

14. Cumulative effects

14.1. Introduction

The purpose of this chapter is to outline the potential effects on environmental receptors and resources both from different aspects of the Scheme interacting, and aspects of the Scheme in-combination with other developments.

The following definitions are applied:

Intra-project: cumulative effects can arise when a single resource or receptor is affected by more than one type of impact from the same development, usually at the same time.

Inter-project: cumulative effects can arise when a single resource or receptor is affected by more than one development at the same time.

Cumulative effects can be additive or synergistic. These terms are used in this assessment as follows:

Additive: additive effects occur when a receptor experiences two or more impacts of the same type which add up to a larger and potentially more significant cumulative effect. For example, two separate sources both producing dust at the same time, but at levels not likely to cause a significant nuisance on their own, could combine to cause a significant dust nuisance when acting together.

Synergistic: synergistic effects occur when a receptor experiences two impacts of different types. The combined effect may be greater than the simple sum of its parts. For example, nesting birds close to a development site may be affected by both noise and dust arising from that development; the combined effect may be more significant than the individual noise and dust effects assessed separately.

14.1.1. Regulatory context

The regulatory context for this assessment relates to the requirements of the Town and Country planning (Environmental Impact Assessment Regulations 2017 (SI 571) and Marine Works (Environmental Impact Assessment) Regulations 2007 (as amended).

Schedule 4 (clause 5) of the Town and Country planning (Environmental Impact Assessment Regulations 2017 (SI 571) and Schedule 3 (clauses 5 and 6) of the Marine Works (Environmental Impact Assessment) Regulations 2007 (as amended) require that an Environmental Statement includes a description of likely significant effects resulting from ‘...*the cumulation of effects with other existing and/or approved projects...*’ and that the description of likely significant effects of the project includes a description of ‘*cumulative*’ effects.

Regulation 4 of the Town and Country planning (Environmental Impact Assessment Regulations 2017 (SI 571) states that the Environmental Impact Assessment (EIA) process must ‘*identify, describe and assess in an appropriate manner...*’ ‘*the interaction between the factors referred to in sub-paragraphs (a) to (d)*’ (i.e. population and human health; biodiversity; land, soil, water, air and climate; material assets, cultural heritage and the landscape).

14.1.2. Consultation

Planning applications of committed developments located within the vicinity of the Scheme and with hydrological and/or ecological connectivity with the Scheme were considered for inter-project cumulative impacts. For the purposes of setting a study area for the assessment a search area with a radius of 5km was set from the Scheme. This includes:

- Approved but uncompleted projects;
- Developments for which an application has been made and which are under consideration by the consenting authorities; and
- Plans and projects which are reasonably foreseeable, i.e. projects for which an application has not yet been submitted, but which are likely to progress before completion of the development and for which sufficient information is available to assess the likelihood of cumulative effects.

East Devon District Council (EDDC) was contacted on 1st May 2020 for details of any other developments that are due to be undertaken within the area which might impact on Lower Otter Restoration Project (LORP). A formal response from EDDC was received on 1st May 2020 which confirmed that no further projects than those identified in Section 14.4 of this chapter had potential to combine with this Scheme.

A search on the Marine Management Organisation's (MMO) Marine Case Management System (MCMS) has identified no other projects within the South West Marine Area.

The Environment Agency has also taken account of proposals relating to other statutory undertakers, such as South West Water (SWW) for information on proposals.

14.2. Environmental Impact Assessment methodology

14.2.1. Study area

The scope and study area for the intra-project cumulative effects assessment is based on the findings of the topic assessments (chapters 6 to 13). The study area comprises the locations where there are receptors on which residual effects from the Scheme have been predicted.

For the purposes of the inter-project cumulative effects assessment, the EDDC planning database and MMO MCMS were searched for relevant planning applications within a radius of 5km from the Scheme boundary. Only the topic assessments of chapter 8 Biodiversity, Marine Ecology and Fish and chapter 13 Traffic and Transport included study areas exceeding 5km, and of these, only the Traffic and Transport assessment has identified a residual effect that could extend beyond 5km (i.e. construction traffic reaching the A3052 from the B3178). The majority of Scheme assessment effects are within 1km of the Scheme, and therefore 5km is deemed sufficient to capture the potential overlap with the majority of other development effects (i.e. both intra-project and inter-project cumulative effects). As a precaution to capture potentially more extensive effects of larger-scale projects, a 10km buffer was applied to identify strategically important projects with planning permission, under design or under consideration by EDDC. However, no such strategic projects were identified.

14.2.2. General approach

The assessment has sought to undertake a receptor-based approach. By identifying the receptors affected by the Scheme, it is possible to analyse whether those same receptors would be affected in more than one way by the Scheme or would also be affected by other projects.

To identify the relevant receptors, the Scheme's predicted residual effects for each topic were identified. The residual effects are those effects which are predicted to remain once proposed mitigation for the Scheme has been taken into account. In accordance with Environment Agency guidelines for the reporting of residual effects, these are either reported as 'significant' or 'not significant'. Those which are 'not significant' are those which have been reduced to a minor (or lower) level of effect following the implementation of proposed mitigation. Those which are 'significant' are those which would remain a moderate or major level of effect even after implementation of the proposed mitigation. Effects assessed as 'minor' or above (whether mitigation has been implemented or not) have been considered as part of the cumulative effects assessment on the basis that while an individual effect from the Scheme may not be significant on its own, when combined with effects of other technical topics, it could result in a significant effect. Residual effects described as neutral or negligible have not been considered on the basis that these are not likely to contribute significantly to cumulative effects.

An exception to using residual effects has been made in relation to the landscape and visual assessment, where temporary visual impacts of construction have been considered. According to the guidance used to inform the landscape and visual assessment, residual impacts are those which would remain once planting has become well-established (15 years post-construction). The temporary visual impacts of construction are not therefore reported in chapter 11 Landscape and Visual as residual effects. However, in relation to the cumulative effects assessment it is considered that there is potential for the temporary visual impacts of the Scheme to combine with other impacts (particularly construction related impacts) to lead to likely significant cumulative effects on receptors exposed to construction activities, and in such a case, the landscape mitigation is unlikely to reduce the magnitude of cumulative effect on local receptors due to the length of time it takes for planting to become established. For this reason, temporary visual effects identified during construction of the Scheme have been considered as part of this cumulative effects assessment and for the purposes of this chapter, treated the same as if they were residual effects.

The residual effects have been set out in Appendix J1, Table J-1. The receptors affected by these residual effects were then identified and used as the basis for assessing both intra-project cumulative effects and inter-project cumulative effects.

14.2.3. Intra-project cumulative effects method

Once the receptors affected by the Scheme's residual effects were identified, these were grouped according to spatial location. By grouping them spatially, it is possible to identify where a specific activity from the Scheme may affect several receptors in the same area. Receptors were also grouped where they were considered to contribute to a particular environmental function. For example, landscape character, public rights of way (PRoW) and cycle routes can be considered to support the function of outdoor recreation, which is important for health and wellbeing. Whereas trees,

hedgerows, ponds and designated nature conservation assets support the function of biodiversity. The grouping of receptors according to environmental function allows for the assessment of whether cumulative effects could affect the integrity of that environmental function (i.e. whether a synergistic effect could occur).

