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**Proposed Third Line – Eastcroft EfW facility
Incinerator Road, Nottingham
Updated Transport Statement**

Prepared on behalf of:



Waste Recycling Group Ltd

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1.0 INTRODUCTION

1.1 This **Updated** Transport Assessment has been prepared by AXIS on behalf of the Waste Recycling Group Ltd (WRG) to consider highways and transport issues related to proposals for a new 'Third Line' at the Eastcroft Energy from Waste (EfW) facility, Nottingham.

1.2 This report has been prepared to appraise the Waste Planning Authority and Local Highway Authority (both Nottingham City Council) of the anticipated highways and transport impact associated with the development of a new 100,000 tonnes per annum (tpa) third line at the existing Eastcroft EfW site. The facility already accommodates two lines, processing residual waste collected from the City of Nottingham and the surrounding County Districts of Broxtowe, Gedling and Rushcliffe. The existing two line operation has a current processing capacity of 150,000 tpa.

1.3 The scope and nature of the assessment issues included in this Transport Statement reflects the extent of highways and traffic issues identified as being of material interest to the LHA. This scope was established during discussions with officers of Nottingham City Council during early May 2007 and is based upon the previously agreed highways assessment methodology prepared to support the July 2005 application for a similar third line scheme at Eastcroft EfW. This July 2005 application was supported by a formal Transport Assessment document submitted by Jacobs Babbie in July 2005 and subsequently revised and updated in November 2005.

1.4 It is understood that ultimately no technical objections were raised by Nottingham City Council highways to the 2005 submitted highways assessment and that it was accepted that traffic impact of the proposal scheme on the local and strategic highway network would not be significant.

1.5 This document therefore seeks to update the previously agreed highways assessment work carried out in 2005 and to provide additional 'worst case' sensitivity analysis where appropriate. The report will include an assessment of the proposed site access strategy, an estimate of the anticipated level of traffic associated with the EfW scheme and an analysis of the operational and environmental impact of additional development related traffic movements over the immediate local highway network. Additional analysis, over and above the base information presented in the 2005 submissions includes for:

- Updated analysis of road traffic accident data for the immediate local highway network;
- Review of traffic generation assumptions via comparison to May 2008 validation weighbridge data;
- Future year link flow and junction operating assessments;
- Inclusion of 'sensitivity test' analysis for alternative development trip distribution scenarios;
- Inclusion of more detailed assessment of proposed extension of practical weekday delivery times (to include the hours 16:00-20:00).

1.6 The structure of the remainder of this Transport Statement is as follows:

- A brief description of the site location and existing conditions - including a description of the local highway network immediately adjacent to the site, accident history and historical traffic demand patterns.
- A description of the development proposals for the site - including a review of the proposed access strategy and its acceptability with respect to prevailing local highway standards and opportunities for the transport of materials by alternative, more sustainable travel modes;

- An assessment of the anticipated future traffic generation to / from the site and the distribution of these trips over the local network;
- A consideration of the potential traffic impact of the additional traffic generated by the development scheme at key local junctions and highway links on the immediate highway network.

1.7 The report has been prepared to reflect March 2007 Department for Transport (DfT) "Guidance on Transport Assessment" for the preparation of Transport Statement reports.

2.0 **SITE LOCATION & EXISTING CONDITIONS**

2.1 **Site Location**

2.1.1 The location of the Eastcroft EfW proposal site is illustrated in Figure 1 to this report. This plan identifies the strategic location of the site in relation to Nottingham City Centre and key road connections such as the A60 London Road, A6011 Meadow Road and A612 Manvers Road.

2.1.2 Photographs of existing key network layout features are illustrated in Appendix A to this report.

2.2 **Description of Local Network**

Existing Site Conditions

2.2.1 The Eastcroft EfW facility is an existing waste processing facility catering for waste supply from Nottingham City and immediately surrounding Nottinghamshire County Districts. The facility is located within the Waterside Regeneration Zone on a broadly rectangular plot of land to the southeast of Nottingham City Centre, immediately to the south of the Nottingham to Grantham / Newark railway line. To the east the site is bounded by the rear servicing area to retail units associated with the Lady Bay Retail Park, to the south by industrial units and royal mail sorting centre and to the west by council offices and maintenance depots.

Existing Site Access

2.2.2 The site is currently served by a private access road taken from the extension of the local industrial access road of Incinerator Road, immediately to the north of the junction of Incinerator Road / Clarke Road. The current

site access is gated (see Appendix A), although these gates were noted to remain open during typical daytime operating periods. As noted above, access to Incinerator Road is via the private northern extension of the existing public road, with movements to / from the site to Incinerator Road having priority over the side road access to Clarke Road.

- 2.2.3 Incinerator Road is a single carriageway industrial standard access route of approximately 9.0m and provides access to a variety of businesses via frontage connections and side road routes including a Council Depot, Royal Mail Delivery Office and Nottingham Wholesale Fruit and Vegetable Market. The route provides opportunities for parking along the eastern route frontage, with double yellow line parking restrictions in evidence along the western route frontage and on both sides on the approach to the southern terminal junction with A6011 Cattle Market Road / A6011 County Road.
- 2.2.4 The old Cattle Market is situated alongside the terminal Incinerator Road / A6011 Cattle Market Road / A6011 County Road junction and is currently utilised by a number of small retail units / businesses. The junction of Incinerator Road with the main road route of A6011 Cattle Market Road / A6011 County Road is formed by a priority junction on the outside of a bend in the mainline route, with an additional access to the old Cattle Market site set back from the main junction. Access to the Cattle Market is achieved by a combination of a mini-roundabout layout to the main T-junction, with movements to the Cattle Market site having priority over exit movements from Incinerator Road. Give-way markings are in evidence on Incinerator Road on the approach to the mini-roundabout section to the frontage of the Cattle Market.
- 2.2.5 Due to its location to the outside of bend in A6011 Cattle Market Road / A6011 County Road, the Incinerator Road side road access provides satisfactory lateral visibility in both approach directions to approaching traffic

on the mainline route. Review of the existing layout suggests that available lateral visibility is well in excess of 120m in the critical leading direction (to the right) from both 2.4m and 4.5m back from the edge of carriageway and over 120m to the centreline of A6011 County Road in the non leading direction (see Figure 2 to this report). Such sightline distances are appropriate for main road approach traffic speeds of 40+mph.

Existing Local Network Connections

- 2.2.6 The A6011 Cattle Market Road / A6011 County Road provides main road links to the south of Nottingham City Centre and delivers connections to a range of key strategic destinations. The route is of a wide single carriageway standard and currently caters for a range of vehicle types, including significant HGV movements from local industrial units / business parks.
- 2.2.7 To the west of the junction with Incinerator Road, the A6011 route provides connections to the A60 London Road (see Figure 2) via Cattle Market Road and crosses a bridge to the Nottingham Canal on the immediate approach to the A60. The A6011 Cattle Market Road is understood to be a designated abnormal load route and therefore the bridge crossing is entirely suitable to accommodate HGV movements.
- 2.2.8 The A60 London Road / A6011 Cattle Market Road junction is of a signalised T-junction design, with flared approach links providing multi-lane access to stoplines. The A60 London Road widens to three lanes in each direction, with dedicated right and left turn lanes being provided for access to Cattle Market Road. A6011 Cattle Market Road widens to two lanes on the approach to the A60 junction with lanes marked as right turn only and a shared left / right turn.
- 2.2.9 The A60 London Road provides main distributor road access to southern and western areas of Nottingham Town Centre and provides two lane access in

each direction. To the north, the route provides direct access to the City Centre and to the south the route provides links to the B679 Rushcliffe, A606 Melton Mowbray, A60 Loughborough and onward connections to the A52 via route options at West Bridgford.

