15. Traffic and Transport

15.1 Introduction

15.1.1 MVV Environment Limited (the Applicant) has submitted a full planning application for a Carbon Capture Retrofit Ready (CCRR) Energy from Waste Combined Heat and Power (EfW CHP) Facility at Canford Resource Park (CRP), off Magna Road, in the northern part of Poole. Together with the associated CHP Connection, Distribution Network Connection (DNC) and Temporary Construction Compounds (TCCs), these works are the Proposed Development.

15.1.2 The primary purpose of the Proposed Development is to treat Local Authority Collected Household (LACH) residual waste and similar residual Commercial and Industrial (C&I) waste from Bournemouth, Christchurch, Poole and surrounding areas, that cannot be recycled, reused or composted and that would otherwise be exported to alternative EfW facilities further afield, either in the UK or Europe or landfilled.

15.1.3 The Proposed Development would recover useful energy in the form of electricity and hot water from up to 260,000 tonnes of non-recyclable (residual), non-hazardous municipal, commercial and industrial waste each year. The Proposed Development has a generating capacity of approximately 31 megawatts (MW), exporting around 28.5 MW of electricity to the grid. Subject to commercial contracts, the Proposed Development will have the capability to export heat (hot water) and electricity to occupiers of the Magna Business Park and lays the foundations for a future CHP network to connect to customers off Magna Road.

15.1.4 The location and the extent of the Proposed Development is identified by the Red Line Boundary shown on **Figure 1.1**. In total, the Proposed Development covers an area of 10.1 hectares (Ha).

15.1.5 A full description of the Proposed Development is provided in **ES Chapter 3: Description of the Proposed Development**. A list of terms and abbreviations can be found in **ES Appendix 1.1**.

15.1.6 Paul Basham Associates has produced this chapter of the Environmental Statement (ES) to present the environmental assessment of the likely significant effects of the Proposed Development with respect to Traffic and Transport, through the construction, operation and decommissioning phases.

15.1.7 The scope and geographical extent of the Study Area for the assessment were agreed upon with Bournemouth, Christchurch, and Poole (BCP) Highway Authority as part of the pre-application process.

15.1.8 To inform the assessment, a comprehensive Transport Assessment (TA) and Staff Travel Plan (STP) have been prepared and are attached within **ES Appendix 15.1** and **ES Appendix 15.2** respectively. The TA examines in detail the impact of the Proposed Development on the transport system, whilst the STP sets out measures to encourage sustainable travel for staff employed at the EfW CHP Facility. These have been prepared in accordance with national, regional and local planning policy.

15.2 Assessment Criteria & Methodology

Legislative Context, Technical Guidance and Best Practice

Legislative Context

15.2.1 This assessment has been carried out in accordance with 'Guidelines for the Environmental Assessment for Road Traffic', Institute of Environmental Management and Assessment (the IEMA Guidelines).

15.2.2 This ES Chapter also considers the following policy documents:

- National Planning Policy Framework (2021 and consultation draft 2022);
- Bournemouth, Poole & Dorset Local Transport Plan 3 (LTP) 2011-2026; and,
- Bournemouth, Christchurch, Poole & Dorset Waste Plan (2019).

15.2.3 The documents above present highways and transportation policies to ensure and encourage a reduction of vehicle dependency and improve the ability to walk and cycle or promote public transportation. Developments must ensure that a goal of sustainable travel and reducing journey lengths is facilitated.

National Planning Policy Framework (NPPF) (2021)

15.2.4 The NPPF (2021) acts as the central guidance for development planning. A consultation draft of proposed alterations was published in late 2022, but these do not affect transport policy, save for paragraph numbers. The following NPPF extracts are relevant to the assessment and use the paragraph numbering from the 2021 version:

15.2.5 According to NPPF Para. 104, "*transport issues should be considered from the earliest stages of plan-making and development proposals, so that:*

- *The potential impacts of development on transport networks can be addressed;*
- *Opportunities from existing or proposed transport infrastructure, and changing transport technology and usage, are realised – for example in relation to the scale, location or density of development that can be accommodated;*
- *Opportunities to promote walking, cycling & public transport use are identified and pursued;*
- *The environmental impacts of traffic and transport infrastructure can be identified, assessed and taken into account – including appropriate opportunities for avoiding and mitigating any adverse effects, and for net environmental gains; and,*
- *Patterns of movement, streets, parking and other transport considerations are integral to the design of schemes and contribute to making high-quality places."*

15.2.6 Paragraph 110 of the NPPF states *"It should be ensured that:*

- *Appropriate opportunities to promote sustainable transport modes can be – or have been – taken up, given the type of development and its location;*
- *Safe and suitable access to the site can be achieved for all users;*

- *The design of streets, parking areas, other transport elements and the content of associated standards reflects national guidance, including the National Design Guide and the National Model Design Code[1]; and,*
- *Any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree."*

15.2.7 Paragraph 111 of the NPPF states "*development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severed".*

Bournemouth, Poole & Dorset *Local Transport Plan 3 (LTP) 2011-2026*

15.2.8 The LTP covers the period up to 2026 and provides strategies for a 15-year period to deliver first-class transport infrastructure, helping to deliver economic growth, reduction in carbon emissions, equality of opportunity, improved safety, security and health, and improved quality of life. The LTP presents the vision as:

15.2.9 *"A safe, reliable and accessible low carbon transport system for Bournemouth, Poole and Dorset that assists in the development of a strong low carbon economy, maximises the opportunities for sustainable transport and respects and protects the area's unique environmental assets."*

Bournemouth, Christchurch, Poole & Dorset Waste Plan, 2019

15.2.10 Policy 2 of the Waste Plan states that *"Proposals for waste management facilities which… are co-located with complementary activities will be supported unless there would be an unacceptable cumulative impact on the local area".*

15.2.11 Policy 12 relates to Transport & Access, stating:

"*Proposals for waste management facilities which could have an adverse impact as a consequence of the traffic generated will be permitted where it is demonstrated, through either a Transport Assessment or a Transport Statement as appropriate that:*

a. a safe access to the proposed site is provided; and,

b. the development makes provision for any highway and transport network improvements necessary to mitigate or compensate for any significant adverse impacts on the safety, capacity and use of the strategic, primary and/or local road network, railway, cycle way or public right of way. Improvements will be delivered in a timely manner to the satisfaction of the relevant Highway Authority;

Where possible, proposals should have direct access or suitable links with the Dorset Advisory Lorry Route Network. Where this is not possible, appropriate routes to the strategic road network should be utilised.