A matrix was then used to identify potential cumulative effects. The receptors (or groups of receptor) were set out along with the types of impact the Scheme would have. This allowed the identification of where more than one type of impact would affect the same receptors. Once these potential cumulative effects were identified, they were assessed and described. The results of the assessment are set out in section 15.5.

14.2.4. Inter-project cumulative effects method

The Scheme’s predicted residual effects for each topic, have also been identified to inform the inter-project cumulative effects assessment. After recording each residual effect from the Scheme, information on the other reasonably foreseeable developments was then reviewed to identify if they would have similar residual effects. Similar effects were then recorded within a matrix (see Table 14.2). The matrix indicated where potential cumulative effects would occur. These potential cumulative effects were then analysed further taking into account the location, characteristics and nature of these residual effects, and in particular whether the effects applied to the same single receptor or group of similar receptors to those affected by the Scheme. This analysis enabled a judgement as to whether cumulative effects were likely to be significant. The results of the assessment are set out in section 14.5.

14.2.5. Significance criteria for cumulative effects

The determination of significance has been by professional judgement, based on the availability of information on other development and reasonable assumptions. The significance criteria used for the cumulative effects assessments are shown in Table 14.1.

Table 14.1 Determining the significance of cumulative effect

Potential Effect	Criteria
Major (Significant)	Cumulation of impacts which result in the permanent loss of (adverse) or creation of (beneficial) integrity/function of a sensitive environmental receptor or resource. Effects at this level are material in the decision-making process.
Moderate (Significant)	Cumulation of impacts which result in a noticeable temporary or partial loss of (adverse) or enhancement of (beneficial) integrity/function of a sensitive environmental receptor or resource. Effects at this level can be considered to be material decision-making factors.
Minor (Not Significant)	Cumulation of impacts which cause a slight incremental loss of (adverse) or slight enhancement to (beneficial) an environmental receptor or resource but at a scale that does not noticeably affect integrity or function. Effects at this level are not material in the decision-making process.

Potential Effect	Criteria
Negligible (Not Significant)	Effects that are beneath levels of perception, within normal bounds of variation or within the margin of forecasting error.

Where significant cumulative effects beyond those identified as residual effects from the Scheme in isolation are identified, additional mitigation has been proposed where appropriate and feasible.

14.2.6. Limitations and assumptions

Although consultation with EDDC and MMO has been undertaken there are limitations to our knowledge of potential planning applications that are yet to be submitted. Therefore, the assessment of cumulative effects is based on our knowledge of submitted planning applications at the time of writing. The amount of information available for other projects varies, and therefore some judgement has been applied as to the nature and type of environmental impact likely.

Where construction programmes for third party projects are uncertain, to capture a worst case scenario, it has been assumed that the construction programmes for those other projects would coincide with the Scheme’s construction phase. Assumptions have been made about the timing and sequencing of construction elements for the France – Alderney-Britain Link (FAB Link) project (refer to section 15.4), since certain areas will need to be vacated by the Scheme construction activities before works on the FAB Link project can commence.

Some of the topic assessments within this Environmental Statement (ES) apply slightly different terminology and approaches due to differences in industry guidance for each topic. Furthermore, in accordance with guidance, the landscape and visual impact assessment only predicts residual effects for the Scheme after it has been operational for 15 years, to account for the mitigating effect of proposed planting. As a consequence of the slight variations of approach between the topics, some professional judgement has been applied in drawing out the residual effects for the purposes of the cumulative effects assessment. The supporting narrative and notes within this chapter set out the judgements made.

14.3. Existing environment

The receptors on which residual effects from the Scheme have been predicted are set out in Table J-1 (Appendix J-1), which also sets out the topic chapter where the effect was identified.

In reality, many of these receptors coincide with the same geographical location or represent different but interrelated facets of the same environment. These are indicated in Appendix J2 Figure 14.2.

For example, Landscape Character Area (LCA) 1 (the River Otter Valley Floor landscape character area as described in Chapter 11 Landscape and Visual) encompasses Otter Meadows County Wildlife Site (CWS) and affected habitats such as the semi-improved grassland and marshy grassland habitat receptor, running water, standing water and swamp. Several of the Public Rights of Way (PRoW) also

coincide with LCA 1. These include the South West Coast Path (SWCP), East Budleigh Footpath 1 and Otterton Footpath 1a (referred to as Footpath 5 in Chapter 11 Landscape and Visual), Otterton Footpath 1 (referred to as Footpath 1 in Chapter 11 Landscape and Visual), Otterton Footpath 2 (referred to as Footpath 3 in Chapter 11 Landscape and Visual), East Budleigh Footpath 3 and Otterton Footpath 1b (referred to as Footpath 2 in chapter 11 Landscape and Visual).

Receptors which coincide with LCA 2 (River Otter Estuary) include the Otter Estuary Marine Conservation Zone (MCZ), Otter Estuary Site of Special Scientific Interest (SSSI), running water, intertidal habitat, saltmarsh, standing water, swamp, aquatic/marine invertebrates, fish, birds, the existing birdwatching platform and the SWCP.

LCA 3 (Budleigh Salterton) encompasses the properties on east side of Granary Lane and East of East Budleigh.

The recreational, biodiversity and landscape value of existing environment and receptors within the areas described above can therefore be regarded as strongly interdependent with the LCAs within which they are located. For example, the bird hide offers recreational value, but is dependent on the birdlife associated with the area and the access offered by the PRow.

The Exe Estuary Special Protection Area (SPA) and Ramsar, World Heritage Site (WHS) and South Farm Cottages are each discrete from the other affected receptors in terms of location (see Figure 14.2).

14.4. Relevant projects for inter-project cumulative effects

14.4.1. Identification of relevant projects

The results of both the search of the EDDC planning website and the direct request for confirmation of relevant other development for the cumulative effects assessment returned only two relevant projects:

- France – Alderney-Britain Link, the installation of a new interconnector cable and associated works (planning refs: 16/2995/CPL and 17/1866/MFUL); and
- Relocation of the Budleigh Salterton Cricket Club and ground (planning ref: 19/1521/MFUL).

Although a small project, the proposed cricket club relocation has been included because there is a dependency on this relocation to realise the proposals for the LORP, and there is a potential cumulative impact on local recreational opportunity as a result.

The EDDC planning portal was accessed on 1st May 2020 and none of the projects listed there, that have not already been identified, were considered to have an impact on the Scheme. Other planning applications in the area tended to be for proposals such as conservatories, domestic extensions, tree works and isolated agricultural buildings. These types of development are not deemed of sufficient scale, or close enough, to give rise to likely significant effects with the Scheme and therefore deemed not relevant.

The two projects to be considered for inter-project cumulative effects with the Scheme are outlined below. The location of both projects is shown in Figure 14.1 in Appendix J2.

One further proposal is known to the Environment Agency. This is the replacement of the Combined Sewer Overflow (CSO) pipe by SWW.

14.4.2. France-Alderney-Britain (FAB) Link

FAB Link is a 220km proposed underground and subsea interconnector which would exchange up to 1400MW of electricity between the UK and France via Alderney. The British side of the cabling project will come to land at Lime Kiln car park, Budleigh Salterton.