- 2.2.10 To the east of the Incinerator Road junction, A6011 County Road gives access to the A6011 Meadow Lane in the vicinity of Notts County FC football ground. The A6011 County Road / A6011 Meadow Lane connection is achieved at a T-junction layout, with priority given to the County Road - Meadow Lane (E) traffic stream around a tight bend (see Appendix A). Meadow Lane to the west of this junction operates as a local access to the football club and frontage businesses and ultimately provides a one way 'westbound only' connection to A60 London Road. The western section of route is therefore generally not utilised by strategic traffic.
- 2.2.11 The eastern section of A6011 Meadow Lane operates as a main distributor road of wide single carriageway standard, providing eastern connections towards the A612 Carlton & Gedling and onward links to the A52 via A6011 Lady Bay Bridge. The junction with Lady Bay Bridge is located approximately 250m to the east of the junction with A6011 Meadow Lane (W) and is of a signalised T-junction layout with multi-lane approaches on all junction approach links (see Appendix A). On the northeast bound approach A6011 Meadow Lane provides two lanes (ahead, ahead / right), on the southbound approach three lanes (ahead, ahead, left) and on the A6011 Lady Bay Bridge approach three short lanes (right, right, left). Lady Bay Bridge itself is of a single carriageway construction with a single operating lane in each direction. Pedestrian facilities are provided on a parallel footbridge to the main bridge on the southern carriageway edge only.
- 2.2.12 The A6011 Meadow Lane ultimately terminates at the A612 Manvers Road gyratory junction approximately 250m further east of the Lady Bay Bridge

junction. The gyratory is essentially of a signalised roundabout layout, providing access to the dual carriageway A612 Manvers Road eastern access link to Nottingham City Centre and an additional development connection to the Lady Bay Retail Park. A6011 Meadow Lane widens to four operating lanes on the immediate approach to the gyratory junction and all other access routes provide multi-lane approaches (see Appendix A).

Observed Traffic Demand

- 2.2.13 Available historical traffic data for the immediate highway network to the Eastcroft EfW site is generally limited. Indeed, discussions with Nottingham City Council highways data collection officers has identified that the only 12 hour count available within the immediate vicinity of the Eastcroft proposal site relates to the December 2004 turning count of Incinerator Road / A6011 Cattle Market Road / A6011 County Road undertaken by Jacobs Babtie to inform the 2005 Transport Assessment work.
- 2.2.14 The Jacobs Babtie count was undertaken on 23 December 2004 and took the form of a 12hr manual classified count of all turning movements. The 2005 Transport Assessment documents noted that traditionally background traffic flows in December could be anticipated to be lighter than for typical network conditions (due to the influence of seasonal holidays), albeit that traffic movements to / from the Eastcroft EfW site itself were unaffected on the day of survey – indeed, weighbridge information indicated that the Eastcroft site illustrated traffic demand slightly higher than the annual average (94 HGV arrivals, when compared to the working day annual average flow of 79 HGV's).
- 2.2.15 In order to provide robust assessment of more typical background conditions at the junction, Jacobs Babtie applied a 'seasonal correction factor' of 1.059 to the December 2004 background traffic information. A summary of the

factored 12 hour turning count information is illustrated in Figure 3 to this report, with factored AM (08:00-09:00), PM (17:00-18:00) and Off-peak (10:00–11:00) hour turning counts illustrated in Figure 4.

2.2.16 At the request of Nottingham City Council highways an additional ‘validation’ count at the junction of Incinerator Road / A6011 Cattle Market Road / A6011 County Road was undertaken for the peak periods to demonstrate the suitability of the factored 2004 count. This validation count was undertaken in October 2005 and the **hourly demand data** identified during the survey is illustrated in Figure 5 to this report.

2.2.17 Comparison of the factored 2004 count data and the validation survey information collected in 2005 reveals similar demand trends for the main approach arms and demonstrates that both counts are suitable for use for the identification of network capacity and operation. Nottingham City Council highways have confirmed their acceptance of this recorded background data.

2.3 **Personal Injury Accident Records**

2.3.1 Personal Injury Accident data (PIA) for the immediate highway network to the Eastcroft EfW facility has been provided by Nottingham City Council highways for the 5 year time period Jan 2002 to Jan 2007. This data updates the 2001-2003 accident information presented within the 2005 Transport Assessment documents prepared by Jacobs Babtie. A summary plan of the location of additional 2002 - 2007 recorded incidents is provided as Figure 6 to this report and a table of the number and type of accidents recorded during each year is illustrated in the table below.

2.3.2 Review of Figure 6, illustrates that 38 accidents have been recorded over the full search area. 6 of these accidents were noted to be classified as serious

incidents, with the remaining 32 incidents being of a slight nature. No fatal accident incidents were recorded during the 5 year search period.

Year	Accident Type			Total
	Fatal	Serious	Slight	
2002	0	0	6	6
2003	0	1	5	6
2004	0	0	6	6
2005	0	2	7	9
2006	0	3	8	11
Total	0	6	32	38

2.3.3 More detailed review of the accident data illustrates that just three incidents have been recorded on the main site access route of Incinerator Road and its terminal junction with A6011 Cattle Market Road / A6011 County Road. Analysis of the accident type recorded at this location demonstrates that all incidents involved vehicles turning out of Incinerator Road into the path of oncoming vehicles on the main A6011 corridor. Two of the incidents involved cars colliding with through HGV movements on the main road route and the other a private car pulling out in front of a pedal cycle user. Given that the HGV's involved in incidents at this junction were carrying out through manoeuvres on the A6011 corridor, it is unlikely that they were associated with the operation of the existing Eastcroft EfW facility.

2.3.4 Review of the location and type of the other accident incidents recorded over the immediate local highway network to the Eastcroft proposal site demonstrates that no other incidents involving HGV's have been recorded. Indeed, the majority of the other accidents recorded within the search area appear to have taken place on the section of the A6011 Meadow Lane to the east of the junction with A6011 County Road. These accidents generally relate to conflicts between through movements and traffic seeking to enter this busy route via give-way access from local side road routes.

2.3.5 Given the above review of recorded accident trends and the generally limited number of additional HGV movements per hour anticipated to be generated by the Third Line proposal scheme (see section 4 to this report), it is considered that there are no existing highway safety factors which would call into question the expansion of the Eastcroft EfW scheme.

2.4 **Site Sustainability**

Access to Public Transport

2.4.1 The Eastcroft EfW site is not directly served by existing public transport services. Local bus stops are available, however, on nearby Meadows Way, which runs parallel to A60 London Road to the west of the proposal site. The Meadows Way bus stops lie within 400m of the Eastcroft proposal site and are therefore considered to be within an acceptable walking catchment for accessing public transport. (Ref: Institution of Highways and Transportation Document "Guidelines for Planning for Public Transport in Developments").

2.4.2 Review of existing bus routes serving the bus stops on Meadows Way demonstrates that the stops are located on an important local bus corridor and offer access to a number of high frequency routes, serving Nottingham City Centre and a variety of destinations to the south and east of the City. Figure 7 to this report illustrates the range of routes available, with frequency details summarised in the table below.

