

**LAND OFF DONCASTER ROAD, GOLDTHORPE
PROPOSED RESIDENTIAL AND EMPLOYMENT
DEVELOPMENT**

TRANSPORT ASSESSMENT

**November 2004
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1 INTRODUCTION

1.1 Introduction

1.1.1 This report considers the transport implications of a proposed residential and employment development on the former Goldthorpe Colliery site and adjacent land. The site is located east of Goldthorpe town centre, some 8km west of Barnsley, as may be seen in a regional context figure 1 and in a local context in figure 2.

1.1.2 The development would comprise some 321 dwellings and some 9540sqm of employment development comprising a range of office, industrial and warehousing development as set out below:

- Office (B1) 1400sqm Gross Floor Area
- Industry (B2) 5340sqm Gross Floor Area
- Warehousing 2800sqm Gross Floor Area

1.1.3 Site access would be improved as part of the proposed development through the widening and realignment of the access road, which would be made up to an adoptable standard with the provision of footways and introduction of traffic signal control at the junction with Doncaster Road. Details of the access improvement have been the subject of extensive discussion and agreement with Officers of Barnsley Council.

1.1.4 Doncaster Road through the Goldthorpe, was previously part of the main A635 route connecting Barnsley with the A1 trunk road and Doncaster. Completion of the Goldthorpe bypass in 1995 however resulted in the removal of most through traffic and Doncaster Road is now generally lightly trafficked and used primarily by local traffic.

1.1.5 Since completion of the bypass a range of traffic management measures have been introduced on Doncaster Road to provide more appropriate facilities for current usage comprising:

- Introduction of traffic calming measures
- Widened footways
- On-street parking bays and build-outs.

1.2 Background

1.2.1 In April 2001 Outline planning approval was obtained (B/00/0001/DE) for a mixed-use development of land, which includes the current application site. A mixed-use development of some 280 dwellings and 17,000sqm of employment uses was envisaged, with access from Doncaster Road by means of a 'ghost-island priority junction.

1.2.2 The development now proposed is therefore broadly comparable with the consented development, although a higher standard of site access is now proposed.

1.3 Scope of the Report

1.3.1 Subsequent sections of this report consider the following matters:

- | | |
|---------------|--|
| Section Two | deals with transport policy considerations |
| Section Three | considers accessibility for public transport users, pedestrians and cyclists |
| Section Four | considers existing and future traffic flows on the local highway network |
| Section Five | presents an analysis of the operation of the local highway network in current and future years |
| Section Six | provides a summary and conclusion to the report |

2 TRANSPORT POLICY CONSIDERATIONS

2.1 Introduction

2.1.1 This report has been prepared having regard to national and local transport related policy statements including:

- Planning Policy Guidance Note 1 – General Policy and Principles
- Transport White Paper - A New Deal for Transport: Better for Everyone
- Planning Policy Guidance Note 3 – Housing
- Planning Policy Guidance Note 13 – Transport
- Regional Transport Strategy for Yorkshire and the Humber
- South Yorkshire Local Transport Plan 2001 – 2006
- Barnsley Unitary Development Plan

2.2 Planning Policy Guidance Note 1 – General Policy and Principles

2.2.1 Planning Policy Guidance (PPG) Note 1: General Policy and Principles, published in February 1997, outlines the main principles of national planning policy. This PPG introduces the desire for sustainable development, the benefits of mixed-use development, and the need for good design.

2.2.2 With reference to land use and transport, PPG1 states in paragraph 23:

"In order to achieve sustainable patterns of development and to help reduce the environmental impacts of transport, local authorities should integrate their transport programmes and land-use policies in ways which help to:

- *Reduce growth in the length and number of motorised journeys;*
- *Encourage alternative means of travel which have less environmental impact; and hence*
- *Reduce reliance on the private car.*

The key objectives for the planning system are to:

- *Influence the location of different types of development relative to transport (and vice versa); and*
- *Foster forms of development which encourage walking, cycling and public transport use."*

2.3 Transport White Paper - A New Deal for Transport: Better for Everyone

2.3.1 The White Paper, published in July 1998, was the culmination of a fundamental review of transport policy and widespread consultation. The White Paper sets the framework within which detailed transport policies are to be taken forward.

2.3.2 The White Paper states that the Government wants transport to:

"Contribute to our quality of life not detract from it. The way forward is through an integrated transport policy. By this we mean:

- *Integration within and between different types of transport – so that each contributes its full potential and people can move easily between them;*
- *Integration with the environment – so that our transport choices support a better environment;*
- *Integration with land use planning – at national, regional and local level, so that transport and planning work together to support more sustainable travel choices and reduce the need to travel;*
- *Integration with our policies for education, health and wealth creation – so that transport helps to make a fairer, more inclusive society."*

2.3.3 Key objectives of the new integrated transport policy are to:

- *Improve choice in transport;*
- *Reduce the need to travel while improving access to education, jobs, leisure and services;*
- *Reduce environmental impacts from transport: on greenhouse gas emissions, air pollution and noise, habitats and wildlife;*
- *Improve transport safety and security.*

2.4 Planning Policy Guidance Note 3 – Housing

2.3.1 PPG 3 sets out the Government's approach to planning for housing, which includes promoting more sustainable patterns of development and making better use of previously developed land. With regard to transport, PPG 3 requires that Local Planning Authorities should:

- *Create more sustainable patterns of development by building in ways which exploit and deliver accessibility by public transport to jobs, education and health facilities, shopping leisure and local services*

- *Place the needs of people before ease of traffic movement in designing the layout of residential developments*
- *Seek to reduce car dependence by facilitating more walking and cycling, by improving linkages by public transport between housing, jobs, local services and local amenity by planning for mixed use and*

2.3.2 In identifying sites to be allocated for housing, PPG 3 advises (in paragraph 30) that a search sequence should be followed starting with the re-use of previously developed sites within urban areas, then urban extensions and finally new development around nodes in good public transport corridors.

2.3.3 In deciding which sites to allocate for housing (paragraph 31) and to assist in managing the release of land PPG 3 identifies (in paragraph 33) a range of further evaluation criteria. Those relevant to transport matters are:

- *The location and accessibility of potential development sites to jobs, shops and services by modes other than the car and the potential for improving such accessibility*
- *The capacity of existing and potential infrastructure, including public transport, utilities, social infrastructure (such as schools and hospitals) and the cost of necessary infrastructure improvements*

2.3.4 PPG 3 also provides guidance on the internal layout of development advocating standards of design consistent with current best practice. A normal maximum provision of 1.5 car parking spaces per dwelling is recommended with development density normally in the range 30-50 dwellings per hectare (paragraphs 58 and 62).

2.3.5 With regard to transport, reference is made (in paragraph 48) to the need for public transport to be used to positively shape the pattern of development and to the policy guidance provided in PPG 13. In this context, an assessment of the effectiveness of proposed bus services, any related bus priority measures, and other facilities for non-car based travel in promoting sustainable transport choices would be required.

2.5 Planning Policy Guidance Note 13 - Transport

2.5.1 The objectives of PPG13, published in March 2001 are to integrate planning and transport at the national, regional, strategic and local level to:

- *Promote more sustainable transport choices for both people and for moving freight;*
- *Promote accessibility to jobs, shopping, leisure facilities and services by public transport, walking and cycling, and*
- *Reduce the need to travel, especially by car.*

2.5.2 PPG 13 recognises in paragraph 20 the need for local authorities to ensure that strategies set out in the development plan and the local transport plan are complementary. The need for development plan allocations and local transport priorities and investment to be closely linked should also be recognised.

2.5.3 In paragraph 6 PPG 13 indicates an objective for developments providing employment opportunities to be located in areas where a realistic choice of access by public transport, walking and cycling is available. PPG 13 also notes the potential benefits arising from mixed use developments, for example involving residential and employment uses where the juxtaposition of these land uses can provide opportunities for non-car based travel, thereby minimising the effects of the local highway network.

2.6 Regional Transport Strategy for Yorkshire and the Humber

2.6.1 The Regional Transport Strategy (RTS) for Yorkshire and the Humber is contained within the Regional Planning Guidance for Yorkshire and The Humber (RPG12), which was published in 2001.

2.6.2 The primary objectives for the Regional Transport Strategy are derived from the key objectives for RPG as a whole, expanding on those aspects most open to influence by transport policies:

- *To integrate transport and land-use planning, in particular:*
 - *To support regeneration and economic growth and in particular facilitate development in the main urban areas and regeneration priority areas identified in RPG*

- *To support sustainable development*
- *To reduce the need to travel, especially by car*
- *To reduce the impact of traffic and travel on the environment*
- *To improve access to opportunities in a manner that is equitable and socially inclusive*
- *Within the transport system itself:*
 - *To integrate the operation of different transport modes*
 - *To make efficient use of transport resources*
 - *To promote safety*
 - *To maximise the use of more energy efficient modes of travel, including cycling and walking*
 - *To assist in the achievement of the Government's local air quality targets*
 - *To increase the provision of safe traffic-free networks for access on foot or cycle within and between town and countryside*
 - *To be affordable and achievable in practical terms*

2.7 South Yorkshire Local Transport Plan

2.7.1 The South Yorkshire Local Transport Plan (LTP), published in 2000, sets out a 5-Year Strategy and Programme for the period 2001-2006). The LTP covers all forms of transport, with the aim of co-ordinating and improving local transport policy and provision. It sets out a long-term strategy for transport provision in South Yorkshire and is intended to influence the provision of transport by all providers.

2.7.2 The LTP objectives are:

- *To improve and protect the environment;*
- *To improve transport to areas of poor accessibility and job creation as an integral part of regeneration;*
- *To reduce the need to travel while improving the efficiency of the transport system and sustaining a vibrant economy;*
- *To meet the needs of the socially and physically disadvantaged;*
- *To provide genuine choices of travel mode;*
- *To improve safety for all travellers;*
- *To maintain infrastructure to ensure the safe and efficient movement of goods and people.*

2.7.1 Specific reference is made within the LTP in figure 15 to preferred strategies by functional area – including redevelopment in former coalfield areas.

