



# **Norwich Western Link**

## **Environmental Statement**

### **Chapter 12: Road Drainage and the Water Environment**

#### **Sub Appendix F – Froude Number**

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## 1 Introduction

1.1.1 **Figure 1-1 to Figure 1-40** show maps indicating the Froude numbers for the different modelled return periods for the baseline and with scheme scenarios.

**Figure 1-1 Map for the 1 in 2yr baseline. Indicating the Froude on rising limb (10 hours). Froude ranges from Pool to Rapid.**

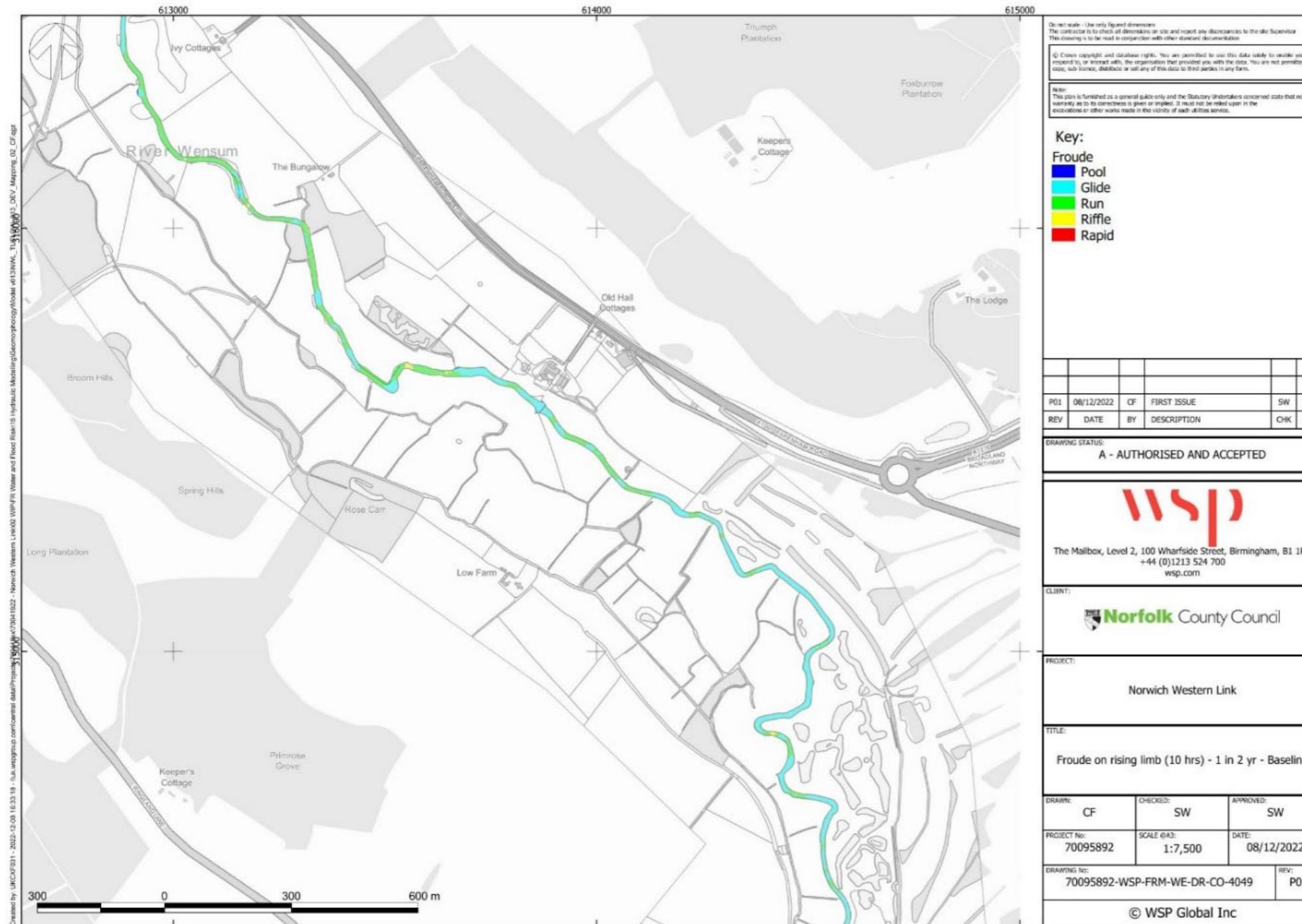




Figure 1-2 Map for the 1 in 20yr baseline. Indicating the Froude on rising limb (10 hours). Froude ranges from Pool to Rapid.

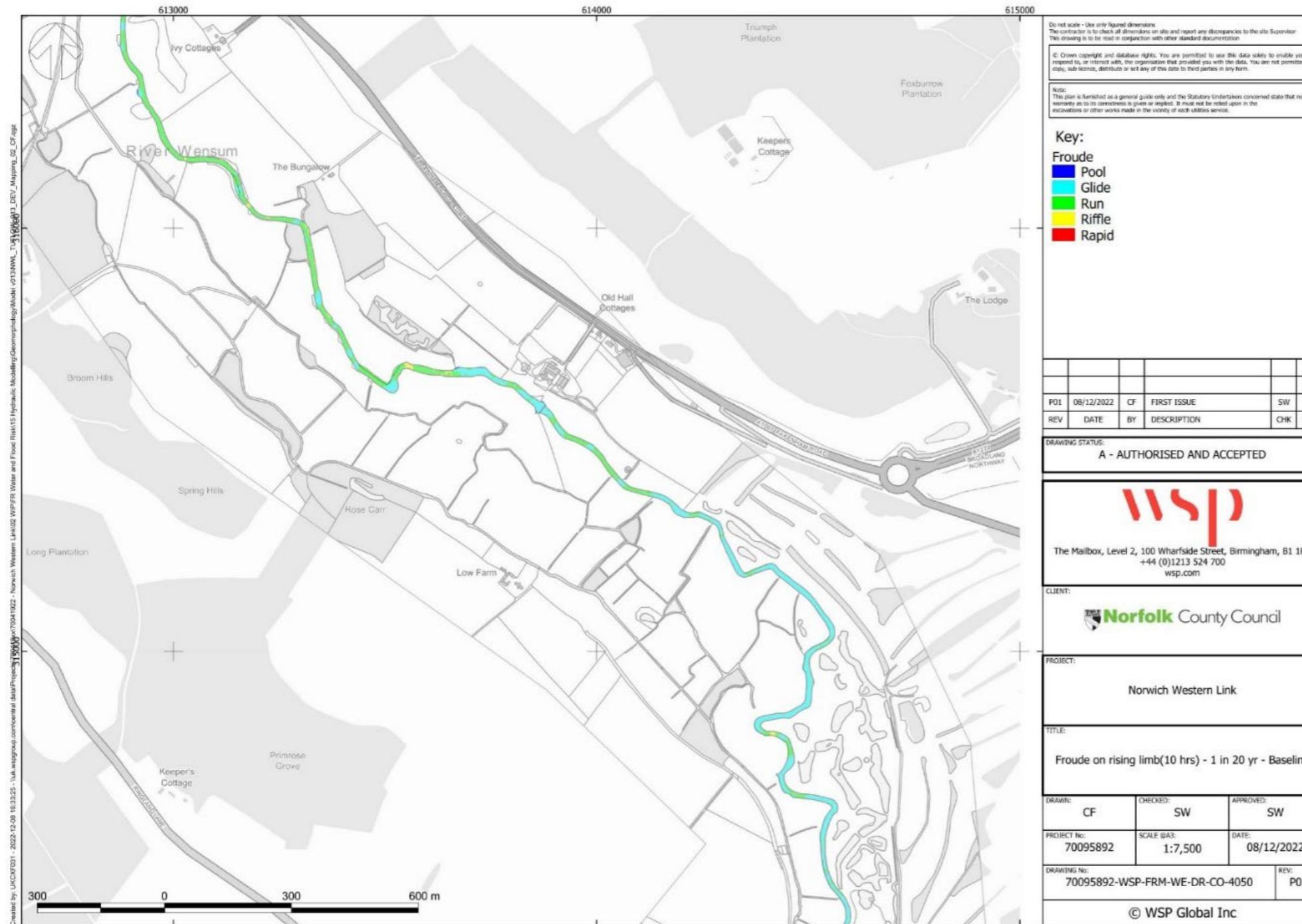
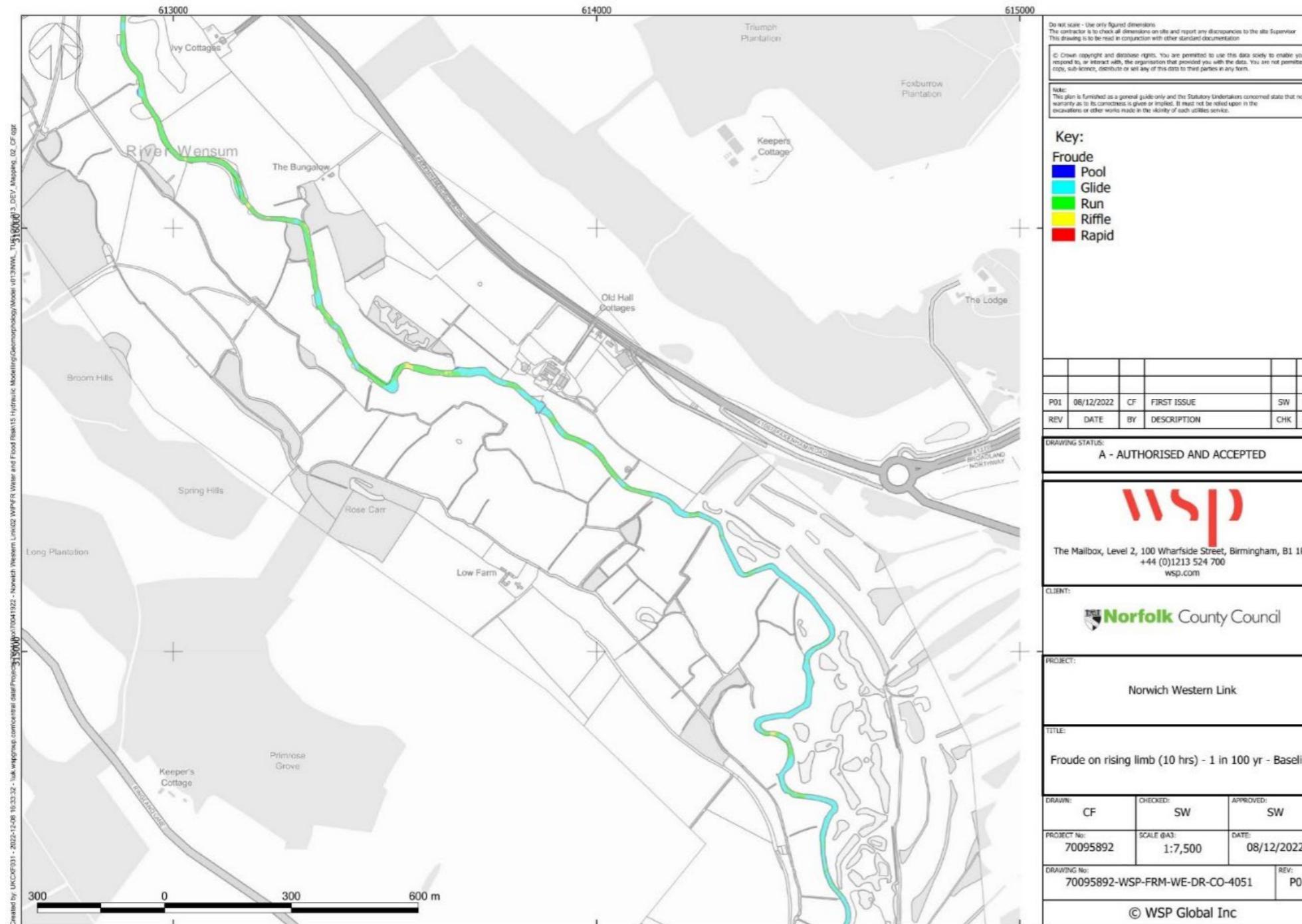




Figure 1-3 Map for the 1 in 100yr baseline. Indicating the Froude on rising limb (10 hours). Froude ranges from Pool to Rapid.



**Figure 1-4 Map for the 1 in 100yr +20% climate change baseline. Indicating the Froude on rising limb (10 hours). Froude ranges from Pool to Rapid.**

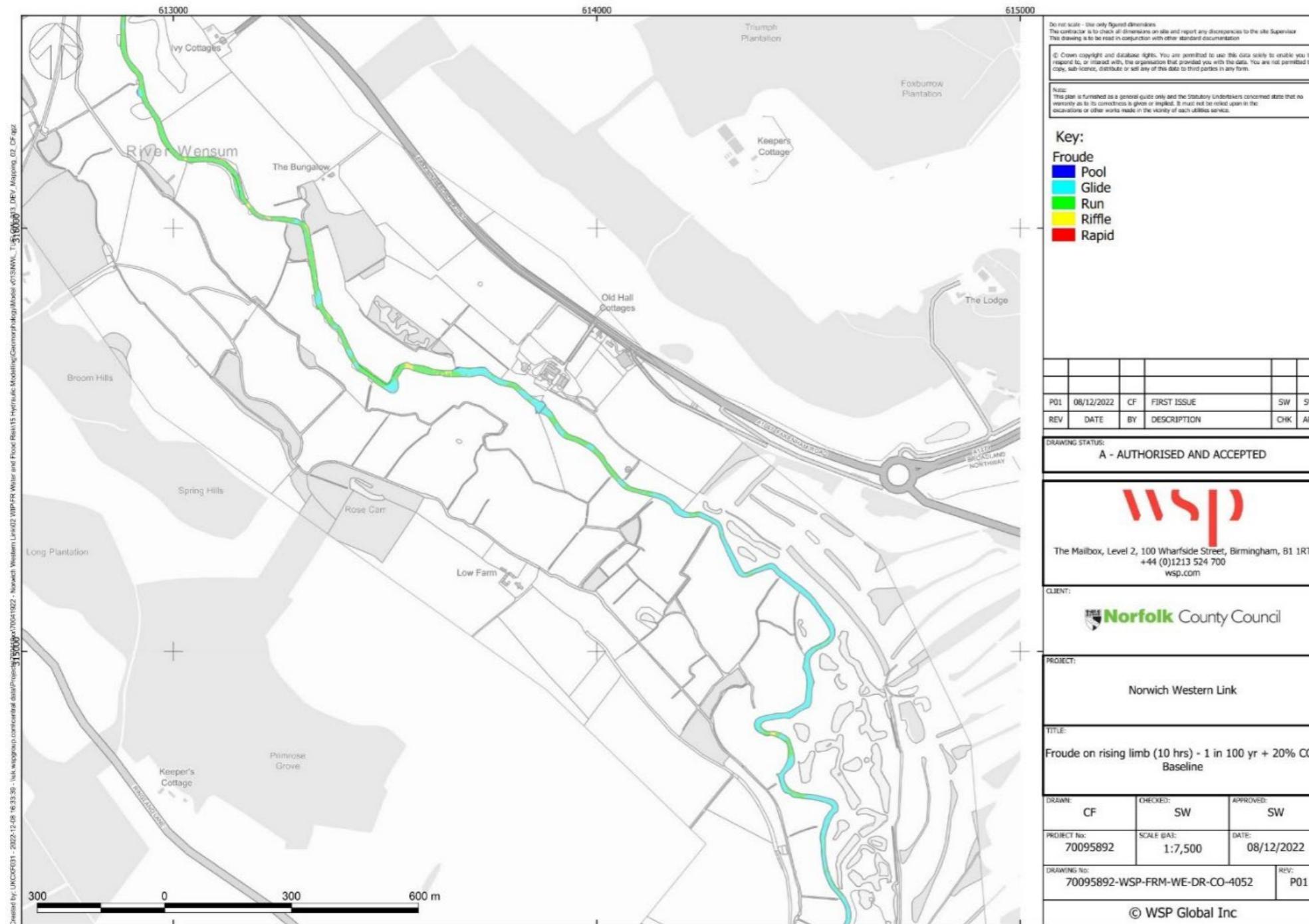




Figure 1-5 Map for the 1 in 2yr baseline. Indicating the Froude on rising limb (50 hours). Froude ranges from Pool to Rapid.

