Note / Memo

HaskoningDHV UK Ltd.
Industry & Buildings

To:	Marine Management Organisation
From:	Royal HaskoningDHV (Steven Rayner)
Date:	16 March 2021
Copy:	Tees Valley Combined Authority
Our reference:	PC1084-RHD-SB-EN-CO-EV-1116
Classification:	Project related
Checked by:	Royal HaskoningDHV (Matt Simpson)

Subject: **South Bank Quay marine licence applications - responses to Cefas comments**

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1. INTRODUCTION

Cefas provided its consultation responses to the Marine Management Organisation (MMO) for the South Bank Quay marine licence application (MLA/2020/00506 and 00507) in February 2021. At the request of the applicant, the MMO reviewed the Cefas comments and listed those that required a response in a separate document; this was issued to the applicant via the Marine Case Management System (MCMS) as a Request for Information. Our responses to each of the Cefas comments listed by the MMO as requiring a response are provided below.

2. RESPONSES TO CEFAS COMMENTS

2.1. Underwater noise

2.1.1. Cefas comment

On page 316, the report states that “underwater noise levels expected during TSHD use are likely to fall within the range experienced with passing vessels, although it will be sustained for as long as dredging is ongoing (a period of approximately four months)”. Page 317 then states that “the TSHD campaign is predicted to last for approximately four weeks”. Please can the duration of the proposed dredging works be clarified?

2.1.2. Applicant response

The indicative durations of the proposed dredging works are detailed in Section 3.6.1 of the EIA Report. The proposed dredge can be summarised as follows:

- Removal of soft material above -5m bCD using a backhoe dredger (approximately four weeks).
- Removal of soft material below -5m bCD using a backhoe dredger and a TSHD (approximately four weeks).
- Removal of soft material in the turning circle using a backhoe dredger and a TSHD (approximately one week).
- Removal of hard material using a backhoe dredger (approximately 10 weeks).

The proposed dredging activities are therefore predicted to take in the order of five months to complete.

2.2. Coastal processes

2.2.1. Cefas comment

Disposal assessments do not present the maximum bed thickness change due to the sediment disposal, though this would be the most important coastal process impact. In contrast to all other data presented, deposition at the disposal site is presented for a single disposal event only (Figure 6.65), but the key data required is the maximum total bed level change from the cumulative disposal of the entire dredge load. This should be presented and discussed with respect to the licensed disposal site.

2.2.2. Applicant response

The licensed offshore disposal site is located within a water depth of approximately 43.5m, and is some 12km offshore from the mouth of the Tees. Based upon a conceptual understanding that was developed prior to the modelling, we envisaged that the disposed sediment would mostly remain within, or very close to the surrounding boundaries of, the licensed disposal site in these water depths and therefore considered that the most important *potential* coastal process impact would be changes in suspended sediment plumes, which could extend into considerably wider areas of surrounding water column / sea bed well beyond the boundaries of the licensed disposal site.

For this reason, the disposal modelling was undertaken with a 'worst case' scenario with respect to suspended sediment plumes; that being each disposal within the licensed disposal site being released at a common point on each occurrence. This was to investigate the worst case potential for coalescence of plumes from separate disposal activities over the whole dredging campaign.

As can be seen from the modelling, a very comprehensive dredging and disposal schedule was developed. However, we acknowledge that whilst releasing each disposal activity at a common point within the licensed disposal site is a worst case for potential plume coalescence it is not realistic in terms of changes in bed thickness. This is because if all disposals were made at a common point, a large cone of material would form on the sea bed, dictated by the angle of repose of the material and truncated at its crest by the action of waves and tidal currents. This would give an unrealistic maximum change in sea bed thickness at the point of release and immediate surrounding area.

It is for this reason that we elected to present in Figure 6.65 an example of the maximum changes in sea bed thickness caused by deposition of material from the sediment plume associated with one single release event (this example being from Stage 1). This shows the very low magnitude of the changes from one event. Figure 6.66 places these changes from one event very much in the context of the wider spatial context of the surrounding environment for scale.

We then argued that in practice, successive disposals will be from different places within the licensed disposal site over time, and at different states of the tidal cycle, so resulting deposition will occur at different locations across the disposal site, at relatively low magnitudes, with negligible changes anticipated beyond the boundaries of the site.

Cefas has requested that the maximum total bed level change from the cumulative disposal of the entire dredge load be presented and discussed with respect to the licensed disposal site. Given the modelling that has already been undertaken, with all disposal releases from a common point, we can easily extract a timeseries of changes in bed thickness at the four 'timeseries analysis' points (the location of which is shown in Figure 6.67 of the chapter) to correspond with the timeseries plot of changes in SSC that was presented in Figure 6.68 of the chapter. For ease of reference, these two figures are reproduced below, with the corresponding bed thickness change plot newly added below as an additional figure.

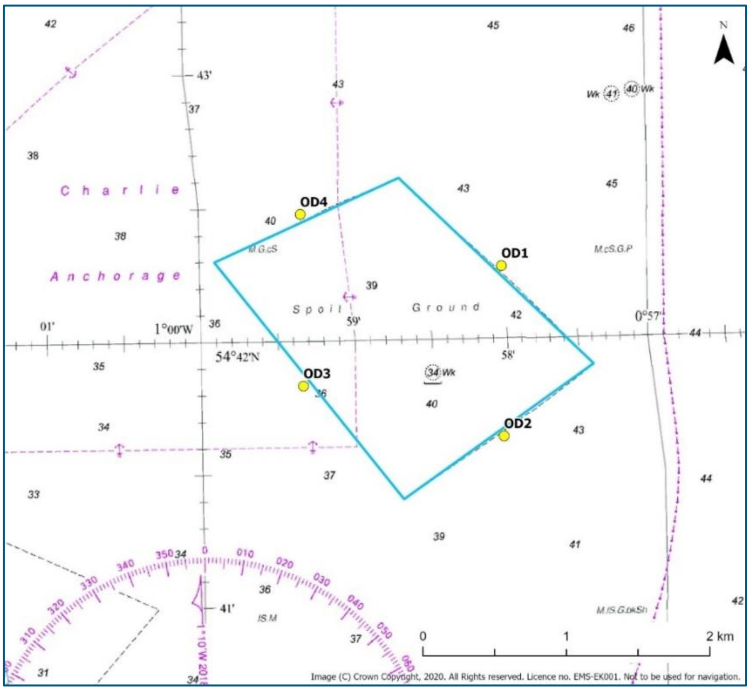


Figure** Error! No text of specified style in document.**.17 Location of points around the offshore disposal site used for of timeseries analysis of changes in SSC and sediment deposition (reproduced from ES chapter)

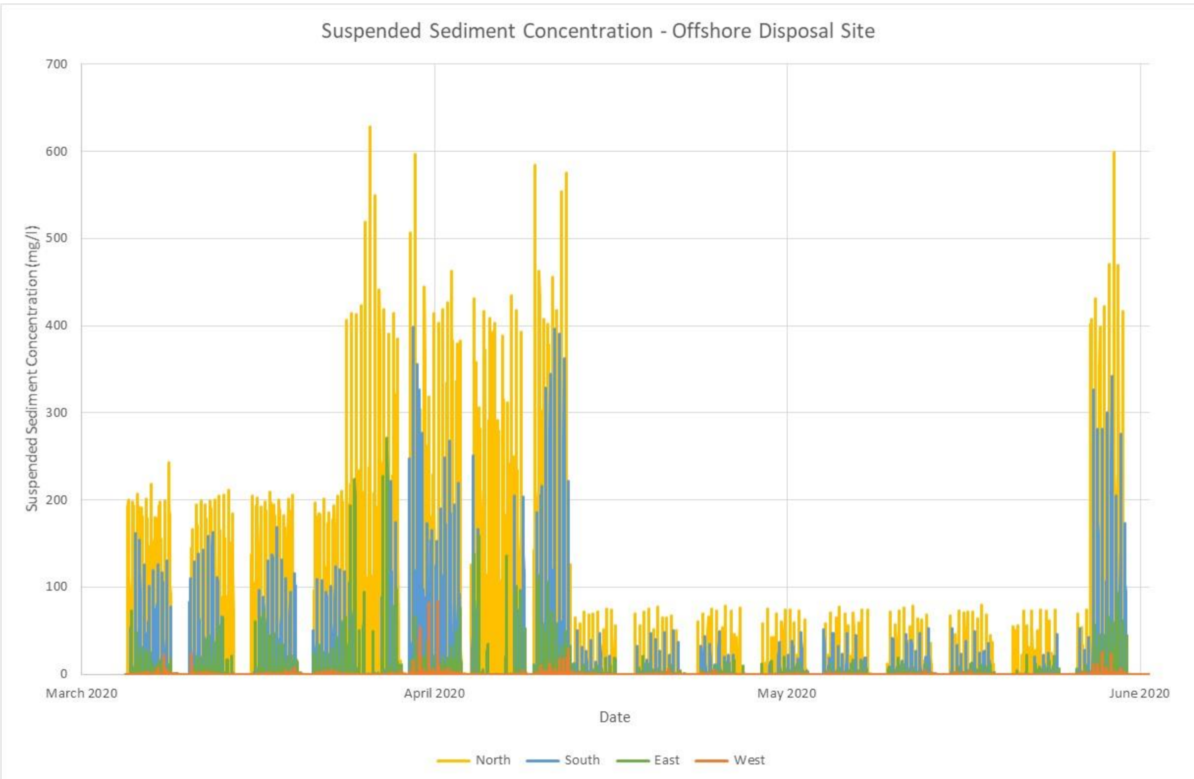
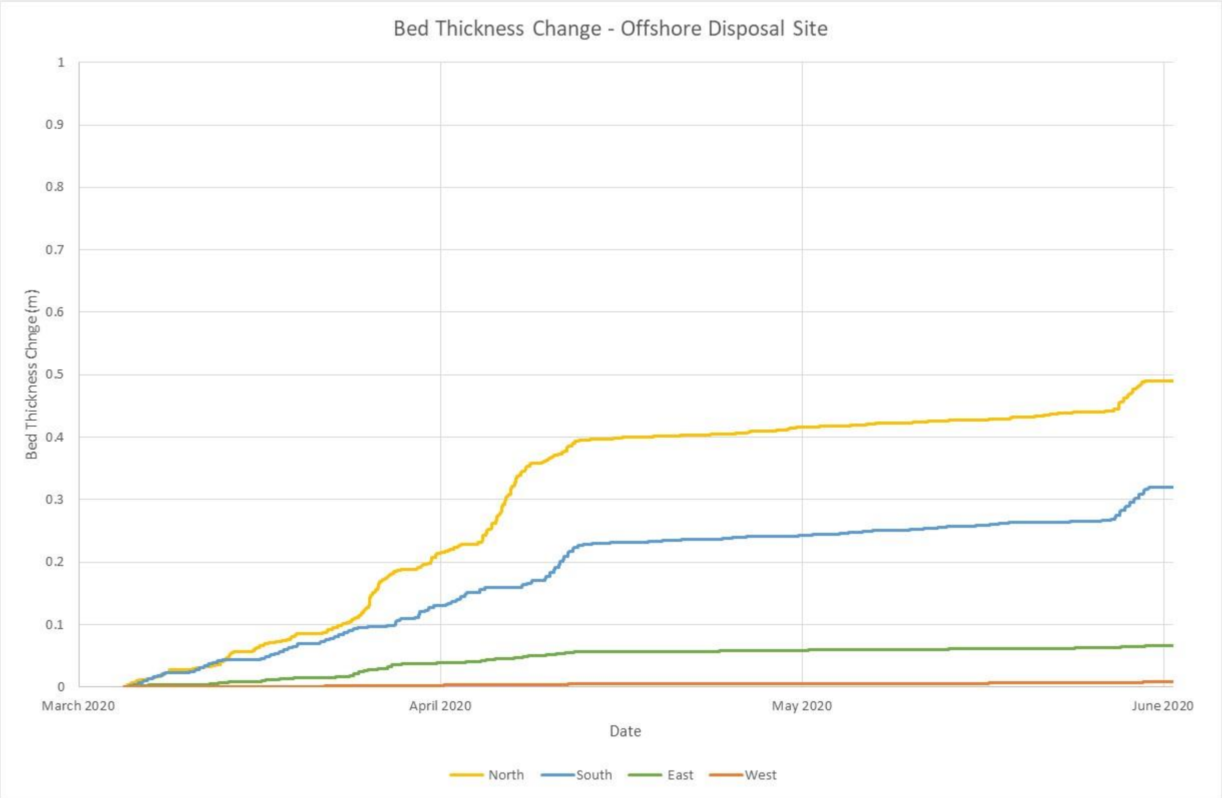


