

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 10: Socio-economics,  
Public Access and Amenity**

## Document Control

|                |  |
|----------------|--|
| Document title | Chapter 10: Socio-economic, Access and Amenity |
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| Status         | Final Issue                                    |

## Revision History

| Version | Date       | Version       | Originator  | Authoriser     |
|---------|------------|---------------|-------------|----------------|
| 0001    | 06/03/2019 | Initial Draft | Zoe Whitley | Mike Roberts   |
| 0005    | 05/02/2020 | Final Issue   | Zoe Whitley | Rebecca McLean |
| 0006    | 28/02/2020 | Publication   | Zoe Whitley | Rebecca McLean |

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## 10 Socio-Economics, Public Access and Amenity

### 10.1 Introduction

- 10.1.1 This chapter assesses the potential socio-economic, human health and safety effects as well as the disruption to public access and amenity resources associated with the construction and operation of the flood protection scheme.
- 10.1.2 The socio-economic assessment will focus on inter-related ‘local economics’ and ‘health, safety and wellbeing’ topics. The assessment considers the potential effects on human health from the scheme. This reflects that for people-based receptors such as those in groups of properties and communities, health is closely related to place-based health ‘determinants’ including existing community health and wellbeing in the areas where people live and work.
- 10.1.3 The effects of the Scheme on agricultural land-take will also be assessed as part of the socio-economic assessment
- 10.1.4 The assessment of public access and amenities consists of a review of linear based recreational facilities such as designated path networks rivers, areas of open space, community facilities.
- 10.1.5 Consultation responses from key stakeholders and the views of the local community are set out in **Chapter 4: Approach to Assessment**, which summarises the public consultation events, workshops and feedback meetings that have been held throughout the development and assessment of the Scheme. Where relevant, public feedback is considered in the context of the themes explored in this chapter.

### 10.2 Policy and Guidance

#### Policy and legislative framework

- 10.2.1 Local policy and development land allocations for the study area are set out in the adopted Perth and Kinross Local Development Plan 2 (LDP) adopted 29 November 2019<sup>1</sup>. The Plan highlights there is ‘*a relatively modest site*’ to the south of the study area designated for housing’ (**Figure 11.1**). The Plan also identifies Comrie Holiday Park as making a ‘*significant contribution to the provision of visitor accommodation and should be retained*’.
- 10.2.2 The Council have produced a Core Paths Plan (2012)<sup>2</sup> under the terms of the Land Reform Act (2003). This Plan identifies a network of paths providing access throughout Perth and Kinross. The Plan provides information about routes for all non-motorised users (NMU) groups. Information regarding Core Paths within the study area is set out in **Section 10.4 Baseline**.

<sup>1</sup> Perth and Kinross Council (2019) Local Development Plan 2 <https://www.pkc.gov.uk/article/15042/Local-Development-Plan-2019->

<sup>2</sup> Perth and Kinross Council (2012) Core Paths Plans <https://www.pkc.gov.uk/corepaths/>



## Guidance

- 10.2.3 There is no specific guidance available which establishes a methodology for undertaking an Environmental Impact Assessment (EIA) of the socio-economic effects of a proposed development. Accordingly, the approach adopted for this assessment is based on professional judgement and best practice with reference to guidance set out in SEPA's 'Assessing the Significance of Impacts - Social, Economic, Environmental' (2017)<sup>3</sup>, and SNH's 'Environmental Impact Assessment Handbook' (2018)<sup>4</sup>.
- 10.2.4 The Scottish Health and Inequality Impact Assessment Network (SHIAN) Report – Health Impact Assessment Guidance for Practitioners, August 2016<sup>5</sup> provides guidance for undertaking these types of assessments for proposed developments. It confirms that the purpose of considering health is to inform the decision making process before a proposal has been implemented. It also confirms that the scale of the assessment, evidence and methods should be appropriate and proportionate to the nature, scale and scope of the proposal and kinds of impacts that being assessed. This guidance has been reviewed whilst preparing this assessment and a proportionate approach has been taken in line with the guidance, due to the nature of the potential impacts associated with the Scheme.

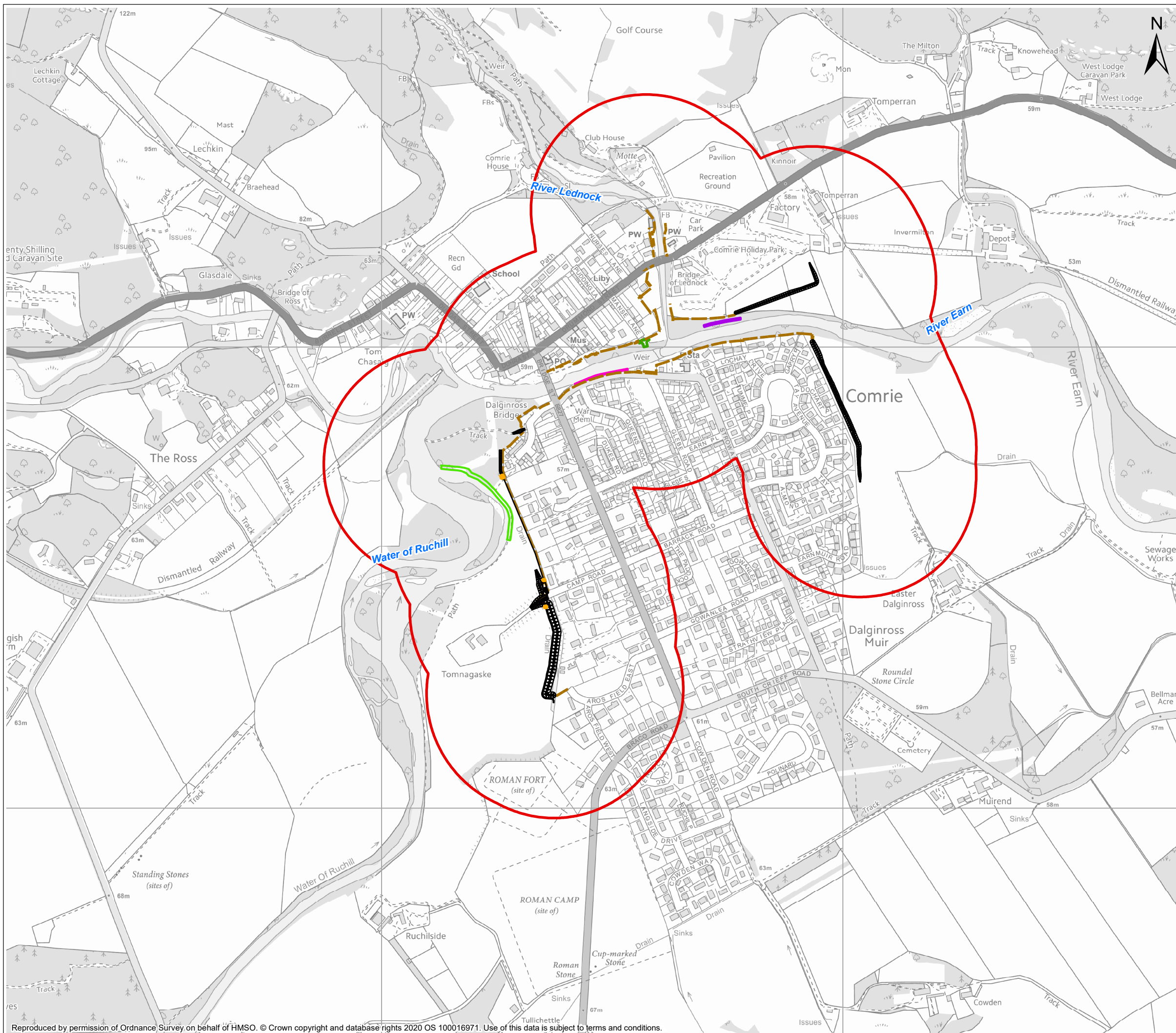
## 10.3 Methodology

- 10.3.1 The socio-economic study area considers the entirety of the Comrie and Dalginross area, as does the human health and safety assessment. The study area for the assessment of impacts to agricultural land is defined by the area of physical works required for the construction and operation of the Scheme.
- 10.3.2 For the purposes of the public access and amenity assessment, a study area of 250m has been defined from the outermost edge of the Scheme as shown in **Figure 10.1**. The impact assessment goes beyond this study area in some instances to allow for consideration of the impact on paths used to access outdoor areas and where impacts result in the severance of communities from community facilities out with the 250m study area.

<sup>3</sup> Supporting Guidance (WAT-SG-67) Assessing the Significance of Impacts - Social, Economic and Environmental v5.1 (SEPA, 2017)

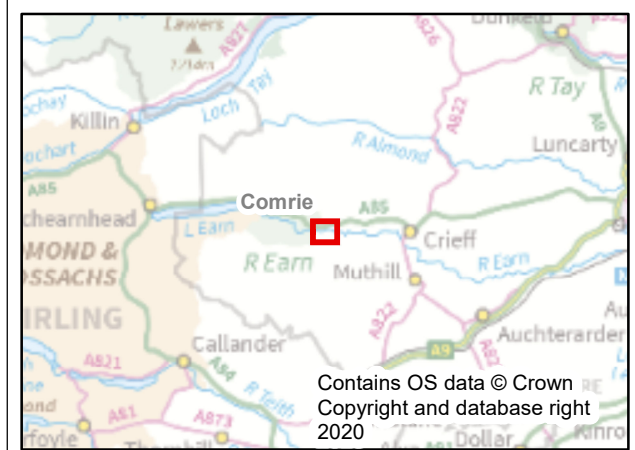
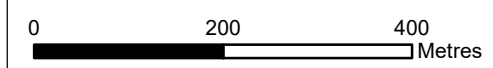
<sup>4</sup> Environmental Impact Assessment Handbook: Guidance for competent authorities, consultation bodies and other involved in the Environmental Impact Assessment Process in Scotland Version 5 (SNH, 2018)

<sup>5</sup> <https://www.scotphn.net/wp-content/uploads/2015/11/Health-Impact-Assessment-Guidance-for-Practitioners-SHIAN-updated-2019.pdf>



**Legend**

- Study Area
- Proposed Designs**
- Embankment
- Flood wall
- Culvert
- Reinforced grass - flood gate
- Proposed Erosion Protection**
- Root Wad Revetment
- Stacked Stone Wall
- Coir Roll



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

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Client

Project **Comrie Flood Protection Scheme 2020**

Drawing Title **Figure 10.1 - Public Access and Amenity Study Area**

|             |         |
|-------------|---------|
| Scale @ A3  | 1:8,000 |
| Project No. | 119702  |

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## Assumptions and limitations

- 10.3.3 Access to outdoor area-based facilities via the NMU routes identified in the study area only considers those areas in the immediate vicinity of the proposed Scheme (as defined in **paragraph 10.3.2**).
- 10.3.4 An assumption of land-take for the construction of the Scheme has been estimated to inform any additional land required for construction, landscape planting and other possible mitigation measures.
- 10.3.5 For the purpose of this assessment, the size of the construction compounds are indicative. The area for the compounds is based on the physical constraints of the land and the facilities assumed to be required at the site e.g. parking facilities, plant and machinery storage and the site office. The required size of these compounds will be determined by the appointed Contractor and in agreement with any affected landowners.
- 10.3.6 Baseline information and the sensitivity of the agricultural land has been determined using the data available at the time of the assessment. To inform the assessment, general observational fieldwork in February 2018 was undertaken to determine the nature of agricultural land use within the fields affected by the Scheme. Further observational fieldwork was completed throughout 2018 and 2019. No changes to the nature of agricultural land use was identified.
- 10.3.7 Estimation of agricultural land-take is indicative and based on the assumed land-take required for construction work and the proposed siting of construction compounds. Upon the appointment of a contractor to undertake the construction of the Scheme, the affected contractor may discuss alternative access / land-take requirements with affected landowners which have the potential to alter the land-take requirements set out within **section 10.6**. Should alternative land-take requirements be agreed it would be the responsibility of the contractor to demonstrate that the revised land-take does not result in any significant impacts over and above those reported in the Environmental Impact Assessment Report.
- 10.3.8 North of the River Earn there are three fields directly affected by the Scheme. In 2008, planning consent (ref: 07/02642/Ful) for the extension of the Holiday Park was granted. Part of the proposed flood embankment (EL05) is located within the area. Construction works for the extension have started but have been on hold for a number of years and as such it is considered that this area is no longer in agricultural use. These fields will be assessed as part of the community facilities assessment.
- 10.3.9 As well as the mitigation measures (set out in **section 10.7**), additional community benefits have been considered within the design of the Comrie Flood Protection Scheme. The location and extent of these enhancements will be subject to further discussions between the Council and their appointed contractors and these will be confirmed at detailed design stage.

## Approach to assessment

- 10.3.10 Baseline data for the study area was gathered through a desk-based assessment of available information, consultation with statutory bodies and key stakeholder groups. Information gathered ranged in spatial scope from areas directly affected by flood risk to the regional scale.
- 10.3.11 The impact assessment adopts a matrix-based approach in line with the methods set out in **Chapter 4: Approach to Assessment**. However, a more defined criteria has been applied to receptor value/importance and impact magnitude based on supporting guidance which has been further adapted using professional judgement.
- 10.3.12 The sensitivity of the receptors and the impact magnitudes have been used to determine the significance of the impact upon the identified receptors. The criteria have been set out in **Table 10.9**.

## Socio-economic

- 10.3.13 Economic information relating to the Scheme is set out in the latest economic appraisal<sup>6</sup>. The economic appraisal has been reviewed as part of the EIA including the identification of the potential benefits and cost savings (associated with the following types of damages):
- Damages to residential properties
  - Damages to vehicles affected by flooding
  - Damages to non-residential properties
  - Expense incurred by the emergency services during and following the flood event
- 10.3.14 **Tables 10.1 to 10.2** set out the sensitivity and impact magnitudes associated with the socio-economic assessment. With respect to identifying the socio-economic receptors and assigning value/ importance, the criteria are based on indicators set-out in the Scottish Index of Multiple Deprivation (SIMD). The SIMD criteria take into account factors such as income, employment, health, education, geographic access to services, crime and housing. The assessment considers all receptors (i.e. residential, commercial or industrial) as being of equal importance (i.e. high value).

