
Chapter 11

The Landscape

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11.1 Introduction

Murray & Associates have conducted this landscape and visual assessment for the proposed Flood Defences West, hereafter referred to as the 'proposed development'. The site of proposed c.1.1km development is located within the north quays area of Waterford City stretching approximately 1km to the west and 100m to the east of the Waterford railway station, Plunkett Station.

The landscape and visual assessment of the proposed development is a means of appraising the affect the proposed development would have on the receiving environment in terms of quality of landscape – both physically and visually.

As part of the assessment, the site and its environs were visited in March 2021.

11.2 Methodology

The landscape and visual assessment of the proposed development is a means of appraising the effect the proposed development would have on the receiving environment in terms of the quality of landscape – both physically and visually. Also considered are construction and demolition works, the operational phase and the cumulation of effects with other existing and/or approved projects. In an urban context, the term 'townscape' is used to refer to the urban landscape.

11.2.1 Terminology

Landscape impacts are defined as changes in the fabric, character and quality of the landscape as a result of the development. This includes direct impacts to landscape receptors and greater effects that can alter the wider distinctiveness of the landscape. Landscape receptors are the physical or natural resource, special interest or viewer group that will experience an impact. The sensitivity (of a landscape receptor) is the vulnerability to change. The extents of the landscape impacts have been assessed by professional evaluation using the terminology defined as per Tables 11.1, 11.3 and 11.4. The terminology is based on the criteria set down in the *Guidelines for Landscape and Visual Impact Assessment* (3rd Edition, by The Landscape Institute / Institute of Environmental Assessment published by E&FN Spon, 2013). Landscape impacts are assumed to be permanent.

The UK Landscape Institute's Technical Information Note *Townscape Character Assessment* recommends that where a proposed development is within or dominated by built elements that the term 'Townscape' is used instead of 'Landscape'. Though the existing site is developed and is peri-urban in character with infrastructural elements (railways and roads, as well as constructed quay walls), it is located adjacent to and within the River Suir, which is almost 200m wide and an important landscape element in its own right. The immediate context to the north of the proposed development is dominated by rock faces which are partially vegetated and semi-wild. Therefore, for the purposes of this study it is considered that the term 'Townscape' does not fully describe the nature of the site, and the term 'Landscape', as applied throughout, should be read as being inclusive of the urban fabric of the city and the built environment.

Table 11.1 Extent of Landscape Effects

Extent of Effect	Description
Imperceptible Effects	An effect capable of measurement but without noticeable consequences. There are no noticeable changes to landscape context, character or features.
Not significant	An effect which causes noticeable changes in the character of the landscape but without noticeable consequences. There are no appreciable changes to landscape context, character or features.
Slight Effects	An effect which causes noticeable changes in the character of the landscape without affecting its sensitivities. There are minor changes over a small proportion of the area or moderate changes in a localised area or changes that are reparable over time.
Moderate Effects	An effect that alters the character of the landscape in a manner that is consistent with existing and emerging trends. There are minor changes over some of the area (up to 30%) or moderate changes in a localised area.
Significant Effects	An effect which, by its character, magnitude, duration or intensity alters a sensitive aspect of the landscape. There are notable changes in landscape characteristics over a substantial area (30-50%) or an intensive change over a more limited area
Very Significant Effects	An effect which, by its character, magnitude, duration or intensity significantly alters the majority of a sensitive aspect of the environment. There are notable changes in landscape characteristics over a substantial area (50-70%) or a very intensive change over a more limited area
Profound Effects	An effect which obliterates sensitive characteristics. There are notable changes in landscape characteristics over an extensive area (70-100%) or a very intensive change over a more limited area

Visual impacts relate solely to changes in available views of the landscape and the effects of those changes on people viewing the landscape. They include the direct impact of the development on views, the potential reaction of viewers, their location and number and the impact on visual amenity. The intensity of the visual impacts is assessed by professional evaluation using the terminology defined as per Tables 11.2, 11.3 and 11.4.

Table 11.2 Extent of Visual Effects

Extent of Effect	Description
Imperceptible Effects	There are no changes to views in the visual landscape.
Not significant	An effect which causes noticeable changes in the character of the visual environment but without noticeable consequences. The proposal is adequately screened due to the existing landform, vegetation or constructed features.

Extent of Effect	Description
Slight Effects	An effect which causes noticeable changes in the character of the visual environment without affecting its sensitivities. The affected view forms only a small element in the overall visual composition, or changes the view in a marginal manner.
Moderate Effects	An effect that alters the character of the visual environment in a manner that is consistent with existing and emerging trends. The proposal affects an appreciable segment of the overall visual composition, or there is an intrusion in the foreground of a view.
Significant Effects	An effect which, by its character, magnitude, duration or intensity alters a sensitive aspect of the visual environment. The proposal affects a large proportion of the overall visual composition, or views are so affected that they form a new element in the physical landscape.
Very Significant Effects	An effect which, by its character, magnitude, duration or intensity significantly alters the majority of a sensitive aspect of the visual environment. The proposal affects the majority of the overall visual composition, or views are so affected that they form a new element in the physical landscape.
Profound Effects	An effect which obliterates sensitive characteristics. The view is entirely altered, obscured or affected.

Table 11.3 Quality of the Landscape and Visual Effects

Quality of Effect	Description
Neutral Impact	Neither detracts from nor enhances the landscape of the receiving environment or view.
Positive Impact	Improves or enhances the landscape of the receiving environment or a particular view.
Negative Impact	Detracts from the quality of the landscape or view.

Table 11.4 The Duration of the Visual Effects

Duration of Effect	Description
Temporary	Impacts lasting one year or less
Short-term	Impacts lasting one to seven years
Medium-term	Impacts lasting seven to twenty years
Long-term	Impacts lasting twenty to fifty years
Permanent	Impacts lasting over fifty years

Note: Landscape impacts are assumed to be permanent, unless otherwise stated in the assessment.

The landscape and visual assessment methodology will be utilised in conjunction with a professional evaluation of the proposed development to determine the degree of impact.