Figure** Error! No text of specified style in document.**.68 Timeseries of changes in SSC at the offshore disposal site monitoring points (reproduced from ES chapter)



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Additional figure monitoring points ***Timeseries of changes in sediment deposition at the offshore disposal site***

In interpreting the additional figure presented above, it should be remembered that the model simulation assumed that all disposals were made at a common point in the centre of the disposal site, but in reality different points will be used for subsequent deposits and therefore the maximum SSC and sediment deposition values will be lower than those presented (but might spread over a wider area at lower concentrations / thicknesses). At the offshore disposal site monitoring points (locations shown in **Figure 6.66**), SSC is enhanced by the greatest values at the points beyond the northern and southern boundaries (**Figure 6.67**). This correlates to the areas where a plume will extend along the axis of the prevailing tidal currents. Just beyond the northern boundary, peak SSC enhancement can reach 600mg/l and at the southern boundary 400mg/l. Just beyond the western and eastern boundaries the peak values are typically much lower (<50mg/l) but on occasion can temporarily reach 100-200mg/l for short durations.

Corresponding with these patterns, sediment deposition under this worst case is greatest just beyond the northern boundaries (up to 0.5m) and southern boundaries (around 0.3m) (**Figure 6.68**), and considerably lower just beyond the western and eastern boundaries (<6cm). Given that the water depth in this offshore area is approximately 43.5m, this maximum scale of potential change is not deemed morphologically significant and we trust that this additional figure and interpretation satisfies Cefas' response.

2.2.3. Cefas comment

The ES appears to make limited specific mention of the rock bed created in the berthing pocket (other than in terms of bed area lost). In view of the potentially large changes in flow velocity (see following comment), should the dynamic consequence of the change in bed substrate also be addressed e.g., does the potentially accelerated deposition due to flow velocity reduction impact the future dredge requirement in this area?

Royal HaskoningDHV

2.2.4. Applicant response

This has been considered in the assessments in Section 6.6.4, although admittedly without specific reference to the "rock bed created in the berthing pocket". We do envisage that there will be a (small) increase in annual maintenance dredge requirement at this location, but that this is not expected to be significant in the context of the annual volumes (and variability therein) for either this reach individually or the estuary as a whole. As detailed in Section 7.6.1 of the EIA Report, the potential increase in maintenance dredging requirement is not expected to be significant and would be managed within existing maintenance dredging and offshore disposal regimes.

2.2.5. Cefas comment

Flow speeds due to scheme are described as being reduced by 'only' 5-10cm/s, but this is not discussed in terms of actual flow speeds at the site, and it appears that this may be up to 50% reduction? Dredging of the turning circle is also reported as having no hydrodynamic impact, which seems counter-intuitive. The applicant should provide a clear description of the baseline case and indicate the magnitude of the change relative to the present. The dredged pocket and area of affected flows appears to occupy the full width of the channel and therefore may have consequences on both banks, leading to a possible long-lasting change, in turn affected by future climate-induced changes. Cefas are concerned that you have not justified your conclusions of the significance of this specific impact sufficiently.

2.2.6. Applicant response

There are a number of points raised in the above comment.

1. We gave consideration to reporting the changes in flow speeds as a percentage of the baseline values, but felt that this would be misleading because the baseline values in some areas are already so low. We feel that what is more important is understanding: (i) whether or not there is a change in the 'state' of the process in any location; and (ii) what the implications of any such change are.

   The modelling results show that (mostly) reductions in flow will be confined to the reach of the estuary containing the proposed dredging/quay. The effect can, at some tidal states (but not all), be seen across the full width of the channel, as stated by Cefas.

   This reach already experiences deposition of sediments sufficient to necessitate maintenance dredging. After the scheme is in place there will be no change in the local process (i.e. it will not revert from deposition to erosion) and we have acknowledged that there may be an increase in requirement for maintenance dredging. There will be no direct change in baseline hydrodynamics beyond the reach containing the scheme (upstream or downstream). The critical question therefore is will the increased deposition in this reach have an indirect effect on the wider-scale estuary (curtailing sediment supply elsewhere), and we believe that because the anticipated increase in deposition is so low, there would not be such wider-scale effect.

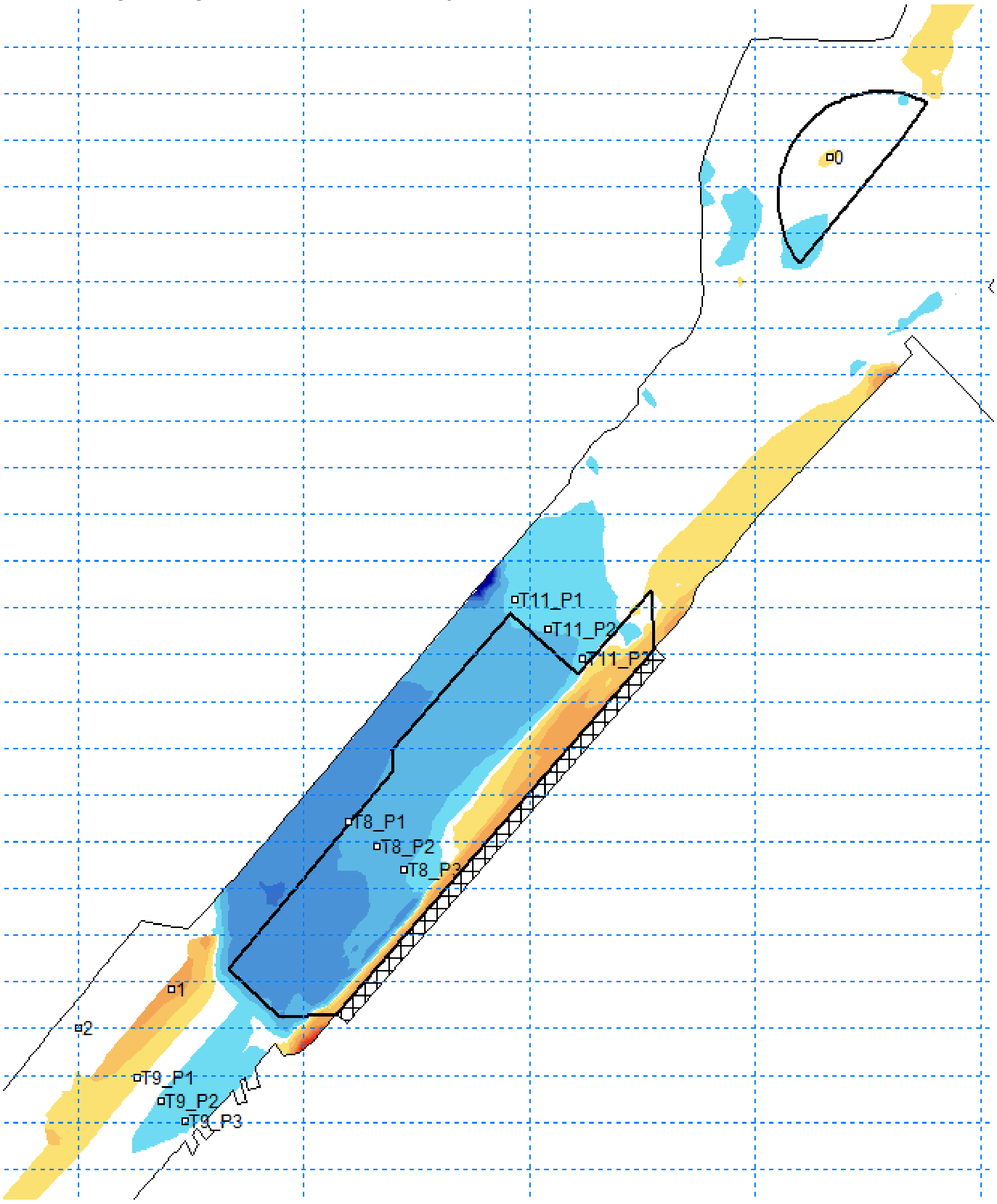
2. We have not claimed that the dredging of the Tees Dock turning circle will have "no hydrodynamic impact". We stated that these is no "measurable change". There is a change within the turning circle, but the change is less than ±0.05m/s and so not displayed on the plot.

