

Irish Water



VARTRY WATER SUPPLY UPGRADE PROJECT

EIS Screening Report



February 2016



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Vartry Water Supply Upgrade Project

Environmental Impact Assessment Screening Report

Nicholas O'Dwyer Ltd
Consulting Engineers
Nutgrove Office Park
Nutgrove Avenue
Dublin 14

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1 INTRODUCTION

The purpose of this report is to identify the legal requirement or otherwise for a statutory Environmental Impact Assessment of the Vartry Water Supply Upgrade project.

2 PROJECT DESCRIPTION

Introduction

The upgrade to the existing long established facilities for the treatment of water at Vartry include:

- Works within the existing dam structure including a piped siphon over the dam;
- Deepening of an existing spillway;
- Construction of a replacement water treatment plant (WTP) on the existing WTP site;
- Construction and operation of a buried pipeline from Vartry to Callowhill and ancillary pumping station, break pressure tank and energy recovery unit.

The works will not result in additional abstraction of water from the environment and the supernatant discharge from the WTP will be in compliance with the relevant licence.

Siphon

The siphon works are required to allow the existing intake to be taken out of service for upgrade. The siphon will remain a permanent facility to improve the security of supply.

The siphon works will require the pipes to be installed from the lake, across the dam crest road and into the existing water treatment plant site. This will require working under traffic management and possible short term road closures. The siphon pipes will be visible on the upstream face of the dam and will be buried on the downstream side. Their installation will be permanent.



Draw-Off Tower and Dam Tunnel

The works to the draw-off tower and dam tunnel involve the replacement of existing pipes and fittings which are in poor condition. The majority of works to the draw-off tower and the tunnel below the dam (including works to the valves) will be contained within the existing structures with limited externally visible changes. A new access platform will be required to the rear of the existing tower to facilitate access to the new reservoir scour valve.

Spillway Channel

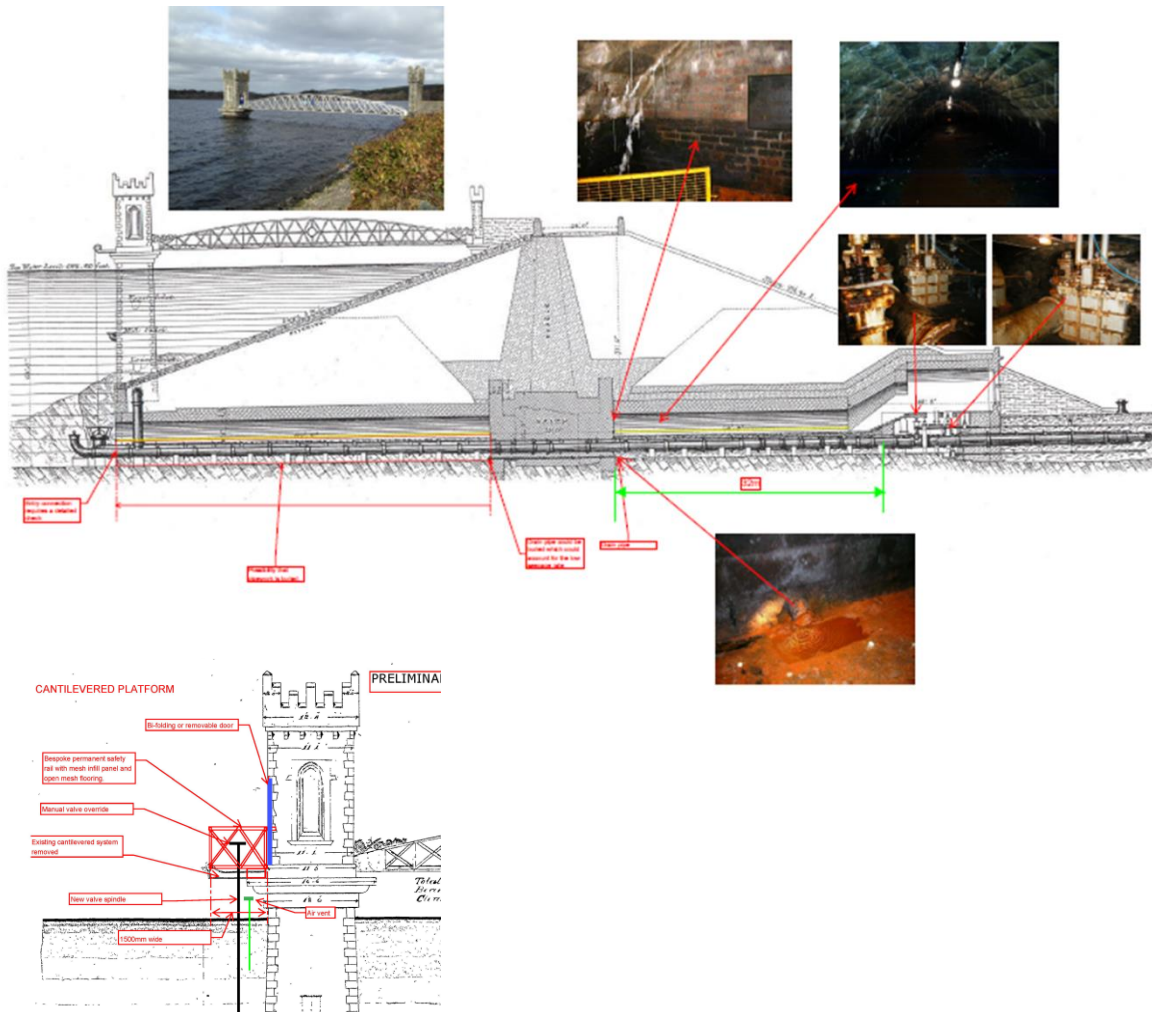
The existing spillway channel needs to be upgraded to increase its hydraulic capacity and protect the integrity of the dam.

