

Appendix A4.8 Landscape Masterplan Statement



Kerdiffstown Landfill Remediation Project

Kildare County Council

Landscape Masterplan Statement

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1. Introduction

1.1 Background

The site of the proposed Project, is located in County Kildare, approximately 3km north-east of central Naas, approximately 400m north-west of Johnstown village and in close proximity to the strategically important M7/N7 corridor. The site is located in close proximity to a number of residential and commercial receptors as well as being a short distance away from the larger settlements of Johnstown and Naas. In addition to the above, the site neighbours a number of recreational land uses, specifically Palmerstown House Estate and Naas Golf Course to the north-east and north-west respectively.

The site occupies approximately 30 hectares and is a former sand and gravel quarry which was progressively backfilled by a number of operators from the 1950s onwards. In January 2011 a major fire developed in a mound of waste material in the northern part of the site. This required intervention of a number of state agencies including Kildare County Council and the Environmental Protection Agency (EPA). The site was under the control of Kildare Fire Service until late February 2011, when it was handed over to the care of the EPA. Since 2011, measures have been taken to secure the site and limit environmental impact.

In April 2015 the Minister for the Environment, Community and Local Government, Alan Kelly TD, announced that funding would be made available for the remediation of the landfill site, and that Kildare County Council (KCC) would take control of the site and commence remediation.

The objective in remediating the site in terms of end-use proposals is to:

- Deliver a solution that is accepted by the community.

Linked to the overarching objectives of the project is the aim to provide a future landform and end use appropriate for the site and of potential benefit to the local community. To that end, KCC is proposing to remediate the site with the vision of restoring the area into a landscaped park and recreational facilities.

1.2 Aims and Objectives

This document supports the outline Landscape Masterplan (LM), shown as Figure 4.30, and has been prepared in support of the planning application and summarises the mitigation for the proposed Project. In absence of equivalent methodology in Ireland, this Statement has been prepared using the methodology set out in Section 0 Environmental Objectives of the Design Manual for Roads and Bridges (DMRB) Volume 10 and the Environmental Protection Agency (EPA) Landfill Manual – Landfill Restoration and Aftercare guidance document, produced in 1999.

This document has been prepared in support of a planning application and industrial emissions licence for the remediation and operational (end-use) phases, outlined as follows:

- *Development / Remediation* – The works required to re-profile the site including excavation of waste and other materials for deposition on site to achieve the proposed final landform. The works will also include the installation of landfill infrastructure such as capping, landfill gas, leachate and surface water management. A second stage of remediation will comprise the works required to restore the site to the proposed park end use, including planting and landscaping, installation of sports pitches, changing rooms, car parks and associated services.
- *Operational / Aftercare* – The life cycle stage of the site following the remediation works when the site will be used for public access parkland and recreation. The responsibility for the management of the site and the landfill infrastructure systems as well as park operation and maintenance will be retained by Kildare County Council (KCC).

The LM is based on the engineering remediation design proposals for the scheme. It includes landscape and environmental mitigation measures put forward as part of the Environmental Impact Statement (EIS).

1.3 Functions and Elements

The methodology set out in DMRB uses a system of 'Functions' and 'Elements' to describe the environmental features. The use of this system enables environmental data to be recorded and developed in a consistent manner and linked through all stages of schemes from initial design through to construction requirements and the management action plans.

Environmental Functions would be determined at the future detailed design stage of the project. These functions would include:

- EFA Visual Screening
- EFB Landscape Integration
- EFD Nature Conservation and Biodiversity
- EFE Visual Amenity

The assigned 'Elements' for landscape and environmental features, describe physical attributes or designation in statutory terms. The 'Landscape Elements' are divided into types e.g. woodland, shrubs, or hedgerows.

The specific 'Elements' used in this LM are set out in Section 1.4.

1.4 Landscape Elements

Grassland

LE1.1 Amenity grassland areas:

Planned for verges and immediate area of sport pitches and changing rooms.

LE1.3 Species-rich grassland:

This includes grass and wildflower species, limited to south facing slopes near the attenuation ponds located to the south-east of the site.

LE1.6 Open grassland:

This is primarily the treatment given to areas that would be allowed to naturalise and form low grassland tussocks.

Native Planting

LE2.1 Woodland

LE2.2 Woodland edge

LE2.6 Shrubs

LE2.8 Scrub

Hedges

LE 4.4 Native hedgerows with trees

Trees

LE 5.1 Individual trees

Other Landscape Treatments

LE3.1 Amenity Tree and Shrub Planting

LE6.1 Water Bodies and Associated Plants

LE6.3 Reed Beds

LE6.4 Marsh and Wet Grassland

1.5 Existing Features

The existing features and designations within the site vicinity are as follows:

- Record of Protected Structures (Church / ruins located to east of the site): KCC;
- Public Rights of Way: KCC data; and
- Retained vegetation/boundaries: based on the original Phase 1 Habitat Survey and aerial photography.