<sup>6</sup> Comrie Flood Protection Scheme Economic Appraisal, Sweco (2019)



**Table 10.1: Sensitivity criteria socio-economic receptors**

| Sensitivity | Criteria  |
|-------------|---|
| Very high   | >10,000 members of the general population<br>>1,000 members of a disadvantaged group<br>The affected community is, or would be, in the most deprived 5% of neighbourhoods in Scotland                   |
| High        | 1,000 – 9,999 members of the general population<br>100 - 999 members of a disadvantaged group<br>The affected community is, or would be, in the most deprived > 5% to 10% of neighbourhoods in Scotland |
| Medium      | 100 – 999 members of the general population<br><100 members of a disadvantaged group<br>The affected community is, or would be, in the most deprived >10% to 20% of neighbourhoods in Scotland          |
| Low         | 10 – 99 members of the general population<br>The affected community is, or would be, in the most deprived >20% to 30 % of neighbourhoods in Scotland  |
| Negligible  | <10 members of the general population<br>The affected community is, or would be, in the most deprived >10% to 20% of neighbourhoods in Scotland   |

**Table 10.2: Magnitude of impacts upon socio-economic receptors**

| Magnitude of economic impact | Criteria   |
|------------------------------|--|
| Very Large                   | There would be a very large change to the economic opportunities available to a very large proportion of the affected group. The size of the affected group or groups is large (e.g. several 1,000s of people) |
| Large                        | There would be a large change to a moderate proportion of the affected group or a moderate change to a very large proportion of the group  |
| Medium                       | There would be a moderate change to a moderate proportion of the affected group  |
| Small                        | There would be a small change to the economic opportunities of the group as a whole. A small number of individuals may benefit more significantly  |
| Very Small                   | There would be a very small change to the economic opportunities of the group as a whole. A very small number of individuals may benefit more significantly  |

### Health, Safety and Wellbeing

10.3.15 The extent of the Scheme’s effect on the following is considered in this assessment:

- The risk of ill-health or disease
- The risk of injury
- Human wellbeing

10.3.16 The Scheme can affect health, safety and wellbeing in multiple ways:

- People can be injured during floods and people whose homes have been affected by floods can suffer ill-health through stress. Therefore, a flood protection scheme can positively affect human health and safety by reducing the risk of flooding.
- Recreation is important to health and wellbeing because it involves exercise and provides a break from stress. If the Scheme reduces recreational opportunities this could be an adverse effect on health. If the Scheme increases recreational opportunities or improve the quality of existing opportunities, there could be a positive effect on health and wellbeing.
- Deprivation can adversely affect health. If the Scheme affects the level of deprivation by changing the economic opportunities or quality of existing opportunities, this can affect health.

10.3.17 The effect of the Scheme on recreational activities and deprivation is also considered in the ‘public access and amenity’ section of this chapter. How the Scheme influences the relationship between recreation, health, safety and wellbeing will be considered in this section of this chapter.

10.3.18 The sensitivity of human health and safety to an effect depends on:

- The degree to which risks to human health and safety are altered
- The number of people likely to be affected

10.3.19 **Tables 10.3** and **10.4** set out the sensitivity criteria and impact magnitudes associated with the assessment of health and safety.

**Table 10.3: Sensitivity criteria for health and safety**

| Sensitivity | Criteria  |
|-------------|---|
| Very High   | <ul style="list-style-type: none"> <li>• &gt;10,000 members of the general population</li> <li>• &gt;1,000 members of a disadvantaged group</li> </ul>    |
| High        | <ul style="list-style-type: none"> <li>• 1,000 – 9,999 members of the general population</li> <li>• 100 - 999 members of a disadvantaged group</li> </ul> |
| Medium      | <ul style="list-style-type: none"> <li>• 100 – 999 members of the general population</li> <li>• &lt;100 members of a disadvantaged group</li> </ul>       |
| Low         | <ul style="list-style-type: none"> <li>• 10 – 99 members of the general population</li> </ul>   |
| Negligible  | <ul style="list-style-type: none"> <li>• &lt;10 members of the local population</li> </ul>  |

Table 10.4: Magnitude of impact for health and safety

| Magnitude of impact for health and safety | Criteria   |
|---|--|
| Very Large                                | <ul style="list-style-type: none"> <li>The effect would be to produce or remove a health or safety issue that would be (or is) very serious, life-threatening or very debilitating;</li> <li>completely effective treatments/alternatives may not be available, and recovery is likely to require a lengthy period of time;</li> <li>people are not able to avoid their exposure to the risk to their health or safety; and</li> <li>the effect is likely to be particularly concentrated on vulnerable or disadvantaged groups.</li> </ul>  |
| Large                                     | <ul style="list-style-type: none"> <li>The effect would change the status of a Bathing Water; or</li> <li>the effect would be to produce or remove a health or safety issue of significant concern and that would be (or is) debilitating at least for a short period;</li> <li>effective treatments/alternatives exist but recovery may take several weeks;</li> <li>people are unlikely to be able to completely avoid exposure to the risk to their health or safety but may have some control over exposure; and</li> <li>the people affected will tend to include those from vulnerable or disadvantaged groups.</li> </ul> |
| Medium                                    | <ul style="list-style-type: none"> <li>The effect would be to produce or remove a health or safety issue that would not be (or is) not life-threatening, not particularly debilitating and not long-lasting;</li> <li>effective treatments/alternatives are readily available and full recovery would be likely in a few days; and</li> <li>with care, people are able to avoid exposure to the risk to their health or safety.</li> </ul>   |
| Small                                     | <ul style="list-style-type: none"> <li>The effect would be to produce or remove a health or safety issue that would not be (or is) not very serious;</li> <li>people are unlikely to notice the change; and</li> <li>people are easily able to control their exposure to the risk to their health or safety.</li> </ul>  |

### Agricultural land

10.3.20 The agricultural assessment identifies the quality and type of agricultural land within the study area. A site visit was undertaken to determine the type of land use in February 2018, this was then reviewed during subsequent site visits by the project team throughout the scheme design period. The quality of this land was then reviewed against the official Scottish system for identifying agricultural land-use capability, referred to as the Land Capability for Agricultural (LCA) classification system.

10.3.21 The key assessment of impacts on agricultural land comprises the following:

- Mapping of agricultural land classifications and identification of field boundaries. The types of land use e.g. arable, grassland, pasture, land use will also be identified.
- The calculation of the loss of agricultural land during construction and operation of the Scheme.
- A qualitative assessment of the predicted effects on land-take, severance, infrastructure, nuisance (business interruption) and access arrangements

10.3.22 **Tables 10.5** and **10.6** set out sensitivity criteria and magnitude of impacts for the assessment of agricultural land.

**Table 10.5: Sensitivity criteria for agricultural land**

| Sensitivity | Criteria  |
|-------------|---|
| High        | Presence of land capable of supporting arable agriculture (Class 1 to Class 3.1)<br>Dependent relationship with key infrastructure (e.g. land directly associated with buildings, such as livestock housing and stabling)                           |
| Medium      | Presence of land capable of supporting mixed agriculture and improved grassland (Class 3.2 to Class 4.2)<br>Some flexibility over operations (e.g. change in cropping or stocking may be feasible which minimises the impact of a change in access) |
| Low         | Presence of land capable of supporting only rough grazing (Class 5.1 to Class 7)  |

**Table 10.6: Magnitude of impact for agricultural land**

| Magnitude of agricultural land impact | Criteria  |
|---------------------------------------|---|
| Large Adverse                         | A major loss or alteration of land or where there would be complete severance of important parts of the existing land use, and/or major permanent decreases in land area (greater than 15ha) and/or major business operational impacts to current agricultural and forestry systems and practices.                            |
| Medium Adverse                        | Existing land use would experience medium levels of disruption to access, and/or moderate permanent decreases in land area (greater than 5ha) and/or business operational impacts to current agricultural and forestry systems and practices.   |
| Small Adverse                         | Minimal loss, alteration or severance of land such that there would be a measurable change but this would not significantly affect existing land use or access, and/or small permanent decreases in land area (less than 5ha) and/or business operational impacts to current agricultural and forestry systems and practices. |
| Negligible                            | No changes would be required to the enterprise mix or the operation of the activity.<br>The type and range of enterprises and activities is unaffected.<br>Minimal loss of land associated with the farm business.  |

## Public access and amenity

### Linear Features

10.3.23 The public access assessment identifies the key routes used by NMUs. Linear features such as Core Paths, Public Rights of Ways (PRoW) and community walks are considered in the assessment of the path networks. The River Earn, River Lednock and Water of Ruchill are considered in the assessment of water-based facilities.

10.3.24 The assessment considers the effects of the Scheme on the users of these routes and focuses on:

- Changes in journey lengths and times as a result of direct impact to and/or the diversion of NMU routes.
- Changes in the amenity value of journeys. The amenity of a journey can be defined as the pleasantness of a journey. It is concerned with the degree and duration of people’s exposure to construction activities and the impact of the scheme itself. Amenity of NMU routes is considered



for all routes irrespective of journey destination (i.e. amenity does not only consider journey to/from community land/facilities).

**Community land, facilities, and venues**

10.3.25 The assessment of impacts to the local community identifies the key land, facilities and venues used by the local community. This includes schools, churches, greenspaces, and recreational facilities (e.g. Bowling Club).

10.3.26 The assessment of effects to these facilities focuses on:

- The uniqueness or rarity of the recreational resource in local, regional, national, and international contexts.
- The qualities offered by the resource to users of different abilities.
- The level of use of the resource compared with other similar resources.
- Whether or not the resource is a recognised sporting or training venue.
- The location, status and importance of the land used by the public which could be lost.

10.3.27 **Tables 10.7 and 10.8** set out the sensitivity criteria and impact magnitudes associated with the assessment of public access and amenity.

**Table 10.7 Sensitivity criteria for public access, amenity and areas of greenspace**

| Sensitivity | Criteria   |
|-------------|--|
| Very High   | <p><b>Water Based Facilities</b></p> <p>The water environment specifically attracts overseas visitors. The qualities of the water environment make it one of the most renowned sites for this form of recreation or type of experience/challenge within the form in the UK.</p> <p>The site is a venue for international competitions or events or an important training venue for such events.</p>  |
| High        | <p><b>Water Based Facilities</b></p> <p>The water environment is regularly used by people from all over Scotland. The qualities of the water environment place it amongst the best sites in Scotland for a particular form of recreation or type of experience/challenge within that form. Similar sites are likely to be rare to very rare in Scotland.</p> <p><b>Terrestrial Facilities</b></p> <p>The site is regionally one of the top sites for a particular form of recreation and its location means that it is particularly accessible from a number of Scotland's major population centres - so making it of national importance.</p> <p>The site is a recreational resource for one or more of the most deprived or otherwise disadvantaged communities in Scotland.</p> <p>The site may host national competitions or events or be an important training site for such events.</p> <p>Linear (PRoW, Core Paths and / or regional links) or Area Based facilities and community land / facilities of national value.</p> |

| Sensitivity | Criteria  |
|-------------|---|
| Medium      | <p><b>Water Based Facilities</b><br/>                     The water environment is among the most popular locations regionally for a particular form of recreation or type of experience/challenge within that form. The qualities of the water environment (including its landscape qualities) place it amongst the best sites in the region for a particular form of recreation or type of experience/challenge within that form. Similar sites are likely to be rare to very rare in the region.</p> <p><b>Terrestrial Facilities</b><br/>                     The site is a recreational resource for local communities or groups. The site is used by clubs in the region as a venue for training or competitions; or the site is particularly important regionally because its location means that it is particularly accessible to recreational users in the region. Area Based facilities and community land / facilities of regional significance.</p> |
| Low         | <p><b>Water Based Facilities</b><br/>                     The water environment is frequently used for recreation but does not meet any of the other criteria listed in this Table.</p> <p><b>Terrestrial Facilities</b><br/>                     Disused community, recreational and other land of no specific importance.</p>   |

Table 10.8: Magnitude of impact for public access and amenity

| Magnitude of Public Access and Amenity Impact | Criteria   |
|---|--|
| Very High                                     | <p><b>Water Based Facilities</b><br/>                     More than an 80% reduction or increase in: the availability of the recreational resource; or the usage of the resource</p>   |
| High  | <p><b>Water Based Facilities</b><br/>                     Around a 41% to 80% reduction or increase in: the availability of the recreational resource; or the usage of the resource</p> <p><b>Terrestrial Facilities</b><br/>                     Considerable adverse change in the existing views, air quality, or noise levels resulting in a change in amenity or perceived safety. Increase in journey lengths on non-motorised user routes or to community facilities of &gt;500m. Significant restriction of access to facilities, barriers, physical restrictions or limitations on the use of the site or facility, or even its loss.</p> |

| Magnitude of Public Access and Amenity Impact | Criteria   |
|---|--|
| Moderate                                      | <p><b>Water Based Facilities</b><br/>                     Around a 16% to 40% reduction or increase in:<br/>                     the availability of the recreational resource; or<br/>                     the usage of the resource<br/>                     If effects are concentrated at low usage times (e.g. week days) then a greater than 40% reduction or increase in the availability of the resource at these times may still be small.<br/>                     If effects are concentrated at high usage times (e.g. weekends), then reductions or increases in availability of less than 40% may be medium scale.</p> <p><b>Terrestrial Facilities</b><br/>                     A noticeable adverse change in the existing views, air quality, or noise levels resulting in a change in amenity or perceived safety.<br/>                     Increase in journey lengths on non-motorised user routes or to community facilities of 250 – 500m.<br/>                     Noticeable restriction of access to facilities, barriers, physical restrictions or limitations on the use of the site or facility, or even its loss.</p> |
| Minor   | <p><b>Water Based Facilities</b><br/>                     Around a 6% to 15% reduction or increase in:<br/>                     the availability of the recreational resource; or<br/>                     the usage of the resource<br/>                     If effects are concentrated at low usage times (e.g. week days) then a greater than 15% reduction or increase in the availability of the resource at these times may still be small.<br/>                     If effects are concentrated at high usage times (e.g. weekends), then reductions or increases in availability of less than 15% may be medium scale.</p> <p><b>Terrestrial Facilities</b><br/>                     A barely noticeable change in the existing views, air quality, or noise levels resulting in a change in amenity or perceived safety.<br/>                     Increase in journey lengths on non-motorised user routes of up to 250m.<br/>                     A barely noticeable change of access to facilities, barriers, physical restrictions or limitations on the use of the site or facility, or even its loss.</p>                          |

**Assessing impact significance**

- 10.3.28 The significance of an impact depends on its magnitude and the sensitivity of the receptor / feature. For example, an impact of small magnitude on a highly sensitive receptor could be moderately significant.
- 10.3.29 For each topic in this chapter, the sensitivity and magnitude has been described. The overall significance of environmental impacts assessed in this chapter uses the matrix in **Table 10.9**.