The spillway channel will be regraded with a slope of 1:55. It will not be widened. The length of the regrading will be ~170m. Works to include the following:

- Removal of disused toilet and vegetation including trees to create a construction compound and access to the bed of the spillway. This access will remain a permanent feature.
- Vegetation clearance along the spillway and rock removal from the bed of the spillway to deepen it.



A temporary access ramp will be required at the edge of the reservoir, at a location to be determined. This will be required for installing pontoons on the reservoir and the movement of men and materials.

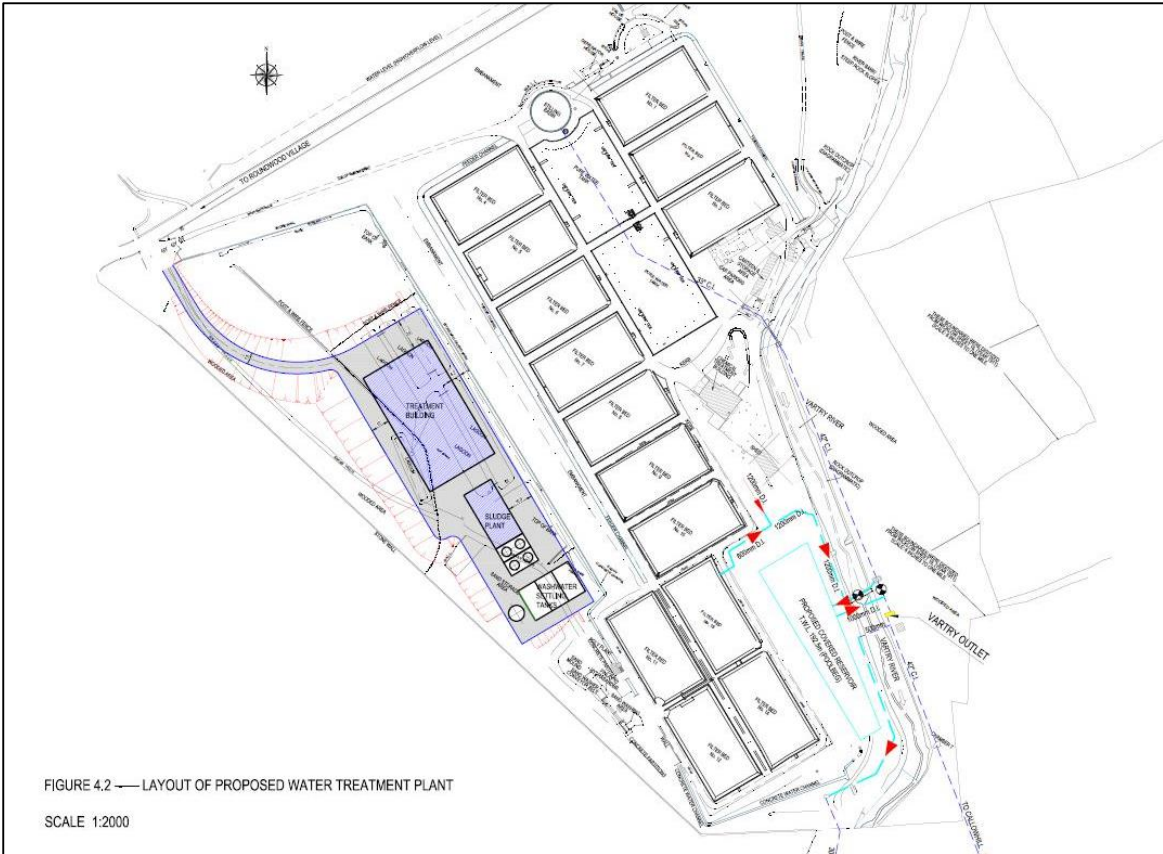


Construction of a new WTP

It is envisaged that a new Water Treatment Plant will include a coagulation and filtration process to ensure the water is treated adequately across flow rates through the plant. All process equipment will be contained within site buildings as indicated on the drawing below. Sludge handling facilities would also be constructed onsite. Consideration will need to be given to the heritage of the existing WTP area and in particular the existing slow sand filters.

There will be no increase in abstraction from the reservoir and the supernatant discharge from the new WTP will comply with the necessary discharge licence.

Water will be supplied to the new WTP through the upgraded intake system.



Construction of New Pipeline

There are three main items of work involved in the construction of the new pipeline:

- Construction of a new pipeline (4km long 1.2m diameter) from the outlet of Vartry Water Treatment Works to the existing tunnel portal at Callowhill.
- Construction of a high lift pump station (HLPS) at the existing outlet from the Vartry site; and
- Construction of a new break pressure tank, energy recovery system and connection to existing mains at Callowhill.
- Decommissioning works to the existing tunnel.

The pipeline will be constructed in open-cut trench. Site investigation of the pipeline route is underway to determine the requirements and location of rock removal. The pipeline will require a temporary wayleave of approximately 14m with a permanent wayleave over the pipeline of 16m giving a total construction width of 30m. This may vary due to local constraints and land conditions.

