

A scenic view of a river flowing through a lush green forest. The river is the central focus, with water rippling and reflecting the sky. The banks are lined with dense, vibrant green trees and bushes. In the background, rolling hills or mountains are visible under a slightly overcast sky. The overall atmosphere is peaceful and natural.

Comrie Flood Protection Scheme

Environmental Impact Assessment Report

Chapter 11: Cumulative Environmental Assessment

Document Control

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11 Cumulative Environmental Assessment

11.1 Introduction

11.1.1 This Chapter of the EIAR sets out the findings of the Cumulative Environmental Assessment (CEA) of the Scheme. This CEA reports on the following:

- **Inter-Project Effects** - Impacts from other future developments together with the Scheme which individually might be insignificant, but when considered together could amount to a significant cumulative impact. For example, combined landscape and visual impacts from the Scheme and two more future developments could affect the setting of a town. These are referred to as 'in-combination' impacts.
- **Intra-Project Effects** – The reaction between impacts on a single receptor. Impacts on a single receptor can arise from the Scheme itself or in-combination with other future developments. For example: residential receptors could be affected during construction due to obstructed views as well as being subject to increase in noise levels.

11.1.2 The term 'Future Developments' has been used throughout this assessment. This term refers to consented developments and developments included in a Local Development Plan.

11.1.3 For the purposes of this assessment there are no future developments designated in the Perth & Kinross Local Development Plan 2 (2019)¹ that are within the EIA study area for the Scheme. The designation (H58) for 33-52 residential development has not been considered in this assessment. There have been no plans submitted to develop the site and the area is outwith the EIA study area.

Policy and Legislative framework

11.1.4 Considering cumulative and combined effects as part of the EIA is in accordance with the 'Flood Risk Management (Flood Protection Schemes, Potentially Vulnerable Area and Local Plan Districts' Scotland Amendment Regulations 2017 which states under Regulation 5:

'The description of the likely significant effects...should cover...cumulative effects of the scheme'.

Assumptions and Limitations

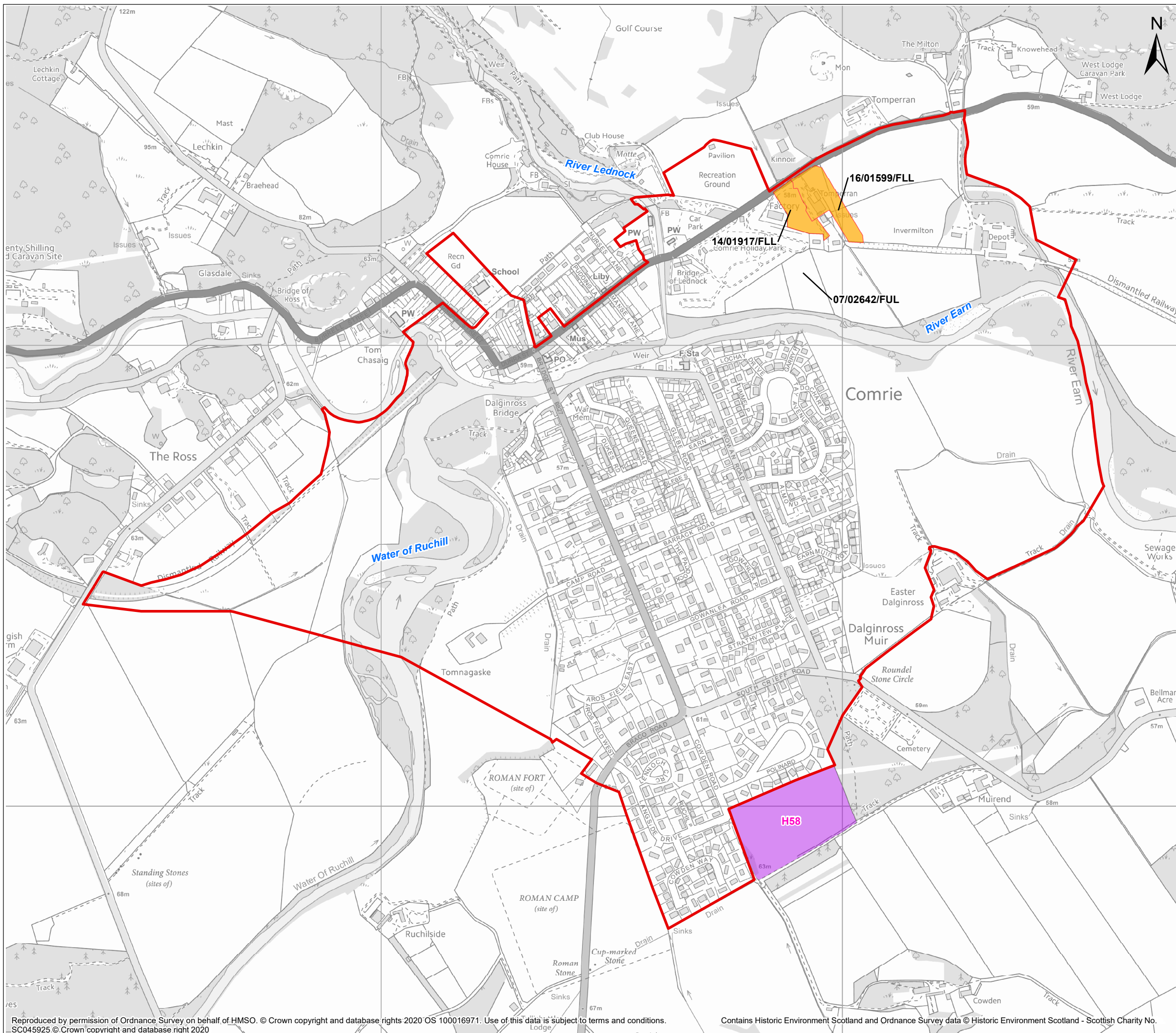
11.1.5 Cumulative impacts have principally been assessed using professional judgement against the general guidance criteria described in **Section 11.2** and **Chapter 4: Approach to Assessment**.

