Chapter 12 Transport
12. Transport

Introduction and Methodology

12.1 This chapter assesses the transport impacts associated with the proposed development. A comprehensive Transport Assessment (TA) has been produced and is contained in Appendix 12.1. The main findings of the TA are summarised below.

12.2 As stated previously, this development will provide a purpose-built waste treatment facility which will produce energy from waste. The facility will process waste which previously was transported to landfill sites at Cottonmount, Mullaghglass and Drumnakelly.

12.3 The TA has been prepared to understand the development proposals in terms of the specific transport and traffic requirements. The TA identifies the transport and traffic activities associated with the new development – both for staff movements and operational activities. It also seeks to quantify the change in traffic movements when compared against the existing situation to identify if any specific mitigation measures are required.

12.4 As part of the development proposals, significant improvements to Boghill Road will be carried out. The sections through the existing Boghill Road and Hydepark Road currently consist of a carriageway of 4m to 6.2m wide, with a verge of approximately 1m and associated hedges.

12.5 In order to improve the current road standard and provide a safe means of access for the large vehicles which will access the proposed facility on a regular basis, Boghill Road will be designed to provide a 6.0m carriageway along straight sections with widening on bends up to 7.0m as required by the design standard TD9/93 to facilitate the swept path of longer vehicles. There will also be a varied verge width along the length of Boghill Road to enable required forward visibility and visibility from accesses, a 2m footway on the northern side, earthworks slopes and a 3m maintenance strip and boundary fence (final specification to be agreed with DRD Roads Service). The Hydepark Road/ Boghill Road priority junction will also be improved to current design standards and enhanced junction visibility.

12.6 An (Automatic Traffic Counter) ATC was located along Boghill Road and Hydepark Road to determine the 85th percentile speed to facilitate the design criteria for the proposed road improvements to Boghill Road and the Boghill Road/ Hydepark Road junction improvement.


12.8 The TA has assessed the impact of the development proposals in terms of the following:

- Accessibility to the site (and local area) by non-car modes, such as public transport, walking and cycling, as well as access for those whose mobility is impaired; and
• Accessibility to the site by private vehicles and the impact of development traffic on the site access and surrounding road network.

12.9 An operational assessment of the site access and other key junctions in the vicinity of the site has been undertaken using standard junction modelling software. The traffic models were calibrated and validated utilising traffic survey count data collected on the 12th February 2013 as well as on-site traffic queue length observations. The assessments have taken into consideration the existing ‘baseline’ traffic conditions as well as forecast year traffic conditions in the opening year of 2018 and the forecast years of 2028 and 2033.

12.10 The forecast traffic flows have also taken into consideration the level of traffic previously experienced at the site as a result of established quarrying activities. They also reflect the change in traffic movements as a result of the transfer of waste from the existing land-fill facilities to the proposed development.

12.11 Traffic issues associated with the construction of the proposed development have also been considered.

12.12 In order to assess the significance of environmental impacts (after mitigation) the following criteria have been used:

• Neutral: where there will be no overall impact;

• Slight: where impacts will be observable but where the scale of the impact is unlikely to be of material significance in the locality;

• Moderate: where impacts could occur which will have effects on factors recognised as being of local importance or implication;

• Substantial: where impacts could occur which have implications for factors which are of recognised regional importance; and

• Severe: where the potential impact is likely to affect a matter of recognised national or international importance, or affect a recognised national or international guideline or standard, or to be of major implication to the character or context of the area in which the feature or factor is located.

12.13 As part of this assessment, indirect impacts, cumulative impacts and impact interactions have also been considered.