The term 'study area' as used in this report refers to the site itself and its wider landscape context in the study of the physical landscape and landscape character. This may extend for approximately 1km in all directions from the site in order to achieve an understanding of the overall landscape. In terms of the visual assessment, the study of visual amenity may extend outside the study area, to areas where views of the site are available, but the majority of visual impacts for a development of this nature would be most significant within 200m.

11.2.2 Methodology

The methodology employed in the landscape and visual impact assessment is as follows:

1. Desktop survey of detailed maps, aerial photography, and other information relevant to the study area, including the following:
 - (I) Waterford City Development Plan 2013 – 2019 (as extended)
 - (II) Waterford County Development Plan 2011-2017 (as extended)
 - (III) The Waterford North Quays Planning Scheme 2018 has also been reviewed, along with the Strategic Environmental Assessment Environmental Report (part of the preparation of the Planning Scheme for the Waterford North Quays Strategic Development Zone (S.I. No. 30 of 2016)), February 2018.
 - (IV) Ferrybank Belview Local Area Plan 2017
2. Site survey and photographic survey undertaken in March 2021 to determine landscape character of the general study area and specific landscape of the site.
3. Assessment of the potential significant impacts of the proposed development utilising the plan and elevation drawings of the development to determine the main impacting features and the degree to which these elements would be visible in relation to observations made during the field survey. In determining visibility, the views to and from the proposed Flood Defences West project are considered based on the heights, finishes, design and other visual characteristics of the proposed structures and setting. Verified photomontages have also been prepared to give an accurate visual representation of the proposals from a selection of viewpoints, and are included in Appendix 11.1 to 11.12 in Volume 3 of the EIAR.
4. The proposal of a scheme of mitigation measures, where relevant. These will be defined as measures which will be generally implemented and specific landscape measures which would be site-specific and address particular landscape or visual issues identified.
5. An evaluation of the impacts of the proposed development with and without amelioration. For the purposes of assessment, the predicted visual effects of the proposed Flood Defences West are assumed at 10 years following the completion of the proposed development.

The assessment follows prescribed methodologies, as set down in the following publications:

- Guidelines for Landscape and Visual Impact Assessment 3rd Edition, by The Landscape Institute / Institute of Environmental Assessment published by E&FN Spon (2013),
- Environmental Protection Agency (2003), Advice notes on Current Practice in the Preparation of Environmental Impact Statements;

- Environmental Protection Agency (2002), Guidelines on the information to be contained in environmental impact statements;
- Draft Environmental Protection Agency (2017) Guidelines on the Information to be contained in Environmental Impact Assessment Reports; and
- Draft Environmental Protection Agency (2015), Advice Notes for preparing Environmental Impact Statements.

11.3 Description of Receiving Environment

11.3.1 Site Setting/Landscape Character

The site of the proposed Flood Defences West project is located on the north quays, approximately 0.7-1.5km northwest / west of Waterford City centre (Broad St/Barrow St). The proposed development is located on the northern edge of the River Suir, and stretches 100m to the east and c.1km to the west of Plunkett Station and Rice Bridge Roundabout.

The North Quays was an industrialised port until the 1990s and the area is now predominantly disused and semi-derelict in visual terms. Many disused industrial buildings, landing stages and wharves have been largely demolished in recent years, whilst Sallypark industrial area includes warehousing and other commercial / industrial buildings and structures. Rail tracks and sidings cover much of the site as well as an Irish Rail depot. A dual carriageway road (R448) runs east-west to the north and rises to cross over the rail line c.200m west of Plunkett Station. The land rises steeply up from the road / rail level, most notably to the peak of Mount Misery, and the cliff-like edifice along the approach road to Waterford from the west (R448) and around the existing train station, immediately north of the project site. To the north of the Sallypark industrial area, a small number of residential properties are accessed from the R448, set in extensive grounds with mature trees.

Residential developments of a suburban character are located to the north and east of the North Quays, east of the site. The residential areas are elevated above Dock Road and the North Quay but are largely hidden from this site by the topography which rises to a ridge which limits views east and is often punctuated with areas of tree cover. A large derelict building, a former hotel, dominates the ridge to the northeast of the site.

Waterford city centre to the south / southeast is set on the side of a hill which falls towards the river. The city rises to a maximum ground level of 70m OD in the vicinity of Carrig Heights residential estate to the northwest of the city centre, with the commercial centre around Broad Street and Arundal Square and O'Connell Street c.10-20m OD. In views from elevated areas to the west of the city looking north, north-east and east, there are distant views towards Kilkenny and Wexford counties, with varied topography and hills on the horizons.

11.3.2 Landscape Planning Context

The landscape planning context for the area is set down in the Waterford County Development Plan 2011-2017 (as extended) and the Waterford City Development Plan 2013 – 2019 (as extended). The Waterford North Quays Strategic Development Zone Planning Scheme 2018 also sets out several policies relevant to the landscape and visual assessment of the proposed Flood Defences West project.

Chapter 8 Environment and Heritage of the Waterford County Development Plan 2011-2017 (as extended) sets out policies with regard to the landscape of the county. Section 8.1 Landscape states:

“The *management of the County’s landscape involves:*

- *Sustaining and conserving the landscape;*
- *Protecting the landscape from inappropriate and unsustainable development;*
- *Providing for development that will enhance and benefit the receiving environment; and*
- *Ensuring adequate protection to sensitive and vulnerable landscapes through appropriate policies and objectives”.*

Appendix A9 Scenic Landscape Evaluation to the Waterford County Development Plan 2011-2017 (as extended) considers that Waterford City is in an area designated as “Robust”; i.e. “*areas of concentrated existing development and infrastructure*”. It states that: “*Appropriate new development in these areas can reinforce the existing desirable landuse patterns. The overall aim is to ensure that the inherent character of the town and village centres is maintained.*”

The Waterford City Development Plan 2011-2017 (as extended) notes the importance of the Quays as a waterfront: “*The width of the river, the length of the Quays, their uniformity and the activities along the South Quays make for an element of major visual and townscape importance*”. By implication, the lack of uniformity and lack of activities along the North Quays and the site area suggests that these areas are less visually important.

