



## **North Lincolnshire Housing and Employment Land Allocations DPD**

**Statement by the Environment Agency relating to Matter 3:**

**Housing Allocations**

**Updated position - 3 December 2014**

Submitted by:  
Mr Richard Kisby  
Principal Planning Adviser  
Environment Agency  
Waterside House  
Waterside North  
Lincoln  
LN2 5HA

- Page left intentionally blank -

## **North Lincolnshire Housing and Employment Land Allocations DPD**

### **Statement relating to Matter 3: Housing Allocations**

**Submitted by the Environment Agency – Richard Kisby**

**Updated position- 3 December 2014**

#### **Statement - BRIH-1**

A primary risk of flooding to this site is from the Old River Ancholme; our opinion is that tidal flood risks do not impact this site.

For the coastal areas in Lincolnshire and fluvial systems, including the river Ancholme, the Environment Agency bases its flood risk advice on Flood Hazard Maps. These maps and their associated modelling provide an in depth analysis of flood risks in terms of potential depths and velocities of flood waters and grade them according to severity as Hazard ratings. These are Low Hazard, Danger to Some, Danger to Most and Danger to All.

Analysis of our Hazard mapping information indicates that parts of the site have been classified with a Hazard rating of 'Danger for Most', and other parts are classified 'Danger for Some' in a flood event (for the 1% plus climate change scenario over the life time of the development).

Where development in such areas is necessary our advice is that development should provide a 'safe' haven for the occupants of the dwellings by means of suitable flood risk mitigation within the design. This might typically be achieved by raising finished floor levels above the predicted flood level to ensure 'dry carpets' and no internal flooding. Other possible mitigation measures are set out in Appendix F of the North Lincolnshire Strategic Flood Risk Assessment.

Taking into account the detail within our Flood Hazard Mapping for this site our opinion is that appropriate mitigation can be provided by raising floor levels up to 1 metre and using flood resistant and resilient construction up to a level of 600mm. A site specific Flood Risk Assessment at the planning application stage will be able to refine the predicted flood depths on site and detail the mitigation measures necessary.

We conclude from our analysis of the Flood Hazard Mapping details for this site that should this site be allocated for development that any resultant development could be made 'safe' from fluvial flooding in line with the second part of the Exception Test.

Accordingly, we withdraw our challenge to the soundness of Plan in relation to this site , but note that a site specific Flood Risk Assessment will be needed at the planning stage, to demonstrate that the design can meet all the requirements of the NPPF to ensure that flood risk from all sources is not increased by the proposal.

## **North Lincolnshire Housing and Employment Land Allocations DPD**

### **Statement relating to Matter 3: Housing Allocations**

**Submitted by the Environment Agency – Richard Kisby**

**Updated position- 3 December 2014**

#### **Statement - BRIH-2**

A primary risk of flooding to this site is from the Old River Ancholme. Our opinion is that tidal flood risks do not impact this site.

For the coastal areas in Lincolnshire and fluvial systems including the river Ancholme the Environment Agency bases its flood risk advice on Flood Hazard Maps. These maps and their associated modelling provide an in depth analysis of flood risks in terms of potential depths and velocities of flood waters and grade them according to severity as Hazard ratings. These are Low Hazard, Danger to Some, Danger to Most and Danger to All.

Analysis of our Hazard mapping information indicates that parts of the site has been classified with a Hazard rating of 'Danger for Some' in a flood event (for the 1% plus climate change scenario over the life time of the development).

Where development in such areas is necessary our advice is that development should provide a 'safe' haven for the occupants of the dwellings by means of suitable flood risk mitigation within the design. This might typically be achieved by raising finished floor levels above the predicted flood level to ensure 'dry carpets' and no internal flooding. Other possible mitigation measures are set out in Appendix F of the North Lincolnshire Strategic Flood Risk Assessment.

Taking into account the detail within our Flood Hazard Mapping for this site our opinion is that appropriate mitigation can be provided with minor floor raising. A site specific Flood Risk Assessment at the planning application stage will be able to refine the predicted flood depths on site and detail the mitigation measures necessary.