Service No.	Route	Daytime Frequency
1	Loughborough – East Leake – Gotham – Clifton – Trent Bridge – Nottingham City Centre	30 mins
2	Clifton – Trent Bridge – Nottingham City Centre	30 mins
3	Clifton – Trent Bridge – Nottingham City Centre	30 mins
4	University (Clifton) – Clifton – Trent Bridge – Nottingham City Centre – University (South Sherwood St) – TERM TIME	15 mins
5	Gamston – Trent Bridge – Nottingham City Centre	30 mins
6	Edwalton – West Bridgford – Trent Bridge – Nottingham City Centre	10 mins
7	Gamston – West Bridgford – Trent Bridge – Nottingham City Centre	30 mins
8	Rushcliffe Leisure Centre – West Bridgford – Trent Bridge – Nottingham City Centre	30 mins
9	Rushcliffe Leisure Centre – West Bridgford – Trent Bridge – Nottingham City Centre	30 mins
10	Ruddington – Trent Bridge – Nottingham City Centre	10 mins

2.4.3 Local stops at Meadows Way are of a high quality design providing passenger shelters and information. The high quality nature of the stops and the wide range of bus services they serve is anticipated to represent a realistic alternative to the private car for staff journeys to / from the Eastcroft EfW proposal site.

Walk / Cycle Access

2.4.4 In addition to public transport connections, the proposal site is also enjoys a location generally well served by dedicated walk / cycle routes. Local cycle paths are available alongside the River Trent, Nottingham Canal and the nearby Meadows area (see Figure 8 to this report). Such dedicated path facilities and the wide population catchment within 5km of the proposal site are also anticipated to encourage the opportunity for staff journeys by cycle.

2.4.5 The Eastcroft EfW site enjoys a highly accessible location close to Nottingham City Centre. The proposals for a new Third Line facility are considered to provide additional opportunities for sustainable waste management, with the proposal site centrally located to the local waste catchment and adjacent to the key main transport corridors to / from Nottingham City Centre and surrounding County districts. Development at

Eastcroft is therefore anticipated to assist in managing overall travel distances for waste vehicle movements, particularly when compared against current bulking and landfill practice.

- 2.4.6 As noted above, the Eastcroft EfW site is also located adjacent to the Nottingham – Newark / Grantham railway line and associated railway sidings / yard. Whilst the EfW facility is not currently directly rail served and indeed does not process waste from locations which have access to a rail bulking facility at this time, it is considered that the site's location could potentially deliver opportunities for future rail connections if practical. Such opportunities further enhance the strategic sustainability case for the development of a third line at the Eastcroft EfW facility and complement the site's central location to current waste arisings, which assists in minimising overall delivery vehicle kilometres.

3.0 DESCRIPTION OF THE DEVELOPMENT PROPOSALS

3.1 Current Site Layout and Operation

- 3.1.1 The Eastcroft EfW site covers an area of approximately 2ha and operations are centred around the main complex which houses the waste reception and tipping hall, the waste storage bunkers, the boiler hall with two existing processing lines and the residuals bunker. Attached to the north of the main complex is the flue gas treatment equipment.
- 3.1.2 Incoming refuse collection and bulk transport vehicles enter the site through the main entrance at the northern termination of Incinerator Road, from where they proceed to the automatic weighbridge to allow the quantity of incoming wastes to be checked and recorded. Vehicle loads are inspected randomly at the weighbridge to confirm the nature of incoming wastes and only authorised wastes proceed to the tipping hall.
- 3.1.3 After weighing, the vehicles continue up a one-way entry ramp to enter the enclosed tipping hall, from where they are directed to a vacant tipping bay to discharge materials into a refuse bunker. The tipping hall is approximately 20m wide and 46m in length and incorporates 8 tipping bays (4 per refuse bunker), each about 3.5m wide. The entry and exit doors to the tipping hall are equipped with manually operated vertical folding doors, which are kept closed when delivery of waste is not taking place (e.g. night-time). On completion of the tipping operation, the vehicles leave the tipping hall via the one-way exit ramp. A second automatic weighbridge located at the gatehouse records weight of the outgoing vehicles.
- 3.1.4 The Eastcroft EfW facility processes waste and generates electricity on a 24-hour basis, 7 days a week with no current time restrictions on operations or deliveries. Despite this, waste is typically only brought to the site between the

hours of 7am and 4pm Monday to Thursday, 7am and 3pm on Fridays and between 7am and 11am on Saturdays.

3.1.5 The plant is shut-down for essential maintenance once a year over a period of 4 weeks. During this time the plant operates at half its normal capacity over 3 weeks using one line, whilst the other is closed. In order to complete the maintenance programme the entire plant is shut-down for one week. Waste which cannot be processed at the plant during this period is disposed of to landfill.

3.2 **Proposed Development Scheme**

3.2.1 The layout of the existing EfW plant is compact and the scope for further expansion is constrained by the existing traffic circulating systems and in particular, the ramps to and from the tipping hall. In order to ensure that the plant would be able to meet local waste management demands in the future, however, the original design for the plant included scope for the addition of additional waste input lines.

3.2.2 The current scheme proposals are to develop a third waste input line at the Eastcroft EfW site, to be accommodated within the existing footprint of the main complex. The new boiler and grate would be provided in an allocated area adjacent to the existing boiler house with the new gas flue treatment system situated to the north of the existing residuals bunker. A new turbine hall and air-cooled condenser would be situated to the west of the main complex, the extent of which would be confined by the location of the tipping hall exit ramp. In addition, the existing gatehouse / weighbridge office would be re-built. This would be slightly taller than the present facilities and would permit HGV drivers to receive tickets from the weighbridge office without having to leave their vehicle cabs.

- 3.2.3 The proposed extension would provide the capacity to process an additional 100,000 tonnes of non-hazardous waste per year. Once the extended plant is operational the waste processing capacity of the plant would increase to approximately 250,000 tonnes per year, providing a preferable alternative to landfill after recycling and composting.
- 3.2.4 Waste would only be brought to the facility from within Nottingham City, or from within a 35 mile catchment of the Eastcroft plant, which could be closer than distant parts of the county.

Proposed Operating Hours

- 3.2.5 It is proposed that the Eastcroft plant would continue to operate on the permitted 24 hour, 7 days a week basis. Following introduction of the additional third line waste stream, it is proposed that practical weekday delivery hours would be extended to cover 7am to 8pm Monday to Friday. No waste would be delivered on Sundays or Bank Holidays. The additional practical weekday delivery hours (16:00-20:00) are proposed to provide a level of future operational flexibility at the site and minimise the potential for site congestion at peak hours - they do not change existing permitted site operation.

Staffing Levels

- 3.2.6 The plant currently provides employment for 33 employees with four in every five being skilled operatives (electricians/fitters/crane operatives) or technical engineers (control and plant). The majority of employees live in the Nottingham area. Once operational, the proposed third line extension is anticipated to require a further 6 skilled and technical employees.

3.3 **Site Access**

3.3.1 Vehicular access to the proposal site would continue to be taken via the existing main access route from the northern extension of Incinerator Road. HGV access will continue to be controlled via the existing gatehouse / weighbridge facility, with no material alterations to the tipping hall access ramps or internal one way system.

3.3.2 No additional highway improvements are proposed at the existing site access point.

3.4 **Car Parking**

3.4.1 Sufficient car parking would be made available for the additional staffing levels within existing on-site car parking areas.

3.5 **On-site Staff Facilities**

3.5.1 Site operator, WRG Ltd, is committed to encouraging staff and visitor journeys to the site by alternative travel modes to the private car where practical. As part of this commitment, the scheme design would include for suitable secure cycle parking stands (provided at levels reflecting Nottingham City Council standards) and a staff showering and changing area.

3.5.2 The site operator would also ensure that up-to-date public transport information, including timetables and maps of services available from the nearby bus stops at Meadows Lane and details of the City of Nottingham / Nottinghamshire County Council car sharing scheme (www.nottinghamshare.com) would be available to staff via a Travel noticeboard facility.