3. Given Cefas' concern that we have not justified our conclusions of the significance of these specific impacts sufficiently, we have extracted further timeseries results from the model at:

   a. three points along each of transects 11 (downstream), 8 (at site) and 9 (upstream)
   b. two points at the North Tees Mudflat
   c. one point from the Tees Dock Turning Circle.

These results have been compared against the critical velocities for sediment motion.

As can be seen from the plots of change in baseline current speed provided within the EIA Report chapter, no further reaching changes were modelled beyond these reaches.

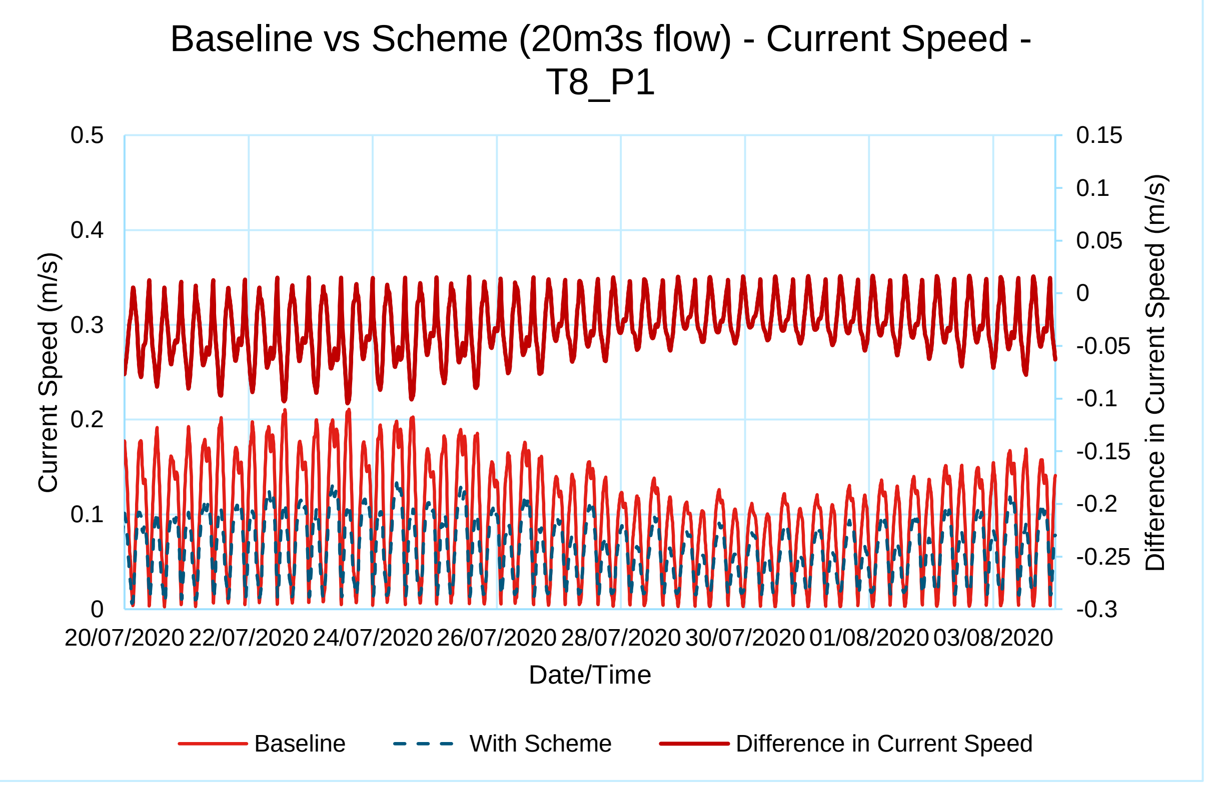


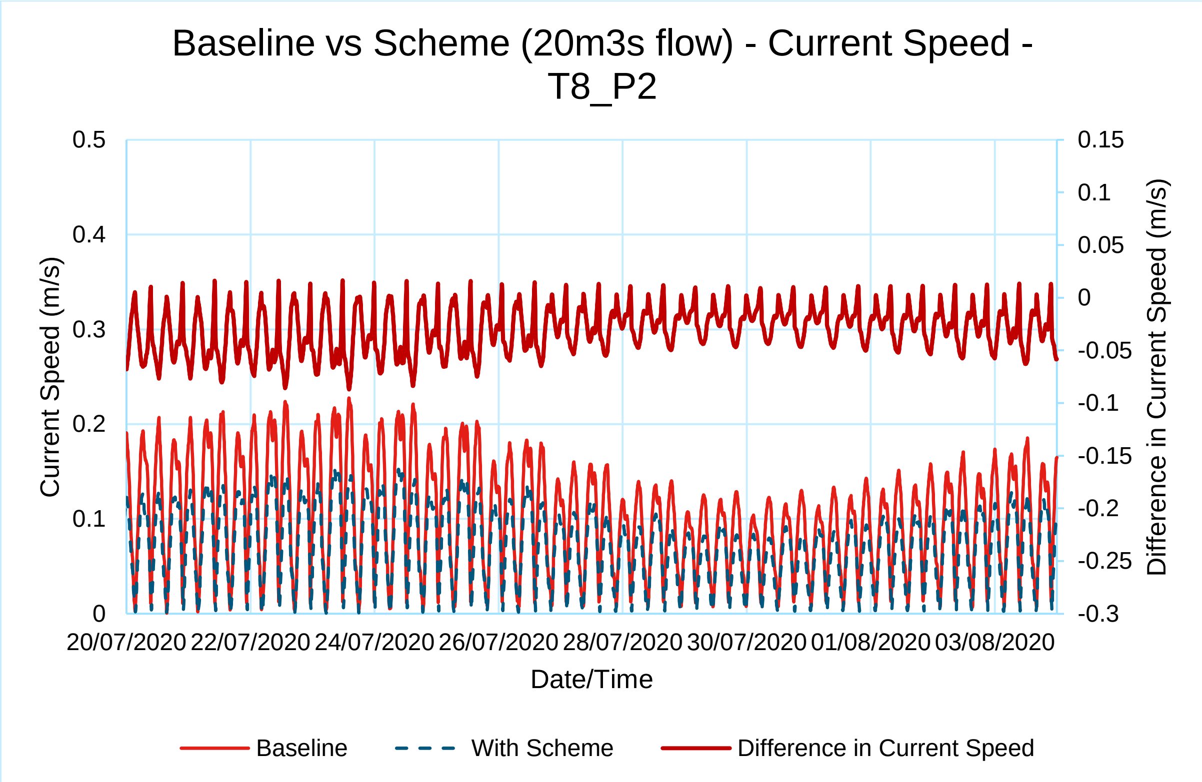
Additional figure: Location of model timeseries extraction points superimposed upon maximum change in baseline tidal currents simulated during any single timestep of the modelling cycle (note this extent of impact will not occur synchronously; rather it presents the maximum impact that may be observed (ephemerally) at each point)

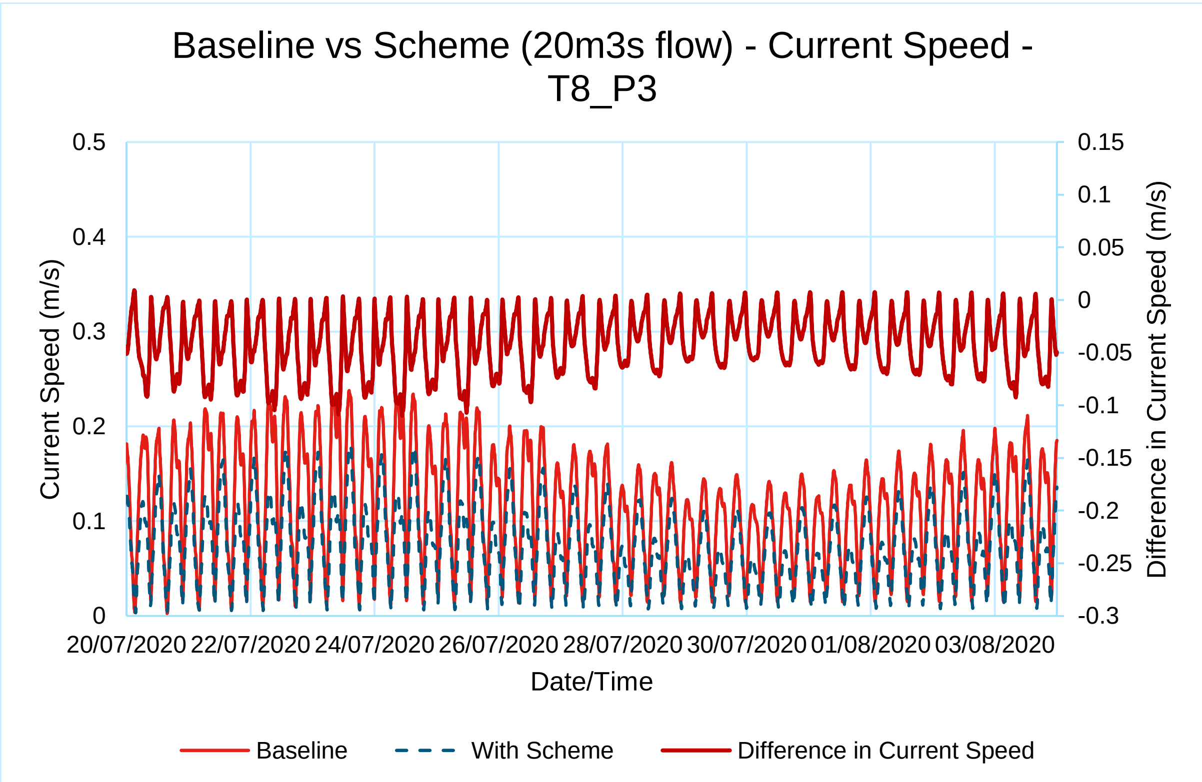
At the site (Transect 8), results are presented for points T8_1, T8_2 and T8_3 below.