The majority of the FAB Link development within the study area would be progressed as permitted development, while part of the development involving footpath raising and to provide flood plain compensation received planning permission in August 2017.

According to the FAB Link website (reference <https://www.fablink.net/> accessed 21st May 2020) construction of the FAB Link is due to commence in 2021 and be completed in 2025. The Environment Agency has been in consultation with FAB Link throughout the Scheme's design process. Based on discussions on sequences of construction activities for FAB Link and the Scheme, the following assumptions have been made.

- Works to South Farm Road as part of the Scheme would be completed and the location to be used by Fab Link vacated by the end of 2022
- Works by FAB Link in the South Farm Road area would start in 2023
- Works elsewhere as part of the Scheme would likely be ongoing in 2023 (Jan to March) and the final breach would need to be undertaken by March 2023.
- Works for FAB Link may be ongoing throughout this time in the wider area but at different locations from where the Scheme construction activities would be taking place.

It is therefore likely that some FAB Link and the Scheme elements will be constructed in parallel but aiming to avoid working in the same area at any given time.

The proposals were screened for EIA and determined not to give rise to likely significant environmental effects due to duty to mitigate imposed by Schedule 9 of the Electricity Act 1989 and the ability to mitigate through standard measures set out in a Construction Management Plan (CMP). The development therefore does not require a statutory EIA. The project has prepared an Environmental Risk Assessment report, which has been a source of environmental information for this cumulative effects assessment, together with the EDDC EIA Screening Opinion.

As a predominantly cabling project, the likely extent of effects would be localised and therefore consideration has been given to environmental features within 200m of the cabling route – the distance over which dust could be a potential impact. The environmental features which are relevant to both the FAB Link development and the Scheme are as follows:

- East Devon Area of Outstanding Natural Beauty (AONB)
- Budleigh Salterton beach (part of Dorset and East Devon WHS)
- Otter Estuary SSSI and Budleigh Salterton Cliffs SSSI (10m from FAB Link project boundary)
- Pebblebed Heaths SSSI/Special Area of Conservation/SPA (19m from FAB Link project boundary)

- Otter Meadows CWS (within 10m of FAB Link project boundary)
- Hedgerows, trees, grassland (mainly agricultural/improved)
- PRow (East Budleigh FP 1; 12; 16; Otterton FP2; East Budleigh FP 2; Budleigh Salterton FP 35; Budleigh Salterton FP 30 and South West Coast Path.
- National Cycle Network route 2
- B3178
- Lime Kiln car park
- Children's play area in car park.

14.4.3. Budleigh Salterton Cricket Club relocation

The planning application for the new Budleigh Salterton Cricket Club (BSCC) was approved with conditions by EDDC in January 2020. The proposal includes the construction of a new cricket ground comprising two new pitches, pavilion, attenuation basin, car parking, equipment store, netting and associated infrastructure. The site of the proposal is on land north of South Farm Cottages, which abuts the western boundary of the Scheme, occupying land between the Scheme and East Budleigh Road.

It is assumed that construction of the BSCC will start in autumn 2020. The new BSCC should be operational for the start of the cricket season in 2023, prior to the breach of sea defences associated with LORP.

The proposals for the cricket club relocation were screened for EIA and determined not to give rise to likely significant environmental effects due to the limited number and scale of impacts predicted. A landscape and visual impact assessment was submitted as part of the planning application which has been a source of environmental information for this cumulative effects assessment, together with the EDDC EIA Screening Opinion.

The aspects of the local environment which are relevant to both the Scheme and the Cricket Club are as follows:

- Hedgerows
- PRow (East Budleigh FP 16; Otterton FP 2)
- National Cycle Network
- B3178

14.4.4. South West Water Combined Sewer Overflow pipe replacement

The current CSO pipe runs along the landward side of the shingle bar beneath the Otter estuary mouth and through the headland to the east before discharging to the sea. The proposed new pipe would be installed to cross the Otter Estuary approximately 45m north of the existing alignment and would tie into the existing outfall.

The aspects of the local environment which are relevant to both the Scheme and the SWW CSO pipe replacement are:

- Otter Estuary SSSI and Budleigh Salterton Cliffs SSSI

- B3178
- Lime Kiln car park
- Children's play area in car park.

14.5. Likely significant effects

14.5.1. Identification of potential intra-project effects

The identified residual effects (Table J-1) can be summarised into a smaller number of types of impact. For example, loss of agricultural land and habitat loss can both be a consequence of land-take during construction. Therefore, for convenience, the effects considered by the intra-project assessment have been condensed into the following broad types of impact:

Construction impacts

- Construction noise
- Risk of contamination from construction spills/accidents
- Physical disruption and habitat change (including habitat loss)
- Landscape and visual effects

Operation impacts

- Risk of contamination from new pathways between source and receptor
- Physical disruption and habitat change (including habitat and/or recreation loss/creation)
- Landscape and visual effects
- Impacts on natural function/processes

These impacts have been set out in a matrix (Table 14.2) together with each receptor affected by the residual effects identified in the topic assessments (Table J-1, Appendix J1). The receptors have been grouped by their broad location to indicate where there may be a spatial relationship between impacts and receptors. Impacts have been split between construction and operational to indicate where there may be temporal relationships between impacts and receptors.

The residual effects from the topic chapters have been summarised in the matrix against the relevant receptors using the following key:

- * Not significant (adverse) residual effect
- ** Significant (adverse) residual effect
- ✓ Not significant (beneficial) residual effect
- ✓✓ Significant (beneficial) residual effect

The matrix was analysed to identify potential cumulative effects, including whether these could be additive or synergistic. Notes were added to the matrix to set out whether or not potential cumulative effects were likely. The potential impacts are described and assessed in section 14.5.2.

Table 14.2 Intra-Project Effects Matrix

Broad location of receptor	Receptors (grouped according to broad location)	Construction impacts				Operation impacts				Potential Intra-project Effect (Y/N) and notes from analysis
		Construction noise	Risk of contamination from construction spills/accidents	Physical disruption and habitat change (including habitat and/or recreation loss) (construction)	Landscape and Visual effects	Risk of contamination from new pathways between source and receptor	Physical disruption and habitat change (including habitat and/or recreation loss/creation)	Landscape and visual effects	Impacts on natural function/processes	
South Farm Road and Otter valley (existing drained farmland west of Otter embankment)	South Farm Cottages	xx			xx			x		Y – combination of noise and visual impact during construction
	Otter Rise (residential property) and South Farm	xx								N - only one receptor affected by one effect
	LCA 1 River Otter Valley Floor							✓✓		N - only one receptor affected by one effect
	SWCP/East Budleigh Footpath 2			x	xx		✓✓	✓✓		Y – during construction there would be a combination of effects such as disruption and visual impact on PRoW. During operation there will be beneficial impacts on SWCP/ East Budleigh Footpath 2.
	East Budleigh Footpath 1			x	xx		x	✓		
	East Budleigh Footpath 1a			x	xx		x	✓✓		
	East Budleigh Footpath 3			x	xx		xx	✓		
	Otterton Footpath 1a			x	xx		x	✓		