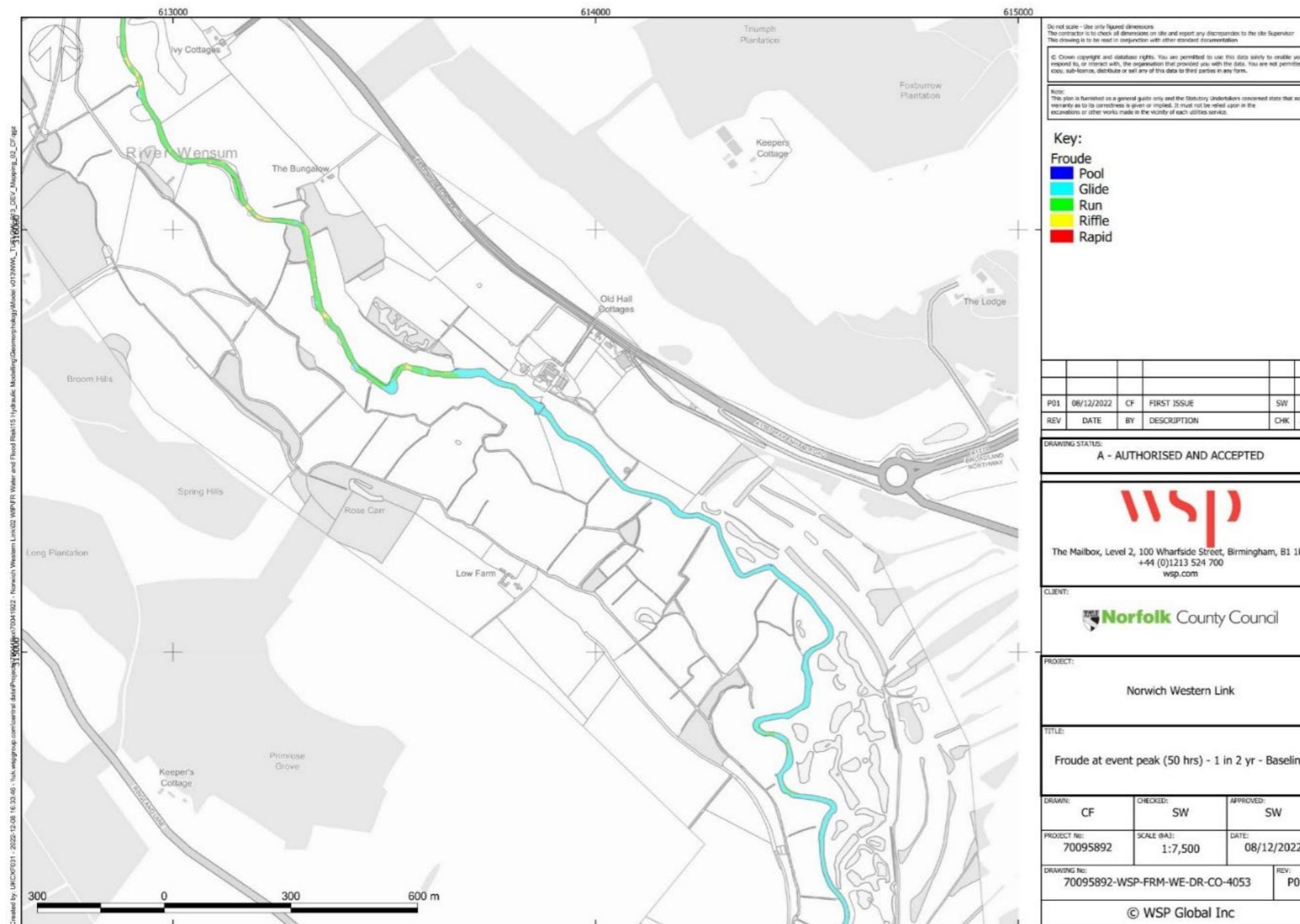
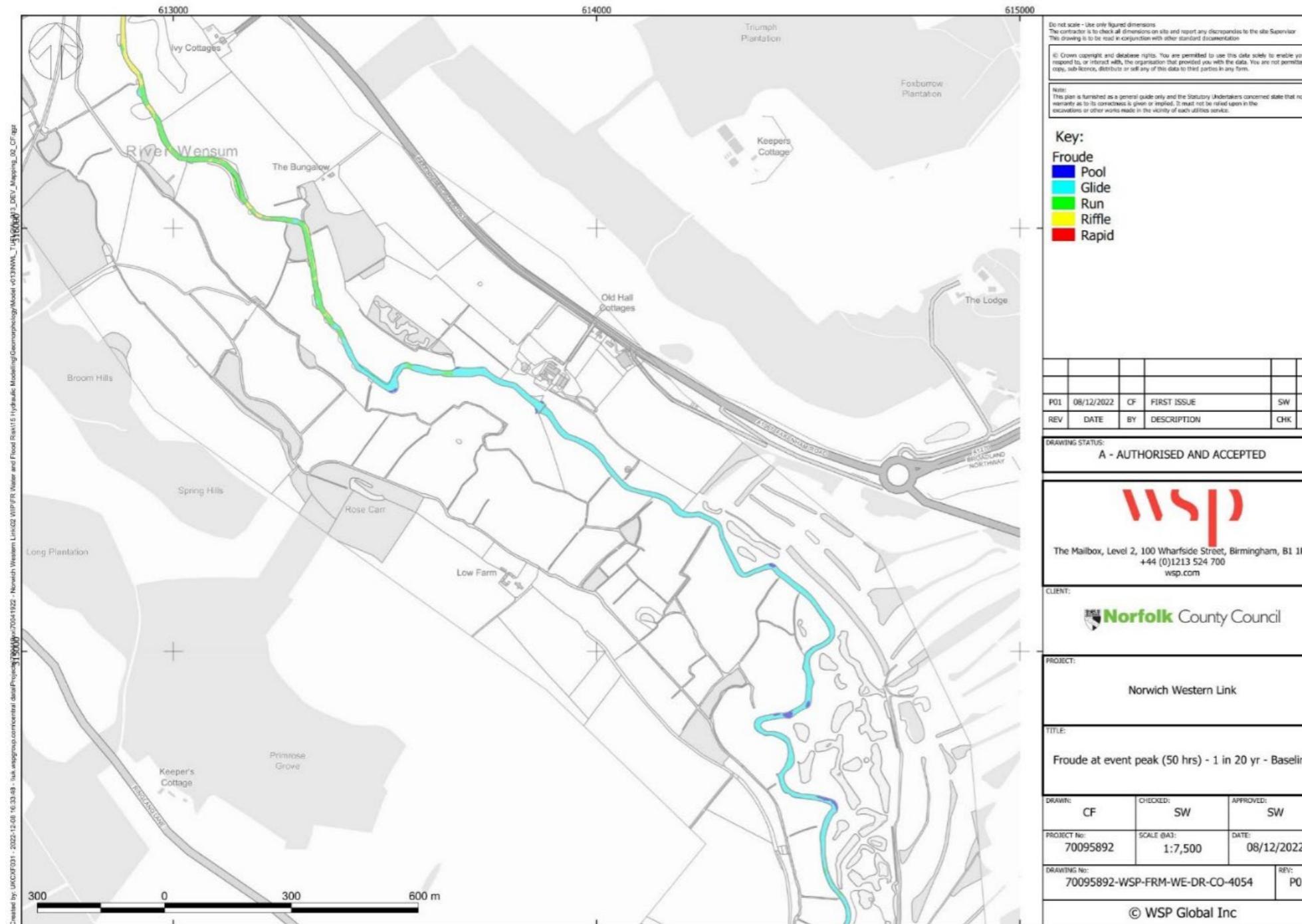
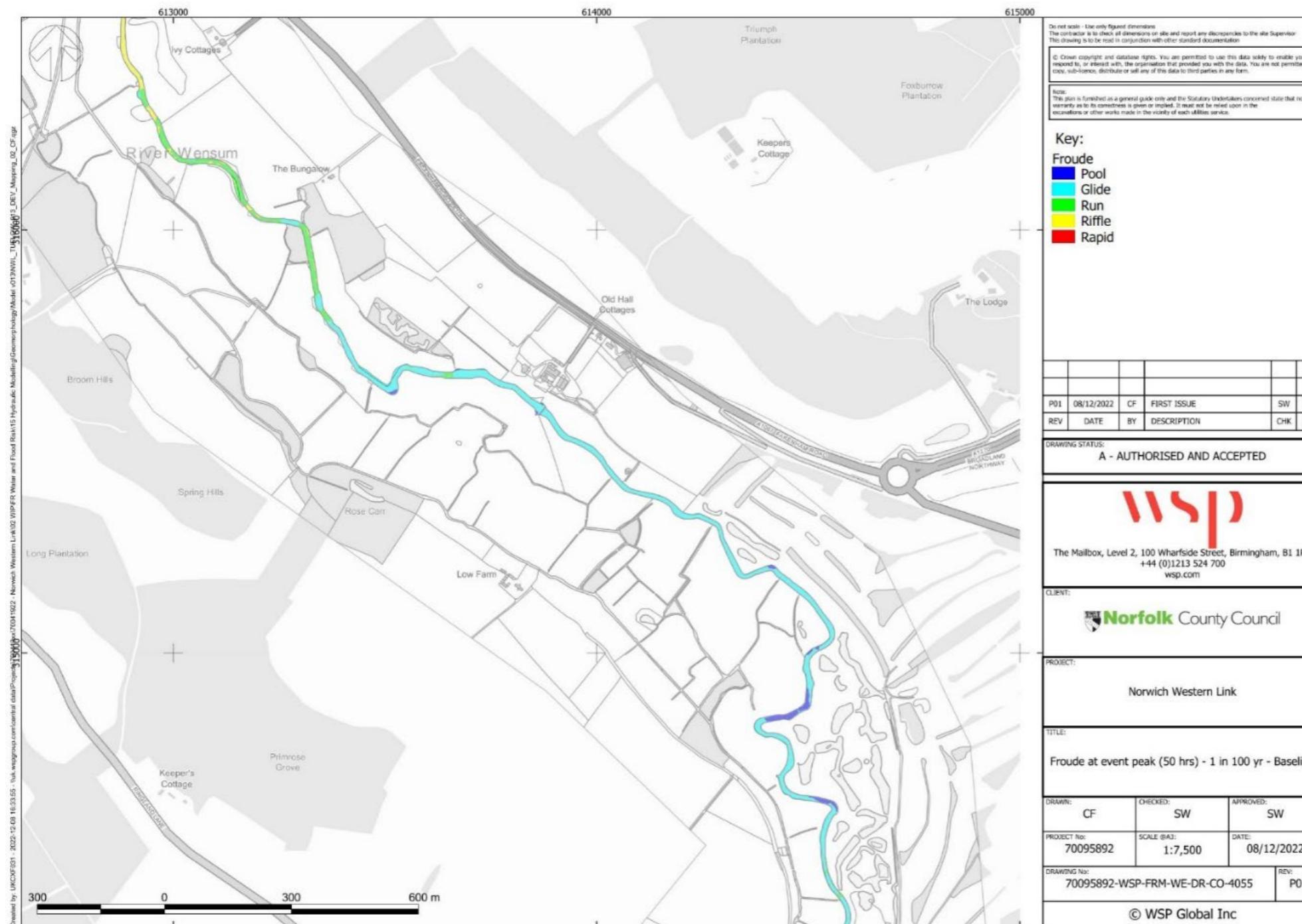




Figure 1-6 Map for the 1 in 20yr baseline. Indicating the Froude on rising limb (50 hours). Froude ranges from Pool to Rapid.

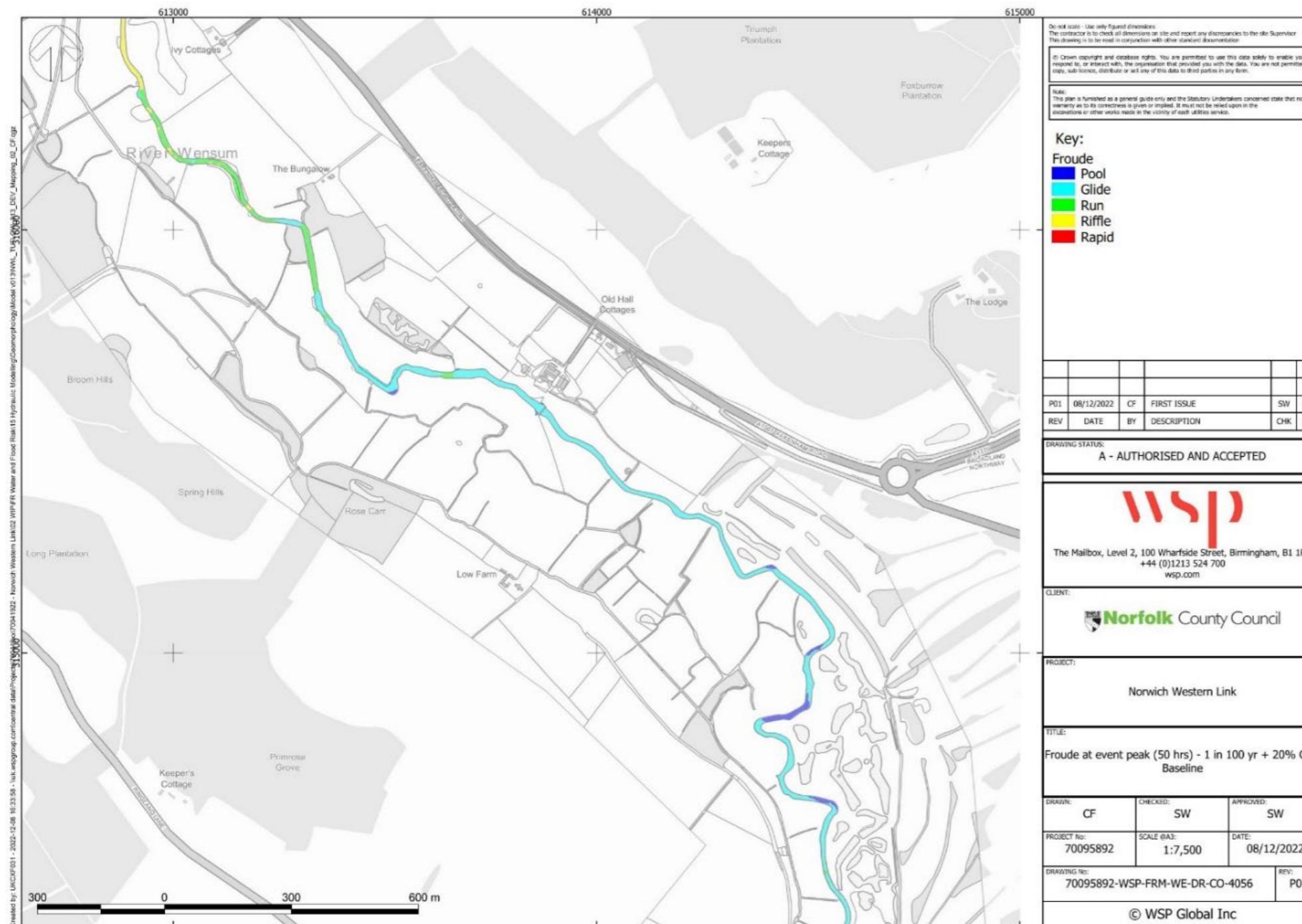


**Figure 1-7 Map for the 1 in 100yr Baseline. Indicating the Froude on rising limb (50 hours). Froude ranges from Pool to Rapid.**





**Figure 1-8 Map for the 1 in 100yr +20% Climate Change Baseline. Indicating the Froude on rising limb (50 hours). Froude ranges from Pool to Rapid.**



**Figure 1-9 Map for the 1 in 2yr With scheme in operation and shading impacts. Indicating the Froude on rising limb (10 hours). Froude ranges from Pool to Rapid.**

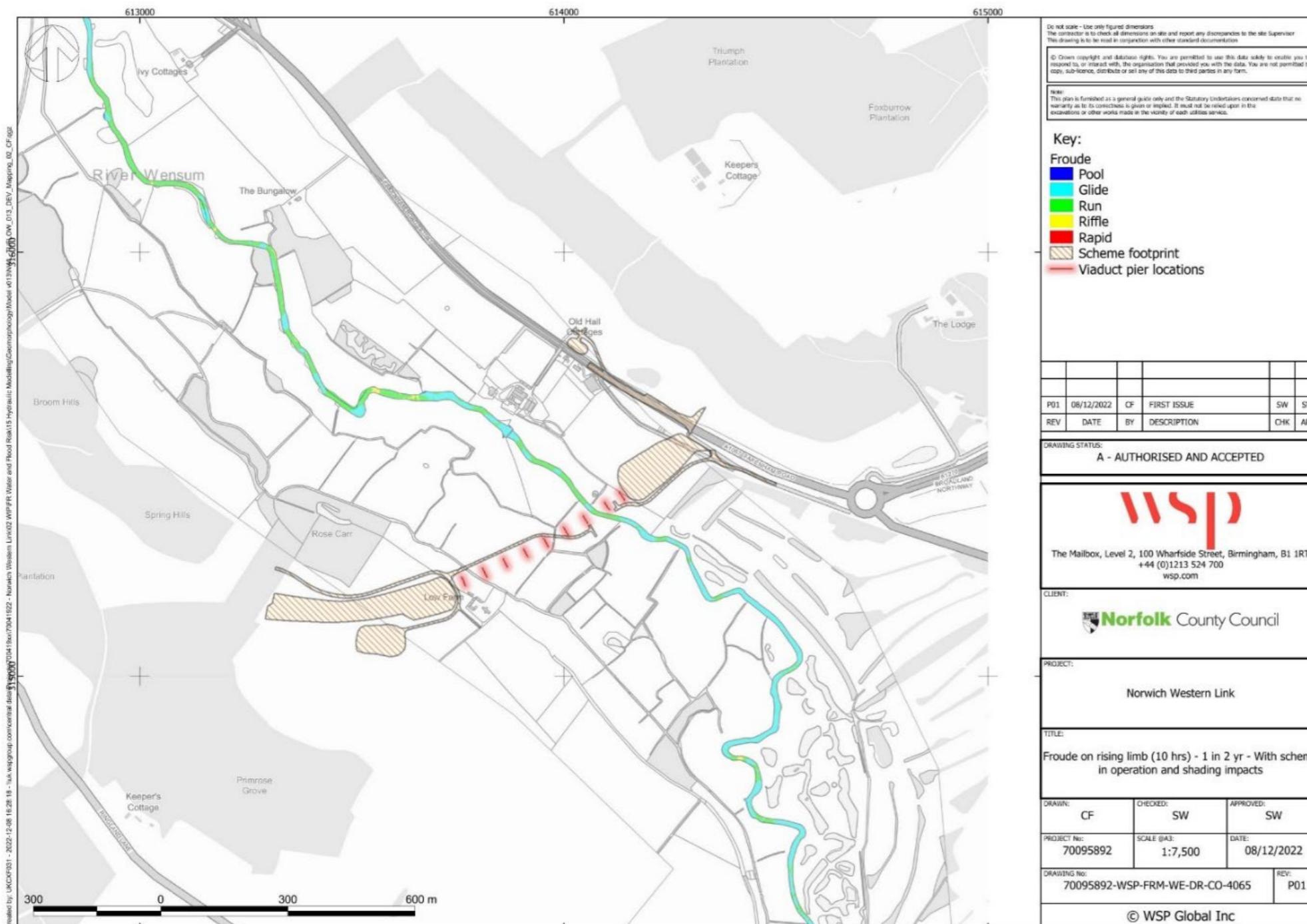




Figure 1-10 Map for the 1 in 20yr With scheme in operation and shading impacts. Indicating the Froude on rising limb (10 hours). Froude ranges from Pool to Rapid.

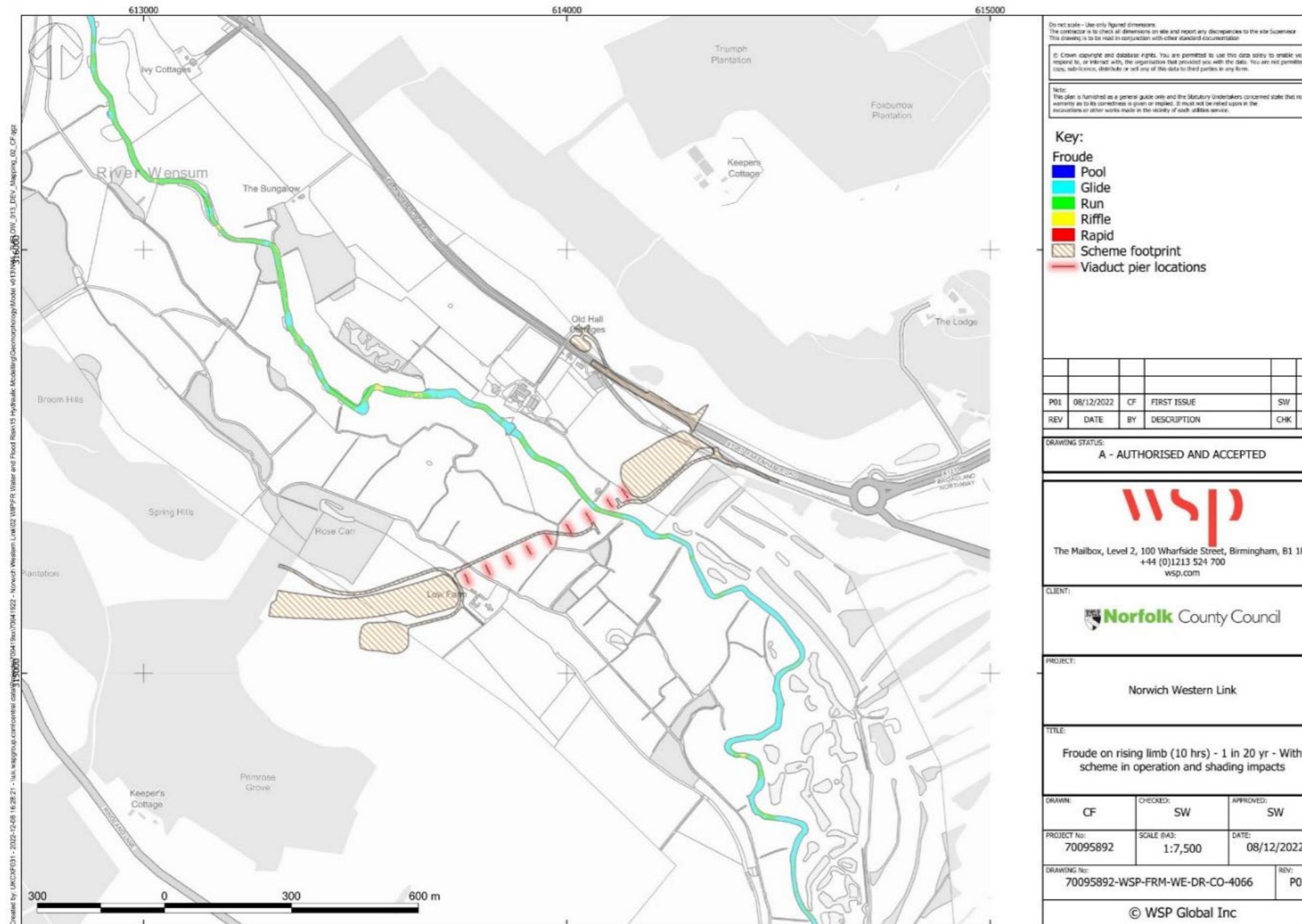




Figure 1-11 Map for the 1 in 100yr With scheme in operation and shading impacts. Indicating the Froude on rising limb (10 hours). Froude ranges from Pool to Rapid.