Sustainable transportation should be explored and used where possible, practical and environmentally acceptable. This could include minimising distances travelled by road and maximising the use of alternative transport modes to road transport. Where proposals are likely to generate significant employment opportunities they should enable the use of public transport where practical."

[1] "Policies and decisions should not make use of or reflect the former Design Bulletin 32, which was withdrawn in 2007." (NPPF 2021)

Baseline Data Collection

15.2.12 The DfT's (Department for Transport) Transport Analysis Guidance (TAG) on Data Sources and Surveys (May 2020) advice states; *"surveys should be carried out during a 'neutral' or representative month, avoiding main and local holiday periods, local school holidays and half terms, and other abnormal traffic periods. However, there can be instances where a particular period (e.g. weekends or school holidays) is of interest, for example in regions with relatively high levels of seasonal tourism. The period for the surveys should be selected with careful consideration of the purpose of the transport model. Neutral periods are defined as Monday to Thursday from March through to November (excluding August), provided adequate lighting is available and avoiding the weeks before and after Easter, the Thursday before and all of the week of a bank holiday, and the school holidays. Surveys may be carried outside of these days/months, ensuring that the conditions being surveyed (e.g. traffic flow) are representative of the transport condition being analysed/modelled."*

15.2.13 With the agreement of the Highway Authority, and in accordance with DfT's TAG requirements, baseline traffic flow information was collected in June 2022. Manual Classified Counts (MCC) took place on 21 June 2022 at six junctions between 07:00-10:00 and 16:00-19:00. The six junctions are listed below and identified in **Figure 15.1**, along with the Red Line Boundary:

- Magna Road (A341)/Arena Way (Canford Resource Park);
- Queen Anne Drive (A341)/Gravel Hill (A349);
- Oakley Hill (A349)/A349/Oakley Hill (B3073);
- Merley Roundabout (A349/A31);
- Magna Road (A341)/Provence Drive/Knighton Lane; and
- Bear Cross Roundabout (A341/A348).

15.2.14 In addition, a 7-day Automatic Traffic Count (ATC) was installed on Magna Road between 19 – 25 June 2022. A desktop review of Personal Injury Accident (PIA) data was also undertaken. Further detailed information on the ATC and PIA data can be found within the TA attached within **ES Appendix 15.1**.

15.2.15 The extent of traffic surveys was informed by the IEMA Guidelines which suggest at paragraph 3.15 that two broad rules-of-thumb could be used as a screening process to delimit the scale and extent of the assessment. These are:

- Rule 1: include highway links where traffic flows will increase by more than 30% (or the number of heavy goods vehicles (HGVs) will increase by more than 30%); and
- Rule 2: include any other specifically sensitive areas where traffic flows have increased by 10% or more.

Figure 15.1: Traffic Survey Locations (Mapping: Open Street Map)

15.2.16 A site visit was undertaken on Friday 19 August 2022 to assess the conditions on the local road network. Photographs were also obtained on the site visit to provide photographic evidence for the TA. Further detail on the Study Area is provided in the TA, see **ES Appendix 15.1.**

Predicting Effects

15.2.17 The significance of the effects of the Proposed Development have been considered in respect of the following subject areas based on the IEMA Guidelines:

- Driver Delay;
- Pedestrian Delay and Amenity;
- Fear and Intimidation;
- Severance;
- Accidents and Safety;
- Visual Effects; and,
- Hazardous Loads.

Driver Delay

15.2.18 The IEMA Guidelines state: *"delays are only likely to be significant when the traffic on the network surrounding the development is already, at or close to, the capacity of the system".* For the Proposed Development, junction assessment modelling has been used to estimate the impact on vehicle delays where necessary.

Pedestrian Delay and Amenity

15.2.19 The IEMA Guidelines state: *"changes in the volume, composition or speed of traffic may affect the ability of people to cross the roads. In general increases in traffic levels are likely to lead to increases in delay".* The IEMA Guidelines do not present thresholds for the assessment of delay significance, therefore assessment is to be taken via the assessor.

Fear and Intimidation

15.2.20 The IEMA Guidelines state that fear and intimidation can be defined as the *"relative pleasantness of a journey"* which includes the relationship of pedestrians and traffic. This is a challenging variable to assess given the emotive factor. However, the IEMA Guidelines suggest the adoption of values from Imperial College Crompton's 'Pedestrian Delay, Annoyance and Risk' (1981) when considering any effect on pedestrian fear and intimidation. This has been shown in **Table 15-1**.

Table 15-1: Level of Pedestrian Delay, Annoyance and Risk (Source: Imperial College)

Degree of Hazard to Pedestrian	Average traffic flow over 18-hour day (vehicles per hour)	Total 18-hour heavy goods vehicle flow	Average Speed over 19 -hour day (miles per hour)
Extreme	1,800+	3,000+	20+
Great	1,200-1,800	2,000-3,000	15-20
Moderate	600-1,200	1,000-2,000	10-15

Severance

15.2.21 The IEMA Guidelines defines severance as "*the perceived division that can occur within a community when it becomes separated by a major traffic artery' that 'separates people from places"*. This may comprise the difficulty to cross existing roads or the physical barrier of the carriageway. There are a variety of indicators for assessing the significance of the relief from severance. The IEMA Guidelines state: *"changes in traffic flow of 30%, 60% and 90% are regarding as producing slight, moderate and substantial changes in severance respectively".*

Accidents and Safety

15.2.22 The IEMA Guidelines consider variables comprising traffic speed, flow and structure, as well as vehicle conflict and pedestrian activity anticipated to be enhanced/increased as a result of developments. PIA data assessments are an efficient way of monitoring safety, and TAs usually incorporate this assessment as a part of the existing conditions.