- *Target development where infrastructure exists or is to be provided within Plan period*
- *Major improvements in public transport*
- *Re-order modal hierarchy*
- *Actively promote self-supporting communities with land use changes and priorities*
- *Promotion and active support for green travel initiatives*

2.8 Barnsley Unitary Development Plan

2.8.1 The UDP Strategy recognizes the positive contribution that good transport links can make towards the economic regeneration, stating the need to:

‘Create a transport network which not only supports sustainable development objectives but also encourages economic regeneration and improvement in the quality of life for local residents in both urban and rural communities.’

2.8.2 The objectives of the Council’s transport strategy as stated in the UDP are therefore:

1. To improve transport provision and services to areas of poor accessibility and job creation as an integral part of a coherent regeneration strategy.
2. To improve and protect the environment.
3. To improve the safety and efficiency of the transport network.
4. To provide genuine choices of travel mode as alternatives to the private car by assisting public transport operation, retention and development of the network, and development of facilities for cyclists and pedestrians.
5. To meet the needs of the physically and socially disadvantaged.

2.9 Summary

2.9.1 National planning and transport related policies seek to promote sustainable development and the integration of planning and transport to promote more sustainable transport choices and reduce the need to travel, especially by car. The main thrust of both national and local transport related policy is that new developments should be conveniently accessible by a range of transport modes including public transport.

3 ACCESSIBILITY

3.1 Introduction

3.1.1 The purpose of this section of the report is to demonstrate that the proposed development will be conveniently accessible by modes of transport other than the private car.

3.2 Public Transport

3.2.1 Two bus services per hour pass the site in each direction on Doncaster Road providing services to Barnsley, Doncaster and intermediate local centres. These services are indicated in table 3.1 below. Existing bus stops on Doncaster Road are situated within around 400metres of most of the site.

Service Number and Operator	Route	Frequency			
		Mon-Sat			Sun
		Peak	Off Peak	Evening	
212 (Yorkshire Traction)	BARNSELY – Darfield – Great Houghton – Thurnscoe – Goldthorpe – Hickleton – Marr - Scawsby – DONCASTER	60 mins	60 mins	60 mins	60 mins
X19 (Yorkshire Traction)	BARNSELY – Darfield – Goldthorpe – DONCASTER	60 mins	60 mins	No Service	No service

Table 3.1 Existing Bus Services on Doncaster Road

3.2.2 A range of further services operates via Barnsley Road/Leadley Street, in Goldthorpe town centre, as indicated in table 3.2. These services are available within a 10 minute walk from the site and would provide a further a useful travel option for residents and employees.

3.2.3 Services available from Doncaster Road and Barnsley Road/Leadley Street therefore combine to provide a frequent service to and from Barnsley, with regular services also available to Doncaster, Rotherham and other local centres.

Service Number and Operator	Route	Frequency			
		Mon - Sat			Sun
		Peak	Off-Peak	Evening	
74 (Yorkshire Traction)	DONCASTER – Sprotborough – Cadeby – High Melton – Goldthorpe (until 1802hrs) – Bolton on Dearne – MEXBOROUGH	60 mins	60 mins	60 mins	60 min
70 (Yorkshire Traction)	ROTHERHAM – Rawmarsh – Swinton – Mexborough – Adwick – Goldthorpe – THURNSCOE	Hourly service from 09.00-18.00 hours			No service
79 (Yorkshire Traction)	ROTHERHAM – Rawmarsh – Swinton – Mexborough – Bolton on Dearne – Goldthorpe – Darfield – BARNLEY	30 mins	30 mins	No Service	60 mins
226 (Yorkshire Traction)	BARNLEY – Wombwell – Wath – Bolton on Dearne – Goldthorpe – THURNSCOE	30 mins	30 mins	60 mins	60 mins

Table 3.2 Existing Bus Services on Barnsley Road/Leadley Street

3.3 Rail Services

3.3.1 Passenger rail service are available from Goldthorpe station to Leeds, Sheffield and intervening stations. The station is situated approximately 15 minutes walk (1200 metres) from the site. Goldthorpe is served by an hourly train service between Leeds and Sheffield. Journey times are approximately 45 minutes to Leeds and 35 minutes to Sheffield. Rail travel therefore also provides a viable travel option for residents and employees.

Operator	Route	Frequency			
		Mon-Sat			Sun
		Peak	Off Peak	Evening	
Arriva Trains Northern	LEEDS – Wakefield – Sandal & Agbrigg – Fitzwilliam – Moorthorpe – Thurnscoe – Goldthorpe – Bolton-on-Deerne – Swinton – Rotherham – Meadowhall – SHEFFIELD	60 mins	60 mins	60 mins	60 mins

Table 3.4 Existing Rail Services Available from Goldthorpe Station

3.4 Facilities for Pedestrians and Cyclists

3.4.1 A network of convenient routes for pedestrians and cyclists is proposed for movement within the site, linking with existing footway/footpaths and cycle routes where possible. Facilities for pedestrians and cyclists within the site will be provided in accordance with current best practice.

3.1.2 Suitable footway links are already available between the site and Goldthorpe town centre where a range of shopping, leisure, community facilities and opportunities for transport interchange are available. A link for pedestrians and cyclists to the market place in the centre of Goldthorpe is also available from the southern end of Beever Street. This route has been adopted by Barnsley Council is lit and has a tarmac surface.

3.4.2 In addition, it is noted that there is a public footpath between the site and Barnburgh Lane to the south. This footpath provides a convenient pedestrian link between the site and Dearne High School and the Dearne Leisure Centre.

3.4.3 The pedestrian and cycling routes already available will therefore assist in promoting walking and cycling for trips within the development and a wide range of local trips.

3.5 Summary

3.5.1 The site is served by regular bus services on Doncaster Road which combine with those available from Barnsley Road/Leadley Street in the town centre to provide a frequent service to and from Barnsley. Regular bus services are also available linking the site with Doncaster, Rotherham and other local centres.

3.6.1 Goldthorpe Railway Station is situated within an easy walking distance of the site. Regular services from Goldthorpe station provide convenient travel opportunities for residents and employees to and from Sheffield, Leeds and other intervening centres.

3.6.2 A network of routes for pedestrians and cyclists is available to promote walking and cycling. In particular, links between the site and Goldthorpe town centre, Dearne High School and the Dearne Leisure Centre are available and provision within the site would be in accordance with current best practice.

- 3.6.3 Development of the site for residential and employment purposes is therefore consistent with the provisions of national and local transport related policies having regard to the opportunities for travel by public transport, walking and cycling which *are already available.*

4 EXISTING TRAFFIC CONDITIONS

4.1 Introduction

4.2.1 *This section of the report considers existing traffic conditions in the vicinity of the site.*

4.2 The Local Highway Network

4.2.2 The existing site access road, which formerly served the Colliery, is a 6.4-metre wide single carriageway two-way road with a narrow verge on its western side and wide verge and footway generally 1.6metres in width on its eastern side, as may be seen in figure 3.

4.2.3 The existing access road is a cul-de-sac and is a private road (ie it is not an adopted highway). It is relatively straight and flat with no serviceable system of street lighting. At its northern end, the road forms a simple priority junction with Doncaster Road. Visibility onto Doncaster Road from the access road is limited due to the proximity of boundary walls and fences etc, which mark the highway boundary. Formal visibility splays have not been provided at the junction.

4.2.4 Doncaster Road, which formed part of the A635 Barnsley-Doncaster road prior to completion of the Goldthorpe bypass, is a single carriageway two-way road with wide footways to both sides. It serves a mixture of terraced residential and retail/business uses, some of which have direct vehicular access. It also connects with several side roads serving predominantly residential development.

4.2.5 Following completion of the bypass in 1995, a range of traffic management measures including on-street parking bays, widened footways and traffic calming measures have been introduced on Doncaster Road in recognition of the reduction in traffic levels achieved by the removal of through traffic. Doncaster Road is lit and is subject to a 30 mph speed limit.

4.2.6 Minor roads joining Doncaster Road in the vicinity of the site access road include:

- *Beever Street* – a minor residential road joining Doncaster Road from the south, currently used also to provide access a number of industrial premises.
- *Nora Street* – a minor residential road joining Doncaster Road from the north
- *Garden Street* – a minor residential road joining Doncaster Road from the south, used to access allotments to the west of the site.

4.2.7 Proceeding in a westerly direction on Doncaster Road towards the village shopping centre, on-street parking bays are available on the southern side of Doncaster Road over a distance of some 100metres from the site access junction to the junction with *Garden Street*. Residential properties front this section of Doncaster Road and some on-street parking is evident.

4.2.8 Doncaster Road through the centre of Goldthorpe is characterised by numerous minor road priority junctions. Around 825 metres west of the site, Doncaster Road connects with High Street as a traffic signal controlled 'T' junction.

4.2.9 To the east of the site access junction waiting restrictions on both sides of Doncaster Road prohibit waiting on the site frontage during the normal working day (Monday – Saturday 0800 – 1800).

4.2.10 Around 600 metres east of the site access junction, Doncaster Road is the minor road at a priority junction with the A635 Goldthorpe bypass. A 'ghost-island' turning lane is available on the bypass to assist turning traffic. The layout of this relatively new junction is consistent with design criteria.

4.2.11 The A635 Goldthorpe bypass is a wide single carriageway two-way road with grass verges to both sides. The A635 forms the main route between Barnsley and the A1/Doncaster metropolitan area. It is subject to the national speed limit (60 mph).

4.3 Existing Traffic Flows

4.2.12 Existing traffic flows in the vicinity of the site have been derived from surveys undertaken by Barnsley Council. This data has been factored to a 2004 base year level by applying National Road Traffic Forecast (NRTF) low growth factors. The resulting morning and evening peak hour traffic flows on the local highway network are shown in figures 4 and 5.