- Baseline peak currents are typically 0.10 – 0.20m/s depending on stage of the tidal cycle.
- With scheme peak currents are typically 0.05 – 0.15m/s depending on stage of the tidal cycle.

- The reductions in baseline peak currents are typically between 0.03 – 0.1m/s, with smaller reductions during neap tides (typically 0.03 – 0.06m/s) than during spring tides (typically 0.06 – 0.10 m/s)
- In the baseline, the maximum peak currents of 0.20m/s are sufficient to mobilise sediments in the grain size range 0.05mm or smaller.
- With the scheme, the maximum peak currents of 0.15m/s are sufficient to mobilise sediments in the grain size range 0.02mm or smaller.
- There will therefore be potential for a slight tendency for increased deposition of fine materials (if present) in the areas affected at the site (as represented by Transect 8).

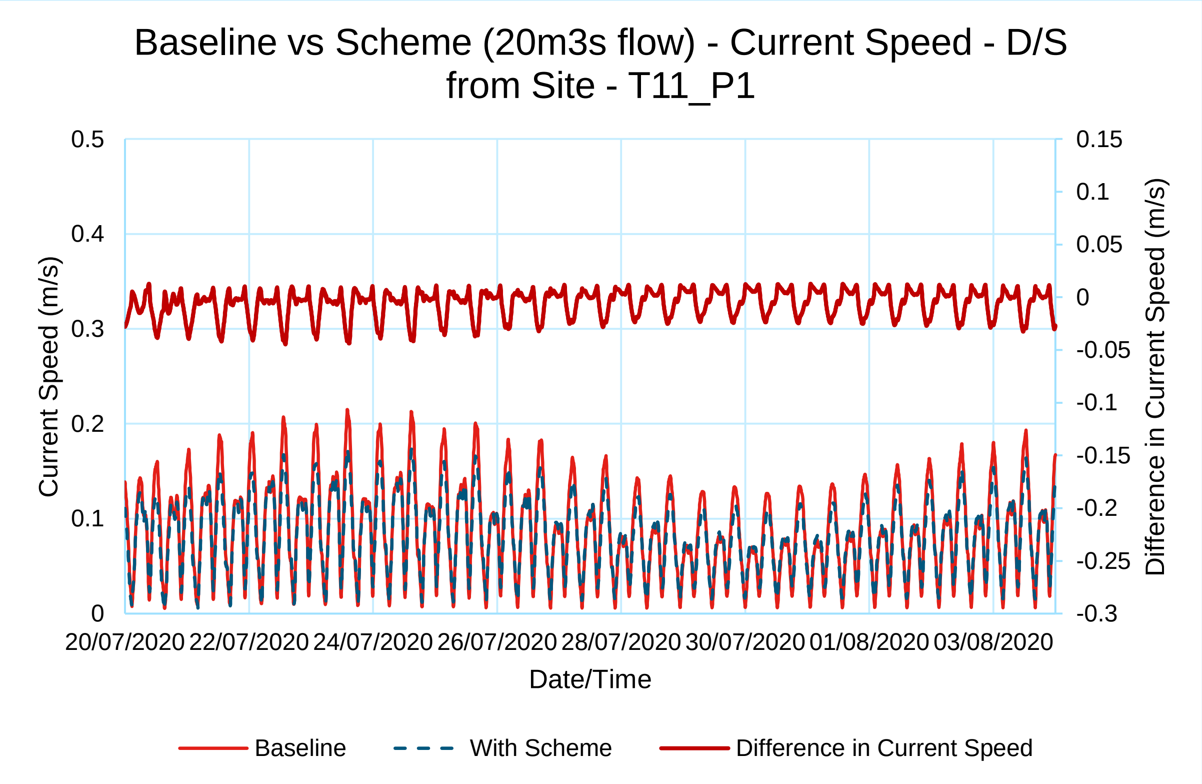


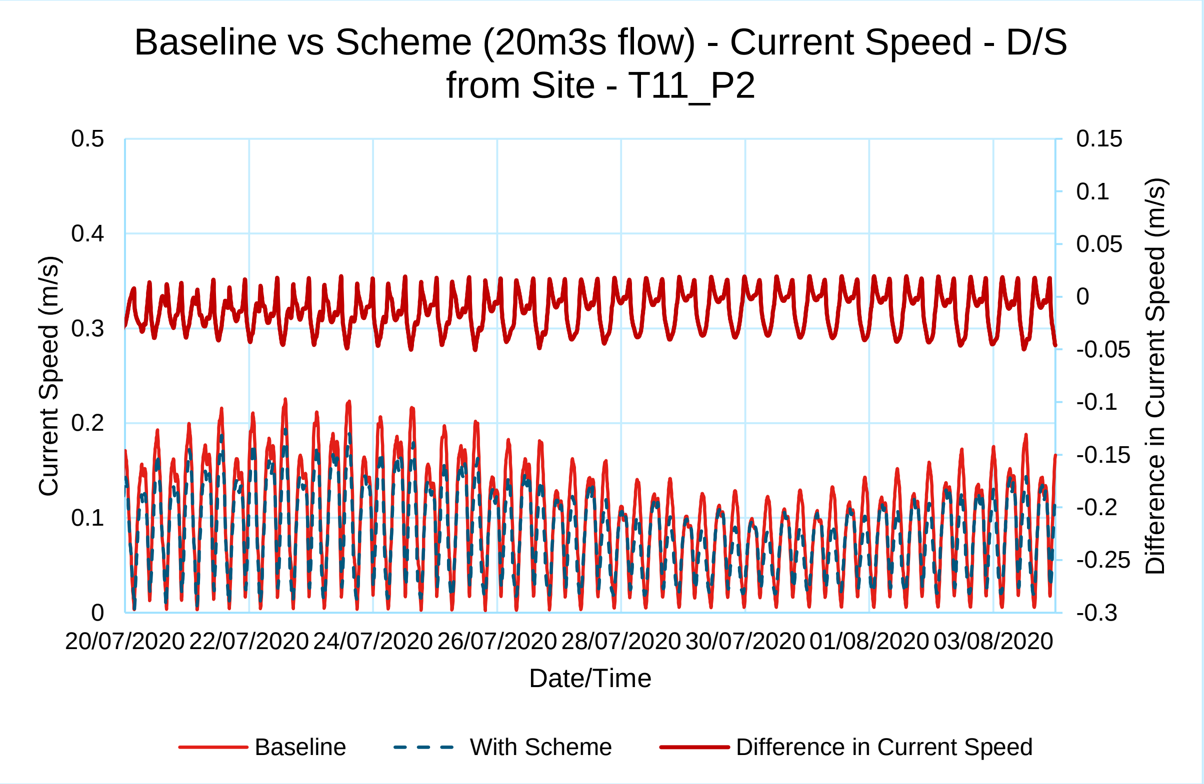

Baseline vs Scheme (20m3s flow) - Current Speed - T8_P2
0.5
0.4
0.3
0.2
0.1
0
Current Speed (m/s)
0.15
0.1
0.05
0
-0.05
-0.1
-0.15
-0.2
-0.25
-0.3
Difference in Current Speed (m/s)
20/07/2020 22/07/2020 24/07/2020 26/07/2020 28/07/2020 30/07/2020 01/08/2020 03/08/2020
Date/Time
Baseline
With Scheme
Difference in Current Speed


Baseline vs Scheme (20m3s flow) - Current Speed - T8_P3
0.5
0.4
0.3
0.2
0.1
0
Current Speed (m/s)
0.15
0.1
0.05
0
-0.05
-0.1
-0.15
-0.2
-0.25
-0.3
Difference in Current Speed (m/s)
20/07/2020 22/07/2020 24/07/2020 26/07/2020 28/07/2020 30/07/2020 01/08/2020 03/08/2020
Date/Time
Baseline
With Scheme
Difference in Current Speed

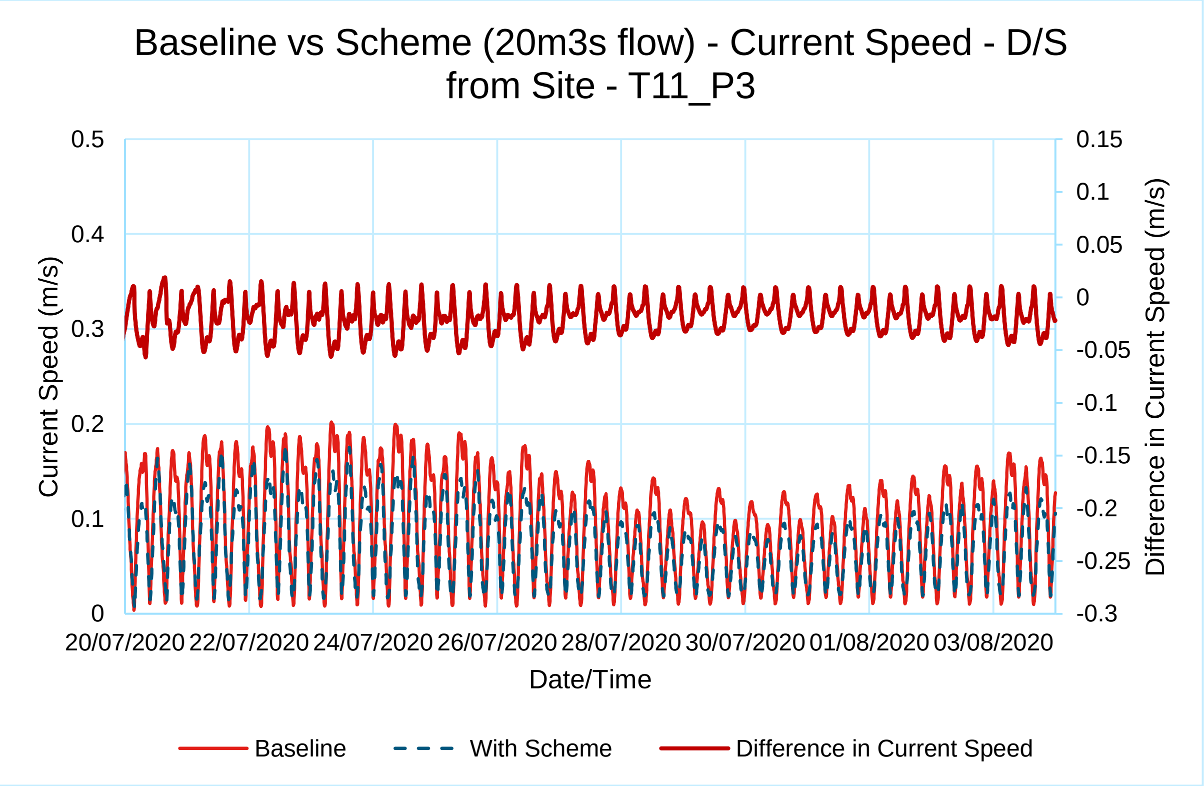
Downstream of the site (Transect 11), results are presented for points T11_1, T11_2 and T11_3 below.

