

Key  
Study Area

WYG Planning & Design

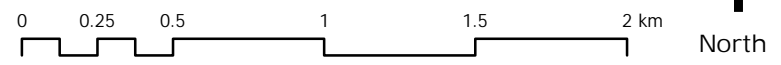
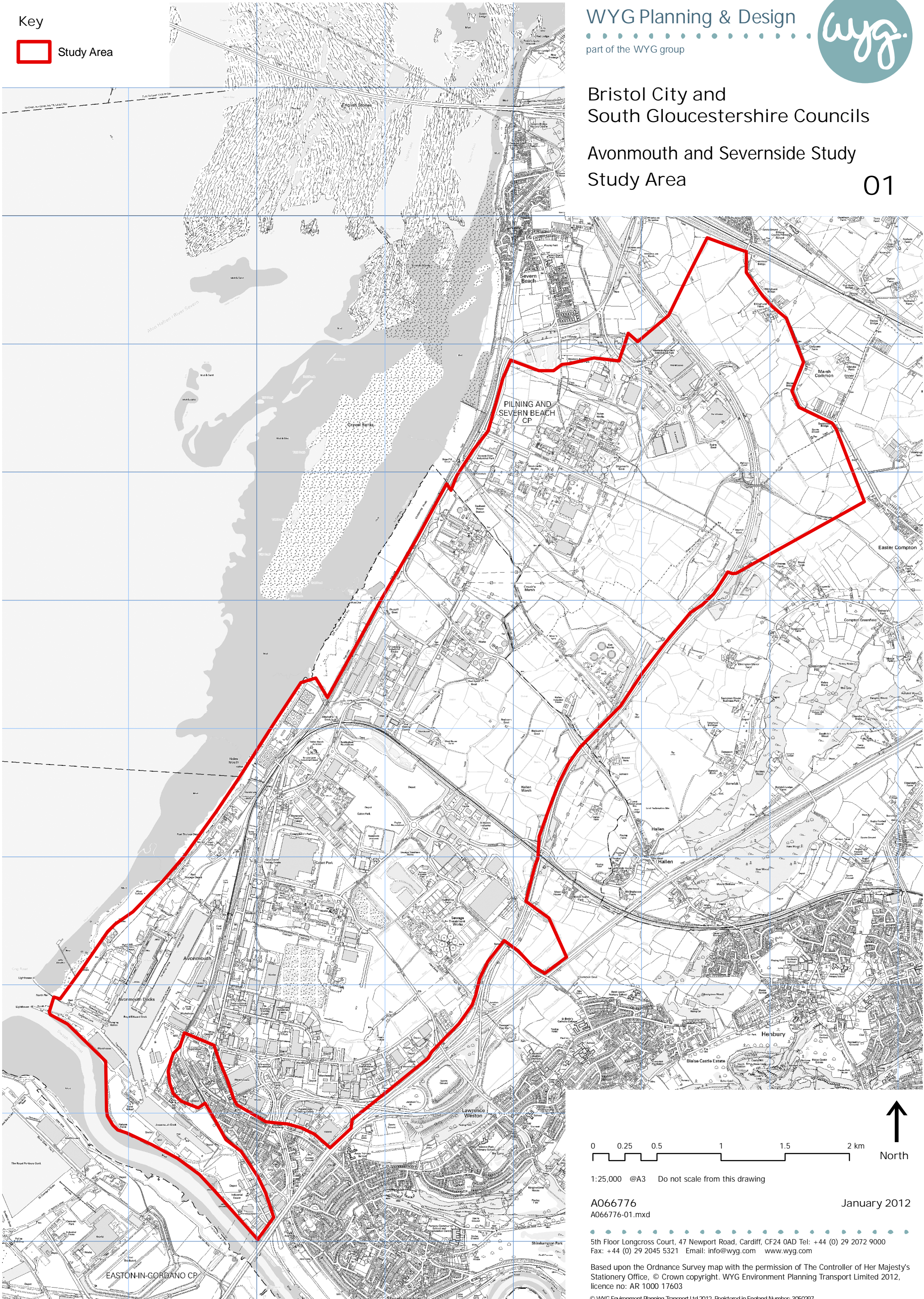
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# Bristol City and South Gloucestershire Councils

