

17 MATERIAL ASSETS

This section examines existing material assets in the area of the proposed development. It outlines the potential impacts that may occur on these assets and the measures proposed to mitigate these effects.

17.1 Study Area

This assessment is based on material assets which have the potential to be directly impacted by the proposed development and therefore are those that occur within the proposed pipeline corridor. Indirect impacts on material assets outside of the corridor have been addressed in other sections of the EIS.

17.2 Methodology

A desk-top study was undertaken to outline the material assets in the existing environment. In order to assess the impacts of the proposed development on material assets, a review of the proposed development to identify potential impacts on material assets was undertaken and the significance of these impacts assessed.

17.3 Existing Environment

Material assets are outlined by the EPA in their *Advice Notes on Current Practice for the Preparation of Environmental Impact Statements* (2002) as 'resources that are valued to specific places'. They may be of human or natural origin and can be important for either economic or cultural reasons as summarised in Table 17.1 below.

Table 17.1: Economic & Cultural Assets

Economic Assets	Cultural Assets
<ul style="list-style-type: none"> • Transportation infrastructure (roads, railways, airports etc) 	<ul style="list-style-type: none"> • Archaeological, architecture and cultural assets
<ul style="list-style-type: none"> • Utilities (water supplies, sewage, power systems etc) 	<ul style="list-style-type: none"> • Recreation & amenity
<ul style="list-style-type: none"> • Towns and cities 	
<ul style="list-style-type: none"> • Ownership and access 	
<ul style="list-style-type: none"> • Non-renewable resources (e.g. minerals, soils) 	
<ul style="list-style-type: none"> • Renewable resources (hydraulic head, wind exposure) 	
<ul style="list-style-type: none"> • Settlements 	

Cultural Assets have been discussed in Chapter 16 – Material Assets - Archaeology, Architectural and Cultural Heritage

Economic assets such as transportation infrastructure and the human environment have been addressed in Chapter 9 – Transportation and Traffic, and Chapter 7 – Human Environment - Land Use respectively, Chapter 8 – Human Environment - Socio Economic.

This chapter will therefore focus on remaining economic assets not addressed elsewhere in this EIS.

17.3.1 Utilities Infrastructure

Utilities infrastructure is necessary to ensure that power (electricity/gas), water, sewerage and telecommunications are provided to areas in a reliable consistent manner. Due to a community's dependency on such sources, any disruption to a utility supply, can give rise to significant negative impacts.

As the proposed development is predominantly located in an urban setting, a large number of utility services are located in the area of the pipeline corridor. The proposed pipeline corridor also runs predominantly along existing road carriageways and this is where the majority of utilities are located.

This assessment is based on utility information that can be provided at this stage which has been collected through consultations with a number of providers including, telecommunications companies, DCC and FCC water and drainage divisions, Irish Water, ESB Networks and Bord Gais.

These utilities can be broken down into different functions and importance as follows:

- *Transmission networks:* these networks transfer utility services from a main supply/generation point to a distribution line. They are of national/regional importance. There is usually a backup supply if this network is impacted
- *Distribution networks:* these connect the transmission networks to the local connections. These are of local importance and there is usually no back-up supply if this network is impacted
- *Local connections:* this network connects the distribution network to the private properties. This network is of local importance and there is usually no back-up supply if this network is impacted.

Table 17.2 outlines the main types of utilities identified in the area of the proposed pipeline corridor.

Table 17.2: Summary of Main Utilities within the Proposed Pipeline Corridor

Location	Utility Services Identified
Dublin Port and Tolka Quay Road	Gas, Electricity, Water-Mains and Drainage, Telecoms
East Wall Road	Gas, Electricity, Water-Mains and Drainage, Telecoms
Alfie Byrne Road	Gas, Electricity, Water-Mains and Drainage, Telecoms
Clontarf Road	Gas, Electricity, Water-Mains and Drainage, Telecoms
Howth Road	Gas, Electricity, Water-Mains and Drainage, Telecoms
Copeland Avenue	Gas, Electricity, Water-Mains and Drainage, Telecoms
Malahide Road (R109)	Gas, Electricity, Water-Mains and Drainage, Telecoms
Malahide Road (R139)	Gas, Electricity, Water-Mains and Drainage, Telecoms
Clonsaugh Road	Gas, Electricity, Water-Mains and Drainage, Telecoms
Athletic Union League (AUL) Sports Complex and M1 motorway	Electricity, Water-Drainage, Telecoms
Dublin Airport Long term Airport Carpark (Red) and Swords Road	Gas, Electricity, Water-Mains and Drainage, Telecoms
Dublin Airport /Fuel Storage Depot	Gas, Electricity, Water-Mains and Drainage, Telecoms

Table 17.1 is not a definitive list and there may be additional unknown services in each area.

