

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

Community details	Community	Snettisham			
	Flood Risk Summary	Highest risk flooding mechanism	Surface Water		
		Most likely source of flooding	Fluvial		
Sources of flood risk	Existing drainage features	<ul style="list-style-type: none"> Coastal boundary approximately 2.5km to the west of the community. Two unnamed drains bisect the north of the community and then flow either side of the western portion of the community with associated tributaries. 			
	Fluvial	Indicative Flood Zone 3b small area on the southern boundary.			
	Tidal	No			
	Surface Water	Impact from 3.3% AEP and above.			
	Residual Risk	No			
	IDB watercourse present?	<ul style="list-style-type: none"> The King's Lynn Internal Drainage Board (IDB) extends across the southern boundary of this community, in the admin area of the Water Management Alliance(WMA). These drains are located south of the community and have an influence on the community: <ul style="list-style-type: none"> Ingol Drain Wallaces Drain The River Ingol flows along the southern boundary of the community with several associated tributaries also affecting the community. The Norfolk Rivers Trust are working with King's Lynn IDB to develop a management plan for this drain with the aim of benefitting wildlife and protecting against flooding. 			
	Flood history	<ul style="list-style-type: none"> Norfolk County Council flood reports have shown evidence of internal flooding of 3 properties (no mechanism provided): <ul style="list-style-type: none"> 25th August 2012 12th June 2016 23rd June 2016. An internet search provided textural and visual evidence of flooding: <ul style="list-style-type: none"> In 1953 from tidal breach which reports bungalows and caravans were destroyed in Snettisham as a result of flooding. In the event of 1978 it is reported that hundreds of caravans at Snettisham were overturned. In June 2017 surface water flooding was reported at Church Lane in Snettisham. 			
		Defence Type	Flooding Type	Standard of Protection	Condition
		Embankment	Coastal	0	3 (Fair)
		Embankment (x4)	Coastal	200	3 (Fair)
		Embankment	Coastal	200	4 (Poor)

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		<ul style="list-style-type: none"> The community is not covered within the Environment Agency area's benefiting from defences. The Environment Agency reports that each year some of the shingle bank protecting 823 properties and 4,200 caravans at Snettisham, near King's Lynn is washed away by the tides. The government has funded around 43% of the works, the rest have been covered by the funding group. However, we will need to keep working with the funding group, which includes the Community Interest Company, the council and other partners, to raise money to ensure the work continues beyond 2017. 75% of the costs of beach recharge works have been committed by the 'East Wash Community Interest Company'. 	
Opportunities for sustainable development	Asset management	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.	
	Capital investment policy and regeneration	No current schemes identified for this community.	

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	Higher level policy	<ul style="list-style-type: none"> This area is within the Great Ouse Catchment Flood Management Plan and sub area 10, the Fens. Within this sub-area the current flood risk is appropriately managed. However, the risk is expected to significantly rise in the future with impacts from climate change. Actions should be taken to manage the increase in risk. The overall intention for this area in the Wash Shoreline Management Plan 2 is to develop a sustainable long-term solution by establishing a process of cooperation between the partner organisations, local people and businesses. This should reduce the risk to life and support adaptation of the local community to coastal change. This has been supported by the designation of the coastal floodplain in this area as a Coastal Change Management Area in the 2019 consultation Local Plan. This area is also located within the DM18 Coastal Flood Risk Hazard Zone, in the Adopted Local Plan. The Hazard Zone stretches from along the coastline to Hunstanton and seeks to prevent any new caravan parks in rapid inundation zones and new ground-floor residential development. 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. 	
Emergency planning	Flood warning	<ul style="list-style-type: none"> The southern boundary of the community is partially covered by the Flood Alert Area 'Coast from north of King's Lynn to Snettisham' The southern boundary of the community is partially covered by the Flood Warning Area 'North West Norfolk rivers' 	
	Access and egress	<ul style="list-style-type: none"> During a fluvial flooding event, access and egress routes to Snettisham will not be possible via the southern end of the B1440. Access and egress may be limited during all surface water events. A high percentage of roads will be significantly affected by flooding, limiting access and egress routes in higher AEP surface water events. 	
Climate Change	Implications for the community	<ul style="list-style-type: none"> There is an increase in flooding from surface water in the whole community due to climate change. 	
Requirements for drainage control and impact mitigation	Broad scale assessment of possible SuDS	Bedrock Geology	Central areas: Sandstone, clay and silt, mudstone, sand Eastern areas: Chalk
		Superficial Geology	Clay, silt, sand and gravel
		Soil Type	Naturally wet.

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		Groundwater Source Protection Zone	No
		Historic Landfill Site	No
		<ul style="list-style-type: none"> Further investigation 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. 	
		<ul style="list-style-type: none"> King's Lynn and West Norfolk Borough Council selected Snettisham for surface water modelling and the SWMP concluded that there is a low risk of significant surface water flooding within the community. Snettisham Parish Council have completed their neighbourhood plan. Areas to the west of Snettisham are located within the DM18 Coastal Flood Risk Hazard Zone, in the Adopted Local Plan and the proposed Coastal Change Management Area. The Hazard Zone stretches from along the coastline to Hunstanton and seeks to prevent any new caravan parks in rapid inundation zones and new ground-floor residential development. Also, according to the Local Plan, Snettisham will receive an allocation of 34 new houses. SuDS should be sought for this development, to avoid increasing the risk of flooding to drains near Snettisham. 	
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. 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 from structures along these watercourses. The Flood Risk Assessment (FRA) should address all forms of flood risk impacting this community (tidal, fluvial, groundwater 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). Should explain how surface water drainage will be managed. Further investigation 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. Early consultation with the WLMA is strongly recommended in this area. 		
Conclusions and recommendations		Tidal and Coastal	Fluvial	Surface Water
		No Risk	5% AEP	3.3% AEP
		<ul style="list-style-type: none"> The majority of the community is in Flood Zone 1. Consideration should be given to providing a contribution to the defences protecting lower lying areas towards the west of this community especially the annual repair required to shingle banks protecting the community. Snettisham will receive an allocation of 34 new houses under the local plan. Early consultation with the WLMA is strongly recommended in this area. 		
Mapping Information				
Flood Zones	<ul style="list-style-type: none"> Indicative Flood 3b is comprised of Flood Zone 3b is comprised from Environment Agency Flood Zone 3 containing fluvial and tidal model outlines. Flood Zone 3a is comprised of Environment Agency supplied outlines from the tidal Wash, 2018 model and from Environment Agency Flood Zones 3 containing fluvial and tidal model outlines. Flood Zone 2 is comprised of Environment Agency supplied outlines from the tidal Wash, 2018 model and from Environment Agency Flood Zones 2 containing fluvial and tidal model outlines. 			