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 3.0

Level 2 Community Level Guidance Tables

Community details	**Community**	Dersingham			
	Flood Risk Summary	Highest risk flooding mechanism	Surface Water		
		Most likely source of flooding	Fluvial		
Sources of flood risk	**Existing drainage features**	• A large drain bisects the community flowing from east to west. • There are multiple drains, surrounding the community, the main concentration of which appear to be on the south and western side of the community. • There are several areas of open watercourse between culvert within the community in the south.			
	Fluvial	There are areas within the indicative Functional Floodplain (3b)			
	Tidal	Small impact in Flood Zone 3a			
	Surface Water	Small impact from 3.3% AEP event. More significant impact in 1% and 0.1% AEP events.			
	Residual Risk	No			
	IDB watercourse present?	The western part of this community is partially covered by the King's Lynn Internal Drainage Basin (IDB), in the admin area of the Water Management Alliance (WMA). The following drains are located close to the western boundary: • Dersingham Main Drain • Hipkins Drain • Boathouse Creek Drain			
	Flood history	• The Environment Agency's recorded flood outline dataset indicates flooding in a small part of Dersingham, during the January 1953 Tidal Event. • The provided Section 19 data, an internet search and sewer flooding records indicates no further records of flooding.			
Flood risk management infrastructure	**Defences**	**Defence Type**	**Flooding Type**	**Standard of Protection**	**Condition**
		-	-	-	-
		Small areas in the north-western corner are recorded as benefitting from defences.			
Opportunities for sustainable development	**Asset management**	No EA pipeline schemes at or near this community.			
	Capital investment policy and regeneration	No current schemes identified for this community.			

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	Higher level policy	• 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 Plan 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 which 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**	Part of the community is covered by the 'Coast from north to Kings Lynn to Snettisham' Flood Warning Area and the 'Coast from Hunstanton to north of King's Lynn' Flood Warning Service.	
	Access and egress	• Access and egress in relation to the southern drain bisecting the community will not be possible from the 5% AEP fluvial event. • Also, access and egress from the north-western side of the community will be unavailable due to inundation of the A149 in tidal scenarios from 0.5% AEP events and above. • During a surface water flood event, access will be locally limited, this risk increases to a significant impact on access and egress in the 0.1% AEP event.	
Climate Change	**Implications for the community**	• There is a small increase in the impact of surface water when taking into account the future effects of climate change. • There is no additional impact from climate change in the tidal scenarios as climate change extents represent defended scenarios.	

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Requirements for drainage control and impact mitigation	**Broad scale assessment of possible SuDS**	**Bedrock Geology**	Tidal Flat Deposits - Clay and Silt
		Superficial Geology	Kimmeridge Clay Formation - Mudstone
		Soil Type	Naturally wet
		Groundwater Source Protection Zone	No
		Historic Landfill Site	No
		• Areas Susceptible to Groundwater Flooding data is not available for this community, as such the potential of broadscale assessment is limited and the suitability of SuDS will need to be determined by on-site investigations. • Source control techniques are likely to be suitable for this community. • Infiltration techniques will be suitable proving 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**	• Dersingham is identified as a key rural service centre in the Borough Council's Local Plan. According to the Local Plan, King's Lynn and West Norfolk Borough Council have allocated Dersingham a total of 30 houses across two sites. • Dersingham Parish Council will soon be completing their neighbourhood plan. This will most likely include more detail on development in Dersingham. • Areas to the west of Dersingham 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 which seeks to prevent any new caravan parks in rapid inundation zones and new ground-floor residential development.	

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	Requirements and guidance for site-specific Flood Risk Assessment	• Early consultation with WMA IDB depending on site location and impact from IDB drains. • New development must seek opportunities to reduce overall level of surface water flood risk at the community. • The Flood Risk Assessment (FRA) should address all forms of flood risk impacting this community (tidal, fluvial, surface water). • Ensure safe access and egress from the site in fluvial, tidal and surface water 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. • Consider the impact of a tidal 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. • Consider the impacts of climate change from all types of flooding within the community. • Areas Susceptible to Groundwater Flooding data availability was limited for this community, as such the potential of broadscale assessment is limited and the suitability of SuDS will need to be determined by on-site investigations. Any SuDS measures should be applied using the guidance provided by the Lead Local Flood Authority.	
Conclusions and recommendations		Tidal and Coastal	Fluvial	Surface Water
		0.5% AEP	5% AEP	3.3% AEP
		• Large areas of the community are in Flood Zone 1. • Recommend early consultation with WMA. • Areas to the west are in the proposed Coastal Change Management Area, with restrictions on the types of development that would be suitable • Ensure safe access and egress from the community in fluvial, tidal and surface water events. • Consider mitigation for surface water flooding.		
Mapping Information				
Flood Zones		• Indicative Flood Zone 3b is comprised of Environment Agency Flood Zone 3a containing fluvial 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 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 outlines.		

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