Clifton Scannell Emerson Associates

EIAR Chapter 16 Identification of Significant Impacts / Interactions Suir Island Infrastructure Links

Comhairle Contae Thiobraid Árann
Tipperary County Council

CONSULTING ENGINEERS

Civil Engineering | Structural Engineering | Transport Engineering | Environmental Engineering | Project Management | Health and Safety

Clifton Scannell Emerson Associates Limited,
3rd Floor, The Highline, Bakers Point, Pottery Road, Dun Laoghaire,
Co. Dublin, A96 KW29
T. +353 1 2885006 F. +353 1 2833466 E. info@csea.ie W. www.csea.ie

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16 Interactions – Interrelationships Between The Aspects

16.1 Introduction

This chapter has been produced having regard the guidance as set out in Chapter 1 of this EIAR.

This chapter of the EIA Report addresses potential interactions and inter-relationships between the environmental factors discussed in the preceding chapters. This covers both the /construction and operational phases of the proposed development.

The majority of the EIA Report chapters have already included and described assessments of potential interactions between aspects, considered by the various specialists contributing to this impact assessment as inherent aspects of their methodology. The quality, magnitude and duration of potential impacts are defined in accordance with the criteria provided in the EPA 2022 Guidance as outlined in Chapter 1. This section of the assessment presents a summary and assessment of the identified interactions.

16.2 Population and Human Health and its Interaction with:

16.2.1 Land, Soils and Hydrogeology

Construction Phase

During the construction phase there is a risk of localised accidental pollution to land, soil and geology within the area of the construction works, such as excavations and oil / diesel spillages from construction plant and equipment. The proposed development will not impact on domestic wells or any groundwater protection areas.

Taking into account the design and mitigation measures set out in Chapter 6 of this EIA Report, there is no potential for negative interaction between Population and Human Health, and Land, Soils and Hydrogeology during the construction phase. The interaction is considered to be ***short-term-imperceptible-neutral***.

Operational Phase

There will be a loss of soil use due to the development. However, the area of development is zoned by Tipperary County Council for development as an amenity. In addition, the employment created by the construction and operation of the proposed development counterbalances this economic loss to some extent and so the impact is ***long-term***, ***imperceptible*** and ***neutral***.

16.2.2 Hydrology

Construction Phase

During the construction phase there is potential for temporary-short term significant impacts associated with increasing silt-laden runoff to the river resulting in decreasing water quality. With the mitigation measures, proposed, the interaction is considered to be ***negative, slight*** and ***short-term***.

Operation Phase

The proposed development including pedestrian and cyclists bridge will be lightly trafficked and the predicted impact of pollutants discharged into the watercourse from the proposed development is considered ***temporary, neutral*** and ***imperceptible***.

16.2.3 Biodiversity

Construction Phase

There are no potentially significant interactions identified between Population and Human Health, and Biodiversity during the construction phase.

Operation Phase

There are no potentially significant interactions identified between Population and Human Health, and Biodiversity during the operational phase.

16.2.4 Air Quality and Climate

Construction Phase

During construction, there is potential for temporary dust emissions from traffic during construction. The mitigation measures to be put in place at the proposed development will ensure that the impact of the proposed development complies with all ambient air quality legislative limits and therefore the predicted impact is ***short-term***, ***negative*** and ***imperceptible*** with respect to the ***construction*** phase.

Operation Phase

As the operational phase air dispersion modelling has shown that emissions of air pollutants are significantly below the ambient air quality standards which are based on the protection of human health, impacts to human health are long-term, direct, neutral and imperceptible. During the operational phase the predicted noise impact to human health is categorised as ***negative***, ***imperceptible*** and ***long-term*** to ***positive***, ***imperceptible*** and ***long-term***.

16.2.5 Noise and Vibration

Construction Phase

During construction, there can be temporary to short term noise associated with machinery noise. The application of binding noise limits, hours of operation along with implementation of appropriate noise and vibration control measures, will ensure that noise effect will have a ***negative***, ***moderate*** to ***very significant*** and ***temporary*** to ***short-term*** effect.

Operation Phase

Once operational, potential effects associated with the proposed development are expected to be low in noise, such as people walking and talking, limited to vehicular activity near car parking areas, occasional maintenance works along the route and members of the public using the public plaza.