We conclude from our analysis of the Flood Hazard Mapping details for this site that should this site be allocated for development that any resultant development could be made 'safe' from fluvial flooding in line with the second part of the Exception Test.

Accordingly, we withdraw our challenge to the soundness of the Plan in relation to this site but note that a site specific Flood Risk Assessment will be needed at the planning stage, to demonstrate that the design can meet all the requirements of the NPPF to ensure that flood risk from all sources is not increased by the proposal.

## **North Lincolnshire Housing and Employment Land Allocations DPD**

### **Statement relating to Matter 3: Housing Allocations**

**Submitted by the Environment Agency – Richard Kisby**

**Updated position- 3 December 2014**

#### **Statement - BRIH-5**

A primary risk of flooding to this site is from the Old River Ancholme. Our opinion is that tidal flood risks do not impact this site.

For the coastal areas in Lincolnshire and fluvial systems including the river Ancholme the Environment Agency bases its flood risk advice on Flood Hazard Maps. These maps and their associated modelling provide an in depth analysis of flood risks in terms of potential depths and velocities of flood waters and grade them according to severity as Hazard ratings. These are Low Hazard, Danger to Some, Danger to Most and Danger to All.

Analysis of our Hazard mapping information indicates part of the site has been classified with a Hazard rating of 'Danger for Some' in a flood event (for the 1% plus climate change scenario over the life time of the development).

Where development in such areas is necessary our advice is that development should provide a 'safe' haven for the occupants of the dwellings by means of suitable flood risk mitigation within the design. This might typically be achieved by raising finished floor levels above the predicted flood level to ensure 'dry carpets' and no internal flooding. Other possible mitigation measures are set out in Appendix F of the North Lincolnshire Strategic Flood Risk Assessment.

Taking into account the detail within our Flood Hazard Mapping for this site our opinion is that appropriate mitigation can be provided with minor floor raising. A site specific Flood Risk Assessment at the planning application stage will be able to refine the predicted flood depths on site and the mitigation measures necessary.

We conclude from our analysis of the Flood Hazard Mapping details for this site that should this site be allocated for development that any resultant development could be made 'safe' from fluvial flooding in line with the second part of the Exception Test.

Accordingly, we withdraw our challenge to the soundness of the Plan in relation to this site, but note that a site specific Flood Risk Assessment will be needed at the planning stage, to demonstrate that the design can meet all the requirements of the NPPF to ensure that flood risk from all sources is not increased by the proposal.



**North Lincolnshire Housing and Employment Land Allocations DPD**

**Statement relating to Matter 3: Housing Allocations**

**Submitted by the Environment Agency – Richard Kisby**

**Updated position- 3 December 2014**

**Statement: BARH-1**

A primary source of flood risk to the site BARH-1 is the Humber Estuary.

For the coastal areas in Lincolnshire and fluvial systems including the river Ancholme the Environment Agency bases its flood risk advice on Flood Hazard Maps. These maps and their associated modelling provide an in depth analysis of flood risks in terms of potential depths and velocities of flood waters and grade them according to severity as Hazard ratings. These are Low Hazard, Danger to Some, Danger to Most and Danger to All.

Analysis of our Hazard Mapping information indicates that part of this site has been classified with a Hazard rating of 'Danger to All'. We are unwilling to support development proposals in such areas because of the risks to life and property.

In our dialogue with North Lincolnshire Council we have agreed a solution to our concerns would be to limit development of the site to that area which lies outside the area classified as 'Danger to All'. North Lincolnshire Council has agreed to amend their Plan to include a policy statement that restricts the development of this site in areas identified as 'Danger to All'. Accordingly and subject to this being implemented we are in a position to withdraw our challenge to the soundness of the Plan in relation to the Exception Test and this site.