**Table 10.9: Criteria for determining significance of environmental impacts**

| Magnitude of Impact   | Value / Sensitivity of receptor |                         |                         |                         |
|-----------------------|---------------------------------|-------------------------|-------------------------|-------------------------|
|                       | Very high                       | High                    | Medium                  | Low                     |
| Very large (adverse)  | Major adverse                   | Major-Moderate adverse  | Moderate adverse        | Moderate-minor adverse  |
| Large (adverse)       | Major-Moderate adverse          | Moderate adverse        | Moderate-minor adverse  | Minor adverse           |
| Medium (adverse)      | Moderate adverse                | Moderate-minor adverse  | Minor adverse           | Minor adverse           |
| Small (adverse)       | Moderate-minor adverse          | Minor adverse           | Minor adverse           | Minor adverse           |
| Very small (adverse)  | Minor adverse                   | Minor adverse           | Minor adverse           | Minor adverse           |
| Negligible            | Negligible                      | Negligible              | Negligible              | Negligible              |
| Very small (positive) | Minor positive                  | Minor positive          | Minor positive          | Minor positive          |
| Small (positive)      | Moderate-minor positive         | Minor positive          | Minor positive          | Minor positive          |
| Medium (positive)     | Moderate positive               | Moderate-minor positive | Minor positive          | Minor positive          |
| Large (positive)      | Major-moderate positive         | Moderate positive       | Moderate-minor positive | Minor positive          |
| Very large (positive) | Major positive                  | Major-moderate positive | Moderate positive       | Moderate-minor positive |



## 10.4 Baseline

### Socio-economics

#### Local economy

- 10.4.1 In the Flood Risk Management Strategy (2015)<sup>7</sup>, SEPA identified Comrie and the surrounding area as a Potentially Vulnerable Area (PVA) and the second worst area within Perth & Kinross for damages to properties and costs from flooding. The PVA is situated in the upper reaches of the River Earn Catchment and includes Comrie and Crieff.
- 10.4.2 The risk of flooding to people, property, community facilities, utilities, the transport network and designated sites (as identified in the Strategy) is summarised in **Table 10.10**.

Table 10.10: Risk of Flood Summary. Extracted from *SEPA's Flood Risk Management Strategy (2015)*

|   | 1 in 10                              | 1 in 200  | 1 in 1000  |
|---|--------------------------------------|---|--|
|   | High likelihood                      | Medium likelihood   | Low likelihood   |
| Residential properties (total 4,800)              | 220                                  | 510   | 830  |
| Non-residential properties (total 1,100)          | 50                                   | 100   | 120  |
| People  | 490                                  | 1,100   | 1,800  |
| Community facilities                              | <10 Emergency services               | < 10 includes: emergency services and healthcare facilities | <10 includes: emergency services and healthcare facilities |
| Utilities assets                                  | <10                                  | <10   | 10   |
| Transport links (excluding minor roads)           | 3 A roads, 2 B roads at 86 locations | 3 A roads, 2 B roads at 89 locations                        | 3 A roads, 2 B roads at 109 locations                      |
| Environmental designated areas (km <sup>2</sup> ) | 0.8                                  | 0.8   | 0.8  |
| Designated cultural heritage sites                | 7                                    | 7   | 7  |

- 10.4.3 For the purposes of the Scheme assessment, the predicted number of receptors flooded during a flood event is identified in **Table 10.11**. Further details on the flood modelling is found in **Chapter 6: Water Environment & Fluvial Geomorphology**.

<sup>7</sup> Flood Risk Management Strategy: Tay Local District. SEPA (2015)

Table 10.11: Number of receptors flooded during a flood event

| Return Period | Numbers of receptors flooded |
|---------------|------------------------------|
| 1:2 year      | 1                            |
| 1:5 year      | 5                            |
| 1: 30 year    | 56                           |
| 1: 100 year   | 117                          |
| 1: 200 year   | 193                          |
| 1: 1000 year  | 421                          |

10.4.4 The Economic Appraisal calculated the costs of damages associated flooding within Comrie. The Do-Minimum scenario assumes no changes from the current baseline but provides maintenance for key assets (such as existing flood embankments) which impede the flow of water within the town. **Table 10.12** provides the damages estimates for the Do-minimum in the present day and 2050.

Table 10.12: Estimated Flood Damages – ‘Do-Minimum’ Scenario

| Category  | Present-Day | 2050        |
|---|-------------|-------------|
| Residential Damages (AAD)                             | £209,237    | £1,145,358  |
| Residential Evaluation (AAD)                          | £23,336     | £169,169    |
| Vehicle Damages (AAD)                                 | £9,609      | £49,623     |
| Emergency Services Cost (AAD)                         | £13,999     | £101,055    |
| Non-Residential Damages (AAD)                         | £7,042      | £46,994     |
| Road Closures (AAD)                                   | £916        | £1,948      |
| Total AAD   | £264,139    | £1,514,147  |
| <i>(Total Present Value (PV) Damages)<sup>8</sup></i> | £7,874,692  | £45,140,594 |

### Health, safety and wellbeing

10.4.5 The ‘Scottish Index of Multiple Deprivation’ (SIMD) tool is used by the Scottish Government to measure the relative deprivation of areas known as ‘data zones’ in Scotland. Deprivation is measured by various factors known as indicators. To assess deprivation in each data zone, the SIMD tool measures indicators across seven topic domains: income; employment; health;

<sup>8</sup> Calculated damages associated with each property for each modelled return period are multiplied by the probability increment and summed to arrive at an annualised average damage estimate. This is summed over the appraisal period, with appropriate discounting applied based on HM Treasury Green Book values, to arrive at a total estimated uncapped present value (PV)

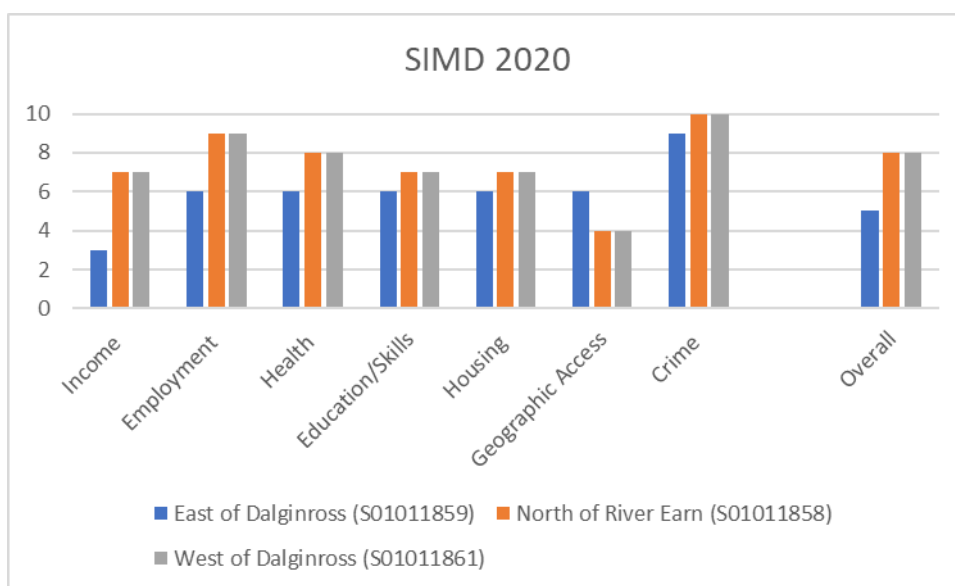
education; housing; access to services and crime. The SIMD ranks data zones from most deprived to least deprived.

10.4.6 This assessment focuses on deprivation rankings split into 10 levels each containing 10% of the data. If the data zone is ranked 10, it is considered to be least deprived for that specific topic domain. If ranked 1, the data zone is considered to be one of the more deprived data zones (areas) in Scotland.

10.4.7 **Figure 10.2** illustrates how Comrie is ranked overall using the SIMD tool. **Graph 10.1** shows how these areas perform in each topic domain which comprise of multiple indicators as described in **paragraph 10.4.5**.



Figure 10.2: Extracted SIMD 2020 Map of Comrie



Graph 10.1: SIMD 2020 ranking of seven domains for each data zone

- 10.4.8 Comrie is generally ranked in the top 50% for most topic domains. Comrie has limited access to main services and markets and ranks slightly lower in terms of accessibility. The A85 is the only trunk road providing access to the area. There is no railway station in Comrie, and the nearest major town is Perth, located 34km to the east.
- 10.4.9 To the east of Dalginross, the area is ranked notably lower in the domains of employment, and income when compared to other areas of the town<sup>9</sup>. This could be correlated to the percentage of 65-year-olds and over' being greater on average in this area than the rest of the town. This could also correlate to the higher percentage of people 'economically inactive.

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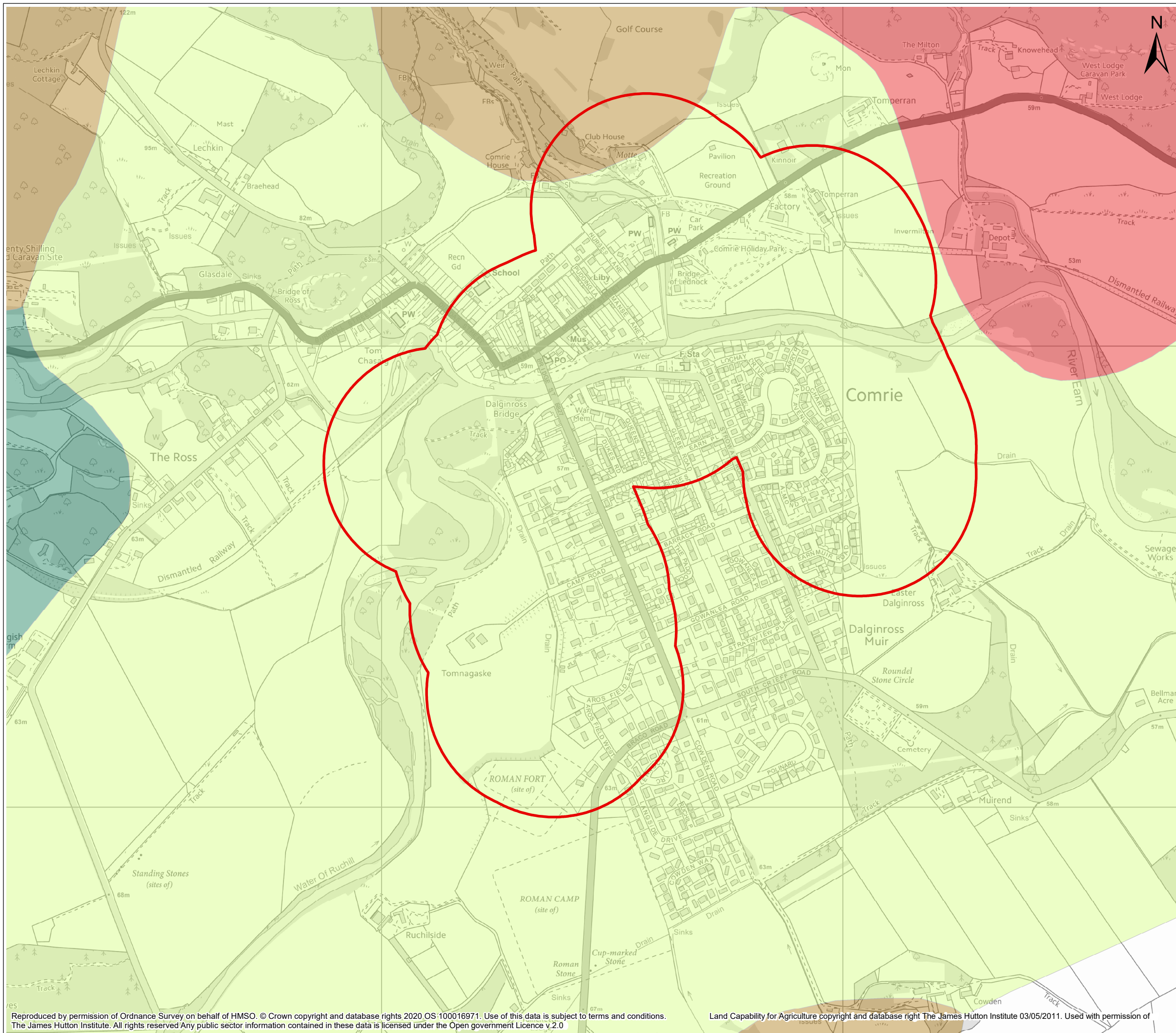
<sup>9</sup> <https://www.scotlandscensus.gov.uk/> Data from the Scottish Census (2011) was used to compare the different 'area profiles of the town'. Area profiles provide further information regarding the domains i.e. the % of people economically active aged 16-74 or number of people per household.