Broad location of receptor	Receptors (grouped according to broad location)	Construction impacts				Operation impacts				Potential Intra-project Effect (Y/N) and notes from analysis
		Construction noise	Risk of contamination from construction spills/accidents	Physical disruption and habitat change (including habitat and/or recreation loss) (construction)	Landscape and Visual effects	Risk of contamination from new pathways between source and receptor	Physical disruption and habitat change (including habitat and/or recreation loss/creation)	Landscape and visual effects	Impacts on natural function/processes	
	Otterton Footpath 1b			x			xx			
	Otterton Footpath 2			x	xx		✓✓	x		
	Otterton Footpath 5				xx			✓		
	Budleigh Salterton Footpath 12			x			xx			
	NCN2				xx		✓✓	x		
	Otter Meadows CWS			xx			xx			

Broad location of receptor	Receptors (grouped according to broad location)	Construction impacts				Operation impacts				Potential Intra-project Effect (Y/N) and notes from analysis
		Construction noise	Risk of contamination from construction spills/accidents	Physical disruption and habitat change (including habitat and/or recreation loss) (construction)	Landscape and Visual effects	Risk of contamination from new pathways between source and receptor	Physical disruption and habitat change (including habitat and/or recreation loss/creation)	Landscape and visual effects	Impacts on natural function/processes	
	Otterton Park – Colaton Raleigh Marsh UWS			x			x ✓			Y – however, note that the residual impacts relate to habitat loss due to land-take, habitat degradation due to inundation and improved habitat quality due to new habitats establishing. The interaction of these Scheme actions on the Otterton Park – Colaton Raleigh Marsh UWS site are assessed within the biodiversity chapter and therefore is not repeated in this chapter.
	Running water		xx	x ✓		x	x			Y – two impacts affecting surface water receptors
	Standing water		xx	x ✓		x	x			
	Groundwater		xx			x				N -only one receptor affected by one effect
	South Farm Road			x			x			

Broad location of receptor	Receptors (grouped according to broad location)	Construction impacts				Operation impacts				Potential Intra-project Effect (Y/N) and notes from analysis
		Construction noise	Risk of contamination from construction spills/accidents	Physical disruption and habitat change (including habitat and/or recreation loss) (construction)	Landscape and Visual effects	Risk of contamination from new pathways between source and receptor	Physical disruption and habitat change (including habitat and/or recreation loss/creation)	Landscape and visual effects	Impacts on natural function/processes	
Estuary area (including Otter Estuary and intertidal zone)	LCA 2 River Otter Estuary							✓✓		Y – two receptor types both of value to recreation and amenity affected.
	SWCP (and users of)				xx			✓✓	✓✓	
	Birdwatching platform				x			✓		
	Otter Estuary MCZ			xx			✓✓		✓✓	Y – likely synergistic impact on biodiversity during construction.
	Otter Estuary SSSI			xx			✓✓		✓✓	
	Freshwater/marine invertebrates			x ✓			✓✓			
	Fish (freshwater and migratory)			✓✓			✓✓			
	Birds (overwintering)						✓✓			
	Otters						✓✓			
	Harvest Mouse						✓✓			

Broad location of receptor	Receptors (grouped according to broad location)	Construction impacts				Operation impacts				Potential Intra-project Effect (Y/N) and notes from analysis
		Construction noise	Risk of contamination from construction spills/accidents	Physical disruption and habitat change (including habitat and/or recreation loss) (construction)	Landscape and Visual effects	Risk of contamination from new pathways between source and receptor	Physical disruption and habitat change (including habitat and/or recreation loss/creation)	Landscape and visual effects	Impacts on natural function/processes	
	Palaeoenvironmental deposits			x						N- two unrelated aspects of historic environment affected, each only affected in one way.
	Second World War cylinder					x				
Budleigh Salterton	LCA 3 Budleigh Salterton							✓		Y – additive impact on visual amenity for local community during construction. No likely cumulative impact during operation as two unrelated features affected.
	Properties on east side of Granary Lane (c. 50 nr) and south of East Budleigh				xx			✓✓		
	Six properties on the east side of East Budleigh				xx			✓		

Broad location of receptor	Receptors (grouped according to broad location)	Construction impacts				Operation impacts				Potential Intra-project Effect (Y/N) and notes from analysis
		Construction noise	Risk of contamination from construction spills/accidents	Physical disruption and habitat change (including habitat and/or recreation loss) (construction)	Landscape and Visual effects	Risk of contamination from new pathways between source and receptor	Physical disruption and habitat change (including habitat and/or recreation loss/creation)	Landscape and visual effects	Impacts on natural function/processes	
	Properties in Ottervale Road, Boucher Road and Coastguard Road (c.20 nr); Granary House; four properties on the B3178; three properties at the north end of Granary Lane; Five properties on Frogmore Lane.				xx					
	Lime Kiln Car Park and play area			x	xx					
Coastline	Dorset and East Devon Coast World Heritage Site (Budleigh Salterton Beach)				xx				✓✓	N – temporal separation between effects on Budleigh Salterton Beach part of World Heritage Site.
Roads	B1378 and A3052			xx						N – one type of effect on one receptor type.

Broad location of receptor	Receptors (grouped according to broad location)	Construction impacts				Operation impacts				Potential Intra-project Effect (Y/N) and notes from analysis
		Construction noise	Risk of contamination from construction spills/accidents	Physical disruption and habitat change (including habitat and/or recreation loss) (construction)	Landscape and Visual effects	Risk of contamination from new pathways between source and receptor	Physical disruption and habitat change (including habitat and/or recreation loss/creation)	Landscape and visual effects	Impacts on natural function/processes	
Exe Estuary	Exe Estuary Ramsar and SPA						✓✓			N – one type of effect on one receptor type.
Key to table: * Not significant (adverse) residual effect ** Significant (adverse) residual effect ✓ Not significant (beneficial) residual effect ✓✓ Significant (beneficial) residual effect										

14.5.2. Assessment of intra-project effects

South Farm Cottages: During construction, residents of these cottages would be exposed to a combination of noise and visual impact during construction. For example, from construction vehicles passing the cottages to access site compounds, and construction activities associated with the South Farm Road area. This would have a synergistic adverse effect on amenity while works took place in proximity to the receptor. The cumulative effect would be temporary and localised. Based on the significance of residual effects identified for the topics of noise and landscape this cumulative effect would be moderate adverse (significant).

LCA 1 River Otter Valley Floor, associated PRow and NCN 2: Residual effects due to construction have been identified in Chapter 6 Population and Human Health and Chapter 11 Landscape and Visual. It is judged that impacts of physical disruption and visual impact could interact to have an overall adverse effect on outdoor access and recreational amenity for users of the PRow and cycle network during the construction stage. For example, there would be temporary disruption to some PRow in some locations, preventing the full network to be used at certain times during the construction period. This may cause confusion or inconvenience to recreational users who may have to change their routes. Should this discourage or prevent recreational access through the Otter Valley area this could have a synergistic effect on health and wellbeing through the construction phase, although this is expected to be temporary. Due to the number of impacts (several PRow affected), this is assessed as moderate adverse (significant).

