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Stonehaven Flood Protection Scheme: Landscape and Visual Assessment

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Aberdeenshire
COUNCIL



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This report describes work commissioned by Aberdeenshire Council. Nick Allin of JBA Consulting carried out this work.

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Purpose

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Executive Summary

JBA Consulting was commissioned by Aberdeenshire Council to provide landscape professional services in relation to a proposed flood prevention scheme at Stonehaven, Aberdeenshire. This commission involved input into the design development process, supplemented by a landscape and visual appraisal which is presented here. The scheme does not require planning permission—it is permitted development—but the findings of this initial assessment may inform the overall design process. Effects that would normally be considered material to the planning process are termed *notable*.

The proposal is for a flood prevention scheme along sections of the Carron Water (River Carron) and the Burn of Glaslaw through Stonehaven. The scheme is currently under development and detailed or finalised designs have not yet been produced. However, broad principles have been established and general treatments proposed for specific areas.

Key elements of the scheme include the construction of new and strengthening of existing walls; the provision of self-closing flood barriers embankments and underground pumping station with associated drainage. Landscape and visual impacts are expected to result from changes in the physical fabric (wall, bridges, channels), construction of new ramps and steps to existing roads and paths and removal and replacement of vegetation, including mature trees.

The effects of the proposal on landscape or townscape character and visual amenity have been assessed. Given that detailed published character studies have not been undertaken for Stonehaven, an outline baseline appraisal referencing zones described within the accompanying Cultural Heritage report (produced by FAS Ltd.) has been adopted for this assessment.

Construction effects are considered to be adverse, but short-term and are likely to be outweighed by the flood prevention benefits of the scheme. Operational effects may be adverse, but considered and appropriate design and detailing may mitigate and reduce these effects, such that they become neutral or even beneficial in the longer term.

Landscape and townscape effects are notable where the construction and operation will impact on key elements or resources within the landscape, such as valued views or features that inform the sensitivity of receptors. Notable construction effects are expected for three landscape zones that encompass the Carron Water between the Bridgefield and Green Bridges, with notable operational effects for the section between the White Bridge and the confluence with the Glaslaw Burn. These arise from the sensitivity and value of important, often historic features within the landscape fabric—such as the White Bridge and existing river walls—and the contribution these make to the overall character and perception of the area.

Visual effects are likely to be notable where the construction or operation will impact on key views or aspects from sensitive receptors, particularly where these have historic or aesthetic value, are directly oriented towards or are in close proximity to the works. Notable construction effects are expected for a number of residential properties to Arbuthnott Street, Cameron Street, Salmon Lane, Carron Terrace and to the corner of High Street and Arbuthnott Place. These may arise through impacts on direct views of the river, particularly where these are open, across valued gardens, include the loss of mature trees or relate to intensive engineering operations such as bridge removal or provision of underground pumping stations. Notable operational effects may be expected for properties on Cameron Street that back directly onto the Carron and a single property to Arbuthnott Street due to increased wall height and proximity to windows and valued views; a single property to Carron Terrace with direct views of the new Green Bridge and associated steps/ramps; and up to 6 properties to the westernmost end of Carron Terrace which may be impacted through removal of mature trees and new raised walls within principal garden views.

Notable visual effects through construction are expected for the Green Bridge, the footpath between the White Bridge and Dunnottar Avenue and the White Bridge. Notable operational visual effects are predicted for the White and Green Bridges. These arise from major changes directly upon or in close proximity to these routes—replacement in the case of the Green Bridge—particularly where historical or amenity sensitivities are high.

The development of this scheme is an iterative process by which potentially adverse impacts are addressed through continual appraisal and revision, including responses from public and stakeholder consultation. Mitigation of adverse impacts may include development of design aspects such as layout, circulation (steps, ramps) and wall height; finishes, such as cladding materials, boundary treatments and street furniture; and choice or layout of new planting, including trees. These should be appropriate to the context, setting and view where possible; for example, natural materials should be specified within the Conservation Area or where new features will impact on valued residential views. The local vernacular includes sandstone or granite with masonry techniques such as snecking, cherry cocking or pared pointing, alongside weatherproof harling. Not all may be suitable for walling or cladding due to engineering and structural constraints, availability and cost. Concrete or brick may be appropriate in less sensitive locations. The inclusion of public art, a considered approach to detailing of street furniture and balustrading and sympathetic, natural paving materials could also better relate to the setting of the scheme. Planting strategies should balance ecological and biodiversity value with visual, seasonal and structural qualities appropriate to what is an important section of local green infrastructure.

Public feedback has also indicated support for outline design proposals to the public spaces at the Green and White Bridges. Whilst not part of the flood protection remit, this scheme may offer a timely opportunity to raise the quality and amenity of these valuable breathing spaces that allow residents and visitors to enjoy attractive riverside and townscape views within easy reach of the commercial and residential areas of Stonehaven.

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1 Introduction

1.1 Background

JBA Consulting was commissioned by Aberdeenshire Council to provide landscape professional services in relation to a proposed flood prevention scheme at Stonehaven, Aberdeenshire. This commission involved input into the design development process, supplemented by a landscape and visual appraisal presented here.

The scheme does not require planning permission; it is permitted development. The planning authority is Aberdeenshire Council.

This report:

- Describes the existing landscape and visual amenity baseline
- Describes the key landscape and visual related elements of the proposed development
- Assesses the sensitivity of the landscape and visual amenity baseline to the type and scale of development proposed
- Describes the nature of the change to the landscape and visual amenity baseline
- Assesses the magnitude of the impact and size/scale of the effect of the changes during the construction and operation stages
- Describes any mitigation measures incorporated to offset the adverse effects identified

1.2 Description of the development

1.2.1 Development overview

The proposal is for a flood prevention scheme through the town of Stonehaven, along the courses of the Carron Water (River Carron) and the Burn of Glaslaw.

The scheme is currently under development and final, detailed designs have not yet been produced. However, broad principles have been established and general treatments selected for specific areas. Much of the scheme will comprise 'direct defences', which include walls and embankments along the course of the streams. These are referenced in Figure 2.

Key elements include:

- Implementation of short-term measures prior to construction of the main scheme, such as large debris traps
- Construction of new walls, or extensions and strengthening to existing walls
- Construction of new self-closing flood barriers, fitted to new walls
- Construction of new flood embankments
- Replacement and raising of existing pedestrian bridges
- Removal of railings
- Removal and replacement of trees
- Removal of channel vegetation and alteration to in-channel structures (such as weirs)
- Changes to pedestrian routes, including new ramps and stepped access to bridges
- Changes to existing public open spaces
- Construction of new pumping stations and drainage works
- Changes to existing culverts

1.2.2 Location

The development is located within the town of Stonehaven, Aberdeenshire. Works will take place along a c.600m section of the Carron Water, between the Red Bridge on Low Wood Road and the coastal boardwalk bridge. Development will also take place along a c.200m section of the Glaslaw Burn, between the confluence with the Carron and the Wood of Dunottar at Carron Gardens. Small-scale works will also take place on the Carron at Walker's Bridge and at certain other locations within the town, the latter in relation to drainage work (Figures 1 and 2).

1.2.3 Proposed changes to the landscape

Construction phase

As noted above, the construction method will depend on the final design. This will in turn influence the appropriate techniques, phasing and programme.

During construction the main activities and infrastructure may include:

- Construction of access routes, storage areas and temporary accommodation
- Stockpiling of materials and storage of plant and equipment
- Creation of temporary protection features
- Overpumping of water to drain sections of channel
- Ground levelling and vegetation clearance
- Tree removal
- Demolition of existing structures such as walls and bridges
- Works to divert utilities
- Construction of new walls, embankments, bridges, footways, pavements and road surfaces
- Construction of new landscaped areas: topsoil, levelling, seeding
- Planting of new trees, shrubs and plants to channel banks and open spaces

Operational Phase

During operation the main activity and infrastructure will include:

- New structures associated with the scheme, including walls, embankments, bridges and ramps/steps
- New landscaped areas and footways
- New trees and vegetation
- Operation of self-closing flood walls during high flows (likely to be infrequent)

2 Methodology

2.1 General approach

This study aims to assess the effects of the proposal on the landscape and visual resource of the area. It does not form part of an Environment Impact Assessment (EIA). In line with current industry guidance for non-EIA projects (Section 2.1.2), effects that may be important in the planning process are identified and described as 'notable'.

Landscape and visual elements, whilst interrelated, will be considered separately in the assessment.

2.1.1 Method of Assessment

The assessment of visual impact has been prepared with reference to 'Guidelines for Landscape and Visual Impact Assessment, 3rd edition' (GLVIA3), published by the Landscape Institute and the Institute of Environmental Management and Assessment in 2013.

The assessment has involved four key stages:

- Desk-based research and site visit to identify receptors and establish the visual baseline;
- Reference to design development including sketches, visual resources and engineering drawings
- Impact assessment and reporting.
- Options for mitigation

2.1.2 Assessment terminology

A statement prepared by the Landscape Institute (10th July 2013) in conjunction with the GLVIA3 panel indicated that for non-EIA assessments the term 'significance' should not be used, as this term may trigger the requirement for a formal EIA. As a result of this information, this report **does not establish the significance of effects**. Where these effects are considered to be of relevance or importance within the planning or appraisal process, these are described as '**notable**'.

In order to determine the scale of effects, two key aspects should be established. These are the *sensitivity* of the landscape or visual receptor and the *magnitude* of the likely change. The combination of the two results in a judgement of the impact, which in turn informs the scale of the effect and whether this is considered to be notable. This is described in Section 2.4.3.

2.1.3 Professional judgement

GLVIA3 recognises that professional judgement is an important concept within LVIA. Whilst there is scope for quantitative measurements of some factors, in many situations the assessment must rely on qualitative judgements that are based on reasoned and informed justifications.

2.1.4 Limitation of the Assessment

This scheme is currently under development. Detailed drawings have not yet been produced. The assessment and the prediction of impacts during the construction and operation of the development are based on the available information and current drawings of the proposals.

The assessment of visual effects on residential receptors is an outline assessment only; it is not a full Residential Amenity Assessment. This is further detailed in Section 5.2.2

2.1.5 Glossary

Some of the terms used within the assessment have a specific meaning. A glossary of these terms is provided in Appendix A. The definitions are based on those provided within GLVIA 3.

2.2 Methodology: landscape impacts

2.2.1 Introduction: landscape impacts

For the purposes of LVIA, the landscape is considered to be a resource in its own right, The European Landscape Convention (2000) provides the following definition of landscape:

"Landscape means an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors".

The assessment of landscape impacts considers the impacts the proposed development or change will have on this landscape resource.

Landscape impacts that may arise include a change, loss or addition of elements; features, aesthetic or perceptual aspects that contribute to the distinctiveness or character of the landscape.

2.2.2 Establishing the landscape baseline

To enable the assessment of the impacts of a proposed development or change, the landscape baseline, or starting point must be established. This study may include the following:

Landscape fabric - physical landscape elements present within the landscape such as landform, land cover, boundary features and trees and woodland.

Landscape character - the distinct and recognisable pattern of elements that occurs consistently in a particular type of landscape and how this is perceived by people. It reflects particular combinations of geology, landform, soils, vegetation, land use and human settlement but also encompasses its perceptual and aesthetic qualities. It creates the particular sense of place of different areas of the landscape

Landscape designations - sites with landscape designations are considered in addition to the overall landscape character areas, to enable site specific judgements of impacts on particularly valued sites.

2.2.3 Determining landscape sensitivity

The next stage is to determine the sensitivity of the landscape receptors to the type and scale of development proposed.

The sensitivity of a landscape receptor is informed by the *susceptibility* and *value* of the receptor. Susceptibility relates to the ability of the landscape to accommodate the proposed development without undue consequences on the existing baseline or planning policies. **The value** of a landscape receptor is informed by designations, planning policy and documents, the contribution of special (cultural, historic or conservation) contributors or associations, scenic quality, rarity, recreational value and aesthetic, perceptual and experiential qualities.

Landscapes of high value may include those with national or international designations on such as National Parks or World Heritage Sites; they may relate to the setting of features that have high archaeological or heritage significance. Medium value landscapes include areas that are subject to local policy protection, such as Areas of High Landscape Value, or where it is considered that particular features or elements contribute to a greater value than other nearby areas. Low value landscapes are not subject to designation but may be appreciated at a community or local level.

Three levels of sensitivity are recorded:

- **High** sensitivity: A landscape of high value and a particularly distinctive character that is susceptible to relatively small changes of the type proposed.
- **Medium** sensitivity: A landscape of valued characteristics reasonably tolerant of change of the type proposed; and
- **Low** sensitivity: A landscape of relatively low value or importance which is potentially tolerant of substantial change of the type proposed.

The considerations noted above are further informed by general observations regarding the condition and quality of the landscape. These support the overall narrative and judgement of sensitivity. Landscape quality or condition may relate to the level of management, distinctiveness, number of detracting features, pattern, unity, structure, sense of place, function, definition and aesthetic value.

Areas of landscape quality may not necessarily correlate directly with landscape character areas or designated sites as defined by statutory agencies or local planning authorities. Where it is considered that this is the case, mention is made within the description and sensitivity evaluation.

2.2.4 Magnitude of landscape change

Impacts on landscape receptors are assessed in terms of their magnitude of change. This is a combination of the size or scale, geographic extent of the area influenced and the duration and reversibility of the impact.

Size and scale concerns the amount of existing landscape elements that will be lost, the extent to which these represent or contribute to the character of the landscape. It also relates to the degree to which aesthetic or perceptual aspects of the landscape are altered through removal or addition of new features, such as hedge loss or introduction of tall features on skylines.

The **geographical extent** over which landscape impacts are felt is distinct from the size or scale. For example, large scale impacts may be limited to the immediate site area.

The **duration** of the effect relates to the time period during which the changes to the landscape will occur.

The **magnitude of change** is a product of the size/scale, extent and duration of the impacts. This is judged as a four-point scale:

- **High:** Notable and long term change in landscape characteristics over an extensive area ranging to a very intensive, long term change over a more limited area;
- **Medium:** Moderate, short term change over a large area or moderate long term change in localised area;
- **Low:** Slight long term or moderate short term change in landscape components; and
- **No Change/Negligible:** No discernible/virtually imperceptible change to the landscape's resources

Once the landscape sensitivity and magnitude of change are established, it is then possible to determine the effect. This is described in Section 2.4

2.3 Methodology: visual impacts

2.3.1 Introduction

Visual impacts relate to how the development may affect the views available to people and their *visual amenity*. Visual amenity is the visual quality of a site or area as experienced by residents, workers or visitors. Visual *receptors* are people that experience the view. Development can change people's direct experience and perception of the view depending on existing context, the scale, form, colour and texture of the proposals, the nature of the activity associated with the development, and the distance and angle of view. Visual impacts can be experienced through development intruding into existing views experienced by residents and day to day users of the area, and the views of tourists and visitors passing through or visiting the area.

2.3.2 Establishing the visual baseline

Identification of potential visual receptors is informed by desk and field studies in conjunction with consideration of the likely visual influence of the proposed development, to identify places where people might be expected to receive a view of the proposed development.

2.3.3 Visual receptor sensitivity

In order to determine the scale of visual impacts, it is necessary—as with the assessment of landscape impacts—to determine the sensitivity of the receptor. This is achieved through the consideration of the susceptibility of the receptor and the value of the view.