- Baseline peak currents are typically 0.06 – 0.22m/s depending on stage of the tidal cycle.
- With scheme peak currents are typically 0.05 – 0.19m/s depending on stage of the tidal cycle.
- The reductions in baseline peak currents are typically between 0.025 – 0.045m/s, with marginally smaller reductions during neap tides (typically 0.025 – 0.030 m/s) than during spring tides (typically 0.030 – 0.045 m/s)
- In the baseline, the maximum peak currents of 0.21m/s are sufficient to mobilise sediments in the grain size range 0.09 mm or smaller.
- With the scheme, the maximum peak currents of 0.19m/s are sufficient to mobilise sediments in the grain size range 0.04 mm or smaller.
- There will therefore be potential for a slight tendency for increased deposition of fine materials (if present) in the areas affected downstream of site (as represented by Transect 11).





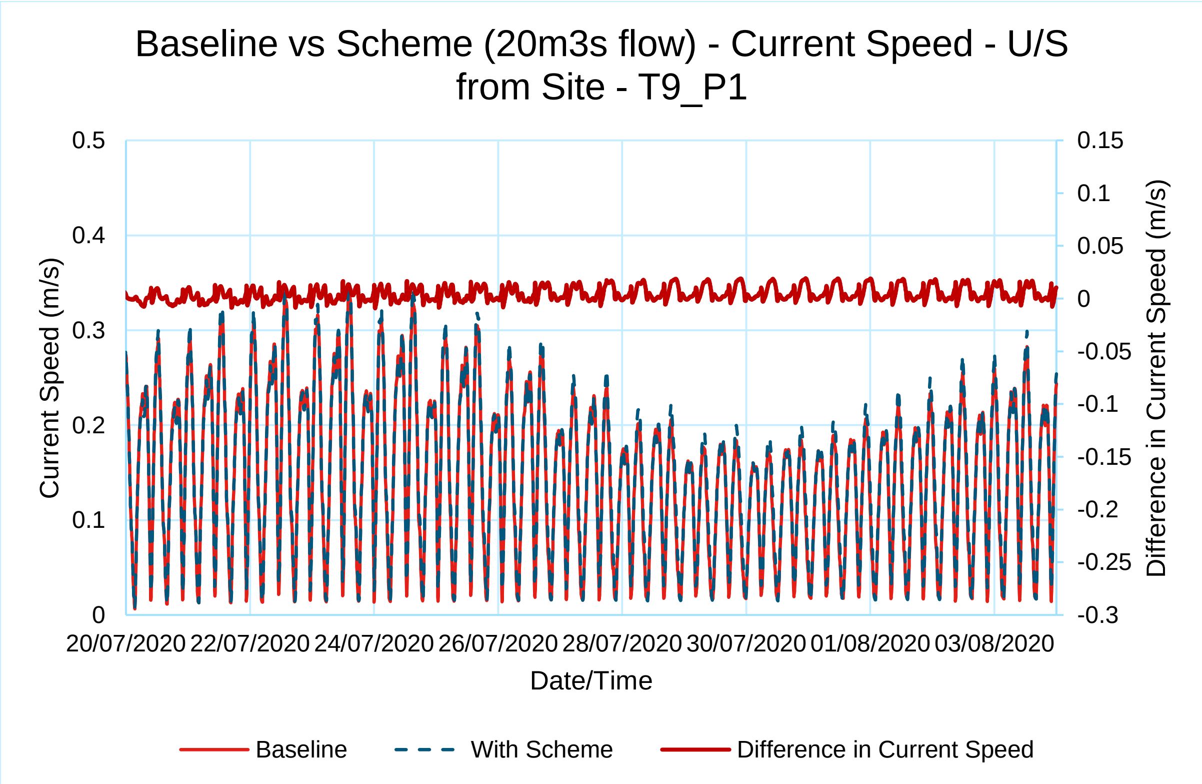
Baseline vs Scheme (20m3s flow) - Current Speed - D/S from Site - T11_P2
Current Speed (m/s)
0.5
0.4
0.3
0.2
0.1
0
Difference in Current Speed (m/s)
0.15
0.1
0.05
0
-0.05
-0.1
-0.15
-0.2
-0.25
-0.3
20/07/2020 22/07/2020 24/07/2020 26/07/2020 28/07/2020 30/07/2020 01/08/2020 03/08/2020
Date/Time
Baseline
With Scheme
Difference in Current Speed

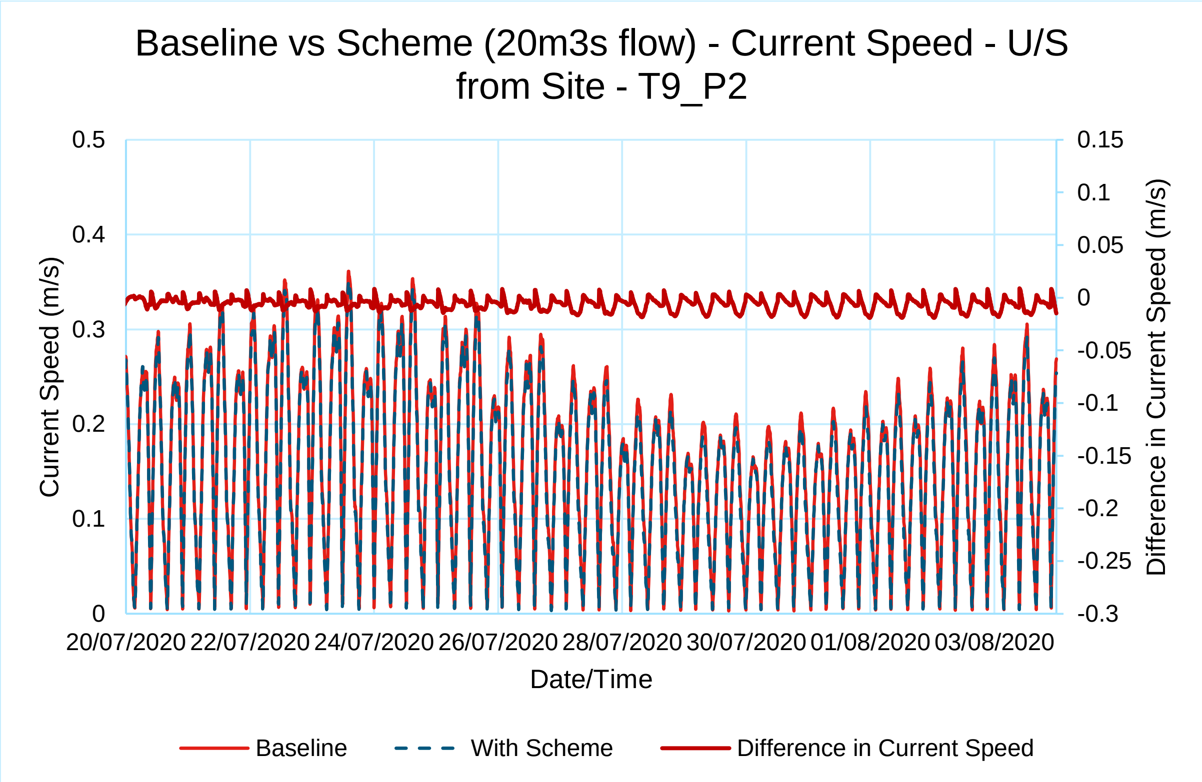


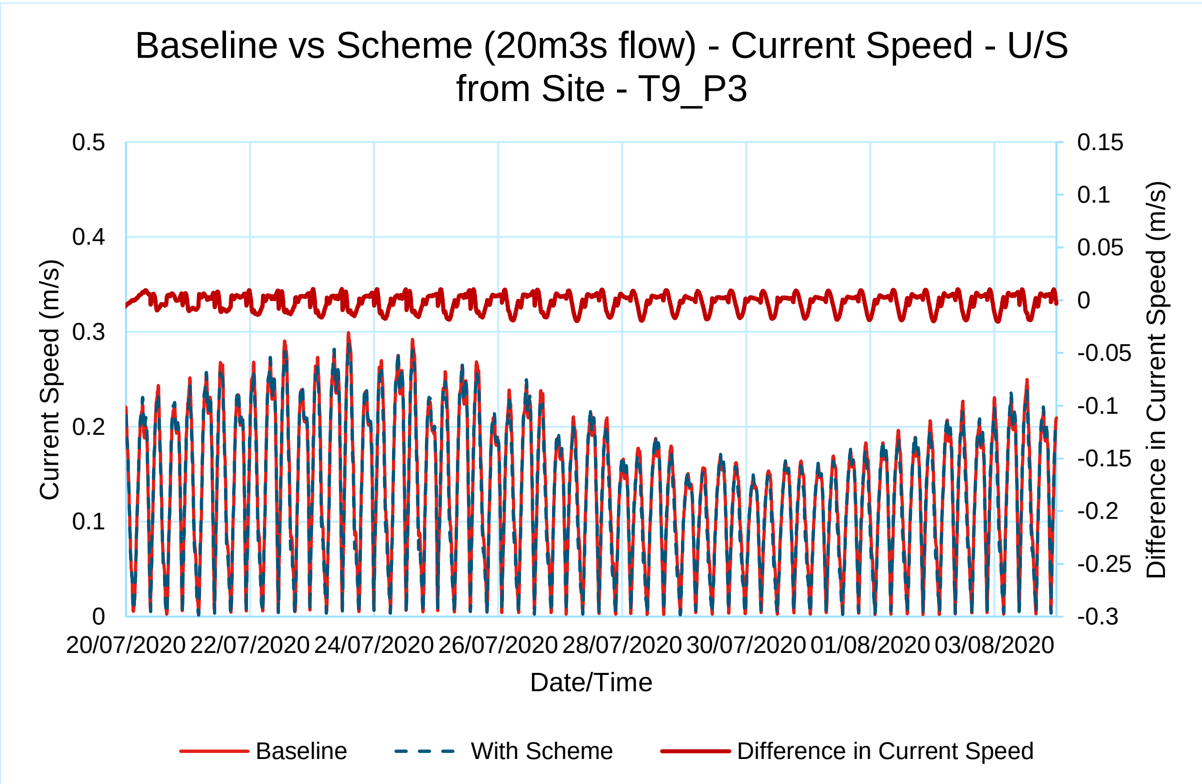
Baseline vs Scheme (20m3s flow) - Current Speed - D/S from Site - T11_P3
Current Speed (m/s)
0.5
0.4
0.3
0.2
0.1
0
Difference in Current Speed (m/s)
0.15
0.1
0.05
0
-0.05
-0.1
-0.15
-0.2
-0.25
-0.3
20/07/2020 22/07/2020 24/07/2020 26/07/2020 28/07/2020 30/07/2020 01/08/2020 03/08/2020
Date/Time
Baseline
With Scheme
Difference in Current Speed

Upstream of the site (Transect 9), results are presented for points T9_1, T9_2 and T9_3 below.