¹ https://www.pkc.gov.uk/media/45242/Adopted-Local-Development-Plan-2019-/pdf/LDP_2_2019_Adopted_Interactive.pdf?m=637122639435770000

- 11.1.6 It is recognised that there is an inherent uncertainty in the range of potential cumulative impacts that may arise, although this assessment seeks to identify the main impacts in a qualitative manner in order to provide for a robust analysis.

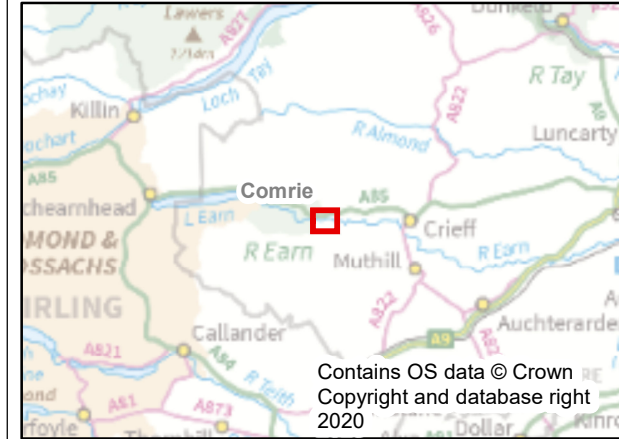
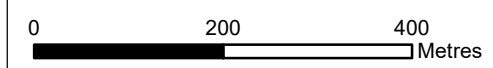
11.2 Inter-Project Effect Assessment

- 11.2.1 To assess the cumulative effect of the Scheme in-combination with other future developments information from the following sources was obtained:
- Information available on the Perth and Kinross Planning Portal (<https://www.pkc.gov.uk/publicaccess>) with regards to planning applications in the area
 - Perth and Kinross Local Development Plan 2.
- 11.2.2 Professional judgement was used to consider the likely significant effects of the scheme in-combination with other future developments. For the purpose of this CEA, the future developments considered in this assessment included (**Figure 11.1**):
- Holiday Park Extension (reference: 07/02642/FUL)
 - Tomperran Farm residential development (reference: 14/01917/FLL and 16/01599/FLL)
- 11.2.3 Future developments noted on the planning portal were scoped out of the assessment, as these were deemed to be of a minor nature and therefore unlikely to result in a significant environmental impacts that could lead to a cumulative significant impact. For example, these applications included applications for minor works to existing buildings such as door and window alterations, canopies and creation of lean-to structures.



Legend

- EIA Study Area
- Planning Applications (Last updated 02/2019)
- Local Development Plan 2 - Housing



P01.1	04/02/2020	For Information	JB	RMCL
Rev.	Rev. Date	Drawing Suitability	Drawn	Appr'd

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PERTH & KINROSS COUNCIL

Project

Comrie Flood Protection Scheme 2020

Drawing Title

Figure 11.1 - Planning Application Developments and LDP Allocations

Scale @ A3	1:8,000
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Holiday Park Extension

- 11.2.4 To the north of the River Earn, planning consent (ref: 07/02642/Ful) was granted in 2007 for the extension of the Holiday Park. Part of the proposed flood embankment (EL05) will be located within the consented Holiday Park extension. Construction works for the extension have started but have been on hold for a number of years. The cumulative effects of developing the Holiday Park Extension and the Scheme is discussed below.