Visual receptor susceptibility is a function of receptor type, location and activity. In assessing visual receptor susceptibility, factors such as the following have been accounted for with a degree of professional judgement:

- Receptor activities – for example, relaxing at home, undertaking leisure, recreational and sporting activities, at work
- Movement/duration – whether receptors are likely to be stationary or moving, which influences how long they will be exposed to the change
- Orientation – of receptors in relation to the development
- Purpose/expectation – of receptors at that location
- Context – the quality of the landscape
- Importance of the view/location – popularity of location as indicated by existence of designations or local value

The **value** of the view that is experienced may relate to associated landscape or planning designations, cultural references or the presence of facilities (car parking, interpretation boards, signage) that may emphasise importance.

In this assessment, sensitivity is judged as a combination of susceptibility and value and is ranked as follows:

- **High:** visitors to promoted or valued viewpoints especially those with panoramic views; viewers with a particular interest in the environment; viewpoints noted within planning guidance or policy; nationally important recreational routes where views in highly valued landscapes are available; receptors in homes with designed views across the landscape
- **Medium:** receptors to local viewpoints, public rights of way, local trails, local landmarks with key views; visitors to heritage or tourism sites where views are important; residents where the view may not be especially valued;
- **Low:** receptors that are fast-moving (due to speed on roads and motorways) or because they are engaged in an activity not concerned with the landscape or view (such as work or sport).

As with all aspects of the methodology, these definitions are not rigid; where professional judgement has been applied, this would be noted in the narrative.

2.3.4 Visual receptor magnitude of change

The assessment of the magnitude of change on visual receptors follows similar principles to landscape assessment in terms of size or scale, the geographic extent of the area influenced and its duration and reversibility.

The **magnitude of change** is a product of the size/scale, extent and duration of the impacts. These are judged as a four-point scale:

- **High** - where the development causes a very notable (or significant) change in the existing view for a sensitive receptor
- **Medium** - where the development would cause a very noticeable change in the existing view
- **Low** - where the development would cause a noticeable change in the existing view
- **Negligible/No Change** - where the development would cause a barely perceptible change in the existing view

2.4 Assessment of landscape and visual impacts

The second step is to determine the scale of impacts. This is evaluated by combining the sensitivity (or nature) of the landscape or visual receptor and the magnitude (or nature) of change. The following matrix provides an objective rationale for determining the scale of impacts, in order to provide consistency and transparency to the process; however a degree of professional judgement is a key element of the evaluation.

Table 2-1: Scale of impacts matrix

		Sensitivity to change (nature of receptors)		
		Low	Medium	High
Magnitude of Change resulting from impacts identified	No Change/ Negligible	Negligible	Negligible	Negligible
	Low	Slight	Slight - Moderate	Moderate
	Medium	Slight - Moderate	Moderate	Moderate - Substantial
	High	Moderate	Moderate - Substantial	Substantial

The scale of impacts detailed above can be classed as beneficial, neutral or adverse.

2.4.1 Classification of landscape impacts:

Adverse landscape impacts occur when features or key landscape characteristics such as established planting, old buildings or structures which—when considered singularly or collectively—help to define the character of an area are lost, or where new structures out of scale or character with the surroundings are introduced.

- **Substantial adverse landscape impacts** occur where the proposals are at considerable variance with the landform, scale and pattern of the landscape and would be a dominant feature, resulting in considerable reduction in scenic quality and large scale change to the intrinsic landscape character of the area.
- **Moderate adverse landscape impacts** occur where proposals are out of scale with the landscape, or inconsistent with the local pattern and landform and may be locally dominant and/or result in a noticeable reduction in scenic quality and a degree of change to the intrinsic landscape character of the area;
- **Slight adverse landscape impacts** occur where the proposals do not quite fit with the scale, landform or local pattern of the landscape and may be locally intrusive but would result in a minor reduction in scenic quality or change to the intrinsic landscape character of the area.

Neutral landscape impacts arise when the change proposed results in no discernible improvement or deterioration to the landscape resource. The proposals sit well within the scale, landform and pattern of the landscape and / or would not result in any discernible reduction in scenic quality or change to the intrinsic landscape character of the area.

Beneficial landscape impacts occur where derelict buildings, land or poorly maintained landscape features are repaired, replaced and maintained or where new features are introduced such as new tree planting which helps to define landscape structure where none currently exists. Beneficial landscape impacts can be slight, moderate or substantial.

2.4.2 Classification of visual impacts:

Adverse visual impacts occur when the proposed development will introduce new, non-characteristic, discordant or intrusive element/s into views.

- **Substantial adverse visual impacts** occur where the proposed development would cause a considerable deterioration in the existing view or visual amenity.
- **Moderate adverse visual impacts** occur where the proposed development would cause a noticeable deterioration in the existing view or visual amenity.
- **Slight adverse visual impacts** occur where the proposed development would cause a barely perceptible deterioration in the existing view or visual amenity.

Neutral visual impacts occur where the change proposed results in no discernible improvement or deterioration to views or visual amenity.

Beneficial visual impacts occur when the proposed development would enhance the quality of the receptor's view e.g. by creating a new focal point in a degraded landscape that includes a range of existing detractors. Beneficial visual impacts can be slight, moderate or substantial.

The scale indicates the importance of the impacts, taking into account the sensitivity (or nature) of the receptor and the magnitude (or nature) of the impact. It is usually rated on the following scale of impact:

- *Substantial* indicates an impact that is very important in the planning decision making process.
- *Moderate - substantial* indicates an impact that is, in itself, material in the planning decision making process.
- *Moderate* indicates a noticeable impact that is not, in itself, material in the planning decision making process.
- *Slight* indicates an effect that is trivial in the planning decision making process.
- *Negligible/No Change* indicates an effect that is akin to no change and is thus not relevant to the planning decision making process.

2.4.3 Judging the overall importance of the impacts

Impacts may be described as notable in projects that are not subject to EIA. *Notable* impacts are defined as those that are moderate-substantial or substantial. However whilst an impact may be significant, it does not necessarily mean that such an effect would be unacceptable. Account is taken of the impact that any mitigation measures—for example planting or landform—may have in terms of minimising potentially detrimental impacts or improving the landscape composition of the area.

3 Principles and overview of the process

3.1 Determining the scope of the study

The scope of the LVIA was defined through desktop research, site analysis and consultation with the client. Key matters reviewed in determining the scope were:

- The extent of the proposed scheme
- The nature of the possible landscape and visual effects
- The main receptors and any specific viewpoints
- The extent and appropriate level of detail for the baseline studies: to be proportionate to the scale and type of development proposed

3.2 Zone of Theoretical Visibility (ZTV)

ZTVs are often produced to indicate theoretical visibility in relation to development. In this instance, the limited and highly localised nature of views was not considered to warrant the production of a ZTV. Identification of expected visibility through field observations was considered to be sufficient.

3.3 Baseline studies

Baseline studies are required to gain an understanding of the existing landscape and visual conditions within the study area. The baseline is reviewed alongside the description of the proposed development to identify and describe the changes that may occur and the landscape and visual effects resulting from these changes.

3.4 Viewpoints/ photomontages

A viewpoint is a location from where a view of the proposal is gained and represents specific conditions or viewers (visual receptors). For many developments, viewpoints are frequently selected, described and assessed, in conjunction with worked-up visualisations of the proposed scheme.

Given that this design is currently being developed and no detailed drawings are available, photomontages have not been produced. However, a 3D visualisation was created to illustrate the general concept of the scheme as part of the consultation process. Still shots have been used to indicate the general impact and inform the assessment.

3.5 Timing of surveys

A site visit took place in July/August when deciduous trees and waterside vegetation were in full leaf. The effects of screening by vegetation were therefore at their highest. Consideration of seasonal vegetation has been given within the assessment.

3.6 Consultation

Consultation with Aberdeenshire Council took place during development of the designs and prior to the production of this report.

A site walkover took place with Frances McFarlane (Planner, Aberdeenshire Council) at the time of visit. This involved a general discussion as to the nature, background and local interest in the scheme.

A public consultation took place at the start of November. Feedback was overwhelmingly positive and supportive of the broad concepts of the scheme.

Subsequent communication with Frances led to confirmation that our proposed scope for reporting was appropriate for this scheme.

4 Landscape Policy

Under the Planning etc. (Scotland) 2006 Act, the development plan system in Scotland consists of three core statutory documents:

- The National Planning Framework for Scotland 2 (NPF2)
- The Strategic Development Plan (SDP)
- The Local Development Plan (LDP)

The National Planning Framework for Scotland 2 is informed by Scottish Planning Policy (SPP). The proposed Aberdeen City and Shire Strategic Development Plan has not yet been examined by Scottish Ministers and adoption of the new plan is not expected until early 2014. Where SDPs have not yet been put in place, previous regional plans are still used. Regional policy is therefore guided by the Aberdeen City and Shire Structure Plan 2009. The existing Aberdeenshire Local Development Plan was adopted in June 2012, although main issues consultation is underway for the emerging Aberdeenshire Local Development Plan 2016, which is due to be adopted in March 2016. These plans and associated policies are described in more detail below.

4.1 National Planning Policy

4.1.1 National Planning Framework for Scotland 2 (NPF2)

NPF2 was published in June 2009 and sets out the spatial strategy for Scotland's development to 2030. It includes the Scottish Government's policy commitments on sustainable economic growth. It is a material consideration in the determination of planning applications. NPF2 includes references to the importance of green infrastructure and landscape and cultural heritage, with particular emphasis on the need for landscape and visual impact assessments to inform decision making in the development process. Planning authorities must also take NPF2 into account in the preparation of SDPs and LDPs.

4.1.2 Scottish Planning Policy (SPP)

SPP is the statement of Scottish Government's policy on nationally important land use planning matters. It sets out the core principles, key objectives and intended outcomes of the planning system.

The section 'Sustainable Development' outlines the role of the system in protecting and enhancing the natural environment, including landscape, as well as the enhancement and promotion of access to open space and recreation.

Within the section 'Historic Environment', it notes that change should be compatible with the fabric, setting and character of the historic environment. This section also emphasises the importance of assessing any impact of proposed developments on historic settings. These assessments include how the site fits into the landscape or townscape, the view from it or how it is seen from the surroundings. This document refers to townscape audits and landscape character assessments.

The section 'Landscape and Natural Heritage' states that siting and design of development should be informed by local landscape character, and that natural and cultural components should be considered together. The importance of local landscape designations is also noted.

4.2 Regional Planning Policy

Preparation of an SDP is a requirement of the Planning etc. (Scotland) Act 2006. The Strategic Development Plan for the area consists of the Aberdeen City and Shire Structure Plan 2009. In time, this plan will be replaced by the 'emerging' Aberdeen City and Shire Strategic Development Plan. This SDP was scheduled to be submitted to Scottish Ministers at the end of June 2013 for a formal examination as required and is expected to be approved and adopted by early 2014.

4.2.1 Aberdeen City and Shire Structure Plan 2009

The Structure Plan provides a strategic context for the Local Development Plan and plays a key role in guiding development over the next 25 years. One of the aims of the Structure Plan is to address the issues of sustainable development and climate change, with the associated aim to "*protect and improve values assets and resources, including the built and natural environment and cultural heritage*". In assessing development proposals, the council will take into account and attempt to balance all aims, objectives and targets set out in the Plan.

The objective within the Structure Plan which is most relevant to this assessment is:

- *Quality of the environment: To make sure new development maintains and improves the region's important built, natural and cultural assets.*

This includes the associated target of:

- *To make sure that development improves and does not lead to the loss of, or damage to, built, natural or cultural heritage assets*

4.3 Local Planning Policy

Preparation of a LDP is a requirement of the Planning etc (Scotland) Act 2006. The LDP sets out detailed policies and proposals for the area which, together with supplementary planning guidance, will inform decisions on future development when the Council assesses planning applications or developments. As part of the reform of the planning system in Scotland, supplementary guidance forms part of the development plan. The Town and Country Planning (Scotland) Act 1997 requires that decisions on planning applications or development should be made in accordance with the development plan unless material considerations indicate otherwise.

The Local Development Plan for the area consists of:

- Aberdeenshire Local Development Plan 2012
- Supplementary Guidance

4.3.1 Aberdeenshire Local Development Plan (2012)

The LDP provides policies and site allocations for the Aberdeenshire area. The adopted Supplementary Guidance provides more detailed information on specific issues.

Policy SG LSD2 is primarily related to housing development, but some of the principles such as the '*creation of local identity...aesthetics...[and] visual appeal*' would apply to this scheme.

In relation to Public Access and paths, Policy SG LSD6 notes that where development affects a route included in the Core paths map or any other footpath, these routes should either be retained, maintained and enhanced or a 'no less attractive' alternative provided.

Policy 12 relates to landscape conservation and consists of SG L1: Landscape character and SG L2: Valued views. SG L2 outlines 'valued views' within the area, which are to be protected from the adverse impacts of development. Views close to the study area include that of the Black Hill from Stonehaven Golf Course and the view from the Slug Road between Stonehaven and Kerloch.

SG L1: Landscape Character states:

We will approve development, subject to other policies, where:

- 1) *Its scale, location and design are appropriate to the landscape character of the area and;*
- 2) *The proposal will not have an adverse impact on:*
 - i) *the key natural or historic features of the landscape character*
 - ii) *the overall composition or quality of the landscape character, particularly if the landscape is currently largely unspoiled by obtrusive or discordant features*
 - iii) *any combination of the above, when considered with other recent developments, resulting in the possibility of an adverse cumulative impact on the local landscape character.*

The Aberdeenshire Landscape Character assessment (described in Section 5.1.1) is referenced.

The protection and conservation of the historic environment is at the core of Policy 13, which includes supplementary guidance relating to Listed Buildings, Conservation Areas, historic gardens and designed landscapes and archaeological sites and monuments. As the majority

of Stonehaven is designated a Conservation Area, SG HE 2: Conservation Areas is of particular relevance to this assessment.

This policy states:

We will refuse planning permission and/ or Conservation Area consent for any development...which would have a detrimental effect on the special character or setting of a Conservation Area. We will only approve new development wholly or partly within a Conservation Area, subject to other policies, if:

...

- 2) *The design if of the highest quality, and respects and enhances the architectural, historic and visual qualities that give rise to the designation*
- 3) *Any trees that contribute to the conservation areas setting and character are retained*

Note that cultural heritage assets are assessed within a separate report.

5 Baseline conditions

This section provides an overview of the landscape and visual baseline. The baseline conditions include the existing landscape components, resource and context alongside visual receptors such as roads, recreational routes and settlements.

A review of the existing landscape and townscape identifies those areas that should be subject to detailed assessment within the effects section, alongside an overview of relevant published material such as landscape character assessments. A similar consideration is also given to visual receptors. Where landscape or visual receptors are expected to have *effects judged unlikely to occur or so insignificant that it is not essential to consider them further* (GLVIA3), these are 'scoped out' of the assessment with reasons given.

Impacts on the views and setting of designated cultural heritage assets including Listed Buildings, *Conservation Areas*, Ancient Monuments and registered parks and gardens are assessed within a separate cultural heritage report, produced by FAS Ltd.

5.1 Landscape baseline

The landscape character of the area under consideration can be assessed at a variety of different scales, from national to site based. Given the urban nature of the site, areas dominated by built form are described as 'townscape'.