Based on the traffic flows associated with the operation of the proposed development the effects are predicted to vary from **negative, imperceptible and long-term to *positive*, *imperceptible* and *long-term*.**

16.2.6 Landscape and Visual Impacts

Construction Phase

During the construction phase the potential impacts on this landscape are viewed as having a negative potential impact., as the construction equipment and activity will dominate the overall site surroundings, affecting the skyline. The visual impacts are perceived as potentially being ***moderate*** and will have ***short-term negative*** effects on all receptors.

Operation Phase

The proposed development will have a positive impact in that the attractiveness of the cycleways will be increased and tourists will be diverted to the town centre, thereby providing an economic benefit to the town of Clonmel also.

Following the implementation and establishment of the proposed landscape measures, the residual visual impacts are considered to be a significant positive interaction with the population and will further integrate the new structure within its surroundings. The interaction is generally considered to be ***permanent,*** and ***moderately positive*** from the various locations assessed.

The predicted interaction on local amenities and tourism with respect to human health will be ***positive, significant, and long-term.***

During operation, the reduction in vehicular movements in the area and the potential landscape impacts of North Bridge and North Plaza with access ramps are considered to be positive. The overall enhancement of the pedestrian environment will encourage the use of sustainable modes of transport. The removal of car parking spaces from the Quays will create a less car dominant environment.

16.2.7 Archaeological, Architectural and Cultural Heritage

Construction Phase

There are no potentially significant interactions identified between Population and Human Health, and Archaeological, Architectural and Cultural Heritage during the construction phase.

Operational Phase

The Suir Island development presents a huge opportunity for the town as a central amenity. The plaza and pedestrian link will provide people with a sense of place and connection to their historic environment. It will complement the existing water sports amenity in the river and Denis Burke Park. The interaction of amenity, heritage, and public well-being is vital for sustainable development. It will provide people with a sense of place and connection to their historic environment. It will complement the existing water sports amenity in the river and the Denis Burke Park to the south of the river. There will be a ***positive long term*** impact on the cultural heritage environment and interaction between public spaces in the town, improving amenities.

16.2.8 Material Assets: Built Services including Traffic Utilities and Waste

Construction Phase

The proposed development will interact with capacities of the available infrastructure however with the implementation of the mitigation measures proposed the interaction is ***short-term, not significant*** and ***neutral.*** Excavations within the vicinity of existing services will be carried out in consultation with Service Providers to ensure there is no impact on local residents or businesses arising from service breakages and interruptions.

Power and water requirements for the construction phase will be relatively minor which will have a potential ***short-term imperceptible*** impact on local power requirements.

During the construction phase there is the potential for construction wastes arising from the site to adversely impact on the Population and Human Health. An Outline Construction and Demolition Waste Management Plan phase also been developed detailing the mitigation that the contractor shall implement to avoid construction wastes from impacting on the Population and Human Health.

During construction phase, re-routing of traffic and the transportation of abnormal loads will impact on local traffic flows. The potential impact will be ***negative***, ***significant*** and ***short-term.***

Operation Phase

There are no potentially significant interactions identified between Population and Human Health and built services and utilities during the operation phase.

There is likely to be ***positive long-term cumulative effects*** on journey characteristics, journey amenity, time, and reduction in severance as a result of the proposed improvements in the pedestrian and cycle network that will be linked via the proposed development. The removal of 33 car parking spaces from 'The Quays' car park will remove a facility for road users. These impacts will be minimised once the pedestrian route from the Suir Island Car Park to the Quays is completed. Based on the traffic flows associated with the operation of the proposed development the effects are predicted to vary from ***negative***, ***imperceptible*** and ***long-term*** to ***positive***, ***imperceptible*** and ***long-term***.

The potential impacts on human beings are in relation to incorrect management of waste during construction and/ or operation, which could result in littering and presence of vermin with associated potential for negative impacts on human health and residential amenity. A carefully planned approach to waste management and adherence to the project specific OC&DWMP (Appendices 12.1), and the mitigation measures in Chapter 12, will ensure appropriate management of waste and avoid any negative impacts on the local population. The effects should be ***long-term, imperceptible and neutral***.