Visual Effects & Hazardous Loads

15.2.23 The IEMA Guidelines acknowledge that the changes in traffic resulting from a development will have little visual impact. A by-product of the EfW CHP Facility is Air Pollution Control residue (APCr) which is exported in sealed tankers. This would be transported in a safe manner in accordance with relevant regulations, and the number of these movements is limited. This matter is therefore not considered further.

Establishing Significance of Effects

15.2.24 The relevant generic significance criteria have been summarised within **Table 15-2**.

Table 15-2: Criteria for Establishing Significance of Effects

Significance of Effect	Description
Major	Likely to be important considerations at a regional or district scale
Moderate	Likely to be important at the local scale
Minor	Generally related to local issues but the effects are relevant in the detailed design of the development
Negligible	Effects are generally beneath levels of perception

15.2.25 The application of the effect significance to the various transport related subjects is set out in **Table 15-3**. Given the Proposed Development would generate a high proportion of movements by large vehicles, the guidelines have also been applied in respect of Heavy Goods Vehicles (HGVs) in isolation. For the purposes of this assessment, the term HGV includes non-articulated goods vehicles with multiple axles.

Table 15-3: Magnitude of Impact (Based on IEMA Guidelines)

Subject	Magnitude of Impact			
	Major	**Moderate**	**Minor**	**Negligible**
Severance	Change in highway link traffic flow of over 60%	Change in highway link traffic flow of 30% to less than 60%	Change in highway link traffic flow of 10% to less than 30%	Change in highway link traffic flow of less than 10%
Driver Delay	Change in traffic flow through junction of over 30%	Change in traffic flow through junction of 10% to less than 30%	Change in traffic flow through junction of 5% to less than 10%	Change in traffic flow through junction of less than 5%
Pedestrian Delay	Change in highway link traffic flow of over 60%	Change in highway link traffic flow of 30% to less than 60%	Change in highway link traffic flow of 10% to less than 30%	Change in highway link traffic flow of less than 10%
Pedestrian Amenity	Change in highway link traffic flow of over 60%	Change in highway link traffic flow of 30% to less than 60%	Change in highway link traffic flow of 10% to less than 30%	Change in highway link traffic flow of less than 10%
Fear and Intimidation	Change in highway link traffic flow of over 60%	Change in highway link traffic flow of 30% to less than 60%	Change in highway link traffic flow of 10% to less than 30%	Change in highway link traffic flow of less than 10%
Accidents and Safety	Change in highway link/junction traffic flow of over 30%	Change in highway link/junction traffic flow of 10% to less than 30%	Change in traffic flow through junction of 5% to less than 10%	Change in traffic flow through junction of less than 5%

Receptor Sensitivity

15.2.26 A magnitude of change in scale in respect of each of the IEMA Guidelines subject areas is defined in **Table 15-4**, whilst the relevant sensitivity of receptors scale is identified in **Table 15-5**. The thresholds have been derived with reference to the IEMA Guidelines, best practice and professional judgment.

Table 15-4: Sensitivity of Identified Environmental Receptor

Receptor value / sensitivity	Receptor type
Very High	Receptors of greatest sensitivity to traffic flows, such as accident 'hotspots or accident prone areas, schools, playgrounds, retirement homes, areas with no footways and high pedestrian footfall.
High	Traffic flow sensitive receptors, including congested junctions, hospitals, community centres, narrow footways.
Medium	Receptors with some sensitivity to traffic flow such as conservation areas, listed buildings, tourist attractions and residential areas. Anthropological receptors include for pedestrians and cyclists.
Low	Receptors with low sensitivity to traffic flows, sites situated distant from affected roads/junctions.
Negligible	Road network not affected

15.2.27 To assess the predicted level of effect, the assessment considers the magnitude of impact and the sensitivity of the Receptor. Whilst the magnitude of impact is a quantitative process, professional judgement determines a Receptor's sensitivity.

Table 15-5: Magnitude of Impact on Identified Environmental Receptor

Receptor Sensitivity	Magnitude of Impact			
	Major	**Moderate**	**Minor**	**Negligible**
High	Major	Major	Moderate	Negligible
Medium	Major	Moderate	Minor	Negligible
Low	Moderate	Minor	Minor	Negligible
Negligible	Negligible	Negligible	Negligible	Negligible

15.2.28 For the purposes of this assessment, the level of impact is considered significant in circumstances when the overall magnitude of effect is moderate or above. In addition to the significance of the impact, the nature of the impact, being either beneficial, negligible, or adverse, has also been considered accordingly.

15.2.29 **Tables 15-2** to **15-5** have been derived with reference to the IEMA Guidelines, such that Locations in the Study Area that would experience an increase in traffic flow of 10% or more are considered in respect of Severance, Pedestrian Delay and Amenity, and Fear and Intimidation. In respect of accidents and safety, locations with a poor collision record are considered where they would experience an increase in traffic flow of 5% or more. In respect of Driver Delay, a change in traffic flow through the junction of 5% or more is considered. These are considered in combination with the sensitivity of the receptor to come to a judgement on the magnitude of the impact. Professional judgement has been exercised as to whether or not mitigation is required and, if needed, what that should comprise.

Geographical Scope

15.2.30 The extent of the Study Area to be assessed was agreed with the Highways Authority during pre-application discussions as detailed in **ES Appendix 15.3**. The Study Area extends from the A31 to the north-west of the Proposed Development, to the Bear Cross roundabout to the east, see **Figure 15.1**.

15.2.31 The Proposed Development is situated within close proximity to public transport, as well as walking and cycle routes. The Proposed Development is approximately 5.6km north-west of Branksome Railway Station and the closest bus stops to the site are the 'Canford Business Park' bus stop and 'Canford Park Arena' bus stop, situated on the A341, approximately 170m north-west and 170m south-east, respectively. A description of the existing local road network is detailed below.

15.2.32 In general, the local road network is considered to be of medium receptor sensitivity, with some high sensitivity areas in the form of congested junctions.