Reference should be made to the Figures 3.1 and 3.2 for the location and overview of the site area and context.

1.6 Proposed Park Design Features

The proposed end use proposals comprise a park which would also incorporate facilities suitable for recreation such as sports pitches, a play area, informal trails and defined viewpoints. It would also provide landscape improvements and an opportunity for ecological enhancements.

These proposals are outlined indicatively on the LM, with an overview list of the components of the park outlined below:

- Vehicular and pedestrian / cycle main entrance, with double gates.
- Semi-ornamental planting to roundabout.
- North-west pedestrian entrance, with security gate.
- Perimeter site fence, 2.2m palisade or high system railing, straight topped, powder coated green, or similar approved.
- Vehicular 6m wide, tarmac access road within the park, with a 2m wide footway.
- Public walkways and informal tracks within the site of varying widths (1.2m-1.8m), constructed of unbound stone. These paths would vary in gradient, with some steps possibly required in steeper sections (to be determined from detailed design and construction).
- Maintenance tracks, 4m in width, constructed of unbound, imported stone.
- One main car park for approximately 100 spaces, with opportunity for additional mobility impaired and coach/mini-bus parking. This would be constructed in tarmac, with the bays formed in Grasscrete or similar approved.
- One overspill car park for approximately 100 spaces, with close access to informal footpaths/cycle paths. This would be constructed in unbound stone, with the bays formed in Grasscrete or similar approved.
- Changing rooms (4no), store room and public toilet facilities.
- Playground area adjacent to the main changing room building.
- 2no multi-use sports pitches, sized to full GAA pitch dimensions, installed with a synthetic or similar approved surface and each lit with 6no x 18m high, hinged masts. This outline specification is based on the suppliers guidance for GAA sports lighting - <http://www.abacuslighting.com/gaelic-sports-lighting.asp>.

- 1no multi-use/ training pitch with a synthetic or similar approved surface, informally marked out as 3no five-a-side pitches, with 6no x 8m high, hinged masts. This outline specification is based on the suppliers guidance for GAA sports lighting - <http://www.abacuslighting.com/gaelic-sports-lighting.asp>.
- Ball-retention fencing (12m high x 30m wide) installed to one end of each pitch, to prevent balls going onto Kerdiffstown Road or into the attenuation ponds. This outline specification is based on GAA guidance provided in the following website, <https://www.nksports.co/find-your-needs/gaelic/>.
- 3no attenuation ponds, enhanced with marginal aquatic species planting and grouped trees.
- Surface water ditches and swales, filled with stone or seeded with wet grassland species.
- Surface water reed bed area, filled with gravel and soil substrate and planted with native reed and marginal aquatic species.
- Native mix woodland, trees, scrub, shrub and hedgerow planting.
- Native or naturalised parkland trees.
- Semi-ornamental amenity tree and shrub planting to the main entrance and roundabout.
- 2no designated wildlife areas, fenced off from public access.
- Ecological enhancement and mitigation features such as hibernacula, nesting boxes and log piles.
- Defined viewpoint areas with a Trig point at the top of the site.
- Outlet to the Morell River, with a stone clad headwall to integrate visually into the bank.

At the detailed design stage, the provision of trim trails would also be considered, which would mark out set trail lengths within the park of 1000m and 2000m with colour coded waymarkers. Future provision of outdoor fitness equipment could be implemented along these trails, along with occasional seating, cycle racks and bin provision.

1.7 Environmental Measures: Remediation Stage

A number of environmental mitigation measures would be carried out during the remediation works; these are not shown on the LM as they are temporary works and do not have a residual “physical” form once the construction phase of the works has been completed.

All of the environmental mitigation and proposed enhancement measures are listed within the relevant topic assessments in Volume 2 of the ES.

1.8 Environmental Measures: Landscape Planting

Landscape planting is proposed to replace vegetation removed during the construction phase of the remediation works and to provide landscape and visual integration with the local area. The proposed planting would also ensure a suitable level of screening to the proposed Landfill Infrastructure Compound, and the new sports facilities, which includes changing facilities located within the centre of the park. The planting proposals are shown indicatively on the LM, and the design strategy for this planting outlined as follows:

- The existing vegetation removed within the boundary of the site, would be replaced with discrete and linked areas of shrub and scrub planting to give a ‘mottled appearance’, with screen woodland planting alongside the entrance area, and smaller grouped areas of trees and woodland to the southern end of the landfill site alongside the wetland ponds. In addition to this a line of trees would be planted within the earthworks bund, alongside the proposed bio-swale to the northern boundary. Overall this approach to the planting should provide something of the parkland aesthetic to be established and set within the open natural grasslands and managed areas of grassland.
- All proposed planting would be native or naturalised species stock, other than at the main entrance and roundabout areas where semi-ornamental species such as *Amelanchier lamarkii* (Snowy mespilus), *Taxus baccata* (Yew), *Euonymus europaeus* (Spindle), and *Escallonia rubra* ‘Crimson Spire’ planting may be preferred to provide seasonal interest and structure..