Aside from disconnection and isolation of the tunnel from the existing treatment works and supply network, the main tasks involved in decommissioning are making safe the existing vent shafts at the surface. It is known that there is infiltration of groundwater into the existing tunnel and maintaining the existing scour and overflow facilities at Callowhill is proposed to cater for these flows. The outflowing groundwater would be monitored to determine if further treatment was required following its discharge from the tunnel. An assessment of quantity and identification of disposal routes (e.g. local field drains) is required.



Figure. Proposed route of the pipeline.

3 LEGISLATIVE BASIS FOR ENVIRONMENTAL IMPACT ASSESSMENT (EIA)

The requirement for an Environmental Impact Assessment of a project was set by the EU Directive (85/337/EEC) as amended by Directive 97/11/EC on the assessment of the effects of certain public and private projects on the environment (known as the ‘EIA Directive’). The amendments were codified into an updated Directive in 2011, EIA Directive (2011/92/EU). The EIA Directive requires that certain developments be assessed for likely environmental effects (commonly known as environmental impact assessment (EIA)) before planning permission can be granted. When submitting a planning application for such a development, the applicant must also submit an Environmental Impact Statement (EIS).

The EIA Directive was transposed into Irish legislation by the Planning and Development Act 2000 and Regulations, 2001, as amended. Part 1 of Schedule 5 to the Planning and Development Regulations lists projects included in Annex I of the Directive which automatically require EIA. Part 2 of the same Schedule outlines thresholds for other projects which also require EIA, per Annex II of the Directive.

3.1 Mandatory EIA

The following are water infrastructure type projects which are outlined in Annex I of the EIA Directive as ones which require mandatory EIA:

- (a) Works for the transfer of water resources between river basins where that transfer aims at preventing possible shortages of water and where the amount of water transferred exceeds 100 million cubic metres/year;
- (b) In all other cases, works for the transfer of water resources between river basins where the multi-annual average flow of the basin of abstraction exceeds 2 000 million cubic metres/year and where the amount of water transferred exceeds 5% of that flow.