5.1.1 Existing landscape studies

Existing published studies relate to the area under consideration. These include one of the 29 regional Landscape Character Assessments (LCA) coordinated by Scottish National Heritage between 1994 and 1999. The **South and Central Aberdeenshire LCA** (no. 102) was prepared by ERM and published in 1998. It describes 5 Landscape Character Types (LCT) which are then subdivided into geographically distinct Landscape Character Areas (LCA). Much of Stonehaven and the entire site area lies within the **Coastal Strip LCA** and **Kincardine Cliffs LCT**. The report provides specific guidance in relation to development, noting in this area that the traditional clustered settlement patterns and vernacular building style should be enhanced.

Aberdeenshire Council published a non-statutory Planning Advice note *Landscape Character Advice for Small-scale Development* (12/2012). This provides advice in relation to the LCAs described in the 1998 ERM study, alongside an indication of sensitivities. For the Coastal Strip LCA, the sensitivity is noted as being 'increased' due to distinctive coastal topography, settlement pattern, history and expansive views. Amongst a number of guidance points, the majority of which relate to cliff top or rural locations, it notes that—for dwellings—stone finishes should reflect the traditional architectural style.

The LCT and LCA described in these reports can inform the development but are generally more applicable to larger scale and/or more rural locations. Given that the site is almost exclusively within the urban area of Stonehaven, a more focused appraisal of the site landscape and townscape is considered suitable for this development. This report will reference the 6 zones approximately contiguous with those described within the Cultural Heritage Assessment prepared by FAS Ltd. (2014), which are considered as being appropriate for this assessment. Zones 1 to 6 are illustrated in Figure 1

A baseline description for each of these zones is given below, alongside an overall appraisal of the general landscape context for Stonehaven.

5.1.2 Baseline landscape descriptions

Stonehaven overview

The town developed as a fishing village within the sheltered Stonehaven Bay, at the mouths of the Carron and Cowie Waters. Settlement was originally focused around the harbour at the south; this became known as the 'Old Town' following the development of the grid-plan 'New Town' to the north of the Carron from the late 18th century. The latter now corresponds to the main commercial centre of Stonehaven, with later, modern housing and light industrial developments surrounding the town. These are constrained by the topographic 'bowl' formed by the valleys of the Carron and the Cowie, with steep sea cliffs to the north and south and gently rising high ground inland.

The Carron Water flows from west to east, rising around 12km inland and forming the southern boundary to much of the town as it passes under the railway and A90 bypass. The Burn of Glaslaw is a smaller watercourse, rising around 5km southwest of the town and broadly following the A90 before joining the Carron at the Green Bridge near the centre of the town. Both channels have a strongly wooded character that permeates into and provides a contrast with the urban fabric of the town, creating an attractive backdrop and creating popular local recreational areas. Within the town itself, the Carron and adjacent public spaces provide and valued green counterfoil to the dense urban form, although the furthest downstream section beyond the White Bridge has a more enclosed character, with no public access.

Zone 1

Zone 1 comprises properties to the south side of Cameron Street and the north side of Arbuthnott Street and the Carron Water between the White and Bridgefield Bridges. Key views are referenced in Figure 3.

Much of this area is within private gardens that back onto the river, but public views are available from the two bridges. Although many of these properties are listed and within the Conservation Area, boundary treatments and walls are of varied quality, including decking, concrete blockwork and lawns which create a slightly discordant character. The street frontages are more regular, with some attractive stone elevations although some more recent residential infill is present.

Cameron Street is a moderately busy route with bus traffic at the south edge of the 'New Town', with the residential properties interspersed with a small number of small shops. In contrast, Arbuthnott Street is a quiet, residential cul-de-sac with little traffic movement and a consistent frontage of largely stone-faced buildings. There are views towards the mature trees at White Bridge which offer a contrast to the dense, urban grain. Bridgefield—the A957—is the former main road through the town, still relatively busy despite the A90 bypass. Although the bridge has a functional appearance it provides glimpsed views upstream, offers a 'gateway' to the New Town and a setting for the historic brick and stone listed building 'Bridgefield'.

Zone 2

Zone 2 encompasses the central part of the scheme, between the White and Green Bridges and extending south to Dunnottar Avenue. The northern boundary runs along Carron Terrace. Key views are referenced in Figure 4.

Key features are the Carron Water, which is bounded by prominent trees, grassy areas of public open space with a footpath and the imposing presence of the Grade A listed Church of St. James. The church lies immediately south of the White Bridge, itself a distinctive, wrought iron structure that is also listed and provides an attractive pedestrian route from the town to residential areas along the south side of the Carron.

Dunnottar Avenue is a wide, residential route forming part of the A957. Carron Terrace is a quiet narrow riverside road with a character heavily informed by the regularly spaced pollarded lime trees and attractive listed buildings at the western end. The section of Cameron Street that lies within this zone offers open views across the Carron towards the White Bridge and church, providing a welcome green respite from the urban grid form as well as a distinctive setting to the listed buildings. This ensemble is further enhanced by the striking Art-deco south elevation of the Carron Restaurant.

Zone 3

Zone 3 includes the section of the Carron between the Green and Red Bridges, the confluence of the Carron and Glaslaw and the two roads to the north and south. Key views are referenced in Figure 5.

The Green Bridge is an important pedestrian route: the structure has a utilitarian appearance but it provides views up and downstream. The Red Bridge is a small—again very functional—footbridge that links Carronhall with Low Wood Road. The character between these two structures is dominated by tall, mature trees to the north bank and the dense deciduous woodland of Dunottar Woods. This provides a distinctive rural appearance that contrasts with the largely suburban, modern developments immediately to the east. The woods are a popular local recreational area.

Low Wood Road is relatively quiet but disproportionately wide for the volume of traffic; the green railings provide a functional quality but overall it is an attractive, wooded route into the town. The westernmost end of Carron Terrace sits within a setting of mature trees and residential gardens, detracted from slightly by a prefabricated garage, but with some imposing front elevations to stone houses set back from the road across well-maintained front gardens.

A small area of open, publically-accessible green space exists immediately downstream of the confluence of the Carron and Glaslaw Burn. This offers views and access to both channels and—like the site adjacent to the White Bridge—a welcome green space within the town. Memorial trees have been planted and seating is present.

Zone 4

Zone 4 encompasses the Burn of Glaslaw where it runs alongside Carron Gardens and Woodview Court. Key views are referenced in Figure 6a to 6c. The Burn is generally screened by low retaining walls and culverted underneath roads, but is more open along Carron Gardens where it borders the pavement and a line of ornamental trees, where there is evidence of bank scour. The character is mainly one of modern, suburban development, with residential flats and houses but set within the wooded valley, creating an enclosed, sheltered feel to the southern end of Carron Gardens. A footpath allows access into Dunnottar Woods, the dense, dark character of which—as with Zone 3—provide a strong contrast to the housing developments.

Zone 5

Zone 5 includes the area of the Old Town to the north of Arbuthnott Place, the High Street as far as the sea shore and the final section of the Carron from Bridgefield Bridge to the sea. Key views are referenced in Figure 6d and 6e.

The character is generally mixed, with older stone built and sometimes listed buildings alongside with more recent infill including harled residential flats a modern commercial building. The well-defined, regular three- and four-storey frontages of the High Street contrast with the

more disparate fabric of Arbutnott Place, although the latter provides a setting for the Grade B listed Church of the Immaculate Conception and the adjacent 'soup kitchen'. From the busier Bridgefield Bridge (see also Zone 1) open views of the sea are available along the Carron, offering a sense of space within the relatively tight urban grid form. The view, however, also includes recent residential housing (some in a sympathetic style), with a small, unused green space to the corner of Salmon Lane.

A boardwalk runs along the beach from the town to the harbour, offering a popular recreational route with expansive sea views across the bay. A timber footbridge over the Carron allows views upstream with glimpses of the mature trees around the White Bridge. The rear walls of properties to the shoreline are generally functional, although views are mainly focused out towards the sea.

Zone 6

Zone 6 includes a parcel of land around the Carron Water immediately upstream from Walker's Bridge (reference Figure 6f). The character is dominated by the wooded surrounds although the bridge is of a functional appearance and residential properties form the edge of the town. These include the 19th century former Woodcot Hospital, which is now a residential housing complex.

5.2 Visual baseline

Visual receptors are people that may experience views of the landscape. These may include residents and visitors to settlements, users of roads, footpaths, trails, visitor facilities or particular viewpoints. Desktop and site studies have been used to identify the key visual receptors within the study area.

5.2.1 Visual qualities of the proposal site

As noted within the landscape and townscape baseline descriptions (Section 5.1.2), the character of the proposal site varies. This is reflected in the visual quality, which depends on location or context. A broad overview is provided here.

Where visible, the presence of the Carron Water offers a dynamic, natural feature within the settled, urban character of Stonehaven. Views up and down the river complement and contrast with the regular, often grid-like form of the town. Threading between and dividing the commercial centre of the New Town from the southern suburbs and the Old Town, the constant movement and sound of the river is a welcome respite from traffic and noise.

The small but valued open spaces next to the White and Green Bridges act as green buffers, from which it is possible to appreciate the context of the river within the overall setting and provide visual links with the semi-rural, wooded hinterland. Features close to the river—such as the White Bridge and St. James Church—form prominent, identifiable and memorable landmarks within the grid of streets. Away from the centre, views are of a more local, residential value but again the Carron and the Glaslaw define views and vistas into and out of the town, often in association with mature trees or woodland.

5.2.2 Residential receptors

Given the localised nature of the site, all residential receptors that can reasonably be assumed to have views of the site and may receive notable effects will be assessed.

5.2.3 Road and rail routes

Roads within the site are predominantly of a residential nature, although the A957 (Bridgefield) carries some through traffic across the bridge of the same name. All roads within and adjacent to the study area are assessed.

5.2.4 Recreational routes and footpaths

Four of the five bridges across the Carron are footbridges; walkers represent the key receptors within the study area. All pedestrian routes within the proposal area will be assessed, alongside any that may reasonably be expected to be impacted upon.

Route 1 of the National Cycle Network passes along the A957 and across the Bridgefield Bridge. Given that views are expected to be very limited as a proportion of this extensive route and construction impacts are short term, this recreation receptor is not assessed here.

6 Assessment of effects

Impacts and effects relating to the scheme on landscape or townscape character and visual receptors are outlined in Sections 6.1 and Section 6.3 respectively.

6.1 Landscape and townscape effects

The impact of the proposal on the character of the fabric and landscape resource for each Zone described in Section 5.1.2 is described and assessed.

Effects that arise from construction are assumed to be short term. Effects that arise from operation of the scheme are considered to be permanent, although note is made of the shorter term effects of raised barriers where appropriate.

6.1.1 Zone 1: Landscape and townscape effects

Key views in zone 1 are referenced in Figure 3. Impacts include the construction of new and reinforcing of existing walls to the rear of nos. 3 to 37 Cameron Street, nos. 5-17 Arbuthnott Street and nos. 1-3 Bridgefield that will affect the existing fabric and the riverside townscape along the Carron. A new underground pumping station may be installed to Cameron Street.

This zone considered to be of medium landscape-high sensitivity: whilst the walls form part of the valued and waterside setting within the conservation area and the curtilage of listed buildings, they are of varying quality and have been degraded by residential and garden interventions. There may be some vegetation loss. Impacts during construction will be short-term, medium scale (they only affect the river corridor, not street elevations) and of local extent; the magnitude of change is medium and the impact is moderate adverse **or moderate-substantial adverse** at most, which is **notable construction effect**. Operational effects will be of low magnitude and impacts are expected to be slight-moderate. Mitigation through the use of more appropriate vernacular materials and a better-defined, consistent wall height may improve the overall quality of the townscape and the effects may be beneficial.

The infilling of the Bridgefield Bridge parapets is considered in Zone 5 and the impact on the White Bridge in Zone 2

6.1.2 Zone 2: Landscape and townscape effects

Key views in zone 2 are referenced in Figure 4. Impacts include the raising of construction of ramped and stepped access to the White Bridge; installation of new flood walls with self-closing barriers to Cameron Street and Cameron Terrace; and reinforcement of walls to the footpath towards Dunottar Avenue.

Zone 2 is considered to be of high landscape sensitivity, due to the historical and local amenity value attached to the setting of the bridge, church, green space and riverside views. Construction impacts will be of a large scale and medium extent. They will involve works to the landscape fabric including the listed bridge; the magnitude of change will be medium-high and the impact will be **moderate substantial** or **substantial adverse**, which is a **notable construction effect**. Operational effects will result from permanent changes to the fabric of the site, setting and key views; these would be of a medium scale, medium extent which will be a **moderate-substantial impact and is a notable operational effect**. However, with a careful and considered approach to design, it may be possible to result in neutral or even beneficial effects to amenity value through improved green spaces and the use of more appropriate finishes. For example, the macadam area to the church entrance may provide an opportunity for a shared surface using natural materials (Figure 8) whilst the replacement of the poor quality post and wire fence to Cameron Terrace may improve the overall appearance of this route.

6.1.3 Zone 3: Landscape and townscape effects

Key views in zone 3 are referenced in Figure 5. Impacts include the replacement of the Green Bridge with a new crossing to the east, new walls to Low Wood Road and Carron Terrace and tree loss along Carron Terrace.

Zone 2 is considered to be of medium landscape sensitivity; it has an attractive waterside setting and is within the setting of listed buildings but the overall impression is of an areas that is less historic than Zones 1 and 2, being dominated by more recent housing development. Construction will involve the removal and replacement of bridges; it will be of a large scale and large extent; the magnitude of change will be *moderate-substantial* at most, which is a *notable construction effect*. Once operational, the new bridge and loss of trees will be a medium change of medium extent; the magnitude of change will be medium and the impact moderate. This may be adverse where the loss of trees which inform the overall character are removed, but beneficial where an improved Green Bridge may be seen as a visual asset to the area and possible improvements to green spaces are incorporated into the scheme. The type of finish and cladding to the walls along Carron Terrace and Low Wood Road will have a bearing on the landscape effect; these walls may be prominent features and will influence the overall character of the area on completion. Over time, as new trees and vegetation is established the overall effects will decrease.

6.1.4 Zone 4: Landscape and townscape effects

Key views in zone 4 are referenced in Figure 6a to 6c. Impacts include the replacement of a culvert at Woodview Court, low flood walls along Carron Gardens and flood debris screens and embankments within Dunnottar Woods. Some tree loss may result.

Zone 4 is considered to be medium landscape sensitivity. Although it is dominated by modern residential development. It has a quiet character and is set within a wooded valley. Construction will be of a medium-small scale and of a medium extent; the magnitude of change is medium and the impact is moderate adverse. Once operational, the scheme is likely to be of small scale, local extent; the magnitude of change is low and the impact is slight-moderate at most. Mitigation may involve the replacement of trees and sympathetic management within the woods to the rear of properties where public access is available.

6.1.5 Zone 5: Landscape and townscape effects

Key views in zone 5 are referenced in Figure 6d and 6e. Impacts within Zone 5 include the infilling of parapets to Bridgefield Bridge, improvements to walls along the Carron Water and the construction of a pumping station and drainage system between the corner of Arbuthnott Place and an outlet close to the beach side of the sea wall.

Zone 5 is considered to be of medium-high landscape sensitivity. Although the townscape quality is varied, it provides a setting to the Old Town whilst the beach has a particular quality that is valued within Stonehaven; the popularity of the boardwalk attests to this. Construction will be of a medium-small scale and of a small extent; the magnitude of change is likely to be low and the impact is moderate overall.