**Explanation of Baseline Conditions**

12.14 Existing traffic conditions have been ascertained through on-site observations and collection of traffic data.

12.15 Initial traffic analysis was undertaken based upon traffic data collected in 2010. However, this has been supplanted by a more recent data collection exercise. Manual Classified Counts

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1 Chapter 5, Chapter 8 and Chapter 9 of Atkins TA
(MCCs) and queue length surveys were undertaken on Tuesday 12 February 2013 at key junctions in the vicinity of the development as previously identified at the scoping stage (see Figure 12.1):

- Junction 1: Hydepark Road / Boghill Road;
- Junction 2: Hydepark Road / Hightown Road;
- Junction 3: Mallusk Road / Hightown Road; and
- Junction 4: Mallusk Road / Hydepark Link Road / Scullions Road.

![](source maps.google.co.uk)

**Fig 12.1 Traffic Survey Locations (source maps.google.co.uk)**

12.16 To provide further context for the assessment of traffic impacts, baseline traffic data collected on 12\textsuperscript{th} February 2013 was growthed using typical values for the Seasonality Index as per Table 6/1 of the COBA Manual (DMRB Volume 13, Section 1, Part 4 Chapter 6) for each road type to estimate the Annual Average Daily Traffic (AADT) flows for:

- Scullions Road - (Approx 20,000 two-way vehicles per day);
- Mallusk Road - (Approx 12,000 two-way vehicles per day);
• Hightown Road – (Approx 9,000 two-way vehicles per day);
• Hydepark Road – (Approx 4,000 two-way vehicles per day); and
• Boghill Road - (Approx 204 two-way vehicles per day).

![Annual Average Daily Traffic Flow (AADT)](image)

**Fig 12.2 Daily Traffic Flows**

12.17 The proposed development site is located in an existing quarry which is accessed from Boghill Road. This is a rural road connecting Hightown and Glengormley to the wider rural areas between Belfast and Antrim. The overall application site including Boghill Road improvements, operations and construction area will occupy approximately 52.4 hectares.

12.18 The site of the proposed operational development is a basalt quarry. The quarry has full planning consent for mineral extraction and associated activities. Whilst output from the quarry varied over recent years it has previously generated upwards of approximately 400,000 tonnes per year. The quarry retains the capability to commence full time production immediately.

12.19 Figure 12.3 illustrates the one way daily traffic movements associated with the quarry activities. This generated significant traffic volumes with heavy goods vehicle movements in the range of 80 to 400 vehicles movements (two-way) per day, peaking in year 2000. For assessment purposes the TA assumed lowest observed levels of 80 vehicles two-way. The vehicles used for previous quarry activities were OGV1 and OVG2 vehicle types.
12.20 At present existing arc21 Council waste is currently being transferred from local council depots to existing waste facilities at:

- Cottonmount site, located off B95 Mallusk Road, Mallusk, County Antrim:
- Mullaghglass site, situated off A501 Mullaghglass Road, approximately 5 miles north-west of Lisburn, County Antrim; and
- Drumnakelly site, situated off Demesne Road, approximately 2 miles west of Seaforde, County Down.

12.21 Figure 12.4 identifies the council utilisation of these landfill sites (as of March 2013 when the Transport Assessment was prepared) and demonstrates that Cottonmount was the predominant facility for treating waste within the arc21 group of councils. To inform the Transport Assessment, information was gathered by arc21 over a period of approximately 8 months to fully understand the type of vehicles used, the loads carried and the routes travelled. This substantial body of information provided a valuable baseline of recent activity in the Council areas.

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However, the Councils within arc21 regularly review their use of landfill sites and these contracts are subject to competitive tendering. A recent review has resulted in a number of the councils making changes to their waste contracts as of April 1st with the result being that only two councils now continue to use Cottonmount:- Larne and Newtownabbey. As these changes have occurred relatively recently there is only limited data available relating to the new arrangements. However, the Transport Assessment was updated to include sensitivity analysis to better understand the potential impact of these changes on the traffic impact analysis. The sensitivity testing therefore included consideration of a potential worst case scenario whereby no arc21 councils utilised Cottonmount and therefore all traffic destined for the Hightown Quarry site would be considered as new to the Mallusk area. This sensitivity analysis concluded that the findings of the Transport Assessment remain valid.

