

## APPENDIX 11.2 – GLOSSARY OF IMPACT ASSESSMENT AND ASSESSMENT METHODOLOGY

### 1 GLOSSARY OF IMPACTS

#### 1.1 Types of Impacts

Potential impacts on the receiving archaeological and cultural heritage environment can be described as direct physical impacts, indirect physical impacts, and impacts on setting.

Direct physical impacts are those development activities that directly cause damage to the fabric of a heritage asset. Typically, these activities are related to construction works; e.g. they could include excavation of foundations, earthmoving / site preparation creation of access roads, cycle paths, and the excavation of service trenches.

Indirect physical impacts are those processes, triggered by development activity, that lead to the degradation of heritage assets.

Impacts on the setting of heritage assets describe how the presence of a development changes the surroundings of a heritage asset (archaeological, or cultural heritage sites) in such a way that it affects (positively or negatively) the heritage significance of that asset. Visual impacts are most commonly encountered but other environmental factors such as noise, light or air quality can be relevant in some cases. Such impacts may be encountered at all stages in the life cycle of a development from construction to decommissioning but they are only likely to be considered significant during the prolonged operational life of the development.

Types of impact, as defined by the Draft EPA Guidelines on Information to be Contained in Environmental Impact Assessment Reports (hereafter referred to as the EPA Guidelines) (EPA 2017):

- *Cumulative Impact* – The addition of many small impacts to create one larger, more significant, impact.
- *Do Nothing Impact* – The environment as it would be in the future should no development of any kind be carried out.
- *Indeterminable Impact* – When the full consequences of a change in the environment cannot be described.
- *Irreversible Impact* – When the character, distinctiveness, diversity or reproductive capacity of an environment is permanently lost.
- *Residual Impact* – The degree of environmental change that will occur after the proposed mitigation measures have taken effect.
- *‘Worst case’ Impact* – The impacts arising from a development in the case where mitigation measures substantially fail.
- *Indirect or Secondary Impacts* – Effects that arise off-site or are caused by other parties that are not under the control of the developer. Effects which are caused by the interaction of effects, or by associated or off-site projects.

#### 1.2 Quality of Impact

Impacts on the archaeological environment are assessed in terms of their quality, i.e. positive, negative, neutral:

- Negative Impact: A change that will detract from or permanently remove an archaeological monument from the landscape;
- Neutral Impact: A change that does not affect the archaeological heritage; and
- Positive Impact: A change that improves or enhances the setting of an archaeological monument.

#### 1.3 Duration of Impact

The duration of an impact can be as follows:

- Temporary Impact                      Impact lasting for one year or less;
- Short-term Impacts                      Impact lasting one to seven years;
- Medium-term Impact                      Impact lasting seven to fifteen years;

- Long-term Impact                      Impact lasting fifteen to sixty years; and
- Permanent Impact                      Impact lasting over sixty years.

## 2 ASSESSMENT METHODOLOGY

### 2.1 Introduction

This assessment methodology has regard to the EPA assessment criteria (EPA 2017) and to the National Roads Authority (NRA) Guidelines for the Assessment of Archaeological Heritage Impact of National Road Schemes (hereafter referred to as the NRA Guidelines) (NRA 2005).

Archaeological and cultural heritage sites are a non-renewable resource and such assets are generally considered to be location sensitive. In this context, any change to their environment, such as construction activity and ground disturbance works, could adversely affect these sites.

### 2.2 Significance / Sensitivity Criteria

In accordance with EPA Guidelines (EPA 2017), the context, character, significance and sensitivity of each archaeological / cultural heritage asset requires evaluation, and the significance of the impact is then determined by considering the significance / sensitivity of the asset and the predicted magnitude of the impact.

In accordance with the NRA Guidelines (NRA 2005), the significance criteria used to evaluate an archaeological site, monument or complex take into account the character and integrity of the asset and any available data regarding it. This can be ascertained by looking at the following criteria cited in the NRA Guidelines (NRA 2005): the existing status (level of protection), condition or preservation, documentation or historical significance, group value, rarity, visibility in the landscape, fragility or vulnerability, and amenity value (Table 1). While these criteria contribute to the significance of a feature they should not be treated as definitive. These criteria are indicators which contribute to a wider judgement based on the individual circumstances of these archaeological/cultural heritage assets.