- Baseline peak currents are typically 0.16 – 0.36m/s depending on stage of the tidal cycle.
- With scheme peak currents are typically 0.16 – 0.35m/s depending on stage of the tidal cycle.
- The reductions in baseline peak currents are negligible, typically less than 0.01m/s, and never greater than 0.02m/s
- In the baseline, the maximum peak currents of 0.36m/s are sufficient to mobilise sediments in the grain size range 0.74 mm or smaller.
- With the scheme, the maximum peak currents of 0.35m/s are sufficient to mobilise sediments in the grain size range 0.70 mm or smaller.
- There will therefore be potential for a slight tendency for increased deposition of fine materials (if present) in the areas affected upstream of site (as represented by Transect 9).

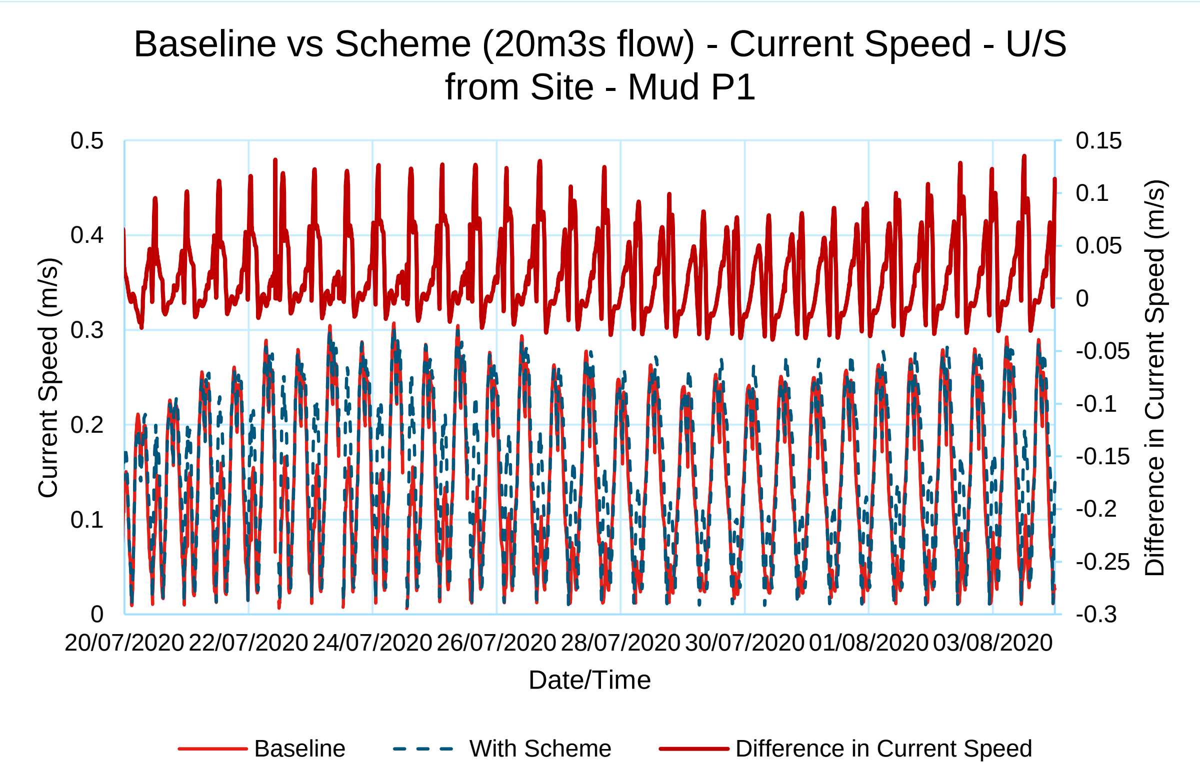



Baseline vs Scheme (20m3s flow) - Current Speed - U/S from Site - T9_P2
Current Speed (m/s)
0.5
0.4
0.3
0.2
0.1
0
0.15
0.1
0.05
0
-0.05
-0.1
-0.15
-0.2
-0.25
-0.3
Difference in Current Speed (m/s)
20/07/2020 22/07/2020 24/07/2020 26/07/2020 28/07/2020 30/07/2020 01/08/2020 03/08/2020
Date/Time
Baseline
With Scheme
Difference in Current Speed


Baseline vs Scheme (20m3s flow) - Current Speed - U/S from Site - T9_P3
Current Speed (m/s)
0.5
0.4
0.3
0.2
0.1
0
0.15
0.1
0.05
0
-0.05
-0.1
-0.15
-0.2
-0.25
-0.3
Difference in Current Speed (m/s)
20/07/2020 22/07/2020 24/07/2020 26/07/2020 28/07/2020 30/07/2020 01/08/2020 03/08/2020
Date/Time
Baseline
With Scheme
Difference in Current Speed

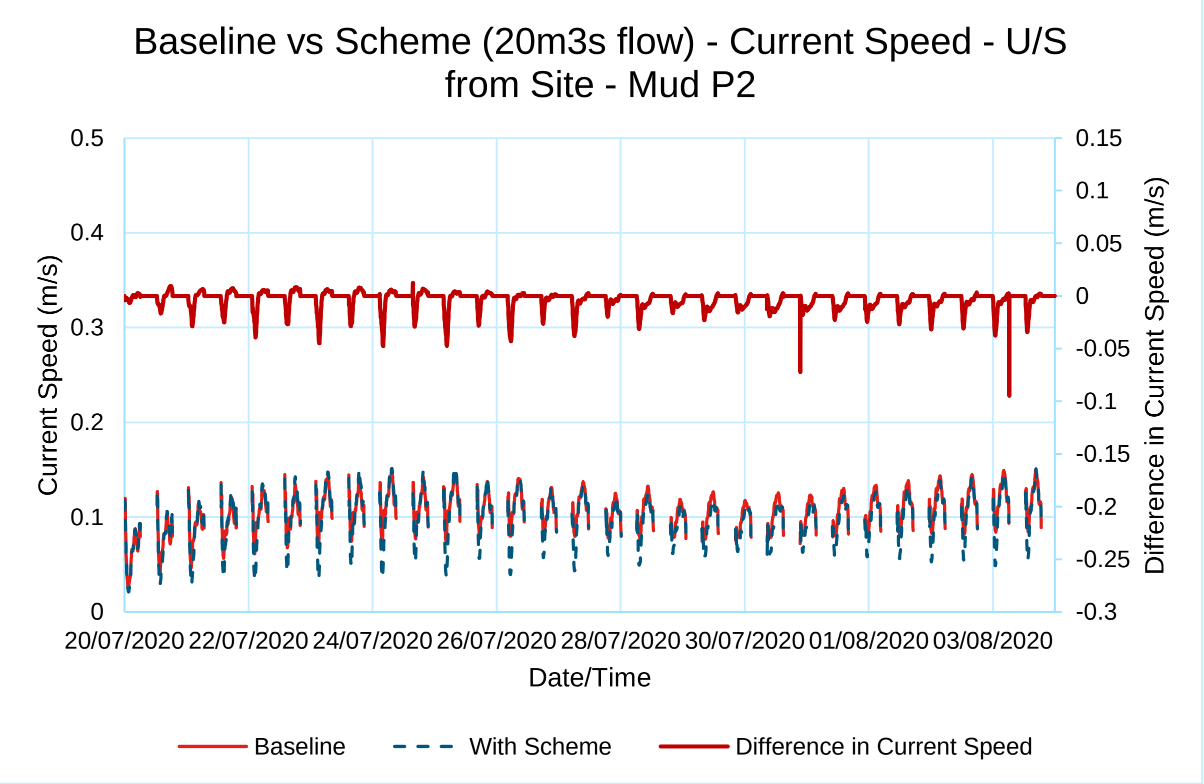
At the North Tees Mudflat, results are presented for point 1 below. This is the zone of maximum change in baseline currents along this mudflat.

- Baseline peak currents are typically 0.04 – 0.31m/s depending on stage of the tidal cycle.
- With scheme peak currents are typically 0.10 – 0.30m/s depending on stage of the tidal cycle.
- The reductions in baseline peak currents are typically up to 0.03m/s, but increases in baseline peak currents are noted at certain phases of the tidal cycle, by up to 0.13m/s. It should be noted that these increases occur predominantly at the peak velocities during the neap tides and do not increase the maximum peak velocities during the spring tide (in fact the maximum peak velocities on spring tides – and hence maximum peak velocities overall - are (marginally) lowered).
- Given this, there will not be an increased risk of erosion of existing sediments; rather there may potentially be marginally less deposition (locally) during the neap tide phase. However, this is unlikely to be a measurable change as a net effect of these changes in baseline tidal currents.