## Avonmouth and Severnside Study Area

01



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January 2012

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Key



Study Area



Completions

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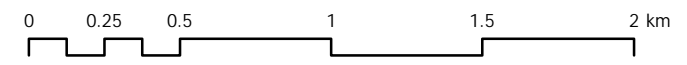
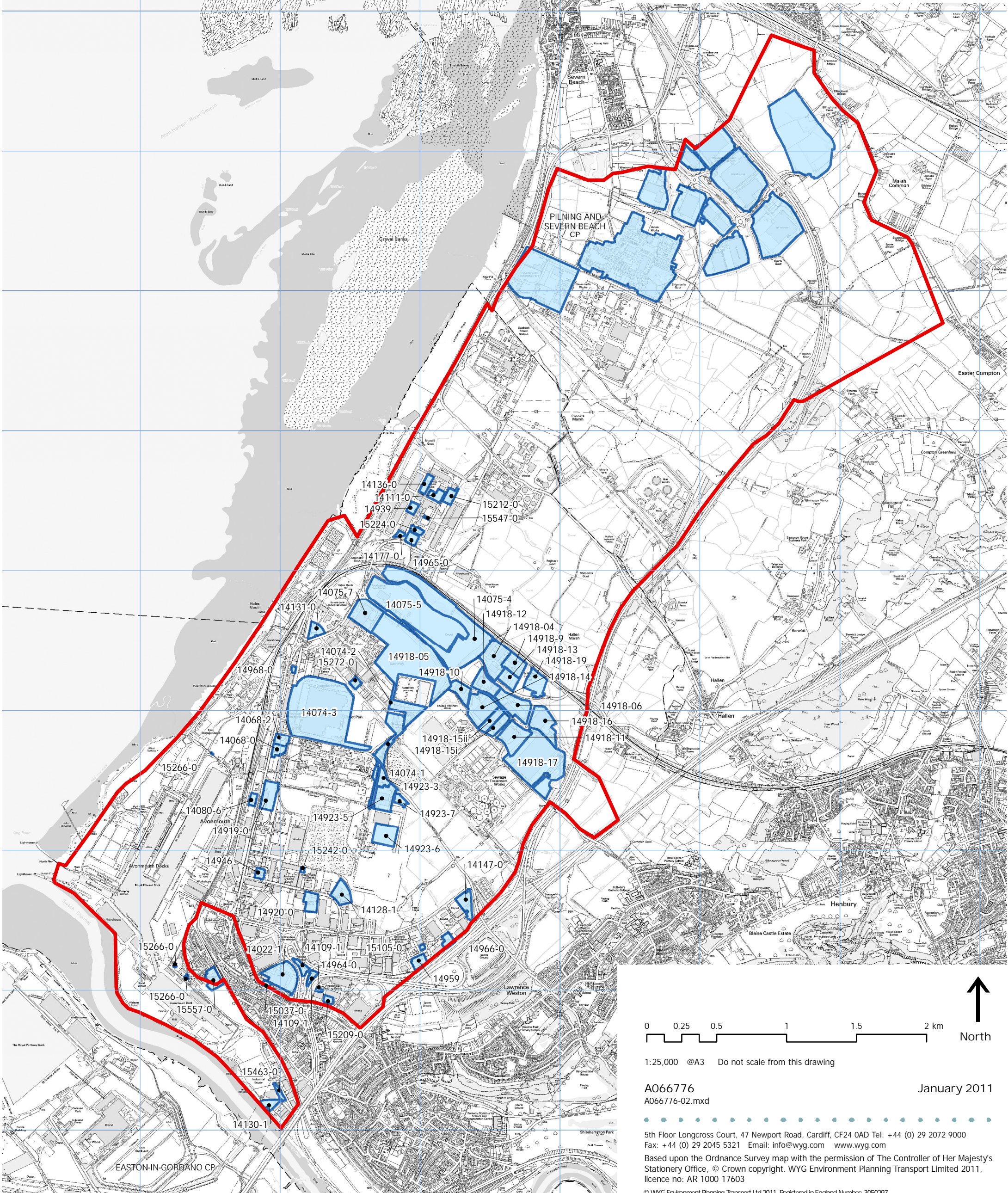