Once operational, the impacts arising from the drainage works are likely to be limited to the presence of control boxes. One such box may replace the existing, rather functional planter at the corner of Arbuthnott Place; there may be opportunities to provide a more appropriate or eye-catching feature at this point, limiting any adverse impacts. Similarly, impacts to the landscape and townscape alongside the Carron will be dependent on the final choice of cladding material to walls, although it is likely that they will appear more visually pleasing on account of a uniform height and finish. Overall, operational impacts are of a small scale, local extent and the magnitude of change is low; the impact is slight-moderate at most.

6.1.6 Zone 6: Landscape and townscape effects

Impacts within Zone 6 (key view illustrated in Figure 6f) will be limited to the introduction of large debris screens upstream of Walker's Bridge. The design will take the form of large steel poles.

Zone 6 is considered to be of medium landscape value; the setting is attractive and has local value as a semi-rural landscape close to the town. Impacts during construction are likely to be slight-moderate adverse. Impacts relating to the operational phase are likely to be slight. The poles may not be immediately visible from the road. Where this is possible, a sympathetic design may mitigate against adverse impacts.

6.2 Summary of landscape and townscape effects

Landscape and townscape effects are notable where the works will impact on key elements or resources within the landscape, such as valued views or features that inform the sensitivity of receptors. Notable effects are summarised below. Note that, in almost all cases, operational impacts may be reduced or be beneficial/neutral depending on the final design.

Receptor	Impact where effect is notable	Key issues that may result in notable effects
Zone 1 Carron Water between White and Bridgefield Bridges	Construction: moderate-substantial	Extent of walls as part of character within riverscape
Zone 2 Carron Water between White Bridge and confluence with Glaslaw Burn	Construction: moderate-substantial or substantial Operation: moderate-substantial	Works to key elements within the landscape, including White Bridge and open sections of river wall within important views
Zone 3 Carron Water around Green Bridge and eastern end of Carron Terrace	Construction: moderate-substantial	Open, valued views to White Bridge across garden. Operational impacts may be reduced, neutral or beneficial depending on final design.

6.3 Visual effects

6.3.1 Residential Receptors

The assessment of visual effects on residential receptors is an outline assessment only; it is not a detailed Residential Amenity Assessment. Assumptions have been made about the types and use of rooms within houses and are based on site-based observations and aerial photography. Without undertaking the assessment from inside each room it is not possible to be certain that the assessment is completely accurate.

Value for residential receptors is generally assumed to be high. However, the context of the view may vary and may include visual detractors. Some properties may appear to have a view or garden designed to take advantage of a valued view. Within the assessment, it is assumed that the sensitivity is medium-high unless otherwise noted. Susceptibility may be influenced by screening or orientation.

Effects are not notable unless described otherwise. Where notable effects are described, this is only a guide and may be subject to more detailed assessment as required.

Zone 1

Views representative of residential receptors are referenced in Figure 3.

Nos. 5 to 37 Cameron Street and **nos. 1 and 3 Bridgefield** will have S facing views of reinforced and raised walls with sections of self closing barrier to the rear of garden boundaries along the river. Most will also have views of the reinforced wall to the S of the river. The houses are all within 5 metres of the wall. Amenity value varies; some properties have simple hard landscaped courtyards whilst others (towards White Bridge) have gardens with lawns and

ornamental planting. The latter also have wider views towards the bridge and church. Sensitivity varies from medium to high from east to west.

Impacts during construction will affect the full extent of the riverbank although this is to one side of the property only; the street elevations will not generally be affected. The magnitude of change will be medium-high and the impact will be *moderate-substantial* or *substantial adverse* at most. This is a *notable construction effect*. Impacts during operation will be subject to the final finish and detailing. These may be *moderate-substantial*, which is a *notable operational effect*, but could be reduced or become neutral or even beneficial if sympathetic materials are used and the external spaces are more usable, valued and protected from flood damage. The raising of flood barriers is likely to have the greatest (albeit short-term) effect at this location, as the increased height will be exaggerated by the proximity to windows.

Nos. 5 to 15 Arbuthnott Street have rear boundary walls along the river that will be reinforced and/or raised. Visibility of the river is more restricted by existing walls than to Cameron Street, although views of the buildings across the river are available. The distance between house and boundary increases from west to east, with a consequent reduction in sensitivity. Impacts during construction are likely to be *moderate-substantial* at most, which is a *notable construction effect*, depending on the method of construction. This may be less than notable if properties are screened or more distant from works. Impacts during operation are likely to be moderate at most; these may be neutral or beneficial if a consistent, sympathetic finish is used and repeated to the north of the river, improving the aspect of these properties.

No 17 Arbuthnott Street has principal views to the west, across the garden to the White Bridge. These are open, valued views and sensitivity is high. The walls will be raised and the works to the bridge may also affect residential amenity. Impacts during construction are likely to be *substantial*, which is a *notable construction effect*. Impacts during operation may depend on the final finish of the boundary treatments and the design of the bridge and access routes, but overall is likely to be *moderate-substantial*, which is a *notable operational effect*. This may be adverse where the open views are compromised, but reduced, or neutral to beneficial, where appropriate detailing or materials are used.

Views of the White Bridge are available from front-facing windows of **no. 14 Cameron Street**. These are in the context of moving traffic immediately outside the property. Impacts during construction are expected to be moderate adverse; during operation to be moderate adverse, or neutral. Increasing the bridge and wall heights may affect the openness and amenity of views.

No. 18 Bridgefield is a carpet and furniture retailer and is not thought to be a residential property.

Zone 2

Views representative of residential receptors are referenced in Figure 4.

Nos. 16 to 28 Cameron Street have front elevations that face south with an open, attractive aspects across the river towards mature trees, St. James Church and the White Bridge. Nos. 18, 20 (Carron Restaurant), 26 and 28 have ground floor commercial occupants but may have residential properties on other storeys. The existing walls are low and allow unrestricted views, albeit in the context of passing traffic and parked cars. The walls and bridge will be raised during works and self-closing flood barriers will operate during high flows. Sensitivity is high. Construction will affect valued views; the impact overall will be *moderate-substantial*, which is a *notable construction effect*. Operational impacts are likely to be moderate; the views will be partially restricted, but the level of amenity should not change overall. These effects may be adverse, but possibly neutral if materials are in keeping with the qualities of the Conservation Area. There may be opportunities to reduce the width of the carriageway and levels of car parking if ramps or steps were constructed at the bridge, which may also mitigate some adverse effects, although this should consider the historic street dimensions which are characteristically wide within the New Town.

Nos. 1 (Woodburn) 2 (Gowan Bank) and 3 (Medwyn Cottage) Carron Terrace and nos. 41 to 51 Cameron Street (odds, inclusive) have views to the south towards Carron Terrace

and the river. However, walls (some of which are high), garages and vegetation screen most ground floor views. Principal views are to the south from properties on Carron Terrace. It is assumed that the pollarded lime trees will remain in situ for the purposes of this assessment, although this is subject to detailed design. Where views are available (the wall to no. 2 is lower and these views are more open), there may be increased visibility of the new wall and loss of bankside vegetation. In addition, an east facing first floor window to no. 1 allows views to the sea across the White Bridge area.

Sensitivity is medium-high. Construction should be largely screened by the boundary features and trees although access will be required along the road; the impact is slight-moderate adverse. Operational impacts are considered to be slight. It is likely that the poor quality post and wire fence that runs along the edge of Carron Terrace will be removed and opportunities may arise for improvements to the visual aspect of this route; in such cases, impacts will be neutral or beneficial. If any trees were to be removed, however, impacts would increase as these trees form a prominent backdrop to south-facing views. Impacts at construction and operational stages are likely to be higher for no. 1 Carron Terrace due to the upper storey views to the west, but these are considered to be moderate at most.

Nos. 7 and 9 Carron Terrace (Burnside) form a pair of highly detailed Grade B Listed cottages, with principal and valued views across the road to the pollarded limes and the river in close proximity. Nos. 9-14 Carron Terrace (inclusive) also similar direct views, but without an intervening garden for nos. 9-13. Sensitivity is medium-high. Impacts will result from the construction of a piled wall along the river, possible channel modification and temporary loss of vegetation to the banks. It is assumed in this report that the lime trees will remain. Construction impacts will be of a medium scale and wide extent; the magnitude of change will be medium-high and the impact will be *moderate-substantial*, which is a *notable construction effect*. Operational impacts are considered to be moderate, reducing to slight through time. However, this is dependent on the quality of the finish to the wall, details of boundary treatments and re-establishment of bankside vegetation. The visually-detracting post and wire fence may be replaced with something more appropriate for the location.

Views may be available for no. **2 Arduthie Street**, which has windows to the south but is largely screened by a hedge from the ground floor. Impacts and effects will be similar to those associated with nos. 7-14 Carron Terrace; the replacement Green Bridge is closer to the receptor and may result in a higher impact during construction but this will be balanced by more limited visibility.

Abbeyfield House is a care home comprising 7 individual flats to the south of the White Bridge. Views will vary within the building; some are close to the existing stone wall along the footpath. Works will involve raising of the wall (possibly with some vegetation loss, although the large trees along the Carron will remain), raising of the White Bridge and construction of ramps, steps and flood barriers. Sensitivity is medium-high. Construction impacts, where views are available, are likely to be *moderate-substantial*, given the proximity and extent of the scheme; this is *notable construction effect*. Once complete, operational impacts are likely to be moderate at most, depending on specific views. For the White Bridge area, although the existing layout will change, there are opportunities to improve the overall appearance of what is at present a functional, macadam turning area for vehicles. This would enhance the setting of the bridge and church and result in neutral or potentially beneficial effects.

No. 42 Dunottar Avenue has a boundary wall alongside the footpath which will be strengthened and/or raised as part of the scheme. The wall runs alongside the rear garden and is visible from ground floor views. Works may involve some vegetation loss although it may be that these take place on the wet side, away from the garden. Impacts during construction may be moderate, for operation they are expected to be slight, reducing to negligible once any vegetation has re-established.

Nos. 44, 46 and 48 Dunnottar Avenue are detached bungalows that have rear gardens that extend to the Carron Water. The western boundary of no. 48 is adjacent to the public green space at the confluence of the Carron and Glaslaw. All three properties have extensive screening through garden vegetation, including hedges. Works to the north bank of the Carron along Carron Terrace may be visible, particularly if they take place during the winter months,

but overall the impact is considered to be moderate at most, more likely slight-moderate. There is more extensive screening to no. 48; views of the new Green Bridge and the adjacent public space are likely to be minimal. Operational impacts are not expected to be greater than slight.

Zone 3

Views representative of residential receptors are referenced in Figure 5.

No. 15 Carron Terrace has open views from the front elevation across a small garden and the road towards the river, the island area and the existing Green Bridge. Sensitivity is medium-high. Works to remove and replace the Green Bridge, construct flood walls provide a new ramp and steps at close proximity will be extensive and in close proximity; the impact is likely to be **substantial adverse** at most, which is a **notable construction effect**. The new walls, bridge and access will change the character of the view on completion; the operational impact is considered to be **moderate-substantial, which is a notable operational effect**. However, the current Green Bridge is of a rather functional appearance and the immediate surrounds are dominated by an area of tarmac and a timber picket fence along the river. The bridge is likely to be of a more visually appealing design and the associated steps and ramps—if detailed and finished to match the attractive vernacular of this property—should be more in keeping with the area. If this were to be the case, effects may be reduced or become neutral or beneficial.

Nos. 16, 17, 18 (Prospect House), 19 (Park Villa), 20 (Oak Villa) and 21 (Kinnabar) Carron Terrace are set back from the road with principal elevations facing south across long, attractive gardens towards the Carron. Visibility varies between properties; no. 16 has a large tree alongside the road and nos. 19-21 have more extensive vegetation within the gardens. All properties have views of the large, mature trees along the north bank of the Carron which provide a dominant green backdrop to the valued garden views. The pre-fabricated garage which is a discordant feature may be demolished depending on approvals. The scheme will involve the removal of many or all of the trees within the view, which would open up views towards Low Wood Road and the modern residential housing beyond. This may represent a significant change in the view, although for properties to the far end of Carron Terrace the backdrop of Dunnottar Woods may allow for some continuity. A high wall will also be built along Carron Terrace, which will obscure views of the river. The final height, finish and design is to be confirmed. Although the properties are around 350m from the site area, the loss of trees and provision of a wall within valued garden views is expected to result in a **moderate-substantial impact** during **both construction and immediately on operation**, which are notable **construction and operational effects**. With replacement tree planting and use of sympathetic materials on the dry side of the wall, combined with loss of the visually intrusive garage, operational impacts may reduce over time. This may be a protracted period, given the height and prominence of the existing trees. The long-term effect (beyond 10 years) is likely to be less than notable.

Tree loss may also impact on views from **nos. 14 and 16 Carronhall**. However, these are heavily screened by garden vegetation and views already include the more elevated backdrop of Dunnottar Woods. The impact is likely to be slight, reducing over time.

Views towards the Carron are available from flats 1 to 12 and possibly some of nos. 13 to 18 **Carron Gardens**. Views from the ground floor are generally screened by ornamental vegetation; views from the third floor are more panoramic. Sensitivity is medium. Works will involve the replacement of the Green Bridge, construction of walls and removal and possible replacement of mature trees and other vegetation. The loss of mature trees along Carron Terrace and screening of the river by walls will impact on views, although these are in the context of Low Wood Road and (in some cases) a sub-station. Construction impacts are expected to be moderate adverse; operational impacts are expected to be moderate at most, but reducing through time. The functional Green Bridge will be replaced with a more attractive structure and vegetation will re-establish.

Zone 4

Views representative of residential receptors are referenced in Figure 6a-c.

Limited properties within flat nos. 1-6 (also described in Zone 3) and 31-36 **Carron Gardens** and flats within **Woodview Court** that have elevations facing towards the Glaslaw Burn may receive views of the scheme. Views from Woodview Court are filtered by ornamental trees. Construction impacts will relate to the strengthening and raising of existing walls, a new road culvert and new embankments or walls to Carron Gardens. Impacts from construction are expected to be slight-moderate at most and slight or negligible during operation.

For properties **37 to 58 (inclusive) Carron Gardens**, views may include tree loss (with possible replacement) and construction of new, low embankments and walls along the edge of the Burn. Sensitivity is medium-high. Close proximity views are expected for **nos. 37 and 41 Carron Gardens**; impacts during construction may be moderate and slight-moderate during operation, depending on the level of tree loss and height and finish of walls. **No. 58** (which has previously suffered flood damage) lies adjacent to the Burn and impacts will be *moderate-substantial* during construction (which is a *notable construction effect*) and moderate during operation, but will be offset (as with all properties, but particularly so in this case) by reduced flood risk. Impacts on other properties are more limited due to distance from the scheme; these are likely to be slight-moderate at most for construction and slight-moderate to negligible for operation, depending—again—on levels of tree loss and the height and finish of the walls.

Zone 5

Views representative of residential receptors are referenced in Figure 6d-e.

Impacts relating to the construction of a possible pumping station on an existing raised planter to the corner of Arbuthnott Place and High Street would be expected for flats with east-facing views within nos. **3-11** and north-facing main elevations for **nos. 7, 11 and 13 High Street**. Impacts during construction will require removal of the planter and excavation; these may be short term but possibly *moderate-substantial* at most, which is a *notable construction effect*. Operational impacts are likely to be slight; long-term impacts may be neutral or beneficial if a suitable design for a replacement planted area is implemented. Views from **no. 24 and 26a High Street** are limited and impacts would be reduced accordingly.

Impacts resulting from the outlet and headwall are likely to be limited; they will be largely screened from ground floor windows to properties at **Arbuthnott Court and Cooperage Court**; higher-level views will have more panoramic aspects of the sea and the construction phase would be of a limited extent; impacts are slight-moderate at most.