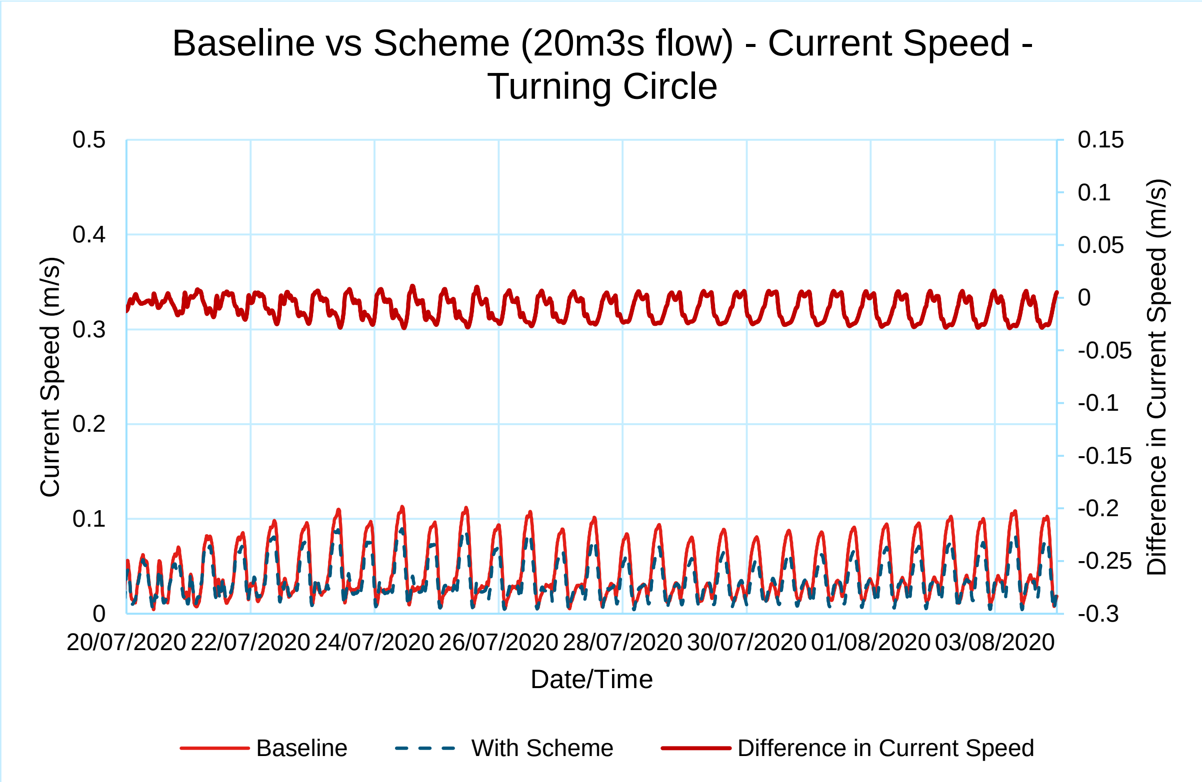
At the North Tees Mudflat, results are presented for point 2 below.

- Baseline peak currents are typically 0.12 – 0.14m/s depending on stage of the tidal cycle.
- With scheme peak currents are typically 0.12 – 0.14m/s depending on stage of the tidal cycle.
- The reductions in baseline peak currents are typically in the range 0.015 to 0.047m/s (noting a couple of larger changes occur, and that these are not at times of peak current but instead are due to a change in the model timestep at which the onset of wetting/drying occurs across the mudflat).
- Given this, there will be a potential for a slight tendency for increased deposition, but the changes in baseline currents are so small that this is unlikely to be a measurable morphological change at this point on the mudflat.



At the Teed Dock Turning Circle, results are presented for point 0 below.

- Baseline peak currents are typically 0.08 – 0.11m/s depending on stage of the tidal cycle.
- With scheme peak currents are typically 0.05 – 0.09m/s depending on stage of the tidal cycle.
- The reductions in baseline peak currents are typically in the range 0.015 to 0.029m/s.
- Given this, there will be a potential for a slight tendency for increased deposition, but the changes in baseline currents are so small that this is unlikely to be a measurable morphological change at the bed of the Tees Dock Turning Circle.



2.3. Fisheries

2.3.1. Cefas comment

Further information and modelling is requested in order to inform the assessment and to determine whether additional mitigation measures are required. Listed the information required below:

- Revised modelling of the plume that takes into account other dredging activity which may be occurring concurrently

2.3.2. Applicant response

A cumulative impact assessment (CIA) is presented in Section 27 of the EIA Report. Section 27.5.2 specifically covers the potential effects on water quality as a result of dredging from all projects which were screened into the assessment. The individual plots from sediment dispersion modelling undertaken for each project are presented and discussed. It is not practicable to undertake a combined sediment plume modelling exercise for all projects screened into the CIA, largely as we do not have access to all models produced for each scheme. CIA can only be undertaken based on information that is available within the public domain – the models used to inform the EIA for the NGCT are not within the public domain. However, the modelling outputs are and therefore these have been used to inform the CIA.

As reported in Section 27.5.3 of the EIA Report, the potential for cumulative effects only arises should the dredging for each scheme coincide. In reality, this is highly unlikely to occur. Under such circumstances, the effect would be a greater increase in SSC than predicted for the proposed schemes alone, and a larger predicted zone of influence than the proposed scheme alone. However, overlaying the plots does not indicate these increases are likely to be significantly greater than those reported for the schemes alone. In addition, the predictions made for each project represent sediment plume dispersion under specific tidal conditions (to enable a realistic worse case to be identified and assessed). It is unlikely, therefore, that the timing of the projects and their respective programmes of capital dredging will coincide to result in a scenario where sediment plumes combine at peak concentration (as predicted by the EIA studies for each project) at any location. Additionally, mitigation is outlined for all three schemes which would reduce plume extents across the estuary and navigational safety is unlikely to support dredging on different sides of the estuary at the same time.

We would also like to reiterate that the sediment plumes shown in Section 6 of the EIA Report are maximum zone of influence plots (i.e. the plots show the maximum values and spatial extents of enhancement in suspended sediment from any stage of the dredging). It is important to note that this type of figure does not represent a plume that would occur at any one point of time. Rather, the figures show the areas of the river channel that will become affected by a plume at some point during the dredging campaign (in some areas this will be on a single occasion, in other areas it will be on multiple occasions) and the maximum magnitude of change that will be experienced at that point.

2.3.3. Cefas comment

Clarification on the proposed exact times (i.e. months) of dredging works so that the likelihood of potential impacts to fish receptors can be more accurately assessed.

2.3.4. Applicant response

The applicant is not able to define months within which the dredge is to be undertaken (as this is dependent on factors which may not be within the control of the applicant). The assessment has been undertaken on a worst case basis whereby the dredge and disposal could be undertaken at any time of the year. This provides the greatest flexibility to the applicant.

2.3.5. Cefas comment

Recommend that the you consider the feasibility of undertaking dredging works outside the peak upstream migration season for salmon (July-August).

2.3.6. Applicant response

The applicant is not able to define months within which the dredge is to be undertaken (as this is dependent on factors which may not be within the control of the applicant). The assessment has been undertaken on a worst case basis whereby the dredge and disposal could be undertaken at any time of the year. This provides the greatest flexibility to the applicant. It would not be desirable to restrict the proposed dredge to certain months of the year from a construction perspective, and based on the conclusions of the EIA Report, as well as the fact that PD Teesport undertake maintenance dredging on almost a daily basis all year round, such a restriction is not considered necessary.

2.3.7. Cefas comment

Cefas recommend that you present a revised sediment dispersion model that includes the dredging proposed for NGCT and regular maintenance dredging (i.e. dredge material quantities, times and locations). This would enable Cefas advisors to evaluate the adequacy of the proposed measure of limiting dredging to one side of the river at a time and better determine the likelihood of potential cumulative effects to fish.

2.3.8. Applicant response

Please refer to response in Section 2.3.2 which is also applicable here. It should also be noted that maintenance dredging could be carried out at various locations depending on need.

2.3.9. Cefas comment
Cumulative impacts have been correctly considered within section 27 of the EIA report (document 4). However, Cefas note that the Net Zero Teesside (NZT) is missing from the list of projects identified in the vicinity of the proposed scheme (Table 27.1). The NZT site, if consented, will comprise works affecting marine receptors in the river Tees therefore, Cefas would expect this project to be included and further assessed.

2.3.10. Applicant response
We have reviewed the Planning Inspectorate's website and there is no publicly available environmental assessment information available for review (with the exception of the scoping report). It is therefore not possible to include this project within the CIA. The Net Zero Project should take account of the NGCT (and all other applicable projects within the Tees estuary) within its own CIA and therefore cumulative impacts would be covered via that mechanism.

2.4. Benthic ecology

2.4.1. Cefas comment
A dedicated survey has been conducted during 2020, the data from which were not available at the time of writing the EIA report. It is presently assumed that the benthic communities within the proposed project area are comparable to those previously observed in the nearby sampling stations of the NGCT (Northern Gateway Container Terminal) survey in 2019. While this is fine in principle, Cefas assume there is the capacity for the understanding of the baseline, and the associated assessment of impacts, to be revised within the EIA process should the new data not support those of previous findings. Can you please confirm this is the case?

2.4.2. Applicant response
The site specific benthic survey results will be provided to the MMO. The results will be interpreted and the impact assessment updated where required within a supplementary report, and it is assumed the MMO will consult its advisors on that report.

2.4.3. Cefas comment
Given that mudflats are a UK Priority Habitat, Cefas would assume they would be regarded as 'high' sensitivity. Given this, the risk assessment process would conclude an overall significance would be 'moderate adverse'. Cefas suggest you provides a greater rationale to support the 'medium' sensitivity given.

2.4.4. Applicant response
The assessment presented in the EIA Report was based on the findings from other benthic surveys undertaken within the Tees estuary recently, namely that undertaken for the NGCT. As reported on Page 201 of the EIA Report, the confidence in the mudflat habitat classification within the footprint of the proposed scheme is low according to Defra's Magic mapping. Furthermore, based on professional experience from other projects within the Tees estuary (most recently the NGCT survey work used to inform the assessment), and the photographs from the site visit (Section 9.5.4, Plate 9.1), such reported areas of mudflat are often not actually mudflat. This therefore accounts for the medium sensitivity assigned to the 'mudflat' reported to be present. The findings from the site specific benthic ecological survey will be used to validate this position which will be presented in a supplementary report.