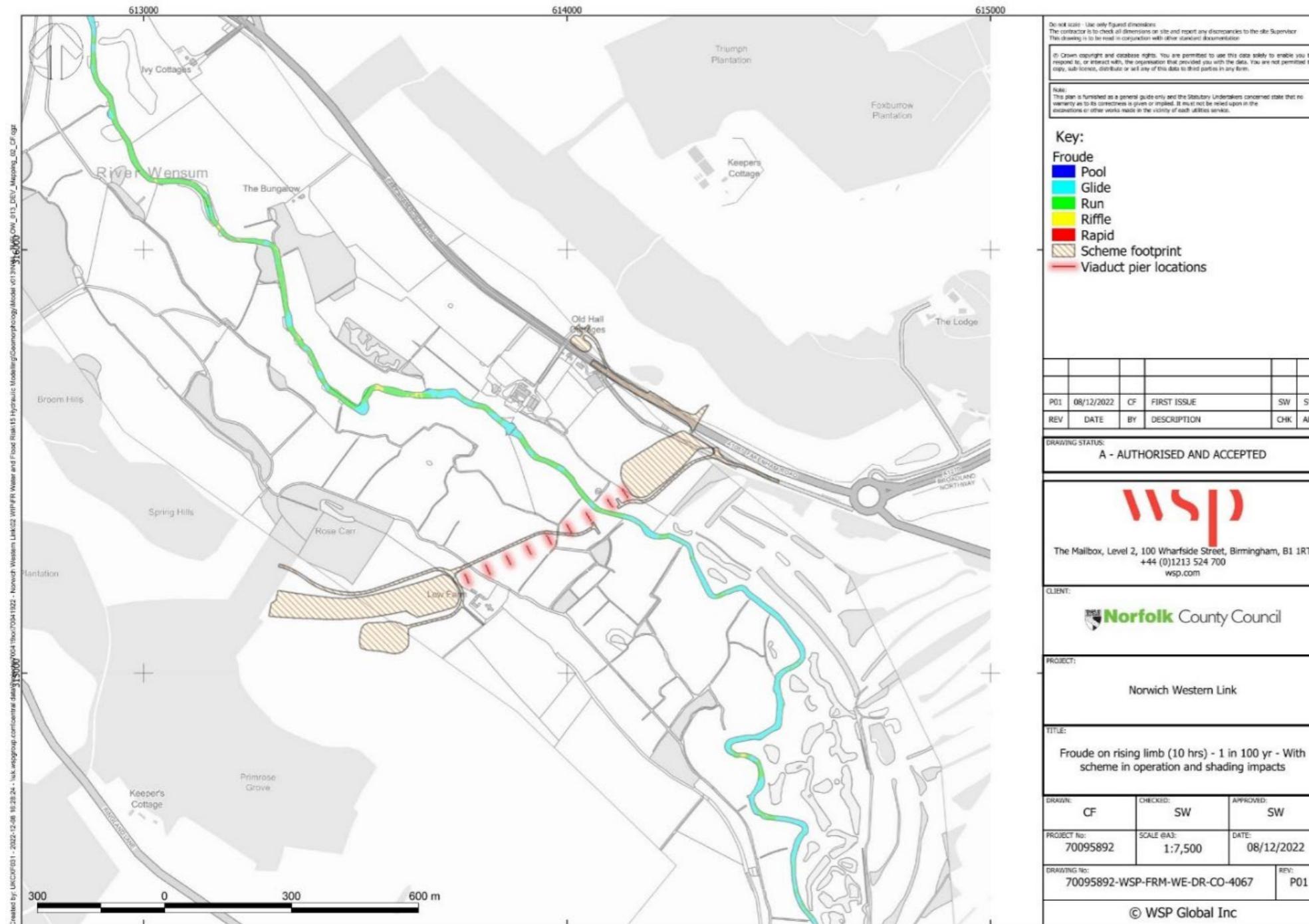




Figure 1-12 Map for the 1 in 100yr +20% Climate Change With scheme in operation and shading impacts. Indicating the Froude on rising limb (10 hours). Froude ranges from Pool to Rapid.

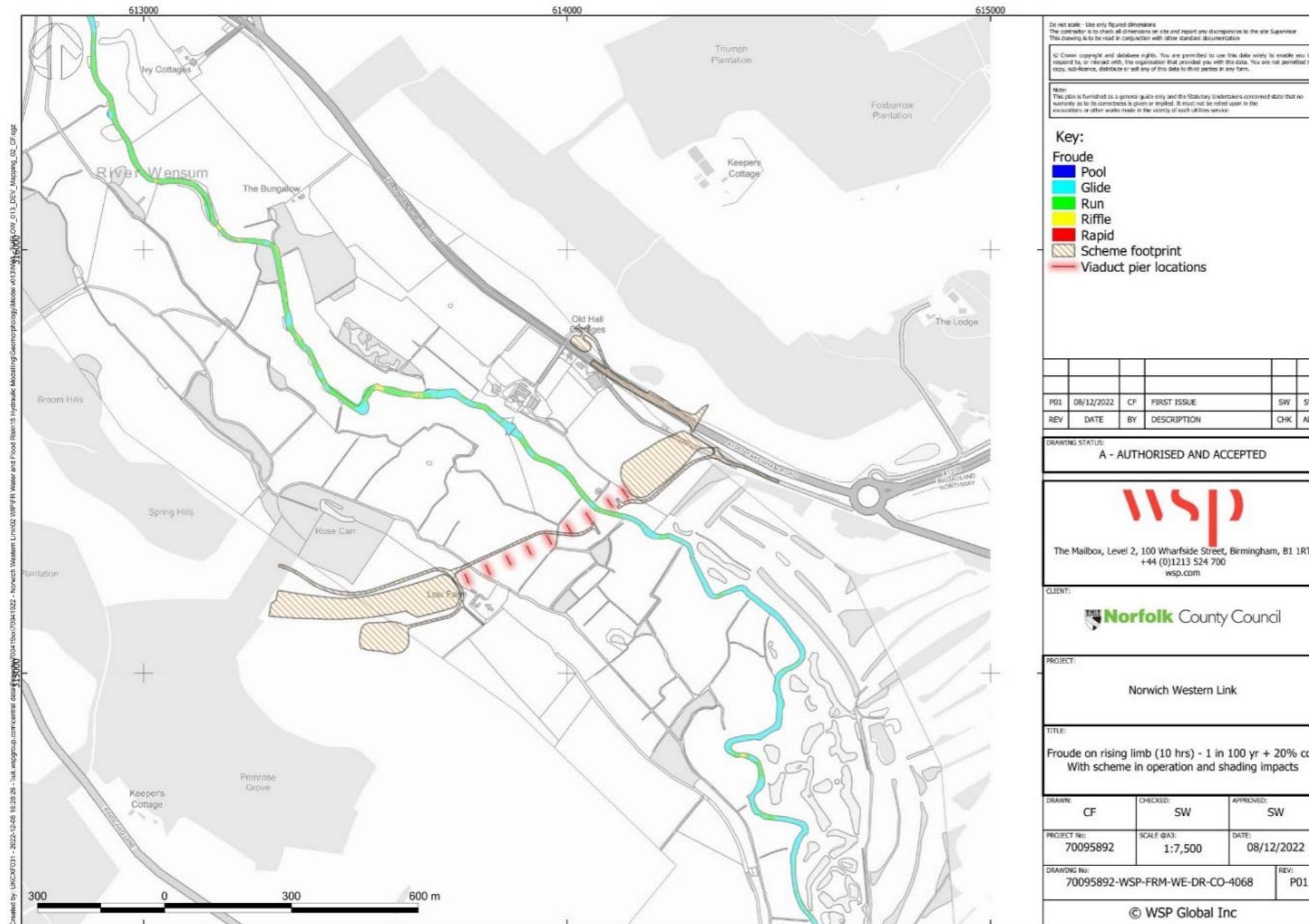
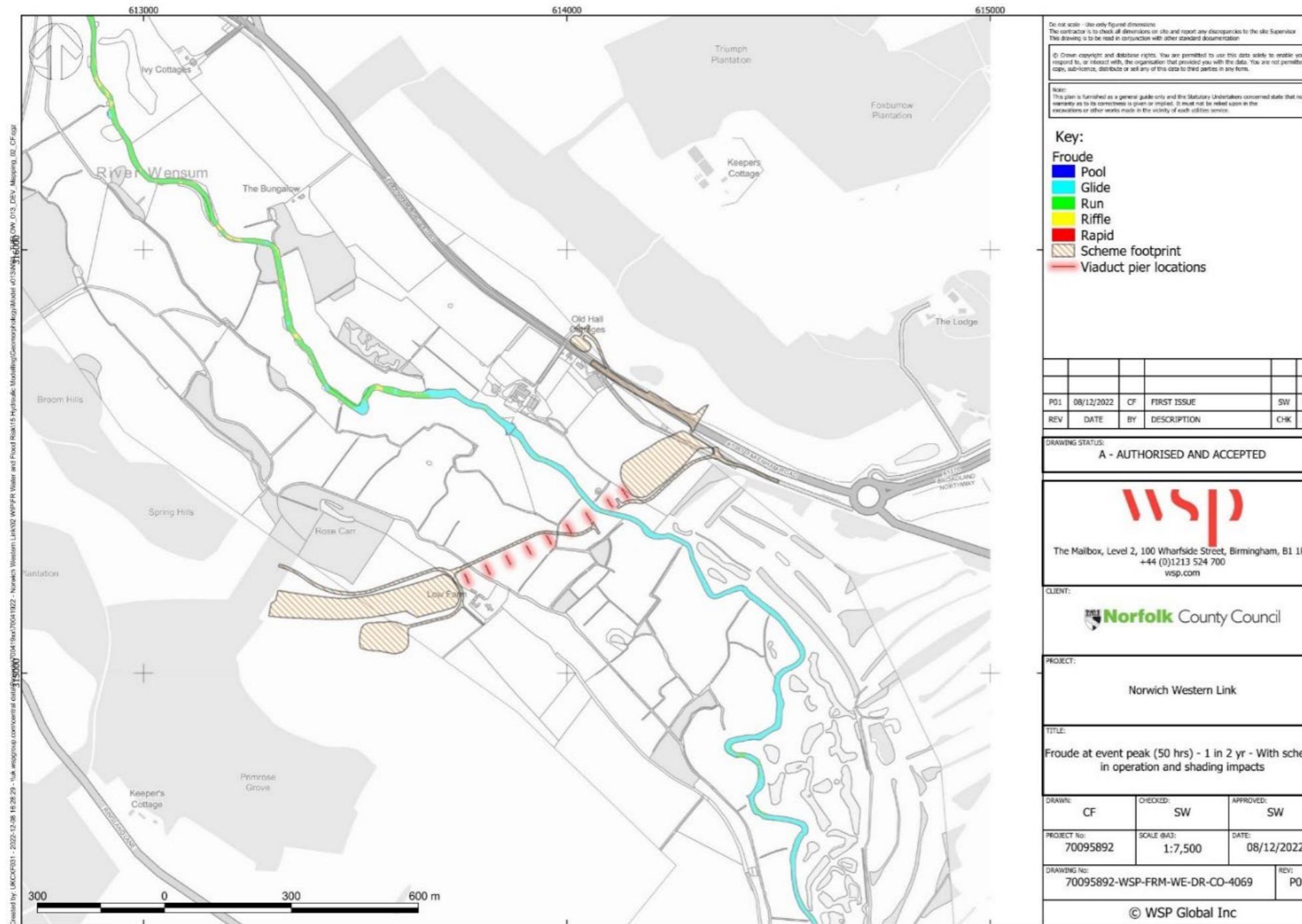




Figure 1-13 Map for the 1 in 2yr With scheme in operation and shading impacts. Indicating the Froude on rising limb (50 hours). Froude ranges from Pool to Rapid.



**Figure 1-14 Map for the 1 in 20yr With scheme in operation and shading impacts. Indicating the Froude on rising limb (50 hours). Froude ranges from Pool to Rapid.**

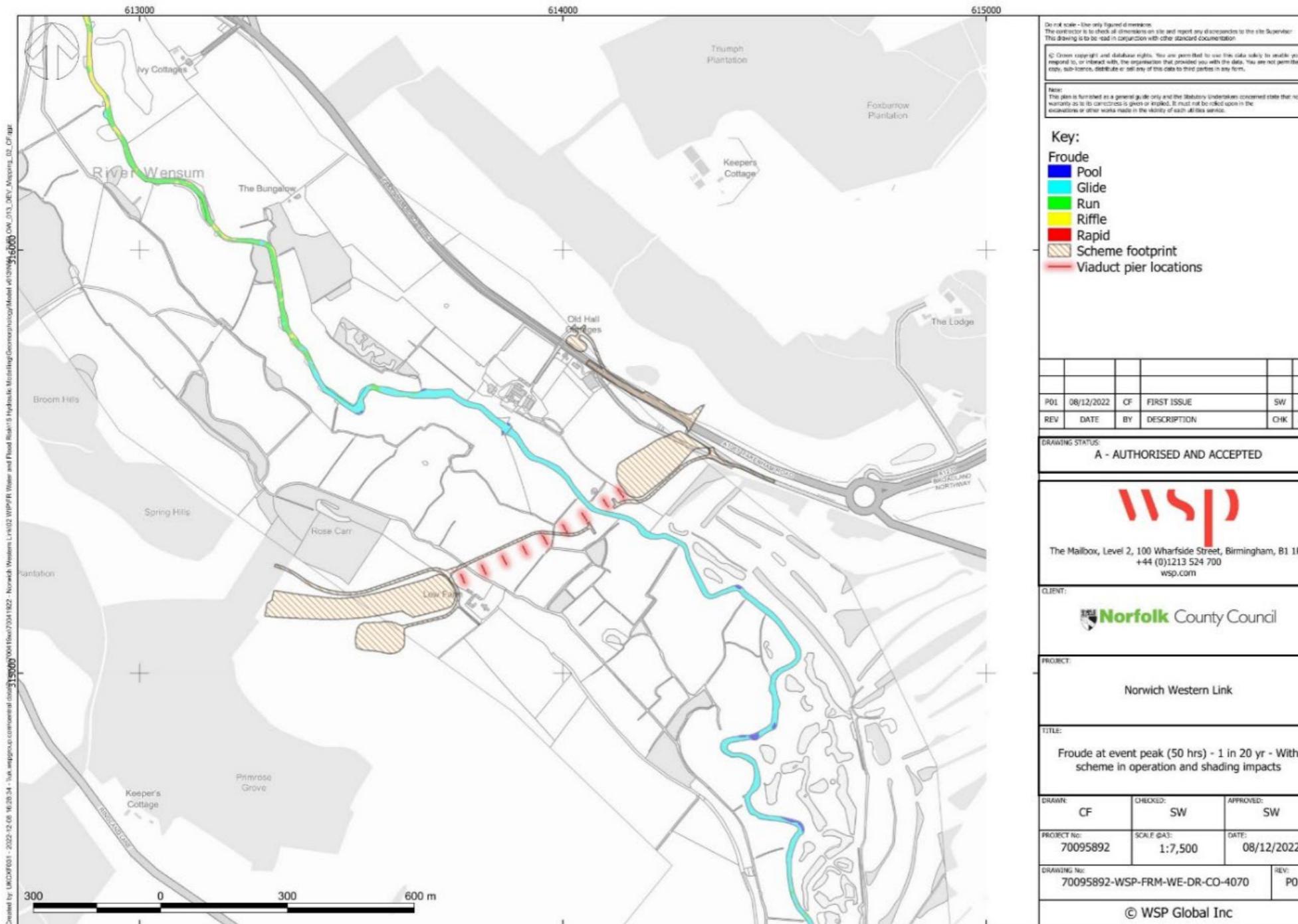
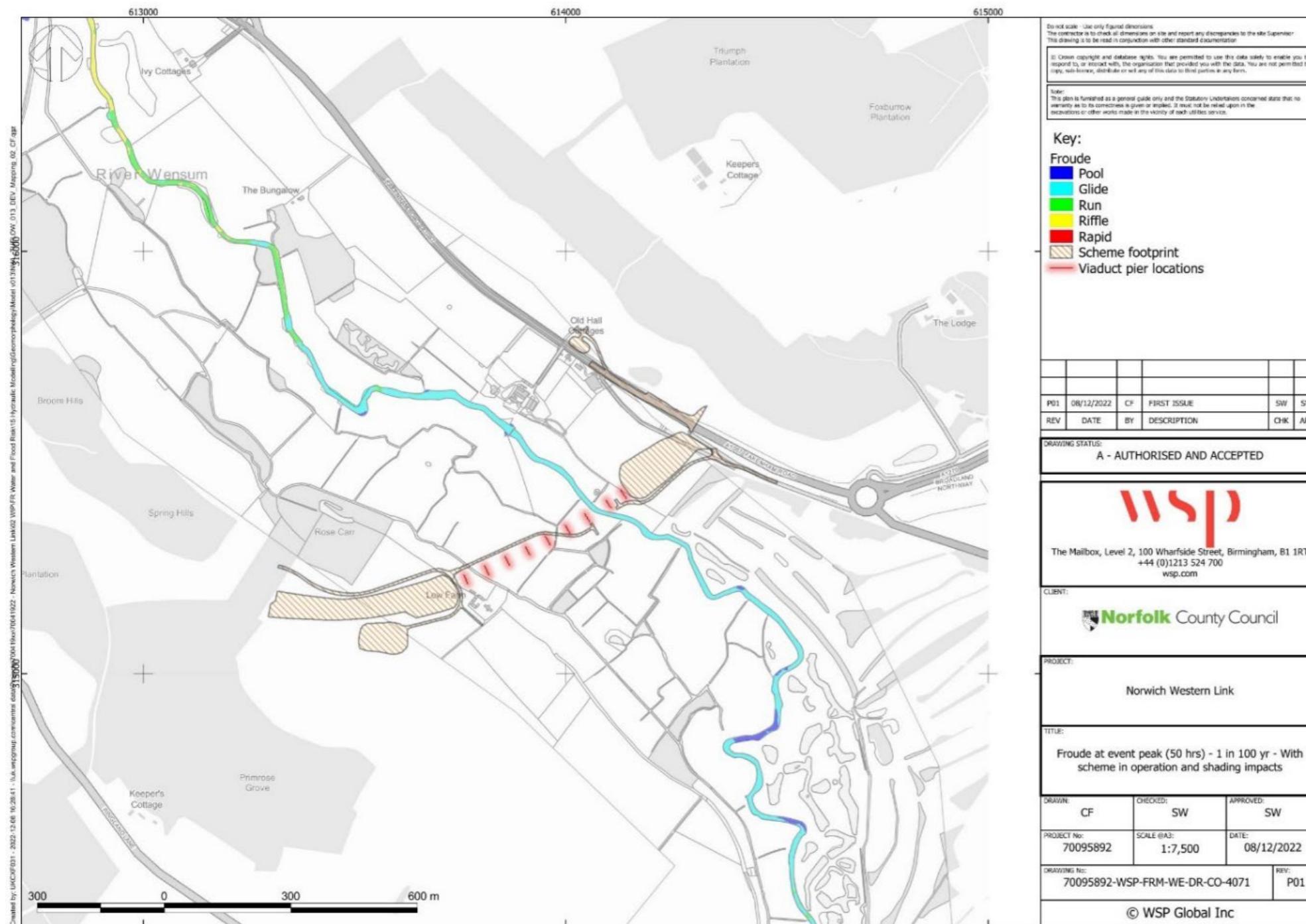