Properties alongside the Carron Water between Bridgefield Bridge and the coast are located close to the river walls which will be strengthened during the construction phase. Works will also be required to Bridgefield Bridge. The detached properties **Riverview** and **Beach House** on **Salmon Lane** have open views to the south across the river including the walls on the far bank. Any works to the left bank will be in very close proximity to windows and the impact during construction will be *moderate-substantial*, which is a *notable construction effect*, although this will depend on the final scale and nature of reinforcement. Views from **nos. 12, 13 and 14 Arbuthnott Place** are more subject to screening from ground floors by the existing wall and impacts during construction may be moderate. Operational impacts are likely to be dependent on the final design; these may be slight-moderate, possibly neutral or beneficial if a more consistent pattern or finish is employed; the current walls are rather irregular and disjointed in appearance.

Zone 6

The installation of large debris poles may be visible from **no. 2 Woodcot Brae (Old Lodge)** and properties to the east side of Murray Place, although the latter are heavily screened by boundary hedges and trees. Impacts during construction are likely to be slight; impacts during operational negligible.

Additional pumping station options

Underground pumping stations may also be installed at the junction of High Street and Market Street (subject to confirmation) and on Cameron Street, near White Bridge. The impact during construction may be **notable (moderate-substantial)** but localised, as excavation may be required. Operational impacts will be negligible or no change as the structures will be largely housed underground.

6.3.2 Road Receptors

Receptors are assessed here in an approximately west to east (downstream) direction.

The installation of large debris traps at Walker's Bridge may be visible from **Woodcot Brae**. Sensitivity is medium-low and any works will be in the context of a much wider, woodland aspect. Impacts during construction may be slight-moderate; during operation are likely to be negligible.

Low Wood Road is a wide but relatively quiet link between the town centre and southwestern residential areas. It has a heavily wooded quality with views of the Carron through green painted modern railings. Sensitivity is medium. Construction of new flood walls, removal of trees to the north bank and replacement of the Green Bridge are expected to result in short-term **moderate-substantial** impacts during construction, which are **notable construction effects** and moderate impacts during operation. Operational impacts will depend on the final height, finish and overall aesthetic quality of walls along the river; a loss of view may result in a more substantial effect, although vegetation will re-establish over time.

Carron Gardens (Figure 6b,c) is a residential cul-de-sac which runs alongside Glaslaw Burn. Sensitivity is medium. Works will involve replacement and/or strengthening of existing walls and new walls or embankments to the southern section. Some trees will be removed. Impacts during construction are considered to be moderate; for operation, these are likely to be moderate at most, but reducing through time, as any replacement planting re-establishes, to slight.

Impacts to **Woodview Gardens**, a short residential road, are considered to be slight-moderate at most during construction and slight during operation.

Carron Terrace is a quiet, narrow residential street alongside the Carron Water with an attractive character informed by period buildings and mature trees. Construction will involve new walls, tree loss around the westernmost section (upstream from the Green Bridge) and the provision of a new Green Bridge with ramps and steps (Figure 5). Sensitivity is medium-high. Given the proximity and extent of works along the route, construction is likely to result in a **substantial adverse effect**, which is a **notable construction effect**. Operational impacts will vary depending on the final design. Avoidance of tree loss should reduce these effects along the section between the Green Bridge and Cameron Street to moderate at most, reducing through time to slight; this may be beneficial if the rough grass and post-and-wire fence is replaced with something more appropriate to the Conservation Area and Listed Building setting. Operational impacts may be greater—**up to moderate-substantial at most (a notable construction effect)** at the easternmost end (Figure 4)—where views towards the White Bridge will be affected by raised walls, and upstream from the Green Bridge where mature tree loss and high walls will change the character of the road. These may reduce in time as vegetation becomes more established and may be less adverse if suitable finishes and designs are implemented.

Cameron Street forms the southernmost east-west 'grid' of the New Town. It is busy road with views of White Bridge, the Carron Water and the setting of St. James Church. The open aspect and mature trees provide a welcome change and contrast to the dense urban form of the town to the north. The presence of varied and well-detailed buildings (many listed, including the distinctive Art-Deco Carron Restaurant) add further value and interest to the scene, although parked cars can conflict with views. Sensitivity is medium-high. Works will involve new, raised self-closing walls and raising of the listed White Bridge (Figure 4), with associated ramps and steps. Construction is likely to be complex but short term and affect only a section of the road; impacts are locally **moderate-substantial adverse**, which is a **notable construction effect**. Operational effects will depend on the final design, although it is likely that views will be reduced by increased wall heights. Ramps may be required at the bridge, which will also impact on the

character of this area. Attention to detail and finishes is particularly important at this point, along with wider considerations of how the overall design might fit in with the existing road uses (Figure 8). Impacts are likely to be moderate, but this may be mitigated by an approach that is sympathetic to the character of the area.

Ann Street runs N-S within the New Town grid and offers views downhill for receptors travelling south. The White Bridge, listed buildings to Cameron Street and St. James church are visible within this important view that demonstrates the contrast between the grid town and more open, green areas along the Carron. This view may be changed through the raising of the bridge and walls and provision of steps and ramps. The impacts during construction and operation are expected to be slight-moderate; although some aspects of the view will change, the overall character with the church and trees should not be significantly affected.

Arbuthnott Street is a quiet, residential cul-de-sac with stone-built, often listed houses leading to the listed St. James church and White Bridge. Valued views are available for receptors travelling west towards the setting of these features; sensitivity is medium-high. Works will only involve the far end of the street, where new walls, ramps and steps will be required to the White Bridge (Figure 4). Impacts during construction will be locally moderate-substantial—which would be notable—but given the restricted extent, these are expected to be slight-moderate overall. Operational impacts are considered to be moderate at most; again, they would only affect the White Bridge area which may benefit from a more refined and higher quality design and surfacing that is appropriate to the setting (Figure 8).

Bridgefield Road (A957) crosses the Carron by way of the Bridgefield Bridge, which has some historic value but is largely functional in appearance. The bridge represents a relatively minor section of the route, but the view up and down the Carron (Figure 3) and to the sea are valued; sensitivity is medium. Construction will involve strengthening of the walls and infilling of the parapets to the bridge. Access may be required from this route; impacts at this stage may be locally moderate-substantial but overall, given the overall length of the receptors, would be moderate. Operational impacts are likely to be slight and may be beneficial if the walls are improved in appearance and the final parapet design for the bridge is in keeping with the vernacular buildings.

Salmon Lane is a short, dead-end road from Bridgefield Road to the sea. Access to the river may be required via the small green space adjacent to Bridgefield Bridge in order to strengthen walls. Sensitivity is medium low; impacts during construction may be moderate at most but operational impacts are likely to be slight. There may be opportunities to improve the green space which currently has little value despite offering views of the river and towards the sea.

Arbuthnott Place and **High Street** have a varied character (Figure 6d), with some historic influences through tall, listed buildings within the Old Town. The former includes more recent infill. Sensitivity around the site area is medium-high. Construction may locally impact on the route as a whole but this will be short term; impacts are moderate. Operational impacts will be slight to negligible, as the surface features related to the proposed drainage scheme at this location will be limited to a control box. Adverse impacts may be mitigated by improvements to the existing functional raised planter.

6.3.3 Recreational receptors including footpaths

A baseline appraisal of these receptors is given in Section 5.2.4.

Receptors are assessed from west to east, following the Carron Water downstream.

A short **footpath between Low Wood Road and Carronhall** crosses the Carron Water via the Red Bridge. This bridge is likely to be raised slightly during works, which will also include installation of flood walls to the south bank and some vegetation removal or management. The bridge is a useful route from residential areas to the north to Dunnottar Woods. The bridge is functional in appearance although the setting is attractive; sensitivity is medium-low. Construction is likely to close the path temporarily; impacts are likely to be moderate adverse. Once complete, the bridge will be largely visually unchanged although the walls may impact on views. The impact is slight adverse.

The **Green Bridge** links Carron Terrace and Arduthie Street to Low Mill Road, providing pedestrian access from the New Town towards Dunnottar Woods and residential areas around Carron Gardens. The bridge itself is a utilitarian feature although it offers good views up and down the river in a wooded and attractive setting. Sensitivity is medium. The bridge will be removed and replaced with a new structure slightly downstream, which is likely to be of a more aesthetically pleasing design that may reference the appearance of the former crossing (Figure 5). Access will be improved through ramps and steps, which will improve the setting of the north access which is currently an open area of macadam. Given the nature of the work, construction impacts are likely to be **substantial adverse**—which is a **notable construction effect**—but short term. Operational impacts will be **moderate to substantial** which is a **notable operational effect**, but are should be beneficial, given the improved crossing and particularly if opportunities arise to improve the overall character of the area, including the green space downstream of the Glaslaw Burn (Figure 8). Flood walls and vegetation loss may impact on views, but these will not change the essential character immediately adjacent to the site.

A **footpath from the south end of Carron Gardens to Dunnottar Woods** provides access to this popular recreational area from properties to the southern edge of the town. Sensitivity is medium-high. Construction work may involve the small-scale removal and management of vegetation and construction of low defences. This will be away from the path, adjacent to the Glaslaw, although the route may be required for access. Impacts during construction are considered to be moderate at most; during operation these are likely to be negligible.

A **footpath between Dunottar Avenue and the White Bridge** at Arbuthnott Street offers a popular and attractive pedestrian route between the town and residential areas south of the Carron. Stone rubble walls form the southern boundary and there are valued views of the setting of the White Bridge, St. James Church and the Carron Water from an open green space to the east, shaded and sheltered by imposing mature trees (Figure 4). Sensitivity is high. The works will involve strengthening the stone walls, creation of ramped and stepped access to the White Bridge and provision of new, raised walls to the far (north) bank of the river which form a key part of the view. The path may be closed during construction. Impacts will **be moderate-substantial**, which is a **notable construction effect**, but short term. Operational impacts will be moderate; aspects of the landscape fabric will be changed that contribute to the value of these views, although this will not be for the full length of the route. However, careful design development and considered specification of materials may mitigate many of these impacts and there could be benefits through improvements to the junction with Arbuthnott Street.

The **White Bridge** is a Category C Listed pedestrian structure that links the Old and New towns across the Carron Water. It is a landmark feature within a highly valued 'set piece' that includes the river, historic buildings, St. James church, mature trees and rare public open space within the centre of Stonehaven (Figure 4). Attractive views are available upstream towards the listed buildings of Cameron Street and the mature trees to the river and Carron Terrace (Figure 8); and downstream along the backs of further listed buildings with glimpses of the sea. Works will involve raising of the bridge, construction of new ramped and stepped access and new, raised walls along the Carron. Construction will involve the closure of the full route; impacts will be **substantial adverse which is a notable construction effect**. Operational impacts will arise from the change in views and the nature of the access. These are likely to be **moderate-substantial**, which is a **notable operational effect**. However, the fundamental character of the bridge itself will not change and the design of the access may increase the overall quality of the setting, alongside potential improvements to the green space and the highway areas at either end (Figure 8). These may mitigate impacts which could ultimately be neutral or beneficial. The raised walls may limit views and will be a permanent feature, although—again—a considered choice of finish may reduce the overall effect.

The **coastal footpath** is a pedestrian and cycle boardwalk along the shoreline linking the promenade, New Town and harbour. It is a well-loved and well-used route with open, sweeping views of the bay, beach and the mouth of the Carron (Figure 6e), although the character is varied and include modern residential infill and rock armour to the river. Sensitivity is medium-high. The works will involve strengthening walls upstream of the Carron Bridge and the provision of an outlet to the seaward side of the wall along Arbuthnott Court. Views are dominantly out to sea but the distant wooded hinterland is visible upstream. Construction

impacts are considered to be moderate; operational impacts likely to be slight. The final finish and height of walls may be more consistent and improve on the existing, irregular appearance, resulting in beneficial effects.

6.3.4 Visitor Destination Receptors

Users of the **St. James the Great Church** (a Category A Listed Building) may experience views from the northern elevation and when arriving or leaving along the short section of path from the White Bridge and Arbuthnott Place. The Bridge contributes to the setting and views from the church, although the main access is from the south. Visitors will be mainly concerned with the interior and activities within the church, although the surroundings contribute to the overall experience. Construction impacts will be close but limited to only one area of the church; these are considered to be moderate at most. Operational impacts are likely to be slight-moderate; the access area by the bridge may be altered with steps and ramps, although there are opportunities to raise the quality of this area with improved materials and walling (Figure 8), which may result in beneficial effects.

6.4 Summary of visual effects

Visual effects are notable where the works will impact on key views or aspects which inform the sensitivity of receptors. Notable effects are summarised below. Note that, in almost all cases, operational impacts may be reduced or be beneficial/neutral depending on the final design.

Receptor	Impact where effect is notable	Key issues that may result in notable effects
Residential receptors		
5-37 Cameron Street and nos. 1-3 Bridgefield	Construction: moderate-substantial Operational: moderate-substantial	Proximity of river wall to windows and valued gardens (where present). Sensitivity and impacts may vary due to nature of view from individual properties. Operational impacts may be reduced, neutral or beneficial depending on final design.
5-15 Arbuthnott Street	Construction: moderate-substantial	Impacts due to proximity of walls and gardens although this may vary and be less than notable depending on views and method of working.
17 Arbuthnott Street	Construction: substantial Operation: moderate-substantial	Open, valued views to White Bridge across garden. Operational impacts may be reduced, neutral or beneficial depending on final design.
16-28 Cameron Street	Construction: moderate-substantial	High sensitivity views across river to Church and White Bridge. Not all properties are fully residential.
7-9 Carron Terrace	Construction: moderate-substantial	High sensitivity open, close proximity views
Abbeyfield Care Home	Construction: moderate-substantial	Proximity to walls and works area around White Bridge
15 Carron Terrace	Construction: moderate-substantial Operation: moderate-substantial	Direct, close views of Green Bridge and site of replacement structure; possible tree loss

Receptor	Impact where effect is notable	Key issues that may result in notable effects
16-21 Carron Terrace	Construction: moderate-substantial Operation: moderate-substantial (reducing over time)	Direct views of tree loss and new wall across valued gardens.
58 Carron Gardens	Construction: moderate-substantial	Close proximity to works (house has previously suffered flood damage)
Properties to corner of High Street and Arbutnott Place (dependent on views)	Construction: moderate-substantial (at most)	Possible direct views of new pumping station site
Salmon Lane: Riverview and Beach House	Construction: moderate-substantial	Close proximity to walls within valued sea and river views
Properties adjacent to pumping station option sites (High St, Cameron St., subject to detailed design)	Construction: moderate-substantial	Localised and will be dependent on final location and nature of views
Road receptors		
Low Wood Road	Construction: moderate-substantial	Extent of new walls with potential tree loss and new Green Bridge within views
Carron Terrace	Construction: substantial Operation: moderate-substantial (to eastern end, reducing through time)	Extent of works within river views, tree loss, wall height may obscure views
Recreational receptors/ footpaths		
Green Bridge	Construction: substantial Operation: moderate-substantial	Removal of existing bridge and replacement with new structure downstream.
Footpath between Dunnottar Avenue and White Bridge	Construction: moderate-substantial	Extent of works to adjacent boundary wall and within key views of river and White Bridge
White Bridge	Construction: substantial Operation: moderate-substantial	Raising of bridge, new steps and/or ramps to both access routes

7 Mitigation

7.1 Mitigation: overview

The remit of the scheme is to protect the town from damage and potential loss of life arising through flooding. It is generally accepted that this will outweigh any potentially adverse impacts on visual and landscape amenity and quality. However, opportunities to mitigate some of these adverse effects should be explored, particularly at more sensitive locations.