- Page left blank intentionally -

## **North Lincolnshire Housing and Employment Land Allocations DPD**

### **Statement relating to Matter 3: Housing Allocations**

**Submitted by the Environment Agency – Richard Kisby**

**Updated position- 3 December 2014**

#### **Statement: BARH-3**

A primary risk of flooding to the site is the Humber Estuary.

For the coastal areas in Lincolnshire and fluvial systems including the river Ancholme the Environment Agency bases its flood risk advice on Flood Hazard Maps. These maps and their associated modelling provide an in depth analysis of flood risks in terms of potential depths and velocities of flood waters and grade them according to severity as Hazard ratings. These are Low Hazard, Danger to Some, Danger to Most and Danger to All.

Analysis of our Hazard mapping information indicates that parts of the site have been classified with a Hazard rating of 'Danger for Most', and other parts are classified 'Danger for Some' in a flood event (for the 1% plus climate change scenario over the life time of the development).

Where development in such areas is necessary our advice is that development should provide a 'safe' haven for the occupants of the dwellings by means of suitable flood risk mitigation within the design. This might typically be achieved by raising finished floor levels above the predicted flood level to ensure 'dry carpets' and no internal flooding. Other possible mitigation measures are set out in Appendix F of the North Lincolnshire Strategic Flood Risk Assessment.

Taking into account the detail within our Flood Hazard Mapping for this site our opinion is that the safe development of this site could be achieved by a combination of the mitigation measures set out

in Appendix F of the North Lincolnshire Strategic Flood Risk Assessment (SFRA). Flood levels at this site are likely to be high and might require the restrictions of use set out in paragraphs F.8 of the SFRA. An updated site specific Flood Risk Assessment at the planning application stage will be able to refine the predicted flood depths on site and the mitigation measures necessary.

We conclude from our analysis of the Flood Hazard Mapping details for this site that should this site be allocated for development that any resultant development could be made 'safe' from coastal and fluvial flood risk in line with the second part of the Exception Test.

Accordingly, we withdraw our challenge to the soundness of the Plan in relation to this site but note that a site specific Flood Risk Assessment will still be needed at the planning stage, to demonstrate that the design can meet all the requirements of the NPPF to ensure that flood risk from all sources is not increased by the proposal.

**North Lincolnshire Housing and Employment Land Allocations DPD**

**Statement relating to Matter 3: Housing Allocations**

**Submitted by the Environment Agency – Richard Kisby**

**Updated position- 3 December 2014**

**Statement: SCUH-13**

A primary risk of flooding to this site is from the tidal river Trent.

A critical factor in determining whether or not a site is or can be made safe from flooding is the ground level of the site relative to flood levels. We have considered the modelled flood levels set out in the Lincolnshire Lakes Flood Management and Drainage Strategy (2014) which relate to the flood compartment in which this site sits. Having reviewed that information we consider that flood levels in this location to be 3.8m AOD. Further evidence brought forward by North Lincolnshire Council indicates that the average site level for this site is 7.58m AOD.

Based on this information we conclude that safe development at this site is achievable, given that existing ground levels are above predicted flood levels.

Accordingly, we withdraw our challenge to the soundness of the Plan in relation to this site but note that a site specific Flood Risk Assessment will still be needed at the planning stage, to demonstrate that the design can meet all the requirements of the NPPF to ensure that flood risk from all sources is not increased by the proposal.

- Page left blank intentionally -

**North Lincolnshire Housing and Employment Land Allocations DPD**

**Statement relating to Matter 3: Housing Allocations**

**Submitted by the Environment Agency – Richard Kisby**

**Updated position- 3 December 2014**

**Statement: SCUH-6**

A primary risk of flooding to this site is from the tidal river Trent.

A critical factor in determining whether or not a site is or can be made safe from flooding is the ground level of the site relative to flood levels. We have considered the modelled flood levels set out in the Lincolnshire Lakes Flood Management and Drainage Strategy (2014) which relate to the flood compartment in which this site sits. Having reviewed that information we consider that flood levels in this location to be 3.8m AOD. Further evidence brought forward by North Lincolnshire Council indicates that the average site level for this site is 7.24m AOD.