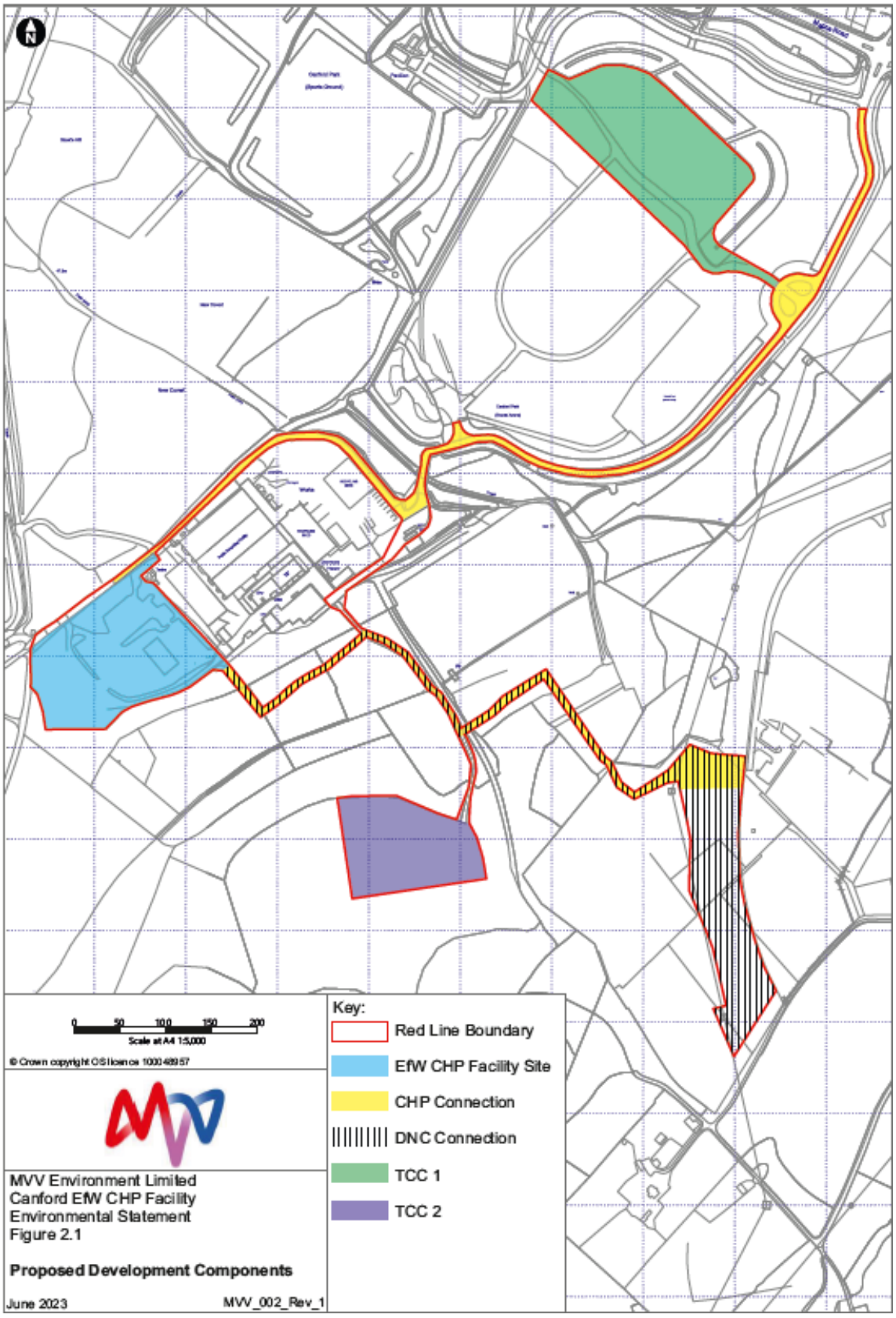
Canford Resource Park (CRP) – Arena Way

15.2.33 CRP is connected to the public highway at Magna Road (A341) by a private single carriageway access road. This road, Arena Way, does not have roadway lane demarcations until the signalised junction at Magna Road. Arena Way serves a northeast-southwest alignment and is approximately 7.5m in width, and approximately 815m in length. Arena Way is subject to a 20mph speed limit, featuring traffic calming speed reduction measures including semi-permanent gated chicanes that are placed three times along the stretch of the carriageway. The EfW CHP Facility Site is located within CRP where vehicles are subject to a 15mph speed limit. To access the EfW CHP Facility Site from Arena Way, vehicles travel along an existing haul road located alongside the northern boundary of CRP. Arena Way also provides access to Canford Park Sports Pitches and Canford Park Arena.

15.2.34 Arena Way meets Magna Road at a signalised crossroads, the northern fourth arm being formed by the access road to a Garden Centre. Staggered pedestrian crossings with tactile paving and dropped kerbs are in place over the southern, western and northern arms of the junction offering controlled pedestrian facilities. Advance stop lines are in place for cyclists at the signalised crossroads.

15.2.35 An informal pedestrian footway runs parallel to the south of Arena Way, providing access to CRP from Magna Road. **Figure 15.2** demonstrates the relationship between Arena Way (which the north eastern part of the CHP Connection follows) and the Proposed Development.

Figure 15.2: Arena Way Location – Identified as the north eastern part of CHP Connection



Magna Road (A341)

15.2.36 Magna Road (A341) is a single carriageway road that stretches approximately 2.95km with a northwest-southeast alignment. Magna Road connects to Queen Anne Drive to the west and the Bear Cross Roundabout to the east, the latter providing access to Ringwood Road (A348) that heads south into Poole and north towards the A31.

15.2.37 In the vicinity of the junction with Arena Way, the carriageway is subject to a speed limit of 40mph, but actual speeds are likely to fluctuate from this due to the signalised traffic lights stopping/slowing vehicle movements.

15.2.38 Furthermore, BCP are in the process of improving facilities for pedestrians, cyclists and bus users across various parts of the road network, as part of their Transforming Travel scheme. This includes the A341 from Gravel Hill to Bear Cross roundabout and beyond.