17.3.2 Non-Renewable Resources

Non-renewable resources include aggregate resources and water supply.

Aggregates from quarries and pits by their nature can only be worked where they occur. Thus there is a need to identify and protect aggregate resource areas to ensure that sources can meet future aggregate demands. There are no quarries or pits within the pipeline corridor. The nearest are Feltrim Quarry, c. 2 km north east of Stockhole Lane and Huntstown Quarry, c. 2.5 km south west of the airport.

Water supply is a non-renewable resource if the water resource is not carefully managed. The supply and demand for high quality drinking water in Dublin is finely balanced with water restrictions occurring in the inner city during times of shortage. Poulaphouca and Vartry Reservoirs, located in Wicklow, are the two major sources of Dublin's drinking water. This will remain the case in the short to medium term pending increased production, storage and delivery capacity. The Dublin Region Water Supply Project is in the process of identifying a new water supply source to avoid shortages of drinking water in the future.

Fingal's water supply currently comes from the Liffey via Leixlip water treatment plant and the Bog of the Ring water supply scheme which supplies drinking water from groundwater resources. The Liffey supplies a significant volume of Dublin City's drinking water resources as well as a treatment plant at Ballyboden. There are also three water reservoirs at Saggart, Stillorgan and Ballycoolin.

17.3.3 Renewable Resources

DCC and FCC in their respective development plans, promote energy efficiency, increasing the use of renewable energy and improved energy performance of all new building developments. The Councils support the development of enhanced energy supplies to the County, with an emphasis on renewable energy supplies such as wind energy, solar, geothermal, hydro-energy and bio-energy.

DCC has also carried out a feasibility study on the implementation of a citywide district-heating network and proactively promotes its benefits and encourages its provision.

There are no existing large scale renewable resource industries within 100 m of the proposed pipeline corridor nor has any received permission and are not yet built.

17.4 Summary of Key Possible Impacts

17.4.1 Utilities Infrastructure

Construction

Potential impacts on service utilities may occur during trench excavation which have the potential to lead to a disruption in service.

Operation

Consultations with DCC and FCC highlighted concerns in relation to the impact of a leak from the proposed aviation fuel pipeline on services in its vicinity. A number of studies have been conducted in the US and UK relating to migration of chemical compounds, including hydrocarbons, through pipe walls.

A study carried out by Feng Mao and supported and published by the American Water Works Association in 2009 entitled "Impact of Hydrocarbons on PE/PVC Pipes and Pipe Gaskets" reviewed the susceptibility of different piping systems to permeation of organic compounds.

The executive summary of this publication states:

- The overall impact of permeation on the water industry is relatively small. Reports of permeation of water mains are rare, with one incident per 14,000 miles of mains.

- Data obtained from the survey described in this report were not sufficient to draw conclusions regarding the thresholds of hydrocarbon contamination that would result in hydrocarbons permeation and require a utility to choose more resistant pipe or gasket materials.

In laboratory testing the PVC pipe is not affected by hydrocarbons to the same extent as PE. In terms of reported incidents there are more records of incidents with PVC pipe than PE.

Decommissioning & Re-Validation

The activities associated with the decommissioning and re-validation of the proposed pipeline will not result in impacts on utilities.

17.4.2 Non-Renewable Resources

Construction

The estimated total volume of material to be excavated and removed from site is approximately 15,120 m³, with a similar volume of material being required as backfill. A breakdown of the quantities of imported material required is as follows:

- | | |
|-------------|----------------------|
| • Surfacing | 3,024 m ³ |
| • Leanmix | 6,048 m ³ |
| • Granular | 5,397 m ³ |

All excavated material will be removed from site by a permitted contractor to an appropriate facility for recovery where possible.