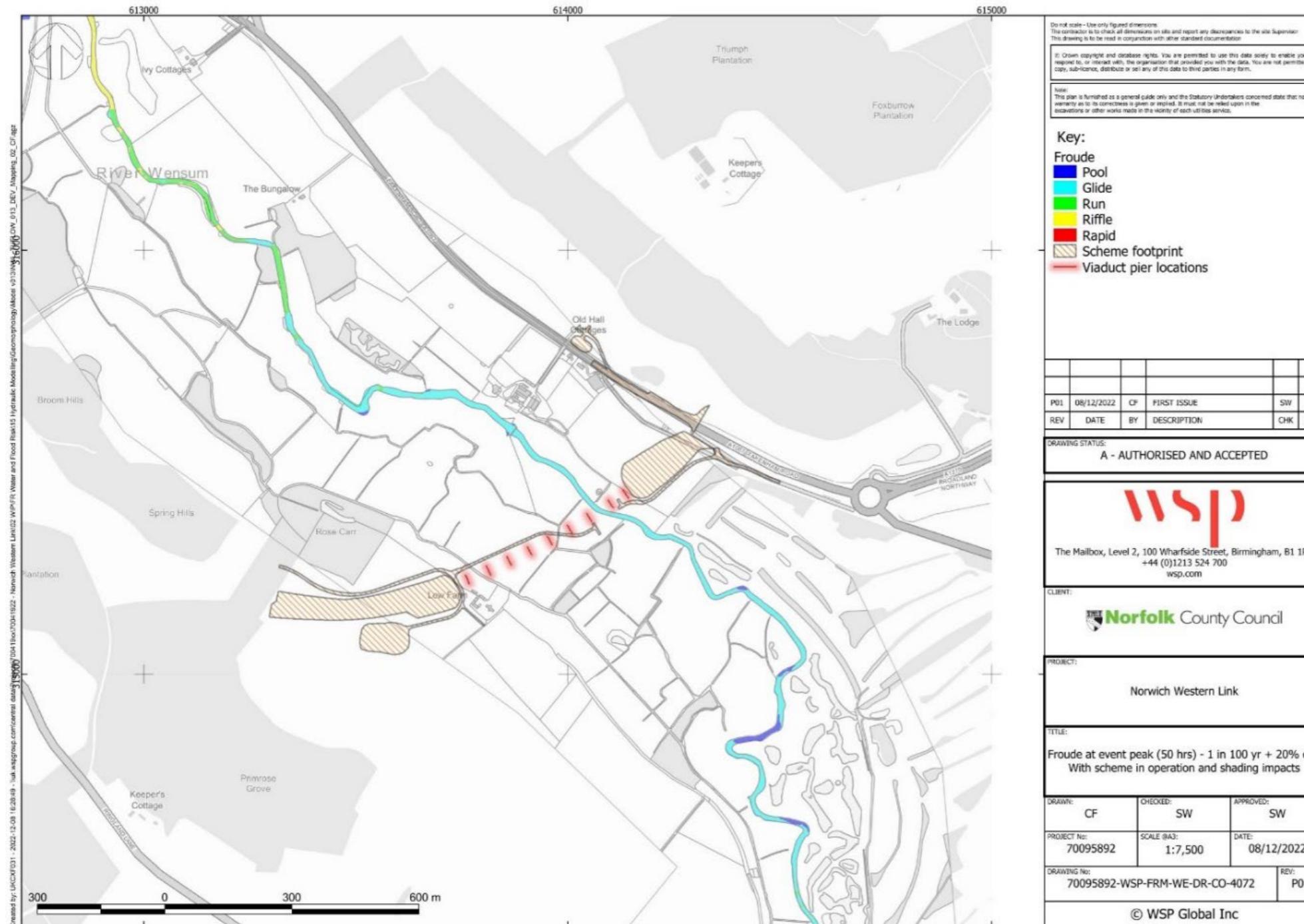


Figure 1-15 Map for the 1 in 100yr With scheme in operation and shading impacts. Indicating the Froude on rising limb (50 hours). Froude ranges from Pool to Rapid.

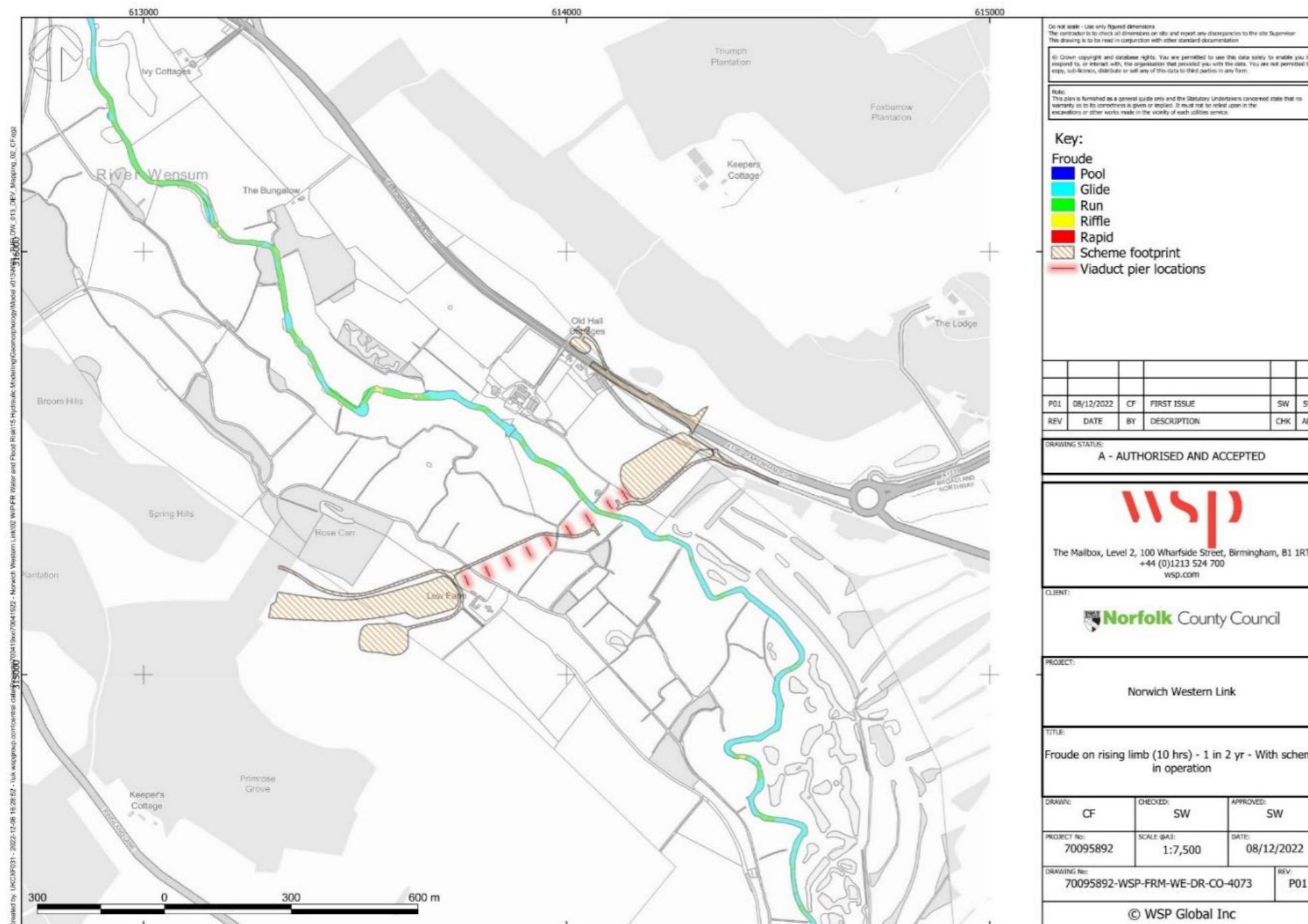




**Figure 1-16 Map for the 1 in 100yr +20% Climate Change With scheme in operation and shading impacts. Indicating the Froude on rising limb (50 hours). Froude ranges from Pool to Rapid.**



**Figure 1-17 Map for the 1 in 2yr With scheme in operation. Indicating the Froude on rising limb (10 hours). Froude ranges from Pool to Rapid.**



**Figure 1-18 Map for the 1 in 20yr With scheme in operation. Indicating the Froude on rising limb (10 hours). Froude ranges from Pool to Rapid.**

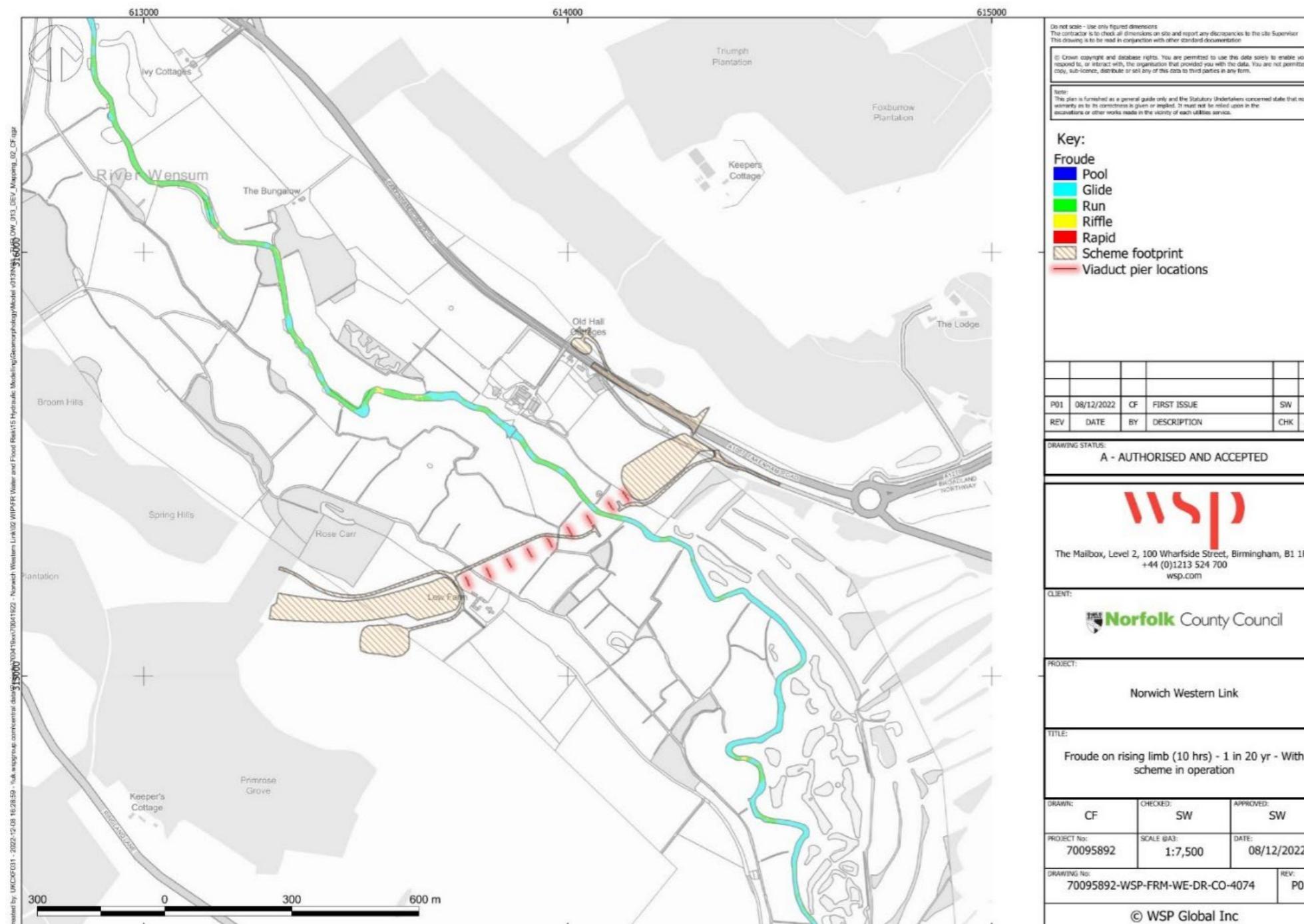
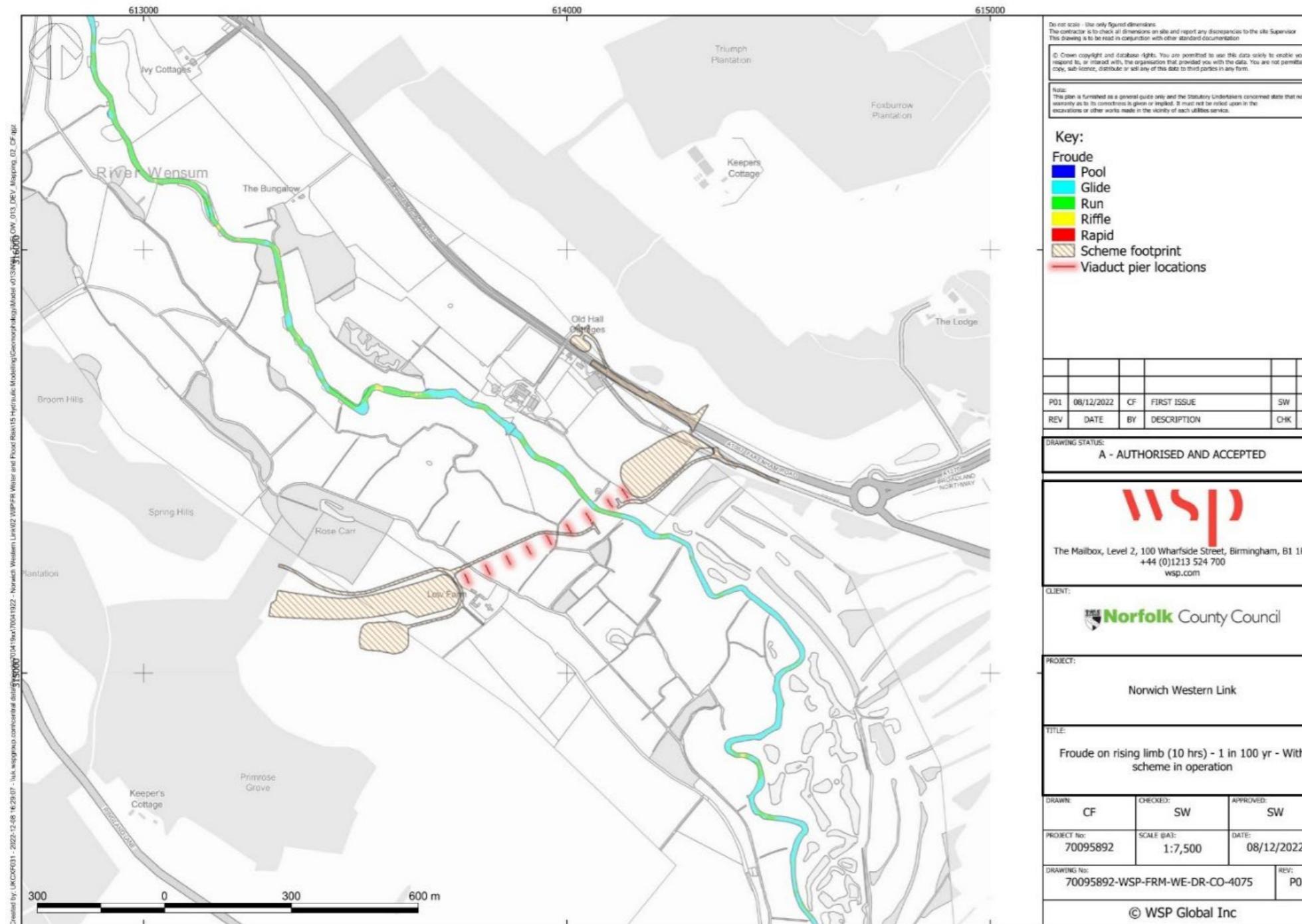
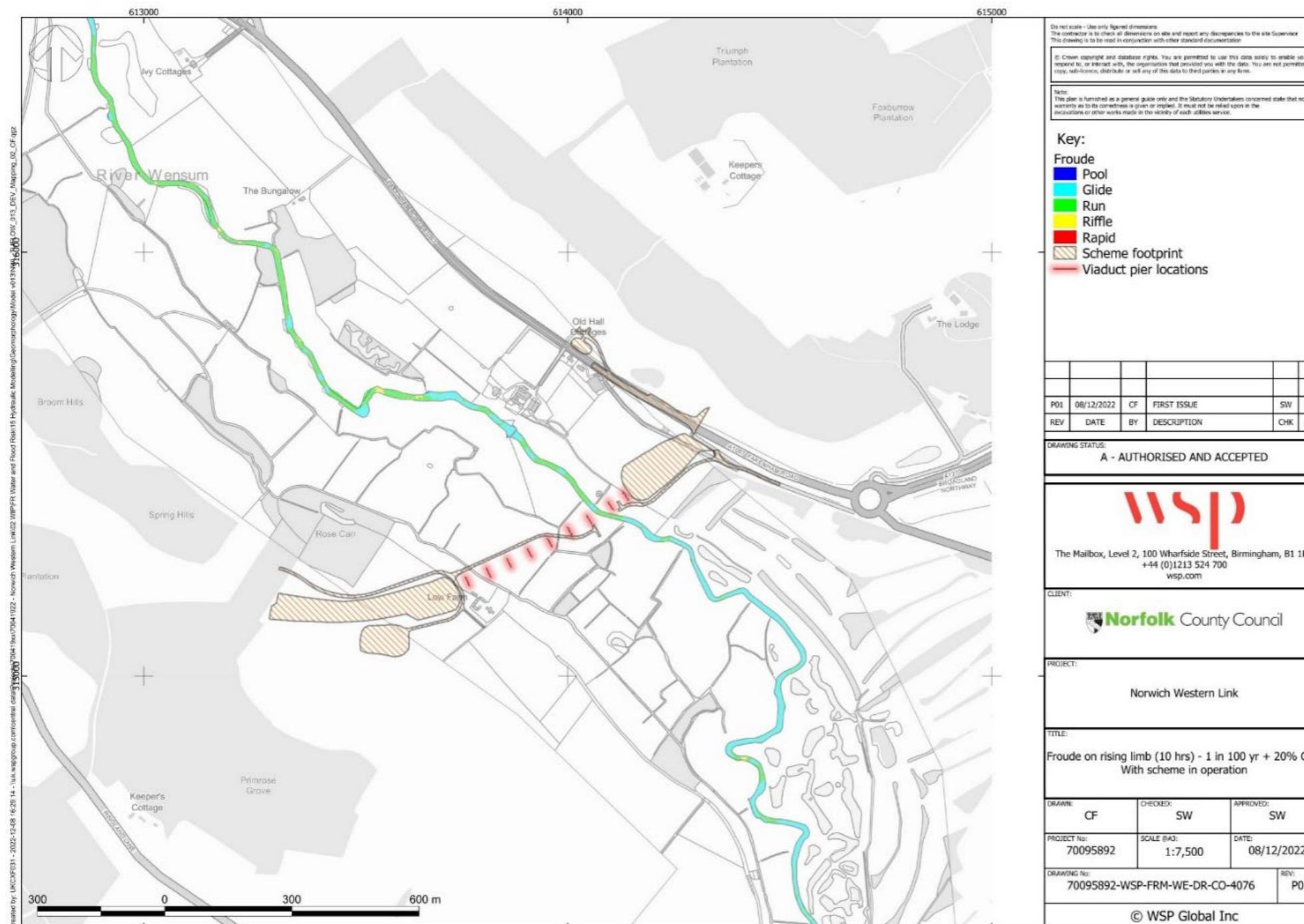