15.2.39 At the time of writing, work has been completed along the A341 from Gravel Hill to Knighton Lane. The works include implementation of a shared use path on the northern side of Queen Anne Drive and on the northern side of Magna Road between the Hamworthy Club and Arena Way. To the east of Arena Way, the existing footway on the northern side of Magna Road has been converted to a shared cycling/walking path and the existing shared path on the south side of Magna Road has been widened, up to Knighton Lane. Improvements at junctions with minor roads to assist pedestrians/cyclists have been completed and bus stop facilities have also been improved with raised access. Further work is estimated to begin in Spring 2023 between Knighton Lane and Bear Cross roundabout.

Provence Drive

15.2.40 Provence Drive runs broadly parallel to Arena Way, situated to the south-east. It provides access to a recent residential development and employment uses. It meets Magna Road at a signalised crossroads, the fourth arm being formed by Knighton Lane.

Temporal Scope

15.2.41 The years of assessment for the operational phase were agreed with the Highway Authority (see **ES Appendix 15.3**) covering up to 2033, representing the end of the Local Plan period, also being six years post the anticipated EfW CHP Facility opening date of 2027. The construction period of the Proposed Development is anticipated to be 36-months, beginning in 2024.

Consultation

Statutory Consultation

15.2.42 The extent of the Study Area, approach to surveys, trip generation, distribution and extent of junction modelling assessments were agreed with the Highway Authority during pre-application discussions, attached as **ES Appendix 15.3**. In addition, a formal EIA Scoping Opinion was issued in October 2022 (see **ES Appendix 5.2**).

15.2.43 Initial analysis was undertaken to quantify the number of vehicle trips likely to be generated, and where these were likely to be travelling to/from. This informed the extent of the Study Area and traffic surveys to be undertaken, which were agreed with the Highways Authority.

15.2.44 Once the traffic data was received, further analysis was completed to quantify the percentage increase in vehicle movements through each junction within the Study Area during the peak periods. On the basis that the percentage increases were negligible across

all junctions in the Study Area, it was agreed with the highway authority that junction modelling was only required for the Arena Way/Magna Road/Garden Centre junction.

15.2.45 To assess cumulative impacts on the local highway network, the requirement to incorporate committed development flows within the assessment was agreed with the Highway Authority. Consequently, traffic flows from the following schemes have been incorporated:

- UE1 North of Merley – 600 dwellings & 62 bed care home (19/00955/P);
- UE2 North of Magna Road – 695 dwellings, community hub & 60 bed care home (19/00237/P);
- Land west of Wheelers Lane – 45 dwellings (21/00620/F);
- Canford Paddock – 324 dwellings (17/00008/F); and,
- Canford Magna Golf Club – Bournemouth FC Training Ground (17/01196/F).

15.2.46 The calculations and junction modelling results are detailed within the TA attached within **ES Appendix 15.1**.

Community Consultation

15.2.47 As part of the Applicant's commitment to engage with the local community, three public exhibitions were held between 12 and 14 January 2023. The exhibitions occurred at the Hamworthy Club, Magna Road and Bearwood Community Centre, King John Avenue. Feedback from these events is reported in the Statement of Community Involvement that accompanies the planning application.

15.2.48 Concerning traffic and transport, feedback included:

- Concern about the existing capacity of the local highway network to accommodate the additional HGV daily movements.
- How many HGVs will arrive daily and whether or not the export of Incinerator Bottom Ash (IBA) and Air Pollution Control residues (APCr) is included in these assumptions?
- The cumulative impacts of the Proposed Development alongside other committed developments should be assessed.
- Will there be a staff travel plan?
- To avoid existing congestion, would the Applicant consider night-time deliveries?
- Concerning construction and operational HGV access routes to the Proposed Development, the Applicant should avoid unsuitable roads, such as the A438 bridge over the River Stour and towns and villages.
- There is a significant number of construction staff, how will they travel to and from the construction site?
- How many daily HGVs will be required during construction?

15.2.49 Where appropriate, in undertaking this assessment, the community's feedback has been considered and a summary response provided in the **Statement of Community Involvement** (SCI) that accompanies the planning application.

Assumptions and Limitations

Assumptions

15.2.50 The traffic flow information for each of the committed developments has been derived from the TA submitted with each planning application. In some cases, the extent of the network assessed for the committed developments did not fully cover the Study Area for the present scheme, and therefore assumptions have been made as detailed in the traffic flow diagrams in Appendix B of the TA (**ES Appendix 15.1**).

Limitations

15.2.51 A limitation was that a rail strike occurred on the day of the survey assessment which could potentially affect traffic conditions. Some commuters may have instead travelled by car, whilst others may have worked from home. However, the nearest train stations are approximately 5km to the south, and it is considered that in this instance the impact on traffic flows is likely to have been negligible.

15.2.52 Indeed, inspection of the ATC data for the week shows variation in flows on the day of the MCC was not significantly different from other weekdays.

15.3 Baseline Conditions

Current Baseline

Existing Traffic Conditions

15.3.1 Traffic surveys were commissioned by the Applicant at key links and junctions as part of the highway assessment work. This data is presented within the TA (**ES Appendix 15.1**).

Collision Data

15.3.2 Collision data (PIA data) has been obtained from CrashMap for the highway network in the vicinity of the Proposed Development for the 5-year period ranging from 2017-2021 inclusive. An analysis of the collision data is provided within the TA (**ES Appendix 15.1**).

15.3.3 The analysis confirmed that there have been various accidents along Magna Road, all ‘slight’ in nature. Whilst any accidents are regrettable, the incidents that occurred are not concentrated in one location. Therefore, the PIA data does not indicate any specific highways concern that would worsen as a result of the Proposed Development.

Future Baseline

15.3.4 Future baseline flows have been forecasted by applying TEMPRO Growth Factors, as agreed with the Highway Authority during the pre-application stage. These TEMPRO Growth Factors are set out within the TA (**ES Appendix 15.1**).