| Criteria   | Explanation   |
|--|---|
| Existing Status                                    | The level of protection associated with an archaeological / cultural heritage asset is an important consideration.  |
| Condition / Preservation / Integrity               | The survival of an archaeological / cultural heritage asset's archaeological potential both above and below ground is an important consideration and should be assessed in relation to its present condition and surviving features. Well-preserved sites should be highlighted, this assessment can only be based on a field inspection.   |
| Documentation / Data                               | The significance of a an archaeological / cultural heritage asset may be enhanced by the existence of records of previous investigations or contemporary documentation supported by written evidence or historic maps. Sites with a definite historical association or an example of a notable event or person should be highlighted.   |
| Group Value / Character                            | The value of a single an archaeological / cultural heritage asset may be greatly enhanced by its association with related contemporary monuments or with monuments from different periods indicating an extended time presence in any specific area. In some cases it may be preferable to protect the complete group, including associated and adjacent land, rather than to protect isolated monuments within that group. |
| Rarity / Character                                 | The rarity of some an archaeological / cultural heritage asset types can be a central factor affecting response strategies for development, whatever the condition of the individual feature. It is important to recognise sites that have a limited distribution.  |
| Visibility in the landscape/ Character / Integrity | Archaeological / cultural heritage assets that are highly visible in the landscape have a heightened physical presence. The inter-visibility between monuments may also be explored in this category.   |

|                                     |   |  |
|-------------------------------------|---|--|
| Fragility / Vulnerability Integrity | / | It is important to assess the level of threat to an archaeological / cultural heritage asset from erosion, natural degradation, agricultural activity, land clearance, neglect, careless treatment or development. |
| Amenity Value Character             | / | Regard should be taken of the existing and potential amenity value of a an archaeological / cultural heritage asset.   |

**Table 1:** Explanation of Archaeology and Cultural Heritage Asset Assessment Criteria

An evaluation of the significance / sensitivity of sites and features is based on the extent to which assets contribute to the archaeological or cultural heritage character, though their individual or group qualities, either directly or potentially. Table 2 presents the scale of significance / sensitivity together with criteria. It has been compiled by Courtney Deery Heritage Consultancy Ltd, based on standard authorities and guidelines as listed in Section 2.5.

| Sensitivity / Value | Criteria  |
|---------------------|---|
| High                | Sites of international significance: World Heritage Sites.<br>National Monuments.<br>Protected Structures (assessed by the NIAH to be of international and national importance), where these are also National Monuments.<br>Undesignated archaeological and cultural heritage sites.   |
| Medium              | Recorded Monuments (RMP sites & SMR sites scheduled for inclusion in the next revision of the RMP)<br>Protected Structures / NIAH sites (assessed by the NIAH to be of regional importance), where these are also Recorded Monuments.<br>Newly identified archaeological sites, confirmed through archaeological investigation, to be added to the SMR.<br>Undesignated archaeological and cultural heritage sites. |
| Low                 | Sites listed in the Dublin City Industrial Heritage Record (DCIHR) and National Inventory of Architectural Heritage (NIAH) Building for which there are no upstanding remains.<br>Undisturbed greenfield areas and riverine environs, which have an inherent archaeological potential.<br>Undesignated archaeological and cultural heritage sites.  |
| Negligible          | Assets with very little or no surviving archaeological and / or cultural heritage interest.   |

**Table 2:** Sensitivity Criteria

### Definition of site designations

#### *World Heritage Sites and National Monuments*

World Heritage sites, National Monuments, and assets of acknowledged international importance or that can contribute significantly to international and national research objectives, are considered to be of high importance.

The National Monuments Act (1930, Section 2) defines a 'National Monument' as

*"a monument or the remains of a monument the preservation of which is a matter of national importance by reason of the historical, architectural, traditional, artistic or archaeological interest attaching thereto".*

The National Monuments legislation legally protects access to and the visual amenity associated with National Monuments and requires consent from the Minister for invasive works in their vicinity.

#### *Recorded Monuments*

The primary source of information for archaeology is the Record of Monuments and Places (RMP) maintained by the Department of Culture, Heritage and the Gaeltacht (DCHG). The RMP documents known upstanding archaeological monuments, their original location (in cases of destroyed

monuments) and the position of possible sites in rural areas identified as cropmarks on vertical aerial photographs dating to before 1700 AD (with some later ones also being included). It is based on a comprehensive range of published and publicly available documentary and cartographic sources.

For the purpose of the assessment, the Sites and Monument Record (SMR) data and mapping as updated by the Archaeological Survey of Ireland ([www.archaeology.ie](http://www.archaeology.ie)) was examined so it could be used within an interactive identification and mapping system developed for Proposed Project.

#### *Zones of Archaeological Potential*

Zones of archaeological potential (ZAP) can be defined as areas within the urban and rural landscape that possess the potential to contain archaeological remains due to the settlement history of a place and or to the presence of topographical features such as rivers, lakes and high, defensible ground.