3.6 **Off-site highway network improvements**

- 3.6.1 It is proposed that the Eastcroft EfW third line proposals will be supported by local improvements to the Incinerator Road / A6011 Cattle Market Road / A6011 County Road to provide upgraded pedestrian facilities at this location. Such a scheme would include new kerbs, footways, tactile paving and improved central refuge and would assist in promoting pedestrian movements and safer crossing road crossing opportunities. Nottingham City Council have identified that such a scheme could be delivered via a highway financial contribution of in the order of £15,000.
- 3.6.2 Nottingham City Council officers have also identified the potential for a requirement for local road surfacing contributions to cover the future maintenance of immediate key local routes such as Incinerator Road and the A6011 Cattle Market Road / County Road Corridor. Analysis of anticipated future traffic impact associated with the proposed extension to the Eastcroft EfW facility, however, demonstrates that the proposals will result in a strictly limited increase in traffic volumes on these routes (see sections 5.2 & 5.4 to this report). It is therefore considered that the need for a maintenance related contribution has yet to be fully identified.

4.0 ANTICIPATED TRIP GENERATION AND DISTRIBUTION FROM THE DEVELOPMENT SITE

4.1 Introduction

4.1.1 The calculation of anticipated development trip demand associated with the Eastcroft EfW third line expansion proposals and the assignment of this traffic to the local network has been carried out in accordance with the 'agreed' methodology set out in the July / November 2005 Transport Assessment documents by Jacobs Babbie. Discussions with Nottingham City Council highways officers have identified that this **base** methodology is considered acceptable for the assessment of Eastcroft EfW development traffic and that there are no technical objections to the re-use of this approach.

4.2 Operational Trip Demand

Existing inputs / exports

4.2.1 The Eastcroft EfW plant is currently permitted for the disposal of controlled waste produced by householders, businesses and industry. The plant currently processes approximately **140,000 – 160,000** tonnes per year (**typically 150,000tpa**) of mainly municipal solid waste (MSW), which includes some light commercial (shops and offices) and industrial waste such as office waste, packaging and other similar materials. Approximately 90,000tpa of the waste arising processed at Eastcroft is generated in Nottingham City, with a further 60,000tpa from immediate local Nottinghamshire County Districts.

4.2.2 Main solid by-products of the Eastcroft EfW process are Bottom Ash and Ferrous metals. These products are transported off the Eastcroft site for landfill / recycling. Combined waste by-product tonnage for the current 150,000 tpa site operation is typically of the order of 40,000 tpa.

Predicted future traffic demand

4.2.3 Anticipated future traffic demand movements to / from the expanded Eastcroft EfW facility have previously been estimated by Jacobs Babbie on the basis of historical operational information provided by site operators WRG for the period 2003 / 2004 (see Appendix B). This information was collected from site entry / exit records taken from the site entrance weighbridges over the course of an operational year.

4.2.4 The data supplied by WRG covered the 12 month period beginning 1st April 2003 and included for the following input / export tonnages:

- Waste Input (Nottingham): 93,665tpa
- Waste Input (County Districts): 59,420tpa

- Ash exported materials: 37,435tpa
- Fe exported materials: 2,045tpa

4.2.5 Detailed analysis of this historical weighbridge data identifies that, on average, the site currently generates of the order of 158 (In + Out) trip movements per day for a typical average working weekday. Figure 9a to this report illustrates the observed two way (In + Out) hourly trip demand profile associated with this historical operation. Review of this profile demonstrates that maximum hourly flow was experienced for the hour of 13:00-14:00, when up to 30 vehicles per hour were recorded entering / leaving the site. Existing development trip demand during the traditional AM & PM network peak hours (08:00-09:00 & 17:00-18:00) was noted to be very low, with just 6 vehicle movements in the AM peak and no vehicles in the PM peak – when the site is currently closed to deliveries.

4.2.6 In order to validate this historical analysis of site traffic demand, an additional review of weighbridge records has been carried out by AXIS, based on weighbridge records collected in May 2008. The results of this validation exercise are included in Appendix B to this report, with the average daily profile over the recorded week illustrated in Figure 9b to this report.

4.2.7 Review of the May 2008 information demonstrates that the site was recently recorded operating with an average daily operational traffic demand of 200 vehicles per day (In + Out). Such flows are of the order of 25% higher than the historical demand recorded in 2003 / 2004. It is anticipated that these changes are likely to be as a result of a combination of factors including:

- A reduction in municipal RCV payloads per vehicle as a result of the increased penetration of recycling. Site operator WRG data demonstrate, that RCV loadings at Eastcroft have fallen by in the order of 10% per vehicle over the past 5 years;
- Due to recent refurbishment at the plant, the Eastcroft EfW site is known to be operating more efficiently than for previous years, with 2007 annual burn tonnages of the order of 156,000tpa;
- The May 2008 validation data simply provides a snapshot of a weeks data at the facility during a known busy operating period. Such recorded vehicle demand levels can be expected to be higher than the previously used estimates of annual average vehicle movements, which would have included for those weeks when the site is affected by annual shut down periods for the different waste input lines.

4.2.8 Comparison of the operational daily demand profile recorded in the May 2008 validation surveys to that recorded in the Jacobs Babbie exercise demonstrates a broadly similar relationship. Traditional AM & PM peak periods still exhibit strictly limited operational demand, with core demand

periods to / from the site being mid morning / early afternoon. No deliveries / export movements have been recorded post 16:00.

- 4.2.9 Operation of the Eastcroft EfW site including for the additional third waste line, will increase overall site processing capacity by 100,000tpa to 250,000tpa. Waste input materials will be generally the same as for the existing site operation and are anticipated to be delivered from within a similar catchment area (i.e. within Nottingham City, local County districts or within a 35 mile catchment area of the plant). Given the similar operation of the additional waste line to existing practice, future development trip demand to Eastcroft EfW site can be reasonably estimated on the basis of a simple pro-rata methodology as illustrated below (based on the AXIS May 2008 survey data):

Existing site capacity: 150,000 tpa = 200 HGV's per day

Pro-rata factor for increase in capacity by additional 100,000tpa per year:
= 100,000 / 150,000 = 0.666

Daily trip movements associated with 100,000tpa increase in site capacity:
= 0.666 * 200 = 134 HGV's per day.

- 4.2.10 On the basis of the above growth assumptions, it has been estimated that expansion of the Eastcroft EfW to 250,000tpa capacity (and associated pro-rate increase in process by-products) via the introduction of the third line would result in total site traffic demand of the order of 334 HGV movements per day (In + Out). Such demand represents an increase in site traffic demand associated with the third line development of the order of 67%.

- 4.2.11 In order to provide a 'worst case' assessment of likely operational traffic demand during the existing core weekday daytime development operating periods, the predicted additional HGV traffic associated with the third line

scheme has been modelled on the basis of the existing observed hourly traffic demand profile at Eastcroft. This demand profile reflects the current observed RCV direct delivery practice at Eastcroft, with the majority of waste delivery trips taking place during mid-morning / early afternoon and deliveries to the site completed by 16:00.

- 4.2.12 In practice, however, it is anticipated that operation of the third line appeal scheme could result in the additional traffic movements being spread more equally across the day, particularly if some of the additional waste is ultimately delivered in bulk HGV units from external transfer stations. Indeed, part of the operational flexibility anticipated to be provided by the revised delivery window is to allow for the more efficient accommodation of larger bulker HGV units and avoid site congestion during peak demand periods. In order to reflect the potential for different delivery patterns for third line development flows, sensitivity assessments have been carried out for the proposed extended delivery hours, based on 20 delivery vehicle movements (10 in + 10 out). The results of these sensitivity assessments are considered in more detail in Appendix C to this report.