Cottonmount Landfill site is located off the Mallusk Road (see Figure 12.5).
12.24 As presented in Figure 12.4, Drumnakelly and Mullaghglass landfill sites received waste from Down District Council and Lisburn City Council respectively. However as both landfill sites are located outside the local road network adjacent to the Becon Hightown project, existing traffic movements in the vicinity of the site are not relevant to our baseline.

12.25 It is however helpful to understand the existing waste levels associated with the landfill sites prior to the contractual change to enable a daily profile of traffic travelling to the proposed site as this waste will be transferred to the proposed Hightown site once operational. Figure 12.6
shows that there were a total of 75 one way vehicle movements associated with Cottonmount. Given the propensity for Council waste contracts to change sensitivity analysis has been undertaken as part of the transport assessment to ascertain the potential impact if the Cottonmount Council waste disposal contracts were to vary again in the future. The core analysis presented in the TA is based on contracts as of March 2013. However we understand that these waste contracts come up for competitive tendering at regular intervals. The sensitivity testing in the TA therefore ensures the analysis is robust.

Roads Safety

12.26 Atkins has consulted with PSNI Statistics team to obtain collision data on the road network likely to be affected by the development traffic over the three year period April 2010 to March 2013.

12.27 In summary, accident levels within the immediate vicinity of the proposed site are minimal over the past three years with 6 slight incidents recorded at the Hydepark Road/ Upper Hightown Road junction. At the Mallusk Road/ Hightown Road only 1 slight collision was recorded with 1 serious accident and 10 slight accidents recorded at the Mallusk Road/ Hydepark Link/ Scullions Road, which is the main access into the Mallusk area. Due to the confidential nature of the information, limited accident data is available to the public.

12.28 To enhance road safety in the vicinity of the site road improvements will be provided in the form of enhanced visibility at the Boghill Road/ Hydepark Road junction and widening of the Boghill Road to deliver betterment to the existing alignment and forward visibility at this location.

Explanation of Proposed Operational Movements

12.29 The proposed site will have the capacity to accept up to 300,000 tonnes of waste annually and incoming waste will consist of a number of elements:

- Local council waste currently deposited at Cottonmount landfill will be diverted to the site (from local council facilities noted in Figure 12.4);
- Lisburn City Council waste currently deposited at Mullaghglass landfill will be diverted to the site;
- Down District Council waste currently deposited at Drumnakelly landfill will be diverted to the site; and
- Third Party EFW Waste from varied areas within the arc 21 area will be transferred to the site.

12.30 The proposed level of operational waste vehicles which will be transferred to the Hightown site is 143 vehicles arriving and 143 vehicles departing the site in a typical daily weekday. This equates to a total of 286 two way vehicles typically associated with the proposed site. During

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2 Chapter 6 of Atkins TA
3 Chapter 8 of Atkins TA
peak periods there will be 32 two-way operational vehicles during the AM peak (07:45-08:45) and 2 two-way operational vehicles during the PM peak (16:45-17:45). Figure 12.7 graphically shows the daily profile of operational vehicles arriving and departing the site on typical weekday.

![Figure 12.7 Proposed typical daily operational traffic movements](image)

**Fig 12.7 Proposed typical daily operational traffic movements**

*The anticipated vehicle movements for the proposed development have been assessed on a total of 286 two way vehicle movements (143 one-way daily vehicle movements) as presented in Table 8.11 of the TA. The vehicle profile (as illustrated above in Figure 12.7 shows a total of 139 one-way daily vehicle movements (equating to 278 two-way daily vehicle movements). This is due a rounding error as a result of the collation and disaggregation of multiple large data sets provided by the Councils. The difference equates to 4 vehicles arriving and 4 vehicles departing the site per day. The TA has assessed traffic impacts associated with the higher 286 two way flow and is therefore robust.