15.3.5 The requirement to incorporate committed development traffic flows was confirmed with the Highway Authority at the scoping stage, as set out in **Section 15.2.42**.

15.3.6 This future baseline scenario was compared to quantify the impact on flow specifically attributable to the Proposed Development following the detailed methodology set out within the TA (**ES Appendix 15.1**).

15.4 Inherent Design Mitigation

15.4.1 The co-location of the Proposed Development with existing adjacent uses at the CRP that generate suitable residual waste to be treated by the EfW CHP Facility is likely to reduce the number of off-site vehicle trips that would be generated, if the scheme was not considered to be a stand-alone facility (as per Scenario 1). This is considered further as 'Scenario 2' below.

15.4.2 Many of the inputs to the EfW CHP Facility could originate from two existing adjacent facilities on CRP; namely the Materials Recovery Facility (MRF) and Mechanical Biological Treatment facility (MBT). The transport cost and possibly the disposal costs to the operators of the MRF and MBT would be reduced if they were to utilise the adjacent EfW CHP Facility. Therefore, for commercial reasons, a significant proportion of the inputs to the proposed EfW CHP Facility could come from the MRF and MBT, or in future be direct delivered through the award of waste contracts. As being reasonably likely, this scenario has been assessed; being Scenario 2.

15.4.3 Based on 2021 information from the Environment Agency's Waste Data Interrogator (available at data.gov.uk, accessed on 25/01/23 and last updated 13/01/23), it is likely that of the 260,000 tonnes per annum (tpa) capacity of the EfW CHP Facility, the sources in Scenario 2 could be:

- 30,000tpa from the adjacent MRF;
- 110,500tpa from the adjacent MBT; and
- 119,500tpa from elsewhere.

15.4.4 Therefore, under Scenario 2, only 46% (119.5/260ktpa) of the residual waste delivered to the proposed EfW CHP Facility would generate new trips on the public highway. However, since the existing facilities at CRP are not currently operating to their maximum permitted capacity, the proportion of residual waste generated by existing on-site waste treatment facilities at CRP could be substantially higher. Consequently, further reductions beyond 54% in associated off-site vehicle movements could be achieved; however, this has not been assessed further.

15.5 Potential Environmental Impact and Effects

Construction phase

15.5.1 Construction of the Proposed Development is anticipated to take 36-months. During construction, HGVs and car numbers will vary depending on the particular construction phase and activities. Although temporary, these vehicle trips have the potential to impact upon driver delay on the local highway network.

15.5.2 Based on the forecast of vehicle movements, see **ES Appendix 15.1**, at their peak, around 100 HGVs (Month 10 and 11) and 200 cars (Month 21) would arrive daily.

15.5.3 On average, over the 36-month construction period, 46 HGVs and 103 cars per day are expected. The average number of vehicle movements would therefore be 298 per day.

15.5.4 Month 21 represents the peak month for total vehicle movements. During Month 21 around 60 HGVs and 200 cars would arrive daily; equating to 520 movements.

15.5.5 As set out in **ES Chapter 3: Description of the Proposed Development**, construction will take place over a 12-hour (07:00-19:00) period on weekdays, therefore the majority of staff will arrive outside the standard network peak hours. Construction hours for Saturdays are

08:00-16:00, with no work outside these hours or on Sundays or Public Holidays without prior approval.

15.5.6 Except for a 6-month period during the construction of the DNC, where up to 10 HGVs and 10 cars may use Provence Drive, these trips will be concentrated at the Magna Road/Arena Way junction, given this represents the main access route to the Proposed Development.

15.5.7 The 2022 baseline weekday Average Annual Daily Traffic (AADT) on Magna Road in 2022 is 16,692 vehicles based on the traffic surveys. Of these, 1,617 are HGVs.

15.5.8 Therefore, the average daily construction traffic represents a 1.8% increase in total flow on Magna Road. The peak figure is 3.1%. In respect of HGVs, the increases would be 5.7% and 7.4% respectively.

15.5.9 Beyond this, construction trips disperse across the network and the percentage increases would decrease further into the future with background traffic growth. On this basis, the potential impacts of the overall traffic generated during the construction phase would be negligible with regards to severance, driver delay, pedestrian delay, pedestrian amenity, fear and intimidation, and accidents & safety. It follows that the impact on identified receptors would also be negligible.

15.5.10 Specifically considering the increase in HGVs, the impact falls within the negligible category for all subjects, except Driver Delay & Accidents and Safety, for which the categorisation is Minor. For medium sensitivity receptors within the Study Area, the overall effect is therefore Minor. For the high sensitivity receptors within the Study Area – congestion junctions – the overall effect is categorised as moderate.

15.5.11 Driver Delay has been further considered and quantified in the TA which concludes the impact is immaterial (**ES Appendix 15.1**). Similarly, the safety record of the road network is considered in the TA, with no specific existing concerns identified.

15.5.12 However, it is considered prudent to minimise the impacts of the traffic during the construction phases through a Construction Traffic Management Plan (CTMP), also in response to local community feedback. This will form part of the Construction Environment Management Plan (CEMP), an outline CEMP is provided in **ES Appendix 3.2.**

Operational phase

15.5.13 The methodology and resulting trip generation for the operational phase is detailed within the TA (**ES Appendix 15.1**), the principles of which were agreed with the Highway Authority during the pre-application stage. The resulting trip generation has been detailed below.

HGVs

15.5.14 The Proposed Development seeks permission to process up to 260,000tpa of residual waste. Given the nature of the scheme, the estimates of trip generation on the local road network have been calculated on a first principles basis, informed by data from the Applicant's existing facilities in the UK. The possible residual waste sources are as follows:

- Local authority collected household (LACH) waste from BCP;
- LACH waste from Dorset; and,
- Commercial and industrial waste (C&I) from BCP and Dorset.

15.5.15 The LACW can either be directly delivered by refuse collection vehicle (RCV) or delivered from Waste Transfer Stations (WTS) by articulated HGV (known as a walking floor (WF)). The C&I waste is also delivered either by RCV or WF.