### Agricultural land

- 10.4.10 The LCA classification is a seven-class system which can be simplified into four categories. Class 1 to 4 are suited to arable and mixed agricultural land use; Class 5 and 6 are suited to improved grassland and Class 6 to 7 is suited for rough grazing. Land within Class 1, Class 2 and Class 3.1 is considered to be 'prime agricultural land', and is, therefore, considered to be of high agricultural value.
- 10.4.11 The study area comprises of mainly Class 3.2 agricultural land with approximately 12 fields within the study area being mainly used for arable or grazing purposes as shown on **Figure 10.3**. Therefore, the land would not be considered prime agricultural land in accordance with the LCA classification system.
- 10.4.12 To the east of Dalginross, there are two fields within the study area. The field to the north of Tomnagaske is predominantly used for grazing and is susceptible to 1:10 year flood events. The field to the south of Tomnagaske is arable and is susceptible to 1:200 year flood events.
- 10.4.13 To the west of Dalginross, there are four fields within the study area which are all used for arable farming and susceptible to at least 1:200 year flood events.

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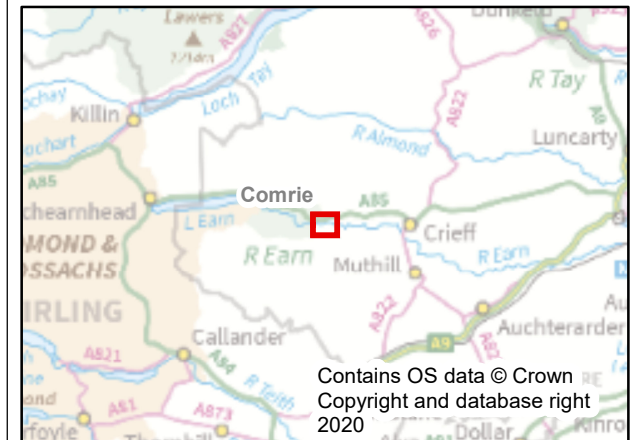
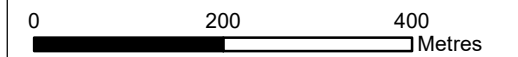


**Legend**

Study Area

**Land Capability for Agriculture (LCA)**

- 3.2 - Land capable of average production though high yields of barley, oats and grass can be obtained. Grass leys are common
- 4.2 - Land capable of producing a narrow range of crops, primarily on grassland with short arable breaks of forage crops
- 5.2 - Land capable of use as improved grassland. Few problems with pasture establishment but may be difficult to maintain
- 5.3 - Land capable of use as improved grassland. Pasture deteriorates quickly



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



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**Comrie Flood Protection Scheme 2020**

Project  
**Figure 10.3 - Land Capability for Agriculture (LCA) classification**

|             |         |
|-------------|---------|
| Scale @ A3  | 1:8,000 |
| Project No. | 119702  |

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## Public access and amenity

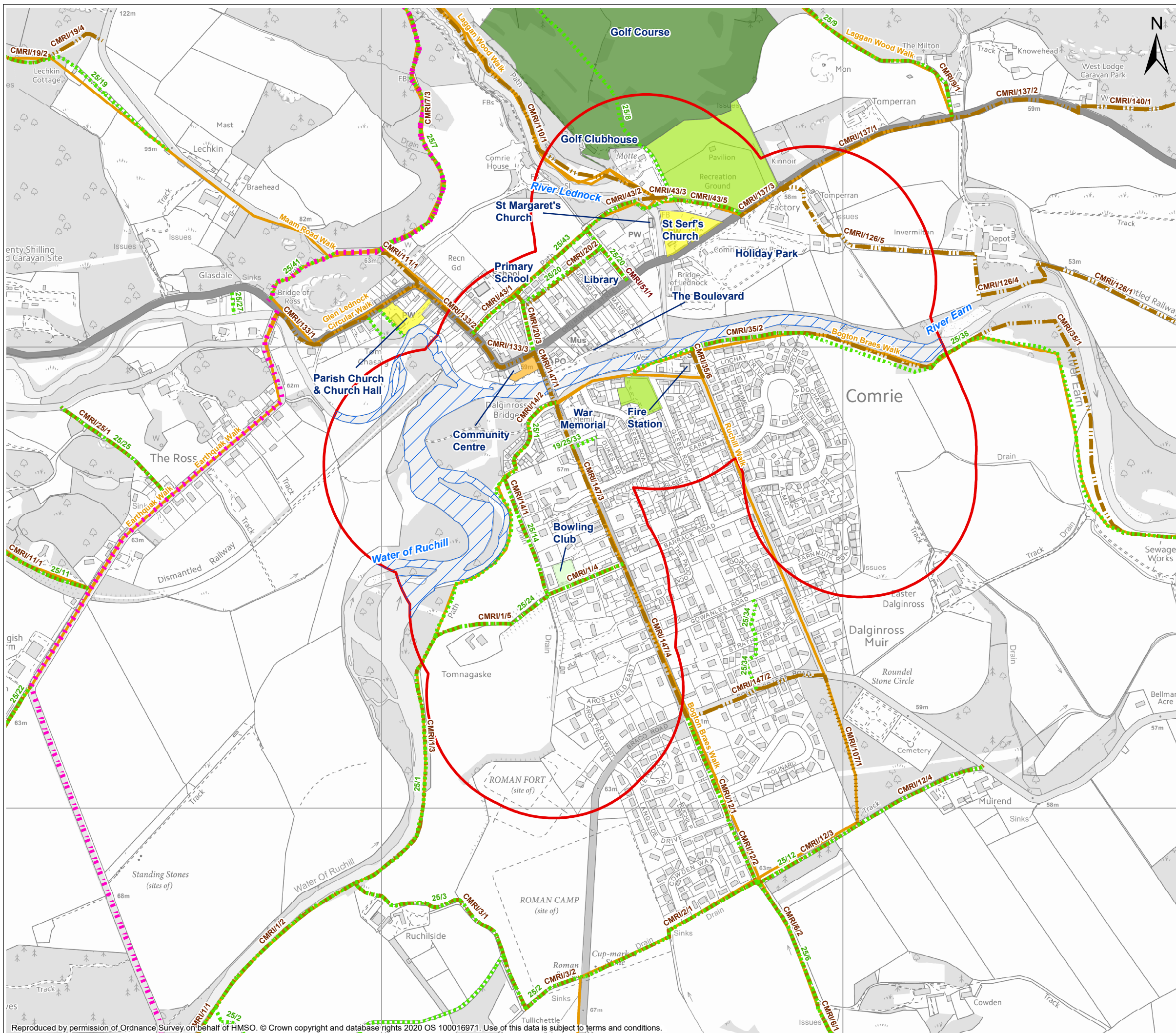
### Linear access facilities

- 10.4.14 Public access routes in Comrie are heavily used by locals and visitors for recreational purposes. Non-Motorised users (NMUs) include (but are not limited to) walkers, cyclists and equestrians.
- 10.4.15 The baseline NMU network within the study area and its interaction with the Scheme is shown on **Figure 10.4** and comprises:
- Core Paths
  - Public Rights of Ways (PRoW)
  - Community walks - 'Comrie Walks' defined by Comrie Community Council<sup>10</sup>
- 10.4.16 Comrie Walks' form part of a larger network of routes in the area and have been set up with support of local landowners and farmers. The walks are circular, all starting and finishing in Comrie and are signposted with waymarkers. Five of the six walks are within the study area for linear features. The five routes are:
- Maam Road Walk: Starts and finishes at Dundas Street parking facility and heads north into Pollyrigg Wood, back along the river Lednock into Balloch Wood and back into Comrie.
  - Glen Lednock Circular Walk: Starts and finishes Dundas Street parking facility, heading north up along one bank of the River Lednock and heads back along the other bank heading into Comrie.
  - Laggan Wood Walk: Starts at Laggan Car Park heading into Laggan wood to the viewpoint and back along the edge of the Golf Course and along the A85 road to the starting point.
  - Ruchill Walk: Start and finishes at Dalginross Bridge heading west along the river bank of the Water of Ruchill. From Cultybraggan, the route heads back into Comrie along the B827 road and Strowan Road to the starting point.
  - Bogton Braes Walk: Starts and finishes at Dalginross Bridge heading east along the bank of the River Earn to Drummondearnoch. The Walk passes Cowden Loch turning back to Comrie where it meets the B827.
  - **Table 10.13** summaries the baseline of NMU routes within the study area. Where Core Paths, PRoW and community routes overlap, this has been identified in the table.

<sup>10</sup> Comrie Community Council and Perth and Kinross Community Trust (2000): Comrie Walks Available at: [http://www.pkc.gov.uk/media/11014/Comrie/pdf/Comrie\\_Leaflet\\_amended.pdf?m=636102123831470000/](http://www.pkc.gov.uk/media/11014/Comrie/pdf/Comrie_Leaflet_amended.pdf?m=636102123831470000/)

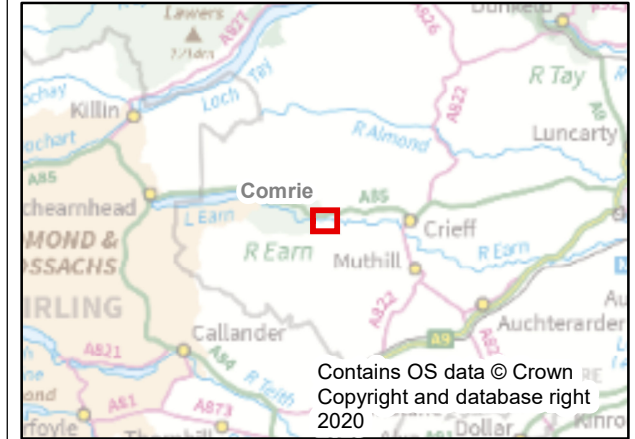
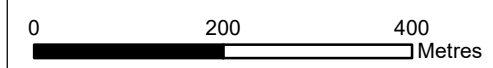
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**Legend**

- Study Area
- Non-Motorised User Routes (NMU)
  - Scottish National Trail
  - Public Right of Way
  - Core Path
  - Comrie Walk
  - Area of River used by Anglers
- Greenspace
  - Bowling Green
  - Playing Field
  - Golf Course
  - Cemetery
  - Religious Ground
- Community Facilities



|       |            |                     |       |        |
|-------|------------|---------------------|-------|--------|
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**Comrie Flood Protection Scheme 2020**

Drawing Title

**Figure 10.4 - Community Facilities, Greenspace and Linear Access Facilities**

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Table 10.13: Core Paths, Public Rights of Ways' and community walks

| CP code               | PRoW code           | Comrie Walks  | Description of Path   |
|-----------------------|---------------------|---|---|
| CMRI/1<br>(3,4,5)     | 25/24 and<br>25/1   | Ruchill Walk  | Ruchill Path: Camp Road to Glen Artney Road at Cultybraggan. PRoW 25/1 heads along the east bank of the Water of Ruchill near Tomnagaske whereas CMRI/1 and 25/24 head along the western field boundary<br>Equestrians are also known to use this route                                     |
| CMRI/14<br>(1,2)      | 25/14               | Ruchill Walk  | Ruchill Path: Dalginross via Field of Refuge to Camp Road   |
| CMRI/20<br>(2,3)      | 25/20               |   | Dundas Street via Melville Lane & Back O Toon Lane to Nurses Lane<br>Equestrians are also known to use this route   |
| CMRI/35<br>(1,2,6)    | 25/35               | Bogton Braes Walk   | Core Path starts at Strowan Road east of fire station and PRoW at Glebe Street, north of Legion Park. Both routes head eastwards along riverbank  |
| CMRI/43<br>(1,2,3,5)  | 25/43               | Glen Lednock Circular Path,<br>Laggan Wood Walk, Maam Road Walk | Laggan Wood & Glen Lednock Circular Paths: Laggan car park and A85 to Dundas Street car park via School Road<br>Route from School Road to Nurse Lane is also used by equestrians  |
| CMRI/51<br>(1,2)      | 25/20 and<br>25/34  | Glen Lednock Circular Path                                      | Nurses Lane: Drummond Street to CMRI/43 and South Crieff Road to Gowanlea Road via Strathview Place   |
| CMRI/107<br>(1)       |                     | Ruchill Walk  | Path from junction of South Crieff Road & Strowan Road to Muirend   |
| CMRI/110<br>(1)       | Un-<br>named<br>RoW | Glen Lednock Circular Path,<br>Laggan Wood Walk                 | Laggan Wood & Glen Lednock Circular Paths: Laggan car park north along banks of River Lednock to Laggan Wood<br>Route from A85 to north of Golf Course is used by equestrians   |
| CMRI/126<br>(4,5)     |                     |   | A85 at Tomperran via disused railway to minor road at Thornhill Lodge<br>Core Path forms part of 'The Three Saints Way'. It is anticipated that when complete, connect Killin to St Andrews and pass by Lochearnhead, St Fillans, Comrie, Crieff, Dunning, Abernethy, Tayport and Leuchars. |
| CMRI/133<br>(1,2,3)   |                     | Glen Lednock Circular Path,<br>Maam Road Walk                   | Earthquake Path & Glen Lednock Circular Path: A85 footway, from Bridge Street to Bridge of Ross   |
| CMRI/137<br>(1,3)     |                     | Laggan Wood Walk  | Laggan Wood Path: a85 footway, from Laggan car park to Lodge at West Lodge Caravan Park   |
| CMRI/143<br>(1)       | 25/43               |   | Link from Melville Lane to School Road  |
| CMRI/147<br>(1,2,3,4) |                     | Bogton Braes Walk   | From Dunira Street over Dalginross Bridge to South Crieff Road at Strowan Road  |
|                       | 19/25/33            |   | Dalginross High Road to Dukes Road in Glebe   |
|                       | 25/8                |   | A85, north of the Comrie Holiday Park heading north along the Golf course   |

| CP code | PRoW code | Comrie Walks | Description of Path   |
|---------|-----------|--------------|---|
|         | 25/21A    |              | The Ross to Water of Ruchill (west) Riverbank via greenspace  |
|         | 25/29     |              | Burrell Street to greenspace next to the River Earn           |
|         | 25/30     |              | Burrell Street to River Earn adjacent to Comrie Parish Church |

- 10.4.17 The three rivers within the study area are also popular with recreational users including anglers and canoeists. The greenspace along the banks of the rivers are used for access via the designated routes.
- 10.4.18 Comrie Angling club provided feedback in their consultation response (April 2018) stating that the majority of the rivers within the study area are used by anglers with the exception of the River Lednock. This river, which was once leased by the club was held as a Salmon reserve. The right bank of the River Earn from where the Core Path diverges from the Public right of Way at Tomnagaske to the weir below the Dalginross Bridge is known to be used by Crieff Angling Club. **Figure 10.4** highlights the locations of the linear water features used by anglers.
- 10.4.19 A canoeing route runs along the River Earn between Comrie and Crieff and canoeists have been observed by Comrie Angling Club.