4.3 **Development Trip Distribution and Assignment**

- 4.3.1 The distribution and assignment of traffic over the immediate local highway network to the development site has been calculated via reference to both:

- Observed route choice of HGV's at the junction of Incinerator Road / County Road / Cattle Market Road;
- Waste origin information for existing waste processed at Eastcroft EfW.

- 4.3.2 The traffic count exercise carried out in December 2004 included for a full classified turning count at the Incinerator Road / A6011 Cattle Market Road /

A6011 County Road junction. This data demonstrates the following arrival / departure approach routes for all HGV traffic entering / exiting Incinerator Road over the full 12 hour survey period:

Arrivals

- A6011 Cattle Market Road (West): 59%
- A6011 County Road (East): 41%

Departures

- A6011 Cattle Market Road (West): 43%
- A6011 County Road (East): 57%

4.3.3 This existing observed local turning distribution has been utilised for identifying existing local movements to / from the proposal site and as a basis for future third line development traffic assignment estimates across the remainder of the immediate local network.

4.3.4 The above information identifies that the majority of HGV movements to / from Incinerator Road chose to make a left turn movement when accessing / exiting this route. This gives rise to an 'uneven' in / out distribution and therefore suggests that some vehicles are likely to take a slightly different route for arrival / departure movements. No attempt has been made to rationalise this effect within this analysis, as it suggests that local route choice will be influenced by external factors such as the performance of other junctions remote from the site and variations in driver route choice on accessing the wider local network. It is considered likely that such 'uneven' route choice trends would continue under future demand conditions for additional waste movements to / from the proposed third line.

4.3.5 In estimating the wider network assignment of traffic over the remaining local access roads within the study area, reference has been taken of the agreed

methodology and assignment proportions identified by Jacobs Babbie in the submitted 2005 Transport Assessments. This methodology examined existing waste origins and vehicle tonnage data taken from the WRG weighbridge information in order to estimate likely approach link proportions on the key routes of A60 London Road, A612 Manvers Road and A6011 Lady Bay Bridge. As noted in Section 4.2 above, the current Eastcroft EfW waste lines process waste from both Nottingham City Council and immediate Nottinghamshire County Districts (Broxtowe, Gedling and Rushcliffe) and therefore use of a distribution base on current site operation is considered to represent a suitable 'proxy' for future waste demand to the proposed third line facility. **This distribution is considered to still provide a suitable estimate of current demand to the Eastcroft EfW and has been utilised within this Updated Transport Statement.**

4.3.6 Waste arisings and by-product volumes recorded at the Eastcroft EfW weighbridges for the recorded 2003-2004 period are as follows:

- Nottingham City: 93650
- Rushcliffe District: 20200
- Gedling District: 5750
- Broxtowe District: 30500
- Other: 3000
- Waste By-Products: 39500

4.3.7 The routing assumptions presented within the 2005 Jacobs Babbie Transport Assessment work identified the main approach link proportions as outlined below and illustrated in Figure 10 to this report. These approach proportions have been agreed with Nottingham City Council highways:

- A612 (E) Daleside Road towards Carlton: 5%
- A6011 Lady Bay Bridge towards Radcliffe: 7%

- A60 (S) London Road towards West Bridgford: 10%
- A60 (N) London Road towards Nottingham: 49% / 33%
- A612 (N) Manvers Road towards Nottingham: 29% / 45%

Route assignment for trips to / from Nottingham City Centre have been altered to reflect the uneven turning proportions observed at the Incinerator Road junction, with a greater proportion of left turn movements being observed for entry movements (from A60 London Road) and exit movements (to A612 Manvers Road).

4.3.8 Application of the above trip proportions to existing 12 hour traffic volumes associated with current operation of the Eastcroft EfW site and predicted additional development traffic demand associated with the proposed third line are illustrated in Figures 11 & 12 to this report. The summation of existing trip demand to the proposed additional development traffic demand levels is illustrated in Figure 13.

5.0 ASSESSMENT OF ANTICIPATED DEVELOPMENT TRAFFIC IMPACT

5.1 Introduction

5.1.1 This section of the report considers the assessment of the operation of the immediate local highway to the Eastcroft EfW site and the ability of this network to accommodate the additional development traffic flow movements predicted in Section 5. Impact assessment has been carried out through the consideration of link / flow assessment over key local network links to the Eastcroft EfW site and detailed junction operational assessment at the immediate junction of Incinerator Road / A6011 Cattle Market Road / A6011 County Road.

5.1.2 Operational assessments have been carried out for a development 'opening year' of 2012 and a 10 year future design horizon of 2022. Such an approach reflects recently updated Department for Transport (DfT) good practice "Guidance on Transport Assessment" for the assessment of development traffic impact. To ensure the most robust assessment of network operation, it is assumed that the Eastcroft EfW facility would be operating at full capacity (250,000 tpa) at both opening and design years.

5.1.3 Background AM (08:00-09:00), PM (17:00-18:00) and off peak (10:00-11:00) demand hourly trip movements at Incinerator Road / A6011 Cattle Market Road / A6011 County Road are illustrated in Figures 14 & 15 for predicted 2012 opening year background demand, and 2022 future year background demand respectively (based on 2005 hourly validation counts). Future background traffic demand estimates have been calculated via reference to NRTF central growth factors as illustrated below:

- Opening Year 2012 (Factor 2005-2012): $1.298 / 1.166 = 1.113$
- Opening Year 2022 (Factor 2005-2022): $1.473 / 1.166 = 1.263$

- 5.1.4 Calculation of the predicted assessment hour traffic volumes associated with the proposed third line at Eastcroft EfW has been carried out via reference to the **May 2008** demand profile **recently** observed at the site weighbridges (see Appendix **B** to this report). These development demand flows are illustrated in **Figure 9d (daily demand profile) & Figure 16 to this** report, with approach link proportions based on the observed 12 hour HGV turning patterns (see section 4.3 of this report).
- 5.1.5 Currently the Eastcroft **EfW** site does not accept delivery movements during the PM peak hour and therefore a proxy demand of **10** entry / **10** exit development movements has been utilised for this time period within the capacity assessments. **Additional 'sensitivity analyses' have also been undertaken to consider traffic impact during the remainder of the proposed extended delivery hours (16:00-20:00) based on this level of demand, with the results summarised in a supporting Technical Paper included with this TA as Appendix C. These tests conclude that third line related HGV deliveries during these time periods will not result in any material operational or environmental issues.**
- 5.1.6 Future year Background + Third Line Development flows for the 2012 opening year and 2022 future year **AM peak, Off peak & PM peak** assessment periods are illustrated in Figures 17 and 18 respectively.

5.2 **Link Flow Demand**

Peak Hour Operational Impact

- 5.2.1 1994 Institution of Highways and Transportation 'Guidelines for Traffic Impact Assessment' suggested that more detailed analysis of highway impact and / or capacity improvements was only likely to be required for situations when either:

- Traffic to / from the development exceeds 10% of existing two way traffic on the adjoining highway; or,
- Where traffic to / from the development exceeds 5% of the existing two way traffic flow on the adjoining highways at locations where traffic congestion exists within the assessment period or in other sensitive locations.

This position has been recently reviewed and updated in March 2007 DfT “Guidelines for Transport Assessment” which notes:

“If the TA confirms that a development will have material impact on the highway network, the level of impact at all critical locations on the network should be established. A particular example of material impact would be a worsening of congestion. In congested areas, the percentage traffic impact that is considered significant or detrimental to the network may be relatively low (possibly below the average daily variation in flow), and should have been determined in discussions with the relevant highway authorities. For the avoidance of doubt, the 1994 guidance regarding the assessment thresholds of 10 per cent and 5 per cent levels of development traffic relative to background traffic is no longer deemed an acceptable mechanism, since it creates an incentive in favour of locating development where high levels of background traffic already exist.”