15.5.16 Assuming that all trips will be new and not already coming to the wider CRP, ('Scenario 1'), using reasonable judgement, and based on an assessment of waste arisings and waste management needs, the Applicant anticipates that the likely proportion of waste sources will be as per **Table 15-6**. Additionally, and based on the Applicant's operating experience, **Table 15-6** presents the average net weight of each vehicle. It is, therefore, possible to quantify the number of vehicles that would be generated per annum.

Table 15-6: Calculation of Annual Vehicle Movements

Source	Vehicle	Volume (tonnes)	Average Weight	Vehicles pa
C&I	RCV	54,000	10	5,400
	WF	54,000	24	2,250
LACH	RCV	77,000	8	9,625
	WF	75,000	23	3,261
Total	-	260,000	-	20,536

15.5.17 By dividing the annual vehicle numbers by the number of working days (261 for LACW and 241 for C&I), making an allowance for 5% of RCV and 20% of WFs to deliver on Saturday/Sunday, it is estimated that on weekdays, 56 RCVs (including Direct C&I) and 17 WFs could visit the EfW CHP Facility. In addition, 11 HGVs could visit the site per day associated with collection of the IBA, APCr and the delivery of consumables. Therefore, for Scenario 1, the overall number of HGVs visiting the EfW CHP Facility per day is calculated to be 85 (170 two-way movements).

15.5.18 For Scenario 2, the anticipated number of daily HGVs is reduced to 45 (90 two-way movements) and, as highlighted in **Section 15.4**, this number of vehicle movements could be lower.

LGVs and Cars

15.5.19 Based on the Applicant's estimates, 8 light goods vehicles (LGVs) and 39 cars will visit the EfW CHP Facility Site each weekday; a total of 47 (94 two-way movements). These movements are common to Scenarios 1 and 2.

Total Vehicles

15.5.20 For EIA purposes, the impact of the Proposed Development upon the highway network has been assessed on the basis of both Scenario 1 and Scenario 2.

15.5.21 For Scenario 1, whereby all residual waste is new to CRP, 170 HGV two-way movements and 94 LGV/car two-way movements total 264 daily vehicle movements. For Scenario 2, whereby a significant proportion of residual waste already managed at CRP is received at the EfW CHP Facility, 90 HGV two-way movements and 94 LGV/car two-way movements, totalling 184 daily vehicle movements would be created.

15.5.22 Considered against a baseline AADT of 16,692, Scenario 1 equates to a percentage increase of 1.59% and Scenario 2 to a percentage increase of 1.10%. The percentage increase would further decrease in future years as the baseline flows increase.

15.5.23 Therefore, with reference to the IEMA Guidelines, the impact of the overall development related traffic during the operational phase would be negligible with regards to severance, driver delay, pedestrian delay, pedestrian amenity, fear and intimidation, and accidents and safety. It follows that the impact on identified Receptors will also be negligible.

15.5.24 Turning specifically to the increase in HGVs (including non-articulated goods vehicles), the 2022 baseline HGV AADT on Magna Road is 1,617. By the opening year of 2027, this is forecast to have grown to 1,700, based on TEMPro growth factors.

15.5.25 For Scenario 1, there would be 170 two-way HGV movements. Including the 16 two-way LGV movements (given they are non-articulated goods vehicles), the total would be 186. This would constitute a 10.9% increase in 2027. For Scenario 2, the equivalent figures would be 90 HGV movements, 16 LGV movements, totalling 106; a 6.2% increase in 2027. The percentage increases would decrease over time as the baseline flows increase.

15.5.26 Specifically considering HGV traffic, the impact of Scenario 1 would be minor in respect of severance, pedestrian delay, pedestrian amenity and fear and intimidation.

15.5.27 Based on the IEMA guidelines, the impact would be moderate in respect of driver delay and accidents and safety. For receptors of high sensitivity, the overall impact would be classified as major and for medium sensitivity receptors, the overall impact would be classified as moderate.

15.5.28 However, specific detailed assessments of the impact upon driver delay have been undertaken in the TA (**Appendix 15.1**) which demonstrate the change is negligible. Similarly, the safety record of the road network is considered in the TA, with no specific existing concerns identified such that the impact on highway safety is not forecast to be significant.

15.5.29 For the more likely Scenario 2, the impact on most subjects would be negligible, with minor impacts on Driver Delay and Accidents and Safety. For high sensitivity receptors, the overall impact would be moderate, and for medium sensitivity receptors, it would be minor.

15.5.30 To summarise, according to the IEMA guidelines, the impact of the Proposed Development would be classified as negligible in respect of overall traffic. In respect of HGVs, the impact would be minor for most subjects. Based on Scenario 1, the impact would be classified as moderate or major on driver delay and accidents and safety, however, specific detailed assessments have been undertaken in the Transport Assessment that demonstrate the impact on the particular subjects is not significant.

Decommissioning phase

15.5.1 For the purpose of the assessment, a working assumption has been made that the Proposed Development has an operational lifespan of 40-years. However, it should be noted that it is common for such developments to be operational for longer periods. It is anticipated that the process of decommissioning would involve the termination of operational activity, following which there would be electrical and process isolation and demolition activities. The EfW CHP Facility Site (including the CHP Connection) and the DNC would be left in a clear and secure condition in accordance with a Decommissioning Plan. The decommissioning process is anticipated to last for one year.

15.5.2 For the purposes of this assessment, the environmental effects associated with the decommissioning phase would be of a similar level to those reported for the construction phase works, albeit with a lesser duration, of one year.

15.6 Additional Mitigation

15.6.1 The traffic impacts of construction are anticipated to be negligible overall with the impact of the increase in HGVs on some Receptors minor-moderate when considered against the IEMA Guidelines. A CTMP is to be produced to outline how the impact of construction traffic and processes would be minimised. The CTMP would be an appendix to the Construction Environmental Management Plan (CEMP) and secured by a planning condition. An Outline CEMP is submitted as part of the ES, see **ES Appendix 3.2**.