### Community land, facilities, and venues

- 10.4.20 Comrie hosts many local events held throughout the year and has a tradition of laying on a range of festivities for all ages during the Comrie Fortnight each July and August and on New Year’s Eve, with the Flambeaux procession. Comrie Fortnight hosts various events in multiple locations within the town. The village is also a regular contender for the annual national Village in Bloom competition.
- 10.4.21 Comrie has a primary school, shops and other facilities and services attractive to tourists such as the golf course and holiday park.
- 10.4.22 The Comrie Holiday Park is located within the study area to the north of the River Earn and east of the Water of Ruchill and is open all year round. The holiday park is identified in the Local Development Plan as *making significant contribution to the provision of visitor accommodation within the Comrie area and it should be retained.*
- 10.4.23 There are several areas where land is used by the local community as open space within the study area. This includes the woodland areas and greenspaces on the banks of all three rivers, Legion park and the golf course. The areas of greenspace and open space within the study area include many non-designated local walks used by NMUs.
- 10.4.24 There are no National, Regional, Country or Major Parks within the study area surrounding the Scheme.
- 10.4.25 To the southwest, outwith the study area lies the former Cultybraggan Camp, which was a former Army facility until 2007 when ownership was transferred to a Community Trust and is primarily being developed for community and employment uses.

10.4.26 **Table 10.14** and **Figure 10.4** sets out the known community land, facilities and venues within the study area.

**Table 10.14: Community land, facilities, and venues in the study area**

| Type                            | Location description   | NMU route used to access the receptor                                    |
|---------------------------------|--|--|
| <b>Amenity/ Activity</b>        |  |  |
| Comrie Bowling Club             | Comrie Bowling Club, which was founded in 1956, is situated in Camp Road, Comrie. Visitors are welcome to the Green whenever it is open.   | <b>Core Path:</b> 14 and 1<br><b>PRoW:</b> 25/14 and 25/24               |
| Comrie Angling Club             | Angling takes place at the River Earn and Water of Ruchill and includes fishing for Salmon Grilse and Sea trout. Fishing for Salmon, Sea Trout and Greyline takes place only between 1st February and 31st October (15th October for Drummond Water), and for Brown Trout only between 15th March and 6th October. | <b>Core Path</b> 14 and 35<br><b>PRoW</b> 25/35                          |
| Holiday Park                    | Comrie Holiday Park is situated on the banks of the River Earn and River Lednock. Available all year round.  | <b>Core Path:</b> 43 and 126<br><b>PRoW:</b> 25/8 and 25/20              |
| <b>Greenspaces designations</b> |  |  |
| Religious Grounds               | The grounds at Comrie and Strowan Parish Church are located to the north of the River Earn.  | <b>Core Path:</b> 133<br><b>PRoW:</b> 25/30                              |
| Legion Park                     | Legion Park is used throughout the year to host various events including the 'Comrie Fortnight' at the end of July. The park is situated south of the River Earn next to Strowan Road.   | <b>PRoW:</b> 25/30 (provides access to the northern site of Legion Park) |
| Laggan Park                     | Laggan Park playing field is north of the A85 and east of the River Lednock. Area is used for recreational activities. Located within the Park is a Pavilion and Skatepark.  | <b>Core Path:</b> 43, 110; 137 and 126<br><b>PRoW:</b> 25/8              |
| Golf Course                     | Founded in 1891, Comrie Golf Course is situated on the Laggan Braes at the eastern end of the village.   | <b>Core Path:</b> 110<br><b>PRoW:</b> 25/8 and 25/43                     |

| Type                                    | Location description   | NMU route used to access the receptor   |
|---|--|---|
| Bank of the River Earn (left and right) | <p>The banks of the River Earn (the left side is locally known as 'The Boulevard') are designated as Open Space in the Adopted LDP.</p> <p>During consultation with Perth and Kinross Council Greenspace Officer it was noted that the Boulevard is well used by various NMUs and is an important asset to the community.</p> <p>Designated Paths used by non-motorised users run along the right bank of the River Earn which is also used by Anglers.</p> <p>Right bank at the field of Refuge supports a network of informal paths used by the local community for walking / horse-riding. Path follows the Water of Ruchill and connects to Core Path CMRI/1 within the agricultural land to the south. The existing informal route along the Water of Ruchill has been undercut in places by erosion and is not considered suitable for equestrian use.</p> | <p><b>Bank of the River Earn-North:</b><br/><b>Core Path:</b> 126; 147; 133<br/><b>PRoW:</b> 25/27; 25/29 and 25/30</p> <p><b>Bank of the River Earn-South:</b><br/><b>Core Path:</b> 35 and 147<br/><b>PRoW:</b> 25/1; 25/25 and 25/35</p> |
| <b>Community facility</b>               |  |   |
| Comrie Fire Station                     | Fire Station, Strowan Road, PH6 2EP  | <b>Core Path:</b> 35<br><b>PRoW:</b> 25/35  |
| Comrie Golf Course                      | Golf Clubhouse, PH6 2LR  | <b>PRoW:</b> 25/8   |
| Comrie Library                          | Library, Drummond Street, PH6 2DS  | <b>Core Path:</b> 51  |
| Comrie Parish Church and Church Hall    | Comrie and Dundurn Parish Church, Burrell Street   | <b>Core Path:</b> 133<br><b>PRoW:</b> 25/30   |
| Comrie Primary School                   | Primary School, School Road, PH6 2LN   | <b>Core Path:</b> 43 and 143<br><b>PRoW:</b> 25/14 and 25/24  |
| Comrie War Memorial                     | Bridge Street, PH6 2FB   | <b>Core Path:</b> 147   |
| Post Office                             | Bridge Street, PH6 2DS   | <b>Core Path:</b> 147<br><b>PRoW:</b> 25/20   |
| St Kessog's Masonic Hall                | Drummond Street, PH6 2DS   | <b>Core Path:</b> 147   |
| St Margaret's Church                    | Drummond Streets, PH6 2EA  | <b>Core Path:</b> 143<br><b>PRoW:</b> 54/43   |
| St Serf's Church <sup>11</sup>          | Station Road, PH6 2EA  | <b>Core Path:</b> 51 and 137  |
| Comrie Cemetery <sup>9</sup>            | Strowan Road, PH6 2HF  | <b>Core Path:</b> 107   |
| Community Centre ('White Church')       | Dunira Street, PH6 2LJ   | <b>Core Path:</b> 133, 147  |

<sup>11</sup> St Serfs church grounds and Comrie cemetery are also greenspace designations.

## 10.5 Consultation

10.5.1 To inform the understanding of the baseline conditions, consultation has been undertaken with a number of organisations as set out in Table 10.15 below. Consultation consisted of meetings and information requests relating to NMU routes and community land/facilities within the study area.

Table 10.15 Consultation responses

| Consultee   | Comment  | Date     | Response   |
|---|--|----------|--|
| Perth and Kinross Council (the Councils) Meeting        | Request for the new Local Development Plan (LDP 2) to be reviewed. The policies in relation to accessibility.  | 20.10.17 | Draft Policies were reviewed in the EIA. Any policy conflicts were further assessed in this chapter.<br>A meeting with the Councils Access Officer was arranged.   |
| Perth and Kinross Council Meeting                       | <p>The Council indicated that the amenity area along the left bank of the River Earn is well-used and is an important aspect to the community. Community Greenspace Team Leader indicated that they would like this retained as much as possible.</p> <p>The Council indicated there is a need for careful liaison with the Councils internal landscape architect when it comes to detailed design of the proposal at this location.</p> <p>The Council noted the area of the Cricket Ground / Laggan Park for use as a potential site compound would likely meet heavy resistance from the community.</p> | 02.11.17 | <p>Access to the left bank of the River Earn has been considered in the design of the Scheme.</p> <p>The Council have engaged with the public during the exhibition events to seek their views on the landscaping of the area.</p> <p>Indicative construction compounds have been considered. The Cricket Ground / Laggan Park did not form one of these locations as a result of the extensive use of these areas by the local community.</p> |
| The Councils Greenspace Officer Scoping Update Response | <p>Content that the effect on public amenity and public open spaces (including core path network) is scoped in and will be assessed.</p> <p>Highlights the need to fully assess any effect on riverside core paths downstream in addition to those within the immediate area.</p> <p>Assumed that core paths affected by the flood defences will be rerouted if required and improved as part of the scheme.</p>   | 23.11.17 | Noted, core paths and other linear access routes are assessed within 250m of the proposed scheme and described in <b>section 10.4</b> baseline information.  |

| Consultee   | Comment   | Date                | Response   |
|---|---|---------------------|--|
| Comrie Angling Club   | The consultee highlighted that the club fishes in the majority of the rivers within the study area of the proposed scheme. The exception of this is the river Lednock which the club had once leased but held as a Salmon reserve. The stretch from the weir below Dalginross bridge, on the right bank, downwards Tomnagaske is held by Crieff Angling Club. | 12.04.18            | Included in <b>section 10.4</b> baseline information. Potential effects to recreational users of the linear water facilities is assessed as part of this chapter.  |
| Tactran Information request                                       | Tactran are aware that there are proposals being developed by SNH/Sustrans as part of the National Walking & Cycling Network (NWCN) which include a route through Comrie.   | 10.01.18            | See response to Sustrans information request below   |
| British Horse Society Information request                         | Provided information on routes used by equestrians.   | 02.03.19 & 17.04.18 | Data has been received and assessed as part of this chapter. This has been included in the baseline information set out in <b>Table 10.13</b> .  |
| Centre for Inclusive Living Perth and Kinross Information request | Consultee suggests:<br>All paths and pavements are accessible for wheelchair users and the visually impaired;<br>Dropped kerbs are in the appropriate places, this would be with portable ramps.<br>Any crossing points are accessible with dropped kerbs and tactile paving<br>There is ramped access to buildings.<br>Appropriate signage on paths.         | 22.01.18            | Ramped access on the left and right bank of the River Earn has been incorporated into the design to allow access for all NMUs.<br>Handrails have also been provided where stairs have been incorporated.<br>The final detail of paths and pavements would be considered at the detailed design stage of the Scheme.  |
| Sustrans Information Request                                      | There are currently no National Cycle routes through Comrie but there are long-term plans to develop a route  | 25.01.18            | The location of the National Cycle route proposed as part of Sustrans long-term plan is not known at the time of this assessment. The proposed cycle route could potentially be located on existing designated paths in Comrie. Access to the designated paths affected by the Scheme has been considered in this assessment. Where possible, access has been maintained and stairs and ramps incorporated into the design of the Scheme where possible. |

10.5.2 Public exhibitions were held in Comrie in April and May 2019. All information and outcomes of the event can be found in the Public Consultation Report<sup>12</sup>. One of the key topics the locals raised frequently related to accessibility to the Boulevard area. The Scheme was originally designed to allow NMUs to access this area via a ramped access from Commercial Lane, however at the

<sup>12</sup> Perth and Kinross Council (2019) Comrie Flood Protection Scheme Public Consultation Report.



exhibitions there was a strong preference these ramps should be concealed or located elsewhere along the bank.

- 10.5.3 Other responses emphasised that the area is used as an event space, particularly in the summer during the Comrie Fortnight and the Scheme proposals would potentially affect access to the associated events.
- 10.5.4 In response to the concerns raised by the local community following the public exhibitions, the design of the Boulevard area was amended. The visual impact and land-take was reduced by removing the pedestrian access ramp that had been proposed at Commercial Lane with a graded ramp provided from Bridge Street to the south of the Comrie Community Centre. This is currently a steep, sloped path which is not accessible for all. To allow all users to enjoy the open amenity space at the Boulevard the design incorporates a gentler slope with landscaping in replacement of the steep sloped path. Suitable rest areas on the slope are incorporated to ensure the ramp is not a long and continuous run.

## 10.6 Potential effects

- 10.6.1 This section presents the potential effects during construction and operation of the Scheme prior to the implementation of mitigation.
- 10.6.2 The magnitude of the predicted impact has been considered in combination with the sensitivity of the affected receptor to determine the potential significance of the environmental impacts. The predicted impacts are presented in **Table 10.9**.

### Socio-economics

#### Construction impacts

- 10.6.3 The Scheme Economic Appraisal has not estimated any potential economic benefits or losses during the construction period, and it is therefore not possible to predict any potential economic impact at this stage.
- 10.6.4 In addition to local events, the Comrie Fortnight Festival and Comrie Flambeaux are two regionally important events that contribute to the local economy, these events are predicted to be of high sensitivity. It is predicted that the construction of the Scheme would not affect the staging of these regionally important events, therefore the overall assessment of construction is assessed as being **low** resulting in an overall significance of **minor adverse**.
- 10.6.5 Further liaison between the Council and locally affected residents, business owners and other potentially affected parties will be undertaken to develop measures to best mitigate their concerns in relation to the economic effects of the construction of the Scheme upon their livelihoods. If required, compensation may be granted within the provision of the Flood Risk Management Act upon demonstration of a financial loss.
- 10.6.6 It is predicted that the Scheme will provide opportunities locally through a small increase in local employment and spending within the local economy. However, the number of people predicted to gain employment through the Scheme is predicted to be **low**.

10.6.7 The impact of the Scheme in income and employment terms is therefore predicted to result in a “very small change to the economic opportunities of the group as a whole. A very small number of individuals may benefit more significantly” as per the criteria set out in **Table 10.2**. The overall significance of impact during construction is therefore predicted to be **minor beneficial**.

**Operational impacts**

10.6.8 The Scheme Economic Appraisal identifies that in the Do-Something scenario in 2050 the implementation of the Scheme is predicted to result in economic benefits as set out in **Table 10.16**.