Based on this information we conclude that safe development at this site is achievable, given that existing ground levels are above predicted flood levels.

Accordingly, we withdraw our challenge to the soundness of the Plan in relation to this site but note that a site specific Flood Risk Assessment will still be needed at the planning stage, to demonstrate that the design can meet all the requirements of the NPPF to ensure that flood risk from all sources is not increased by the proposal.

- Page left blank intentionally -



**North Lincolnshire Housing and Employment Land Allocations DPD**

**Statement relating to Matter 3: Housing Allocations**

**Submitted by the Environment Agency – Richard Kisby**

**Updated position- 3 December 2014**

**Statement: SCUH-C8**

A primary risk of flooding to this site is from the tidal river Trent.

A critical factor in determining whether or not a site is or can be made safe from flooding is the ground level of the site relative to flood levels. We have considered the modelled flood levels set out in the Lincolnshire Lakes Flood Management and Drainage Strategy (2014) which relate to the flood compartment in which this site sits. Having reviewed that information we consider that flood levels in this location to be 3.8m AOD. Further evidence brought forward by North Lincolnshire Council indicates that the average site level for this site is 6.71m AOD

Based on this information we conclude that safe development at this site is achievable, given that existing ground levels are above predicted flood levels.

Accordingly, we withdraw our challenge to the soundness of the Plan in relation to this site but note that a site specific Flood Risk Assessment will still be needed at the planning stage, to demonstrate that the design can meet all the requirements of the NPPF to ensure that flood risk from all sources is not increased by the proposal.

- Page left blank intentionally -

**North Lincolnshire Housing and Employment Land Allocations DPD**

**Statement relating to Matter 3: Housing Allocations**

**Submitted by the Environment Agency – Richard Kisby**

**Updated position- 3 December 2014**

**Statement: SCUH-C1**

A primary risk of flooding to this site is from the tidal river Trent.

A critical factor in determining whether or not a site is or can be made safe from flooding is the ground level of the site relative to flood levels. We have considered the modelled flood levels set out in the Lincolnshire Lakes Flood Management and Drainage Strategy (2014) which relate to the flood compartment in which this site sits. Having reviewed that information we consider that flood levels in this location to be 3.8m AOD. Further evidence brought forward by North Lincolnshire Council indicates that the average site level for this site is 5.10m AOD

Based on this information we conclude that safe development at this site is achievable, given that existing ground levels are above predicted flood levels.

Accordingly, we withdraw our challenge to the soundness of the Plan in relation to this site but note that a site specific Flood Risk Assessment will still be needed at the planning stage, to demonstrate that the design can meet all the requirements of the NPPF to ensure that flood risk from all sources is not increased by the proposal.

- Page left blank intentionally -

**North Lincolnshire Housing and Employment Land Allocations DPD**

**Statement relating to Matter 3: Housing Allocations**

**Submitted by the Environment Agency – Richard Kisby**

**Updated position- 3 December 2014**

**Statement: SCUH-4**

A primary risk of flooding to this site is from the tidal river Trent.

A critical factor in determining whether or not a site is or can be made safe from flooding is the ground level of the site relative to flood levels. We have considered the modelled flood levels set out in the Lincolnshire Lakes Flood Management and Drainage Strategy (2014) which relate to the flood compartment in which this site sits. Having reviewed that information we consider that flood levels in this location to be 3.8m AOD. Further evidence brought forward by North Lincolnshire Council indicates that the average site level for this site is 4.07m AOD.

Based on this information we conclude that safe development at this site is achievable, given that existing ground levels are above predicted flood levels.

Accordingly, we withdraw our challenge to the soundness of the Plan in relation to this site but note that a site specific Flood Risk Assessment will still be needed at the planning stage, to demonstrate that the design can meet all the requirements of the NPPF to ensure that flood risk from all sources is not increased by the proposal.