The supply of drinking water through pipelines was determined as exempt in the context of the proposed works. The fact that drinking water through pipelines and drinking water resources are not being transferred between river basins means that this proposal does not require a Mandatory EIA.

3.2 Sub-threshold EIA

Other water infrastructure projects may require EIA as outlined in Annex II of the EIA Directive:

Works for the transfer of water resources between river basins not included in Annex I. Such works would require EIA only where they are deemed to be likely to have significant effects on the environment.

The 1997 amending Directive (97/11/EC) introduced guidance for Member States in terms of deciding whether or not a development is likely to have “significant effects on the environment”. The guidance is provided by way of criteria set out in Annex III of the consolidated Directive.

Schedule 7 of the Planning and Development Regulations sets out “criteria for determining whether a development would or would not be likely to have significant effects on the environment” in accordance with Annex III of the Directive. Schedule 7 effectively acts as guidance for consent authorities in Ireland in assessing whether a ‘sub-threshold development’ should be subject to EIA.

The Department of Environment, Heritage (now Community) and Local Government published guidance on the consent for sub threshold development (DEHLG, 2003). The criteria for evaluation are grouped under three headings as follows:

Characteristics of Proposed Development

The characteristics of proposed development, in particular:

- the size of the proposed development,
- the cumulative effects with other proposed development,
- the use of natural resources,
- the production of waste,
- pollution and nuisances,
- the risk of accidents, having regard to substances or technologies used.

Location of Proposed Development

The environmental sensitivity of geographical areas likely to be affected by proposed development, having regard in particular to:

- the existing land use,
- the relative abundance, quality and regenerative capacity of natural resources in the area,
- the absorption capacity of the natural environment, paying particular attention to the following areas:
 - (a) wetlands,
 - (b) coastal zones,
 - (c) mountain and forest areas,
 - (d) nature reserves and parks,
 - (e) areas classified or protected under legislation, including special protection areas designated pursuant to Directives 79/409/EEC and 92/43/EEC,
 - (f) areas in which the environmental quality standards laid down in legislation of the EU have already been exceeded,
 - (g) densely populated areas,
 - (h) landscapes of historical, cultural or archaeological significance.

Characteristics of Potential Impacts

The potential significant effects of proposed development in relation to criteria set out under paragraphs 1 and 2 above and having particular regard to:

- the extent of the impact (geographical area and size of the affected population),
- the transfrontier nature of the impact,
- the magnitude and complexity of the impact,
- the probability of the impact,
- the duration, frequency and reversibility of the impact.

4 CHARACTERISTICS OF PROPOSED DEVELOPMENT

The first of the criteria relates to the characteristics of the proposed development. Each of the issues will be briefly considered in relation to the proposed development at Vartry.

4.1 Size of the Proposed Development

The upgrade works to the existing intake, new siphon and spillway upgrade are not of a significant scale.

The area of the new water treatment plant will be wholly contained within the existing WTP site. The new development will contain a main treatment building with approximate size 50m x 90m and other ancillary structures (sludge treatment tanks, pumping stations) resulting in a total development area of approximately 2 hectares. The Vartry to Callowhill pipeline and associated structures are limited to a 4km buried pipeline within a trench which will be fully reinstated to the current ground condition and some structures less than 500m³ in size.

4.2 Cumulation with other Proposed Development

Consideration of cumulative effects is considered here. A review of extant planning applications indicates that developments locally are of mainly minor nature. No recent planning applications have been lodged for lands directly adjacent to the subject site.

4.3 Use of natural resources

While a small number of trees will be felled for the development the assessments to date have shown that there will be no significant loss of habitats. No additional abstraction will be taken from the Vartry catchment.

4.4 Production of Waste

A waste management plan will be developed for the site to promote minimization and reuse of materials. Soils excavated onsite for the water treatment plant and pipeline and excavation of rock in the spillway channel will be reused onsite in the decommissioning of some of the filter beds with the balance used in landscaping proposals and as road bases for site roads. It is envisaged that some additional sludge waste will be generated during the enhanced treatment process but this is considered minimal and will be disposed of to a licensed facility.

