

Appendix 3 Drainage and Flooding Statement

SURFACE WATER DRAINAGE AND FLOODING
STATEMENT

8 JANUARY 2015

- 1.01 The Environment Agency's flood map indicates the site to be outside of risk zones of flooding from rivers and sea (previously flood zone 1), although Heybridge itself is affected from flooding caused by rainfall directly on Heybridge and from additional field run-off from the north, Wickham Bishops area etc. This field runoff converges in a number of field drains and is concentrated in three ditches; Heybridge Hall, Holloway Road and Langford, which pass through Heybridge and discharge to the estuary via Sadd's Dam.
- 1.02 **What is at risk?** (Source of information – Environment Agency)
- **At Risk:** 139 households at a Very Significant Risk; 177 properties at Significant Risk; 17 properties at a Moderate Risk (333 households in total). Numbers identified by a recent Flood Modelling Study carried out by us.
 - **Recent flood events:** Winters 2000, 2001, 2003, 2009, 2011 & 2012, the worst case being in February 2001 when five properties flooded internally. Further property flooding occurred in January 2011 for which Essex County Council carried out a flood incident investigation for the Holloway Road Watercourse incident. The area has also been identified to have flooded during the winters of 2000, 2001, 2003, 2009 and 2012 and 2013/14, predominantly affecting roads and gardens. A shopping centre, industrial area and Hospice are also affected by flooding.
- 1.03 **Proposal**
- The proposal is to divert surface water runoff from the catchments (field runoff) above the new development, which currently flow across the development land and contribute to the flooding of Heybridge, for storm events greater than the 1:1 year event up to the 1:75 year event plus climate change to the River Blackwater. This results in flow for the 1:1 year event only discharging from the boundary of the development into Heybridge for all storm events up to and including the 1:75 year event plus climate change.
- It is intended that storms greater than the 1:75 year event plus climate change will continue to follow the existing flood flow routes as close as possible. The 1:75 year event plus climate change was set and agreed with the Environment Agency, as this is the insurance flood threshold set for existing properties.
- The existing watercourses will be intercepted with a new watercourse running east to west; there will be a small amount of flow remaining within the existing ditches, with the remainder diverted into the new watercourse. This watercourse will then be piped under Langford road at a restricted rate of 1,000 litres per second into the River Blackwater, which in turn discharges over Beeleigh weir into the estuary. During storm events where the discharge rate is exceeded, water will back up into bunded areas of farmland, which will drain down as the storm subsides. Please see attached illustration.
- The details of this scheme have been developed with close liaison with the Environment Agency, option-ering has previously also included dialogue with Maldon and Essex Council and Essex Waterways.
- It is noteworthy that in 2006 the Environment Agency promoted a Flood Alleviation Scheme for Heybridge following incidents in both February and October 2001 which resulted in the flooding of properties. They were however unable to obtain funding for the scheme from DEFRA. This was because of the high scheme costs relative to the sum of damages avoided over the scheme lifetime.
- The onsite drainage has been sized to accommodate the 1:100 year event plus climate change, with a restricted flow rate of 1:1 year event leaving the site for both previous and

SURFACE WATER DRAINAGE AND FLOODING STATEMENT (CONTINUED)

LAND NORTH OF HEYBRIDGE, ESSEX

44006

8 JANUARY 2015

impervious areas alike, including Heybridge Wood. The on-site proposed drainage solution is to utilise SuDS in the form of ponds, swales, ditches, filter strips, permeable paving, etc. This concept has been discussed and agreed with the Environment Agency and Essex County Council's drainage department (potential SAB).

1.04 Outcome

Royal Haskoning were previously commissioned by the Environment Agency to model the existing flooding situation, please see attached Fig 2e. Royal Haskoning have been appointed by Countryside Properties to undertake the same modelling for the proposed situation, please see attached Fig 4a. From the attached it is clear to see the significant benefit the flood alleviation scheme offers to Heybridge and its residents.