The proposed flood defence works are planned in the context of several other adjacent developments, all part of the Waterford North Quays Strategic Development Zone (SDZ), notably the Waterford Sustainable Transport Bridge, Transport Hub and the development of a mixed use new urban quarter on the North Quays in accordance with the Waterford North Quays SDZ Planning Scheme (NQ SDZ PS) 2018. Permission was granted in July 2020 for the Waterford North Quays Development (Planning Register Number 19/928) and the bridge and transport hub have also been granted permission in recent years. Work has not yet commenced on these projects.

The NQ SDZ PS summarises the existing significant views as identified in previous plans for the North Quays in Section 4.5 as follows:

“South to North

(A) *Bridge Street*

(B) *Barronstrand Street*

(C) *The Mall*

(D) *Panoramic view from South Quays to North Quays*

North to South

(E) *Western approach to Rice bridge*

(F) *Rockshire Road*

(G) *Panoramic view from North Quays to South Quays*

It is generally recognised that the most significant views are those generally available from the north to the south and vice versa from any point on the river’s edge. It is the objective of the Planning Scheme that these views will be retained as the defining views of the City”.

Views A and E are most relevant to the proposed development as they may include potential views of the site of the proposed flood defence works. Plate 11.1 illustrates the location of the views and is taken from Figure 25 of the North Quays Planning Scheme (WCCC, 2018).

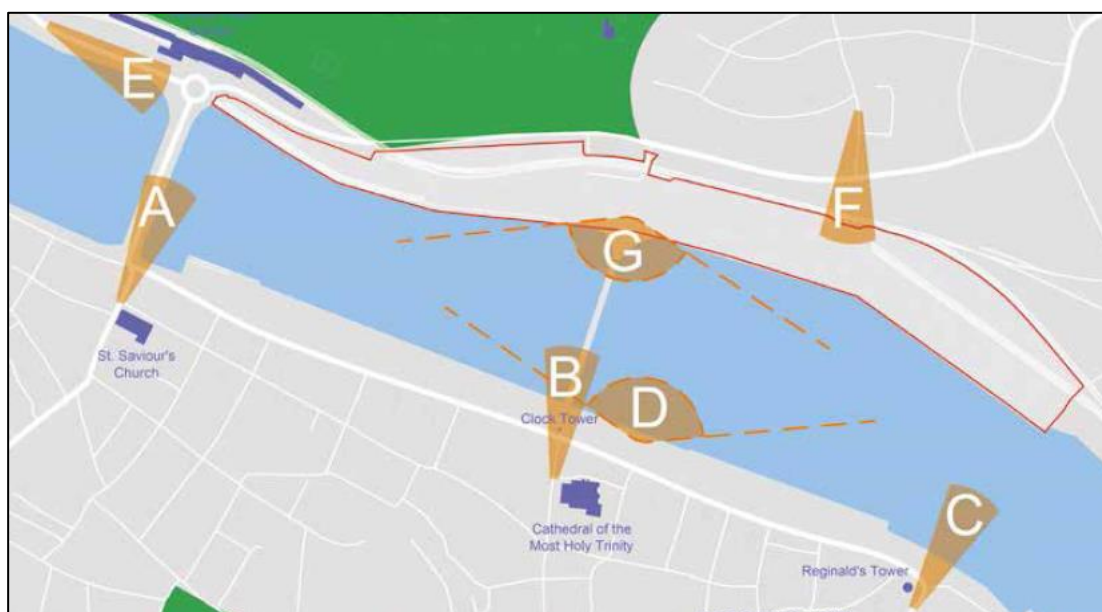


Plate 11.1 Figure 25 of the NQ SDZ PS – Views to be retained

The Ferrybank Belview Local Area Plan 2017 also lists views for protection, but none are considered relevant as the viewsheds do not cover the site of the proposed works. Therefore, there is no likelihood of effects being generated.

11.3.3 Description of Site

The site of the proposed Flood Defences West project is located to the northwest of the city centre on the northern edge of the River Suir, to the west of Rice Bridge. It is located approximately 0.7-1.5km northwest / west of Waterford city centre (Broad St / Barrow St). It extends for approximately 1.1km and is oriented generally east-west. The site is narrow as it follows the existing quay wall south of the IÉ train tracks, but widens out at the eastern side, south of Plunkett Station to almost 100m, where it encompasses the existing railway station and the Rice Bridge roundabout. Most of the landuse within the footprint of the site is infrastructure. There are no trees or significant landscape vegetation within the site.



Plate 11.2 View west along Terminus Street with rockface to right (north) and rail / industry / commercial to the left (south)



Plate 11.3 View east along Terminus Street with rockface / ridgeline to left (north) and River Suir (south); note that rail below is screened from angle of view from elevated road.

The natural topography rises up at Mount Misery and Mount Sion to the north / northeast and creates a ridgeline which is quite heavily wooded and limits views to and from the north / northeast / east.

The River Suir is the main feature of the landscape in this area, flowing in an eastward direction and it is approximately 150-200m wide as it flows into and through the city. The river transitions from a semi-natural state to the west / north-west of the site as it flows into the city, with the riverbanks and edges become increasingly less naturalised

and vegetated as it approaches the city. The river becomes somewhat canalised to the west of Rice Bridge, with quay walls to north and south as it passes the site. Past Rice Bridge, both banks become more urbanised wharves, with disused and semi-derelict elements to the north and an active waterfront to the south, with amenity spaces and car parking / transportation depots, as well as some active shipping and water-based amenity uses. As one moves east, leaving the city, the riverbanks once again become more naturalised and heavily vegetated where it joins with the River Barrow and flows out into Waterford Harbour approximately 7.5km to the east.