4.5 Pollution and Nuisances

Operational noise will be similar to present and limited to the operation of pumps and filter plant. A noise assessment and CADNA model for the site has indicated acceptable noise to the identified receptors. No air pollution will result from the operation of the plant. Supernatant discharges from the water treatment plant will meet licence conditions.

4.6 Risk of Accidents

The site will be operated in accordance with an agreed HSQE plan. A Safety File will be kept and updated throughout the development.

5 LOCATION OF THE PROPOSED DEVELOPMENT

5.1 Existing Land Use

The site for the new WTP is currently used as a settlement area for sludge from the existing slow sand filter washing facility. The pipeline crosses predominantly agricultural land and for a section is adjacent to the existing built catchwater drain structure. Ecological assessments for the sites have determined a low significance.

5.2 Relative abundance, Quality and Regenerative Capacity of the Natural Resources

The ecological assessment has demonstrated that the proposed development will not significantly impact on the integrity of the natural habitats.

5.3 Absorptive Capacity of the Natural Environment

The criteria pays particular attention to:

- (a) wetlands,
- (b) coastal zones,
- (c) mountain and forest areas,
- (d) nature reserves and parks,
- (e) areas classified or protected under legislation, including special protection areas designated pursuant to Directives 79/409/EEC and 92/43/EEC,
- (f) areas in which the environmental quality standards laid down in legislation of the EU have already been exceeded,
- (g) densely populated areas,
- (h) landscapes of historical, cultural or archaeological significance.

The proposed development is not located close to wetlands, coastal zones, mountains and forest areas, nature reserves or parks.

The proposed development is not located in or adjacent to any Special Areas of Conservation. The development has had Appropriate Assessment screening completed. A pathway to one designated site, the Murrough Wetlands SAC, was identified (the River Vartry) but screened out due to its distance from the proposed works (~7km). Other areas of Qualifying Interests and Qualifying Species (e.g. Wicklow Mountains SAC, Otter) were screened out. The Vartry Lake is a potential Natural Heritage Area. The lake will not be significantly impacted by the proposed development with development limited to the new siphon on the upstream side of the dam and works on the offtake structure.

The development is proposed in a rural area and is therefore away from densely populated areas. The quiet rural nature of the area has been considered in the design and location of the water treatment plant and the buried pipeline. The buildings will be in keeping with the existing buildings on the site and local agricultural buildings.

An archaeological screening of the developments has been completed. Three areas of archaeological potential have been identified along the pipeline route and these areas have been either avoided or archaeological monitoring proposed.

A built heritage assessment of the existing Vartry and Callowhill sites has been completed. The proposed impact to the structures is considered acceptable. A landscape management plan for the site which retains much of the heritage of the existing site has been developed.

6 CHARACTERISTICS OF POTENTIAL IMPACTS

6.1 Extent of the Impact

The potential impacts will be limited to the existing site and along the route of the buried pipeline. Areas affected by construction of the pipeline will be restored to their present use (predominantly semi-improved agricultural land and poor grazing).

6.2 Transfrontier Nature of Impact

The development is entirely within County Wicklow and further assessment is not required.

6.3 Magnitude and Complexity of Impact

The main impacts will result from the construction of the water treatment plant, ancillary structures and the buried pipeline. The environmental assessments have predicted the potential impacts from these to be minor.

6.4 Probability of Impact

There will be short term nuisance to the local environment during the construction phases. The operational nuisance will be similar to that as present for the site. There will be no operational impact from the buried pipeline.

6.5 Duration, Frequency and Reversibility of Impact

The principal impacts will be during the construction phase which will be temporary (24-36 months). The buried pipeline route will be reinstated.

7 OVERVIEW OF ENVIRONMENTAL ASSESSMENT SCREENING

In order to inform the screening evaluation, consideration was first given to the potential for impacts on particular aspects of the environment, as set out in Section 4 of this report.

The Environmental Topics as set out in the EIA Directive are as follows:

- (a) human beings, fauna and flora;
- (b) soil, water, air, climate and the landscape;
- (c) material assets and the cultural heritage; and
- (d) the interaction between the factors referred to in points (a), (b) and (c)

It is noted that the EPA (2002) guidelines on the information to be contained in Environmental Impact Statements, outlined in Section 2.4.7 that *“Where reasonable concerns exist that a single or very limited number of environmental topics may be adversely affected by a development proposal then an appropriate evaluation of the relevant topic(s) may be carried out.”*

Environmental Assessments of the proposed works have been carried out for a number of subject areas. An overview of the potential impacts against the environmental assessment areas in the Directive are presented in **Table 5.1**.