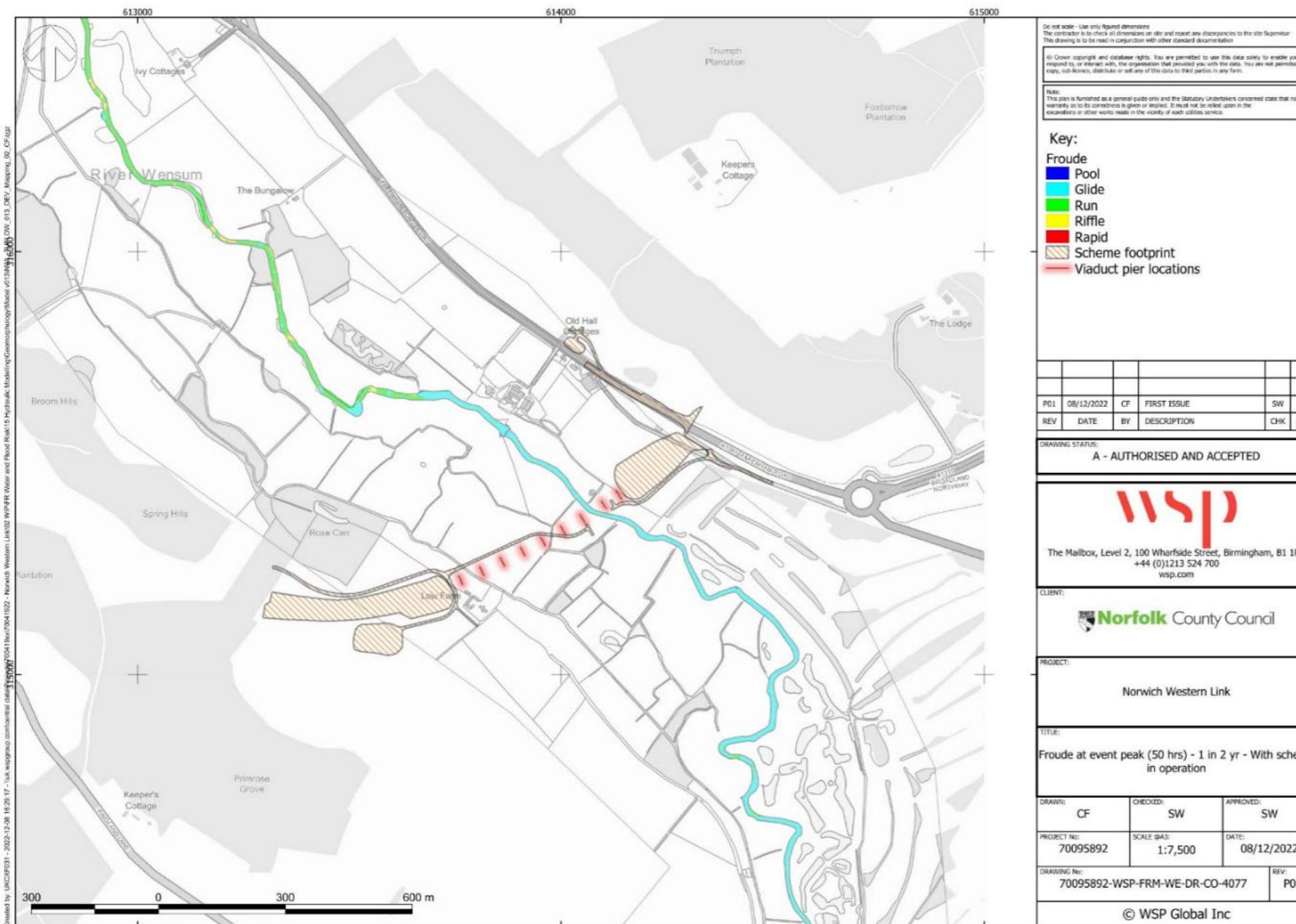
Figure 1-19 Map for the 1 in 100yr With scheme in operation. Indicating the Froude on rising limb (10 hours). Froude ranges from Pool to Rapid.



**Figure 1-20 Map for the 1 in 100yr +20% Climate Change With scheme in operation. Indicating the Froude on rising limb (10 hours). Froude ranges from Pool to Rapid.**



**Figure 1-21 Map for the 1 in 2yr With scheme in operation. Indicating the Froude on rising limb (50 hours). Froude ranges from Pool to Rapid.**



**Figure 1-22 Map for the 1 in 20yr With scheme in operation. Indicating the Froude on rising limb (50 hours). Froude ranges from Pool to Rapid.**

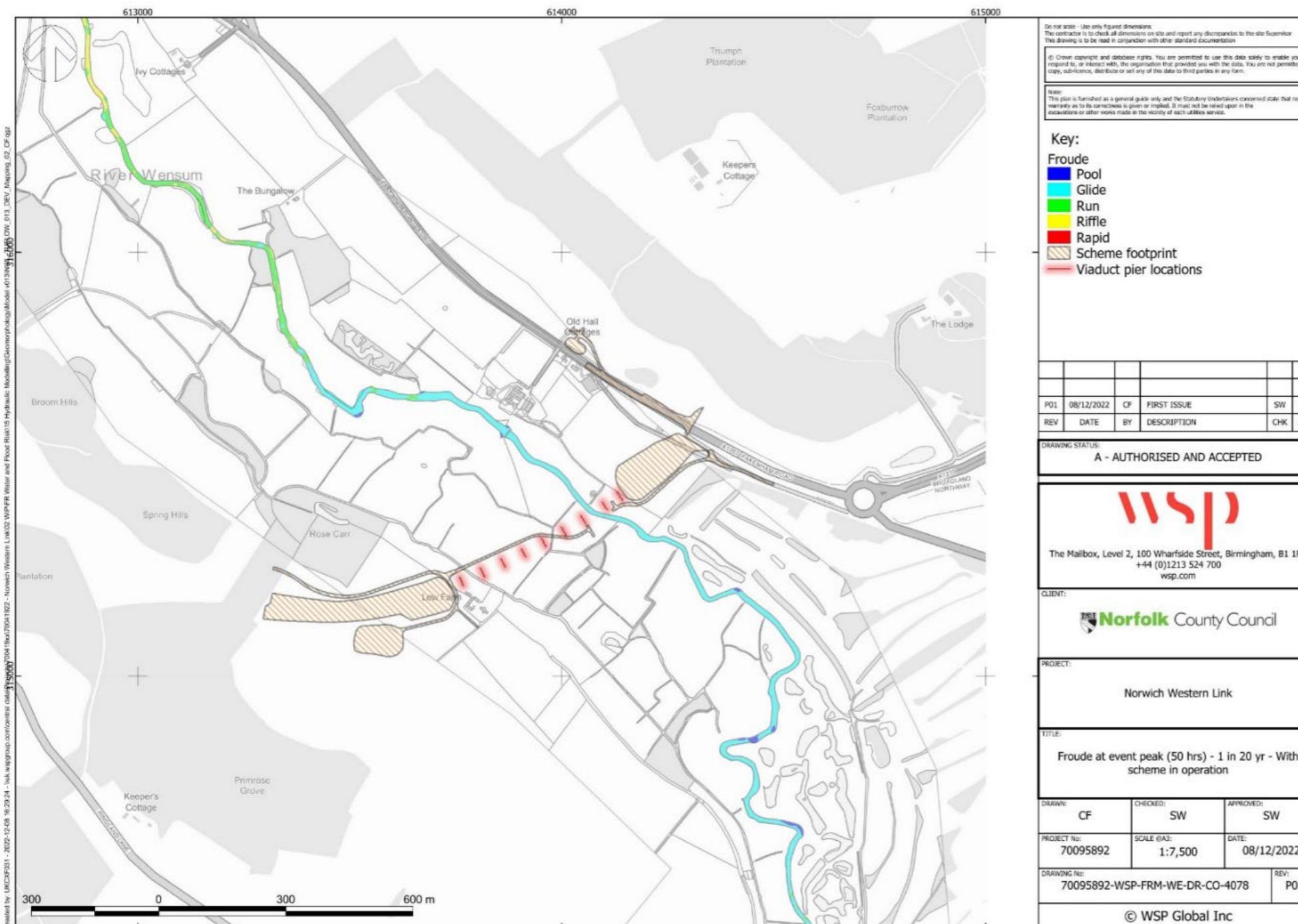
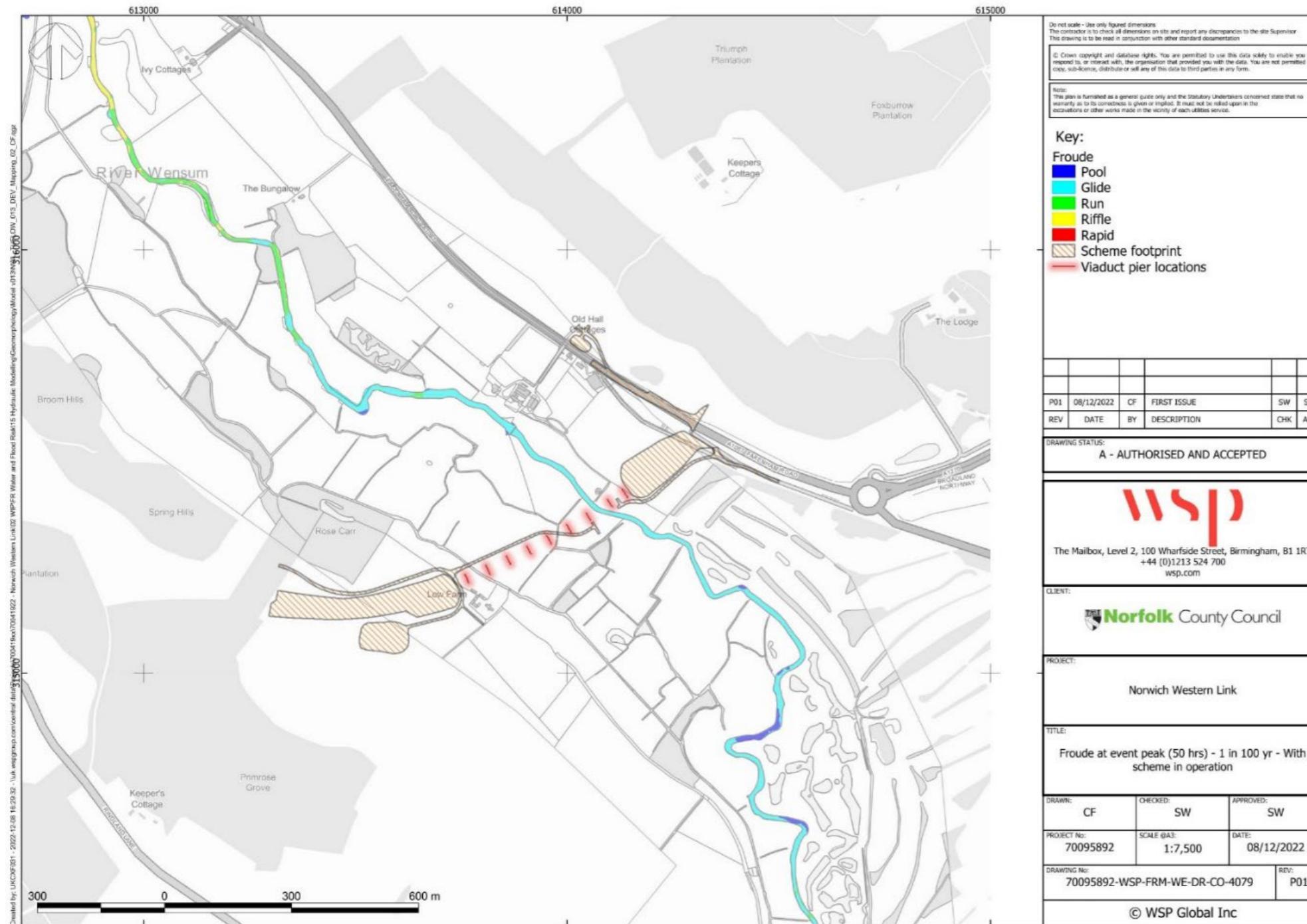




Figure 1-23 Map for the 1 in 100yr With scheme in operation. Indicating the Froude on rising limb (50 hours). Froude ranges from Pool to Rapid.



**Figure 1-24 Map for the 1 in 100yr +20% Climate Change With scheme in operation. Indicating the Froude on rising limb (50 hours). Froude ranges from Pool to Rapid.**

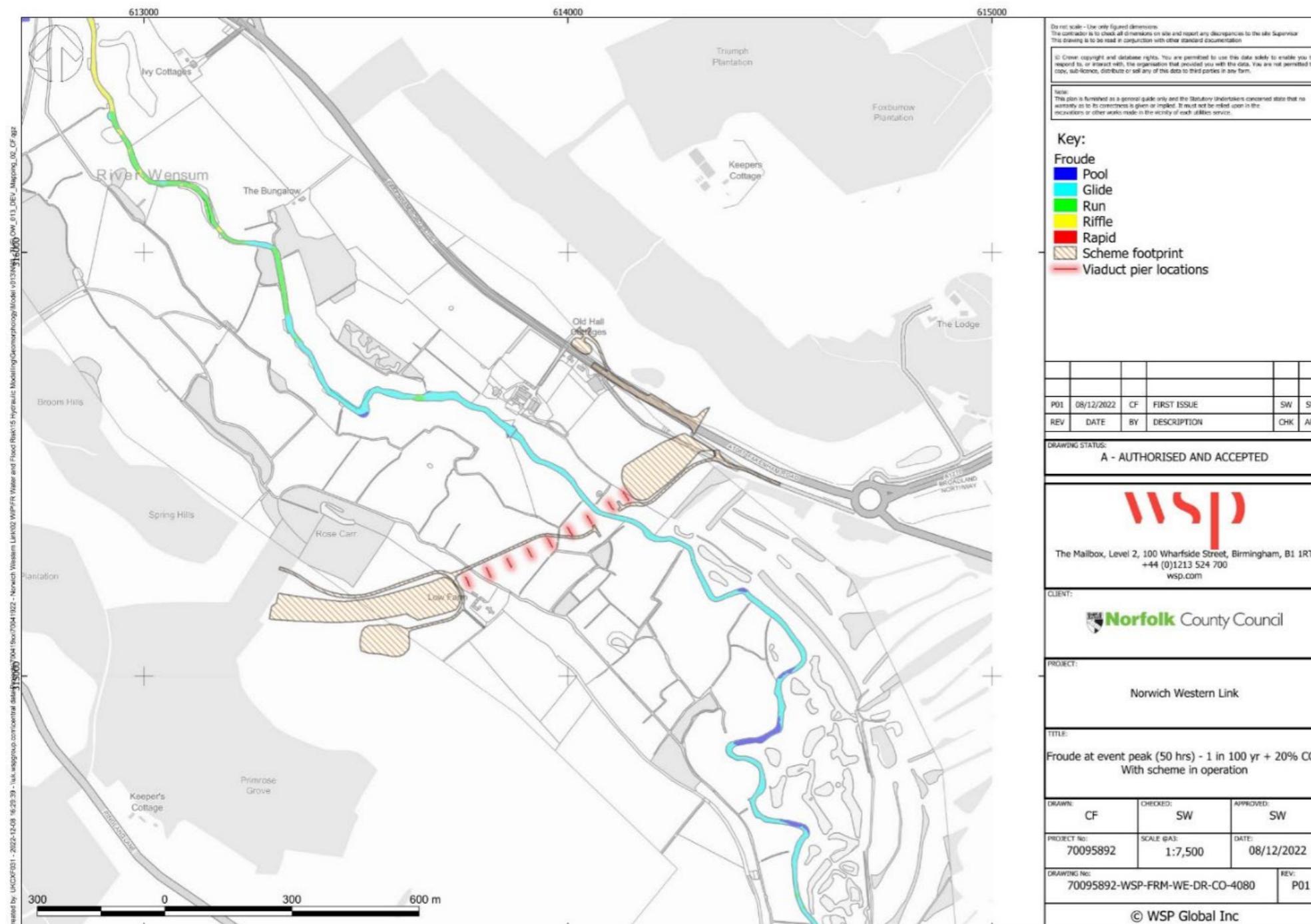
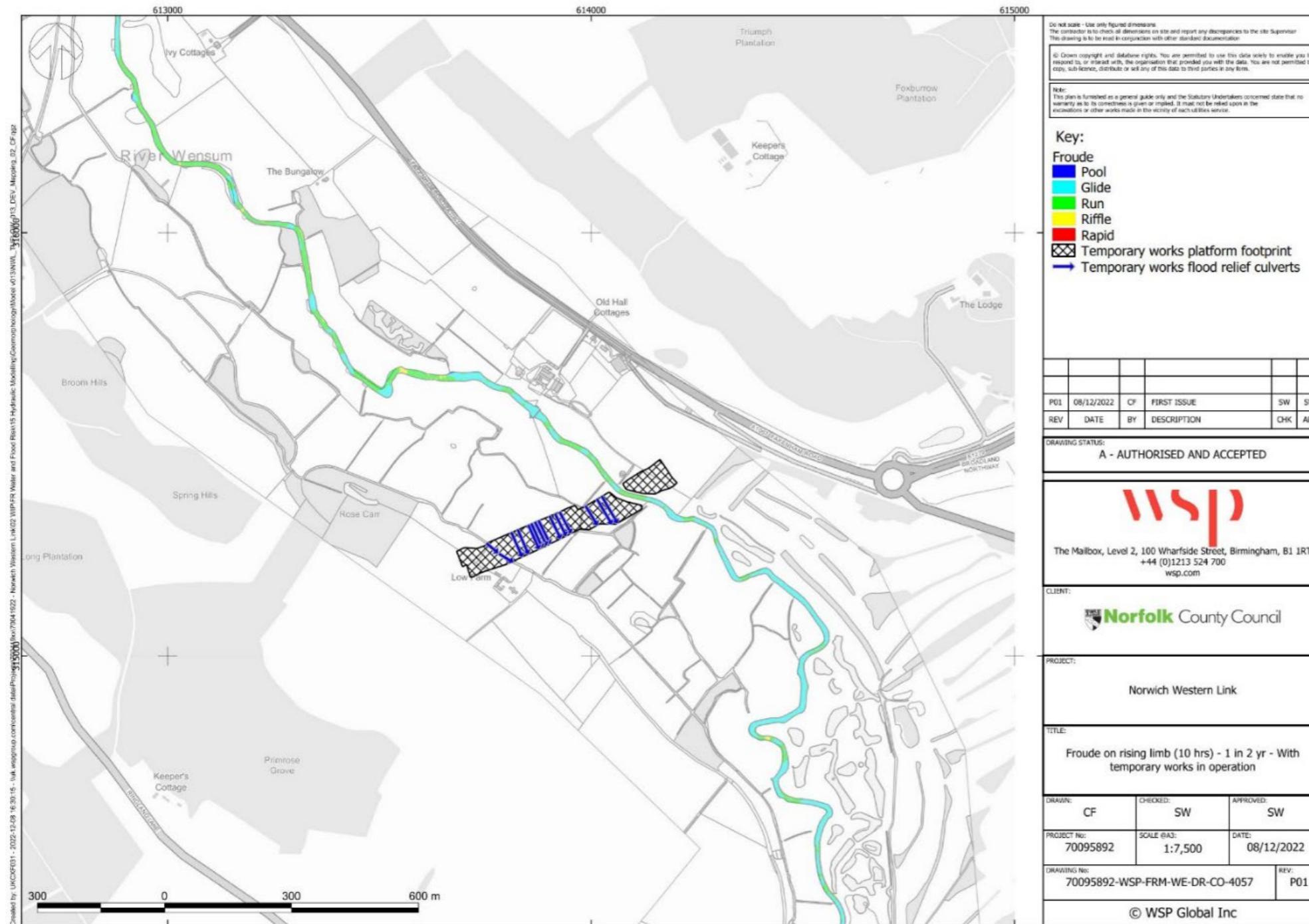




Figure 1-25 Map for the 1 in 2yr With temporary works in operation. Indicating the Froude on rising limb (10 hours). Froude ranges from Pool to Rapid.