The site is focused on the existing quay wall of concrete / stone to the southern edge with the river. The remainder of the site is primarily in use as an operational railway line. Historic mapping from the early to mid-20th century show a number of landing stages indicating that this was once part of a busy shipping port, but this activity has now ceased, and the landing stages are no present, with the only remaining elements being a number of surviving timber fenders visible at low tide and part of an abutment which was once associated with a landing stage (see Chapter 14 Archaeological and Cultural Heritage for further information). The landscape of the site is dominated by the railway line and Terminus Street (R448). Terminus Street is estimated to be elevated above the level of the rail by some 6-8m where it crosses over the railway line. Further east, there has been an extensive programme of demolition on the North Quays in recent years resulting in the presence of spoil heaps and large areas of open space and hard standing on the wharves. Overall, the visual quality of the existing site and context is poor.

Plunkett Station is a modern building and there is a row of low red-brick buildings alongside, which are used as offices. These are not considered sensitive receptors for this assessment. There is a 19th Century signal box to the west of the station which is a listed building, and this is considered in the context of the proposed development.

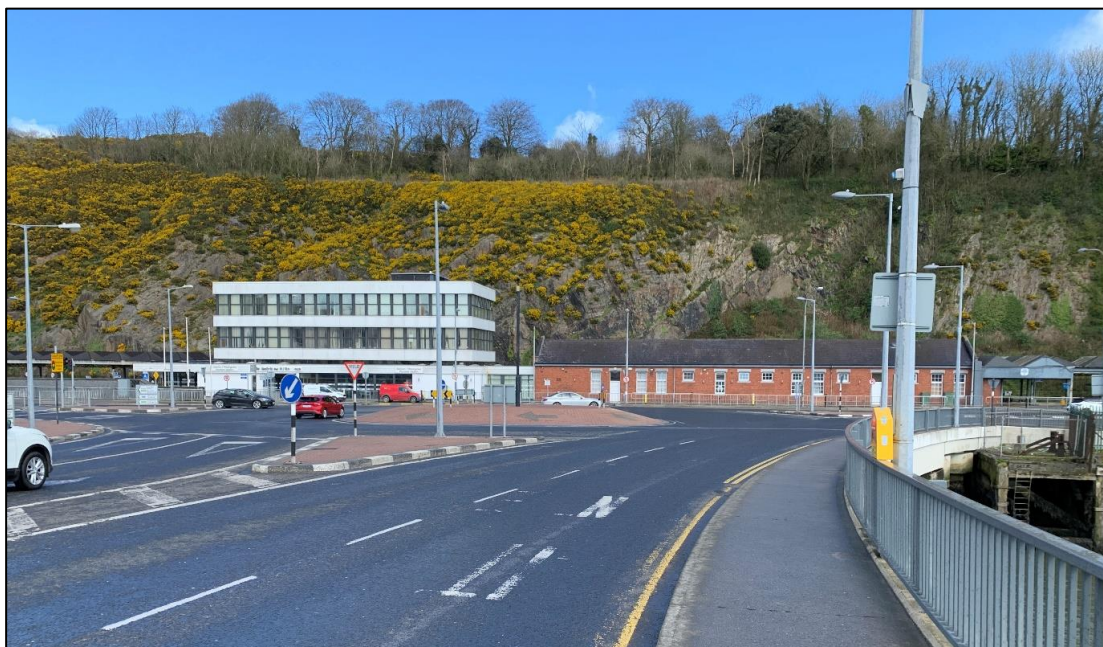


Plate 11.4 Plunkett Station viewed from Rice Bridge Roundabout



Plate 11.5 19th Century Signal Tower, west of Plunkett Station (listed building) with rock face behind

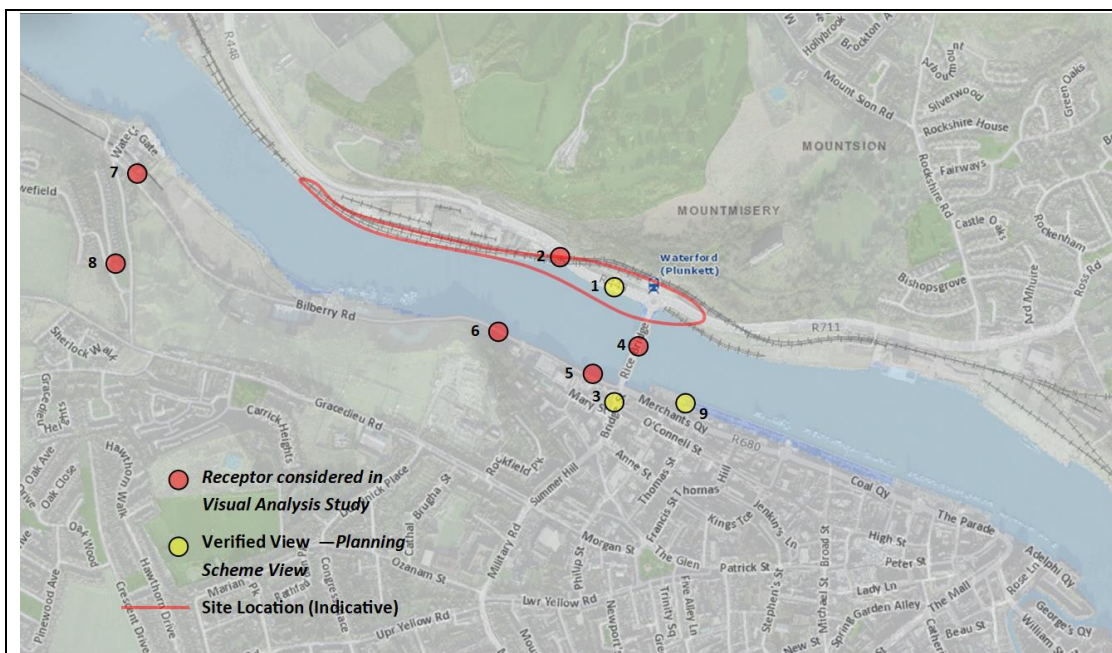
The total site area within the red line site boundary of the proposed development is approx. 9 hectares. The existing land uses of the lands required for the proposed development include: Rice Bridge Roundabout, the existing rail line and associated railway infrastructure; and the existing quay walls. The interface of the river with the quay walls is considered to be a sensitive element of the landscape.