Table 10.16 – Estimated Flood Damages – ‘Do- Something’ Scenario

| Category                                  | Present-Day | 2050        |
|---|-------------|-------------|
| Residential Damages (AAD)                 | £3,929      | £71,334     |
| Residential Evaluation (AAD)              | £238        | £ 5,559     |
| Vehicle Damages (AAD)                     | £108        | £3,654      |
| Emergency Services Cost (AAD)             | £220        | £3,995      |
| Non-Residential Damages (AAD)             | £835        | £9,867      |
| Road Closures (AAD)                       | £696        | £1,898      |
| Intangible Health Benefits (AAD)          | -£3,274     | -£383       |
| Total AAD                                 | £2,752      | £95,931     |
| <i>(Total Present Value (PV) Damages)</i> | £82,012     | ££2,859,934 |

10.6.9 It is predicted that the Scheme would provide flood protection to 189 receptors which are currently at risk of flooding from a 1 in 200 year flood event resulting in a **medium beneficial effect**.

**Health, safety and wellbeing**

**Construction impacts**

10.6.10 Due to the size of the population according to the 2011 census and the potential number of people affected by the construction of the Scheme, a **medium sensitivity** has been applied to the health, safety and wellbeing of the local community.

10.6.11 The potential effects on the community, due to disturbance caused by the construction of the Scheme within close proximity to residential properties and community land / facilities etc. are summarised as follows:

- Construction activities leading to increase in traffic and associated driver frustration

- Construction activities leading to an increase in noise and vibration levels
- Local movement of large plant and machinery through rural areas and the town of Comrie
- Increased flood risk during construction (in-river working areas reducing channel capacity)
- Risk associated with people accessing construction areas
- Risk to construction workers working in the river environment
- Temporary diversions to the public road and footpath network

10.6.12 It is predicted that the effects to health, safety and wellbeing during construction would be temporary and short-lasting. Construction work would be phased reducing the length of time those affected by the period of work are exposed to disturbance effects.

10.6.13 The magnitude of effect on health safety and wellbeing is predicted to be **medium (adverse)** as with appropriate mitigation and good communication, the local residents should be able to avoid exposure that would put their health, wellbeing or safety at risk, resulting in a **moderate adverse impact**.

### Operational impacts

10.6.14 As with the construction assessment, the size of the population within the study area results in a **medium sensitivity** and has applied to the health, safety and wellbeing of the local community.

10.6.15 Intangible health benefits as shown in **Table 10.16** seek to place a monetary on health problems avoided as a result of the Scheme. A person is likely to experience greater health problems due to flooding if they are flooded more frequently. Hence, the intangible health benefit has been based on the reduction in flood frequency at each residential receptor.

10.6.16 The Scheme would result in a reduction in flood risk throughout the study area resulting in a positive effect upon the health, safety and wellbeing of the community. The Scheme has been designed to reduce flood risk at a 1 in 200 year event which will help safeguard 189 properties which are at risk of flooding, thereby benefiting the local community.

10.6.17 It is predicted that during the operation of the Scheme, it would result in a **large positive** effect through the associated reduction to flood risk in the local community, leading to significant benefits to health, safety and wellbeing.

10.6.18 The overall significance of impact is therefore predicted to be **moderate beneficial**.

## Agricultural Land

### Construction

10.6.19 The construction of the Scheme is predicted to directly affect agricultural land with land-take required to locate and operate construction compounds and for the construction working corridor. Elements of the Scheme would also be constructed within agricultural areas.

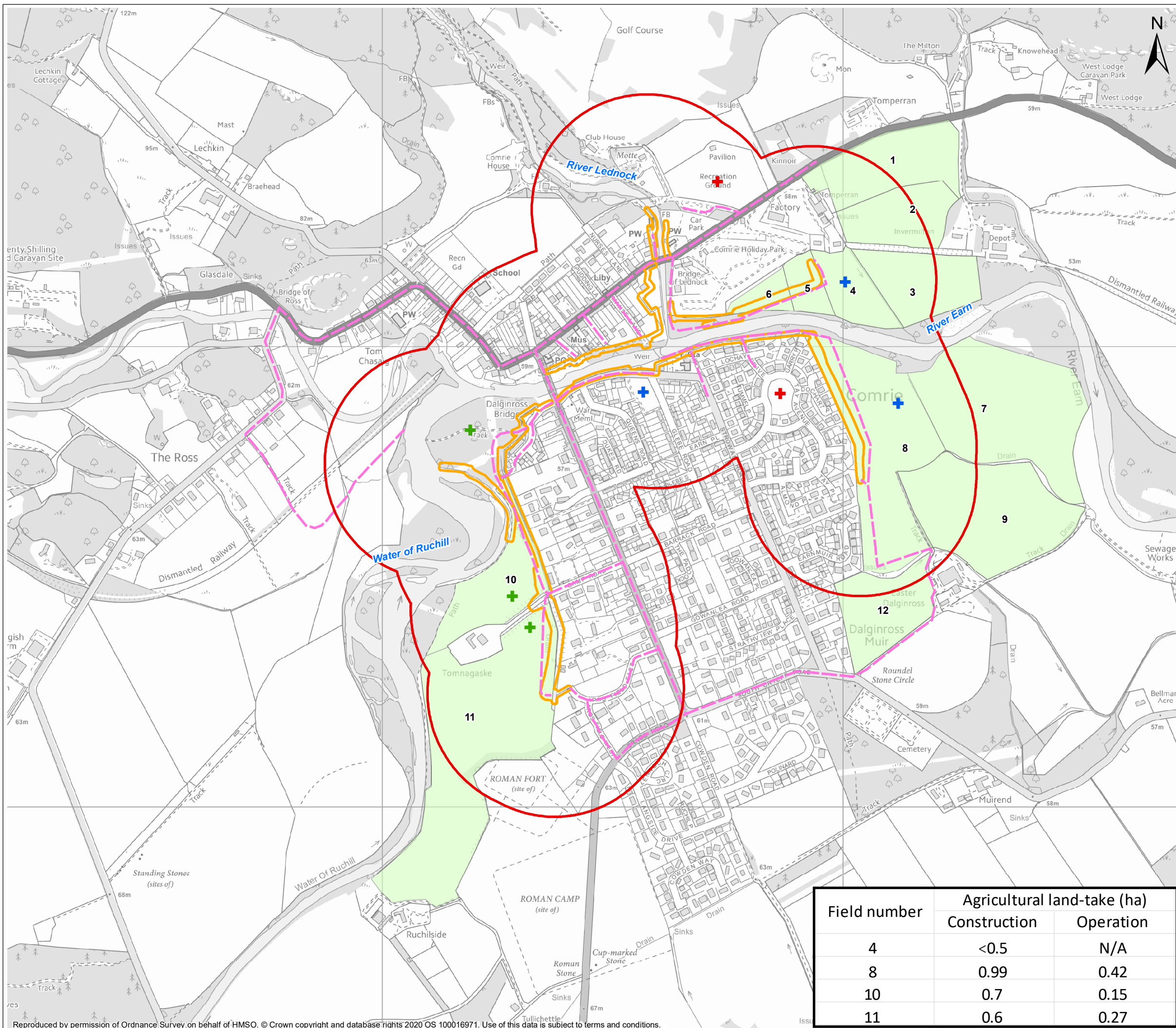
- 10.6.20 The required land-take is predicted to not result in the loss of any prime quality land with the land classification of the affected fields being Class 3.2 and therefore the land is considered to be of **medium sensitivity**.
- 10.6.21 To the east of Dalginross, temporary land-take would be required for the anticipated siting of a construction compound situated across field number 8 as shown in **Figure 10.5**. It is predicted that land-take during construction in the arable field could amount to **< 1 ha** to allow the siting of the anticipated construction compound and the construction of the proposed embankment (ER04) resulting in a **small adverse** impact. Therefore, the overall significance of impact is predicted to be **minor adverse**.
- 10.6.22 Siting a construction compound in Field Number 4 north of the River Earn would require land-take that could amount to less **<0.5 ha** resulting in **minor** adverse impact.
- 10.6.23 During the construction of the Scheme at west of Dalginross, agricultural land-take will accumulate to **0.7 ha** in the northern field (field 10) and **0.6 ha** in the southern field (field 11); a total of **1.3 ha** resulting in a **small adverse** impact.
- 10.6.24 It is predicted that access to the fields for agricultural machinery will not be significantly affected. All access points to the fields are retained along their current alignments. Therefore, it is anticipated that the overall significance of impact is predicted to be **minor adverse / negligible**.

### Operation

- 10.6.25 It is predicted that all agricultural land affected during construction would be re-instated to agricultural land in agreement with the affected landowner (with the exception of the land being used for flood embankment s). All agricultural accesses will be maintained or improved on their current alignments and therefore no permanent change in access will occur as a result of the Scheme.
- 10.6.26 To the east of Dalginross, there is an approximate permanent land-take of **0.42 ha** as a result of the embankment (ER04) footprint including the 6m strip of land between the foot of the embankment and Dalginross which is required for maintenance access. The permanent land-take requirement is predicted to result in a **small adverse** effect to the medium value agricultural resource resulting in an overall **minor adverse impact**.
- 10.6.27 To the west of Dalginross, there is an approximate permanent land-take of **0.15 ha** from field 10 and **0.27 ha** from field 11 as a result of the flood protection wall and embankments (WR02). The permanent land-take requirement is predicted to result in a **small adverse** effect resulting in an impact significance of **minor adverse**.<sup>13</sup>

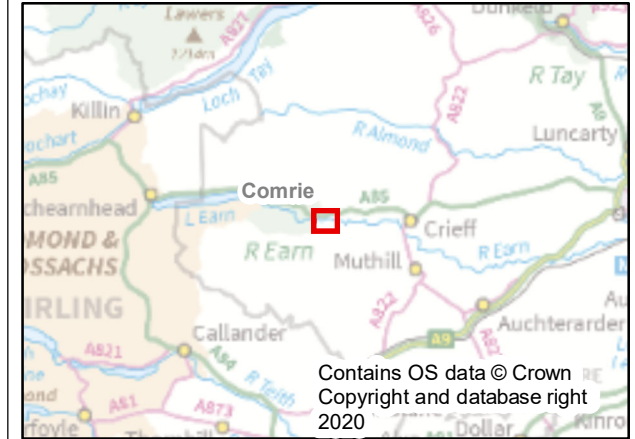
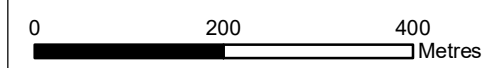
<sup>13</sup> It should be noted there is an additional land-take of 0.06 ha adjacent to Field 11. However, it is unclear however, land ownership is unclear.





- Legend**
- Study Area
  - Anticipated Construction Work Footprint
- Potential Construction Site Compounds
- + Main Compound
  - + Satellite Compound
  - + Discounted
  - Access Route
  - Field Boundaries\*

\*Note: Fields 4, 5 and 6 are not assessed for agricultural land use.



| Field number | Agricultural land-take (ha) |           |
|--------------|-----------------------------|-----------|
|              | Construction                | Operation |
| 4            | <0.5                        | N/A       |
| 8            | 0.99                        | 0.42      |
| 10           | 0.7                         | 0.15      |
| 11           | 0.6                         | 0.27      |

|       |            |                     |       |        |
|-------|------------|---------------------|-------|--------|
| P01.1 | 06/02/2020 | For Information     | JB    | RMcL   |
| Rev.  | Rev. Date  | Drawing Suitability | Drawn | Appr'd |



Client: Perth & Kinross Council

Project: Comrie Flood Protection Scheme 2020

Drawing Title: Figure 10.5 - Agricultural land-take

|             |         |
|-------------|---------|
| Scale @ A3  | 1:8,000 |
| Project No. | 119702  |

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## Public access, amenity and greenspace

### Public access construction effects

- 10.6.28 It is predicted that some designated routes (including Core Paths and Public Rights of Way) in the vicinity of the Scheme would be temporarily affected during construction. However, it has been assumed due to phasing of the construction activities, routes affected would be closed or rediverted in line with the phased activities and with prior consultation with Perth & Kinross Council. Any diversions/closures would be planned and advertised ahead of construction commencing so all users should have sufficient notice of the temporary impacts. It is also predicted that diversions/closures would not remain for the entire duration of the construction period as works will be phased according to the agreed construction programme. In accordance with Table 10.7, the sensitivity of Public Rights of Way, Core Paths and the rivers in Comrie are of **High value**.
- 10.6.29 **Table 10.17** below identifies the routes affected during construction.