16.3 Land, Soils and Hydrogeology and its Interaction with:

16.3.1 Hydrology

Construction Phase

Levelling and landscaping will have the potential to increase suspended solids within run-off during construction. However, the implementation of mitigation measures detailed in Chapter 6 (Hydrology) the interaction will be ***short-term*** imperceptible and ***neutral*** during ***construction.***

Operation Phase

During operation, there are negligible potential for sediment run-off to impact on hydrology. The implementation of mitigation measures detailed in Chapter 6 (Hydrology) will ensure that the interaction between soils and the hydrological environment will be ***long-term***, ***imperceptible*** and ***neutral*** during ***operation***.

16.3.2 Biodiversity

Construction Phase

Due to the inter-relationship between soils, geology and hydrogeology and surface water (hydrology) the development has the potential to result in impacts on surface water runoff, or directly impact the River Suir leading to effects on the aquatic ecology of the receiving waterbody. However, with the implementation of mitigation measures for the proposed development site the impact of the construction phase is ***short-term*** in duration with an ***Imperceptible*** *impact* rating.

Operation Phase

With the implementation of all mitigation measures the residual impact of the project will be confined to the permanent loss of negligible areas of mixed broadleaved woodland, dry meadows and grassy verges and scrub habitat to the footprint of piers, abutments and the promenade/path. This will represent an

effect of ***negligible permanent*** significance on the habitat removed. However, it is anticipated that the proposed landscaping will result in enhancing local biodiversity by incorporating native species and pollinator planting.

The design measures and mitigation measures proposed will ensure that there is no change in the overall water regime at water dependent habitats on site. The interaction is ***long-term***, ***imperceptible*** and ***neutral*** during ***operation***.

16.3.3 Air Quality and Climate

Construction Phase

Demolition and construction phase activities such as land clearing, excavations, stockpiling of materials etc. have the potential for interactions between air quality and land and soils and the water environment (hydrology) in the form of dust emissions. With the appropriate mitigation measures to prevent fugitive dust emissions, it is predicted that interactions between air quality and land and soils and hydrology will be **short-term** and **imperceptible**.

Climate change has the potential to lead to increased rainfall in future years which may result in flood impacts and interactions between Hydrology and Land, Soils and Geology. The flood risk for the development was assessed within Chapter 7 – Hydrology, which determined that flood risk impacts are not predicted as a result of the proposed development. In addition, the attenuation and drainage designed for the site ensure that flood risk is minimised by allowing additional capacity to deal with increased rainfall events as a result of future climate change. Therefore it can be determined that there is no significant risk to the proposed development as a result of increased rainfall and climate. No significant interactions between Climate, Hydrology and Land, Soils and Geology is predicted.

No significant interactions between Climate, Hydrology and Land, Soils and Geology is predicted.

Operational Phase

There are no potentially significant interactions identified between Land, Soils and Hydrogeology, and Air Quality and Climate during the operational phase.

16.3.4 Noise and Vibration

Construction Phase

There are no potentially significant interactions identified between Land, Soils and Hydrogeology, and Noise and Vibration during the construction phase.

Operational Phase

There are no potentially significant interactions identified between Land, Soils and Hydrogeology, and Noise and Vibration during the operational phase.

16.3.5 Landscape and Visual Impacts

Construction Phase

There are no potentially significant interactions identified between Land, Soils and Hydrogeology, and Landscape and Visual Impacts during the construction phase.

Operational Phase

There are no potentially significant interactions identified between Land, Soils and Hydrogeology, and Landscape and Visual Impacts during the operational phase.

16.3.6 Archaeological, Architectural and Cultural Heritage

Construction Phase

Although the archaeological assessment for the proposed development has identified no known features of archaeological interest on the site, aspects of the proposed development have the potential to impact on unidentified archaeological features during construction works. However, mitigation measures detailed in Chapter 13 (Archaeological, Architectural and Cultural Heritage) if archaeological features or material is uncovered, will ensure that the effect is ***short-term***, ***imperceptible*** and ***neutral*** during construction.

Operation Phase

There are no potentially significant interactions identified between Land, Soils and Hydrogeology, and Archaeological, Architectural and Cultural Heritage Impacts during the operation phase.

16.3.7 Material Assets: Built Services including Utilities, Traffic and Waste

Construction Phase

As detailed in Chapter 12 (Waste Management), c. 2,000m^3 of material will be excavated and 500m^3 will be reused for fill material on the existing flood protection berm located on Suir Island. Any spoil which cannot be reused on site will be removed off site for reuse or recovery, where practical, with disposal as last resort. Adherence to the mitigation measures in Chapter 12 and the requirements Outline Construction and Demolition Waste Management Plan (included as Appendix 12.1), will ensure the effect is ***short-term***, ***imperceptible*** and ***neutral***.