**Figure 1-26 Map for the 1 in 20yr With temporary works in operation. Indicating the Froude on rising limb (10 hours). Froude ranges from Pool to Rapid.**

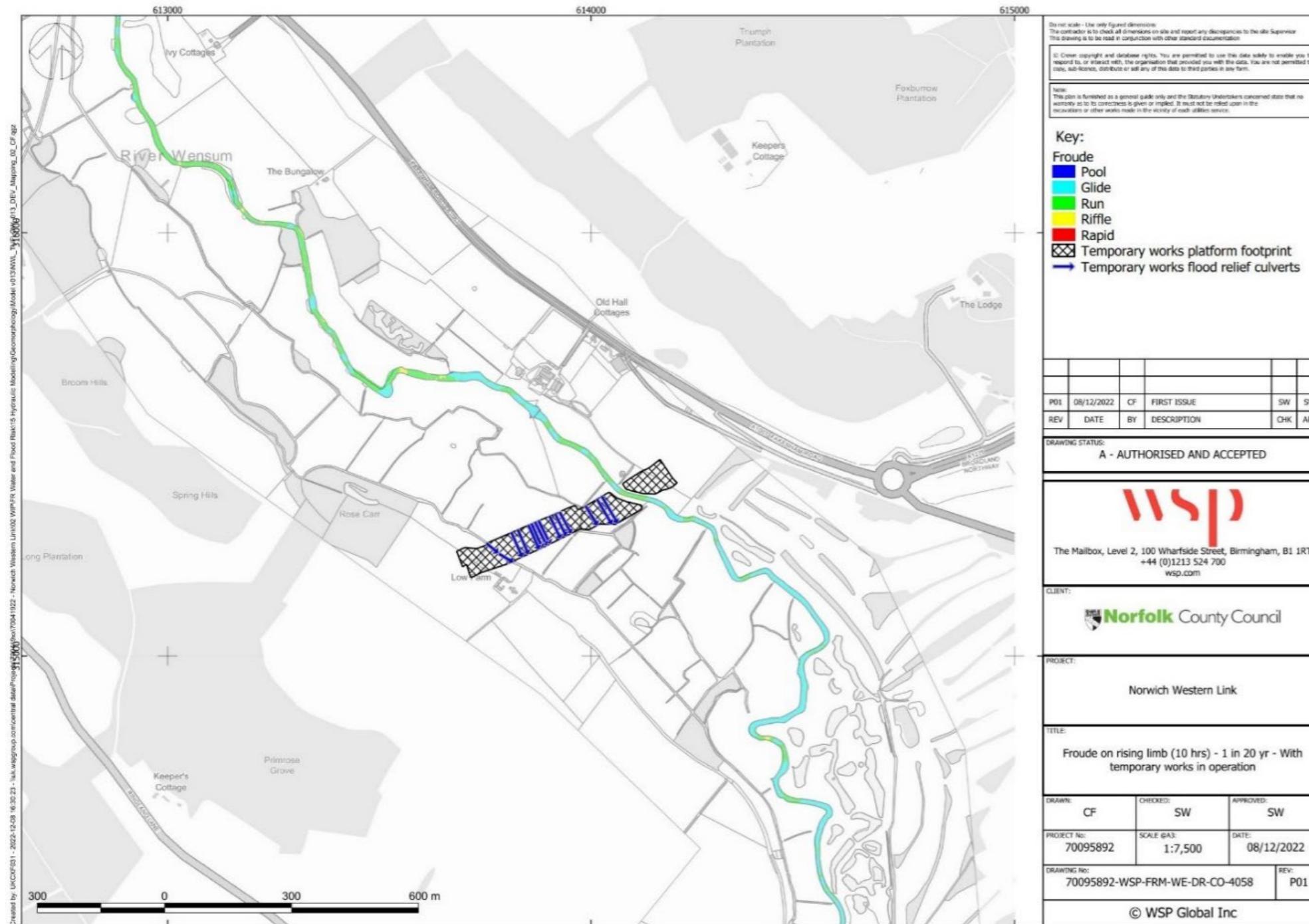




Figure 1-27 Map for the 1 in 100yr With temporary works in operation. Indicating the Froude on rising limb (10 hours). Froude ranges from Pool to Rapid.

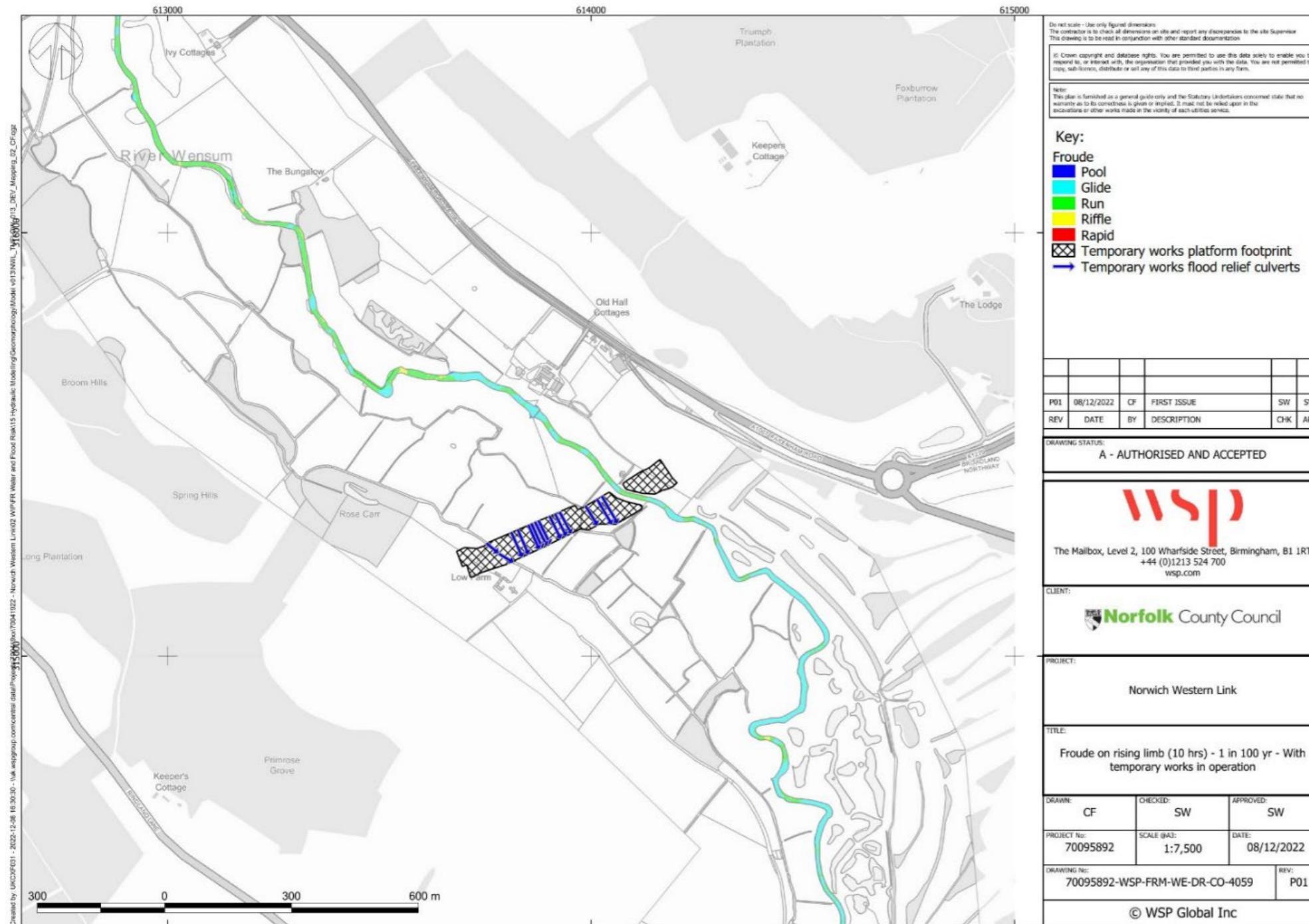




Figure 1-28 Map for the 1 in 100yr +20% Climate Change With temporary works in operation. Indicating the Froude on rising limb (10 hours). Froude ranges from Pool to Rapid.

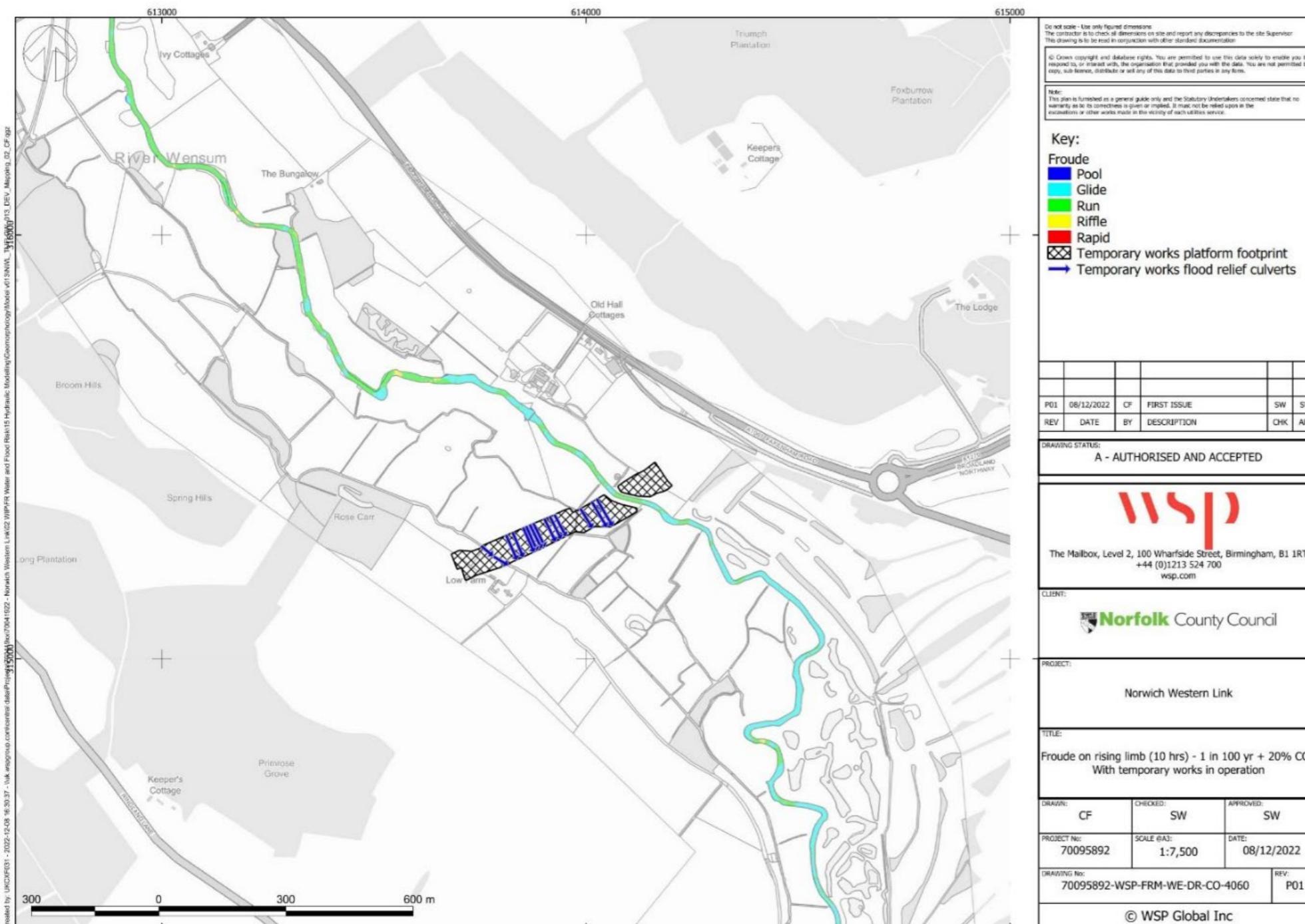




Figure 1-29 Map for the 1 in 2yr With temporary works in operation. Indicating the Froude on rising limb (50 hours). Froude ranges from Pool to Rapid.

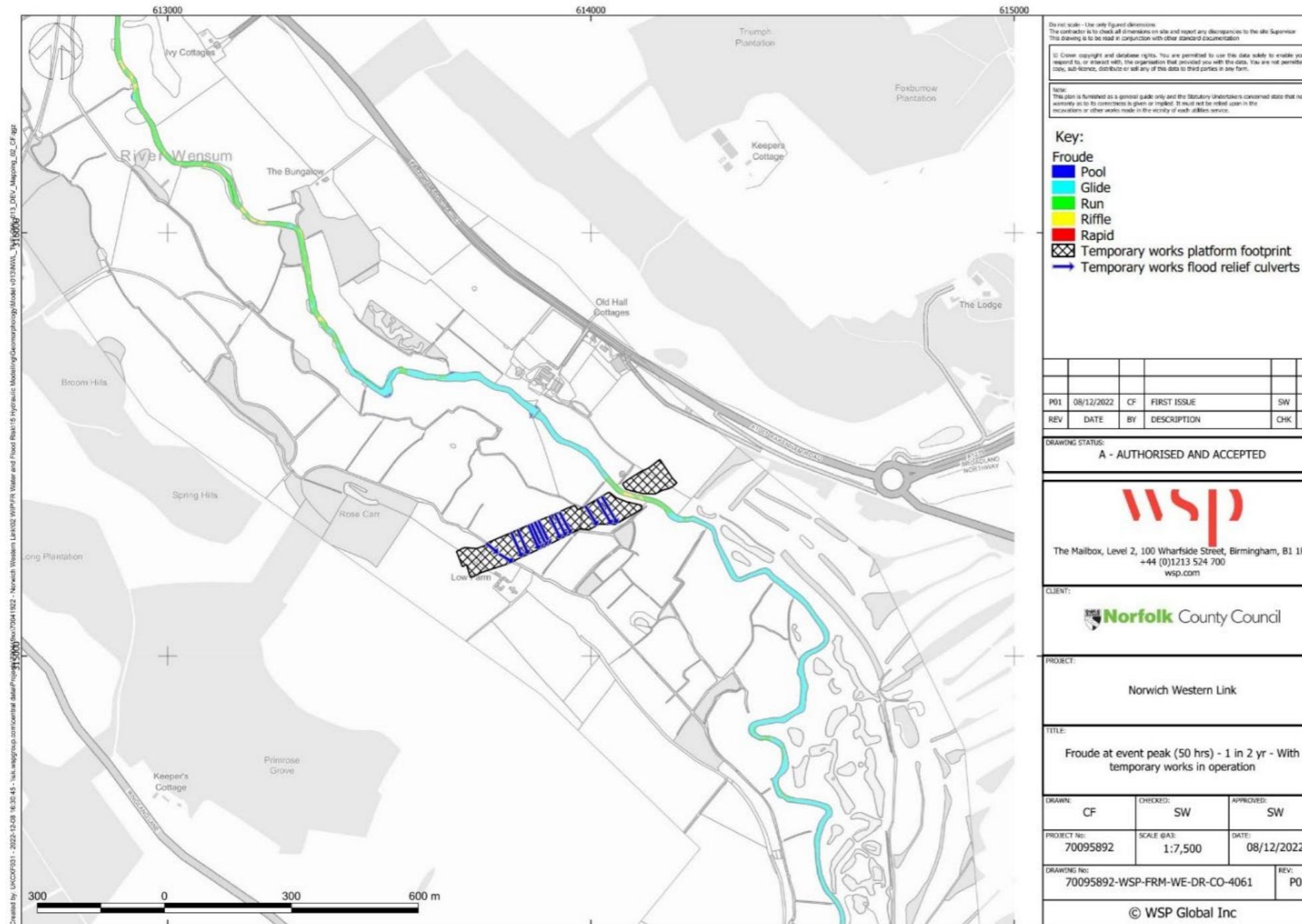




Figure 1-30 Map for the 1 in 20yr With temporary works in operation. Indicating the Froude on rising limb (50 hours). Froude ranges from Pool to Rapid.