During operation, there would be a combination of adverse and beneficial effects on recreation and amenity. Landscape character and visual amenity would be improved for the majority of PRow in the longer term, although occasional inundation of some footpaths would reduce access from time to time (other footpaths would remain accessible). It is likely that these impacts would interact to have an effect on recreational amenity for the local community. However, it is anticipated that recreational users would become accustomed to the changed environment (which would become intertidal) and adapt to the changed experience. It is not anticipated that the minor visual effect on the NCN 2 from the new highway bridge would affect enjoyment of the cycle route. Overall the cumulative effect is anticipated to be moderate beneficial (significant).

Habitats and species within the broad area of South Farm Road and Otter valley (existing drained farmland west of Otter embankment):

A cumulative synergistic effect on biodiversity is anticipated due to construction impacts (and subsequent inundation by saline waters). Construction would result in the permanent loss of the existing habitats (including trees and hedgerows), which would change the ecosystem from one based on terrestrial and freshwater habitats and species to one associated with intertidal habitats. The cumulative effect on the existing ecosystem is assessed as major adverse (significant). However, it should be noted that the new intertidal habitat types which would establish in the longer term would be more biodiverse and beneficial – see below in relation to ‘nature conservation designations and habitats associated with the Otter Estuary’.

No operational cumulative effects would arise since these terrestrial ecology receptors would be permanently lost.

LCA 2 River Otter Estuary, associated PRow and birdwatching platform: Construction activities such as the movement of construction plant and workers at various locations in the Otter valley, would be visible to members of the public. While some people may be

interested in the construction activities, for others the experience would be visually intrusive and disruptive to recreational amenity in the context of the outdoor natural environment. It is judged that visual impact during construction on both the SWCP and birdwatching platform would combine to have an overall impact on recreational amenity. Due to the localised and temporary nature of effects, and that only two types of recreational resource are affected, it is assessed that the cumulative impact on recreational receptors would be minor adverse (not significant).

During operation the larger area of intertidal landscape would have beneficial impacts on landscape character and visual amenity for the SWCP and birdwatching platform, as well as attract more wildlife. These impacts would likely combine and interact to have an overall beneficial cumulative effect on recreational amenity. This is assessed as moderate beneficial (significant).

Nature Conservation designations and habitats associated with the Otter Estuary: A likely significant cumulative effect on biodiversity is predicted for the Otter Estuary during operation of the Scheme. It is anticipated that beneficial impacts on estuary geomorphology, saltmarsh and intertidal habitat creation, together with beneficial impacts on aquatic and marine invertebrates, fish and overwintering birds, would combine to have a synergistic beneficial effect on intertidal ecosystems by restoring natural functions to a larger area. The overall effect is assessed as major beneficial (significant).

Residents on eastern edge of Budleigh Salterton: During construction visual impacts, noise and general disruption associated with various construction activities, would likely combine to have an additive cumulative effect on amenity for residents living on the eastern edge of Budleigh Salterton and users of the Lime Kiln car park and play area. The effect would be temporary. Due to the number of impacts (several properties affected), this is assessed as moderate adverse (significant).

14.5.3. Identification of potential inter-project effects

Available information for the FAB Link project, Budleigh Salterton Cricket Club and SWW CSO replacement was reviewed to identify potential impacts that could occur within the zone of influence of the Scheme. Figure 14.1 in Appendix J2 indicates the route of the FAB Link project.

FAB Link Project Description and Potential Effects

From the point where the FAB Link project would come to land at Lime Kiln car park, Budleigh Salterton, an onshore High Voltage Direct Current (HDVC) cable would be routed northwards, eventually reaching an HDVC converter station site near to Exeter Airport. The sections of the project relevant to the Scheme in terms of potential cumulative effects are Section 12 – East Budleigh to Budleigh Salterton Landfall, and Section 11 – Otterton to East Budleigh.

The onshore cabling would require either one trench with four HDVC cables, or two trenches with two cables each. As a worst case scenario for this assessment, the two trench option is assumed as that requires the greatest amount of space. The typical working width would be 30m, with a finished permanent easement width of 12m across agricultural land, and 3m in roads. The target depth of burial would typically be 1.2m.

Hours of construction work are understood to be 08:00 – 18:00 Monday to Friday, and 09:00 – 13:00 on Saturdays.

From Otterton the cable route would pass through arable fields east of Frogmore Road (within the River Otter flood plain) and within the Scheme boundary before reaching a

sewage pumping station and Budleigh Brook where a specialist crossing technique (e.g. auger boring) will be required. The route approaches the B3178 East Budleigh Road at Pulhayes Farm where a compound is likely to be required.

The cable would then run along the B3178 East Budleigh Road to a point north of South Farm Road. A choice of route remains open in this section as follows:

Option 1: to the east of South Farm Cottages and onto the footpath leading along the western edge of the Otter Valley Grazing Marshes. The footpath section would require a specialist installation method which has been the subject of a feasibility study and required a separate planning permission. At the southern end of the footpath, the route follows the verge of Granary Lane before entering Lime Kiln car park. The route crosses the access to current Budleigh Salterton Cricket Club and a small watercourse at surface where it meets Granary Lane.

Option 2: within local roads leading to the Budleigh Salterton landfall at Lime Kiln car park (B3178 East Budleigh Road Coastguard Road and Salting Hill).

FAB Link has obtained planning permission for works associated with Option 1, and therefore it is considered likely that Option 1 would be pursued. Both options require cable construction traffic to use the local roads into Lime Kiln car park as there is insufficient space for a haul road in Option 1. A compound north and south of South Farm Cottages would be required for Option 1.

The offshore and onshore cable circuits would be jointed on the landward side of the sea defences/beach at Lime Kiln car park in a Transition Joint Bay (TJB). The TJB is an underground chamber constructed of reinforced concrete which provides a secure and stable environment for the cable joints.

The landfall at Budleigh Salterton would be constructed by either Horizontal Directional Drilling (HDD) under the sea defences and beach or an appropriate authority approved open-cut trenching technique. The open-cut trenching technique may still have an element of trenchless techniques for example under roads and/or sea defences.

Construction for the Budleigh Salterton landfall would take up to 6 months for the HDD technique, and burial would be a minimum depth of 0.5m for open cut shore crossing, or minimum of 1 m for HDD crossing.

As stated above, the project has been determined not require an EIA, this is on the basis that appropriate techniques are used when routing across the World Heritage Site at Budleigh Salterton. Based on the above understanding of the project and available environmental information, the following impacts are considered likely. All but one of these impacts would relate to the construction stage, and due to mitigation proposed by FAB Link, none of these impacts are considered to be significant.

- Temporary disturbance to farmland, grassland and marsh associated with topsoil stripping and excavation for cable installation
- Loss of hedgerows and trees where unavoidable, due to cable installation (this has been minimised through choice of routing and removal of important hedgerows will require a Hedgerow Removal Notice from the LPA)
- Potential disturbance to breeding or roosting wading birds that use the Exe estuary. FAB Link has identified mitigation to avoid significant impacts, such as avoiding work in the breeding season and the use of screening/hoarding to limit potential for disturbance of wintering birds in key locations

- Potential impacts of dust, unmanaged water run-off or accidental spills of contaminants during construction
- Potential impacts on protected species using impacted habitats, such as badgers, bats, birds, dormice, reptiles and amphibians. FAB Link has identified mitigation to protect wildlife from significant impacts
- Disturbance to recreation, PRow and local roads, including Budleigh Salterton Beach, SWCP, NCN Route 2 and Lime Kiln car park and play area during construction. FAB Link proposes to undertake construction outside of the peak tourist season to limit effects
- Disruption to local residents and traffic due to construction traffic using local road network
- Disturbance to local residents during construction
- Enhancement of PRow from footpath raising and conversion to all ability route (operational effect)

Budleigh Salterton Cricket Club Relocation

The proposed new site would be located immediately north of South Farm Cottages, occupying an area of approximately 3.7 hectares. The selected site is currently an agricultural field, bounded by hedgerows.