4.2.13 Traffic flows on Doncaster Road in the vicinity of the site are at a modest level with around 200 vehicles per hour two-way during the morning peak hour and 300 vehicles per hour in the evening peak hour. The count data demonstrates that there is little variation in traffic volumes throughout the working day. Traffic flows on Doncaster Road west of the site access junction are set out in the table below.

	Eastbound to A635 (vehicles)	Westbound from A635 to Goldthorpe centre (vehicles)	Two-Way flow (vehicles)
Morning Peak Hour (08:00 – 09:00 hours)	83	131	214
Evening Peak Hour (17:00 – 18:00 hours)	163	147	311

Table 4.1 Existing (2004) Peak Hour Traffic Flow on Doncaster Road, West of the Site Access

4.3.6 Peak hour traffic flows on Doncaster Road at the junction with High Street are at a moderate with around 435 vehicles per hour two-way during the morning peak hour and 610 vehicles per hour in the evening peak hour.

	Doncaster Road Eastbound (vehicles)	Westbound traffic Doncaster Road (vehicles)	Two-Way Flow (vehicles)
Morning Peak Hour (08:00 – 09:00 hours)	193	242	435
Evening Peak Hour (17:00 – 18:00 hours)	276	334	610

Table 4.2 Existing (2004) Peak Hour Traffic Flow on Doncaster Road, East of the Junction with High Street, Goldthorpe

4.3.7 Existing traffic flows on A635 Goldthorpe Bypass are at a moderate level, with two-way flows in the range 1050 – 1100 vehicles per hour in the peak hours, as summarised in table 4.3 below.

	Eastbound on A635 (vehicles)	Westbound on A635 (vehicles)	Two-Way flow (vehicles)
Morning Peak Hour (08:00 – 09:00 hours)	541	516	1057
Evening Peak Hour (17:00 – 18:00 hours)	482	603	1085

Table 4.3 Existing (2004) Peak Hour Traffic Flow on A635 Goldthorpe Bypass, East of Doncaster Road Junction

4.4 Traffic Speed

4.4.1 Traffic movement on Doncaster Road from the junction with the A635 bypass past the site access junction and through the centre of Goldthorpe is subject to a 30mph speed limit. Whilst formal surveys have not been undertaken, traffic speeds appear to be generally consistent with the speed limit.

4.5 Operational Assessment

4.5.1 Current operation of the local highway network during morning and evening weekday peak hours has been analysed using the appropriate Transport Research Laboratory (TRL) software. Currently there is effectively no traffic usage of the site access and therefore a formal assessment of the existing junction with Doncaster Road would be inappropriate.

4.5.2 Operation of the junction of Doncaster Road and High Street has been analysed using the Transport Research Laboratory program OSCADY. Table 4.4 shows the results of the analysis for the base year of 2004 at the junction of Doncaster Road and High Street. This demonstrates that the junction operates within capacity. Full details of the analysis are provided in Appendix A.

Approach	Morning Peak Hour (08:00-09:00hours)		Evening Peak Hour (16:00-17:00 hours)	
	Ratio of Flow to Capacity	Max Queue in vehicles	Ratio of Flow to Capacity	Max Queue in vehicles
Doncaster Road East	0.584	2.8	0.727	5.0
High Street	0.611	2.8	0.734	4.4
Doncaster Road West	0.547	2.2	0.728	4.9

Table 4.4 Junction of Doncaster Road and High Street – Existing Operation

4.5.3 The junction of Doncaster Road and the A635 bypass has been analysed using PICADY version 4 and shows that currently the junction is operating well within capacity. The results of this analysis are summarised in table 4.5 and presented in full in Appendix B.

Movement	Morning Peak Hour (08:00-09:00hours)		Evening Peak Hour (16:00-17:00 hours)	
	Ratio of Flow to Capacity	Max Queue in vehicles	Ratio of Flow to Capacity	Max Queue in vehicles
Doncaster Road right turn to Goldthorpe Bypass	0.218	0.3	0.348	0.5
Doncaster Road left turn to Goldthorpe Bypass	0.013	0.0	0.012	0.0
Goldthorpe Bypass right turn to Doncaster Road	0.004	0.0	0.017	0.0

Table 4.5 Junction of Doncaster Road and A635 Bypass Operational Assessment – 2004 Base Year

4.6 Summary

4.6.1 Access to the former colliery site is currently available from Doncaster Road at a simple priority junction. Existing traffic flows on Doncaster Road are at a modest level as most 'through' traffic now uses the A635 Goldthorpe Bypass. Following the closure of the Colliery, the site access road is little used by vehicular traffic.

- 4.6.2 This section of Doncaster Road provides a link between Goldthorpe town centre and the A635 Bypass to the east. Traffic signal control has been introduced at the junction with High Street in the town centre, whilst a ghost-island layout is provided at the junction with the Bypass. Both junctions currently operate well within capacity, even during peak hours.

5 TRAFFIC EFFECTS OF DEVELOPMENT

5.1 Introduction

5.1.1 This section of the report considers the volume of traffic likely to be generated by the proposed development and the effects of this traffic on operation of the local highway network.

5.2 Traffic Generation

5.2.1 The volume of traffic likely to be generated by the proposed developments has been assessed by reference to the TRICS database (version 2004b). The assessment for each element of the proposed development was made by reference to the relevant section of the database, as listed below:

- Residential – Privately Owned'
- Employment – Office
- Employment – Industrial Estate
- Employment – Warehousing (Commercial)

5.2.2 The following parameters were adopted for each interrogation of the database:

- Most recent survey for each site;
- Greater London and town centre sites excluded
- Sites with no public transport provision excluded

5.2.3 Trip rates and traffic generation for each element of the proposed development are summarised in the tables below and presented in full in Appendix C.

	WEEKDAY 08:00-09:00 HOURS		WEEKDAY 17:00-18:00 HOURS	
	Arrivals (veh)	Departures (veh)	Arrivals (veh)	Departures (veh)
Trip Rate per Dwelling	0.15	0.47	0.41	0.22
Trips (321 dwellings)	48	151	132	71

Table 5.1 Traffic Generation – Proposed Residential Development

	WEEKDAY 08:00-09:00 HOURS		WEEKDAY 17:00-18:00 HOURS	
	Arrivals (veh)	Departures (veh)	Arrivals (veh)	Departures (veh)
Trip Rate per 100sqm GFA	1.80	0.26	0.19	1.59
Trips (1400 sqm GFA)	25	3	4	22

Table 5.2 Traffic Generation – Proposed Office Development

	WEEKDAY 08:00-09:00 HOURS		WEEKDAY 17:00-18:00 HOURS	
	Arrivals (veh)	Departures (veh)	Arrivals (veh)	Departures (veh)
Trip Rate per 100sqm GFA	0.62	0.19	0.14	0.52
Trips (5340sqm GFA)	33	10	7	28

Table 5.3 Traffic Generation – Proposed Industrial Development

	WEEKDAY 08:00-09:00 HOURS		WEEKDAY 17:00-18:00 HOURS	
	Arrivals (veh)	Departures (veh)	Arrivals (veh)	Departures (veh)
Trip Rate per 100sqm GFA	0.17	0.10	0.11	0.16
Trips (2800sqm GFA)	5	3	3	4

Table 5.4 Traffic Generation – Proposed Warehousing Development

5.2.4 An estimate of traffic generation for the composite development has been obtained by adding the traffic generation for each element of the development, as indicated in table 5.5 below.

5.2.5 The proposed development, incorporating residential and employment land uses will provide the opportunity for people to live close to their place of work, with the opportunity for trips to and from work to be made on foot or by cycle. Such trips would clearly not impact on Doncaster Road or other off-site sections of the local highway network, however to ensure that a robust assessment is made no allowance has been made for such local trips in the assessment of overall trip making associated with the composite development.

	WEEKDAY 08:00-09:00 HOURS		WEEKDAY 17:00-18:00 HOURS	
	Arrivals (veh)	Departures (veh)	Arrivals (veh)	Departures (veh)
Trips	111	167	146	125

Table 5.5 Traffic Generation – Composite Development

5.2.6 The proposed development will also provide the opportunity for vehicular access to the existing industrial units and telephone exchange to be taken from the new access road rather than Beaver Street. This would clearly be of significant benefit to residents of Beaver Street as it would provide the opportunity to remove industrial traffic from this minor residential road.

5.2.7 The two existing industrial units provide floorspace of 1354sqm GFA. Whilst traffic generation associated with these existing units is currently at a low level, to provide a robust assessment, potential traffic generation has been assessed by reference to the relevant section of the TRICS database, as indicated in table 5.6 below. *The telephone exchange generates only occasional traffic movements and the traffic effects of this existing building can therefore be ignored.*

	WEEKDAY 08:00-09:00 HOURS		WEEKDAY 17:00-18:00 HOURS	
	Arrivals (veh)	Departures (veh)	Arrivals (veh)	Departures (veh)
Trip Rate per 100sqm GFA	0.62	0.19	0.14	0.52
Trips (1354sqm GFA)	8	3	2	7

Table 5.6 Traffic Generation – Existing Industrial Developments off Beaver Street

5.2.8 Adjusted traffic figures for the overall development and the existing industrial units off Beaver Street have been obtained by adding the figures shown in tables 5.5 and 5.6, as set out in the table 5.7 below.

	WEEKDAY 08:00-09:00 HOURS		WEEKDAY 17:00-18:00 HOURS	
	Arrivals (veh)	Departures (veh)	Arrivals (veh)	Departures (veh)
<i>Trips</i>	119	170	148	132

Table 5.7 Traffic Generation – Composite Development (Including Existing Industrial Units on Beaver Street)

5.3 Traffic Distribution and Assignment

5.3.1 The distribution of traffic generated by the proposed development has been based on the pattern of observed traffic movements on the local highway network, during the morning and evening peak periods. The distribution of generated trips may be at the junction of the site access and Doncaster Road may be summarised as follows:

Morning Peak Hour

- to/from Doncaster Road West 61%
- to/from Doncaster Road East 39%

Evening Peak Hour

- to/from Doncaster Road West 48%
- to/from Doncaster Road East 52%

5.3.2 The assignment of traffic generated by the proposed residential development in the morning and evening peak hours is shown in figures 6 and 7.