Operation Phase

There are no potentially significant interactions identified between Land, Soils and Hydrogeology, and Material Assets: Built Services including Utilities, Traffic and Waste during the operation stage.

16.4 Hydrology and its Interaction with:

16.4.1 Biodiversity

Construction Phase

Construction has the potential to result in the accidental spillage or deposition of construction materials which in turn could impact on surface water runoff, or directly impact the River Suir leading to impacts on the aquatic ecology of the receiving waterbody. However, the implementation of mitigation measures detailed in Chapter 6 (Hydrology) the interaction will be ***short-term imperceptible*** and ***neutral*** during ***construction.***

Operation Phase

The mitigation measures incorporated as detailed above will ensure that there is no change in the overall water regime at water dependent habitats on site and that the interaction will be and long-***term***, ***imperceptible*** and ***neutral*** during ***operation***.

16.4.2 Air Quality and Climate

Construction Phase

There are no potentially significant interactions identified between hydrology and air quality or climate due to the construction phase of the project.

Operation Phase

There are no potentially significant interactions identified between hydrology and air quality or climate due to the operation phase of the project.

Climate change has the potential to lead to increased rainfall in future years which may result in flood impacts and interactions between Hydrology and Land, Soils and Geology. The flood risk for the development was assessed within Chapter 7 – Hydrology, which determined that flood risk impacts are not predicted as a result of the proposed development. In addition, the attenuation and drainage designed for the site ensure that flood risk is minimised by allowing additional capacity to deal with increased rainfall events as a result of future climate change. Therefore it can be determined that there is no significant risk to the proposed development as a result of increased rainfall and climate. No significant interactions between Climate, Hydrology and Land, Soils and Geology is predicted.

16.4.3 Noise and Vibration

Construction Phase

There are no potentially significant interactions identified between hydrology, noise and vibration due to the construction phase of the project.

Operation Phase

There are no potentially significant interactions identified between hydrology, noise and vibration due to the operation phase of the project.

16.4.4 Landscape and Visual Impact

Construction Phase

There are no potentially significant interactions identified between Hydrology and Landscape and Visual Impacts during the construction phase of the proposed development.

Operation Phase

There are no potentially significant interactions identified between Hydrology and Landscape and Visual Impacts during the operation stage of the proposed development.

16.4.5 Archaeological, Architectural and Cultural Heritage

Construction Phase

There are no potentially significant interactions identified between Hydrology and Archaeological, Architectural and Cultural Heritage during the construction phase of the proposed development.

Operation Phase

There are no potentially significant interactions identified between Hydrology and Archaeological, Architectural and Cultural Heritage during the Hydrology and Archaeological, Architectural and Cultural Heritage during the

16.4.6 Materials Assets: Built Services including Utilities, Traffic and Waste

Construction Phase

There is minimal impact on flooding during the construction phase. The volumes displaced by the proposed bridge piers, abutments and localised temporary sheet piling during construction phase are

extremely small relative to the flow volumes in the receiving waterbody and will result in an *imperceptible* effect. The recommended mitigation measures will negate potential risk of flooding during construction.

For the works located on the Quays (North Plaza) and Raheen Road, there is a ***Neutral, Temporary*** **and** ***Imperceptible*** risk of erosion and sediment transport to the river arising from the works. This is due to the works taking place behind the existing Clonmel Flood Defence Scheme concrete masonry walls which would prevent runoff from draining to the river.

Operation Phase

Hydrocarbon sludge waste and debris will be generated in the hydrocarbon interceptors which will treat the surface water run-off from the proposed development during the operational phase. This waste stream will be managed in accordance with the relevant legislation identified in Chapter 12 such that the effect of the waste generation will be ***long-term, imperceptible*** and ***neutral***.

The proposed development will result in changes to surface water drainage, water supply and wastewater networks. However, a combination of mitigation measures to be implemented as detailed in Chapter 7 (Hydrology), as well as the capacity already built into these networks, will ensure that these changes will result in a ***long-term, imperceptible*** and ***neutral*** impact.