11.3.4 Views

Views of the site for the proposed Flood Defence West are available from the following locations in the public realm:

- View from R448 Terminus Street Approaching Rice Bridge from west. (Listed View E from North Quays Planning Scheme - Figure 11.1) – See Plate 11.7
- View from Bridge Street looking north across Rice Bridge (Listed View A from North Quays Planning Scheme - Figure 11.1) – See Plate 11.8
- Views Terminus Street footpaths looking west – See Plate 11.2
- Views from Rice Bridge footpaths looking north and west – See Plate 11.9
- Views from Grattan Quay north / north-west towards north bank of river – See Plate 11.10
- Views from Bilberry Road Halting Site south of the site, looking north – See Plate 11.11
- Views from waterside residential areas to the west of the site, south of the river (Water's Gate) – See Plate 11.12
- View from elevated residential areas to the west of the site, south of the river (Bowfield) – See Plate 11.13

Views from areas to the east of Rice Bridge, particularly the sensitive views from the South Quays and city centre are considered unlikely to have visibility of the proposed works due to the presence of Rice Bridge screening the majority of the areas which are likely to change. (See Plate 11.14)



1. Terminus Street (R448) approaching Rice Bridge from west (View E from Planning Scheme)
2. Terminus Street (R448) looking west from footpath
3. Bridge Street looking north—View A from Planning Scheme
4. Rice Bridge looking west
5. Grattan Quay looking north / northwest
6. Bilberry Road Halting Site looking north
7. Water's Gate—Residential
8. Bowefield—Residential
9. Panoramic view from South Quays to North Quays—View D from Planning Scheme & Variations—no visibility of proposed works from these vantage points due to screening presence of bridge and minor nature of works around Plunkett Station.

Plate 11.6 Visual Receptors



Plate 11.7 View from R448 looking east showing the river, quays, and buildings on the South Quays. The spire of Christ Church Cathedral and the top of Reginald's Tower are visible on the city skyline. (View E from Figure 11.1)



Plate 11.8 Framed View from Bridge Street (View A from Figure 11.1)



Plate 11.9 Rice Bridge looking west – views from footpaths



Plate 11.10 View from Grattan Quay, looking north towards the North Quays

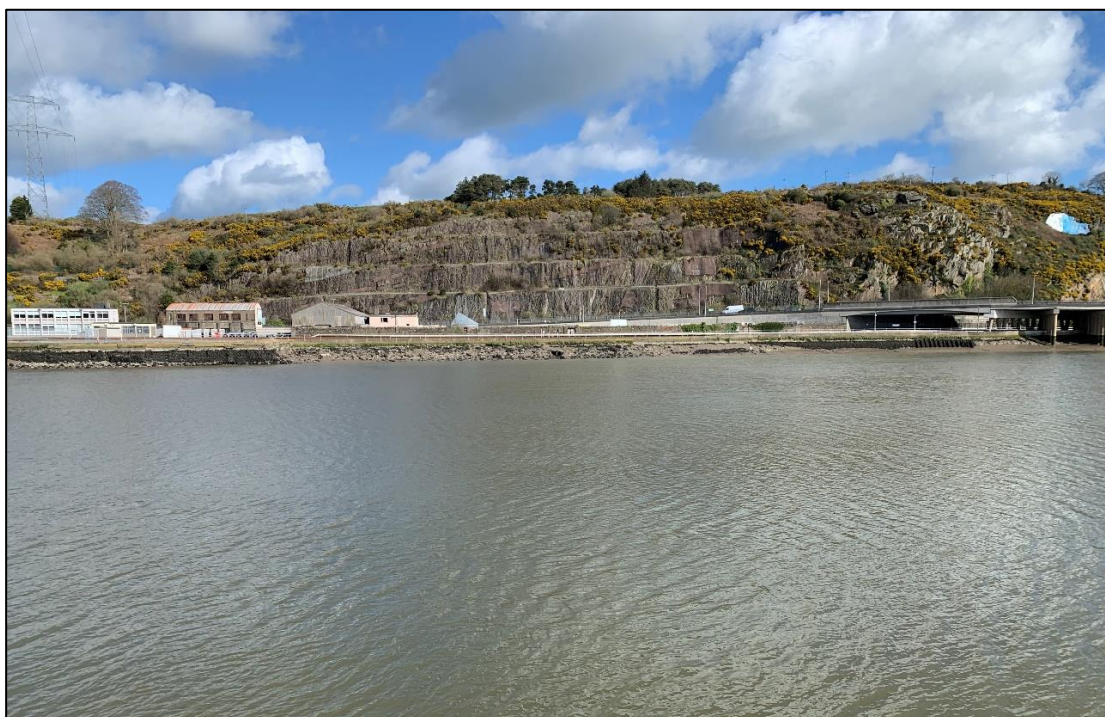


Plate 11.11 Bilberry Road Halting Site looking north across river



Plate 11.12 Water's Gate—Residential – view east towards site



Plate 11.13 Bowefield —Residential – view east / north east from elevated location



Plate 11.14 Panoramic views from South Quays to North Quays —View D from Planning Scheme & Variations—no visibility of proposed works from these vantage points due to screening presence of bridge and minor nature of works around Plunkett Station.

11.3.5 Sensitivity of the Identified Receptors

In landscape terms, the site of the proposed Flood Defence West, which is composed of existing roads, rail, and low-quality landscape, is considered to have low sensitivity. The only landscape element considered to be sensitive is the interface of the river with the banks. In this location, the interface is the existing, weathered quay wall, which is composed of concrete / stone. The built edge is considered less sensitive to change than the more naturalistic sections west of the site.

Visual receptors have greater potential sensitivity to change in the landscape, however this is reduced by the following existing adverse factors:

- Low visual value of the existing site with road, rail and inharmonious spaces;
- There are visual barriers for many potential receptors, including ridgeline, walls, trees, etc. which limit views of the site;
- The existing quay wall is composed of stone / concrete and is in poor condition in many places.