- Existing vegetation retained to the perimeter edge of the site to the north-west and south-west of the site, would be infilled with new planting stock if gaps are noted, to provide a continuous cover of screening vegetation.
- Existing retained individual trees within the site perimeter edge outlined above may require arboricultural work following the remediation of the site and a post inspection tree survey would be undertaken to confirm if any action is needed.

The locations of the planting areas will be confirmed based on the extents of the capping areas installed as part of the remediation works, to ensure that the integrity of the underlying capping system is not compromised and that the gas and leachate infrastructure are accessible and free from any root growth. For the species identified additional top soil or soil forming material will require to be imported to the site, to facilitate root growth whilst maintaining the integrity of the capping system. This will be reviewed as part of the detailed design stage.

The composition of grass seeding mixes and planting species would be based on the habitat survey information for the existing site and Irish native tree and shrub listing provided by KCC. Reference should be made to Chapter 12 of the EIA with respect to habitats and flora field survey results and Kildare County Development Plan 2011-2017, Chapter 19, Table 19.2.

Final details for planting and seeding mixes, (including sowing rates and whether hydroseeding is used on steeper slopes), would be confirmed in consultation with the local authority landscape officer to achieve landscape design functions and to enhance local biodiversity.

The outline LM is based on the following proposals:

Seed Mixes:

LE 1.1 Amenity grassland

Low maintenance mix for verges.

LE1.2 Species-rich grassland

Dry Neutral and Calcareous (GS2) grasslands are proposed for defined species-rich grassland areas. Refer to Grasslands on Irish Vegetation Classification (IVC) website link: <http://www.biodiversityireland.ie/projects/national-vegetation-database/irish-vegetation-classification/explore/>

LE1.6 Open grassland

Low maintenance, tussocky grassland suitable for naturalising.

LE6.4 Marsh and Wet Grassland

Grass mix (GS4) suitable for wetland areas and open ditches/swales.

Planting Mixes:

LE2.1 Woodland

A mixed, deciduous woodland is proposed of a composition that matches the local area. This would , incorporate *Quercus robur* (Pendunculate Oak), *Fagus sylvatica* (Beech), *Sorbus aucuparia* (Rowan), *Alnus glutinosa* (Alder), *Betula pendula* (Birch) and understory shrub species.

Woodland would be planted at 2m centres and woodland edge planting would be planted at 1.5m centres.

Bare-root shrub and tree transplants would be used, sizes varying between 40-60cm and 60-80cm, with a small percentage of bare-root feathered trees, (175-200cm stock).

Where screening is a required environmental function, such as alongside the landfill infrastructure compound, a percentage of evergreen stock would be included in the mix. This would be containerised stock, sizes varying between 40-60cm to 60-80cm. Species to include *Taxus baccata* (Yew), *Ligustrum vulgare* (Privet) and *Ilex aquifolium* (Holly).

LE2.6 Shrubs and LE2.8 Scrub

Areas of shrub and scrub planting would use species that replicate the existing vegetation cover, such as *Cornus sanguinea* (Dogwood,) *Corylus avellana* (Hazel), *Prunus spinosa* (Blackthorn) and *Crataegus monogyna* (Hawthorn).

Scrub areas would be re-established in suitable locations on the site, with the planting of *Rubus fruticosus* (Bramble), *Sambucus nigra* (Elder) and *Rosa canina* (Dog Rose).

Shrubs and Scrub planting would be planted at 1.0m to 1.5m centres and planted as bareroot transplants (40-60cm and 60-80cm).

LE5.1 Individual Trees

The proposed individual trees would be:

20-25cm girth Semi-mature *Quercus robur* (Pedunculate oak) and *Tilia cordata* (Small leaved lime) would enhance the parkland setting along the northern boundary, which would be planted immediately adjacent to the proposed swale. This will compensate for the removal of the existing tree line, required to facilitate the remediation works.

14-16cm girth Extra Heavy Standards, grouped *Amelanchier lamarkii* (Snowy mespilus) planting to the new roundabout, and grouped *Betula pendula*, (Birch) and *Alnus glutinosa* (Alder) alongside the wetland pond area.