5.4 Future Traffic Forecasts

5.4.1 Traffic forecasts for 2008, the projected year of completion for the development have been produced with and without the proposed development. Forecasts of *weekday peak hour traffic without the proposed development*, have been produced by applying the National Road Traffic Forecast low growth factor to 2004 base year flows, implying growth of 5.2% over this period. Peak hour traffic flows in 2008 without the proposed development, are shown in figure 8 and 9.

- 5.4.2 Traffic forecasts for 2008 with the proposed development are shown in figures 10 and 11 and have been produced by adding traffic generated by the development (figures 6 and 7) to the non-development traffic flows (figures 8 and 9).

5.5 Site Access Arrangements

- 5.5.1 Improvements to the existing site access to Doncaster Road are proposed as part of the proposed development, as shown in figure 12. The main features are as follows:

- Signalisation of the site access road junction with Doncaster Road, also incorporating signal control on Nora Street
- Pedestrian crossing facilities on each arm of the junction
- Improved turning radii and junction layout to assist HGV movement
- Widening of the site access road to provide a 6.75 metre carriageway, with flaring on the approach to the junction with Doncaster Road
- The provision of suitable footways throughout the proposed development

- 5.5.2 Details of the access improvement have been the subject of extensive discussion and agreement with Officers of Barnsley Council. The access improvements now proposed involve demolition of Nos 112, 114 and 116 Doncaster Road to enable the necessary access road widening and junction improvements to be undertaken.

- 5.5.3 Initial discussions with Officers of the Council confirmed the suitability of the junction layout to accommodate heavy goods vehicles. Further discussions then led to correspondence from the Council dated 2 December 2003 confirming that the junction would provide good reserve capacity. Minor amendment of the siting of traffic signal poles and stop lines were requested by the Council, and these amendments have now been incorporated. Relevant correspondence is included as Appendix D.

- 5.5.4 The traffic signals would operate essentially in three stages, with a further pedestrian stage called on demand when all vehicular traffic would receive a red signal. Doncaster Road eastbound and westbound would operate simultaneously, whilst the site access and Nora Street would have a separate stage. Traffic movements from the site would therefore run unopposed by other traffic movement.

- 5.5.5 Whilst the level of pedestrian movement through the junction is likely to be relatively low, push-button activated pedestrian crossing facilities would be provided on each arm of the junction to assist pedestrian movement. Tactile paving and dropped kerbs would be provided at the crossing points to assist usage.
- 5.5.6 With the demolition of Nos 112, 114 and 116 Doncaster Road, there would be no vehicular accesses within the traffic signal controlled area and on-street parking spaces would be retained as existing in front of other existing residential properties on the southern side of Doncaster Road. Road geometry for movements on Doncaster Road and into/out of Nora Street is not materially affected by the traffic signalisation scheme.
- 5.5.7 The junction layout maximises junction intervisibility (visibility between drivers and pedestrians using the junction) within the land available. Reference to relevant highway design standards and the correspondence from the Council, included as Appendix D confirms that the proposed junction layout is satisfactory in this regard.
- 5.6 Operational Assessment**
- 5.6.1 Operation of the traffic signal controlled junction of Doncaster Road and the site access has been analysed using the Transport Research Laboratory computer program OSCADY. The analysis has been undertaken using anticipated traffic flows in 2008, with the completed development.
- 5.6.2 Basic 3-stage operation during peak hours is analysed in the table below and the results presented in full in Appendix E. The analysis confirms that the traffic signal controlled junction would operate satisfactorily. Traffic flows would be well within capacity with only limited queuing.

Movement	With Development Morning Peak Hour (08:00-09:00hours)		With Development Evening Peak Hour (17:00-18:00 hours)	
	Ratio of Flow to Capacity	Max Queue in vehicles	Ratio of Flow to Capacity	Max Queue in vehicles
Doncaster Road East	0.350	1.5	0.381	2.1
Site Access	0.485	1.9	0.500	2.0
Doncaster Road West	0.411	1.5	0.459	2.2
Nora Street	0.242	0.6	0.159	0.4

Table 5.8 Junction of Doncaster Road and Site Access Road Operational Assessment – 2008 With Development

- 5.6.3 A sensitivity test has been undertaken using OSCADY to consider the implications of the pedestrian stage being called in every cycle. Whilst the pedestrian stage will be called on demand, it is considered to unlikely that the pedestrian stage will be called with this frequency.
- 5.6.4 The sensitivity test has been carried out by including an additional 'all red' stage for pedestrian movement. This comprises a crossing period of 4 seconds, sufficient for a crossing distance of up to 7.5metres, and a further 7 seconds provided for the flashing green/amber 'clearance' period.
- 5.6.5 The results of the operational analysis are summarized in table 5.3 below and presented in full in Appendix E. Even with the pedestrian stage called every cycle, traffic flows would remain well within capacity, with only limited queuing.

Movement	With Development Morning Peak Hour (08:00-09:00 hours)		With Development Evening Peak Hour (17:00-18:00 hours)	
	Ratio of Flow to Capacity	Max Queue in vehicles	Ratio of Flow to Capacity	Max Queue in vehicles
Doncaster Road East	0.367	2.3	0.399	3.2
Site access (colliery)	0.533	3.0	0.544	3.1
Doncaster Road West	0.487	2.3	0.507	3.3
Nora Street	0.372	1.0	0.245	0.6

Table 5.9 Junction of Doncaster Road and Site Access Road Operational Assessment - 2008 With Development (Sensitivity Test)

5.7 Traffic Effects of the Proposed Development

5.7.1 The more general traffic effects of the proposed development on the local highway network have also been considered. Peak hour traffic flows on Doncaster Road to the east and west of the site access junction on completion of the proposed development in 2008 would remain at a modest level and well within capacity, as indicated in the table below.

	Doncaster Road West of Site Access		Doncaster Road East of Site Access	
	Westbound	Eastbound	Westbound	Eastbound
Morning Peak Hour (08:00 – 09:00 hours)	242	161	172	166
Evening Peak Hour (17:00 – 18:00 hours)	218	242	244	228

Table 5.10 Traffic Flows on Doncaster Road on Completion of Proposed Development (2008)

5.7.2 The effects of the proposed development on operation of the junctions of Doncaster Road with High Street and A635 Goldthorpe Bypass have also been considered, as set out in the paragraphs below.

Junction of Doncaster Road and High Street

5.7.3 The operation of the traffic signal junction of Doncaster Road and High Street in 2008 with and without the proposed development has been analysed using the TRL computer program OSCADY. The results of this analysis are summarised in table 5.11 for the morning peak hour and table 5.12 for the evening peak hour. The results are presented in full in Appendix A.

5.7.4 It can be seen from tables 5.11 and 5.12 above that the proposed development has a relatively minor impact on operation of the junction of Doncaster Road and High Street. The junction continues to operate within capacity and with only a slight increase in queue length.

Approach	With Development Morning Peak Hour (08:00-09:00hours)		Without Development Morning Peak Hour (08:00-09:00hours)	
	Ratio of Flow to Capacity	Max Queue in vehicles	Ratio of Flow to Capacity	Max Queue in vehicles
Doncaster Road East	0.721	5.1	0.615	3.0
High Street	0.732	4.6	0.639	3.0
Doncaster Road West	0.696	3.7	0.611	2.5

Table 5.11 Junction of Doncaster Road and High Street - Operational Assessment 2008 With and Without Development (Morning Peak Hour)

Approach	With Development Evening Peak Hour (17:00-18:00 hours)		Without Development Evening Peak Hour (17:00-18:00 hours)	
	Ratio of Flow to Capacity	Max Queue in vehicles	Ratio of Flow to Capacity	Max Queue in vehicles
Doncaster Road East	0.858	8.3	0.756	6.0
High Street	0.859	7.3	0.763	5.2
Doncaster Road West	0.858	7.6	0.767	5.7

Table 5.12 Junction of Doncaster Road and High Street - Operational Assessment 2008 With and Without Development (Evening Peak Hour)

Junction of Doncaster Road and A635 Goldthorpe Bypass

5.7.5 The operation of the priority junction of Doncaster Road and A635 Goldthorpe Bypass in 2008 with and without the proposed development has been analysed using the TRL computer program PICADY. The results of this analysis are summarised in table 5.13 for the morning peak hour and table 5.14 for the evening peak hour. The results are presented in full in Appendix B.

Movement	With Development Morning Peak Hour (08:00-09:00hours)		Without Development Morning Peak Hour (08:00-09:00hours)	
	Ratio of Flow to Capacity	Max Queue in vehicles	Ratio of Flow to Capacity	Max Queue in vehicles
Doncaster Road right turn to Goldthorpe Bypass	0.361	0.6	0.235	0.3
Doncaster Road left turn to Goldthorpe Bypass	0.022	0.0	0.013	0.0
Goldthorpe Bypass right turn to Doncaster Road	0.006	0.0	0.004	0.0

**Table 5.13 Junction of Doncaster Road and A635 Goldthorpe Bypass –
Operational Assessment 2008 With and Without Development
(Morning Peak Hour)**

Movement	With Development Evening Peak Hour (17:00-18:00 hours)		Without Development Evening Peak Hour (17:00-18:00 hours)	
	Ratio of Flow to Capacity	Max Queue in vehicles	Ratio of Flow to Capacity	Max Queue in vehicles
Doncaster Road right turn to Goldthorpe Bypass	0.513	1.0	0.369	0.6
Doncaster Road left turn to Goldthorpe Bypass	0.018	0.0	0.012	0.0
Goldthorpe Bypass right turn to Doncaster Road	0.025	0.0	0.017	0.0

**Table 5.14 Junction of Doncaster Road and A635 Goldthorpe Bypass -
Operational Assessment 2008 With and Without Development
(Evening Peak Hour)**

5.7.6 It can be seen from tables 5.13 and 5.14 above that the junction of Doncaster Road and A635 Goldthorpe Bypass would operate satisfactorily in 2008 in both the morning and evening peak hours, with and without development. Traffic flows on completion of the proposed development remain well within capacity with very limited queuing.