Construction

- 11.2.5 During construction of the Scheme and Holiday Park extension, there is a potential risk of silt-laden and polluted runoff entering the River Earn from bare surfaces including higher intensity of potentially polluting activities occurring on site. This could have an increased impact on chemical and ecological quality of the Earn, as well as directly impacting on aquatic species and habitats. However, with implementation of mitigation measures and assuming best practice construction methods are adopted on both the Scheme and the Holiday Park, **no significant** residual cumulative impacts are predicted on the River Earn from this development.

Operation

- 11.2.6 The construction of the Scheme and Holiday Park extension is likely to bring benefits to the local economy. Although the area of land available for the extension will be reduced, the area to the north of the embankment would benefit from the Scheme and receive protection from the flood defences for up to a 1 in 200-year flood event. Therefore, the Scheme would benefit the local economy as the wider Holiday Park would continue to operate with reduced risk of flooding continuing to attract tourists to the local area.

Tomperran Farm

- 11.2.7 The land at Tomperran Farm has a history of planning applications being submitted for the buildout of residential developments. Four applications have been submitted but only two applications are currently valid. This includes application 14/01917/FLL for 13 dwellinghouses / garages and application 16/01599/FLL for 5 dwellinghouses, both of which are considered below.

Construction

- 11.2.8 If construction of the residential development proposal was to start at the same time as the Scheme, the appointed Contractor(s) for the scheme and residential development would need to liaise and ensure that the construction works do not result in an increase of risks to health, safety and wellbeing such as an increase in disturbance of noise and/or traffic. Measures would be put in place to minimise disruption including timing of the deliveries, overall works and traffic management.

Operation

- 11.2.9 The construction of the dwellinghouses (the proposed development) and the construction of the Scheme would have a cumulative effect on agricultural land use. It is anticipated that the land for the residential development has been sold by the current landowner or that they are responsible for the development. With regards to the land take for the Scheme, this has been reduced as far as possible and again will afford protection for this area of the Town.
- 11.2.10 The cumulative impacts of the Scheme and proposed residential development on the local economy is **negligible**. Both have a benefit on the local economy but only on their own accord. The result of the Scheme reducing the risk of flooding in Comrie is anticipated to have an economic benefit for the community in terms of reducing the damages to properties (business and residential). The development of additional housing is anticipated to contribute to local economic activity by providing new residential housing for existing and future residents.

11.3 Intra-Project Effect Assessment

- 11.3.1 This section summarises and assesses the additive or amplified effects resulting from environmental effects on 'shared receptors'.
- 11.3.2 There is no available technical guidance on how to 'combine' effects i.e. three minor impacts on one receptor do not necessarily accumulate to be a major impact. Therefore, a professional judgement-based approach has been adopted drawing on the findings of the main EIA and understanding of the sensitivity of the key receptors.
- 11.3.3 The prediction and evaluation of the significance of cumulative effects has been undertaken on a topic by topic basis, drawing on the findings of the individual assessments (**i.e. topics scoped into the EIA and presented in Chapters 5 - 10**).
- 11.3.4 The receptors affected by more than one topic with a residual minor (significant) moderate (or above) potential significant effect have been considered further.
- 11.3.5 There is an appreciation that the Scheme will affect some receptors by more. Where the topic specific assessments have concluded that the potential impacts to receptors are considered non-significant (i.e. minor (not significant) or negligible), they have not been considered further in this cumulative assessment. Generally, they have been assessed as non-significant due to the recommended inclusion of mitigation measures either detailed in the CEMP, the schedule of mitigation and the embedded environmental enhancements or changes to the design that have occurred at this stage.

Cumulative Intra-Project Effects

- 11.3.6 Those receptors affected by more than one topic or with a moderate or above effect, have been classed as potentially significant and have the potential to encounter significant cumulative effects.

- 11.3.7 The majority of the cumulative effects associated with the Scheme are related to landscape and visual impacts. Therefore, professional judgement was used to assess the cumulative effects over a short- and long-term' timescale of the Scheme. This is in line with **Chapter 5: Landscape and Visual Assessment**.
- 11.3.8 Short-term is classified as during construction or until landscaping planting is fully established. Long-term is classified as after the Scheme has been completed or once the landscape planting is mature and fully established.
- 11.3.9 The findings of the assessment are summarised in **Table 11.1** and consider both effects associated with the Scheme.

