Appendix 32
Environmental Statement Data Processing

ADC Infrastructures Ltd

NORTHAMPTON GATEWAY SRFI

Environmental Statement Data Processing

70035256
APRIL 2018

CONFIDENTIAL

ADC Infrastructures **Ltd**

NORTHAMPTON GATEWAY SRFI

Environmental Statement Data Processing

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1 BACKGROUND

1.1.1. WSP has been commissioned by ADC Infrastructure Ltd, on behalf of Roxhill (Junction 15) Ltd, to undertake transport modelling work in relation to the Northampton Gateway SRFI (Strategic Rail Freight Interchange) development, hereafter referred to as “the Northampton Gateway development”.

1.1.2. The Northampton Gateway development is situated in Northamptonshire, adjacent to Junction 15 of the M1. Due to the location of the development, the Northamptonshire Strategic Traffic Model (NSTM2) has been selected for the purpose of this modelling exercise. NSTM2 is the Northampton County Council’s (NCC) strategic model, maintained and operated by WSP.

1.1.3. Daily flow data was needed for Air Quality and Noise analysis for inclusion in the Northampton Gateway development Environmental Statement (ES). Transport models for the Northampton gateway development were solely created for the AM and PM peak hour periods.

1.1.4. The purpose of this note is to outline the process in producing daily flow data from the transport model peak hour flows.

2 DAILY FLOW FACTORS

2.1.1. Peak hour model flows have been extracted from the 2015 Base models, 2021 B1 & H1 models, and 2031 D1, J1d & J3 models.

2.1.2. Peak hour model flows were factored upwards to create approximations of 24 hour annual average daily traffic (AADT), 18 hour annual average weekly traffic (AAWT), and 6 hour night-time AAWT.

2.1.3. The factors used were different depending on a number of criteria; these included location, road type and development/non-development traffic.

2.2 ROAD TYPE

2.2.1. The defined local area used specific factors based on road type. These were broken down into four categories of M1, A45, A-road (other than the A45), Other road.

2.2.2. The Traffic and Accident Database System (TRADS) was used to collect data for the M1 and the A45. This data was used to create daily flow factors specifically for the M1, and specifically for the A45.

2.2.3. Factors for A roads other than the A45 and all other roads were created from collected ATC data used in the validation and calibration of the transport models.

2.2.4. All roads within the defined local area were designated into one of the four categories above, and the appropriate factors applied to convert peak hour flows into AADT/AAWT.

2.2.5. A generic factor was created from a combination of the collected ATC data, and this was used for roads outside of the defined local area.

2.2.6. As the daily speeds and daily percentage of Heavy Goods Vehicles (HGVs), Heavy Duty Vehicles (HDVs) will likely differ from the speeds percentages during the peak hours, factors were also calculated from the collected ATC data for this data as well.

2.2.7. Factors used are shown in Table 1.

Table 1 – Traffic flow factors

Factors	M1	A45	A-Road	Other	Generic
AAWT AM: 1hr - 3hr	3.15	2.80	2.81	2.27	2.45
AAWT PM: 1hr - 3hr	2.90	2.82	2.77	2.51	2.60
AAWT 6hr-12hr	1.97	1.71	1.66	1.72	1.74
AAWT 12hr-18hr	1.27	1.21	1.21	1.16	1.18
AAWT 12hr-AADT 24hr	1.06	1.05	1.10	1.10	1.10
AM 1hr + PM 1hr peak periods - 6hr Night	0.69	0.31	0.18	0.10	0.16
HDV % (AM/PM Av.) - 24hr HDV %					1.48
HGV % (AM/PM Av.) - 18hr HGV %					1.21
HGV % (AM/PM Av.) - 6hr Night HGV %					2.11
Speed (AM/PM Av.) - 24hr Speed					1.01
Speed (AM/PM Av.) - 18hr Speed					1.00
Speed (AM/PM Av.) - 6hr Night Speed					1.05

2.3 DEVELOPMENT TRAFFIC

2.3.1. For development forecast data, a separate set of factors were used for any traffic flows going to or from the development site. These factors were provided by ADC Infrastructure Ltd.

2.3.2. The factors differed depending on the development forecast year, whether the traffic flows were arrivals or departures, and vehicle class (Light vehicles or HGVs).

2.3.3. Development daily traffic flows were calculated separately and then combined with all other transport model daily traffic flows.

2.3.4. Factors used are shown in Table 2.

Table 2 – Northampton Gateway development

Scenarios J		Arrivals	Departures
Average peak hour to AADT factor	LIGHTS	13.31	13.85
	HGVS	15.33	16.31
Average peak hour to AAWT 18hr	LIGHTS	10.59	12.22
	HGVS	12.85	13.71
Average peak hour to AAWT 6hr	LIGHTS	2.72	1.63
	HGVS	2.48	2.60

Scenario H1		Arrivals	Departures
Average peak hour to AADT factor	LIGHTS	13.29	13.83
	HGVS	14.94	15.94
Average peak hour to AAWT 18hr	LIGHTS	10.58	12.19
	HGVS	12.69	13.59
Average peak hour to AAWT 6hr	LIGHTS	2.71	1.64
	HGVS	2.25	2.35

2.4 DEFINED ROADS CRITERIA

2.4.1. Defined roads originally included the roads local to the development.

2.4.2. After the process of creating daily flow data, both the Air Quality and Noise analysis highlighted roads of interest outside of the defined local area. These roads were then added to the total set of defined links, and their daily flows were also calculated using the methodology outlined above.