#### *Non-Designated Sites*

Newly identified archaeological sites that have been confirmed through archaeological investigation (monitoring, testing, excavation, geophysical survey) are considered to be of medium importance. Such sites are undesignated as they have yet to be added to the SMR.

Potential or undesignated archaeological sites identified through aerial photography, historic mapping, stray finds are considered to be of low sensitivity, as they have yet to be ground-truthed through archaeological investigation. Similarly, undisturbed greenfield areas and riverine environs, which have an inherent but as yet unproven archaeological potential are considered to be of low sensitivity.

The DCIHR provided by Dublin City Council (DCC) is based on a paper survey only and where there are no upstanding remains of the industrial heritage sites, the survival of below-ground sites cannot be confirmed; as such the sensitivity is considered to be low.

### **2.3 Magnitude of Impact**

When assessing the impact magnitude, the following criteria need to be considered:

- Extent – size, scale and spatial distributions of the effect;
- Duration – period of time over which the effect will occur;
- Frequency – how often the effect will occur; and
- Context – how will the extent, duration and frequency contrast with the accepted baseline conditions.

These criteria, as applied to archaeological and cultural heritage, are outlined in Table 2.

| <b>Impact Magnitude</b> | <b>Criteria</b>   |
|-------------------------|---|
| High                    | These impacts arise where an archaeological / cultural heritage asset is completely and irreversibly destroyed by a proposed development. A change such that the value of the asset is totally altered or destroyed, leading to a complete loss of character, integrity and data about the site.  |
| Medium                  | An impact which, by its magnitude, duration or intensity alters an important / significant aspect of the environment. An impact like this would be where an archaeological / cultural heritage asset would be impacted upon leading to a significant loss of character, integrity and data about the site.<br>Or an impact which by its magnitude results in the partial loss of a historic structure (including fabric loss or alteration) or grounds including the part removal of buildings or features or part removal of demesne land (e.g. severance, visual intrusion or degradation of setting and amenity).<br>A permanent positive impact that enhances or restores the character and / or setting of a cultural heritage site or upstanding archaeological heritage site in a clearly noticeable manner. |
| Low                     | A low impact arises where a change to the site is proposed which though noticeable is not such that the archaeological / cultural heritage character / integrity of the site is significantly compromised, and where there is no significant loss of data about the site.<br>A positive impact that results in partial enhancement of the character and / or setting of a cultural heritage site or upstanding archaeological heritage site in the medium to long-term.   |

| Impact Magnitude | Criteria  |
|------------------|---|
| Negligible       | An impact which causes very minor changes in the character of the environment and does not directly impact an archaeological / cultural heritage asset or affect the appreciation or significance of the asset. There would be very minor changes to the character and integrity of the asset and no loss of data about the site. |

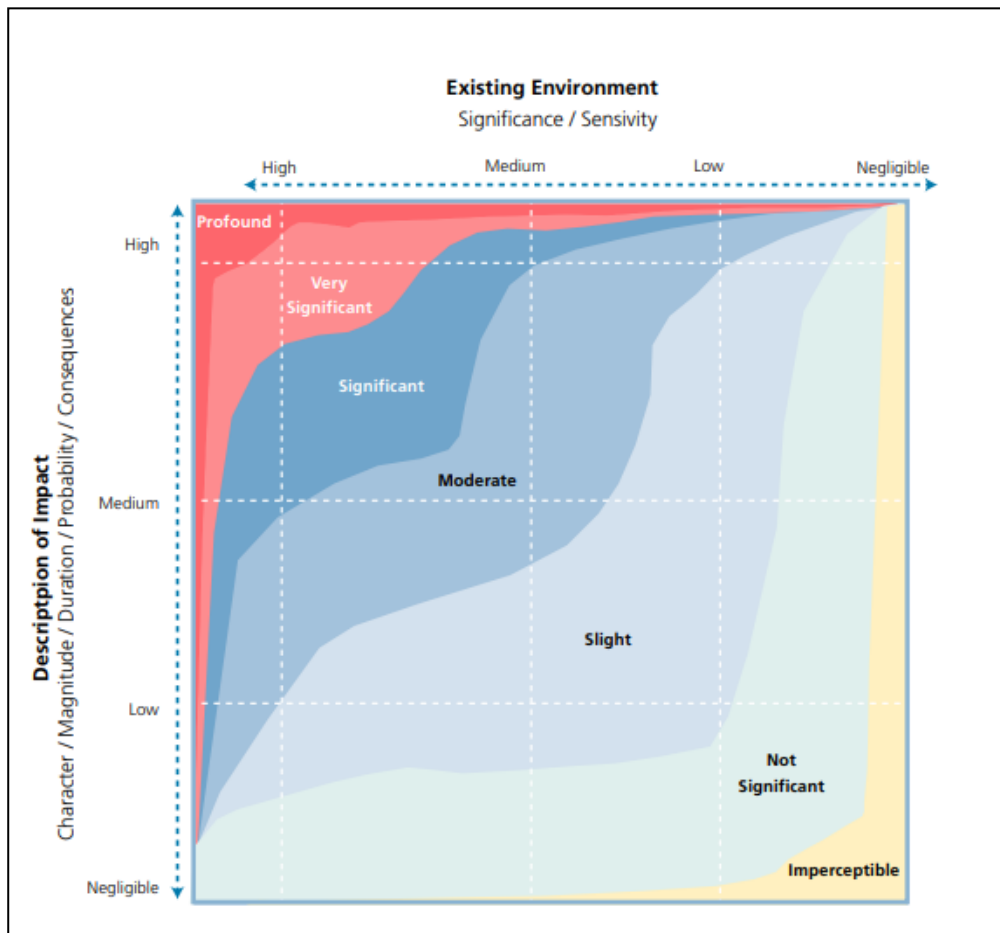
**Table 2:** Magnitude of Impact Criteria