5.8 Summary

- 5.8.1 The existing access to the site from Doncaster Road would be improved as part of the proposed development. The introduction of traffic signal control is proposed, also incorporating signal control on Nora Street. The site access road would be widened and a footway provided to each side. Improved turning radii would be provided to assist HGV movement and signal controlled pedestrian crossing facilities would be provided on each arm of the junction.
- 5.8.2 The proposed access arrangements would provide adequately for traffic generated by the proposed development. Details of the site access improvement have been the subject of extensive discussion and agreement with Officers of Barnsley Council. Correspondence from the Council dated 2 December 2003 confirms the suitability of the junction layout and minor modifications requested by the Council have now been incorporated.
- 5.8.3 Traffic generated by the proposed development would have only a very limited effect on operation of the local highway network. Traffic flows on Doncaster Road and at the junctions with High Street and A635 Goldthorpe Bypass would remain within capacity on completion of the proposed development.

6 SUMMARY AND CONCLUSION

6.1 Introduction

6.1.1 This report considers the transport implications of a proposed residential and employment development on the former Goldthorpe Colliery site and adjacent land. The site is located east of Goldthorpe town centre, some 8km west of Barnsley. The development would comprise some 321 dwellings and some 9540sqm of employment development comprising a range of office, industrial and warehousing development as set out below:

- Office (B1) 1400sqm Gross Floor Area
- Industry (B2) 5340sqm Gross Floor Area
- Warehousing 2800sqm Gross Floor Area

6.1.2 *Site access would be improved as part of the proposed development through the widening and realignment of the access road, which would be made up to an adoptable standard with the provision of footways and introduction of traffic signal control at the junction with Doncaster Road.*

6.2 Transport Policy Considerations

6.2.1 National planning and transport related policies seek to promote sustainable development and the integration of planning and transport to promote more sustainable transport choices, promote accessibility and reduce the need to travel, especially by car.

6.2.2 *When considering the siting of new development, the main thrust of both national and local transport related policy is that new development should be conveniently accessible by a range of transport modes including public transport.*

6.3 Accessibility

6.3.1 The site is served by regular bus services on Doncaster Road which combine with those available from Barnsley Road/Leadley Street in the town centre to provide a frequent service to and from Barnsley. Regular bus services are also available linking the site with Doncaster, Rotherham and other local centres.

6.3.2 Goldthorpe Railway Station is situated within an easy walking distance of the site. Regular services from Goldthorpe station provide convenient travel opportunities for residents and employees to and from Sheffield, Leeds and other intervening centres.

6.3.3 A network of routes for pedestrians and cyclists is available to promote walking and cycling. In particular, links between the site and Goldthorpe town centre, Dearne High School and the Dearne Leisure Centre are available and provision within the site would be in accordance with current best practice.

6.3.4 Development of the site for residential and employment purposes is therefore consistent with the provisions of national and local transport related policies having regard to the opportunities for travel by public transport, walking and cycling which are already available.

6.4 Existing Traffic Conditions

6.4.1 Access to the former colliery site is currently available from Doncaster Road at a simple priority junction. Existing traffic flows on Doncaster Road are at a modest level as most 'through' traffic now uses the A635 Goldthorpe Bypass. Following the closure of the Colliery, the site access road is little used by vehicular traffic.

6.4.2 This section of Doncaster Road provides a link between Goldthorpe town centre and the A635 Bypass to the east. Traffic signal control has been introduced at the junction with High Street in the town centre, whilst a ghost-island layout is provided at the junction with the Bypass. Both junctions currently operate well within capacity, even during peak hours.

6.5 Traffic Effects of Development

6.5.1 The existing access to the site from Doncaster Road would be improved as part of the proposed development. The introduction of traffic signal control is proposed, also incorporating signal control on Nora Street. The site access road would be widened and a footway provided to each side. Improved turning radii would be provided to assist HGV movement and signal controlled pedestrian crossing facilities would be provided on each arm of the junction.

6.5.2 The proposed access arrangements would provide adequately for traffic generated by the proposed development. Details of the site access improvement have been the subject of extensive discussion and agreement with Officers of Barnsley Council. Correspondence from the Council dated 2 December 2003 confirms the suitability of the junction layout and minor modifications requested by the Council have now been incorporated.

6.5.3 Traffic generated by the proposed development would have only a very limited effect on operation of the local highway network. Traffic flows on Doncaster Road and at the junctions with High Street and A635 Goldthorpe Bypass would remain within capacity on completion of the proposed development.

6.6 Overall Conclusion

6.6.1 Having regard to the above, it is considered that the proposed development is acceptable from a transport viewpoint.



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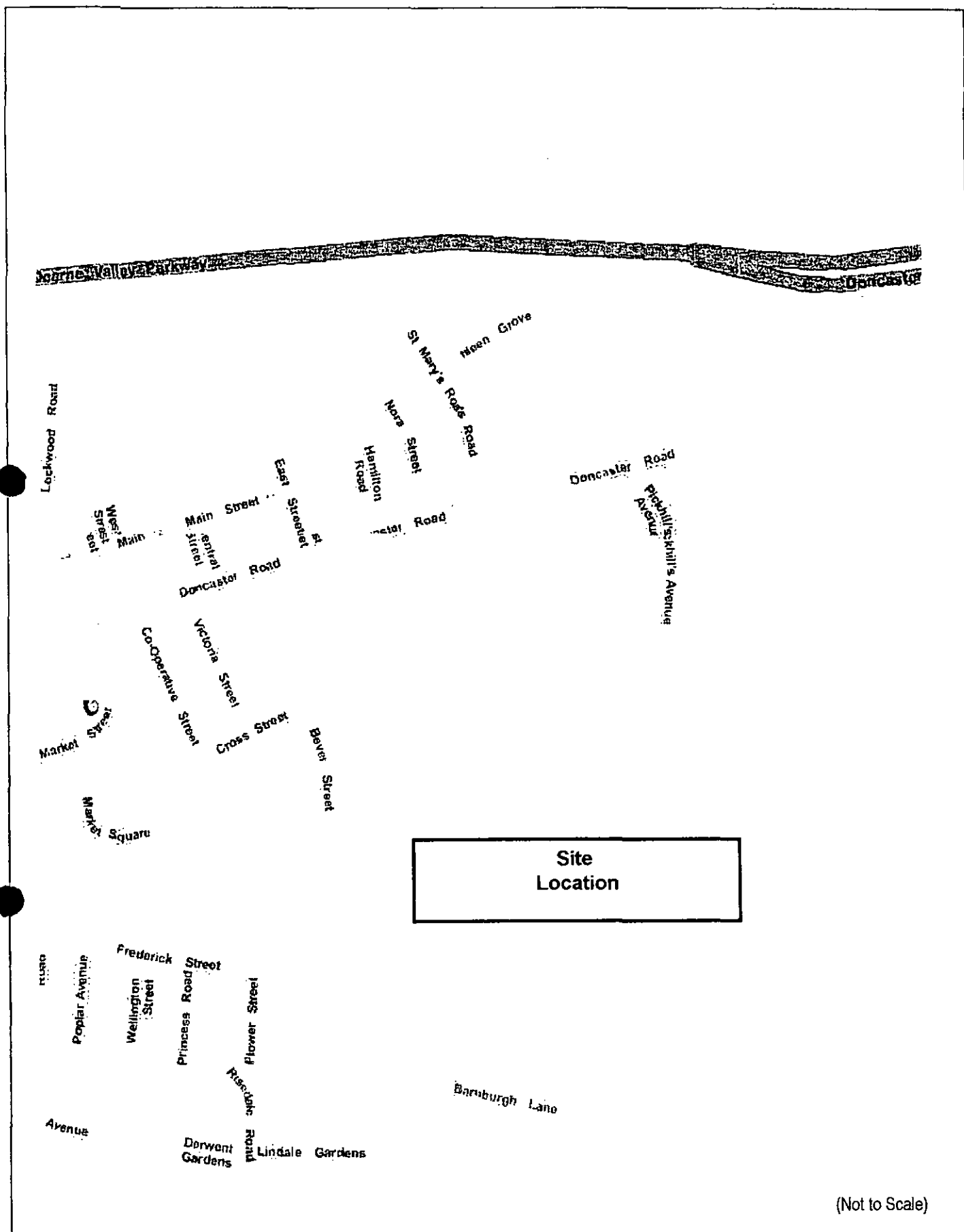


Figure 2 – Site Location in a Local Context

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A hand-drawn map of a residential area. The map shows several streets and buildings. On the left, a street is labeled 'MILTON ROAD'. A large building complex is labeled 'The Goldthorpe (PH)' and includes a 'Surgery'. To the right of the PH is a row of houses with numbers 155, 171, and 173. Below the PH is a row of houses with numbers 96, 106, and 116. A small building is labeled 'PC'. A dashed line with an arrow points towards the bottom right. A wavy line runs horizontally across the middle of the map. Two black dots are marked on the top edge of the map.