Table 11.5 lists the identified receptors (as illustrated in Plate 11.6 above) and their level of sensitivity. The most sensitive views are those listed in the Planning Scheme (Viewpoints 1 & 3 referenced here). Residential receptors could also have reasonably high sensitivity, however the nearest residential receptors are at some distance from the site, therefore this reduces the potential sensitivity in this case. In general, the views identified are not amenity areas or key viewpoints that will be affected, therefore

the sensitivity is limited for most other viewpoints, as the user groups are most likely to be passing through.

Table 11.5 Sensitivity of Potential Visual Receptors

Ref.	Viewpoint / Approx. Elevation	Distance from Site	Description of View	Level of Sensitivity
1	R448 Road; 8m OD	0m	View east on western approach to Rice Bridge—View E from Planning Scheme of South and North Quays with rising topography and urban landscape behind.	High
2	R448 Road; 8m OD	0m	Terminus Street footpaths looking west	Low
3	Bridge Street; 5m OD	250m south	View A from Planning Scheme from public realm on Bridge Street. Framed view of Mount Sion to north/northeast.	High
4	Rice Bridge, 5m OD	50m south	View from public footpath on Rice Bridge of site with rail and roads rising topography behind.	Low
5	Grattan Quay, 5m OD	170m south	Views from Grattan Quay north towards north bank of river. <i>Bilberry to Waterford City Centre Greenway Link is proposed to run into the city along Grattan Quay.</i>	Current: Low <i>Future: Medium</i>
6	Bilberry Road Halting Site, 5m OD	180m south	Views from Bilberry Road Halting Site south of the site, looking north; Existing walls limit views from residential area	Medium
7	Water's Gate, Quarry Road, 6-10m OD	300m west	Views from waterside residential areas to the west of the site, south of the river.	Medium
8	Bowfield residential estate; 60m OD	450m west	Elevated viewpoint from residential dwellings on side of hill with open views towards site and river.	Medium

11.4 Description of Potential Impacts

Potential landscape and visual impacts are effects created by the proposed development that have an appreciable impact, positive or negative, on the existing landscape or on views of the landscape from sensitive receptors. Mitigation measures are not considered in the calculation of potential impacts.

Prior to the consideration of potential impacts, it is important to consider the landscape and visual characteristics of the proposed development.

11.4.1 Visual Characteristics of the Proposed Development & Magnitude of Change

For a full description of the proposed development, please see Chapter 4 of this EIAR. The proposed Flood Defences West project will include the following elements:

- remedial works on the existing quay wall;

- construction of a new flood defence wall, typically in the form of a driven steel sheet pile wall with precast concrete cladding ('eco-wall') installed for the intertidal zone of the riverside sheet pile wall;
- a system of low glass walls and flood gates will be implemented at the verges of the Rice Bridge roundabout;
- other works including underground impermeable trenches and drainage works (remedial measures to existing drainage, new trackside drainage, outfalls to the River Suir and two pumping stations at Ch.390 and Ch.550).

The proposed top-of-wall level for the flood protection measures is 4.30m OD (metres above Ordnance Datum Malin). The remedial works to the existing quay wall and the installation of low glass walls for the arms of the Rice Bridge Roundabout are both considered to affect no appreciable visual change in this landscape when compared with the existing context. Similarly, any below-ground works in the locations proposed will have no landscape or visual effects beyond the construction stage.

The proposed steel sheet flood defence wall is therefore the only element which is likely to cause any landscape or visual effects. The height of the wall as proposed is lower than all receptor view heights, so no views will be blocked by the proposed works. The new wall may in fact screen or partially screen some of the existing rail infrastructure to the north. The degree of change to existing views will therefore be limited to the presence of the new flood defence wall along the banks of the River Suir and the degree of visibility of same. The flood defence wall is a functional structure and has been designed to fulfil the function of preventing future flooding. The structure is simple, but has a significant visual presence locally, with riverside-installed sheet piles projecting above the existing mudline by between 3.3m and 5.3m at low tide. The sheet piles have a coarse, corrugated profile, leading to a 3-dimensional surface, with prominent shadowing. The structure is in weathered steel and will therefore have a grey or rusty hue. An example of a finished sheet pile wall is given in Plate 11.15 and can also be seen in the Photomontages shown in Figures 11.1 to 11.12 in Volume 3 of this EIAR.