**2.4 Significance of Impact**

The Draft EPA Revised Guidelines on the Information to be Contained in Environmental Impact Statements (EIS) (EPA 2015) added the two additional levels of significance of effect: Very Significant and Not Significant (Table 3 and Image 1).

| Significance of Effect | Description  |
|------------------------|--|
| Very Significant       | An impact which by its character, magnitude, duration or intensity significantly alters the majority of a sensitive aspect of the environment, for example in this case a monument |
| Not Significant        | An effect which causes noticeable changes in the character of the environment but without noticeable consequences.   |

**Table 3:** Significance of Effects (EPA 2015)



**Image 1:** Figure 3.5 Description of Impacts from the Draft EPA Revised Guidelines on Information to be Contained in EIS (EPA 2015)

The likely significance of impacts is determined by considering the baseline rating or sensitivity value of the asset upon which the impact has an effect and the magnitude of the impact (Image 1). The impact significance is defined as Imperceptible, Not Significant, Slight, Moderate, Significant, Very Significant, or Profound (Table 4).

| Impact           | Definition   |
|------------------|--|
| Imperceptible    | An impact capable of measurement but without noticeable consequences.  |
| Not Significant  | An impact which causes noticeable changes in the character of the environment but without significant consequences.  |
| Slight           | An impact which causes minor changes in the character of the environment and does not affect an archaeological / cultural heritage asset in a moderate or significant manner.  |
| Moderate         | A moderate impact arises where a change to the site is proposed which though noticeable, does not lead to a significant loss of character, integrity and data about the archaeological / cultural heritage asset.  |
| Significant      | An impact which, by its magnitude, duration or intensity, alters an important aspect of the environment. An impact like this would be where part or all of a site would be permanently impacted upon, leading to a significant loss of character, integrity and data about the archaeological / cultural heritage asset. |
| Very Significant | An impact which, by its character, magnitude, duration or intensity significantly alters most of a sensitive aspect of the environment.  |
| Profound         | Applies where mitigation would be unlikely to remove adverse impacts. Reserved for adverse, negative impacts only. These impacts arise where an archaeological / cultural heritage asset is completely and irreversibly destroyed by a proposed development.   |

**Table 4: Defining Significance of Impacts**

## 2.4 Relevant Guidelines and Standards

Code of Practice for Archaeology agreed between the Minister for Arts, Heritage, Regional, Rural and Gaeltacht Affairs and Transport Infrastructure Ireland, 2017.

Code of Practice for Archaeology agreed between the Minister for Environment, Heritage and Local Government and EirGrid, 2009.

Council of Europe (2005). Framework Convention on the Value of Cultural Heritage for Society, 'Faro Convention'.

EirGrid (2015). Cultural Heritage Guidelines for Electricity Transmission Projects: A Standard Approach to Archaeological, Architectural and Cultural Heritage Impact Assessment of High Voltage Transmission Projects. EirGrid.

Department of Arts, Heritage, Gaeltacht and the Islands (1999). Framework and Principles for the Protection of the Archaeological Heritage.

DAHG (2015). National Landscape Strategy for Ireland 2015-2025.

Department of Arts, Heritage and the Gaeltacht (2011). Architectural Heritage Protection Guidelines for Planning Authorities.

National Roads Authority (NRA) (2005). Guidelines for the Assessment of Archaeological Heritage Impact of National Road Schemes.