15.6.2 For the operational phase, the impact of overall traffic is negligible. Specifically considering the increase in HGVs, the impact on most subjects would be minor, but moderate-major for driver delay and accidents and safety depending on the receptor sensitivity. However, specific detailed assessments of the impact upon driver delay have been undertaken in the TA which demonstrate the change is negligible. Similarly, the safety record of the road network is considered in the TA, with no specific existing concerns identified such that the impact on highway safety is not forecast to be significant. The impact would be reduced if the more likely Scenario 2 is considered.

15.6.3 In terms of mitigation, the Applicant has committed to the implementation of a Staff Travel Plan (STP), which has been produced to encourage sustainable travel behaviour and reduce travel by single occupancy vehicle – see **ES Appendix 15.2**. In addition, the Applicant has prepared an Outline Operational Traffic Management Plan (Outline OTMP), partly following feedback from the local community, see **ES Appendix 15.4**.

15.7 Residual Effects

15.7.1 The Study Area is considered to generally be of medium receptor sensitivity, with some areas of high sensitivity. Once the additional mitigation measures are taken into account, the magnitude of the impacts on the receptors are considered to be minor/negligible.

15.8 Implications of Climate Change

15.8.1 There will not be any significant implications of climate change upon the Proposed Development and its associated impacts. It is feasible that climate change could result in social attitudes towards private car use altering and may result in fewer vehicular trips being undertaken. This would therefore reduce driver delay at the assessed junctions, or through the introduction of electric vehicles the pedestrian amenity and fear and intimidation associated with the increase in construction and operational traffic will be reduced due to an increase in quieter, less polluting vehicles. This migration towards electric car ownership has been future proofed through the provision of electric car charging points which are to be provided in accordance with the STP measures for the EfW CHP Facility. However, the impacts of these are not known and therefore cannot be quantified within an appropriate assessment format.

15.8.2 Furthermore, the transport and disposal costs to the operators of the adjacent MRF and MBT would be reduced if they were to utilise the proposed EfW CHP Facility. Therefore, for commercial reasons, a significant proportion of the inputs to the proposed EfW CHP Facility could come from the MRF and MBT. This would reduce HGV movements and the associated CO_2 emissions from these movements.

15.9 Summary

15.9.1 This ES chapter has considered the impact of the Proposed Development and associated traffic during the construction, operational and decommissioning phase. The impacts have been assessed for the following:

- Driver Delay;
- Pedestrian Delay and Amenity;
- Fear and Intimidation;
- Severance;
- Accidents and Safety;
- Visual Effects; and,
- Hazardous Loads.

15.9.2 Baseline data has been obtained to inform the assessment which includes traffic data gathered through MCC and ATC surveys undertaken in June 2022.

15.9.3 The Proposed Development has been developed in accordance with a range of local, regional and national policy. The Proposed Development has been demonstrated to be accessible and the principles of sustainable travel for employees and staff have been adopted throughout the Proposed Development, as applicable.

15.9.4 The proposed vehicular trip generation for the Proposed Development's construction and operational phases has been estimated and set out within this ES chapter and the TA (**ES Appendix 15.1**) and STP (**ES Appendix 15.2**) accompanying the planning application submission.

15.9.5 The resulting increase in flow percentage is such that the magnitude of impact would mostly be negligible for the construction, operational and decommissioning phases, with higher classifications on two subjects based on a worst-case approach. Specific detailed assessments of these matters are presented in the TA and, taking into account mitigation measures proposed by the Applicant including the STP, CTMP and OTMP, the overall environmental impact of the Proposed Development traffic will be minor/negligible.

Table 15.7: Summary of Effects

Receptor	Sensitivity of Receptor	Magnitude of Impact	Magnitude of impact on Receptor	Proposed mitigation	Residual effect	Significant/not significant
Construction Phase						
Potential impacts of overall construction traffic upon Severance, Driver Delay, Pedestrian Delay, Pedestrian Amenity, Fear & Intimidation, Accidents and Safety	Medium/High	Negligible	Negligible	-	Negligible	Not Significant
Potential impacts of construction HGVs upon Severance, Pedestrian Delay, Pedestrian Amenity and Fear & Intimidation	Medium	Negligible	Negligible	-	Negligible	Not Significant
Potential impacts of construction HGVs upon Driver Delay, Accidents and Safety	Medium/High	Minor	Minor/Moderate	CTMP to manage traffic during the construction period.	Negligible	Not Significant
Operational Phase						

Receptor	Sensitivity of Receptor	Magnitude of Impact	Magnitude of impact on Receptor	Proposed mitigation	Residual effect	Significant/not significant
Potential impacts of overall development traffic upon Severance, Driver Delay, Pedestrian Delay, Pedestrian Amenity, Fear & Intimidation, Accidents and Safety	Medium/High	Negligible	Negligible	STP to monitor and encourage sustainable travel behaviours.	Negligible	Not Significant
Potential impacts of development HGVs upon Severance, Pedestrian Delay, Pedestrian Amenity and Fear & Intimidation	Medium	Minor	Minor	OTMP to manage traffic during the operational period.	Negligible	Not Significant
Potential impacts of development HGVs upon Driver Delay and Accidents and Safety	Medium/High	Moderate	Moderate/Major	OTMP to manage traffic during the operational period.	Minor/Negligible	Not Significant

15.10 Mitigation Commitments Summary

Table 15.8: Summary of Mitigation Commitments

Identified receptor	Type and purpose of additional mitigation measure (prevent, reduce, offset, enhance)	Means by which mitigation may be secured (e.g., planning condition/legal agreement)	To be delivered by	Auditable by
Construction Phase				
Potential impacts of construction HGVs upon Driver Delay and Accidents and Safety	CTMP to manage traffic during the construction period.	Planning Condition	Applicant	BCP Council
Operational Phase				
Potential impacts of overall development traffic upon Driver Delay, Road Safety, Pedestrian Delay and Amenity, Fear and Intimidation and Severance	STP to monitor and encourage sustainable travel behaviours.	Planning Condition	Applicant	BCP Council
Potential impacts of development HGVs upon Driver Delay and Accidents and Safety	OTMP to manage traffic during the operational period.	Planning Condition	Applicant	BCP Council