Table 10.17: Linear routes affected during construction

| Reference                                  | Assessment of changes to Journey Length  | Effect to Amenity  | Pre-mitigation significance of impact |
|--|--|--|---------------------------------------|
| CMRI/1 and PRow 25/24                      | <p><b>Minor adverse</b><br/>Journey length change: &lt;250m<br/>Access along Core Path CMRI/1 will be retained along its current alignment and it is not predicted that any changes to journey length will occur.</p>  | <p><b>Moderate adverse</b><br/>Noticeable temporary changes due to construction works including the presence of loud machinery, stockpiles and construction traffic located immediately adjacent to the Core Path resulting in a noticeable adverse change to the amenity of the route.</p>  | <b>Moderate adverse</b>               |
| CMRI/14, PRow 25/1, 25/14 and Ruchill Walk | <p><b>Minor adverse</b><br/>Journey length change: &lt;250m<br/>Access will be temporarily affected during construction with users diverted via alternative routes such as CMRI/147 resulting in an increase in journey length of &lt;250m during the phase of the works to the west of Dalginross.</p>  | <p><b>Moderate adverse</b><br/>During construction, the route of CMRI/14 and PRow 25/14 would be closed for the period of the works in this area. It is anticipated that PRow 25/1 and Ruchill Walk along the eastern bank of the Water of Ruchill would remain open. However, access to these routes from Field of Refuge would close for construction of the Scheme in this area. NMUs would be temporarily diverted along CMRI/147 which follows the local road network through Dalginross resulting in a noticeable change to the amenity of journeys for users with the change being one from an off-road route within agricultural land, to routing alongside a road which has associated safety implications relating to traffic.</p> | <b>Minor-moderate adverse</b>         |
| CMRI/35, PRow 25/35 and Bogton Braes Walk  | <p><b>Major adverse</b><br/>Journey length change: &gt;500m<br/>Access to the route along the bank of the River Earn would be closed for the duration of the construction works associated with the flood protection wall and access points. NMUs will be diverted for the period of works as a result of the closure of the Core Path and PRow between Strowan Road (east of the Fire Station) and Garry Place.</p> | <p><b>Moderate adverse</b><br/>During the construction works, part of the route will not be accessible. NMUs will be temporarily diverted to another access point along the route. Whilst the section of the route between Strowan Road (east of the Fire Station) and Garry Place would be closed, the remainder of the route which follows the River Earn to the east would be largely unaffected.</p>   | <b>Moderate-major adverse</b>         |

| Reference   | Assessment of changes to Journey Length   | Effect to Amenity   | Pre-mitigation significance of impact |
|---|---|---|---------------------------------------|
| CMRI/43<br>PRoW 25/43<br>Glen Lednock<br>Circular Path,<br>Laggan Wood<br>Walk, Maam<br>Road Walk | N/A   | <b>Minor adverse</b><br>A barely noticeable change to the amenity of the route resulting from the proximity of the route to construction traffic and processes adjacent to the Water of Ruchill which would affect amenity on a short section of the overall route.   | <b>Minor adverse</b>                  |
| CMRI/126  | N/A   | <b>Minor adverse</b><br>Barely noticeable temporary changes to amenity resulting from the proximity of the short section of the route to the construction of the flood embankment s to the south of Comrie Holiday Park.  | <b>Minor adverse</b>                  |
| River Earn  | <b>Minor adverse</b><br>A section of the river may need to be used for temporary in river construction work resulting in the temporary closure of sections of the river. This would be determined by the appointed Contractor. It is anticipated, construction works would be phased and would take ecological seasonal restrictions into account. Any disruption to users of the river would be temporary. If the river is closed off, anglers would be unable to fish in the affected part of the river and would be required to use another section. | <b>Moderate adverse</b><br>The construction works would be phased and any disruption to anglers would be temporary. Giving the temporary nature of the disruption, the magnitude of effect would be considered moderate adverse.<br>Anglers would be able to use the area to the west of Dalginross Bridge but there would potentially be a noticeable change in amenity due to the presence of construction machinery in close proximity to the river. | <b>Minor - moderate adverse</b>       |
| Water of Ruchill  | N/A   | <b>Minor adverse</b><br>During construction, there may be a temporary noticeable change in the amenity due to the presence of loud machinery in the anticipated construction compounds and the nature of construction works at Tomnagaske   | <b>Minor adverse</b>                  |
| River Lednock   | N/A   | <b>Minor adverse</b><br>During construction there may be a temporary noticeable change in the amenity due to the presence of loud machinery and the nature of construction works along the river bank at St Marys' and St Serfs' Church.  | <b>Minor adverse</b>                  |

10.6.30 Core Paths 20, 51,107, 110, 133, 137, 143, 147 and Public Rights of Way (PRoW) 25/20, 25/21A and 19/25/33 are within 250m of the Scheme and indicative construction compound sites. Users of these routes would not experience any changes to their journey length during the construction period. However, some barely noticeable changes to amenity will occur along the routes. This is a result of construction traffic increases or the proximity of the works (and compounds) to the routes which may affect the overall experience of users on short sections of the path network.

#### **Community land, facilities and venues - construction effects**

- 10.6.31 During construction, community facilities and the associated greenspaces located in close proximity are predicted to be affected by the Scheme works.
- 10.6.32 As part of the development process for the Scheme, some greenspaces have been considered for use as a potential construction compound and may be inaccessible to the public (dependent upon the final selection of site compounds areas by the Council and the appointed Contractor for the works). Areas along the bank of the River Earn that are accessible may be affected by construction noise, dust and /or visual impacts as a result of the proximity of the areas to the phased construction works. In accordance with **Table 10.9**, community and greenspace facilities potentially affected by the construction of the Scheme are of **medium sensitivity**.
- 10.6.33 **Table 10.18** below identifies the amenity and greenspace facilities that are predicted to be affected by the construction of the proposed Scheme.

Table 10.18: Proposed scheme effects to amenity and greenspace facilities

| Community Facility   | Impact assessment   | Pre-Mitigation impact           |
|--|---|---------------------------------|
| Comrie Fire Station  | <p>During construction, the Fire Station would be directly affected by the construction of the flood wall on the right bank of the River Earn and &lt;0.1ha land-take is predicted to be required from the north section of the car park to facilitate this.</p> <p>The construction of the Scheme would result in a barely noticeable restriction of access to facilities, barriers, physical restrictions or limitations on the use of the site or facility, or even its loss. Permanent access for emergency vehicles and staff is required and will be maintained at all times throughout the duration of the works.</p>  | <b>Moderate adverse</b>         |
| St Margaret Church   | <p>During construction the grounds of St Margaret’s Church would be directly affected. The anticipated construction footprint of the flood wall on the east bank of the River Lednock would require &lt;0.1ha land-take from the open space surrounding the church. For all-NMUs, access to the facility from A85 would not be possible during the period of works in the area. The facility would be accessed from behind the Church (to the north) which can be entered via Nurses Lane to the west using designated paths CMRI 5 and 43 or PROW 25/20 and 25/43. Alternatively, NMUs can enter the facility via the designated footpaths (CMRI43 and PRoW 25/8) from the car park to east of the facility and the River Lednock.</p> <p>It is predicted that there will be a noticeable change to the amenity of the facility during construction resulting from the presence of loud machinery and an increase in construction traffic local to the site.</p> | <b>Moderate adverse</b>         |
| St Serfs Church  | <p>During construction, St Serf’s Church will be directly affected. The anticipated construction footprint of the flood wall on the east bank of the River Lednock would require &lt;0.1ha land-take from the open space surrounding the church.</p> <p>It is predicted that there will be a noticeable change to the amenity of the facility during construction resulting from the presence of loud machinery and an increase in construction traffic local to the site.</p>  | <b>Moderate adverse</b>         |
| Greenspace along the riverbanks of the Earn (Inc. the Boulevard) | <p>During construction, both the banks of the River Earn are predicted to be directly affected and inaccessible during the period of construction work for the flood walls.</p> <p>Construction activities are predicted to result in noticeable changes to the amenity of the area and the informal routes within the greenspaces to the south of the River Earn. Access is also predicted to be restricted during the construction period when the cantilever wall is constructed.</p>  | <b>Moderate - major adverse</b> |



10.6.34 The following facilities are within the locality (<250m) of the Scheme and indicative construction compound sites; these facilities are not expected to be directly affected by the construction works. There are no significant alterations to journey lengths predicted, no land-take requirements and barely noticeable changes to amenity for the following facilities and venues:

- Comrie Library
- Comrie Parish Church
- Comrie Primary School
- Comrie War Memorial
- Post Office
- St Kessogs' Masonic Hall
- Laggan Park
- Comrie Golf Club

#### **Public access operational effects**

10.6.35 The retention of access along existing NMU routes has been considered in the design of the Scheme. The flood wall along both the left and right bank of the River Earn has incorporated a series of access points where the public can reach the greenspace areas along the banks of the river. These access points comprise of stairs from Commercial Lane and Ancaster Lane which allow NMUs to use the local routes. A ramped access has been incorporated in to the Scheme from Bridge Street to the south of Comrie Community Centre facilitating access for the less able. **Table 10.19** describes the operational effects of the Scheme on public access.

Table 10.19: Operational effects of the Scheme on public access

| Reference  | Assessment of Changes to Journey Length  | Effect to Amenity  | Pre-mitigation impact                |
|--|--|--|--------------------------------------|
| CMRI/1<br>PRoW 25/24   | <b>Negligible</b><br>No change in journey length.  | <b>Negligible</b><br>It is predicted that there would be a barely noticeable change in amenity along the route as a result of the presence of the flood wall and embankment s to the north and south of the path alignment.  | <b>Negligible</b>                    |
| CMRI/14<br>PRoW 25/1, 25/14 and Ruchill Walk   | <b>Negligible</b><br>The existing alignment of the NMU routes is not predicted to be affected by the operation of the Scheme. The baseline scenario includes stairs to allow NMUs to cross the flood wall from Field of Refuge to the open landscape (next to the Water of Ruchill). A replacement set of stairs has been incorporated into the design of the Scheme and as such no change to journey lengths are predicted.   | <b>Minor adverse</b><br>Views of the watercourse and open landscape are not predicted to be affected by the operation of the Scheme. The presence of the flood wall to the west of Dalginross does not represent a significant change when compared to the existing baseline which includes a historic flood wall. | <b>Negligible-<br/>minor adverse</b> |
| CMRI/ 35, PRoW 25/35 and Bogton Braes Walk   | No change in journey length for the majority of NMUs. A new upgraded path from Garry Place leading to stairs has been incorporated in to the scheme design where CMRI 35 enters Dalginross. This proposal will result in a <b>negligible impact</b> for the majority of NMUs. For some vulnerable users, access from Garry Place will be restricted however, it is unlikely this path is used. This would potentially result in significant changes to journey length in excess of 500m to a ramp proposed from Strowan road (north of Legion Park) where PRoW 25/35 enters the main town of Dalginross. It is predicted that an overall <b>minor-moderate</b> impact would occur though impacts may be more significant for some users. | <b>Minor adverse</b><br>A barely noticeable change in the existing views due to presence of the flood protection wall and removal of vegetation (to allow for the construction of the wall). The wall is to south of the route and does not affect the view of the River Earn.                                     | <b>Minor- moderate<br/>adverse</b>   |
| CMRI/43<br>PRoW 25/43,<br>Glen Lednock Circular Path, Laggan Wood Walk, Maam Road Walk | <b>Negligible</b><br>No change in journey length.  | <b>Negligible / minor adverse</b><br>A barely noticeable change to the amenity of the route due to the presence of the flood walls at St Margaret and St Serfs church.   | <b>Negligible-<br/>minor adverse</b> |

| Reference        | Assessment of Changes to Journey Length           | Effect to Amenity  | Pre-mitigation impact |
|------------------|---|--|-----------------------|
| River Earn       | <b>Negligible</b><br>No change in journey length. | <b>Minor adverse</b><br>A barely noticeable change in the existing views due to the presence of the proposed scheme along the bank of the River Earn. The loss of trees along the banks would also reduce the predicted effect to anglers' interests where trees would provide shade and cover for juvenile salmon | <b>Minor adverse</b>  |
| Water of Ruchill | <b>Negligible</b><br>No change in journey length. | <b>Negligible</b><br>No change to amenity of the route.  | <b>Negligible</b>     |
| River Lednock    | <b>Negligible</b><br>No change in journey length. | <b>Minor adverse</b><br>A barely noticeable change in the existing views due to the presence of the proposed scheme along the bank of the River Earn.  | <b>Minor adverse</b>  |

10.6.36 Core Paths 1, 20, 51, 107, 110, 126, 133, 137, 143, 147 and Public Rights of Way 25/8, 25/20 25/21A, 25/29, 25/30 and 19/25/33 are within 250m of the Scheme. However, users of these routes would not experience any changes to their journey length and there would be barely noticeable changes to amenity as a result of the Scheme.

**Community land, facilities and venues – operational effects**

10.6.37 Effects on the community land and facilities are predicted to occur as a result of changes to the surrounding landscape brought about through the expected required land-take and loss of trees as a result of the Scheme. **Table 10.20** describes the effects of the Scheme on the community land and facilities.

**Table 10.20 Operational effects of the proposed scheme on community land and facilities**

| Community Facility                          | Impact assessment   | Pre-Mitigation impact         |
|---|---|-------------------------------|
| Comrie Fire Station                         | The Scheme is predicted to directly affect the Fire Station’s car park resulting in a loss of <0.1 ha.<br>However, there would be a barely noticeable change of access to the facility, limitations on the use of the site and the site would benefit from the protection of 1 in 200 year flood events.  | <b>Minor adverse</b>          |
| St Margaret’s Church                        | The Scheme is predicted to directly affect the open space in St Margaret’s Church resulting in a loss of <0.1 ha.<br>The amenity of the open space is also predicted to be affected as views of the River will be restricted due to the flood wall and a loss of existing trees.<br>However, the site would benefit from the protection of 1 in 200 year flood events.  | <b>Minor-Moderate adverse</b> |
| St Serfs Church                             | The Scheme is predicted to directly affect the open space in St Margaret Church resulting in a loss of <0.1 ha.<br>The amenity of the open space surrounding the church is also predicted to be affected as views of the River would be restricted due to the flood wall and loss of trees.<br>However, the site would benefit from the protection of 1 in 200 year flood events.   | <b>Minor-Moderate adverse</b> |
| The bank of the River Earn (left and right) | The Scheme is predicted to directly affect the open space on the bank of the River Earn resulting in a loss of <0.1 ha.<br>Access to the bank of the River on both sides has been maintained through the provision of both stairs and ramps which will provide access for all NMUs. There will be an increase in journey length to access the area on the left bank of the River Earn for less able members of the public via a new graded out ramp immediately to the south of the Comrie Community Centre. It is not predicted that this will significantly affect less able visitors to the area as feedback from the public exhibitions indicates that access to this area is already restricted due to the road surfacing along the existing vennel access.<br>There is a potential effect on anglers’ interest along the bank where trees provide summer shade for juvenile salmon and cover under their roots. | <b>Minor beneficial</b>       |

10.6.38 The following facilities are within the locality (<250m) of the Scheme. These facilities are not affected by any significant alterations to journey lengths

predicted, no land-take requirements and barely noticeable changes to amenity:

- Comrie Library
- Comrie Parish Church
- Comrie Primary School
- Comrie War Memorial
- Post Office
- St Kessogs' Masonic Hall
- Laggan Park
- Comrie Golf Club

## 10.7 Mitigation

10.7.1 The following section describes the mitigation measures that will be adopted during construction and the operation of the Scheme to reduce or offset the disruption to land use or loss of land.