The works will require some small scale ground reprofiling to create flat cricket pitches, removal of sections of hedgerows and typical construction activities to build the new pavilion, gravel car park and attenuation pond. A new native species rich hedgerow would be planted along the southern boundary, together with new tree planting around the north and east boundaries of the site.

Hours of construction work are understood to be 08:00 – 18:00 Monday to Friday, and 09:00 – 13:00 on Saturdays. Hours of opening would be restricted to 09:00 – 22:00 Monday to Saturdays, or 10:00 – 21:00 on Sundays.

Based on the understanding of the works, the following impacts are considered likely during construction. None of these impacts are considered to be significant:

- Loss of farmland to accommodate the new grounds
- Temporary disturbance to soils and agricultural land to allow for earthworks associated with reprofiling
- Small scale loss of trees and hedgerows to accommodate works
- Potential impacts to protected species, such as bats, during tree removal and construction
- Habitat creation in the form of new tree and hedgerow planting (at a greater scale than that removed)
- Disturbance to recreational users of the adjacent PRow and local roads during construction
- Disruption to local residents and traffic due to construction traffic using local road network

South West Water Combined Sewer Overflow (CSO) Pipe

The pipe would be installed at a greater depth than the existing pipe using HDD. This will require large HDD plant required at either end of the 550m pipe route, one in Lime Kiln car park, the other above Otterton Cliffs. Approximately one third to a half of Lime Kiln car park would need to be occupied to allow this work to take place, including welfare and laydown areas. In total, the construction period is likely to last up to six months (drilling to take approximately three to four months). Based on project understanding, the following impacts are considered likely:

- Disruption to the local residents and community (including users of the playground) from occupation of Lime Kiln car park
- Noise associated with plant and vehicles at the drilling rig sites (although the HDD itself would not create any noticeable vibration)
- Localised loss of vegetation associated with site clearance to locate drilling rigs, welfare and laydown areas (for the site above Otterton Cliffs)
- Transportation and appropriate disposal of circa five – ten tankers of arisings from the drilling process
- Temporary disruption to the local road network from construction traffic

It is anticipated that these impacts would be relatively localised and relate to the construction stage only.

The anticipated impacts of the Scheme and the three other projects are summarised in the following matrix (Table 15.3). For ease of presentation, the type of impact (i.e. whether visual or land-take etc.) is not presented. Instead, where impacts are identified relating to receptors affected by the Scheme, they are recorded as either adverse or positive. Since none of the projects are EIA development, none of the identified impacts are significant in relation to each project alone.

As with the intra-project assessment, the matrix was analysed to identify potential cumulative effects, including whether these could be additive or synergistic. Notes were added to the matrix to set out whether or not potential cumulative effects were likely. The predicted potential impacts are assessed in the next section.

Table 15.3 Inter-Project Effects Matrix

Broad location of receptor	Receptors (grouped according to broad location)	Construction impacts				Operation impacts				Notes
		Scheme	FAB Link	BSCC Relocation	SWW CSO Replacement	Scheme	FAB Link	BSCC Relocation	SWW CSO Replacement	
South Farm Road and Otter valley (existing drained farmland west of Otter embankment)	South Farm Cottages	xx	x	x		x				Cumulative effects likely for residents of South Farm Cottages due to proximity of more than one project and construction requirements. No inter-project cumulative effect in operation.
	Otter Rise (residential property)	xx								No inter-project cumulative effect anticipated.
	LCA 1 River Otter Valley Floor		x			✓✓				Potential cumulative adverse effects on PRow due to temporary disruption from construction activities. No inter-project cumulative effect in operation.
	SWCP/East Budleigh Footpath 2	xx	x			✓✓				
	East Budleigh Footpath 1	xx	x			x ✓				
	East Budleigh Footpath 1a	xx				x ✓ ✓				
	East Budleigh Footpath 3	xx	x			xx ✓				
	Otterton Footpath 1a	xx				x/✓				

Broad location of receptor	Receptors (grouped according to broad location)	Construction impacts				Operation impacts				Notes
		Scheme	FAB Link	BSCC Relocation	SWW CSO Replacement	Scheme	FAB Link	BSCC Relocation	SWW CSO Replacement	
	Otterton Footpath 1b	x				xx				Assuming FAB Link cable installation takes place after the Scheme is operational (and habitats inundated), it is anticipated there are no inter-project cumulative effects on habitats and species in the Otter Valley during the construction stage.
	Otterton Footpath 2	xx				x✓ ✓				
	Otterton Footpath 5	xx				✓				
	Budleigh Salterton Footpath 12	x	x			xx				
	NCN2	xx	x			✓✓ x				
	Otter Meadows CWS	xx	x			xx				
	Otterton Park – Colaton Raleigh Marsh UWS	x				x✓				
	Running water	xx	x			x				
	Standing water	xx	x			x				
	Groundwater	xx				x				
	South Farm Road	x				x				

Broad location of receptor	Receptors (grouped according to broad location)	Construction impacts				Operation impacts				Notes
		Scheme	FAB Link	BSCC Relocation	SWW CSO Replacement	Scheme	FAB Link	BSCC Relocation	SWW CSO Replacement	
Estuary area (including Otter Estuary and intertidal zone)	LCA 2 River Otter Estuary					✓✓				There is a potential inter-project cumulative effect between the Scheme and FAB Link on recreational enjoyment of the River Otter Estuary area. This is as a result of combined construction impacts (noise, dust, visual intrusion).
	SWCP	xx	x			✓✓				
	Birdwatching platform	x				✓				
	Otter Estuary MCZ	xx	x		x	✓✓				There is a potential inter-project cumulative effect on habitats and species on the Otter Estuary area as a result of combined construction impacts (noise, dust, visual disturbance).
	Otter Estuary SSSI	xx	x		x	✓✓				
	Freshwater/marine invertebrates	x✓	x			✓✓				
	Fish (freshwater and migratory)	✓✓	x			✓✓				
	Birds (overwintering)		x		x	✓✓				
	Otters					✓✓				
	Harvest Mouse					✓✓				
Palaeoenvironmental deposits	x								No potential cumulative effects on heritage receptors is anticipated.	