The development of this scheme is an iterative process where impacts may be addressed through continued appraisal and revision. Public and stakeholder consultation has already provided feedback and suggestions for possible options. These include design aspects of the scheme itself, alongside possible works to adjacent or related areas that are outside the immediate scope of the project. The extensive interventions to the channel may provide a timely

opportunity to carry out these works, which could allow a more wide-ranging series of improvements to this important asset within Stonehaven.

Mitigation during the construction stage will depend on the final design, site constraints, phasing, programme, construction techniques, access and storage for plant and materials. These are outside the scope of this report and are likely to be addressed at the detailed design stage.

Mitigation in relation to the overall design of the scheme can be considered here. This may be addressed in a number of ways:

- Development of the design dimensions, layout, massing or circulation routes e.g. wall height, steps, ramps
- Finishes, including cladding materials, boundary treatments (railings, walls), lighting, street furniture
- Soft landscape specification, including ornamental planting, trees, meadow areas etc.
- Additional improvements to existing spaces that may not be directly related to the scheme, but will add value as a whole. This may include locations such public greenspace, highways and pavements.

7.2 Mitigation: specific sites

Potential design developments or improvements relating to specific locations are described below.

7.2.1 Mitigation: White Bridge

The White Bridge will be raised, which will increase the level change required to access from Cameron Terrace and Arbuthnott Place. The bridge already has steps in place, which form part of the overall fabric that contributes to the setting of the bridge. This route is an important pedestrian link between the central commercial area and residential suburbs to the south of the Carron. However, the steps restrict access to those with mobility issues or, for example, those with pushchairs. This is compounded by the stepped access at the Green Bridge, further upstream.

A desire to see ramped access was expressed through feedback from the public consultation. Whilst there are obvious inclusivity benefits for ramps, the footprint of these features—particularly if they comply with Disability Discrimination Act requirements—will be relatively large, as well as being more costly and resulting in greater visual and landscape impacts. However, it may be worth pursuing options for both stepped and ramped access. The latter would need to be sensitive to the views and setting of the bridge, particularly from Cameron Street and St. James Church.

Options to improve the footway and relationships between pedestrians and vehicles at both ends of the bridge may also be considered, such as build-outs, carriageway narrowing, shared surfaces and use of varied paving materials to indicate pedestrian priority (Figure 8). These may incorporate natural or more sympathetic materials which would be more in keeping with the valued historic setting at this point. At present, Cameron Street is dominated by parking whilst Arbuthnott Place is a rather functional vehicle turning area. Both of these aspects detract from the overall scene and could be developed in a more imaginative, appropriate manner, although the largely unaltered, historic street widths and pavement pattern may require consideration here. Examples of good practice may be observed through the Inverness streetscape scheme (Figure 7).

Potential improvements to the open, riverside public space immediately upstream from the White Bridge were also highlighted in feedback from public. This valued green space is perfectly located to offer a view of the bridge, church and river 'set piece' and is evidently a focal point for meeting and resting within the town. Improvements to seating, lighting, surfacing and planting may raise the quality of this small but much-appreciated location.

7.2.2 Mitigation: Green Bridge area

The existing functional Green Bridge will be replaced with a new structure that is expected to be more aesthetically pleasing focal feature, more in keeping with the value of this key pedestrian route with fine views of the river (Figure 5). Initial designs suggest that it will include elements that reference the current bridge, such as the diamond railings and the green colour. As with the White Bridge, consideration should be given to ramped as well as stepped access. In relation to ramps, space is less of a constraint and the existing northern access is of relatively low visual quality, being a simple macadam-dominated wider section of road. Variations in paving material and style could highlight the onward pedestrian route, whilst the use of natural materials in adjacent walling would reflect the character of the adjacent houses.

The area immediately to the east of the confluence of the Glaslaw and Carron is an open, publically accessible greenspace. It has views of the two channels and the 'island', although this will be reduced during works. When the Green Bridge is completed, there will be views to and from this area, which currently appears under-used despite the presence of seating and memorial trees. Public consultation feedback indicated a desire to see improvements at this location, possibly in a formal style that could offer a contrast with the naturalistic river channel. Improved access from Low Wood Road and to the river bank (particularly for children), better seating and more appropriate planting may offer a more positive character that could increase levels of use and informal surveillance, possibly reducing the potential for antisocial behaviour. In the light of this, an area that is easily visible from the road and has an open aspect may be preferred.

7.2.3 Mitigation: Carron Terrace

It is anticipated that the line of lime trees along Carron Terrace will be retained. This route has a quiet, attractive character that provides a setting to listed buildings and views of the river. The latter, however, are at present seen in the context of a rather unappealing and incongruous post and wire fence with rough vegetation (Figure 3c). Once the flood wall along the channel is installed, there may be benefits in exploring the potential for a more formalised edge to this road, which could highlight the regular form of the trees through a 'harder' kerb line and simple planting to the base. This may be in conjunction with better lighting and surfacing to the road.

7.3 Mitigation: principles and materials

7.3.1 Mitigation: materials

A wide variety of buildings and walling materials have been used in the development of Stonehaven (Figure 7). Not all of these will be suitable for flood wall development, due to structural properties, technical detailing of fixings and availability. However, wherever possible, they should be appropriate for the location. Within the Conservation Area and where surfaces are prominent in views, traditional stone or a suitable brick would be the preferred option. Away from these areas, concrete, harled surfaces and reconstituted stone may be visually acceptable and more cost effective. In some cases, the use of modern materials—where carefully specified and detailed—may highlight the contrast between old and new elements or structures.

Much of the natural stone within the town is a pink-brown sandstone, with some red sandstone—more typical of Angus—to isolated buildings. Granite reflects the proximity of quarries further north. Harling is a traditional technique of weatherproofing using a slurry of fine stones and lime render. Brick is uncommon in the area, but is used in the furnishings listed building south of Bridgefield Bridge.

The arrangement or coursing of materials is often locally distinctive and can add a unique and striking character to masonry. 'Snecked' work involves the keying together of parallel courses of stone to increase strength. 'Cherry cocking' is a local term to describe the use of small stones between larger blocks. The blocks are laid in mortar, in the normal way, but pebbles are embedded in the mortar, adding decoration to the joints and beds, but also allowing the relatively undressed blocks to be aligned neatly into courses. Following the development of the granite industry in Aberdeen in the 1830s, mechanically-cut ashlar became cheaper and this

practice died out, but the practice of using smaller blocks of a different stone remained a decorative feature. This may have influenced the 'Aberdeen bond' style of masonry, examples of which can be seen in the town.

Pointing may also reflect the local vernacular. For example, a method of leaving the mortar standing proud of granite blocks in order to direct rainwater away and reduce dampness is termed 'pared pointing'.

Availability of materials may be an issue; many quarries used for historical construction materials are now closed and appropriate material may only be acquired through salvage, is unsuitable or not available in sufficient volumes for the scheme. Brick may be a less challenging proposition, as it is cheaper and there are wide ranges of heritage styles that may match those in existing buildings.

Material for paving could include resin-bonded gravels, which have a more attractive wearing surface than macadam and would suit key routes such as the path from the White Bridge to Dunnottar Avenue. Caithness stone and granite setts can provide contrast to certain areas of footway and highway; these materials were used in the Inverness streetscape scheme (Figure 7).

7.3.2 Mitigation: street furniture and fixings

The inclusion of public art commissions within streets and spaces can add interest, depth and visual quality to the environment. These could be incorporated adjacent to or within paving or paths, in the channel itself or to structures such as the new Green Bridge.

Attention should be paid to the design and specification of street furniture, such as lighting, signage, seating and bins. A consistent approach may create a coherent 'image' for the course of the Carron, although this should be appropriate for the context. For example, designs for the White Bridge area should reflect the Conservation Area status, whilst those for the greenspace close to the Green Bridge may offer potential for innovative designs due to the more modern character of the setting. Railings and balustrading in historic areas should follow cues from existing forms and patterns.

7.3.3 Mitigation: planting

The course of much of the Carron through the town is characterised by the presence of welcome greenery, including mature trees and lush waterside vegetation. This 'green infrastructure' is an important amenity, ecological and aesthetic asset to Stonehaven. Whilst the scheme will involve the removal of some large trees and riverside vegetation, it is intended to replace losses through new planting. Specification will be informed by ecological and site constraints; species will be native and locally sourced where possible, but there may be potential for carefully chosen non-native species within the open public spaces to provide a wider season and variety of visual interest. Vegetation will rapidly re-establish along river channels, but where new planting is required, the use of pre-planted coir rolls and matting may be required. Low-maintenance grass seed mixes may be a requirement for flood embankments, but for less critical areas native wildflower and grass mixes could be used, using suppliers such as Scotia Seeds.

A programme of removal of invasive species (Himalayan Balsam *Impatiens glandulifera* and Giant Hogweed *Heracleum mantegazzianum*) will be implemented. Local species that are suitable to the site and have good aesthetic value might include Purple Loosestrife (*Lythrum salicaria*), Meadowsweet (*Filipendula ulmaria*) and Globe Flower (*Trollius europaeus*) (Figure 7).

Innovative engineering designs may be proposed in order to retain mature trees, such as the pollarded limes along Carron Terrace. Flood walls will use sheet piling to protect sensitive root zones whilst preventing water ingress. Mitigation measures will be agreed with an arboriculturalist and implemented to avoid damage to trees during construction.

8 Summary and Conclusions

The effects of the proposal on landscape character and visual amenity have been assessed. Given that detailed published character studies have not been undertaken for Stonehaven, an outline baseline appraisal referencing zones described within the accompanying Cultural Heritage report (produced by FAS Ltd.) has been adopted for this assessment.

Construction effects are considered to be adverse, but short-term and are likely to be outweighed by the flood prevention benefits of the scheme. Operational effects may be adverse, but considered and appropriate design and detailing may mitigate and reduce these effects, such that they become neutral or even beneficial in the longer term.

Landscape and townscape effects are notable where the construction and operation will impact on key elements or resources within the landscape, such as valued views or features that inform the sensitivity of receptors. Notable construction effects are expected for three landscape zones that encompass the Carron Water between the Bridgefield and Green Bridges, with notable operational effects for the section between the White Bridge and the confluence with the Glaslaw Burn. These arise from the sensitivity and value of important, often historic features within the landscape fabric—such as the White Bridge and existing river walls—and the contribution these make to the overall character and perception of the area.

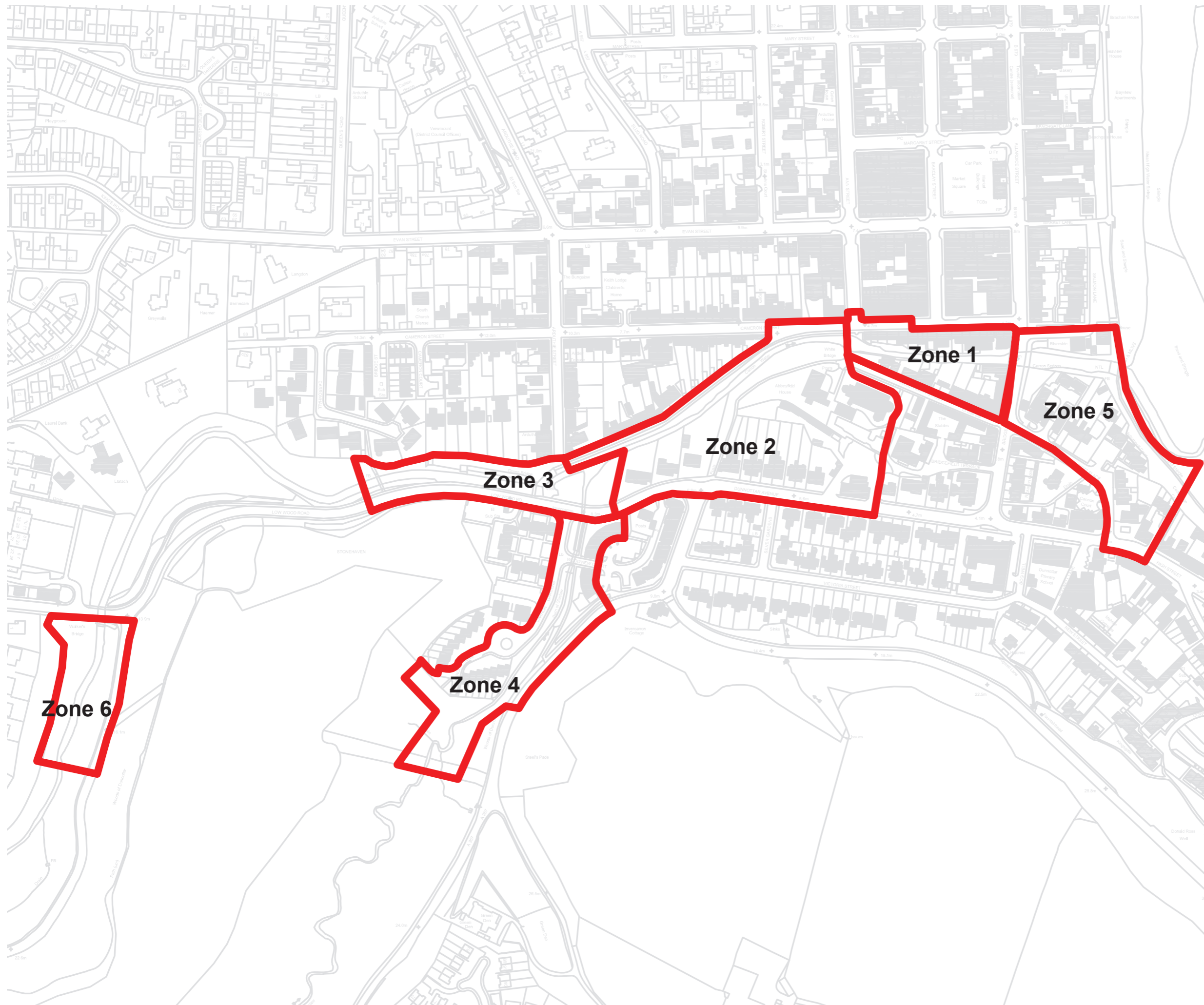
Visual effects are likely to be notable where the construction or operation will impact on key views or aspects from sensitive receptors, particularly where these have historic or aesthetic value, are directly oriented towards or are in close proximity to the works. Notable construction effects are expected for a number of residential properties to Arbutnott Street, Cameron Street, Salmon Lane, Carron Terrace and to the corner of High Street and Arbutnott Place. These may arise through impacts on direct views of the river, particularly where these are open, across valued gardens, include the loss of mature trees or relate to intensive engineering operations such as bridge removal or provision of underground pumping stations. Notable operational effects may be expected for properties on Cameron Street that back directly onto the Carron and a single property to Arbutnott Street due to increased wall height and proximity to windows and valued views; a single property to Carron Terrace with direct views of the new Green Bridge and associated steps/ramps; and up to 6 properties to the westernmost end of Carron Terrace which may be impacted through removal of mature trees and new raised walls within principal garden views.

Notable visual effects through construction are expected for the Green Bridge, the footpath between the White Bridge and Dunnottar Avenue and the White Bridge. Notable operational visual effects are predicted for the White and Green Bridges. These arise from major changes directly upon or in close proximity to these routes—replacement in the case of the Green Bridge—particularly where historical or amenity sensitivities are high.