The risk of pollution to both surface and groundwater resulting from accidental spillage is considered negligible, as the bridge crossing would only accommodate pedestrians and cyclists. It is not anticipated that any chemicals or hydrocarbons will ever be transported across the bridge. Accidental spillage on the North Plaza and South Arrival Point would be contained behind the flood protection walls. Accidental spillage risk is considered ***temporary*** and ***imperceptible***.

16.5 Biodiversity and its Interaction with:

16.5.1 Air Quality and Climate

Construction Phase

There is the potential for interactions between air quality and biodiversity as works will take place within a section of the Lower River Suir SAC (site code 002137). The impacts on biodiversity within the Suir Island anticipated during the construction phase as a result of the dust and vehicular emissions associated with construction traffic. will be ***short-term*** in nature and once the mitigation measures outlined within Chapter 8 are implemented impacts are predicted to be ***short-term***, ***neutral*** and ***imperceptible***.

Operation Phase

During the operation stage, emphasis on pedestrian, cycling and sustainable transport traffic will result in **positive long term imperceptible** impacts on biodiversity due to reduced levels of dust and vehicular emissions.

16.5.2 Noise and Vibration

Construction Phase

Some temporary disruption to species and habitats due to noise and vibrations is expected throughout the works period, but once this is over there will be no further significant noise generated as a result of the route and bridge activities: The interaction will be ***short term*** and ***negative*** and **imperceptible.**

Operation Phase

There are no potentially significant interactions identified between noise and vibration on biodiversity during the operation stage of the proposed development. The interaction will be ***long term*** and ***neutral*** and **imperceptible.**

16.5.3 Landscape and Visual

Construction Phase

Mitigation measures during construction phase will include tree fencing to protect the root system (RPA) of existing trees considered feasible for retention. During construction phase the landscape character preserving of the site development area will be limited to tree fencing to protect the root system (RPA) of existing trees considered feasible for retention. The residual interaction of the construction phase with the landscape and visual amenity is considered to be ***temporary***, with a **slight negative and imperceptible** impact to the environment.

Operation Phase

While some temporary disruption to species and habitats is to be expected during the works themselves, for a duration of 12 months or so, natural systems should recover quickly once the works are complete. The disruption to nature will most likely cause displacement rather than destruction of most flora and fauna, apart from the trees that will need to be removed or pruned back in and around the works areas. Commitments have already been given to replace like with like where tree removal is unavoidable and the medium to long-term intention is to restore and strengthen the natural habitats affected. In the longer term, even though the bridge is providing access to areas of nature hitherto isolated or ignored (the treetops where it passes through the woodland on each side of the island for example), the users of the bridge will be confined to the area of its deck with little opportunity, apart from visual proximity, to interact physically with the ecosystems. The lighting of the bridge is via directed LED strips which illuminate the deck only with no light pollution. They will be sensor-activated so will only light up when the bridge is being used, further limiting any potentially disruptive effects on habitats. The interaction is considered ***long term*** and ***imperceptible.***

16.5.4 Archaeological, Architectural and Cultural Heritage

Construction Phase

There are no potentially significant interactions identified between Biodiversity, and Archaeological, Architectural and Cultural Heritage during the construction phase.

Operational Phase

There are no potentially significant interactions identified between Biodiversity, and Archaeological, Architectural and Cultural Heritage during the operational phase.

16.5.5 Material Assets Built Services including Utilities Waste and Transport

Construction Phase

There are no potentially significant interactions identified between Biodiversity, and Material Assets during the operational phase.

Operational Phase

There are no potentially significant interactions identified between Biodiversity, and Material Assets during the operational phase.

16.6 Air Quality And Climate and its Interaction with:

16.6.1 Noise and Vibration

Construction Phase

There are no potentially significant interactions identified between Air Quality and Noise and Vibration during the construction phase.

Operational Phase

There are no potentially significant interactions identified between Air Quality and Noise and Vibration during the operational phase.

16.6.2 Landscape and Visual Impacts

Construction Phase

There are no potentially significant interactions identified between Air Quality and Landscape and Visual during the construction phase.

Operation Phase

There are no potentially significant interactions identified between Air Quality and Landscape and Visual during the operational phase.

16.6.3 Archaeological, Architectural and Cultural Heritage

Construction Phase

There are no potentially significant interactions identified between Air Quality and Archaeological, Architectural and Cultural Heritage during the construction phase.

Operational Phase

There are no potentially significant interactions identified between Air Quality and Archaeological, Architectural and Cultural Heritage during the operational phase.