Notwithstanding these recent observations, in the case of the immediate local highway network to the Eastcroft EfW site (which has been demonstrated to generally be operating with some spare capacity and with little or no congestion) it is considered that the traditional 5% / 10% thresholds still represent a suitable initial ‘guide’ as to the level / extent of development traffic impact on immediate local routes.

- 5.2.2 Figure 19 to this report demonstrates changes in 2012 Opening Year background hourly **one** way link flows on those closest highway links to the Eastcroft EfW site (Incinerator Road, A6011 Cattle Market Road and A6011 County Road) as a result of the third line proposal. This analysis identifies that hourly link flow impact on both of the A6011 approach links is not anticipated to be **in excess of 1%** - well below minimum guidelines thresholds for additional assessment / impact.
- 5.2.3 Review of link impact on the main site access route of Incinerator Road suggests that development link flow increases are not anticipated to reach levels in excess of 10% in key approach directions **for the core weekday daytime hours. Larger impacts are, however, identified during the PM peak and early evening extended delivery hours, although these** larger percentage increases are more a reflection of low existing trip demand on this link, rather than a significant increase in development traffic volumes. Indeed maximum modelled hourly traffic demand to / from the proposal site **during this time** is not anticipated to be in excess of **20** vehicles per hour (In + Out) or **just** one additional vehicle movement every **3** minutes. Such demand levels are not anticipated to lead to a material change in network operational conditions.
- 5.2.4 The above hourly link flow impact conclusions are further supported by analysis of 12 hour traffic volumes **(based on all Eastcroft EfW third line operational demand traffic compared to background traffic demand 07:00-19:00)**. The anticipated changes in 12 hour flow demand conditions predicted on the key immediate local routes of Incinerator Road, A6011 Cattle Market Road and A6011 County Road are illustrated in Figure 20 to this report and summarised in the table below:

	12 hour flow 07:00-19:00 All vehicles		
	Devel trips	B'ground flows	%'tage Increase
A6011 Cattle Market Road	69	16849	0.41%
Incinerator Road	134	3375	3.97%
A6011 County Road	65	16198	0.40%

2 way flow totals

5.2.5 Analysis of the above table demonstrates that maximum two-way development link flows associated with the proposed third line at Eastcroft EfW are generally anticipated to be low, with maximum link impact of just **3.97%** being experienced on Incinerator Road. Such changes are below minimum indicative 5% thresholds. Link impact on the immediate sections of the A6011 is also not anticipated to reach material levels, with development traffic predicted to represent less than 0.5% of opening year background demand flows.

5.2.6 Given that trip demand on these closest approach links to the development scheme are not predicted to reach material levels, it is anticipated that trip demand on more remote local approach links to the Eastcroft EfW are likely to have a similar limited effect. Indeed, review of daily additional traffic volumes associated with the proposed third line at Eastcroft EfW identifies the following limited two way (In + Out) traffic demand on key other approach links within the local regeneration zones (Waterside, Southside and Eastside):

- A60 London Rd (N): **55** movements per day;
- A60 London Rd (S): **14** movements per day;
- A6011 Lady Bay Bridge: **10** movements per day;
- A612 Manvers Road (N): **49** movements per day;
- A612 Daleside Road (E): 6 movements per day.

5.2.7 Such limited levels of additional traffic flow are not anticipated to generate a material change in operational or environmental conditions on these busy routes or within the key immediate regeneration zones.

'Sensitivity Testing'

5.2.8 The above assessment runs have been undertaken on the basis of the predicted third line development trip assignment calculated via reference to existing waste origins and observed turning movements at the main Incinerator Road junction. At the time of preparation of this report, however, it is not clear as to the exact origins of the waste to be treated via the new third line facility (subject to development of suitable commercial contracts). It is therefore possible that future waste contracts associated with the third line could result in a different assignment of additional development trips.

5.2.9 In order to model the impact of alternative development traffic routings for the additional waste supply, two sensitivity tests have been carried out to reflect the following 'worst case' assignment scenarios:

- All additional third line development traffic approaches from the west via A6011 Cattle Market Road;
- All additional third line development traffic approaches from the east via A6011 County Road.

5.2.10 Key assessment hour (AM, PM & Off Peak) and 12 hour link flow assessments under the above sensitivity assumptions are illustrated in Figures 21(a&b) and 22(a&b) respectively, with base traffic flows illustrated in Appendix D. Review of these sensitivity assessments demonstrates that even with these worst case assumptions, traffic flow impact on the A6011

approaches will remain at levels well below the minimum indicative 5% guideline threshold levels.

- 5.2.11 On the basis of the above analysis it can be concluded that operation of the third line proposal scheme is not anticipated to generate traffic levels that will result in a material change in general link flow conditions on key local access routes or regeneration zones.

5.3 **Site Access Junction Operation**

- 5.3.1 Notwithstanding the above conclusions regarding link flow impact, in order to reflect DfT good practice guidance, a detailed operational assessment of the Incinerator Road / A6011 Cattle Market Road / A6011 County Road junction has been carried out through the utilisation of a PICADY assessment model. This junction will be accessed by all traffic movements to / from the Eastcroft EfW site, including the additional volumes associated with the third line scheme.

- 5.3.2 In order to provide a robust assessment of operational impact, junction capacity assessments have been carried out for the future demand year of 2022. Traffic demand associated with the 'third line' proposal scheme has been added 'extra-over' to these future year background trip estimates (see Figure 18 to this report).

- 5.3.3 The PICADY model utilised in this report is the same as that utilised in the Jacobs Babbie 2005 Transport Assessment and which has been agreed as appropriate with Nottingham City Council.

Future Year 2022 Background + Eastcroft EfW Third Line Scenario

- 5.3.4 The results of the junction capacity analyses are summarised in Tables 1-3 to this report, with full model printouts included as Appendix E.
- 5.3.5 Results of the 2022 future year 'with Eastcroft EfW Third Line' model runs for typical AM, PM and off peak hour periods illustrate that the key Incinerator Road access junction to the A6011 corridor is predicted to operate efficiently with some spare capacity and only strictly limited queuing on key turning movements. For 'typical' 2022 future year demand conditions, maximum junction operation is predicted to occur during the AM peak, with maximum RFC's of the order of 0.54 and negligible queuing levels. Such operation is considered to represent satisfactory conditions for the future demand period and suggests an element of spare capacity even at the future assessment year.
- 5.3.6 'Sensitivity' operational assessments, including for the 'worst case' development assignment proportions outlined in paragraph 5.2.9 to this report (i.e. all third line traffic accessing the site from a single approach direction on the A6011 - either all eastbound or all westbound), have been carried out and are included in Appendix F to this report. These tests demonstrate that the junction is predicted to continue to illustrate satisfactory performance for future demand conditions, with no evidence of congestion and only strictly limited queuing.

5.4 **Review of Traffic Related Environmental Conditions**

5.4.1 Reference to Institute of Environmental Assessment (IEA) guidelines for the assessment of road traffic, suggests the following general rule of thumb when considering the need for detailed analysis of environmental effects:

“Include highway links where traffic flows will increase by more than 30% (or the number of heavy goods vehicles will increase by more than 30%)”

5.4.2 IEA guidance notes that the most discernable environmental impacts of road traffic are considered to be noise, severance and pedestrian delay & intimidation. In terms of these potential impacts, IEA guidance notes the following:

- In general, people are unable to perceive a change in noise nuisance for changes in noise levels of less than 3dB(A), such changes requires a “doubling or halving in the level of traffic”.
- At low flows, increases in traffic of around 30% can double the delay experienced by pedestrians attempting to cross a road.
- Severance and intimidation are much more sensitive to traffic flow and DoT suggest 30%, 60% and 90% changes in traffic levels should be considered as ‘sight’, ‘moderate’ and ‘substantial’ impacts respectively;

Other environmental impacts (e.g.: pollution, ecology, etc) are less sensitive to traffic flow changes, and it is recommended that, as a starting point, a 30% change in traffic would represent a reasonable threshold for undertaking a detailed highway link assessment.