Table 11.1: Summary of intra-project cumulative effects.

Receptor	Landscape and Visual Impact	Water Environment and Fluvial Geomorphology	Ecology and Nature Conservation	Cultural Heritage Impact	Socio-economics, Public Access and Amenity
short-term effects					
Bank of the Rivers	X (Moderate adverse due to loss of trees)	X (Minor adverse due to Temporary disturbance to river bank)	X (Minor adverse due to loss of habitat)		
Community	X (Moderate due to the construction of the Scheme impact on town character)			X (Minor due to the loss of trees effect on the Conservation area)	X (Minor adverse due to reduced accessibility during construction)
long-term effects					
Community		X (Moderate beneficial due to reduced risk of flooding)			X (Moderate beneficial due to reduced risk of flooding and associated reduced risk to health and safety)

Bank of the rivers

- 11.3.10 There are impacts associated with the construction of the Scheme along the banks of the Rivers Earn, Lednock and Ruchill. The loss of trees would form noticeable breaks in the characteristics continuous tree belts and be considered a loss of habitat for protected species. Construction activities would temporarily disturb / potentially damage the bank due to the installation of flood defences.
- 11.3.11 The impact along the bank of these rivers associated with the construction work would be considered temporary in nature. Mitigation measures would seek to

minimise the impacts associated with construction and be noted in a detailed Construction Environmental Management Plan (CEMP). Replanting of trees would also reduce the magnitude of impact once the trees are matured and fully established.

Community

- 11.3.12 The scheme will introduce a change to the character and setting of Comrie and Comrie Conservation area. The design of the hard defences has been developed as far as possible to compliment and be sympathetic to the surroundings, however it will have a residual change. Replacement tree planting and the use of natural stone coping on the walls has been incorporated to try and reduce the visual impact further.
- 11.3.13 During construction, there are nuisance impacts associated with construction activities. This includes the closures of paths, increase in noise and vibration levels and increase in construction plant and machinery in the area. To minimise these impacts, the appointed Contractor will be required to submit a detailed CEMP to the Council. This document will seek to address noise, dust management, timing of works, diversions and ensure that the works are carried out in compliance with legislative requirements.
- 11.3.14 It is recognised in national guidance that Comrie is an area vulnerable to flooding and the community have experienced significant flooding events in the past. The Scheme is anticipated to reduce flood risk for 189 properties and provide a minimum of 1:200-year standard protection exceeding the projects wider national objective of 1:100-year protection. Reducing the risk of flooding, the Scheme will directly benefit those affected by flooding in terms of health, wellbeing (reduce stress of being flooded), safety and economically (i.e. the cost of putting right after flooding). It is therefore anticipated that although there will be impacts as you would expect with a Scheme that requires new structures in the river, there will also be appropriate benefits to the Town and the community that live there.

11.4 Summary

- 11.4.1 This chapter presents a summary of the findings of the Cumulative Environmental Assessment (CEA) of the Scheme. The assessment took account of the potential for significant cumulative effects (inter and intra) from the combined effects of the construction and operation of the Scheme.
- 11.4.2 The inter cumulative assessment (**Section 11.2**) took account of other reasonably foreseeable future developments which included key consented planning applications. The environmental effects associated with the future developments and Scheme combined are associated with the construction activity. However, with implementation of mitigation measures (as detailed in the Outline CEMP) and assuming best practice construction methods are adopted there are **no significant** residual cumulative impacts.
- 11.4.3 It is anticipated that the construction of the Scheme and future developments (extension of Holiday Park and buildout of residential developments) would have a local economic benefit in their own merits. The Scheme provides protection from flood risk for a number of properties and businesses (including the Holiday Park) reducing the risk of damages associated with flooding. The extension of the Holiday Park and buildout of residential developments seeks to contribute to local economic activity in the area.
- 11.4.4 For the intra cumulative assessment (**Section 11.3**) it is anticipated there will be intra cumulative effects during construction and operation on the bank of the rivers and the community. Short-term effects associated with the construction activities have been mitigated as far as possible through the implementation of mitigation measures noted in the Outline CEMP. Replanting of trees would reduce the magnitude of impacts once the trees are matured / fully established and the design of the Scheme has been developed to compliment and be sympathetic to the surroundings. Overall long-term effects include benefitting the community with the reduced risk of flooding which has indirect beneficial effects on health / safety and the local economy.