12.31 The majority of movements of vehicles in and out of the site will be undertaken outside of peak hours to avoid unnecessary delays and ensure efficiency in operations. The waste operation hours for the site will be between 07:00 and 18:00 during the weekdays and therefore waste operational vehicles will only enter and depart the site during this time. Waste deliveries will also occur on Saturday mornings although there will be no Sunday deliveries.

12.32 The key changes in terms of traffic movements within the Mallusk area are:

- Removal of Hightown Quarry traffic;
- Re-distribution of existing Cottonmount traffic;
- Additional traffic movements from other waste treatment centres used by arc21 councils; and
- Additional traffic movements from other third party waste.
12.33 There are four primary routes which operational vehicles associated with the Waste Treatment Facility can utilise from the M2 Motorway when arriving/departing to/from the site, they are as follows:

- B95 Mallusk Road;
- Hightown Road;
- Upper Hightown Road; and
- Hydepark Road.

12.34 Figure 12.8 illustrates the anticipated vehicle routing of operational vehicles associated with the Waste Treatment Facility.

![Anticipated vehicle routing for operational traffic](image)

**Fig 12.8 Anticipated vehicle routing for operational traffic**

12.35 The majority of operational vehicles will arrive and depart via the M2 motorway as this is the most direct route to onward journeys to the various Council depots.

12.36 Hightown Road will be the designated route from the M2 for vehicles during the construction stage, however Mallusk Road/ Hydepark Road may occasionally be used as an alternative route subject to weather conditions, road closures and roadworks.

12.37 For further information relating to existing and proposed traffic movements please refer to the Transport Assessment in Appendix 12.1.
Predicted Environmental Effects and their significance (Construction)\(^4\)

12.38 Traffic movements associated with the construction phase will include cars and light good vehicles (LGVs) for construction workers as well as heavy goods vehicles (HGVs) delivering construction materials and plant to the site. Due to the movement of materials and the nature of construction sites a potential exists for the spillage of materials and carrying of soil from the site onto the carriageways. A potential also exists for the disturbance of adjacent landowners and people using the road network in the area.

12.39 A separate Construction Management Plan (CMP) has been prepared to address the detailed procedures, sequencing and construction methodology anticipated by the project team engaged in the planning, liaison, and construction of the project. The plan outlines detailed proposals for temporary traffic and environmental management measures to be adopted during construction and provides supplementary information on detailed construction practice that will be adhered to in the development of the site.

Predicted Environmental Effects and their significance (Operation)\(^5\)

12.40 The Traffic Impact Assessment involved operational assessments of the site access, Boghill Road/ Hydepark Road junction and Hydepark Road/ Upper Hightown Road/ Hightown Road junction. These were identified as being locations that may potentially be impacted upon by the additional development-generated traffic. The TA has concluded that the potential operational impacts associated with this development are not significant and are localised in their area of influence.

12.41 The operational assessment of the site access situated on Boghill Road has demonstrated that the proposed simple priority junction configuration works well within the capacity limits for the assessed opening year (2018) and design years (both 2028 and 2033).

12.42 The assessment of both off-site junctions demonstrated that the junctions will operate well within capacity thresholds during both morning and evening peak periods in the opening year of the development (2018) and both design years (2028 and 2033). The assessment also considers the potential impact of the completion of the Hightown Link road which is expected to reduce traffic volumes along Hightown Road.

12.43 The TA also includes a comprehensive assessment of historical and forecast traffic data as well as a full review of existing pedestrian facility in the vicinity of the site. In order to provide a robust assessment and enable a clearer understanding of the overall impacts of the proposed development the vehicle movements associated with the previous quarry and previous haul routes have been netted off the total operational and staff traffic associated with the proposed waste treatment facility. The TA has demonstrated that the proposed HGV movements associated with the new waste facility will be less than previously experienced when the quarry was operating at peak output levels. Although there will be an increase of operational traffic to

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\(^4\) Chapter 4 of Atkins TA
\(^5\) Chapter 7, Chapter 12 and 13 of Atkins TA

arc21 Residual Waste Treatment Project: Hightown Quarry
the site the junction operational assessments have indicated that the junctions perform within sufficient capacity threshold limits.