3

EXISTING ROAD LAYOUT

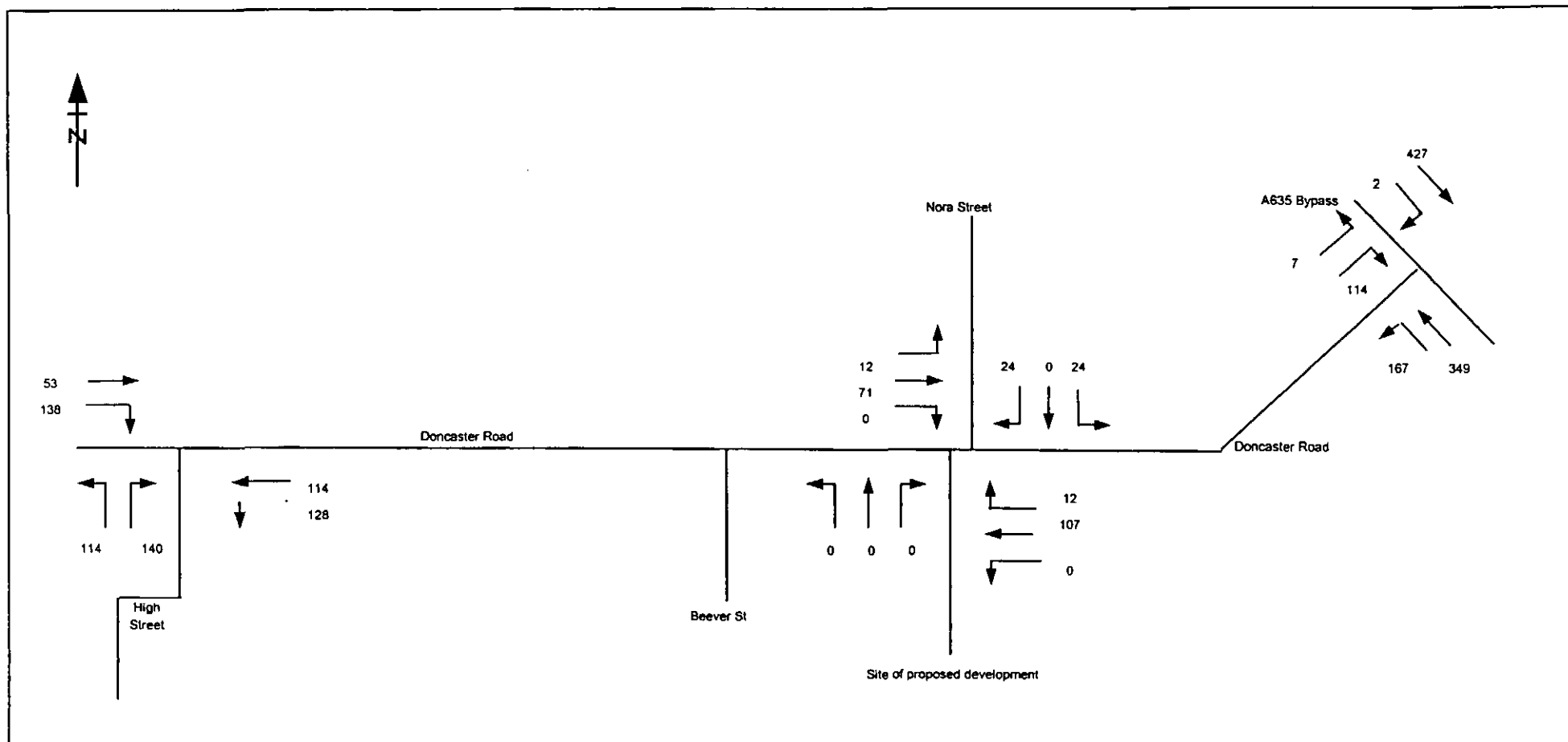


Figure 4.
Existing Morning Peak Hour Weekday Traffic
Flows 2004 (Vehicles)
(08:00 - 09:00 hours)

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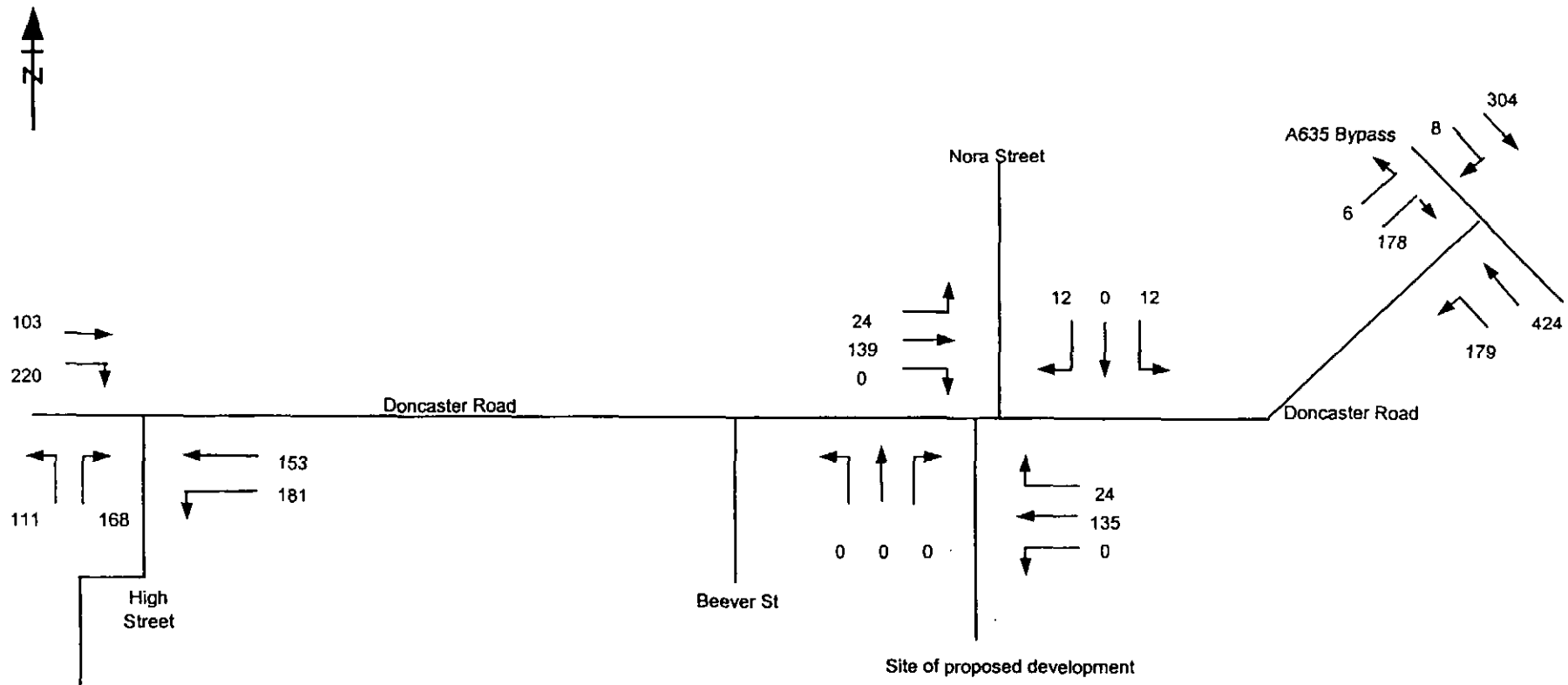


Figure 5.
Existing Evening Peak Hour Weekday Traffic
Flows 2004 (Vehicles)
(17:00 - 18:00 hours)

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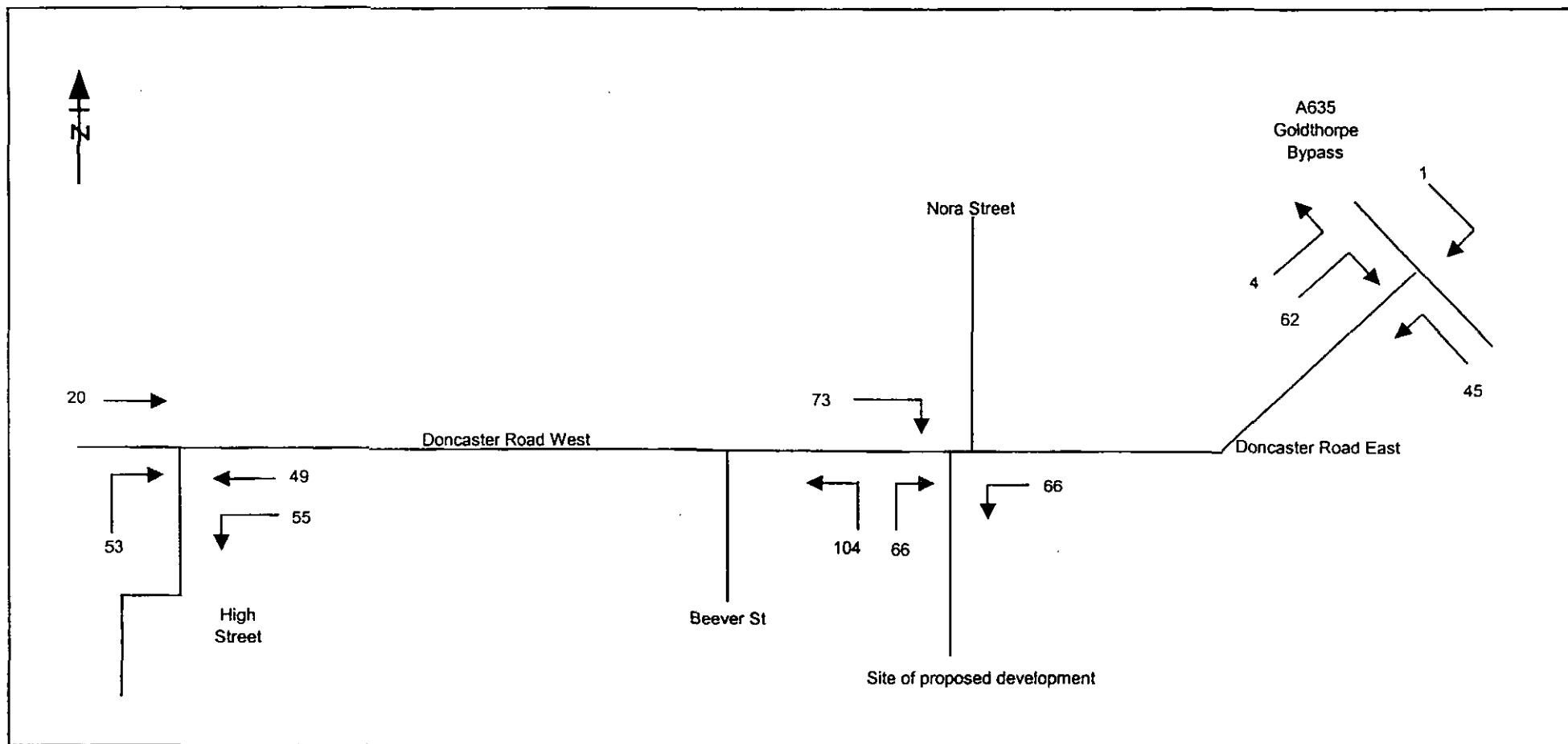