- Page left blank intentionally -

**North Lincolnshire Housing and Employment Land Allocations DPD**

**Statement relating to Matter 3: Housing Allocations**

**Submitted by the Environment Agency – Richard Kisby**

**Updated position- 3 December 2014**

**Statement : SCUH-C5**

A primary risk of flooding to this site is from the tidal river Trent.

A critical factor in determining whether or not a site is or can be made safe from flooding is the ground level of the site relative to extreme flood levels. We have considered the modelled flood levels set out in the Lincolnshire Lakes Flood Management and Drainage Strategy (2014) which relate to the flood compartment in which this site sits. Having reviewed that information we consider that extreme flood levels in this location to be 3.8m AOD. Further evidence brought forward by North Lincolnshire Council indicates that the average site level for this site is 3.34m AOD.

The mitigation measures necessary to make this development safe (such as land raising or raising floor levels) is in our opinion achievable. This has been demonstrated recently within this flood cell at site SCUH-16 where we have agreed similar levels of mitigation with the developer.

Based on this information we conclude that safe development at this site is achievable presuming that safe access and egress can be provided.

Accordingly, we withdraw our challenge to the soundness of this Plan in relation to this site but note that a site specific Flood Risk Assessment will still be needed at the planning stage, to demonstrate that the design can meet all the requirements of the NPPF to ensure that flood risk from all sources is not increased by the proposal.

- Page left blank intentionally -



**North Lincolnshire Housing and Employment Land Allocations DPD**

**Statement relating to Matter 3: Housing Allocations**

**Submitted by the Environment Agency – Richard Kisby**

**Updated position- 3 December 2014**

**Statement:SCUH-16**

This application is subject to a live application and agreement has been reached with the developer on suitable mitigation which will ensure its 'safe' development.

We therefore withdraw our challenge to the soundness of the Plan in relation to this site.

- Page left blank intentionally -

**North Lincolnshire Housing and Employment Land Allocations DPD**

**Statement relating to Matter 3: Housing Allocations**

**Submitted by the Environment Agency – Richard Kisby**

**Updated position- 3 December 2014**

**Statement: SCUH-10**

It remains our opinion that insufficient evidence is available to demonstrate that this development can be made safe without increasing flood risk to others, and hence our challenge to the soundness of the Plan in relation to this site remains.

We have received further information from North Lincolnshire Council, which we are in the process of assessing. We will update the Inspector on this issue in the Statement of Common Ground.

- Page left blank intentionally -

**North Lincolnshire Housing and Employment Land Allocations DPD**

**Statement relating to Matter 3: Housing Allocations**

**Submitted by the Environment Agency – Richard Kisby**

**Updated position- 3 December 2014**

**Statement:CROH-1**

A primary risk of flooding to this site is from the tidal river Trent.

A critical factor in determining whether or not a site is or can be made safe from flooding is the ground level of the site relative to flood levels.

For the flood cell in which Crowle sits the Critical Flood Level is set at 4.1m AOD – taken from the North Lincolnshire Strategic Flood Risk Assessment. Evidence provided by North Lincolnshire Council in relation to this site suggests average land levels are 6.2m AOD.

Based on this information we conclude that safe development at this site is achievable, given that existing ground levels are above predicted flood levels.

Accordingly, we withdraw our challenge to the soundness of the Plan in relation to this site but note that a site specific Flood Risk Assessment will still be needed at planning stage, to demonstrate that flood risk from other sources are properly addressed.

- Page left blank intentionally -

**North Lincolnshire Housing and Employment Land Allocations DPD**

**Statement relating to Matter 3: Housing Allocations**

**Submitted by the Environment Agency – Richard Kisby**

**Updated position- 3 December 2014**

**Statement: CROH-2**

It remains our opinion that insufficient evidence is available to demonstrate that this development can be made safe without increasing flood risk to others and hence our challenge to the soundness of the Plan in relation to this site remains.

We have received further information from North Lincolnshire Council, which we are in the process of assessing. We will update the Inspector on this issue in the Statement of Common Ground.