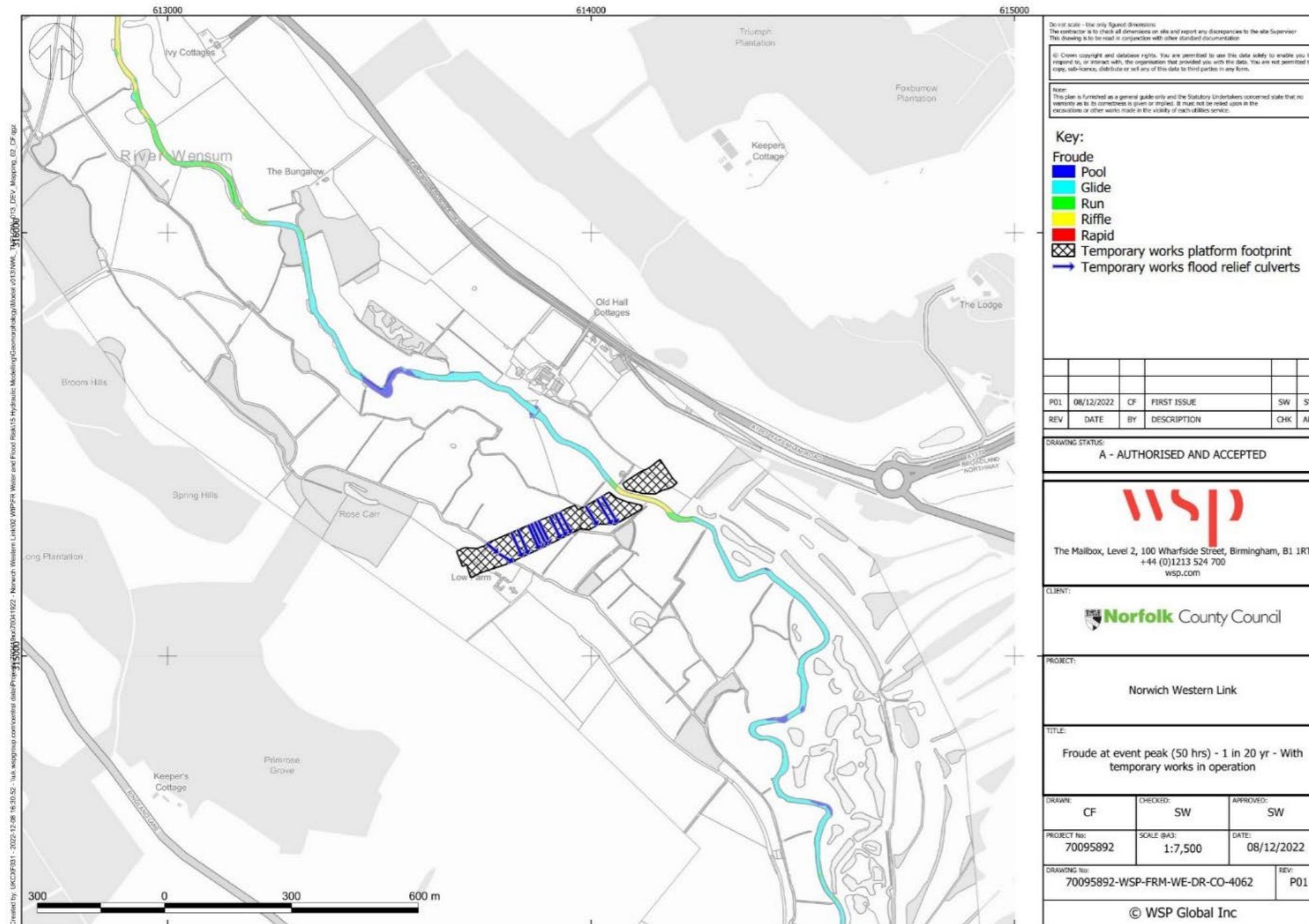
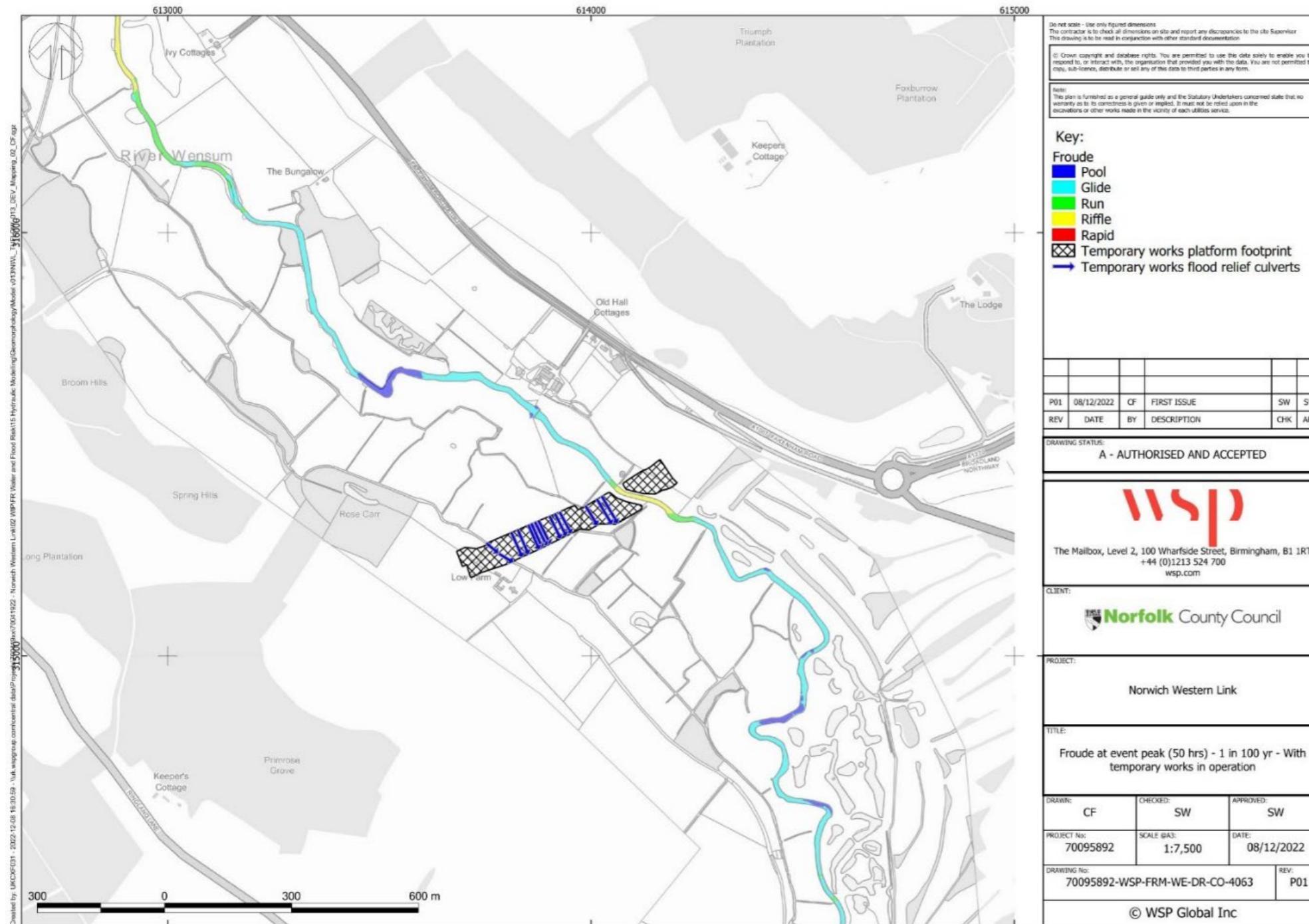




Figure 1-31 Map for the 1 in 100yr With temporary works in operation. Indicating the Froude on rising limb (50 hours). Froude ranges from Pool to Rapid.





**Figure 1-32 Map for the 1 in 100yr +20% Climate Change With temporary works in operation. Indicating the Froude on rising limb (50 hours). Froude ranges from Pool to Rapid.**

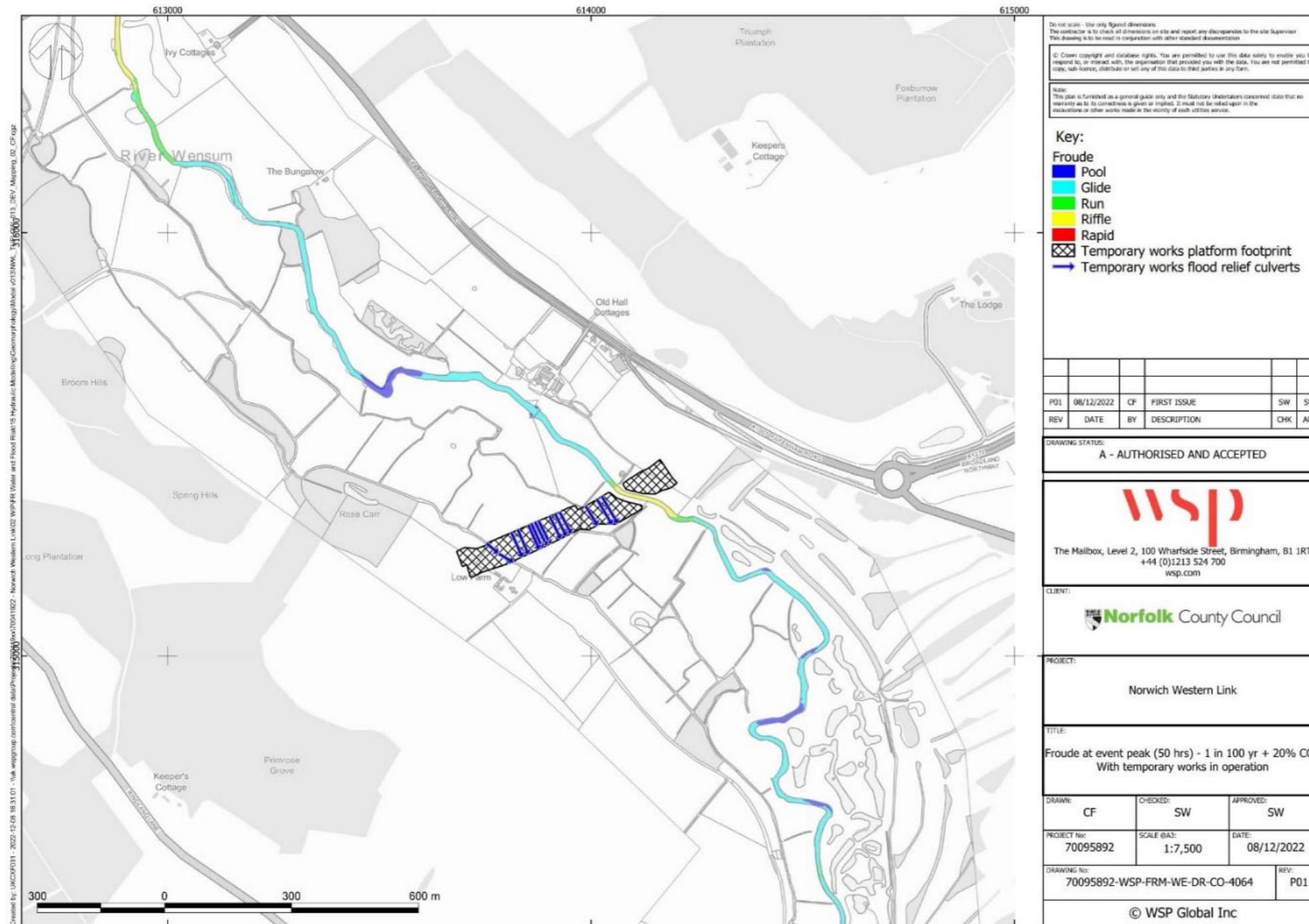
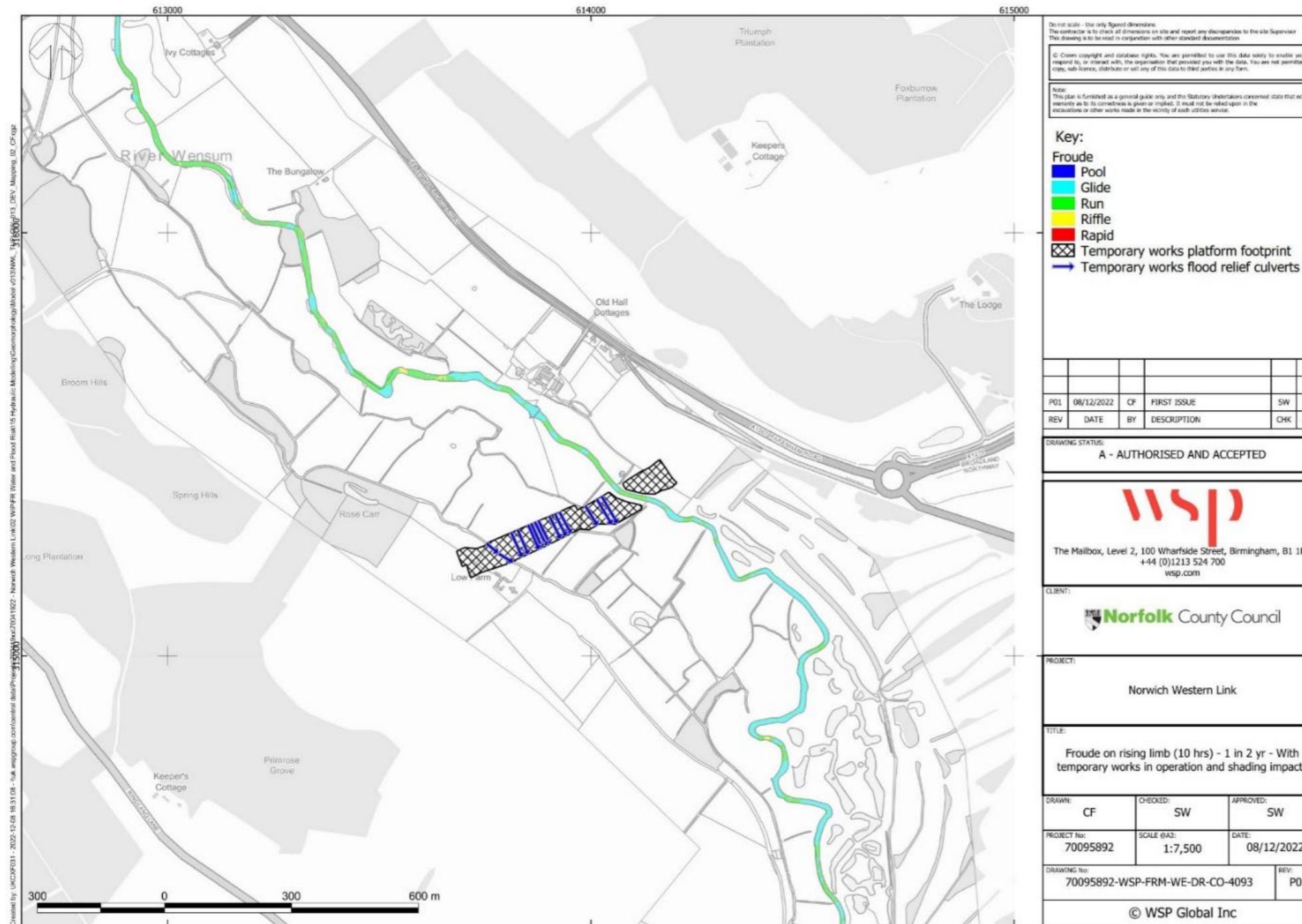




Figure 1-33 Map for the 1 in 2yr With temporary works in operation and shading impacts. Indicating the Froude on rising limb (10 hours). Froude ranges from Pool to Rapid.



**Figure 1-34 Map for the 1 in 20yr With temporary works in operation and shading impacts. Indicating the Froude on rising limb (10 hours). Froude ranges from Pool to Rapid.**

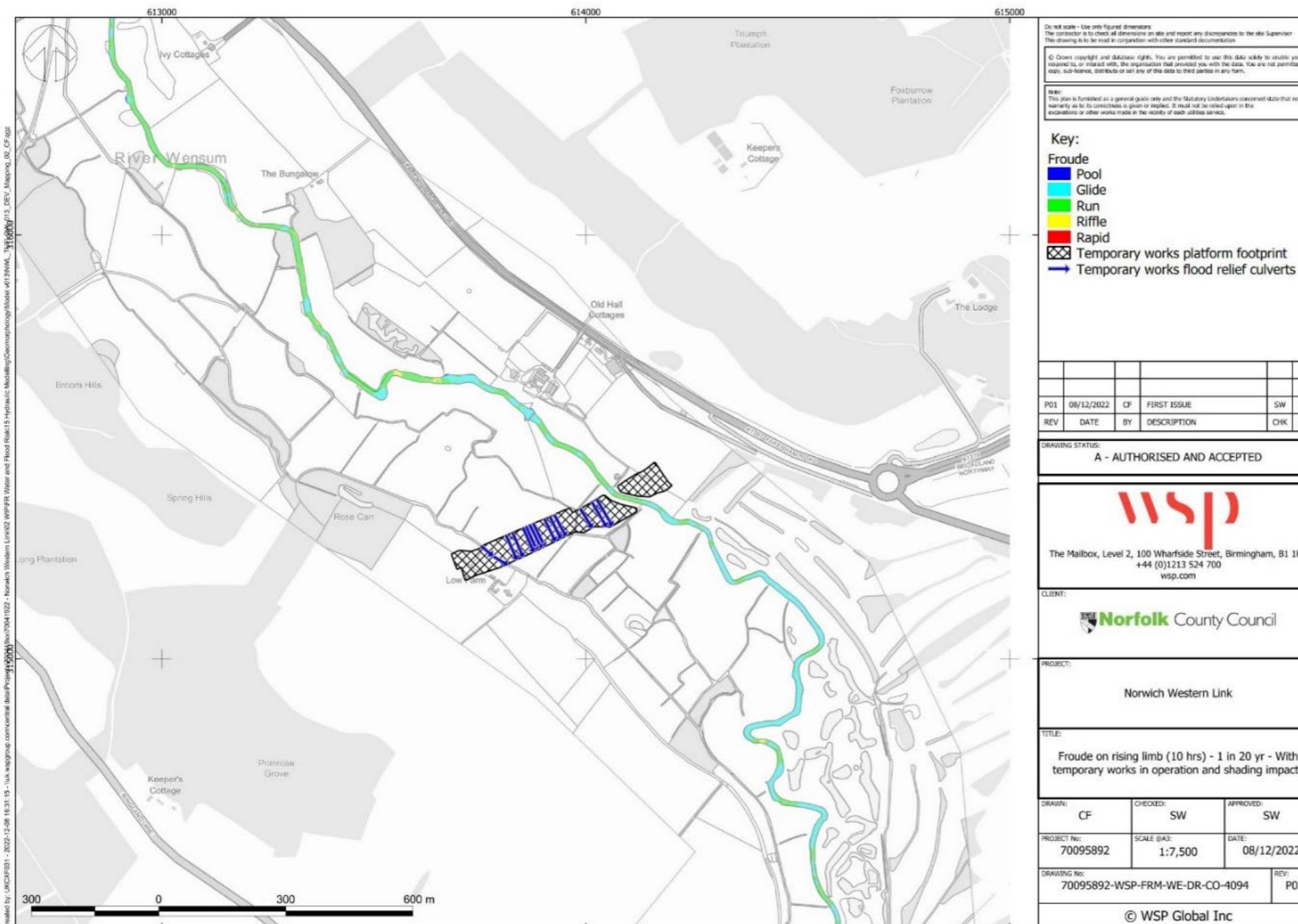
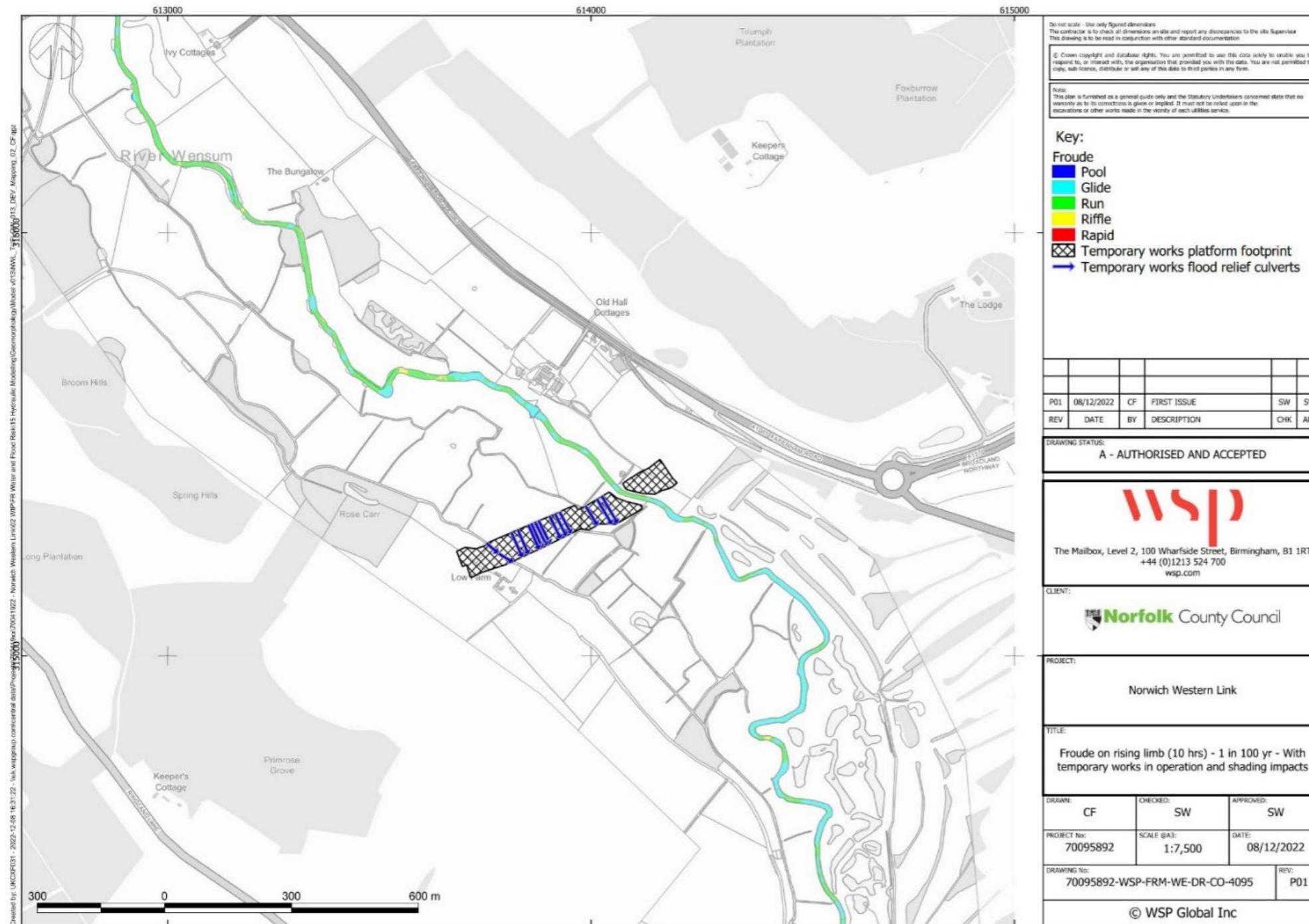