The development of this scheme is an iterative process by which potentially adverse impacts are addressed through continual appraisal and revision, including responses from public and stakeholder consultation. Mitigation of adverse impacts may include development of design aspects such as layout, circulation (steps, ramps) and wall height; finishes, such as cladding materials, boundary treatments and street furniture; and choice or layout of new planting, including trees. These should be appropriate to the context, setting and view where possible; for example, natural materials should be specified within the Conservation Area or where new features will impact on valued residential views. The local vernacular includes sandstone or granite with masonry techniques such as snecking, cherry cocking or pared pointing, alongside weatherproof harling. Not all may be suitable for walling or cladding due to engineering and structural constraints, availability and cost. Concrete or brick may be appropriate in less sensitive locations. The inclusion of public art, a considered approach to detailing of street furniture and balustrading and sympathetic, natural paving materials could also better relate to the setting of the scheme. Planting strategies should balance ecological and biodiversity value

with visual, seasonal and structural qualities appropriate to what is an important section of local green infrastructure.

Public feedback has also indicated support for outline design proposals to the public spaces at the Green and White Bridges. Whilst not part of the flood protection remit, this scheme may offer a timely opportunity to raise the quality and amenity of these valuable breathing spaces that allow residents and visitors to enjoy attractive riverside and townscape views within easy reach of the commercial and residential areas of Stonehaven.



Zone 1
White Bridge to Bridgefield
Bridge: Cameron Street (east)
and Arbutnott Street

Zone 2
White Bridge to Green Bridge
and Carron Terrace (west)

Zone 3
River Carron: Green Bridge to
Red Bridge and Carron Terrace
(west)

Zone 4
Burn of Glaslaw, Carron
Gardens

Zone 5
Old Town and River Carron
east of Bridgefield

Zone 6
Walker's Bridge

Zone relate to areas described
in landscape impact assessment
and approximately coincide with
those outlined in Cultural Heritage
Assessment (FAS Heritage Ltd.)

Figure 1
Landscape Zone Plan

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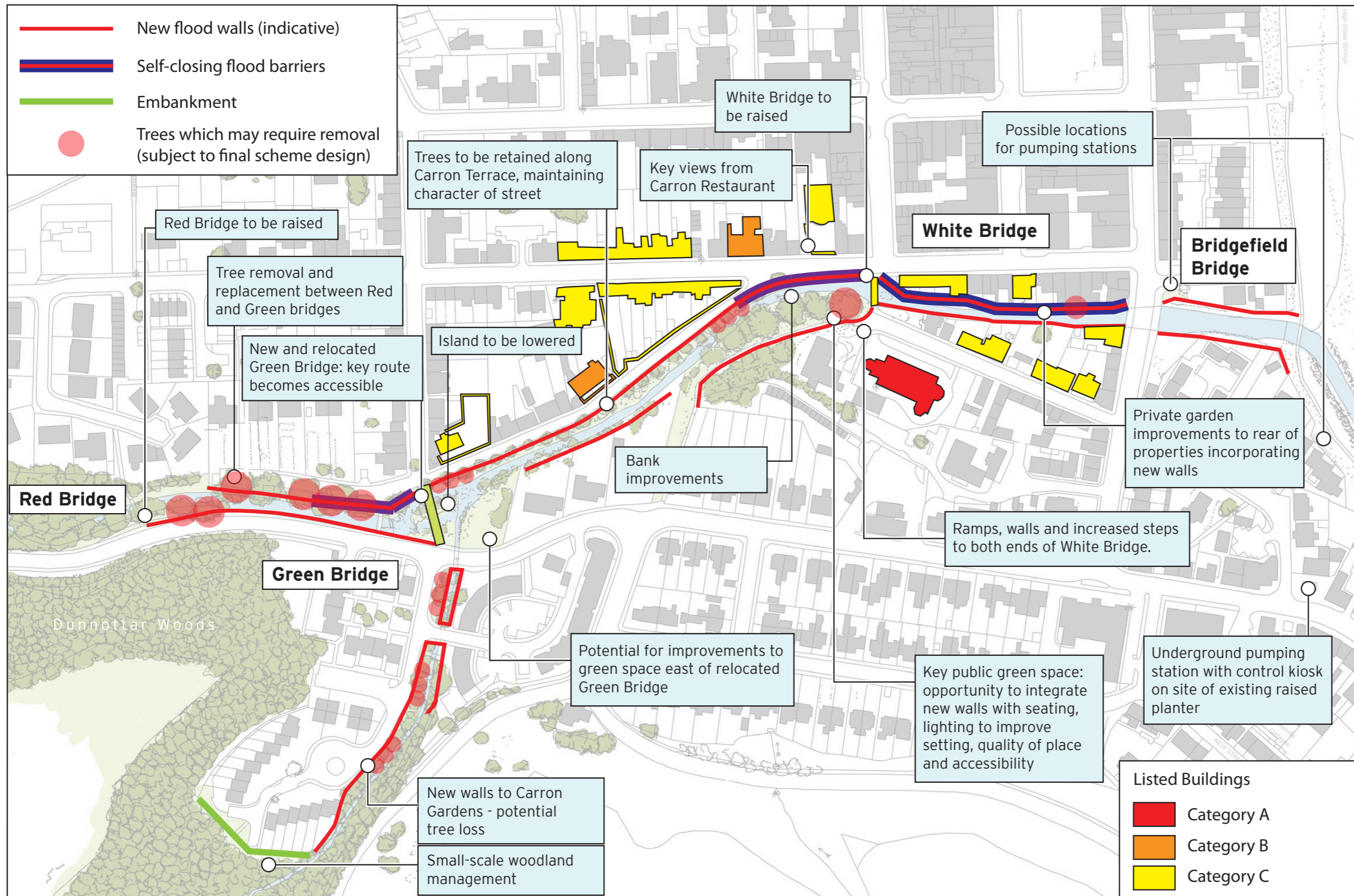


Figure 2
Key landscape elements

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Zone 1 -White Bridge to Bridgefield Bridge: Cameron Street (east) and Arbuthnott Street

Existing views



(a) River Carron from White Bridge, looking east

Rear gardens to properties along Cameron Street (left of view) have open and valued views of the river, particularly those situated close to the White Bridge. Views from Arbuthnott Street (right of view) are more enclosed, although no. 17 (pictured) has open views directly towards the White Bridge.

New walls will be built and existing walls will be strengthened, with some vegetation loss. Given the proximity of the properties to the walls and river, effects for residential receptors are likely to be notable in some cases, as well as public and recreational views from the bridges



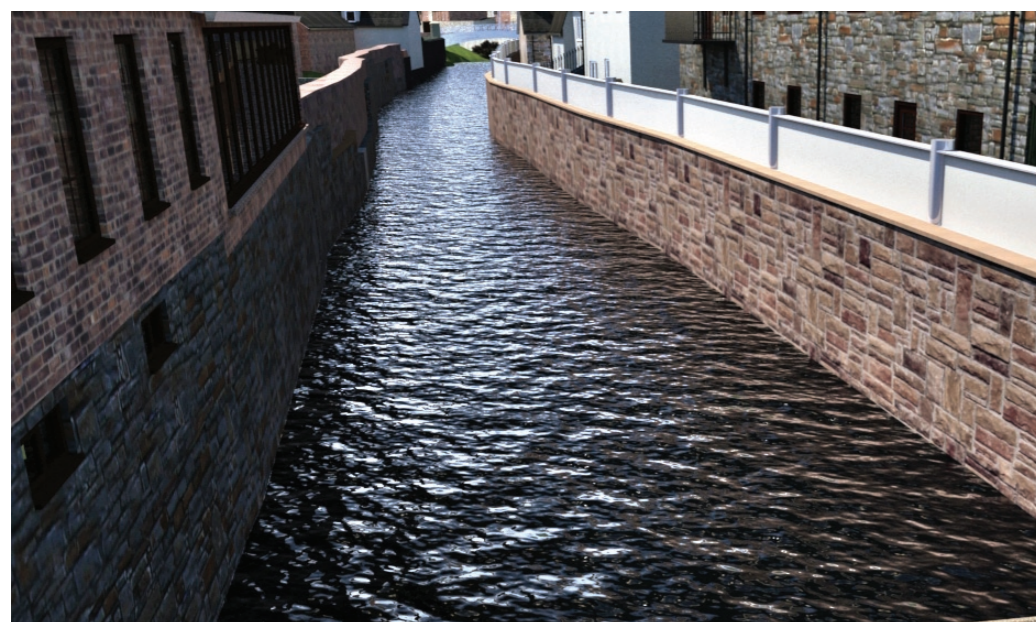
(b) River Carron from Bridgefield Bridge, looking west

Rear gardens and windows to properties along Cameron Street near the Bridgefield Bridge are very close to the river. New walls will be constructed which will impact on views and amenity (see photograph (c) below).

Whilst the aspect may become more restricted, there may be opportunities to improve the overall quality of finish and details which will create a more consistent appearance to walls with more accessible and attractive private riverside spaces.

The brick finish to the listed building no. 18 Bridgefield contrasts with the stone and harled finished to the majority of properties in the town.

Possible views (for guidance only, subject to detailed design)



(c) River Carron from Bridgefield Bridge, looking west

Proposed self-closing flood barriers are shown here in the raised position, with the river at high flow. The additional impact of the raised barriers is balanced by the reduction in flood risk and short-term effect. New walls will also restrict views, but may offer a more unified appearance with a finish that is more appropriate to the historic character of this section of river.



(c) River Carron, looking west towards the White Bridge

This view again shows the flood barriers in a raised position. Residents will lose the sense of openness through the presence of walls, although this will be balanced by protection to the gardens. Use of traditional, vernacular materials is particularly important at this location given the historical and amenity character of the listed White Bridge and cottages to Cameron Street, alongside garden views.

Figure 3
Zone 1: key views

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Zone 2 - White Bridge to Green Bridge and Carron Terrace (east)



(a) White Bridge

The setting of the Grade C listed White Bridge and Grade A St. James the Great Church alongside the River Carron and mature trees represents an important and valued public species that contrasts with the dense urban form of much of the town. The raising of the White Bridge is likely to have a significant effect on the open aspect of the area, as well as the setting of the prominent, identifiable and valued landmarks. It may reduce the sense of 'opening out' from the more enclosed New Town grid plan when looking south across the river. Whilst some of these effects will be unavoidable, mitigation may reduce this impact. Materials that are in keeping with the Conservation Area would be specified where appropriate. There is potential to make changes to the road layout and surfacing in front of the church, to give pedestrians priority and use higher quality materials. At present, this area is a largely featureless tarmac turning space.



(b) View from the Carron Restaurant

Key views will be impacted upon by the scheme, such as the south-facing elevation of the Art-Deco Carron Restaurant. The flood walls will be raised and views of the river may be more restricted, although parked cars are currently more dominant.

(c, right) Carron Terrace

Mature trees add to the character, views and ecological value along the Carron and Glaslaw. These listed lime trees are likely to be retained through the use of innovative flood wall design and construction, which will reduce visual impacts along a road that provides a setting to listed buildings alongside close-range views from residential properties. Opportunities may arise to improve the boundary of the road at the base of the trees, which currently comprises a post-and-wire fence and rough vegetation.

(d, below left) White Bridge: post-construction view (for guidance only, subject to detailed design)

The White Bridge will be raised by over 1 metre (3') to ensure that there is enough capacity for floodwater to flow underneath. This means that additional steps, ramps or a combination of the two will be required. There is an option to provide ramps to both side of the bridge in order to improve access, but this may mean larger and more visually dominant structures within a sensitive view. See also Figure 8.

(e, below right) Cameron Street: post-construction view (for guidance only, subject to detailed design)

Proposed self-closing flood barriers are shown here in the raised position, with the river at high flow. The presence of defences will restrict views but reduce the flood risk. Self-closing barriers will be provided at the more sensitive locations where impacts on the view, setting and amenity will be reduced through the use of these temporary structures.



**Figure 4
Zone 2: key views**

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Zone 3 - River Carron: Green Bridge to Red Bridge and Carron Terrace (west)



(a, left) Low Wood Road and Dunnottar Avenue

The existing Green Bridge will be replaced with a new structure towards the centre of this view, to the left (west) of the Glaslaw Burn. The existing green railings will be replaced with walls.

Opportunities may arise to improve the public green space adjacent to the confluence of the Glaslaw and Carron; a new space could be more welcoming, open, accessible and offer views of the river and new bridge.

(b, right) Green Bridge and Carron Terrace (west)

Selected mature riverside trees to the western end of Carron Terrace will be removed to allow construction of the flood walls. Although these are not formal trees they provide character to the area and contribute to valued views from residential properties. The impact of tree loss and restricted river views to this location will be high. However, replacement tree planting will be included within the scheme.



(c, right) Green Bridge

The Green Bridge is an important pedestrian route that links the town centre with residential areas to the south alongside Dunnottar Woods. The replacement bridge is likely to reflect some of the original features such as the diamond railings. However, it should be a more visually appealing structure that will respond to the location, with potential to further develop the open space to the east (right of view).



(d,e below left and right) New Green Bridge:

post-construction view (for guidance only, subject to detailed design)

Provisional designs indicate a stepped access to Carron Terrace. At present, the northern access to the bridge is a simple, overly-wide area of tarmac. There may be potential to improve this elevation to reflect the importance of the route from Arduithie Street and the north.



**Figure 5
Zone 3: key views**

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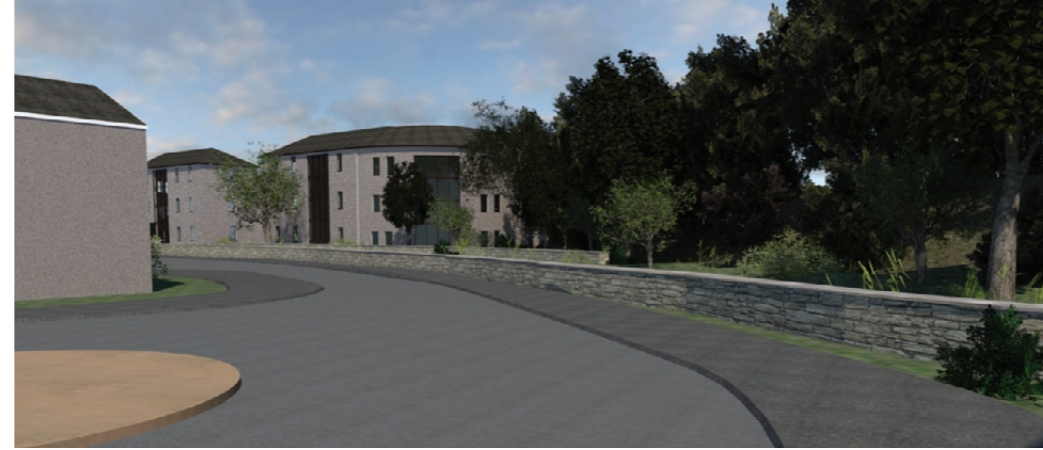
Zone 4 (Burn of Glaslaw, Carron Gardens), Zone 5 (Old Town and River Carron east of Bridgefield) and Zone 6 (Walker's Bridge)

Zone 4



(a) Zone 4: Carron Gardens, existing view

A low wall and/or embankment will be constructed along the east side of Carron Gardens, where the Glaslaw Burn shows signs of scour adjacent to the footway. This will require some removal of trees although the presence of woodland on slopes to the far side of the Burn will reduce the overall impact.