Bristol City and  
South Gloucestershire Councils

Avonmouth and Severnside Study

Existing development

02



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Key

 Study Area

Land Ownership

 Bristol City Council

 Other - as per label / colour

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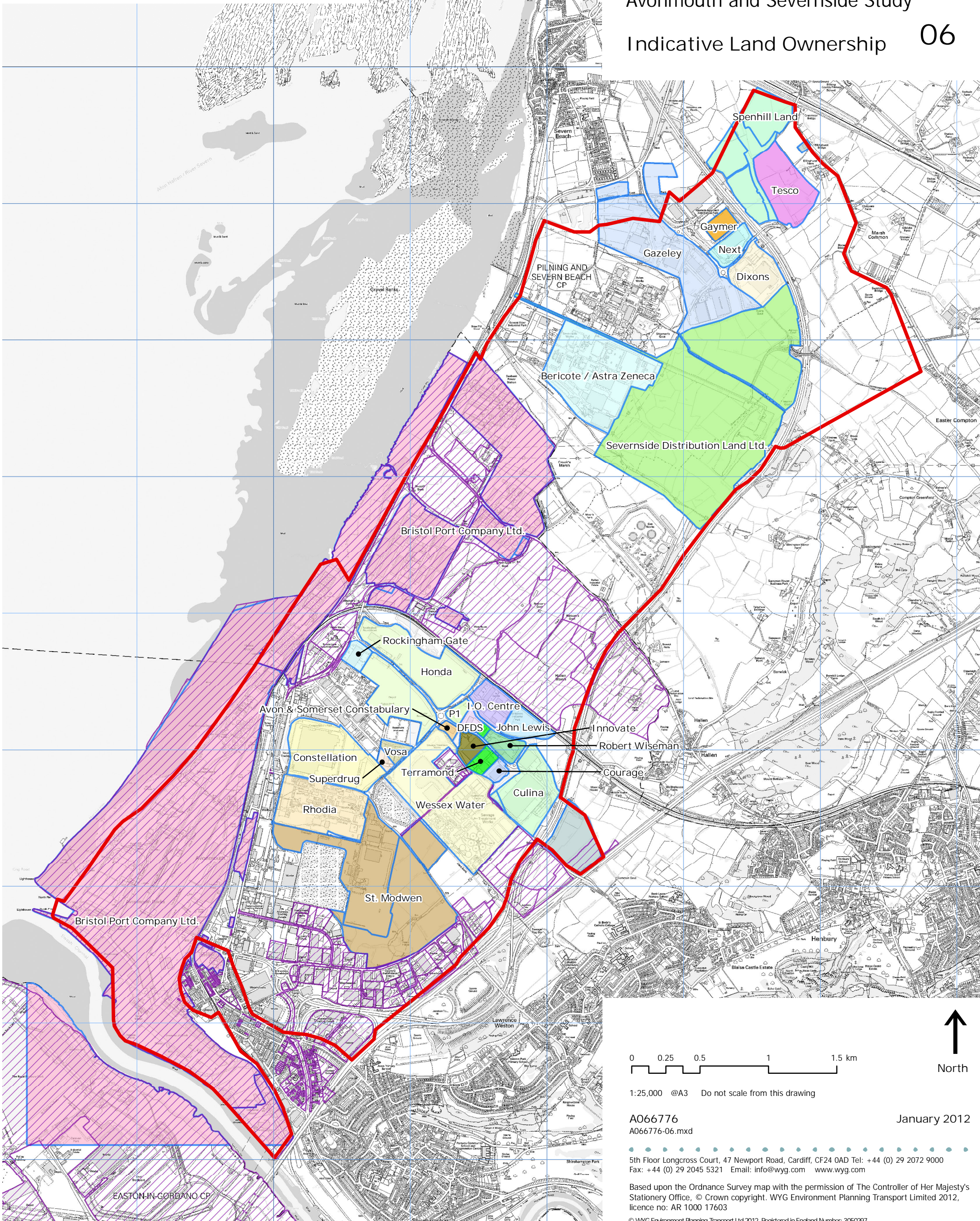


Bristol City and  
South Gloucestershire Councils

Avonmouth and Severnside Study

Indicative Land Ownership

06



0 0.25 0.5 1 1.5 km

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North



Mr Andrew Strange  
White Young Green Planning  
12 Lower Park Row  
Bristol  
Avon  
BS1 5BN

**Our ref:** WX/2011/117988/01-L01  
**Your ref:**  
**Date:** 22 March 2011

Dear Mr Strange

## **DEVELOPMENT OPTIONS FOR AVONMOUTH/ SEVERNSIDE**

I refer to your consultations regarding the above.

In response the Environment Agency would make the following comments in respect of its position in the general context of the Avonmouth and Severnside area, in addition to addressing the specific issues detailed in your emails dated 21 February and 4 March 2011:

### **Context**

- 1) Avonmouth / Severnside is a low lying area adjacent to the Severn Estuary with the mouth of the River Avon to the south west. The area is drained by a large network of artificial rhynes and control structures. The Agency's current flood mapping of the Avonmouth/Severnside area shows it lying wholly within Flood Zone 3, i.e. the 1 in 200 year tidal floodplain of the Severn Estuary.
- 2) The tidal defences along Avonmouth/Severnside are sub-standard. Current defences along the estuary provide a variety of standards of protection ranging between 1in10 (Port Lock Gates) to a 1in 200. Even though the area is protected by a combination of EA and privately maintained defences (e.g. Bristol Port) these vary in terms of design and materials. The defences do not therefore, provide protection to the required standard, as detailed in PPS25, either now or to accommodate the effects of climate change over the lifetime of the development.
- 3) The recommended standard of protection for new development to be safe from tidal flooding is identified as 1 in 200 years plus an allowance for climate change. As already mentioned, the current defences along the sea frontage do not provide this level of protection.
- 4) This risk is reiterated by Bristol City Council's Level 2 SFRA, which duplicates the Capita Symonds Avonmouth/Severnside assessment dated 2007. Figure 7.2 and 7.3 in the Avonmouth/Severnside study shows the actual flood risks to the area. Current climate change predictions indicate a sea level rise of approximately 1m by 2105 resulting in significant overtopping. This equates to depths of flood water in the region of 0.5m to 2m across the Avonmouth/Severnside area. When the depths and velocities are translated to Defra's "Flood Risks to People" flood hazard category system this displays a very dangerous risk. There is a combination of "danger for most" and "danger for all" across the whole site.