1.05 Foul Water Drainage

Consultation with Anglian water has been undertaken, including a Pre-Development report produced by Anglian Water. The report states that, "The foul drainage from this development is in the catchment of Maldon Sewage Treatment Works that will have available capacity for these Flows", although some reinforcement of their drainage system will be required. Anglian Water have supplied two options for this which will be developed during detailed design stage.

1.06 Conclusion

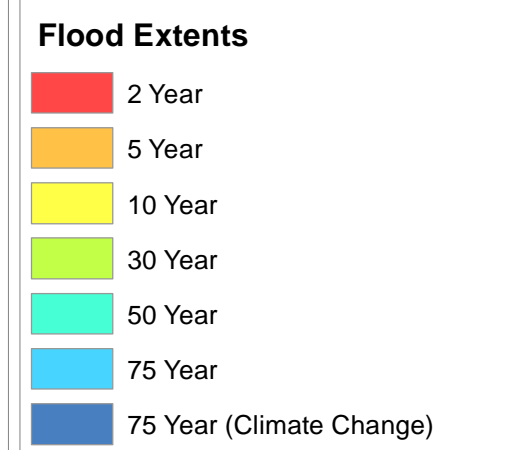
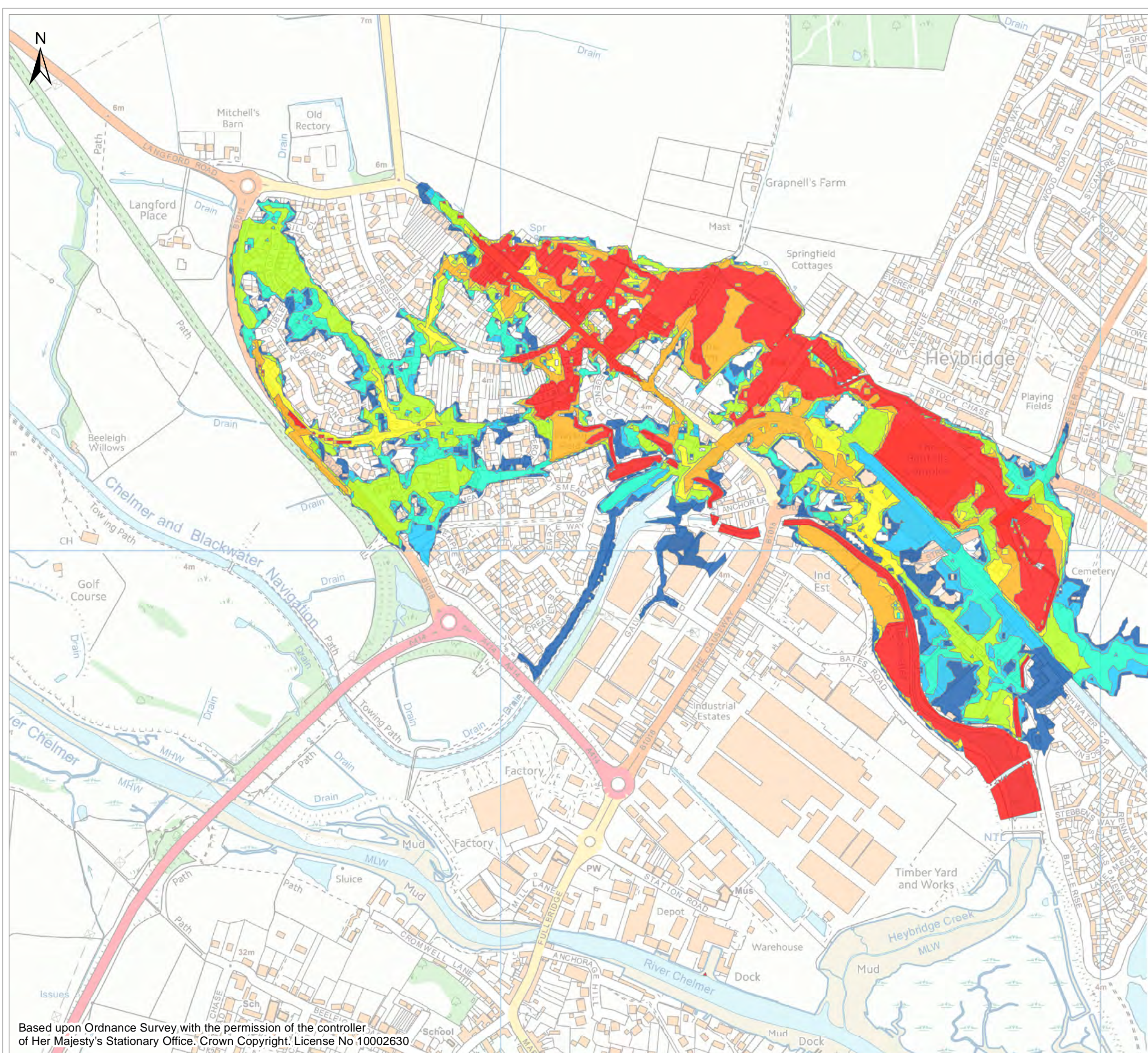
Flooding and sewerage issues are resolved, flooding problems can be practically and viably resolved. The Maldon Draft Local Plan intends to link the delivery of the previously unachievable (by DEFRA) flood alleviation scheme for Heybridge with the creation of new homes for Heybridge, all to be funded by the Developer, Countryside Properties. This is in accordance with paragraph 100 of the new National Planning Policy Framework, which provides underpinning guidance to Local Planning Authorities for scenarios such as this. Namely that Local Plans should safeguard land from development that is required for current and future flood management, and use opportunities offered by new development to reduce the causes and impacts of flooding.