### Socio-economic

10.7.2 The appointed Contractor will be required to maintain effective liaison with the local community throughout the construction period. A stakeholder communications plan will be developed and maintained by the appointed Contractor. This will describe how information will be circulated about ongoing activities, i.e. via the project website, newspaper articles or the setup of a community liaison group. A contact telephone number for use by the local community to contact the appointed Contractor for information will also be identified. The telephone will be operated during operational hours and person(s) with appropriate authority to resolve any problems that occur will be available. A log of all complaints and actions taken will be kept and made available for inspection.

### Health, Safety and Wellbeing

10.7.3 The outline Construction Environmental Management Plan (OCEMP) included in the suite of documents provided in support of the EIA and Flood Order sets out the outline mitigation to reduce noise and nuisance impacts during the construction of the Scheme. The appointed Contractor will be required to submit a detailed CEMP prior to construction works commencing for agreement with Perth & Kinross Council. The detailed CEMP will be required to address noise, dust management, traffic management, timing of works, procedures for in river works and to comply with current legislative requirements.

10.7.4 The CEMP will include a list of roads which may be used by construction traffic in the vicinity of the construction works including any restrictions to construction traffic on these routes, such as the avoidance of large goods vehicles operating adjacent to schools during drop off and pick-up periods.



- 10.7.5 During the construction period all site compounds and construction areas will be appropriately fenced in order to prevent public access to the construction areas.
- 10.7.6 The appointed Contractor will also identify the measures to reduce the short-term health and safety risks due to the construction works. This will be completed by ensuring tender and procurement documentation conditions are adhered to throughout the construction period as well as ensuring that best practice relating to construction site planning and management are implemented throughout the works period.
- 10.7.7 Methodologies including construction site and access traffic management and a phasing plan will be developed by the appointed Contractor to reduce the extent of any disruption to the local community including reducing conflicts with both local and strategic traffic and to ensure any health and safety risks associated with construction movements are minimised.

### **Agricultural land**

- 10.7.8 Land-take for the Scheme will be kept to the minimum necessary for safe construction and operation.
- 10.7.9 Landowners will be notified in advance of construction works. Consultation with affected landowners and occupiers will be undertaken in advance of the works in order to plan the phased construction activities to minimise disturbance to agricultural practices including harvesting periods. All work will be carried out in accordance with the agreed programme.
- 10.7.10 Agricultural land temporarily used during construction will be re-instated to agricultural use immediately following completion of the works. Topsoil, where disturbed will be left in a loose friable condition and where agreed, appropriate cover will be replaced. Re-grading where appropriate will be undertaken.
- 10.7.11 Construction activities such as vehicle movements will be restricted to an allocated working corridor which will be determined by the appointed Contractor. Construction site and access will be agreed with affected landowners prior to works commencing.
- 10.7.12 Access to all fields which remain in agricultural use will be maintained or upgraded and boundary features (fences, walls and hedges, water supplies, and drainage systems) will be re-instated following the completion of works.
- 10.7.13 Financial compensation for the temporary and permanent land-take required for the Scheme will be agreed separately between the affected land-holder and Perth & Kinross Council.

## Public access and amenity

### Embedded Mitigation

- 10.7.14 The outline design embeds a series of stairs and ramps to retain access to NMU routes, the rivers and the areas of open space following the construction of the Scheme. Access has been provided at various locations including:
- Stairs embedded into the design of the west Dalginross flood protection wall (Ref. ER01 and ER03) for access to PRow 25/1, 25/1 and CMRI/14 from the Field of Refuge car park
  - An area of open space along the southern bank of the River Earn can be accessed via:
    - a suitably graded ramp from Strowan Road opposite Legion Park to PRow 25/35 is provided which provides access for vulnerable users. As no other ramps are provided along this section of the PRow, a warning sign will be incorporated into the scheme design identifying that the ramped access is the only point of access for the less able and that it should not be used during times of wet weather or flooding as there are no other means of egress
    - stairs from Strowan Road (next to the fire station) and Garry Place to CMRI/35
  - Improved ramped access to the Boulevard area. This area of open space is used for events (such as Comrie Fortnight) throughout the year. Access along the informal routes of the Boulevard will be retained along their current alignments and upgraded access will be provided for vulnerable users via the graded, ramped access.
  - A new footpath has been provided along the flood embankment to the south of the Comrie Holiday Park.
- 10.7.15 The design of the Scheme has also incorporated landscape planting and seating areas within the Boulevard to improve the amenity of the area.
- 10.7.16 As well as embedded mitigation, there is capacity for additional community benefits (as set out in **Section 10.3**) to be considered at detailed design. Such benefits may include improvements to Legion Park for a potential relocation of Comrie Fortnight but will be subject to agreement between the Council and their appointed Contractor.

### Construction

- 10.7.17 A phased construction programme will ensure access to rivers and the associated banks is maintained in certain areas throughout the period of the works thereby enabling use by anglers, canoeists and NMU's.
- 10.7.18 Where practicable, temporary diversion routes will be provided to maintain safe access for NMUs throughout the construction works. Any closure or re-routing of routes used by NMUs would take cognisance of relevant guidance such as the 'Roads for All: Good Practice Guides for Roads' (Transport Scotland, 2013). These will be agreed with the Council by the appointed Contractor and will be clearly indicated with signage as appropriate and with advance notification where possible.

- 10.7.19 Exact details of accessibility along certain NMU routes (including CMRI/14 and CMRI/35) during the construction phase is unknown at this stage (a worst-case scenario has been assumed for the purposes of the assessment. However, working techniques implemented by the appointed Contractor may result in some paths remaining open during construction). The appointed Contractor will be required to implement a Traffic Management Plan for the construction period setting out any path closures and associated diversion routes and in agreement with the Council.
- 10.7.20 Construction would be undertaken in line with best practicable measures (as set out in the appointed Contractors CEMP) to ensure noise, air and dust impacts are reduced as far as reasonably practicable, whilst also reducing the visual impacts of works were feasible. Best practicable measures would include fencing off construction work areas, dust suppression techniques and completion of work during agreed working hours to minimise community disturbance.
- 10.7.21 The appointed Contractor will liaise with the Council and construction activities will be planned carefully to ensure minimal disruption to local events hosted in Comrie and Dalginross.

**Operational**

- 10.7.22 Once operational, landscape planting incorporated into the design of the Scheme may also serve to improve the amenity value experienced by users of NMU routes.
- 10.7.23 There will be enhancement within green space with improvements to the informal path network and a coherent ornamental planting scheme. Additional enhancement will occur along Strowan Road with additional planting within the traffic calming measures (trees with ornamental planting).

**10.8 Residual Effects**

- 10.8.1 This section presents an assessment of the predicted residual effects of the Scheme following implementation of the mitigation measures in **section 10.7**. Only those effects which have been identified in **section 10.6** as potentially significant are assessed. Effects that are potentially not significant are considered to not result in residual effects.

**Socio-economic**

- 10.8.2 Through the application of the mitigation described in **section 10.7**, it is predicted that there would be **minor adverse effect** to the local economy during construction.
- 10.8.3 It is predicted that the Scheme would provide flood protection to 189 receptors which are currently at risk of flooding from a 1 in 200-year flood event resulting in a **moderate beneficial effect**.

## Health, Safety and wellbeing

### Construction

- 10.8.4 The residual risk to health, safety and wellbeing during the construction of the Scheme is predicted to be reduced through mitigation such as compliance with the contractual obligations imposed upon contractors as set out in **section 10.7**.
- 10.8.5 The mitigation measures as described in **section 10.7** would be adopted by the appointed Contractor and the application of these measures throughout the construction period would result in a reduction in the significance of effect to a **small adverse** effect. However, some residual risk such as noise disturbance and nuisance, loss of access to and use of some amenity land and increase in traffic are predicted to temporarily affect the community. The overall residual effect to health, safety and wellbeing during construction is considered to be **minor adverse**.

### Operation

- 10.8.6 Through the reduced risk of flooding, the Scheme is predicted to result in a long-term **moderate beneficial** impact to health, safety and wellbeing of the community.

## Agricultural

### Construction

- 10.8.7 The predicted temporary land-take required for the construction of the Scheme would be kept to a minimum and agreed upon between the appointed Contractor, the Council and the landowner. Although land-take is temporary, the impact would remain **minor adverse**.

### Operation

- 10.8.8 Whilst the design of the Scheme seeks to minimise agricultural land-take, the loss of Class 3.2 agricultural land remains unavoidable. Land utilised for the construction of the Scheme will be reinstated and returned to agricultural use following the completion of construction. In the long-term it is predicted that there would be a reduction in area available for farming within the field boundaries resulting in a residual effect of **minor adverse**, therefore, the impact remains **significant**. As noted in **section 10.7** financial compensation for any agricultural land lost to the Scheme will be agreed with the affected landowners.

## Public access and amenity

### Construction

- 10.8.9 Appropriate mitigation stated in **section 10.7** would reduce some short-term adverse impacts associated with disruption and reduction to public access and amenity during the construction period. This would result in temporary residual **minor adverse or negligible impacts**. The exception of this would be to the

following designated linear routes and community facilities (including Greenspaces):

- Access along the River Earn (CMRI/35 PRow 25/35 and Bogton Braes Comrie Walk) and along the western section of Dalginross (CMRI/14 and PRow 25/14) would remain closed throughout the construction of the flood protection wall. Given the temporary nature of the closure and the appropriate diversion that would be implemented, the residual significance is predicted to be **moderate adverse**.
- Access to the greenspace to the left and right of the River Earn would remain closed during the construction of the flood protection wall. The appointed Contractor would liaise with Perth and Kinross Council to ensure that the phased construction works would not affect events placed in this area. The residual significance is predicted to be **moderate adverse**.
- St Margaret and St Serfs Church: Construction works would directly affect area of greenspace within the grounds of the churches. Access to the St Margaret Church would be diverted via Nurses Lane (CMRI/51 and 43 and PRow 25/20) or to the west via CMRI 43 or PRow 25/8 from the car park next to Laggan Park. Through the application of the mitigation measures described in **section 10.7**, and given the temporary nature of the disruption, the residual significance of the effect is predicted to be **moderate adverse**.
- Comrie Fire Station: Through the application of the mitigation measures described in **section 10.7**, and given the temporary nature of the disruption, the residual significance of the effect is predicted to be **minor adverse**.

### Operation

- 10.8.10 The flood protection walls at St Margaret and St Serfs Church are predicted to alter the amenity of the greenspace within the grounds of the churches even with the mitigation described in **section 10.7**. However, the magnitude of effect is likely to be **negligible** and result in a **negligible impact**.
- 10.8.11 Although the Scheme directly affects Comrie Fire Station, the curtilage is **negligible** (<0.01ha) resulting in a **negligible impact**.
- 10.8.12 There is a potential effect to amenity of the following designated routes and community facilities due to the presence of the proposed flood walls and loss of trees:
- CMRI/35, PRow 25/35 and Bogton Brae along the right riverbank of the Earn
  - Existing local routes within the greenspace used by NMUs along the left bank of the Earn
- 10.8.13 Access to these routes has been considered in the design of the Scheme and would result in no change in journey length resulting in a **negligible impact**. However, for some vulnerable users, access from Garry Place would be restricted. This would potentially result in significant changes to journey length in excess of 500m to a ramp proposed from Strowan road (north of Legion Park) where the PRow 25/35 enters the main town of Dalginross. This would be considered a **minor-moderate adverse impact**; however, it is predicted



that this would not affect a significant number of users as the condition of the existing path (muddy surface with protruding rocks and trees roots) is not deemed suitable for use by many vulnerable users at present.

- 10.8.14 It has been predicted that the amenity of these routes on the left and right bank of the River Earn would not change significantly. On the southern bank, only a small section of CMRI/35, PRoW 35 and Bogton Braes Community Walk are affected by the flood protection wall. NMUs view of the River Earn would not be obstructed by the flood protection wall. Therefore, it is anticipated that there would be a **negligible / minor** residual impact to users of these routes.
- 10.8.15 The Boulevard is an area of open space used by NMUs. Access to the area will be retained and improved for vulnerable users. A steep sloped path will be re-graded by reducing its gradient and landscaping will be provided in the immediate vicinity of the path to allow more vulnerable users to access the bank. With this included, it is anticipated that there would be a **minor-beneficial** residual impact to the area of greenspace on the northern bank of the River Earn.
- 10.8.16 Although some trees would be retained on the bank of the River Earn, the loss of trees may change the amenity of the River Earn which is used by anglers and canoeists. It is predicted that anglers' interest in the area due to the loss of some trees would not be affected as juvenile salmon would still be able to seek protection under the retained trees. It is also anticipated that canoeists interests would remain unaffected. The route through Comrie and Dalginross only forms part a small section of the route. Therefore, it is anticipated that there would be a **negligible/ minor** residual effect to the amenity of the River Earn.

## 10.9 Summary of Effects

- 10.9.1 This assessment has identified a number of potentially significant effects. Following the implementation of mitigation, the assessment of effects can be summarised as follows:
- Flood protection is anticipated to benefit 189 properties which are currently at risk of flooding from a 1 in 200 year flood event.
  - During construction, a **minor adverse** impact to health, safety, and wellbeing due to the disruption of noise and nuisance. However, once the Scheme is constructed, the impact would result in a **moderate beneficial** due to the decrease in flood risk.
  - Potential **minor** significant impacts were identified due to the loss of agricultural land during construction.
  - During construction, due to the disturbance and nuisance impacts, it is anticipated there would be a **minor adverse** impact to designated routes in the study area. The exception of this is the **moderate adverse impact** to Core Path and PRoW 35 along the right bank of the River Earn and the Boulevard which are anticipated to remain closed during construction.
  - The design of the proposed scheme has improved connectivity to the Boulevard area and includes landscape planting and seating resulting in a **minor benefit**. There is also capacity to consider additional features that would result in some additional community benefits.

It is anticipated there would be a **minor adverse impact** to the greenspace in St Margaret and St Serfs church and Comrie Fire Station due to disturbances caused by construction work.