Figure 1-35 Map for the 1 in 100yr With temporary works in operation and shading impacts. Indicating the Froude on rising limb (10 hours). Froude ranges from Pool to Rapid.





**Figure 1-36 Map for the 1 in 100yr +20% Climate Change With temporary works in operation and shading impacts. Indicating the Froude on rising limb (10 hours). Froude ranges from Pool to Rapid.**

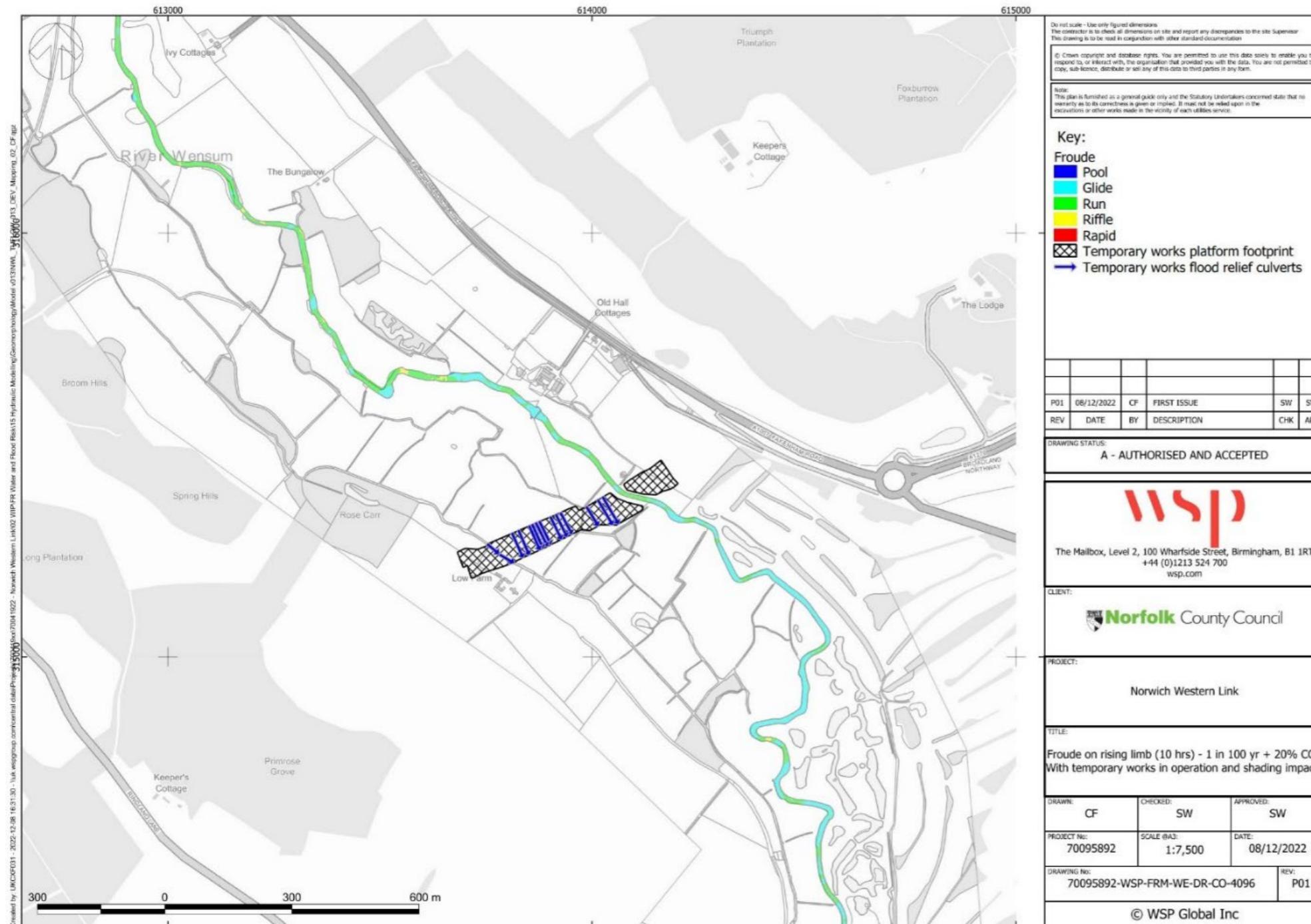




Figure 1-37 Map for the 1 in 2yr With temporary works in operation and shading impacts. Indicating the Froude on rising limb (50 hours). Froude ranges from Pool to Rapid.

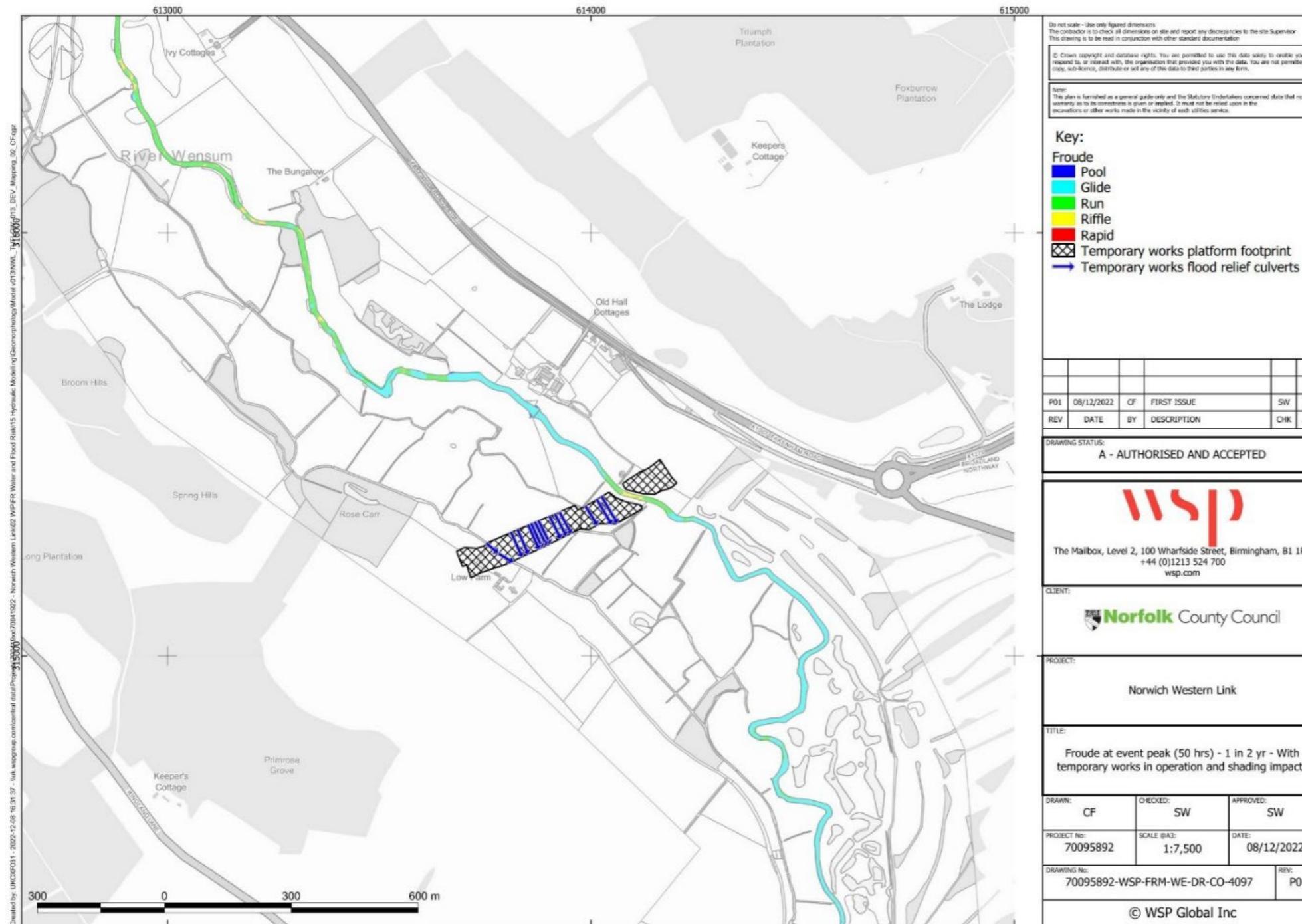




Figure 1-38 Map for the 1 in 20yr With temporary works in operation and shading impacts. Indicating the Froude on rising limb (50 hours). Froude ranges from Pool to Rapid.

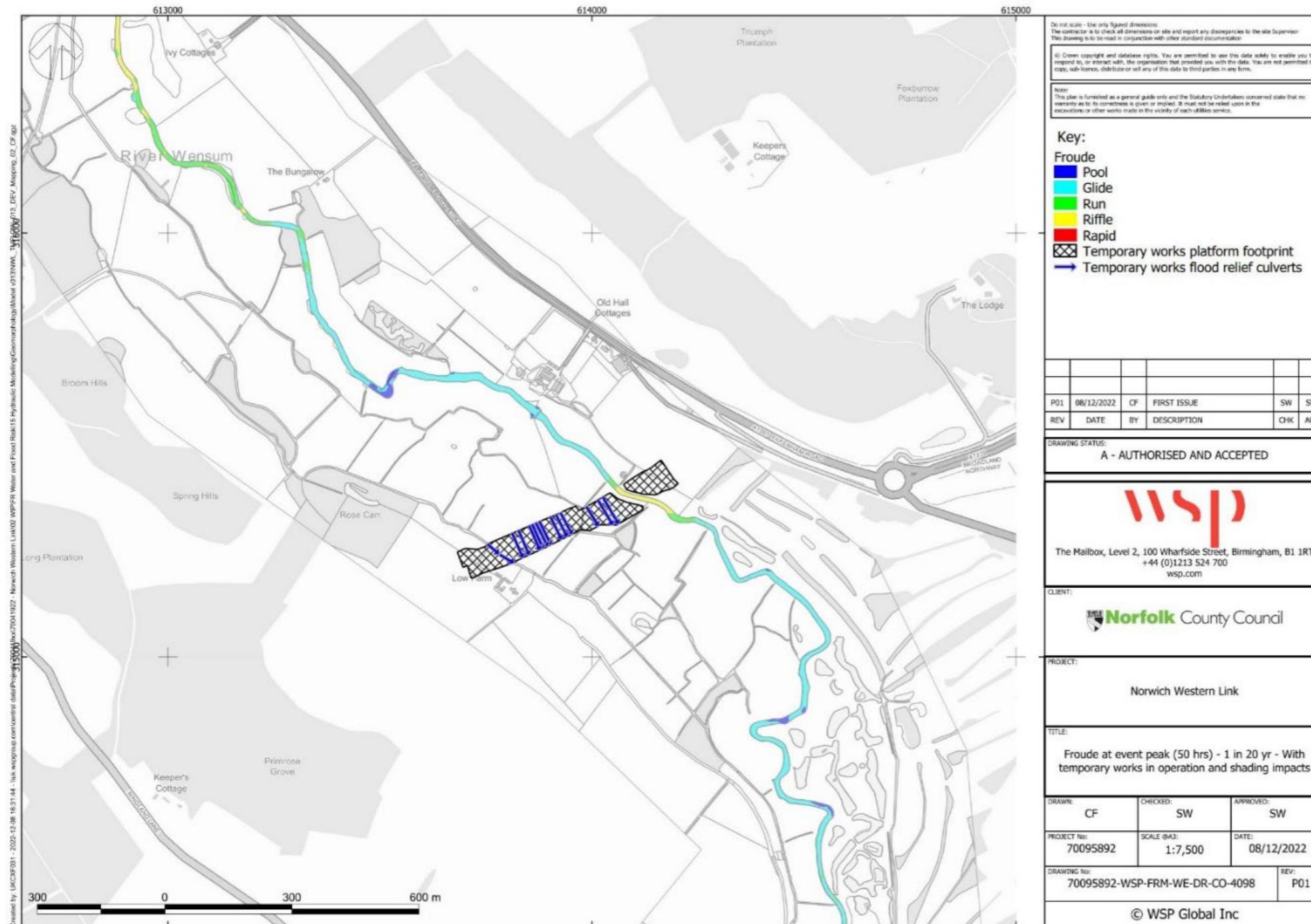
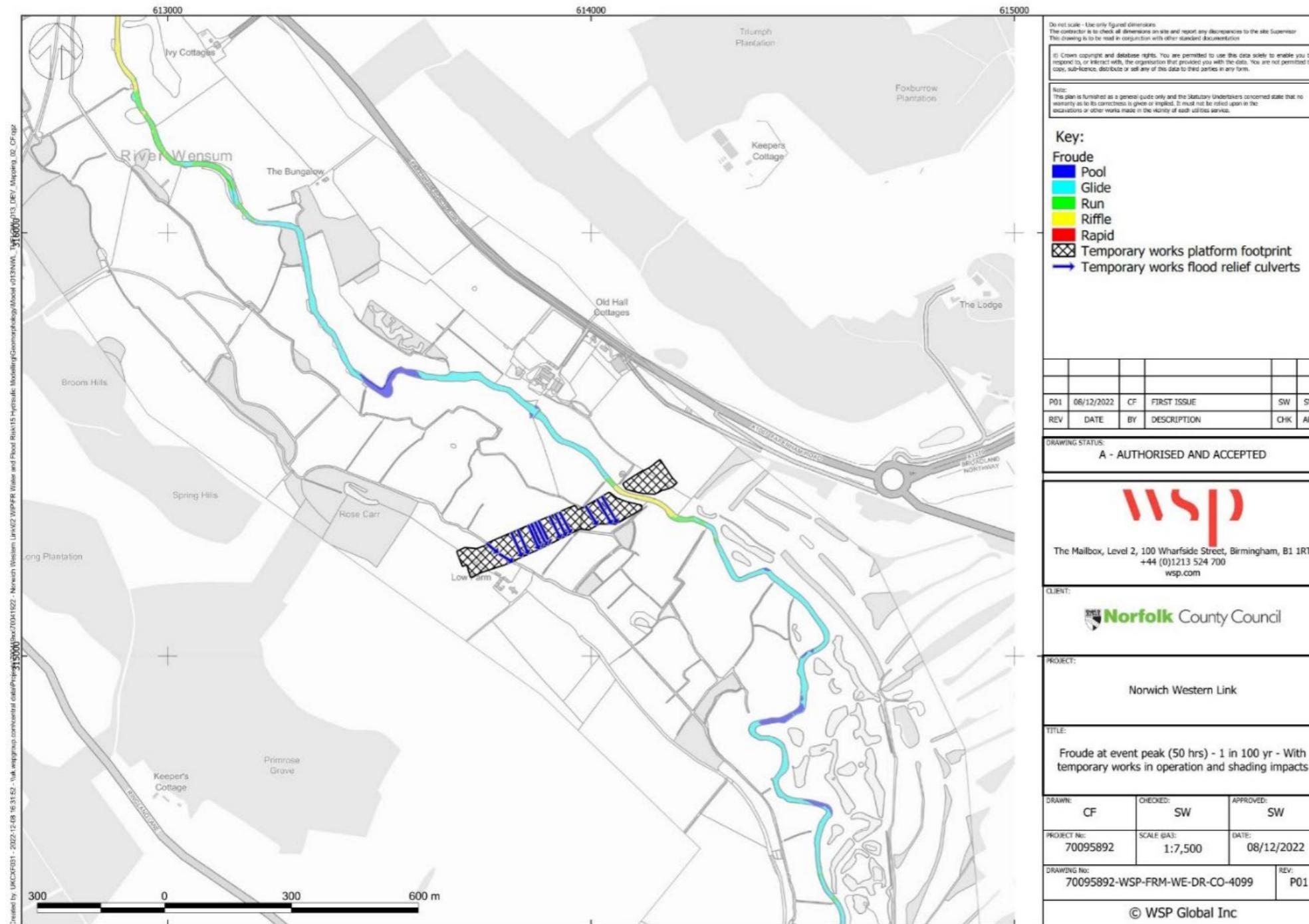




Figure 1-39 Map for the 1 in 100yr With temporary works in operation and shading impacts. Indicating the Froude on rising limb (50 hours). Froude ranges from Pool to Rapid.





**Figure 1-40 Map for the 1 in 100yr +20% Climate Change With temporary works in operation and shading impacts. Indicating the Froude on rising limb (50 hours). Froude ranges from Pool to Rapid.**