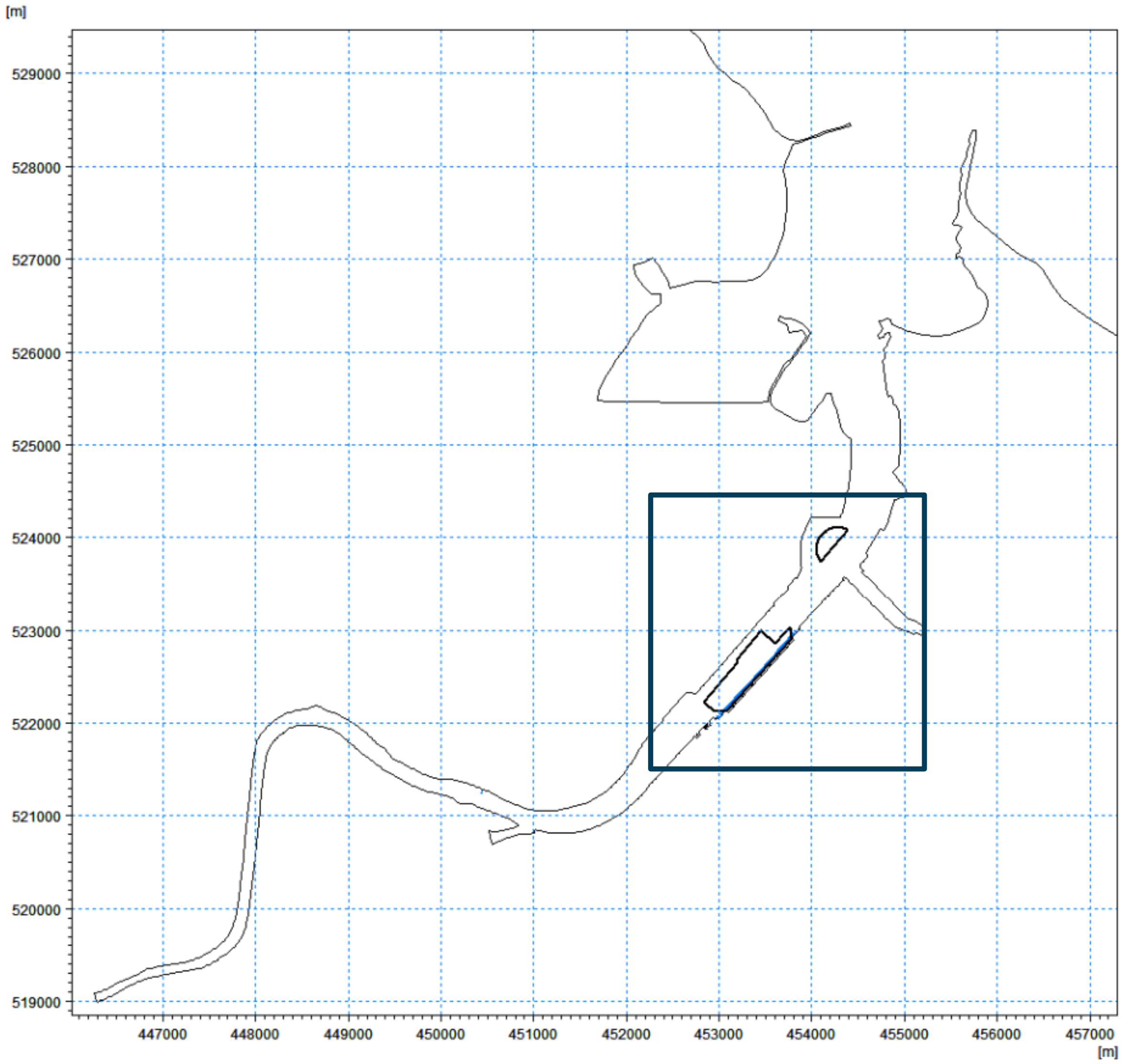
2.4.5. Cefas comment
It is stated that there is predicted to be an increase in the tidal prism of 0.8% and that this is considered to be of low magnitude. However, while a prism change of 0.8% may seemingly appear small, there is no

evidence to indicate what effect this 0.8% change will have on the extent of intertidal vs subtidal area. Is there any evidence of this in the EIA report to quantify this which may therefore be used to support the conclusion of low magnitude?

2.4.6. Applicant response

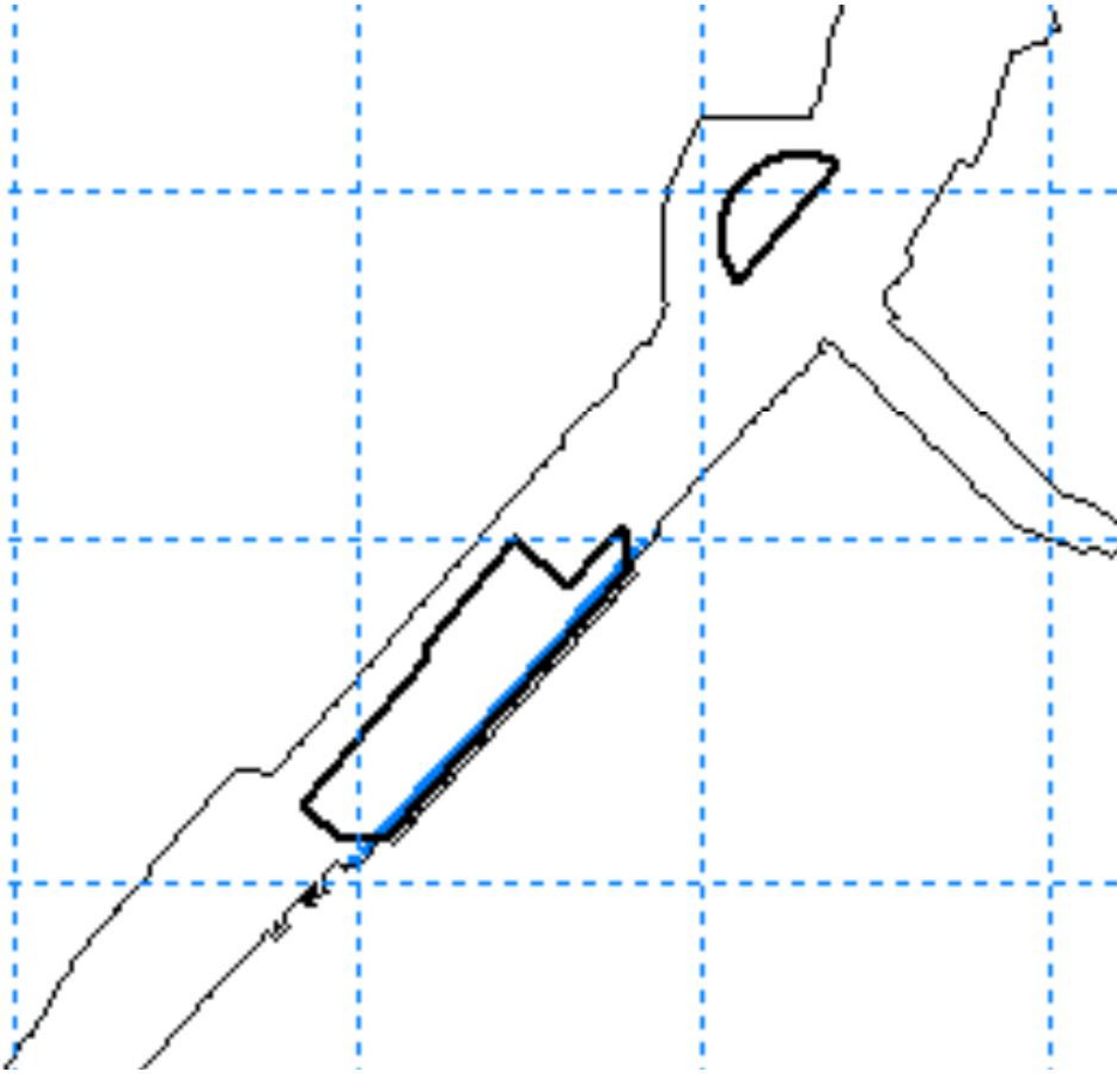
The change in tidal prism relates purely to the addition of an area of both sub-tidal and inter-tidal within the newly created 'pocket' to be created as part of the proposed scheme. There will be no change in hydrodynamics due to the scheme which will lead to changes in tidal prism elsewhere (e.g. water level changes which will alter the extent of inter-tidal prism /area).

To demonstrate this, we have extracted the following plot from the existing model, showing water level changes within the newly created quay, but no change elsewhere.



Additional figure ***Extract from the hydrodynamic model showing water level changes within the new quay area only***

As shown above (and in further detail below), there will be no change in water level except for at location of proposed new quay (see inset below). Because the area where a change in water level is predicted is currently land, there are no implications for the exposure regime of existing intertidal or subtidal habitats in the Tees.



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Additional figureIncrease in water level due to creation of new quay from existing land area

2.5. Dredge and disposal

2.5.1. Cefas comment

Conclusions about sediment quality largely rely on the assessment of previous licensing sample data as discussed in points 13 – 15. These conclusions adhere to the respective Cefas licence consultations under MLA/2018/00555 (Joe Perry, 28th February 2019), MLA/2019/00469 and MLA/2020/00079 (Joe Perry, 29th April 2020), in that the applicant recognises the Tees river's known presence of hydrocarbons and other organic pollutants (like Polybrominated Diphenylethers (PBDEs). This presents an adequate characterisation of the general Tees area, but as detailed in previous comments, the data presented are not appropriate to characterise the South Bank project area. You state that you have sought sampling advice (SAM/2020/00026) for these works and are collecting data. Therefore, the evidence base is not complete until these data are provided.

2.5.2. Applicant response

The site specific sediment quality survey results have been provided to the MMO (with the exception of the PBDE results which are still awaited from Cefas). The results will be interpreted and the impact assessment updated where required within a supplementary report.

3. SUMMARY

As noted earlier, the MMO reviewed the comments provided by Cefas to the South Bank Quay marine licence applications and provided a list of comments that required a response; these are provided above. We trust that these responses allow the MMO to progress with the determination of the marine licence applications.