5.4.3 As noted in section 5.2 to this report, analysis of the daily link flow demand on the closest main road corridors to the proposal site demonstrate that, in

general traffic terms, the development of the third line at Eastcroft EfW will not result in a material change in traffic volumes. Even including for 'worst case' sensitivity test scenarios, development traffic impact during key site operating periods (12 hour daytime period) is not anticipated to exceed 4.0% of background traffic. Such levels are substantially below IEA 30% guideline threshold levels.

5.4.4 In order to ensure the most robust appraisal of environmental impact, however, an additional test has been undertaken to review changes in HGV link flows. This appraisal has been carried out on the same basis as that for the appraisal of general traffic movements – i.e. based on a comparison of total daily Eastcroft EfW operational traffic movements to existing classified background traffic movements as taken from the base 12 hour 2004 surveys at the junction of Incinerator Road / A6011 Cattle Market Road / A6011 County Road. The table below illustrates the results of the HGV test, with base data provided in Appendix F to this report.

	12 hour flow 07:00-19:00 HGV Movements		
	Devel trips	B'ground flows	%'tage Increase
A6011 Cattle Market Road	69	1018	6.78%
Incinerator Road	134	426	31.45%
A6011 County Road	65	998	6.51%

2 way flow totals

5.4.5 The above table demonstrates that predicted additional development HGV levels on the main A6011 approach links will be less than the minimum IEA 30% guideline threshold. Indeed, HGV increases on the main A6011 route are not anticipated to reach levels of 7% of background HGV demand.

5.4.6 Sensitivity assessments assuming for all development traffic arriving from either the east or west A6011 corridor are illustrated below. These

demonstrate that even for these extreme routing scenarios, HGV increases will only be of the order of 13-14%, well below IEA guideline threshold levels.

All third line development traffic approaching from A6011 County Road (i.e. from the east):

- Development HGV Trips (2-way): 134
- Background HGV Trips (2-way): 998
- Percentage Impact: 13.4%

All third line development traffic approaching from A6011 Cattle Market Road (i.e. from the west):

- Development HGV Trips (2-way): 134
- Background HGV Trips (2-way): 1018
- Percentage Impact: 13.2%

5.4.7 Maximum development related HGV increases on the immediate local network are anticipated to be experienced on the main site approach road of Incinerator Road. Review of the table in paragraph 5.4.4, however, demonstrates that such additional demand will be of the order of 30% of existing 12hr HGV levels on this corridor. It should be noted however, that Incinerator Road is an industrial development distributor road and has no sensitive frontage development receptors such as residential land uses. Such HGV flow levels can therefore be accommodated on this route corridor without resulting in any material environmental impact.

5.4.8 Given the above review of anticipated link flow impact and reference to IEA guidelines, it can be concluded that the development of a third line at Eastcroft EfW will not result in a material change in operational or environmental conditions over the local highway network.

6.0 SUMMARY & CONCLUSIONS

6.1 This **Updated** Transport Statement has considered the highways and traffic issues arising as a result of the proposed expansion of the Eastcroft EfW facility to provide an additional 'Third Line' for the processing of municipal waste materials. The EfW facility already accommodates two lines, processing residual waste collected from the City of Nottingham and surrounding County Districts. The existing operation has a current processing capacity of 150,000 tpa. The proposal scheme envisages the delivery of a new waste line to provide an additional 100,000tpa processing capacity.

Report Scope

6.2 The **base** scope and nature of the assessment issues included in this report reflects the extent of highways and traffic issues identified as being of material interest to the LHA. This scope was established during discussions with officers of Nottingham City Council during early May 2007 and is based upon the previously agreed highways assessment methodology prepared to support the July 2005 application for a similar third line scheme at Eastcroft. It is understood that ultimately no technical objections were raised by Nottingham City Council highways **to the either the 2005 or 2007** submitted highways assessments and that it was accepted that traffic impact of the proposal scheme on the local and strategic highway network would not be significant. This document therefore seeks to update the previously agreed highways assessment work carried out in **2005 / 2007** and to provide additional 'worst case' sensitivity analysis where appropriate.

Strategic environmental and sustainability case

6.3 The Eastcroft EfW site enjoys a highly accessible location close to Nottingham City Centre. The proposals for a new Third Line facility are

considered to provide additional opportunities for sustainable waste management, with the proposal site centrally located to the local waste catchment and adjacent to the key main transport corridors to / from Nottingham City Centre and surrounding County districts. Development at Eastcroft is therefore anticipated to assist in managing overall travel distances for waste vehicle movements.

- 6.4 The Eastcroft EfW site is also located adjacent to the Nottingham – Newark / Grantham railway line and associated railway sidings / yard. Whilst the EfW facility is not currently directly rail served and indeed does not process waste from locations which have access to a rail bulking facility at this time, it is considered that the site's location could potentially deliver opportunities for future rail connections if practical.

Development Proposals

- 6.5 The current scheme proposals are to develop a third waste input line at the Eastcroft EfW site, to be accommodated within the existing footprint of the main complex. The proposed extension would provide the capacity to process an additional 100,000 tonnes of non-hazardous waste per year. Once the extended plant is operational the waste processing capacity of the plant would increase to approximately 250,000 tpa.
- 6.6 Vehicular access to the proposal site would continue to be taken via the existing main access route from the northern extension of Incinerator Road. HGV access will continue to be controlled via the existing gatehouse / weighbridge facility, with no material alterations to the tipping hall access ramps or internal one way system.
- 6.7 It is proposed that the Eastcroft plant would continue to operate on the permitted 24 hour, 7 days a week basis. Following introduction of the

additional third line waste stream, it is proposed that practical weekday delivery hours would be extended to cover 7am to 8pm Monday to Friday. No waste would be delivered on Sundays or Bank Holidays. The additional practical weekday delivery hours (16:00-20:00) are proposed to provide a level of future operational flexibility at the site and minimise the potential for site congestion at peak hours - they do not change existing permitted site operation.

Anticipated Development Trip Demand

- 6.8 The Eastcroft EfW plant currently processes approximately 140,000 – 160,000tpa (typically 150,000tpa) of mainly municipal solid waste (MSW), which includes some light commercial (shops and offices) and industrial waste such as office waste, packaging and other similar materials. Anticipated future traffic demand movements to / from the expanded Eastcroft EfW facility have been estimated on the basis of a pro-rata methodology using operational information collected at the site access weighbridges. Information utilised in this updated report has been based on May 2008 weighbridge data. These surveys identified an increased level of traffic demand when compared to the data previously recorded during the 2003 / 2004 exercise. It is anticipated that this increase in baseline demand to the Eastcroft EfW site reflects changes in vehicle loadings associated with the increased penetration of municipal waste recycling, the increased efficiency of the Eastcroft EfW plant following refurbishment and that the May 2008 data recorded a known busy operational period, when previously typical annual average flows were utilised.
- 6.9 Operation of the Eastcroft EfW site including for the additional third waste line, will increase overall site processing capacity by 100,000tpa to 250,000tpa. Waste materials will be similar to the existing site operation and are anticipated to be delivered from within a similar catchment area.