Planting centres for individual trees would be determined at the detailed design phase.

LE 4.4 Native hedgerows with trees

Perimeter edge infill planting would restore mixed native species where any gaps are identified.

Where a full length of hedgerow (LE4.4) is required this would be predominantly 80% *Crataegus monogyna* (Hawthorn), with holly, elm, and blackthorn also in the mix.

Hedgerow plants would be set out as a double staggered row at 500mm apart, with plants planted at approximately 450mm centres, at 4 plants per linear metre.

Plants would be bare-root transplants (90 to 100cm), with additional hedgerow trees planted as 14-16cm girth extra heavy standards. final number to be confirmed at at detail design.

LE 6.1 Water Bodies and Associated Plants

Marginal, emergent and floating aquatic plants would provide amenity and ecological benefits.

The proposed species would include species such as *Lythrum salicaria* (Purple Loosestrife), *Caltha palustris* (Marsh Marigold), *Succisa pratensis* (Devils bit scabious), *Lychnis flos-cuculi* (Ragged-Robin) and *Filipendula ulmaria* (meadowsweet). The plants would be supplied as 9cm Root trainer plants and 150cc cell plants.

LE 6.3 Reed Bed

Native wetland species appropriate to the location, providing filtration, amenity and ecological benefits.

Reed Bed location determined on basis of reducing earthworks in locally flat area, utilising surface water run-off to create ecological enhancement through use of reeds and marginal planting. Specific details to be determined at detailed design stage, but proposals currently based on use of a widened ditch for drainage water to slowly flow through and over a prepared gravel/soil substrate.

Species mix would include 85% reed species and 15% marginal aquatics planted on a ratio of 4 reeds or plants per square metre. Reeds and marginal planting would be supplied as 9cm plugs or in 1ltr containers.

Plant Specification:

A specification would be prepared for the proposed mitigation seeding and planting, and would be based on the DMRB, Volume 1, 3000 series guidance and the Environmental Protection Agency (EPA) Landfill Manual – Landfill Restoration and Aftercare guidance document, produced in 1999.

Tree pit sizes would be as provided in Table 30/1, of the DMRB series 3000 specification, unless underlying site constraints require alterations to these dimensions. This would be confirmed at detailed design.

Provisional soil depths to be considered at the detailed design stage are:

- 0-50mm for species rich grassland areas;
- 50mm for Open Grassland areas;
- 75mm for Marsh and Wet Grassland areas;
- 75mm for Verge areas;
- 150mm for sports pitch areas (if not artificial);
- Land drainage for pitch areas (specific to surface design adopted);
- 150/200mm min for scrub/shrub planting areas; and
- 300mm min for woodland planting areas.

All planting stock would include for planting stakes and 600mm height tubular guards or spiral shelters, suitable to protect against rabbit damage. A rabbit proof fence may be considered as an alternative to this for lengths of new hedgerow. It is recorded the mammal proof fencing is to be installed in local areas where badger has been identified.

The planting areas would generally be under-seeded with grass, with the exception of replacement hedgerows and individual trees which would be mulched to a width of 1m and a depth of 50mm.

The setting out of indicative planting areas as detailed on the LM has taken into account the required remediation works, with a further review and assessment required at detailed design stage. A separate assessment of health and safety would be undertaken to ensure the end use site sufficiently complies with ATEX ('Atmosphere Explosible') regulations and also complies with Safety, Health and Welfare and Work (Construction) Regulations 2013 SI 291.

Planting Maintenance:

A five year maintenance plan is typical for a project like that being promoted. However, as this is overlying a landfill site maintenance requirements will be determined in the IED Licence to be regulated by the EPA, and are therefore likely to remain for the life-cycle of the site. This would be confirmed at detailed design stage.

The maintenance programme would be implemented following completion of the seeding and planting. This would outline all measures necessary to ensure the successful establishment of the mitigation seeding and planting and would include (as a minimum):

- Control of succession and invasive weeds;
- Mowing requirements for grassland areas;
- General and specific requirements for maintaining landscape elements and habitats;
- An annual assessment of plant failures in September (by the contractor) and replacement of all failed stock under the agreement of the supervising agent;
- Watering as required;
- Removal of rabbit shelter guards at Year 5 if planting stock sufficiently established; and
- Monitoring of wetland ponds and control of marginal vegetation.

Programme:

The proposed remediation works are anticipated to be undertaken over a 3.5 year period, with end-use development and landscaping taking place thereafter.

Landscape establishment across the site is estimated to take approximately 15 years. A photomontage showing an impression of the site post-completion is provided in Chapter 10 of the EIS.