16.6.4 Material Assets Built Services, Utilities, Traffic and Waste

Construction Phase

Interactions between air quality and traffic can be significant. With increased traffic movements and reduced engine efficiency, i.e. due to congestion, the emissions of vehicles increase. The impacts of the proposed development on air quality are assessed by reviewing the change in AADT on roads close to the site. However applying this analysis to this assessment, the impact of the interactions between traffic and air quality during the construction stage due to traffic is ***neutral***, ***imperceptible***, and ***short-term***.

Traffic emissions have the potential to impact climate through the release of carbon dioxide (CO_2) emissions and other greenhouse gases (GHGs). This is an interaction between Material Assets – Traffic, Air Quality and Climate. The changes in traffic emissions associated with the proposed development were assessed within Chapter 8 – Air Quality. It was found that the proposed development will result in

imperceptible changes in emissions as a result of traffic from the proposed development. Therefore no significant interactions between Climate and Traffic or Air Quality are predicted. Predicted impacts are long-term, neutral and imperceptible.

There is the potential for interactions between Climate and Material Assets – Waste. There will be quantities of wastes generated as part of the construction of the proposed development which will have an associated embodied carbon which impacts climate. As part of the greenhouse gas (GHG) assessment conducted for the proposed development it was found that construction wastes will contribute an imperceptible amount to the total GHG emissions associated with the development at less than 0.1% of the total. As a result, interactions between Climate and Material Assets – Waste are predicted to be ***short-term, minor adverse*** and ***not significant***.

Operation Phase

Traffic emissions have the potential to impact climate through the release of carbon dioxide (CO_2) emissions and other greenhouse gases (GHGs). This is an interaction between Material Assets – Traffic, Air Quality and Climate. The changes in traffic emissions associated with the proposed development were assessed within Chapter 8 – Air Quality. It was found that the proposed development will result in imperceptible changes in emissions as a result of traffic from the proposed development. Therefore no significant interactions between Climate and Traffic or Air Quality are predicted. Predicted impacts are ***long-term, neutral and imperceptible***.

There is the potential for interactions between Climate and Material Assets – Waste. There will be quantities of wastes generated as part of the construction of the proposed development which will have an associated embodied carbon which impacts climate. As part of the greenhouse gas (GHG) assessment conducted for the proposed development it was found that construction wastes will contribute an imperceptible amount to the total GHG emissions associated with the development at less than 0.1% of the total. As a result interactions between Climate and Material Assets – Waste are predicted to be short-term, minor adverse and not significant.

No other significant interactions with Climate have been identified.

16.7 Noise And Vibration and its Interaction with:

16.7.1 Landscape and Visual Impacts:

Construction Phase

There are no potentially significant interactions identified between Noise and Vibration, and Landscape and Visual during the construction phase.

Operational Phase

There are no potentially significant interactions identified between Noise and Vibration, and Landscape and Visual during the operational phase.

16.7.2 Archaeological, Architectural and Cultural Heritage

Construction Phase

There are no potentially significant interactions identified between Noise and Vibration, and Archaeological, Architectural and Cultural Heritage during the construction phase.

Operational Phase

There are no potentially significant interactions identified between Noise and Vibration, and Archaeological, Architectural and Cultural Heritage during the operational phase.

16.7.3 Material Assets, Built Services including Utilities, Waste, and Transport

Construction Phase

During the construction phase of the proposed development there is the potential for significant effects on nearby noise sensitive properties due to noise emissions from construction activities. The application of binding noise limits, hours of operation, along with implementation of appropriate noise and vibration control measures, will ensure that noise effect will have a *negative*, *moderate* to *very significant,* and *temporary* to *short-term* effect on the surrounding environment.

Taking into account the low levels of vibration generated at close distances to piling rigs and excavations the vibration effects are *negative*, *not significant,* and *short-term on Material Assets*.

Operation Phase

Once operational, potential effects associated with the proposed development are expected to be low in noise, , limited to vehicular activity near car parking areas, occasional maintenance works along the route and members of the public using the public plaza.

Based on the traffic flows associated with the operation of the proposed development the effects are predicted to vary from *negative*, *imperceptible* and *long-term* to *positive*, *imperceptible* and *long-term*.