(b) Zone 4: Carron Gardens, post-construction view (for guidance only, subject to detailed design)

The choice of material to the proposed wall is subject to detailed design, although harled finishes may be specified to reflect the modern residential properties within the area.



(c) Zone 4: Dunnottar woodland

Debris traps and low banks will be constructed within the woodland, to the rear of residential properties. This is generally away from public access routes. Mitigation through woodland management may be carried out.

Zone 5

(d) Zone 5: Arbuthnott Place and High Street

An underground pumping station will be located beneath the existing low raised planter. Construction will require excavation and will result in short-term but notable impacts for adjacent properties. There may be potential to improve the appearance of this Old Town location once the underground works are complete. The pumping station is likely to be constructed at the edge of the beach, near the mouth of the Carron. The new structure will be mainly underground, apart from a control box and access manholes.



(e) Zone 5: River Carron, from the beach footbridge - post-construction view (for guidance only, subject to detailed design)

Existing river walls will be strengthened and raised in some locations. Whilst there may be localised notable effects to adjacent residential properties, the final overall appearance may be more unified and consistent. The balustrade panels to Bridgefield Bridge will be infilled with a suitable natural design.



Zone 6

(f) Zone 6: Walker's Bridge, looking west

Large debris traps will be placed at this location to prevent logs and other material being swept downstream and blocking other structures. These steel poles which will be relatively unobtrusive and largely screened from adjacent residential properties.



Figure 6
Zones 4,5 and 6: key views

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Materials and finishes

A wide variety of building and walling materials are visible in Stonehaven [below]. Not all of these will be suitable or available in sufficient quantity or quality for flood wall development, but the finish should be appropriate for the location where possible. Within the Conservation Area and where surfaces are prominent in views, traditional stone would be preferred.

Away from these areas, concrete, harling, brick and reconstituted stone may be a more cost effective option. In some cases, the use of modern materials can highlight the contrast between old and new structures.

Natural stone in Stonehaven is a mixture of pink-brown sandstone, with some red sandstone (more typical of Angus) to isolated buildings. Granite reflects the proximity to quarries further north. Harling is a traditional technique of weatherproofing using a slurry of fine stone and lime render.

'Snecked' work involves the keying together of parallel courses of stone to create very strong masonry. 'Cherry cocking' is the use of small stones between larger blocks, prior to the development of cheaper methods of cutting more finely cut ashlar.



'Cherry cocking' in sandstone wall



Reconstituted stone wall and coping



Red ashlar sandstone and pared pointing



Coursed sandstone rubble wall



Harling to old cottages



Coursed sandstone



Sandstone including 'Aberdeen bond'



Granite ashlar



Brick on rubble wall



Modern harling with reconstituted stone quoins

Public art

The use of art commissions within public spaces can add interest, depth and visual quality to the environment. These could be incorporated within paving or paths, along the channel or to structures such as the new Green Bridge.

Examples [right] are from the LUC scheme in Inverness (Al MacInnes and Fin Macrae) and the Cockshaw Burn flood scheme in Northumberland (David Jacobson).



David Jacobson



Planting



Meadowsweet (Filipendula ulmaria)



Globe flower (Trollius europeus)



Purple Loosestrife (Lythrum salicaria)

River channels and watercourses naturally revegetate rapidly. However, the works would provide an opportunity to introduce appropriate native species [above, left] that would offer ecological and visual interest within areas that are accessible to the public and form key sections of Green Infrastructure. This may be carried out through seeding, plug plants or pre-planted coir (fibre rope) and mats.

Landscape precedents

[right] The award-winning Inverness streetscape scheme (by Land Use Consultants) involved the use of natural stone and resin-bonded surfaces to define and prioritise areas for pedestrians.

A similar concept could be used at certain locations, such as the entrances to the Green and White Bridges



Figure 7 Mitigation strategies

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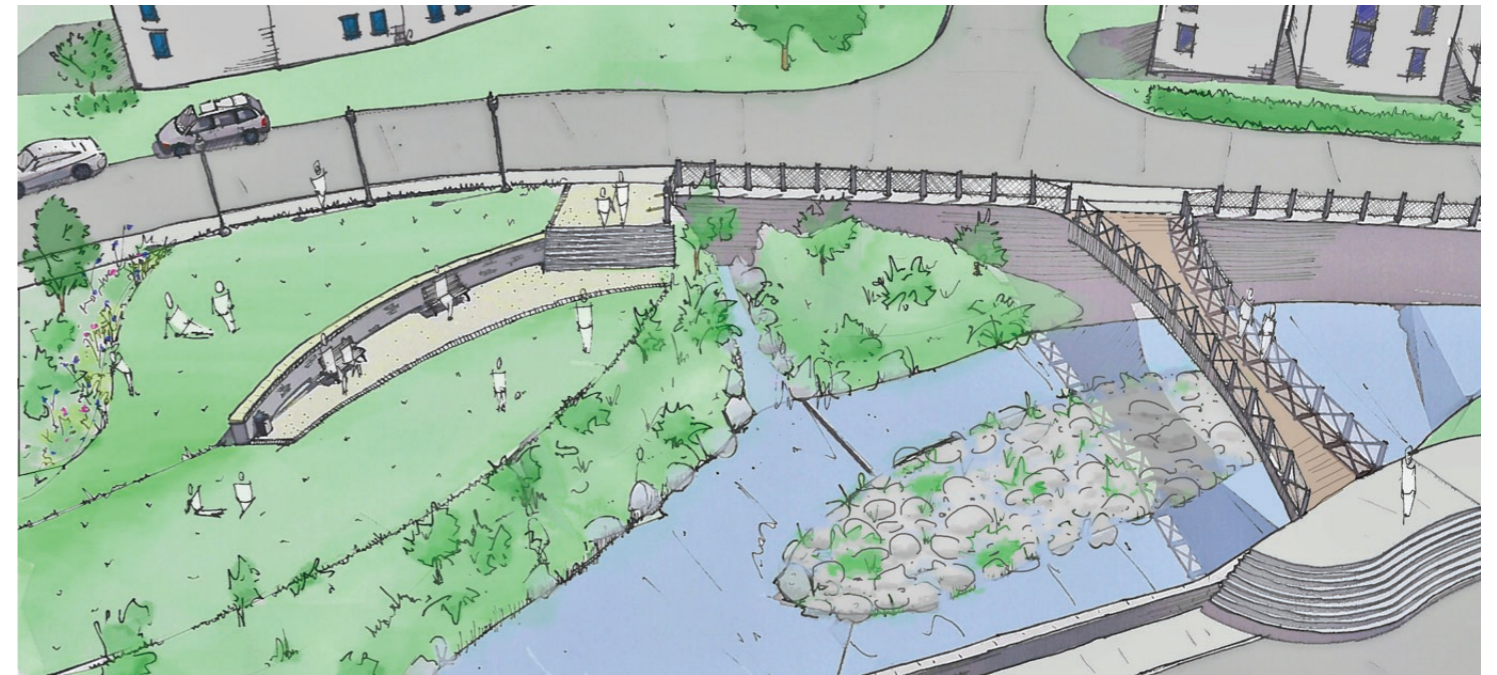


Green Bridge area

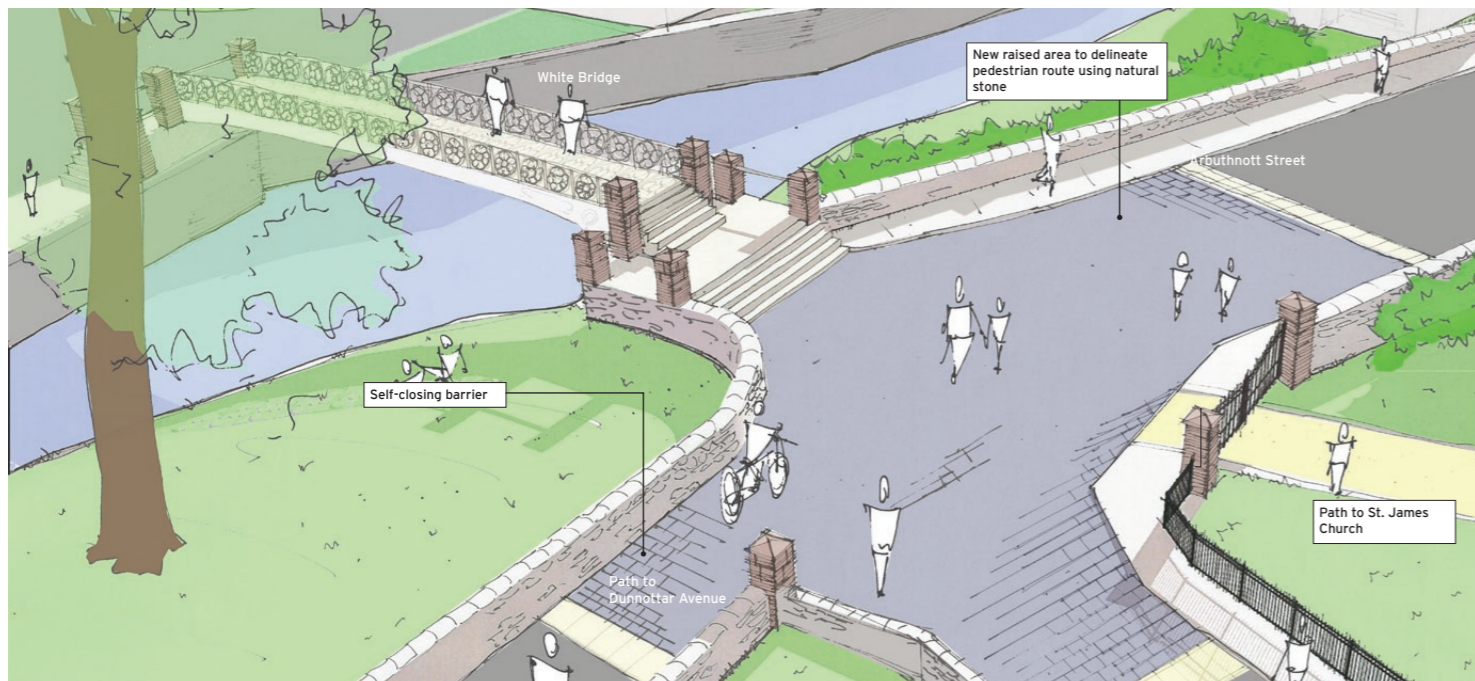
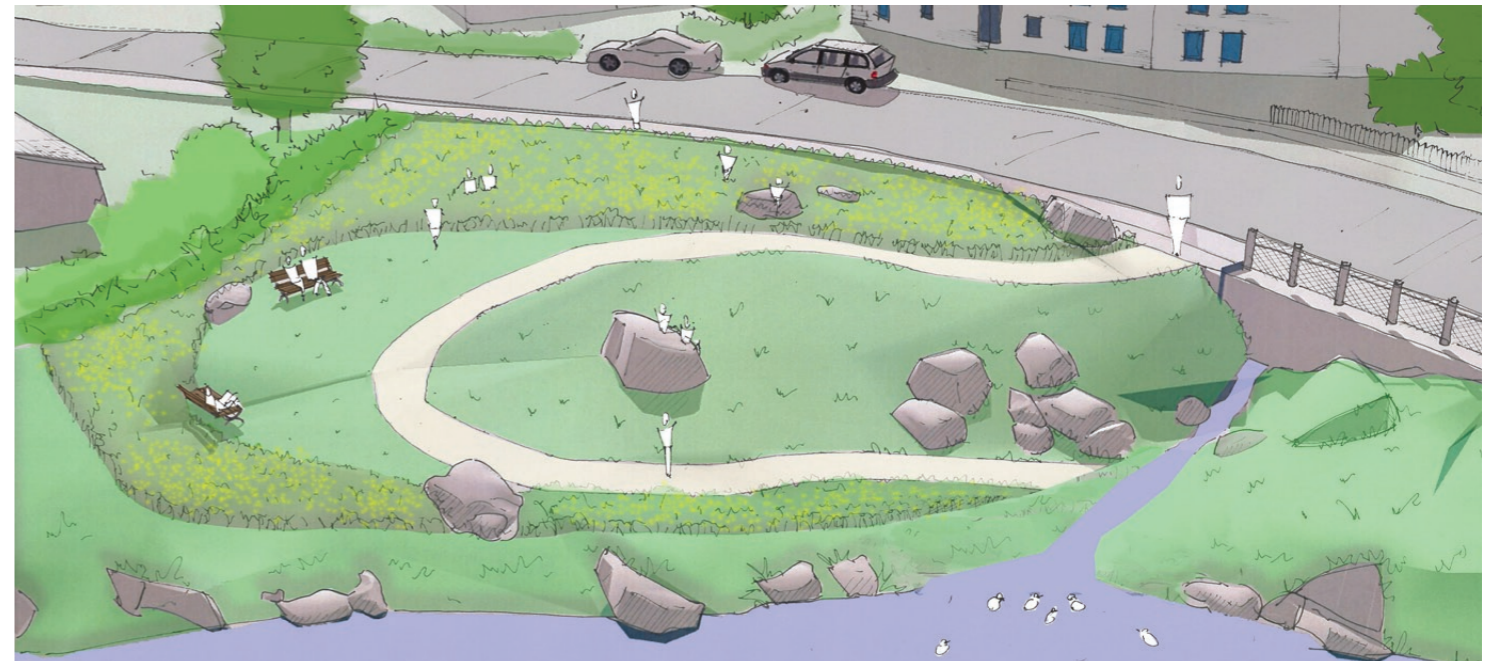


Adjacent to the confluence of the Carron Water and Glaslaw Burn is an open public space with access to the river [above]. There are opportunities to create a more attractive and accessible area, with new seating, paths and better planting. It would allow views of the bridge and improve the setting and quality of the immediate area.

Two outline options were put forward at the public consultation. A more structured seating area [top right] with surfaced paths would allow better accessibility for all. An informal design using boulders [right], some of which may be removed from the channel during widening, would create a more naturalistic appearance. Feedback from the consultation indicated a preference for more formal elements.



White Bridge area



The White Bridge will be raised by over 1 metre (3') to ensure that there is enough capacity for floodwater to flow underneath. This means that additional steps, ramps or a combination of the two will be required. Ramps will allow step-free, inclusive access but a ramp to the north side along Cameron Street would need to be long, more expensive and may impact on views.

Two possible options are presented for the south side of the bridge: one with a ramp (see Figure 4), the other with steps.

At present the area to the south of the White Bridge is largely functional and designed around the needs of turning vehicles. This does not reflect the visual quality of the setting adjacent to St. James the Great Church and the importance of this key pedestrian link between the town centre and residential areas to the south.

The option put forward at public consultation [left, below] is indicative and intended to guide further design development. However, it indicates how informed choices regarding materials and detailing could appreciably improve the quality of this important space.

Figure 8 Landscape opportunities

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Susceptibility

The ability of a defined landscape or visual receptor to accommodate the specific proposed development without undue negative consequences.

Visual Amenity

The overall pleasantness of the views people enjoy of their surroundings, which provides an attractive visual setting or backdrop for the enjoyment of activities of the people living, working recreating, visiting or travelling through an area.

Visual Effects

How the surroundings of individuals and groups of people may be specifically affected by changes in the content and character of views as a result of the change, loss or addition of elements

Visual Receptors

Individuals and/or defined groups of people who have the potential to be affected by a proposal.

Zone of Theoretical Visibility (ZTV)

A digitally produced map, showing areas of land within which a development is theoretically visible.

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