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5) As the RDA are aware Phase 4 of the Avonmouth/Severnside study, has been updated to take into account PPS25 climate change figures. The study provides more mapping on today's and future flood risks, which again shows this area is significantly at risk of flooding. As a result of climate change the depths have increased over the study area with their associated DEFRA hazard rating.

6) The Phase 3 study estimated that it would cost in the region of £16 to £280 million to upgrade the defences. Flood protection would need to be provided for the whole tidal cell rather than just partial improvements. Phase 4 clearly puts forward a strong message that a strategic flood risk management approach is required to enable new development. The preferred approach is to improve the tidal defences.

With regard to the specific questions raised in your email dated 4 March 2011, the Agency would comments as follows:

As Phase 3 has never been fully adopted or made available in the public domain, it has been very difficult for the both LPA's and the Agency to use the outputs to inform LDF policies and take the strategic mitigation measures forward.

Over recent months we have seen a number of enquiries/applications for energy/waste industry developments. The only evidence available to inform site specific FRA's has been the Phase 3 executive summary, which does not provide sufficient detail regarding the strategic mitigation measures required. As a result, to make development safe from a flood risk perspective, the Agency has responded to these applications on a site by site basis (land raising and the provision of an emergency plan) to enable respective development proposals to pass the Exception Test, as detailed in PPS25.

Once Phase 4 is completed and adopted by both councils, this will need to be used to inform LDF policies for the area and to establish how flood risk management will be taken forward to facilitate development. A more "strategic approach" to Avonmouth /Severnside, when considering flood risk, will need to be taken forward in agreement with all statutory parties.

The principle matter of whether the site is green or a recycled brown site makes no difference to our approach in respect of development in Avonmouth/Severnside, due to the requirement to demonstrate that the development will be safe for its lifetime, in accordance with PPS25. It must be noted that transforming more green land to hardstanding will result in additional surface water volumes being discharged into the rhyne system. If not mitigated, this could increase flood risk locally, due to the time it takes for the area to drain due to the tide and ground conditions.

As the Agency is the Councils' flood risk advisor, it will need to make a clear representation to both LPA's about the risks and implications of continuing a site specific approach. It must be understood that it is not a sustainable approach as the cumulative impact of land raising, as explained in the Phase 4 SFRA, has a detrimental impact due to a loss in overtopping storage volume, creating an increased risk in flooding to third parties. The risk of breach would also still be present. To summarise, this approach is unacceptable and contrary to government policy, as detailed in PPS25.



It is doubtful whether the length of defence could be delivered in a phased manner, on the grounds that it would still get flanked from low spots. However, it may be possible to provide the final design height in a phased approach, thereby ensuring the provision of an appropriate defence when it is actually needed. Detailed design would need to investigate the phased approach, particularly in respect of the inherent costing implications.

On site mitigation would still be required as a factor of safety, in case of residual flooding from overtopping events.

**Q) Would we allow development without a strategic solution so that money can be collected.**

Its very unlikely that there is sufficient development to fund a scheme via a S106 agreement however, it is assumed that alternative funding mechanisms are being investigated. As this is critical infrastructure for new and existing development, the preferred option is to ensure delivery at the earliest opportunity, to prevent piecemeal development taking place in a high flood risk area.

There needs to be an agreed strategy informed by the SFRA conceptual outputs and this economic study, to inform planning policies and guide the determination of planning applications. There would appear to be no reason why a detailed design study should not be progressed to address outstanding issues. This could potentially include: joint wave/tide assessment, ground conditions assessment, land ownership and defence crest height requirements. This would better inform the formulation of a developer contribution policy.

**Q.EA/DEFRA funding status**

As we need to prioritise our capital schemes at a national level, it is unlikely that funding would be secured due to the low residential nature of the area.

**Q. Would the EA take the lead on developing a strategic solution if other funding becomes available?**

At this stage it is difficult for the Agency to provide a definitive response to this question, on the grounds that there is no agreed strategy. The Agency has previously provided the lead on technical aspects of detailed design studies, in respect of similar projects. This has been subject to an approved/agreed strategy, which has the funding already collected, or as a minimum, has appropriate mechanisms to secure funding in place.

Should you wish to discuss these issues further, please contact Nigel Smith at this office (tel: 01278 484807).

Yours sincerely

**DAVE PRING**  
**Planning Liaison Technical Specialist**

Direct dial 01278 484627