16.8 Landscape And Visual Impacts and its Interaction with:

Construction Phase

At the construction stage, the impact on noise sensitive locations due to construction traffic is likely to be ***moderate***, ***negative***, and ***short-term***. The temporary nature of the construction period and the variety of machinery used will ensure that no construction activity is operational for long periods. The TII derived guidance limits will be followed as an appropriate target criterion for this assessment and relevant noise mitigation measures will be followed during construction.

Review of the development shows a layout change to the roads in this localised area, and it is predicted that there will in fact be a reduction in traffic noise levels surrounding the plaza as a result of modification of the road network. Furthermore, the proposal promotes the use of walking and cycling as a mode of transportation, which is likely to reduce the traffic levels in the local area, and consequently, the noise levels.

Operation Phase

During the operational phase of the proposed development, there will be an increase in vehicular traffic associated with the site on some surrounding roads. the predicted change in noise level associated with additional traffic on the surrounding existing road network has a negligible effect. For some road links, less traffic will be experienced and a decrease in noise level is predicted. Therefore, the effect varies from negative, ***imperceptible***, and ***long-term*** to ***positive***, ***imperceptible***, and ***long-term***.

16.8.1 Archaeological, Architectural and Cultural Heritage:

Construction Phase

The visual impact will be slight due to construction, although negative initially, these features will be temporary and the interaction is not considered significant.

Operation Phase

The interaction of landscape and visual impacts of the proposed development with The Suir Island heritage by retaining all the upstanding industrial heritage elements on the site, providing access. will provide people with a sense of place and connection to their historic environment. It will complement the existing water sports amenity in the river and the park to the south of the river in Denis Burke Park. The proposed development is in keeping with the objectives of The "Clonmel and Environs Development Plan 2013-2019". The interaction will be ***positive, significant*** and ***long term***.

16.8.2 Material Assets Built Services including Utilities, Waste and Transport

Construction Phase

There are no potentially significant interactions identified between Landscape and Visual Impacts, and Material Assets during the construction phase.

Operational Phase

There are no potentially significant interactions identified between Landscape and Visual Impacts, and Material Assets during the operational phase.

16.9 Archaeological, Architectural And Cultural Heritage and its Interaction with:

16.9.1 Material Assets, including Utilities Waste Management, and Transport:

Construction Phase

There are no potentially significant interactions identified between Material Assets, and Archaeological, Architectural and Cultural Heritage during the operational phase.

Operational Phase

There are no potentially significant interactions identified between Material Assets, and Archaeological, Architectural and Cultural Heritage during the operational phase.

16.10 Summary

In summary, the interactions between the environmental factors and impacts discussed in this EIA Report have been assessed and the majority of interactions are ***short*** to ***long-term*** and ***negative***, ***neutral*** to ***positive***. Refer to Table 15-1 for the summary of Interrelationships between the Aspects.

Table 16-1: Summary of Interrelationships Between the Aspects

	Population & Human Health		Land, Soils and Hydrogeology		Hydrology		Biodiversity		Air Quality and Climate		Noise and Vibration		Landscape and Visual Impact		Archaeology, Cultural Heritage and Architecture		Material Assets, Built Services including Transport and Waste	
	Con.	Op.	Con.	Op.	Con.	Op.	Con.	Op.	Con.	Op.	Con.	Op.	Con.	Op.	Con.	Op.	Con.	Op.
Population & Human Health			o	o	-	o	x	x	-	+	-	o	o	+	x	×	-	×
Land, Soils and Hydrogeology					o	o	o	o	o	×	o	×	×	×	x	×	o	x
Hydrology							o	o	o	×	×	×	×	×	×	×	o	-
Biodiversity									o	×	-	x	x	o	x	x	o	o
Air Quality and Climate											x	x	x	x	x	x	o	o
Noise and Vibration													x	x	x	x	-	×
Landscape and Visual Impact															-	×	x	x
Archaeology, Cultural Heritage and Architecture																	x	x
Material Assets, Built Services including Transport and Waste																		

Con.	Construction Phase
Op.	Operational Phase
x	No Significant Interaction

+	Positive Interaction
o	Neutral Interaction
-	Negative Interaction

Clifton Scannell Emerson Associates Limited, Civil & Structural Consulting Engineers
3rd Floor, The Highline, Bakers Point, Pottery Road, Dun Laoghaire, Co. Dublin, A96 KW29
T. +353 1 288 5006 F. +353 1 283 3466 E. info@csea.ie W. www.csea.ie