12.44 The assessment has also considered whether the opening of the proposed Energy from Waste facility will have any material impact on pedestrian facilities at the Hightown Road which serves a number of residential developments. The TA states that the existing pedestrian facilities are considered excellent with a good standard of footway and a signalised pedestrian crossing adjacent to Edmund Rice College.

12.45 On that basis it is concluded that the operation of the waste facility will not raise potential issues of (pedestrian) severance of Hightown Road as a result of increased traffic volumes.

Description of Proposed Mitigation Measures (Construction)\(^6\)

12.46 During the construction phase suitable traffic management arrangements will be put in place to control traffic in all of the working areas. All proposed measures will be agreed in advance between the appointed contractor and the local Roads Service section office. Close liaison between the contractor and the section office is essential during the construction period to minimise the risk of any issues arising. It will also ensure that if unexpected problems occur, then appropriate remedial action can be taken quickly.

12.47 As stated, a CMP has been prepared to address the detailed procedures, sequencing and construction methodology anticipated by the project team and outlines proposals for traffic and environmental management measures to be adopted during construction. It also includes proposals for diversionary routes required for the upgrade of the Boghill Road.

Description of Proposed Mitigation Measures (Operation)\(^7\)

12.48 The TA has demonstrated that the proposed site access and key junctions on the local road network will operate satisfactorily throughout the predicted lifespan of the facilities. The development proposals include the upgrade and widening of the Boghill Road to enhance forward visibility and improvements to provide adequate visibility splays at the Boghill Road/Hydepark Road junction and forward visibility on Hydepark Road.

12.49 Direct access to the site by public transport and walking are limited, however the provision of a new footway will be provided along Boghill Road and cycle parking facilities will be provided within the site to encourage travel to the site via walking and bicycle. Within the site, footways will be provided to facilitate ease of access for all. Routes will be clearly identified and supported by appropriate signage. Pedestrian, wheelchair and cycle access will be segregated from the vehicle access and will be designed to include minimal crossing points.

12.50 It is anticipated that the majority of visitors will travel by coach to the site, the majority of which would be expected to be school parties. Two coach spaces have been provided within close vicinity of the visitor car park. Sufficient parking spaces for staff and visitors have also been provided.

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\(^6\) Chapter 4 of Atkins TA
\(^7\) Chapter 7 and Chapter 12 of Atkins TA
Description of Residual Effects and their Significance taking Mitigation into account (Construction and Operational)\(^8\)

12.51 The TA has identified the future traffic movements for the new facility and potential locations on the highway network that may experience some impact. Operational assessment of the relevant junctions has demonstrated that there will be no tangible reduction in highway performance as a result of development traffic. The impact of the proposed development on transport issues is therefore assessed as neutral.

12.52 A CMP has been developed to ensure that the construction phase of the development will have minimal impact on the site or its general vicinity. The impact during the construction phase of the proposed development on transport is assessed as moderate due to relative significant traffic volumes and diversionary routing during the construction period. However it should be noted that this will be a short term impact.

12.53 The development proposals involve upgrading and widening of Boghill Road and improvements to the visibility splays at the Boghill Road/ Hydepark Road junction and forward visibility on Hydepark Road. These improvements will improve road safety and the general convenience of road users.

12.54 In terms of indirect impacts it is considered that transport could have potential indirect impacts on ecology, landscape, the water environment, noise and air quality. These impacts relate to both the construction and operational processes which will result in implications for the transport network. These indirect impacts are considered in detail in the various relevant chapters of this Environmental Statement and related chapters should be referenced accordingly.

12.55 Cumulative Impacts are impacts that result from incremental changes caused by other past, present or reasonably foreseeable actions together with the project under consideration. In summary, it is considered that there will be a slight cumulative effect due to the anticipated increases in traffic on the localised road network.

\(^8\) Chapter 4 and Chapter12 of Atkins TA