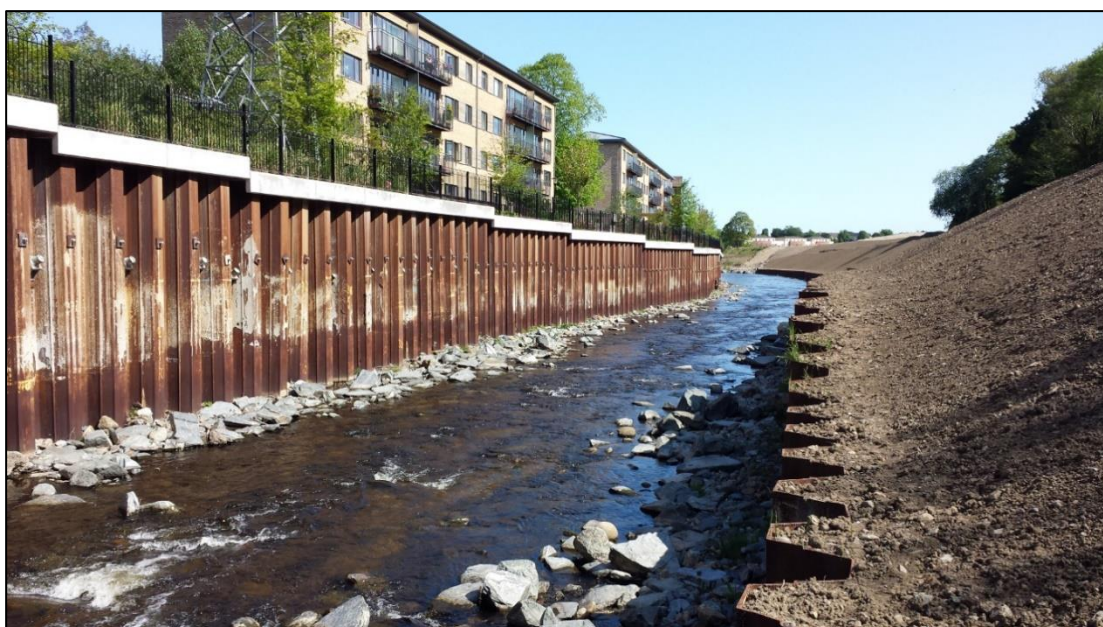


Plate 11.15 Example of finished sheet pile wall in urban environment

Pre-cast concrete cladding (“eco-wall”) is proposed for the intertidal zone of the riverside sheet pile wall which will soften the interface with the River Suir. Over time, this cladding will be colonised with vegetation and will take on the colouring of the mud and silt from the river, resulting in a more grounded and sympathetic interface with the river. As the main visual effects arise from the presence of the new structure and not from its aesthetic appearance, this cladding is unlikely to fundamentally change the main visual effects of the proposed structure, but it will help it to integrate the proposed development with the landscape of the river. With the passage of time, this transition at the interface of the river and the proposed flood defence wall will become similar in appearance and texture to that of the existing quay wall. The proposed cladding may also result in some small visual improvements, such as reduced corrugation at the interface and shadowing which may help to make the structure less visually heavy and less likely to draw the eye.

Overall, the magnitude of change in the landscape as a result of the proposed works is considered to be low, as the proposed wall will be slightly taller than the existing quay wall, but won't significantly alter the landscape pattern or structure. It will be relatively low lying and will be somewhat consistent with the built, industrialised nature of the quays in this area.

It is also relevant to note that the consequences of not constructing the wall would lead to further deterioration to the existing quay wall and further dereliction and damage to the area.

The quality of the proposed change in the landscape is considered to be marginally negative, due to the increase in the height and scale of the wall, and the rusty appearance.

11.4.2 Potential Landscape and Visual Impacts - Construction Phase

Construction phase impacts, where they occur, are considered to be of negative quality and temporary, as the construction stage is expected to last less than 12 months.

There will be moderate temporary negative impacts associated with the construction works of this development on the river edge and around Plunkett Station / northern end of Rice Bridge. This will be due to the presence of construction equipment and building processes required to construct the proposed development, which will include jack-up barges (up to two at once) on the river with a long reach excavator, an additional barge and tugboat to transport the sheet piles for the riverside construction, and other plant and machinery including excavators for the landside elements, that will contrast with the existing landscape and create negative visual impact. The landscape of the site is not currently of value in general but will undergo change from that of an area comprising riverbank and transport infrastructure to a construction site. The riverbank is a constructed quay wall in this location and the construction will extend further into the river than the current wall.

Visual impacts will be most acute for pedestrians in proximity to the works, on Terminus Street and Rice Bridge. Construction plant will be more visible than the permanent works due to the height of the plant involved, meaning that it will be visible. All of the identified visual receptors (see Table 11.5) will have visibility of the construction activity.

The impacts on the visual receptors during construction are therefore *slight, negative* impacts in general, but this could rise to *moderate* due to the large size of the machinery likely to be required for some of the work and its visibility in the landscape

and the visual disruption caused by construction activity on the river itself. However, due to the width of the river and the distance of the receptors at more than 170m to the south / west, the level of impact will not exceed *moderate, negative, temporary* impact.



Plate 11.16 Example of Spud-can Barge with long-reach excavator to be used in the construction of the works.

11.4.3 Potential Landscape and Visual Impacts - Operation Phase

11.4.3.1 Potential Landscape Impact

During the operational phase, the main landscape impacts of the proposed development are associated with the presence of the proposed flood defence works along the river edge. The proposed riverside sheet pile wall will be present at a level of 3.3-5.3m above the level of the existing mud flats at low tide, up to 2m higher than the existing quay wall and offset further into the river approximately 1m from the existing quay wall. This changes the interface with the river generating *slight, negative* landscape effects on the riverside landscape. The landscape is considered to be of low sensitivity due to the current poor quality of the quay wall, and this is considered to be a *slight, negative, permanent* impact due to the colour and form of the proposed sheet pile wall in corrugated / folded steel with grey or potentially rusty hues in terms of colouration.

11.4.3.2 Potential Visual Impact

During the operational phase, the main visual impacts of the proposed development are associated with the views of the proposed riverside sheet pile wall, present in views

at a level of 3.3-5.3m above the level of the existing mud flats at low tide, up to 2m higher than the existing quay wall and offset further into the river approximately 1m from the existing quay wall. This visual change is marginal in more distant views, and remains lower in height than the surrounding riverbanks and structures associated with the railway and roads. Thus, across the range of views identified, the overall level of visual impact is considered to be *slight, negative, and permanent* due to the current poor quality of the existing quay wall and visual environment. The colour and form of the proposed sheet pile wall in corrugated / folded steel with grey or potentially rusty colouration imposes a minor additional negative change in the views.

Views from Terminus Street

In viewpoint 1 (see Tables 11.5 & 11.6) approaching Rice Bridge along the R448 Terminus Street, which is protected in the Planning Scheme (View E), the proposed development will have a very minor and marginal, almost imperceptible, change on the view in this direction, classified as a very low magnitude of change. The top of the proposed quay wall may be just visible on the boundary of the river edge, resulting in a small change to the view at a sensitive point in this view, with the water behind. In views from the footpath travelling west, viewpoint 2, there will be views over the wall and at certain points, the quay wall and infill behind will be visible from above, and will constitute a noticeable change in the views from specific points, again at the more sensitive interface at the river edge. This user group is considered to have low sensitivity as they are walking past an area with a built-up and semi-derelict or untidy character and the main focus of the views is the wider areas of the river and riparian scenery beyond. Thus, the visual impact is considered to be *slight and negative* for this viewpoint. See Photomontage 2 for an illustration of this view. (Note that the works proposed will have no impact on the setting of Plunkett Station and the adjacent 19th Century Signal Box, a protected structure.)