Broad location of receptor	Receptors (grouped according to broad location)	Construction impacts				Operation impacts				Notes
		Scheme	FAB Link	BSCC Relocation	SWW CSO Replacement	Scheme	FAB Link	BSCC Relocation	SWW CSO Replacement	
	Second World War cylinder					x				
Budleigh Salterton	LCA 3 Budleigh Salterton		x			✓				Inter-project cumulative effects on the amenity of Budleigh Salterton, including for residents and users of Lime Kiln car park are anticipated as a result of the combined construction activities of the Scheme, FAB Link and the SWW CSO Replacement. These cumulative effects would be restricted to the construction phases.
	Properties on east side of Granary lane (c. 50 nr) and south of East Budleigh	xx	x			✓✓				
	Six properties on the east side of East Budleigh	xx	x							
	Properties in Ottervale Road, Boucher Road and Coastguard Road (c.20 nr); Granary House; four properties on the B3178; three properties at the north end of Granary Lane; Five properties on Frogmore Lane.	xx	x							

Broad location of receptor	Receptors (grouped according to broad location)	Construction impacts				Operation impacts				Notes
		Scheme	FAB Link	BSCC Relocation	SWW CSO Replacement	Scheme	FAB Link	BSCC Relocation	SWW CSO Replacement	
	Lime Kiln Car Park and play area	xx	x		xx					
Coastline	Dorset and East Devon Coast WHS (Budleigh Salterton Beach)	xx				✓✓				No cumulative effects are anticipated on the Dorset and East Devon Coast WHS.
Roads	B1378 and A3052	xx	x	x	x					All projects are anticipated to use these roads as construction traffic routes and therefore there is a potential cumulative effect during the construction phases.
Exe Estuary	Exe Estuary Ramsar and SPA					✓✓				No cumulative effects are anticipated on the Exe Estuary Ramsar and SPA.
<p>Key to table:</p> <ul style="list-style-type: none"> x Not significant (adverse) residual effect xx Significant (adverse) residual effect ✓ Not significant (beneficial) residual effect ✓✓ Significant (beneficial) residual effect 										

14.5.4. Assessment of inter-project effects

Pulhayes Farm and South Farm Cottages: Residents at South Farm Cottage would experience disruption from construction of the Scheme as well as Fab Link. This would include noise, potential dust, and visual intrusion from construction compounds as well as construction activities themselves. The disruption to South Farm Cottages would likely be sequential rather than concurrent because of the aim for the Scheme to vacate the area before FAB Link works commence in the area. However, the sequence of construction activities would prolong the period that residents are exposed to construction related disruption. These cumulative effects would be temporary and relate to construction only. The adverse effect is assessed as localised yet moderate significant for the residents concerned.

Recreational amenity and access in River Otter Valley: The combined influence of construction activities associated with the Scheme and FAB Link would likely have a cumulative effect on recreational amenity, as well as temporary disruption of access to some PRoW, during construction. The effect is assessed as moderate adverse (significant).

During operation there would be a beneficial cumulative effect on Budleigh Salterton Footpath 12 as a result of improvements to the footpath as part of the FAB Link proposals and improved views and landscape character as a result of the Scheme. The effect is assessed as localised but moderate significant due to benefits of providing improved access along the footpath for a range of abilities.

Habitats and species within the broad area of South Farm Road and Otter valley (existing drained farmland west of Otter embankment): Assuming FAB Link cable installation takes place after the Scheme is operational (and habitats inundated), it is anticipated there are no inter-project cumulative effects on habitats and species in the Otter Valley during the construction stage. Impacts could include localised habitat loss as part of cable installation, and potential dust, noise and visual disturbance on the CWS and other habitats and species. The additive effect from FAB Link in combination with the Scheme is anticipated to be very minor (not significant), with the greater effect being caused by the Scheme's intra-project effects alone.

LCA 2 River Otter Estuary, associated PRoW and birdwatching platform: Cable installation associated with FAB Link may have a slight additive effect on the visual intrusion and disturbance for recreational users of the River Otter Estuary area. However, effects are anticipated to be temporary and localised and therefore assessed as minor adverse (not significant).

Nature Conservation designations and habitats associated with the Otter Estuary: There would be no direct impact on habitats and designations associated with the Otter Estuary from construction of FAB Link. However, there is potential for some minor disturbance to some species from adjacent construction activities, such as visual disturbance and noise from both the Scheme and FAB Link. This may have temporary effects on species of wading birds and other wildlife. However, the effect is anticipated to be minor, transient and not significant.

Residents on eastern edge of Budleigh Salterton: Construction and compounds associated with the Scheme, FAB Link and the SWW CSO Replacement will likely combine to have an additive cumulative effect for residents living on the eastern edge of

Budleigh Salterton and users of the Lime Kiln car park. The effect would be temporary but since Lime Kiln car park is likely to be occupied for up to three years in total, taking into account combined construction programmes for all three projects, the overall effect is assessed as moderate adverse (significant). This effect is partially mitigated by proposals to vacate the car park for peak holiday seasons.

Local highway network: All projects are anticipated to use B3178 and A3052 as construction traffic routes and therefore there is a potential cumulative effect during the construction phases. In a worst-case scenario with all projects under construction concurrently, there could be occasions when access for residents along the B3178 could be disrupted. However, none of the projects are anticipated to generate substantial traffic movements and proposals to avoid peak tourism season means that the effect is likely minor (not significant).

14.6. Mitigation and monitoring

Each of the projects will have its own CMPs and/or Construction Codes of Practice setting out measures to limit impacts on the environmental and local community.

Intra-project and inter-project cumulative construction effects can be partially mitigated through the following good practice measures:

- Continued communication between the Environment Agency and other project teams to ensure works are phased to limit disruption in any given location
- Providing the public with signage and information about temporary PRow closures, and details of alternative routes that can be taken
- Phasing works so that some PRow and cycle routes remain open and accessible throughout the combined construction programmes of the projects
- Use of standard measures such as maintaining a tidy site and use of hoarding and screening to limit noise and visual intrusion
- Phasing works and timing vehicle journeys to avoid peak traffic conditions

No monitoring requirements for intra-project or inter-project effects have been identified.

14.7. Conclusion

This chapter has identified the potential for cumulative effects on environmental receptors and resources both from different aspects of the Scheme interacting (intra-project effects), and aspects of the Scheme in-combination with other developments (inter-project effects).

A receptor based approach was taken for the assessment of intra-project effects to identify how a single receptor, or groups of related receptors, could be affected in multiple ways by the Scheme. Temporary adverse effects have been identified for the construction phase, and permanent beneficial cumulative effects for the operational phase of the Scheme. These intra-project effects relate to impacts on land use, habitats and PRowS combining to have an overall effect on recreational amenity. The short-term adverse effects would be balanced by the long-term beneficial effects from the more extensive saltmarsh and intertidal habitats. These are summarised below in Table 15.4.

The other projects considered for the inter-project cumulative effects were the FAB Link project, the Budleigh Salterton Cricket Club relocation, and the installation of a replacement SWW CSO pipe in the Otter Estuary. None of these three projects have

required EIAs. The timescales for construction of some of these projects are uncertain. Therefore, as a worst case scenario it has been assumed construction programmes would coincide (although works for the Scheme and FAB Link would seek to avoid being in the same specific location at the same time).

Inter-project cumulative effects in most cases relate to the potential for projects to combine and increase the level of construction related disruption during the construction phase. Therefore temporary significant construction inter-project effects have been predicted. No significant operational inter-project effects are anticipated. The results of the assessment are summarised below in Table 15.4.