Direct impacts on water supply schemes in DCC and FCC will not occur as the pipeline is not located in proximity to water sources or treatment plants. Impacts on both groundwater and surface water quality are discussed in Chapter 12 – Soils, Geology & Hydrogeology and Chapter 13 - Surface Water Quality & Drainage of this EIS.

Operation

The proposed development will indirectly positively impact on non-renewable resources by reducing the quantities of fossil fuel used in the current practice of transportation of aviation fuel by road tankers.

Decommissioning & Re-Validation

Water will be required in the decommissioning of the pipeline and the revalidation of the pipeline as outlined in Chapter 3 – Description of the Proposed Development, which will be sourced from mains supply.

17.4.3 Renewable Resources

The proposed development will not give rise to impacts on renewable resources or potential future renewable resources within the vicinity of the pipeline.

17.4.4 Do-Nothing Impact

If the proposed pipeline does not proceed, the number of road tankers using public roads will increase to meet the increased demands of Dublin Airport.

Given the urban nature of the proposed pipeline route through DCC's functional area in particular, the addition of new service infrastructure along the proposed pipeline route would be anticipated.

17.4.5 Cumulative Impacts

There is a possibility that the construction programme for the pipeline could overlap with the construction programme for another project such as the installation of other utilities or other road works. Should this occur then there is the potential for cumulative impacts on material assets such as non-renewable resources and/or utilities. However given the timeline for other projects is not known and therefore it is not possible to quantify this impact at this stage, however it should be noted that other projects of this nature will also be required to apply for road opening licences given that the roadway is a regulated environment. Therefore consultation with the local authority will ensure that the risk of multiple projects working in the same areas is minimised/avoided under the road opening licence application stage.

17.5 Mitigation Measures

Construction Mitigation Measures

Due to the considerable number of existing services along the proposed pipeline corridor, the precise position of the route has not been confirmed at this stage. It is proposed to undertake slit trenching as part of the construction works which will identify services along the route. This will minimise the impact on disruption or damage to existing utilities. It is not intended to divert existing services but instead where possible the pipeline will be re-routed within the pipeline corridor. Communication with the services providers will be maintained for the duration of the construction.

Non-renewable resources will be sourced locally as far as possible to minimise transportation distances and indirect impacts on climate change.

Operational Mitigation Measures

Routine operational impacts are all positive and thus no mitigation is proposed.

A set of emergency response procedures is to be put in place to cover the unlikely event of an accident with the pipeline. These will include a communications link to Dublin Port, Dublin City Council, Fingal County Council and Dublin Airport Authority. The plan will be based on existing plans used by the aviation fuel transportation industry in the UK and adapted and modified as necessary to meet local conditions and agreed with the Dublin Fire Brigade. An outline emergency response plan is included in Appendix 3.7 of Volume 3 of the EIS.

The pipeline will be monitored by a SCADA system which will monitor the operations and provide status display, alarm and event history and logging of measurements. A PLC based alarm system will alert the on-call operator using a pager. If the operator fails to respond, a backup callout via 24 hour call centre service will be initiated to the emergency response team.

The procedure for clean-up from a leak is similar to that for a spillage from a road tanker, in relation to the use of Personal Protective Equipment (PPE), notification to statutory bodies, prevention of the spreading of fuel, absorbing fuel and removing or pumping fuel to a tanker.

Decommissioning & Re-validation Mitigation Measures

The quantities of water used in the decommissioning and re-validation process will be minimised as far as practicable. This will include the re-use of the water to test individual sections of the pipeline.

17.6 Residual Impacts after Mitigation

Following the full reinstatement of the construction corridor, there will be no residual impacts on material assets in the area.

While non-renewable resources such as backfill material are required onsite during the construction phase, the proposed development will also positively impact non-renewable resources by eliminating the use of fossil fuel in the transportation of the aviation fuel by road tankers.

In the event that the pipeline is damaged and a leak occurs the residual impact to other material assets will be very low following clean-up/remediation.

17.7 References

Say Kee Ong, James A. Gaunt, Feng Mao, Chu-Lin Cheng, Lidia Esteve-Agelet, and Charles R. Hurburgh *Impact of Hydrocarbons on PE/PVC Pipes and Pipe Gaskets*. 2008/2009.