Table 5.1 Screening for Environmental Assessment

Topic	Screening for Environmental Assessment
Human Beings, Material Assets, Traffic and Transport.	It is expected that this proposal will have a positive impact in the wider area by providing improved water services infrastructure. Consequently, the proposed development will have a very beneficial impact due to improved water supply security for residential, commercial, industrial and agricultural uses. There will be very limited loss of

Topic	Screening for Environmental Assessment
	<p>agricultural area along the pipeline route for small chambers and no loss of residential property.</p> <p>During the construction period there will be an increase in traffic volumes as a result of employees travelling to and from the site and for the delivery and disposal of construction related materials. This will impact on local residents only during working hours but will be temporary in nature. Suitable traffic management measures will be implemented during the construction period to mitigate potential construction related impacts and it is intended that construction related activities will be restricted to normal working hours.</p>
Terrestrial Ecology	<p>An Ecological Impact Assessment (EclA) was carried out by qualified ecologists at Nicholas O'Dwyer. A Phase 1 habitat survey of the sites was conducted in September, 2015 using methodology developed by the Joint Nature Conservation Committee (1993). Numerous terrestrial habitats were identified within the survey area that ranged from low to high value of local importance. The bird populations within the study area were considered to be of local importance. The bat population within the affected areas was considered to be of high local importance. The otter population in the affected areas is of high local importance. The EclA concluded that the residual impacts would be acceptable with the implementation of the mitigation proposed.</p>
Aquatic Ecology	<p>The Appropriate Assessment (2015) identified that a single connection pathway discharge from the Vartry WTP is connected to the Murrough Wetlands Special Area of Conservation (SAC) (Site Code: 002249).</p> <p>The AA screening concluded no significant adverse effects on the integrity of the SAC are anticipated, in view of the conservation objectives of the site and that the conservation status of the qualifying interests/features will not be compromised by the project either directly, indirectly or cumulatively.</p>
Soil and Geology	<p>The proposed WTP will result in the excavation of ~50,000 m3 of soils and subsoils. It is proposed that all of this material will be reused onsite, principally as backfill to the decommissioned filter beds and as site landscaping.</p> <p>The proposed pipeline route crosses agricultural land and some local roads. In all instances the pipeline will be underground. Displaced soil from the excavated trench will be removed from site (and disposed of at an authorised place of disposal) and will be subsequently backfilled with suitable sandstone type aggregate material obtained from an authorised quarry in the area. It is not anticipated that significant impacts on soil and geology will occur.</p>
Air, Climate, Noise and Vibration	<p>There may be additional noise and possibly an impact on air quality through the generation of dust, during the construction stage. However, any such impacts would be localised and temporary in nature.</p> <p>There will be additional operational noise from the high lift pumping station for the pipeline but this has been assessed and modelled and does not impact on the identified receptors. Overall given the scale and location of works in this instance, significant impacts are not likely to be a matter of concern in this instance.</p>
Landscape and Visual	<p>The proposed infrastructure will be limited to buildings and structures (e.g. treatment plant) of limited extent which will be constructed to blend into the local vernacular. As a consequence, the impacts will be local in nature and not significant. A landscape impact assessment and photomontages have been completed for the WTP.</p>
Cultural Heritage and the Built Environment	<p>Archaeological surveys have been conducted. Three features of note were recorded along the pipeline route and archaeological monitoring during the excavation works in some areas have been proposed. No significant impacts were assessed.</p>

Topic	Screening for Environmental Assessment
	The heritage of the existing Vartry WTP site was assessed. The site was noted to be of local significance and mitigation measures proposed.
Interactions of the Foregoing (Cumulative Impacts)	On the basis of the assessment of the above it is not considered that any environmental impacts resulting from the cumulative interaction of the above assessment impacts would be significant.

8 CONCLUSIONS

Having regard for the proposed Works and in the context of previous studies undertaken, this report concludes that this proposal is not one which is likely to have significant effects on the environment, either by itself or in combination with other plans or projects, and that an Environmental Impact Statement (EIS) is not required under the Planning and Development Act 2000, as amended and incorporating the Planning and Development Regulations 2001, as amended.