible providing site slopes are <5% at the location of the detention feature. If the site has groundwater issues, then a liner will be required. Filtration systems are probably suitable providing site slopes are <5% and the depth to the water table is >1m. If the site has groundwater issues, then a liner will be required. All forms of conveyance features are likely to be suitable. Where slopes are >5%, features should follow contours or utilise check dams to slow flows. 	
		NPPF and planning implications	Existing Local Considerations

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	Requirements and guidance for site-specific Flood Risk Assessment	<ul style="list-style-type: none"> Ensure safe access and egress in all flood events, especially in the western area of the community. Detailed hydraulic modelling will need to consider any drains within and surrounding the community that are likely to affect the site to assess fluvial flood risk in the community (including IDB drains). Hydraulic modelling should also seek to understand the impact of residual risk from culvert blockage to any proposed site. The Flood Risk Assessment (FRA) should address all forms of flood risk impacting this community (coastal inundation, fluvial and surface water). Consider the impacts of climate change, especially on the extent of surface water flooding in the community. An FRA should also suggest appropriate mitigation (flood resilience measures). Consider the impact of a coastal breach by sequentially placing the highest vulnerability part of the development in the areas of lowest flood risk, applying the Council's Flood Risk Design Guidance and creating a site-specific emergency plan for flood events. Should explain how surface water drainage will be managed. The FRA must demonstrate how the development would provide wider sustainability benefits to the community that outweigh the risk associated with flooding and that the development would be safe for its lifetime without increasing flood risk elsewhere and, where possible, would reduce flood risk overall. The contribution towards the wider regeneration aspirations for the town should be noted where appropriate. Further investigation of SuDS on a site specific basis due to the variety of levels of risk from groundwater identified for this community in the Areas Susceptible to Groundwater Flooding dataset. 		
Conclusions and		Tidal and Coastal	Fluvial	Surface Water
	5% AEP and Breach	None	3.3% AEP	

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recommendations		<ul style="list-style-type: none"> • Most of Hunstanton is located within Flood Zone 1. • Ensure safe access and egress from the community in coastal and surface water events and that the effects of a coastal breach are taken into account. • Areas to the south of Hunstanton are in the proposed Coastal Change Management Area, with restrictions on the types of development that would be suitable. • Developments on the seafront should take into account the outcomes of the Coastal Management Plan and the existing 2008 and emerging updated Southern Seafront Masterplan. • The Hunstanton Seafront Masterplan outlines the need to provide a year-round attraction for visitors and residents alike in Hunstanton. This is reflected in both the overall masterplan and the 7 opportunity sites. Specific site related guidance for each of these opportunity sites is provided within the masterplan document. • Consideration should be given to providing a contribution to the defences protecting this community. 	
Mapping Information			
Flood Zones	Flood Zones are compiled from the outputs of The Wash, 2018 tidal model and mapped outlines from 2D Jflow modelling of the fluvial Heacham River and tributaries carried out as part of this study.		