Figure 6.
Assignment of Traffic Generated by Proposed
Development (Vehicles)
Morning Peak Hour (08:00 - 09:00 hours)

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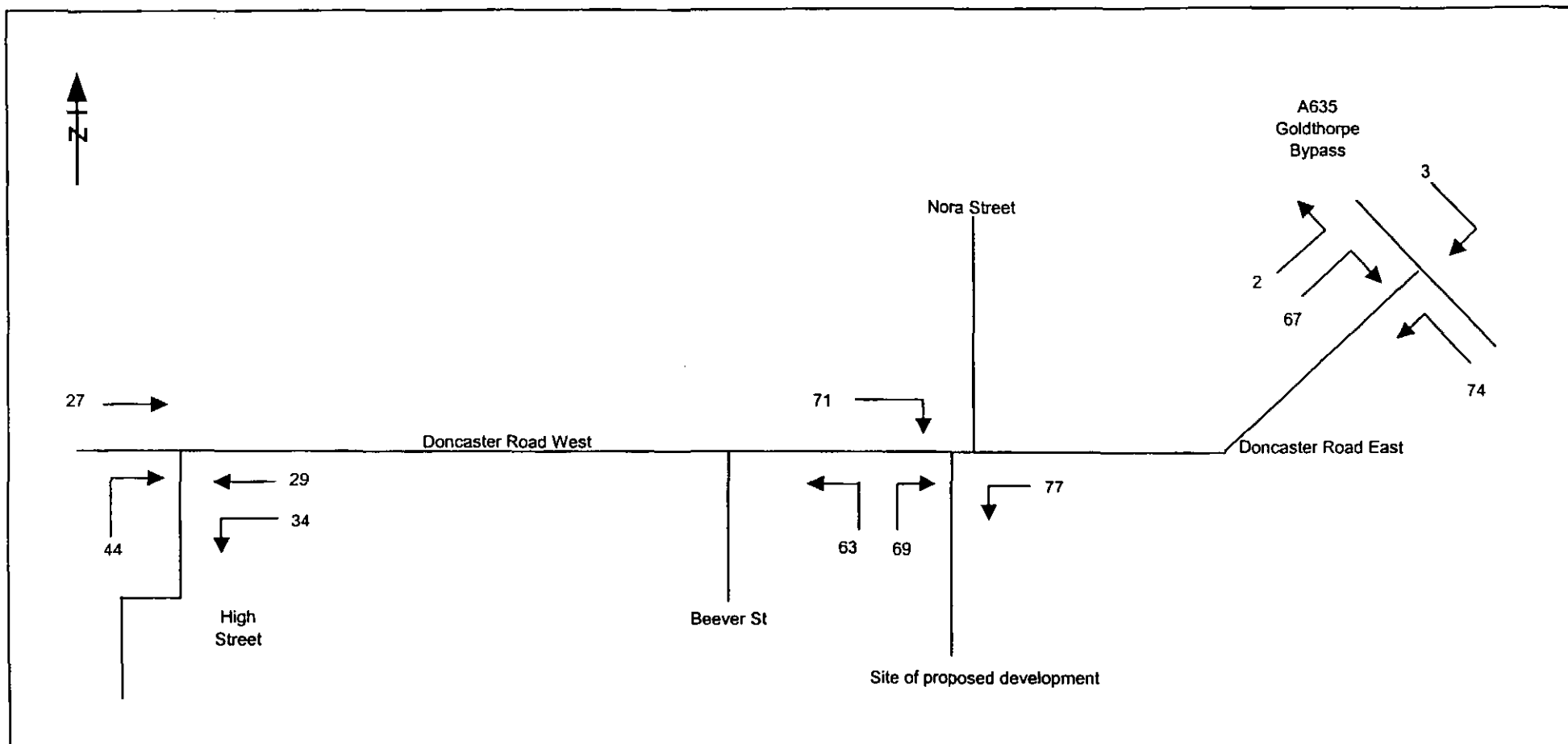


Figure 7.
Assignment of Traffic Generated by Proposed
Development (Vehicles)
Evening Peak Hour (17:00 - 18:00 hours)

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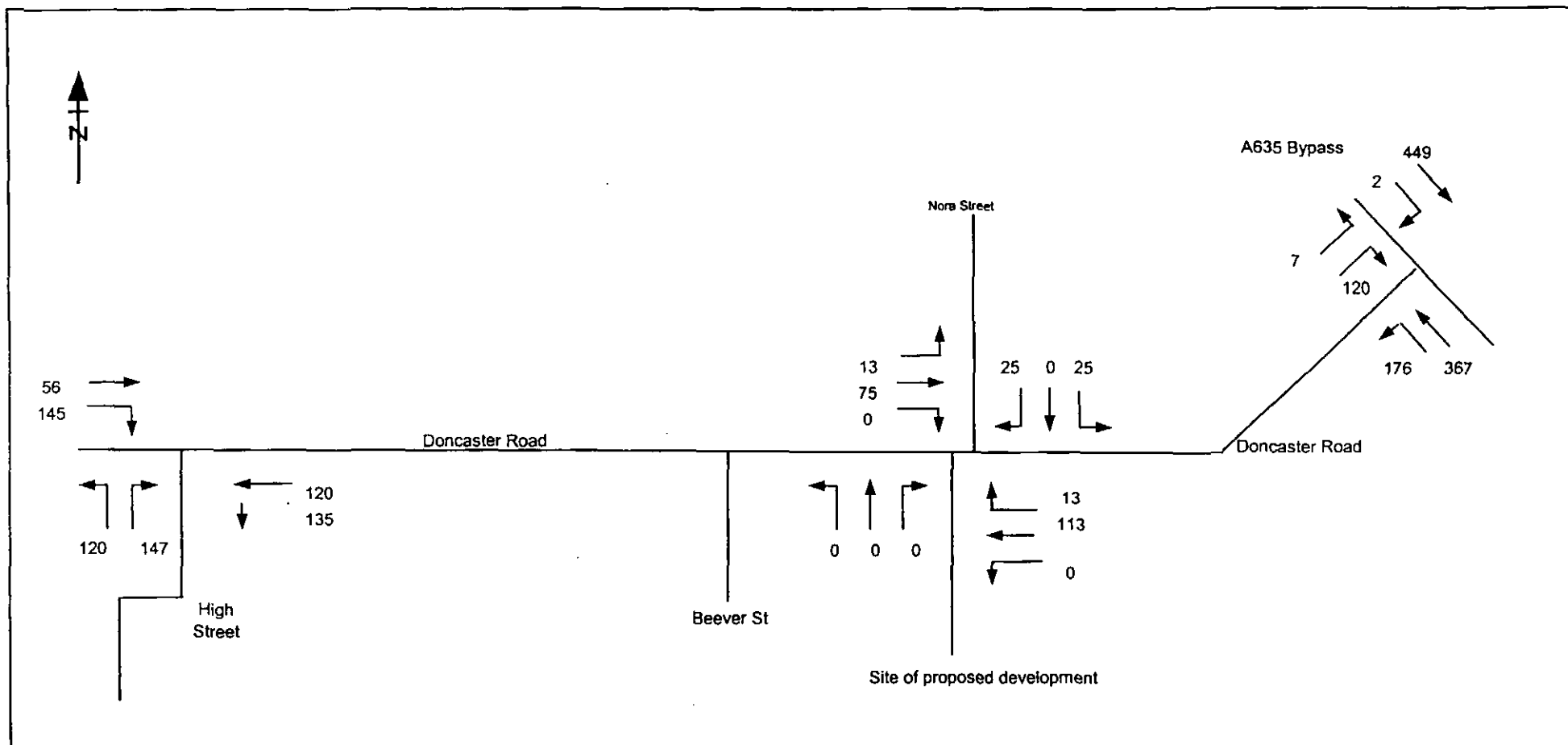


Figure 8.
Weekday Morning Peak Hour Traffic Flows
Without Development 2008 (Vehicles)
(08:00 - 09:00 hours)

