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**	Watlington			
	Flood Risk Summary	Highest risk flooding mechanism	Tidal / Coastal		
		Most likely source of flooding	Surface Water		
Sources of flood risk	**Existing drainage features**	• There are several areas of open watercourse both within the community and adjoining the community boundary. • The River Great Ouse flows to the west of the community boundary. • There are a number of fluvial drains surrounding the community the main concentration of which are in the north and east.			
	Fluvial	No			
	Tidal	Minor impact from Flood Zone 3a			
	Surface Water	Impact from 3.3% AEP event and above			
	Residual Risk	• Encroachment from Tidal Breach in the west of the community from the Tidal Great Ouse. • Minor impact from fluvial breach on the Fenland River.			
	IDB watercourse present?	This western area of the community is covered by the East of Ouse Polver & Nar Internal Drainage Board (IDB), in the administration area of the Downham Market Group of IDBs. The drains near the community are: • Blue Arch • Little Goole • Mud Lane Drain			
	Flood history	• An internet search found records of flooding in July 2017, internal flooding was recorded at Watlington Primary School from surface water flooding. • There are no records of sewer flooding in this community.			
Flood risk management infrastructure	**Defences**	**Defence Type**	**Flooding Type**	**Standard of Protection**	**Condition**
		Wall (x3)	Tidal	100	3 (Fair)
		Embankment (x8)	Tidal	100	3 (Fair)
		The community is benefitting from tidal defences along the River Great Ouse to the West and protect the western area of the community.			
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. • Watlington is designated as low-lying fenland in the hinterland of the Wash Shoreline Management Plan (SMP) 2 and is protected by defences along the wash coastline and is therefore relevant to the SMP. The policy within this area (PDZ1) is to maintain the current defences into the future, considering an 'envelope of potential developments' for all future scenarios. • 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**	• The western area of the community is covered by the 'Tidal River Great Ouse east bank breach from Watlington to south King's Lynn' Flood Warning Area and the 'Tidal River from Denver to south of King's Lynn' Flood Alert Area.	
	Access and egress	• Access and egress are possible in all tidal and fluvial events but there may be small minor impacts in the north-western corner of the community from the 0.5% AEP event. • Localised impacts on access and egress from the 3.3% AEP surface water event and above, especially in the western area of the community.	
Climate Change	**Implications for the community**	• Climate change modelling does not show any impact to the defended tidal scenario (which assumes no breach occurs). However, it may have a significant impact on the frequency and severity of storm surges which have not been modelled for the SFRA. • There is a small increase in the impact of surface water when taking into account the future effects of climate change.	
Requirements for drainage control and impact mitigation	**Broad scale assessment of possible SuDS**	**Bedrock Geology**	Mudstone
		Superficial Geology	Clay and silt; gravel
		Soil Type	Naturally high groundwater
		Groundwater Source Protection Zone	No
		Historic Landfill Site	No

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<table>
<tr><td rowspan="3">Community details</td><td>Community</td><td colspan="3">Watlington</td></tr>
<tr><td rowspan="2">Flood Risk Summary</td><td>Highest risk flooding mechanism</td><td colspan="2">Tidal / Coastal</td></tr>
<tr><td>Most likely source of flooding</td><td colspan="2">Surface Water</td></tr>
<tr><td></td><td></td><td colspan="3">• 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.
• Mapping suggest groundwater flooding may be an issue in this community, providing the site is not at medium to high risk from groundwater flooding infiltration techniques may be suitable.
• Detention features may be feasible providing site slopes are <5% at the location of the detention feature. If groundwater is a risk to the site, then a liner may be required to mitigate against potential contamination issues.
• Filtration systems are probably suitable providing site slopes are <5% and the depth to the water table is >1m. If the site is at risk from groundwater, 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.</td></tr>
<tr><td rowspan="2">NPPF and planning implications</td><td>Existing Local Considerations</td><td colspan="3">• In the Borough Council's Local Plan, Watlington was designated as a Key Rural Service Centre and allocated a total of 32 new dwellings.</td></tr>
<tr><td>Requirements and guidance for site-specific Flood Risk Assessment</td><td colspan="3">• 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, as appropriate
• The Flood Risk Assessment should address all forms of flood risk impacting this community (tidal, surface water and groundwater).
• Early consultation with the Downham Market Group of IDBs is strongly recommended in this area.
• 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 Councils Flood Risk Design Guidance and creating a site-specific emergency plan for flood events.
• Consideration of the impact of climate change on all flooding mechanisms in this community.
• Further investigation SuDS on a site-specific basis due to the variety or levels of risk from groundwater identified for this community in the AStGWf dataset.</td></tr>
<tr><td colspan="2" rowspan="2">Conclusions and</td><td>Tidal and Coastal</td><td>Fluvial</td><td>Surface Water</td></tr>
<tr><td>0.5% AEP and Breach</td><td>Breach</td><td>3.3% AEP</td></tr>
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recommendations		• Majority of the community is in Flood Zone 1, but there is a risk from other sources and from a breach • No historical records of flooding. • Consider the impacts of tidal breach. • Consideration of safe access and egress. • Early consultation with Downham Market Group of IDBs is strongly recommended in this area.	
Mapping Information			
Flood Zones		• Flood Zone 3b is comprised of supplied outlines from: the Fenland, 2016 fluvial model and The Wash, 2018 tidal model. • Flood Zone 3a is comprised of supplied outlines from: Eastern Rivers MP2 – River Nar, 2016 fluvial model; The Wash, 2018 tidal model; and outlines from Environment Agency Flood Zone 3 from fluvial and tidal models. • Flood Zone 2 is comprised of supplied outlines from: Eastern Rivers MP2 – River Nar, 2016 fluvial model; The Wash, 2018 tidal model; and outlines from Environment Agency Flood Zone 2 from fluvial and tidal models.	