- 6.10 On the basis of the above growth assumptions, it has been estimated that expansion of the Eastcroft EfW to 250,000tpa capacity (and associated increase in process by-products) via the introduction of the third line would **likely** result in total traffic demand of the order of **334** HGV movements per day (In + Out). Such demand represents an increase in traffic demand associated with the Eastcroft EfW site of the order of 67%.
- 6.11 In order to provide a 'worst case' assessment of likely operational traffic demand during the existing core weekday daytime development operating periods, the predicted additional HGV traffic associated with the third line scheme has been modelled on the basis of the existing observed traffic demand profile at Eastcroft. This demand profile reflects the current observed RCV direct delivery practice at Eastcroft, with the majority of waste delivery trips taking place during mid-morning / early afternoon.
- 6.12 In practice, however, it is anticipated that operation of the third line appeal scheme could result in the additional traffic movements being spread more equally across the day, particularly if some of the additional waste is ultimately delivered in bulk HGV units from external transfer stations. Indeed, part of the operational flexibility anticipated to be provided by the revised delivery window is to allow for the more efficient accommodation of larger bulker HGV units and help avoid site congestion during peak demand periods. In order to reflect the potential for different delivery patterns for third line development flows, sensitivity assessments have been carried out for the proposed extended delivery hours, based on 20 delivery vehicle movements (10 in + 10 out).

Distribution of Development Trips

- 6.13 In estimating the wider network assignment of traffic over the remaining local access roads within the study area, reference has been taken of the agreed

methodology and assignment proportions identified by Jacobs Babbie in the 2005 Transport Assessment. This methodology examined existing waste origins and vehicle tonnage data taken from the WRG weighbridge information to estimate likely approach link proportions on the key routes of A60 London Road, A612 Manvers Road and A6011 Lady Bay Bridge. As the current Eastcroft EfW waste lines process waste from both Nottingham City Council and immediate Nottinghamshire County Districts use of a distribution base on current site operation is considered to represent a suitable 'proxy' for future waste demand to the proposed third line facility. **This distribution is considered to still provide a suitable estimate of current demand to the Eastcroft EfW**

Development Traffic Impact

- 6.14 Impact assessment has been carried out through the consideration of link / flow assessment over key local network links to the Eastcroft EfW site and detailed junction operational assessment at the immediate junction of Incinerator Road / A6011 Cattle Market Road / A6011 County Road. Operational assessments have been carried out for a development 'opening year' of 2012 and a 10 year future design horizon of 2022. Such an approach reflects DfT good practice guidance for transport assessment. To ensure the most robust assessment of network operation, it is assumed that the Eastcroft EfW facility would be operating at full capacity (250,000 tpa) at both opening and design years.

Link Flow Impact

- 6.15 Review of changes in 2012 Opening Year hourly two way link flows on those closest highway links to the Eastcroft EfW site (Incinerator Road, A6011 Cattle Market Road and A6011 County Road) as a result of the third line proposal scheme, identifies that peak hour impact on both of the A6011

approach links is **not** anticipated to be **in excess of 1%** - well below minimum indicative guidelines thresholds for additional assessment.

6.16 **Review of link impact on the main site access route of Incinerator Road suggests that development link flow increases are not anticipated to reach levels in excess of 10% in key approach directions for the core weekday daytime hours. Larger impacts are, however, identified during the PM peak and early evening extended delivery hours, although these larger percentage increases are more a reflection of low existing trip demand on this link, rather than a significant increase in development traffic volumes. Indeed maximum modelled hourly traffic demand to / from the proposal site for this time periods is not anticipated to be in excess of 20 vehicles per hour (In + Out) or just one additional vehicle movement every 3 minutes. Such demand levels are not anticipated to lead to a material change in network operational conditions.**

6.17 The above hourly link flow impact conclusions are further supported by analysis of 12 hour traffic volumes. This demonstrates that maximum two-way development link flows associated with the proposed third line at Eastcroft EfW are generally anticipated to be low, with maximum link impact of just **3.97%** being experienced on Incinerator Road. Such changes are well below minimum indicative guideline thresholds. Link impact on the immediate sections of the A6011 is also not anticipated to reach material levels, with development traffic predicted to represent less than 0.5% of opening year 2012 background demand flows.

6.18 In order to model the impact of alternative development traffic assignment **for the proposed third line waste stream**, two sensitivity tests have been carried out to reflect the following 'worst case' assignment scenarios:

- All additional third line development traffic approaches from the west via A6011 Cattle Market Road;

- All additional third line development traffic approaches from the east via A6011 County Road.

6.19 Analysis of the results of these sensitivity tests, further supports the conclusion that operation of the Eastcroft EfW Third Line proposal scheme is not anticipated to generate traffic levels that will result in a material change in link flow conditions on key local access routes.

Site Access Junction Operation

6.20 Notwithstanding the above conclusions regarding link flow impact, in order to reflect DfT good practice guidance, detailed operational assessment of the Incinerator Road / A6011 junction has been carried out. Results of the 2022 future year 'with Eastcroft EfW Third Line' model runs for typical AM, PM and off peak hour periods, **as well as the proposed extended delivery hours of 16:00-20:00** illustrate that the key Incinerator Road access junction to the A6011 corridor is predicted to operate efficiently with some spare capacity and only strictly limited queuing on key turning movements. For 'typical' 2022 future year demand conditions, maximum junction operation is predicted to occur during the AM peak, with peak RFC's of the order of 0.54 and negligible queuing levels. Such operation is considered to represent satisfactory conditions for the future demand period and suggests an element of spare capacity.

6.21 'Sensitivity' operational assessments, including for the 'worst case' development assignment proportions (i.e. all third line traffic accessing the site from a single approach direction on the A6011 - either all eastbound or all westbound), have also been carried out. These tests demonstrate that the junction is predicted to continue to deliver satisfactory performance for future demand conditions, with no evidence of congestion and only strictly limited queuing.

Traffic Related Environmental Conditions

- 6.22 Analysis of the daily link flow demand on the closest main road corridors to the proposal site demonstrate that, in general traffic terms, the development of the third line at Eastcroft EfW will not result in a material change in traffic volumes. Even including for 'worst case' sensitivity test scenarios, development traffic impact during key site operating periods (12 hour daytime period) is not anticipated to exceed 4.0% of background traffic. Such levels are substantially below IEA 30% guideline threshold levels.
- 6.23 In order to ensure the most robust appraisal of environmental impact, however, an additional test has been undertaken to review changes in HGV link flow demand. The analysis of 12 hour traffic data demonstrates that predicted additional development HGV levels on the key A6011 approach corridor are anticipated to represent an increase of less than 7% when compared to 2012 baseline demand. Sensitivity assessments assuming for all development traffic arriving from either the east or west A6011 corridor have also been carried out and demonstrate that even for these extreme routing scenarios, HGV increases will only be of the order of 13-14% - well below the IEA threshold of 30%.
- 6.24 Maximum third line development related HGV increases on the local network are anticipated to be experienced on the main site approach road of Incinerator Road. It should be noted however, that Incinerator Road is an industrial development distributor road and has no sensitive frontage development receptors such as residential land uses. It is therefore considered that the predicted third line HGV flow levels can be accommodated on this route corridor without resulting in any material environmental impact.

- 6.25 Given the above review of anticipated future operational highway conditions and reference to appropriate guideline standards, it can be concluded that the development of a third line at Eastcroft EfW will not result in a material impact in operational or environmental conditions over the local highway network. Development traffic flow increases will generally be low and it is considered that there is no requirement for significant development related off-site highway improvement works to support the scheme.