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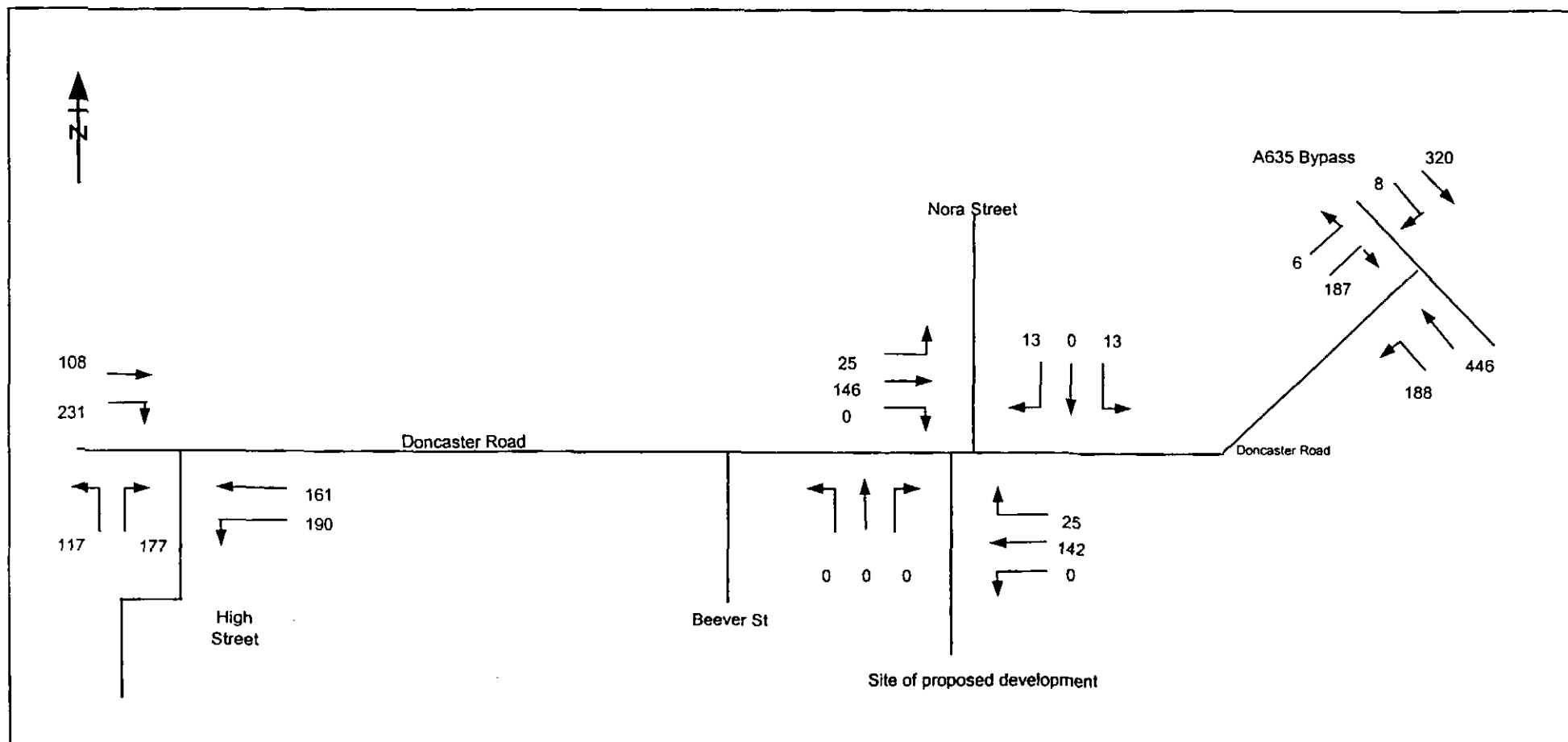


Figure 9.
Weekday Evening Peak Hour Traffic Flows Without
Development 2008 (Vehicles)
(17:00 - 18:00 hours)

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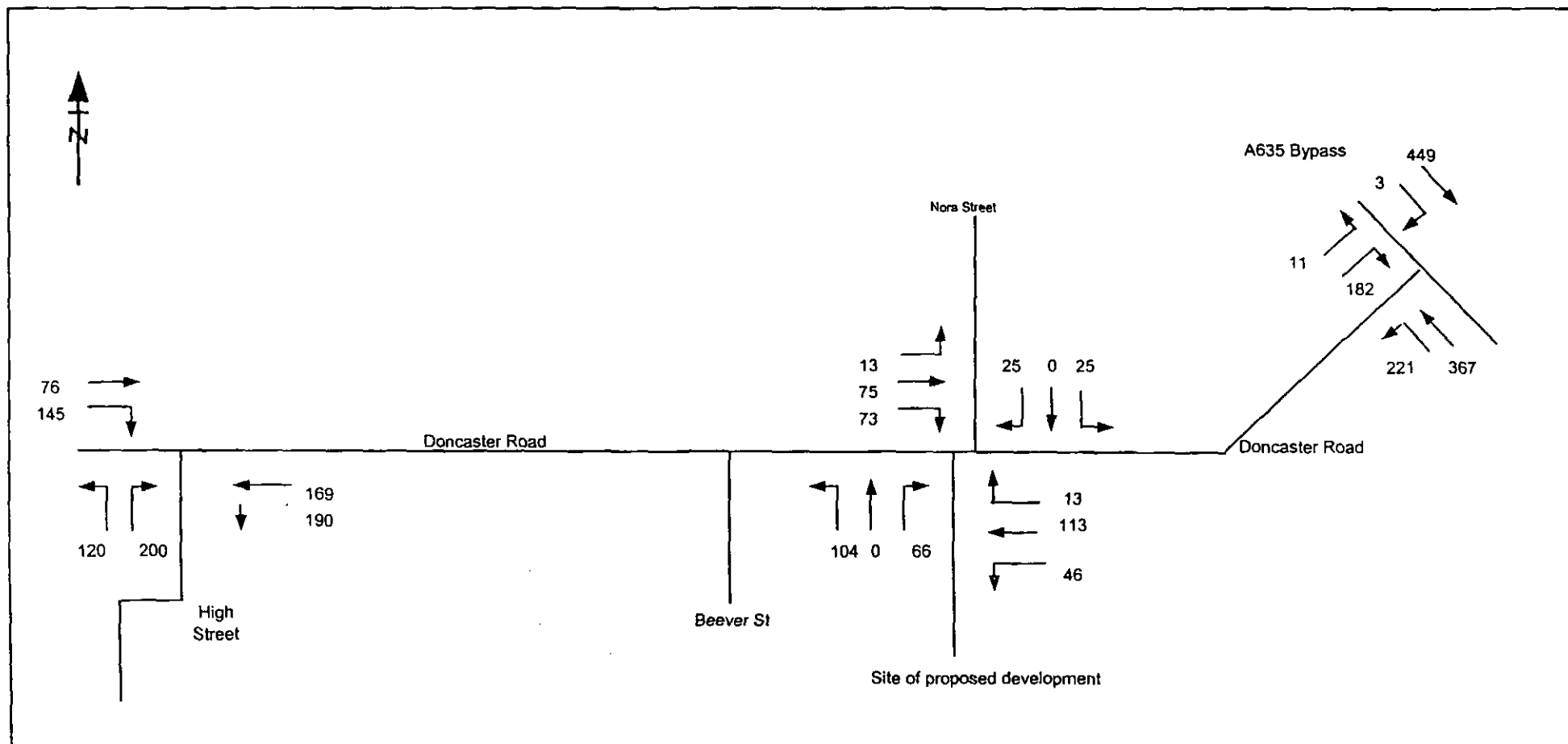


Figure 10.
Weekday Morning Peak Hour Traffic Flows
With Development 2008 (Vehicles)
(08:00 - 09:00 hours)

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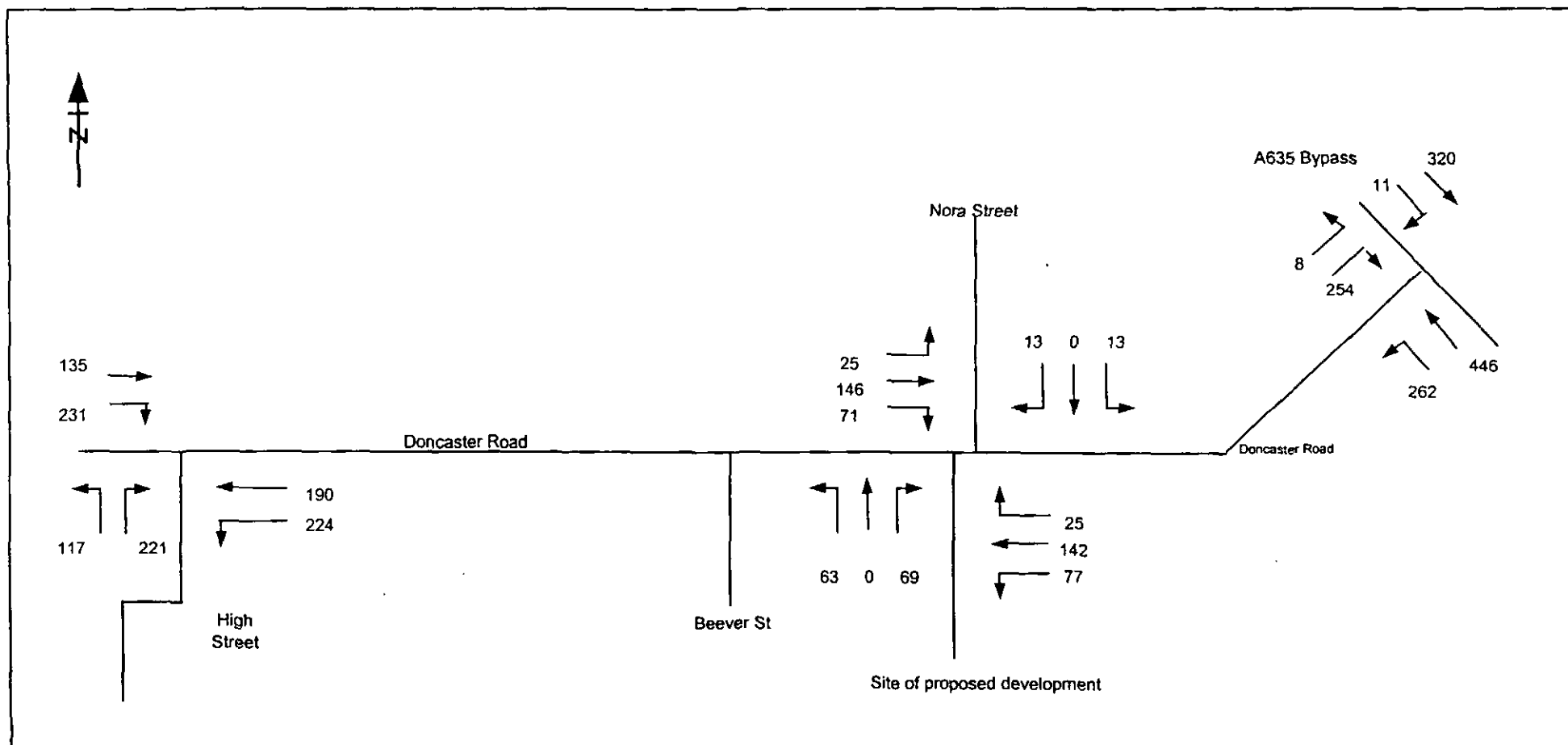


Figure 11.
Weekday Evening Peak Hour Traffic Flows
With Development 2008 (Vehicles)
(17:00 - 18:00 hours)

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