Potential mitigation for cumulative effects relate to maintaining good communication between the developers and residents to help limit concern and to allow opportunities for sensitive phasing and planning of works. Other measures are good practice measures such as maintaining tidy construction sites and the use of screening to limit visual intrusion. The Scheme and all other projects will have their own Construction Codes of Practice and CMPs to adhere to.

Table 15.4 – Residual cumulative effects

Area (receptor/group of receptors)	Summary description	Project Stage	Potential Mitigation	Residual Effect
Intra-Project Cumulative Effects				
South Farm Cottages	Likely temporary adverse synergistic effect on residential amenity from combination of noise and visual intrusion from nearby construction activities.	Construction	Ensure frequent and good communication between contractor and residents to advise of works and allow for appropriate plans to be put in place. Maintain a tidy site and consider use of screening to reduce noise/visual impact.	Significant adverse (temporary)
Recreational amenity and access in River Otter Valley	Likely adverse cumulative effect on landscape character and recreational amenity of the Otter Valley due to disruption to PRoW as well as noise and visual intrusion from construction activities. Potential temporary effect on health and wellbeing if disruption	Construction	Clear signage and communication where temporary PRoW closures would occur, with alternative routes made available. Maintain a tidy site and consider use of screening to reduce noise/visual impact.	Significant adverse (temporary)

Area (receptor/group of receptors)	Summary description	Project Stage	Potential Mitigation	Residual Effect
Intra-Project Cumulative Effects				
	is sufficient to dissuade outdoor recreational access.			
	Improved landscape character resulting in improved overall beneficial recreational experience. Some slight adverse effects due to occasional inundation disrupting some PRow, however this is likely to be accepted as a quality of the new environment.	Operation	N/A	Significant beneficial (permanent)
Otter Meadows CWS, habitats and soils in Otter Valley (existing drained farmland west of	Cumulative synergistic effect on biodiversity due to construction impacts (and subsequent inundation by saline waters). Construction would	Construction	None identified.	Significant (adverse*) (permanent) (*Note although adverse for these habitats, new habitats would be

Area (receptor/group of receptors)	Summary description	Project Stage	Potential Mitigation	Residual Effect
Intra-Project Cumulative Effects				
Otter embankment	result in the permanent loss of the existing habitats, which would change the ecosystem from one based on terrestrial and freshwater habitats and species to one associated with intertidal habitats.			created in the long-term which will be beneficial)
Otter Estuary (landscape character and outdoor recreation)	Slight cumulative adverse effect on outdoor recreation due to visual intrusion affecting SWCP and birdwatching platform.	Construction	Maintain tidy construction site, use of visual screening	Not Significant (adverse) (temporary)
	Improved landscape character and visual amenity for SWCP and birdwatching platform likely to combine to have an overall additive and beneficial	Operation	N/A	Significant (beneficial) (permanent)

Area (receptor/group of receptors)	Summary description	Project Stage	Potential Mitigation	Residual Effect
Intra-Project Cumulative Effects				
	effect on recreational amenity.			
Nature Conservation designations and habitats associated with the Otter Estuary	Beneficial impacts on estuary geomorphology, saltmarsh and intertidal habitat creation, together with beneficial impacts on aquatic and marine invertebrates, fish and overwintering birds, would combine to have a synergistic beneficial effect on intertidal ecosystems.	Operation	N/A	Significant (beneficial) (permanent)
Residents on eastern edge of Budleigh Salterton	Visual intrusion from construction activities would likely combine to have an additive adverse cumulative effect on residential amenity on the eastern edge of Budleigh	Construction	Ensure frequent and good communication between contractor and residents to advise of works. Maintain a tidy site and consider use of screening to reduce noise/visual impact.	Significant (adverse) (temporary)

Area (receptor/group of receptors)	Summary description	Project Stage	Potential Mitigation	Residual Effect
Intra-Project Cumulative Effects				
	Salterton and users of the Lime Kiln car park and play area.			
Inter-Project Cumulative Effects				
Pulhayes Farm and South Farm Cottages	South Farm Cottages residents would experience disruption from the Scheme as well as FAB Link. This would include noise, potential dust, and visual intrusion from construction compounds as well as construction activities themselves.	Construction	Continued communication between the Environment Agency and other project teams to ensure works are phased to limit disruption in any given location	Significant (adverse) (temporary)
Recreational amenity and access in River Otter Valley	The combined influence of construction activities associated with the Scheme and FAB Link would likely have a	Construction	Phasing works so that some PRoW and cycle routes remain open and accessible throughout the combined construction programmes of the projects	Significant (adverse) (temporary)

Area (receptor/group of receptors)	Summary description	Project Stage	Potential Mitigation	Residual Effect
Intra-Project Cumulative Effects				
	cumulative effect on recreational amenity, as well as temporary disruption of access to some PRow.			
	Beneficial cumulative effect on Budleigh Salterton Footpath 12 as a result of improvements to the footpath as part of the FAB Link proposals and improved views and landscape character as a result of the Scheme.	Operation	N/A	Significant (beneficial) (permanent)
Otter Estuary (landscape character and outdoor recreation)	Cable installation associated with FAB Link may have a slight additive effect on the visual intrusion and disturbance for recreational users of	Construction	None identified.	Not Significant (temporary)

Area (receptor/group of receptors)	Summary description	Project Stage	Potential Mitigation	Residual Effect
Intra-Project Cumulative Effects				
	the River Otter Estuary area.			
Nature Conservation designations and habitats associated with the Otter Estuary	No direct impact on habitats and designations associated with the Otter Estuary from construction of FAB Link. However, potential for some minor disturbance to some species from adjacent construction activities, such as visual disturbance and noise from both the Scheme and FAB Link.	Construction	Use of screening may limit potential for disturbance of birds	Not Significant (temporary)
Residents on eastern edge of Budleigh Salterton	Construction and compounds associated with the Scheme, and FAB Link will likely combine to have an additive cumulative	Construction	Continued communication between the Environment Agency and other project teams to ensure works are phased to limit disruption in any given location	Significant (adverse) (temporary)

Area (receptor/group of receptors)	Summary description	Project Stage	Potential Mitigation	Residual Effect
Intra-Project Cumulative Effects				
	effect for residents living on the eastern edge of Budleigh Salterton and users of the Lime Kiln car park and play area.			
Local highway network	Potential cumulative effect from occasional disruption from construction traffic, particularly for B1378, should construction phases for Scheme and other projects overlap.	Construction	Phasing works and timing vehicle journeys to avoid peak traffic conditions	Not Significant (temporary)

14.8. References

Hyder, 1999, Guidelines for the Assessment of Indirect and Cumulative Impacts as well as Impact Interactions. European Commission.

IEMA, 2011, Special Report: The State of Environmental Impact Assessment Practice in the UK. Iema.net

14.9. Abbreviations

CMP - Construction Management Plan

CSO - Combined Sewer Outfall

CWS - County Wildlife Site

EDDC - East Devon District Council

EIA - Environmental Impact Assessment

ES - Environmental Statement

LCA - Landscape Character Area

LORP - Lower Otter Restoration Project

MCMS - Marine Case Management System

MCZ - Marine Conservation Zone

MMO - Marine Management Organisation

PRoW - Public Right of Way

SPA - Special Protection Area

SWCP - South West Coast Path

SWW - South West Water

WHS - World Heritage Site