Views from Rice Bridge & Environs

Similar to the foregoing receptor, views from Rice Bridge footways, nearing the northern end of the bridge, viewpoint 4, will have a noticeable change in the views, again at the more sensitive interface at the river edge. This user group is considered to have low sensitivity as they are walking past an area with a built-up and semi-derelict or untidy character and the main focus of the views is the wider areas of the river and riparian scenery beyond. Thus, the visual impact is considered to be *slight and negative* for this viewpoint. From View A as listed in the Planning Scheme, from Bridge Street (viewpoint 3), the view will not change perceptibly due to the peripheral nature of the elements and the focus of the view being the backdrop of Mount Sion / Mount Misery, resulting in *imperceptible* effects.

Views from Grattan Quay / Bilberry Road Halting Site / Water's Gate

These viewpoints (5, 6 and 7) are located close to the riverside on the southern bank.

The flood defence wall will be visible from Grattan Quay (viewpoint 5) as a change at the edge of the northern edge of the River Suir, c.170m from the viewpoint, with the corrugated sheet pile wall resulting in a *slight, negative* visual impact, due to the overall low level of sensitivity. It is proposed to develop the Bilberry to Waterford City Centre Greenway Link along the South Quays and Grattan Quay in the future, so allowing for this additional tourism-related use and greater sensitivity, the visual impact would be *moderate and negative* to the Greenway users. See Photomontage 1 for an illustration of this view. Views from Bilberry Road Halting Site (viewpoint 6) are very similar and will be similarly affected. The residential receptors are considered to be more sensitive, so the visual impact rating is higher at *moderate and negative*.

Water's Gate residential area (viewpoint 7) is also considered more sensitive as residential receptors. The level of change to the view is relatively minor at c.300m distance and doesn't significantly affect the most sensitive elements of the view, i.e. the riparian landscape, ridgeline backdrop, etc., the visual impact is considered *slight, negative, and permanent* due to the change in the view from fixed residential receptors.

Views from Bowefield

Bowefield residential area (viewpoint 8) is an elevated group of residential receptors, all with views over the River Suir, with the proposed site central in the views, approximately 450m west of the nearest point of the site and 1.4km to Rice Bridge. The level of change to the view is relatively minor at this distance and doesn't significantly affect the most sensitive elements of the view, i.e. the riparian landscape, ridgeline backdrop, etc. The visual impact is considered *slight, negative, and permanent* due to the change in the view from fixed residential receptors.

Table 11.6 Summary of Visual Impacts

Ref.	Viewpoint / Approx. Elevation	Level of Sensitivity	Magnitude of Change to View	Level of Impact
1	R448 Road; 8m OD (View E)	High	Very Low	Slight, Negative
2	R448 Road; 8m OD	Low	Medium	Slight, Negative
3	Bridge Street; 5m OD (View A)	High	Imperceptible	Imperceptible
4	Rice Bridge, 5m OD	Low	Medium	Slight, Negative
5	Grattan Quay, 5m OD	Low	Medium	Slight, Negative
6	Bilberry Road Halting Site, 5m OD	Medium	Medium	Moderate, Negative
7	Water's Gate, Quarry Road, 6-10m OD	Medium	Low	Slight, Negative
8	Bowefield residential estate; 60m OD	Medium	Low	Slight, Negative

Note: All impacts are considered to be permanent.

11.5 Mitigation & Monitoring Measures

Due to the nature of the site and the works proposed, there are no practical landscape or visual mitigation measures that would make a significant difference to the impacts identified at either construction or operational stage. As the levels of landscape and visual impact generated by the proposed development are relatively low, this is considered acceptable.

As part of the design process, the type and details of the proposed solution were challenged, but the solution is considered the most suitable for the engineering challenges to be solved by the proposed project and there were no alternatives with a different finish or typology which could be reasonably considered.

11.6 Residual Impacts

As there are no mitigation measures possible which will avoid or reduce impacts, the residual impacts remain as per the potential impacts outlined in Section 11.4.

11.6.1 Cumulative Impacts

In the context of the other developments associated with the development of the North Quays to the east of the proposed development site into a substantial new urban quarter with residential, commercial and community buildings, a new bridge, a transport hub and new waterfront areas, this development is not considered to add any appreciable additional landscape and visual impacts due to the low levels of change and impacts associated with this development. Therefore, significant cumulative landscape and visual impacts will not arise.

11.6.2 'Do Nothing' Scenario

The do-nothing impact refers to the non-implementation of the proposed development. The primary effect of this would be that the impacts and effects identified would not directly occur. Without the development of the proposed Flood Defence West however, the likelihood is that the quay wall would continue to degenerate and could generate negative landscape and visual effects over time for the identified receptors. The quay wall would likely fail over time leading to potential damage and landscape and visual deterioration.

11.6.3 'Worst Case' Scenario

The views selected for analysis are those from where the proposed development is most likely to be visible and so the analysis of impacts represents a worst-case scenario.

11.7 Difficulties Encountered

There were no difficulties encountered during the landscape and visual impact assessment. Please note that the assessment is conducted from publicly accessible areas only and views from dwellings are understood / photographed from the adjacent public realm.

11.8 References

Waterford County Development Plan 2011-2017 (as extended), published by Waterford City and County Council (2011)

Waterford City Development Plan 2013 – 2019 (as extended), published by Waterford City and County Council (2013)

Waterford North Quays Planning Scheme, published by Waterford City and County Council (2018)

Strategic Environmental Assessment Environmental Report (part of the preparation of the Planning Scheme for the Waterford North Quays Strategic Development Zone (S.I. No. 30 of 2016)), published by Waterford City and County Council (2018)

Guidelines for Landscape and Visual Impact Assessment 3rd Edition, by The Landscape Institute / Institute of Environmental Assessment, published by E&FN Spon (2013)

Advice notes on Current Practice in the Preparation of Environmental Impact Statements, published by the Environmental Protection Agency (EPA) (2003)

Guidelines on the information to be contained in environmental impact statements, published by the EPA (2002)

Discovery Series Mapping Sheet no. 76 4th Edition, published by Ordnance Survey Ireland

Various Ordnance Survey Maps, accessed on-line at www.geohive.ie, March 2021.