Paul Keating BEng (Hons) CEng MICE

Associate

On behalf of Richard Jackson Ltd





Title
Flood Extents in Existing Scenario

Project
Countryside Flood Alleviation Study

Client
Countryside Properties

Date 16/06/2014	Scale @ A3 1:6000
---------------------------	-----------------------------

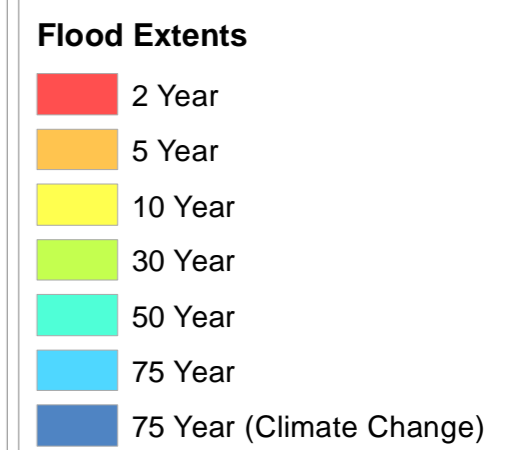
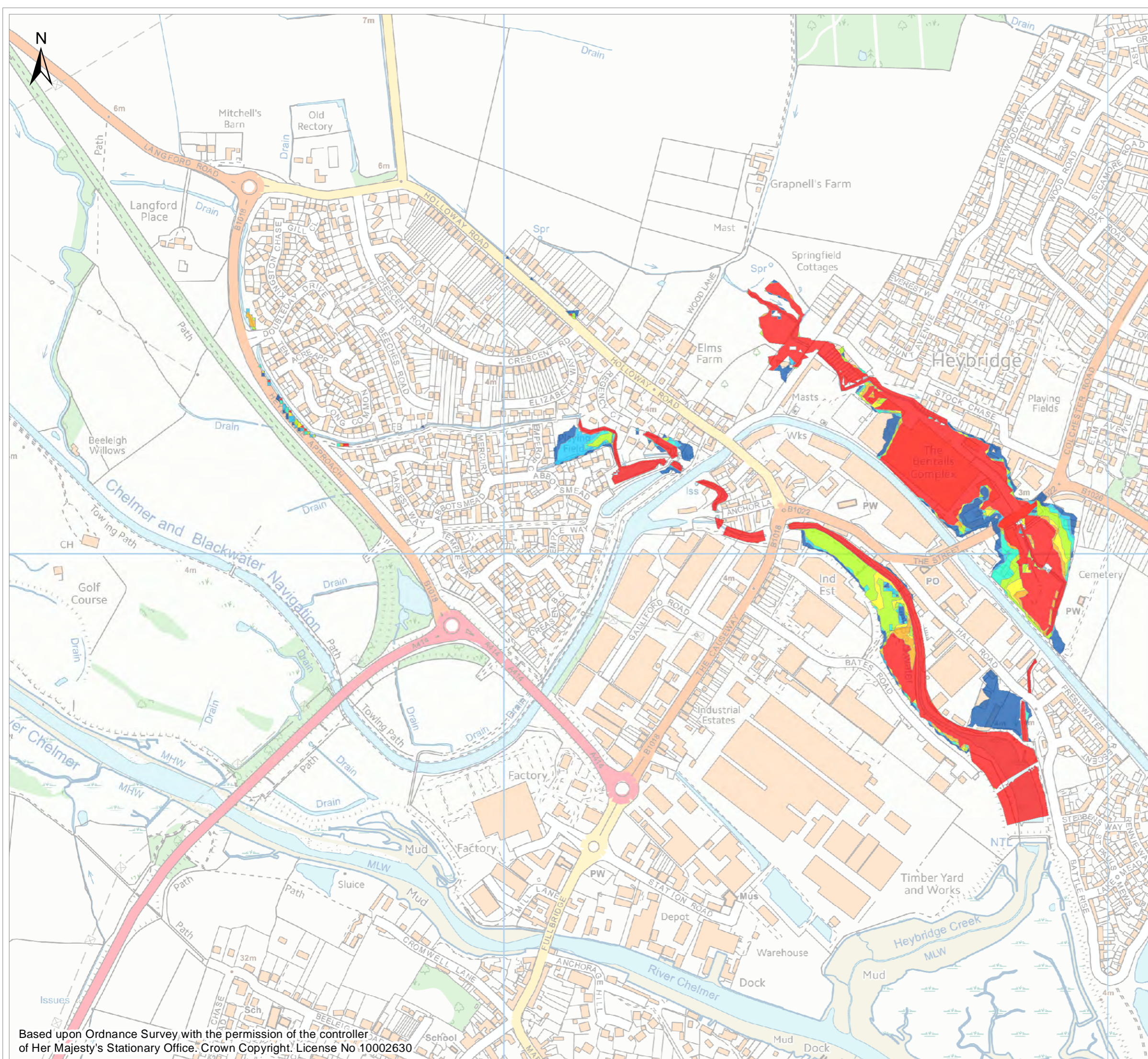
Figure
1

Checked by AC	Version 1
-------------------------	---------------------



Based upon Ordnance Survey with the permission of the controller of Her Majesty's Stationary Office. Crown Copyright. License No 10002630

Path: L:\Sites\UK-Peterborough\Project\B2382\Technical_Data\T5_GIST5.2_Projects\Figures\Figure 1 - Present Day - 1.mxd



Title
Flood Extents in Post Development Scenario

Project
Countryside Flood Alleviation Study

Client
Countryside Properties

Date 01/07/2014	Scale @ A3 1:6000
---------------------------	-----------------------------

Figure
4a

Checked by AC	Version 1
-------------------------	---------------------



Based upon Ordnance Survey with the permission of the controller of Her Majesty's Stationary Office. Crown Copyright. License No 10002630