2.4.3. The result defined roads included in the environmental data are shown on the figures included in Appendix A.

Appendix A

DEFINED LINK FIGURES

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DO NOT SCALE

Key

Base model defined links

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ARCHITECT:

PROJECT: NORTHAMPTON GATEWAY

TITLE: AADT/AAWT NUMBERED LINKS
Base Model

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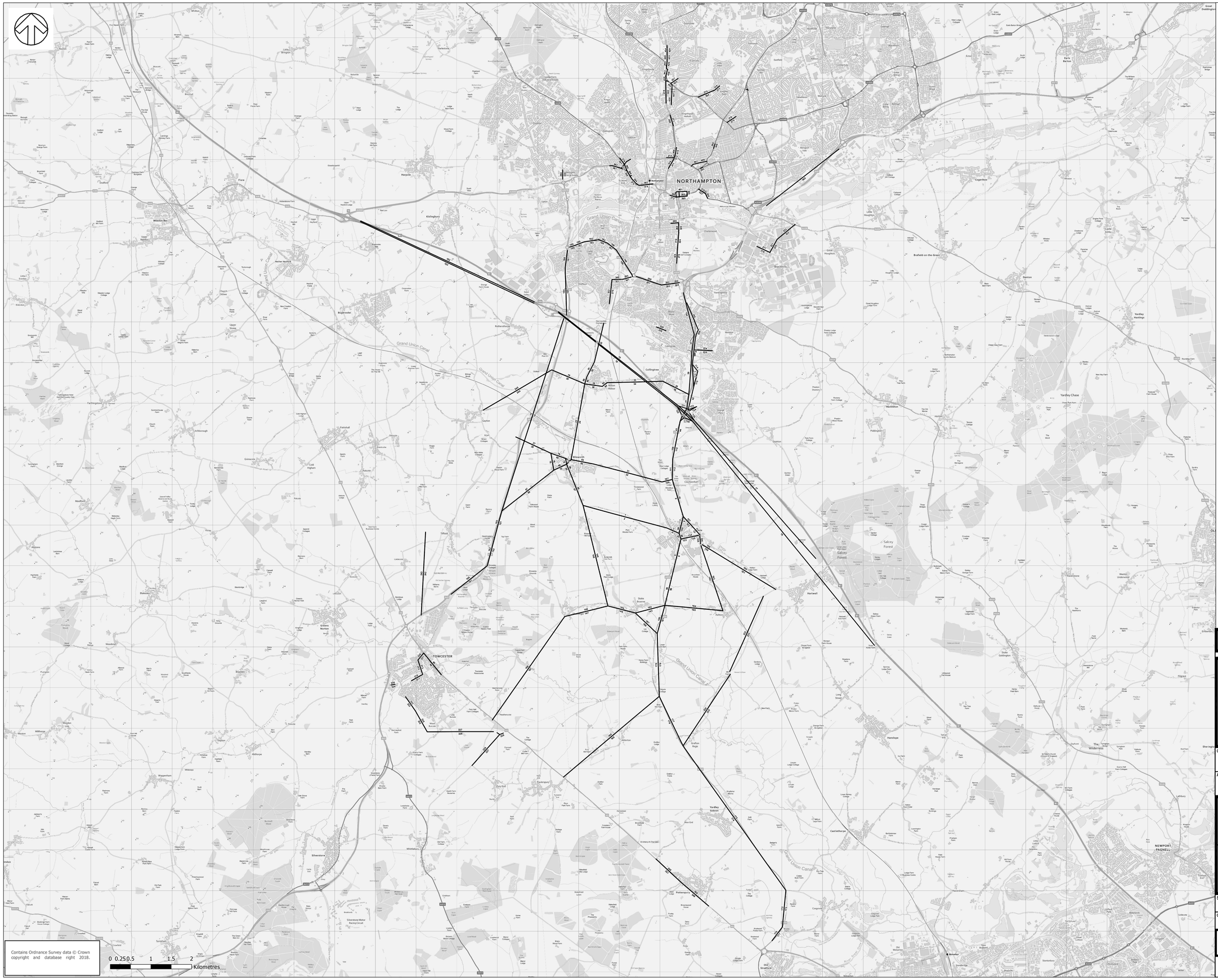
PROJECT No:	DRAWING No:	REV:

NUMBER NUMBER

Drawn By: ukrdt001



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B1 defined links

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TITLE: AADT/AAWT NUMBERED LINKS
Scenario B1

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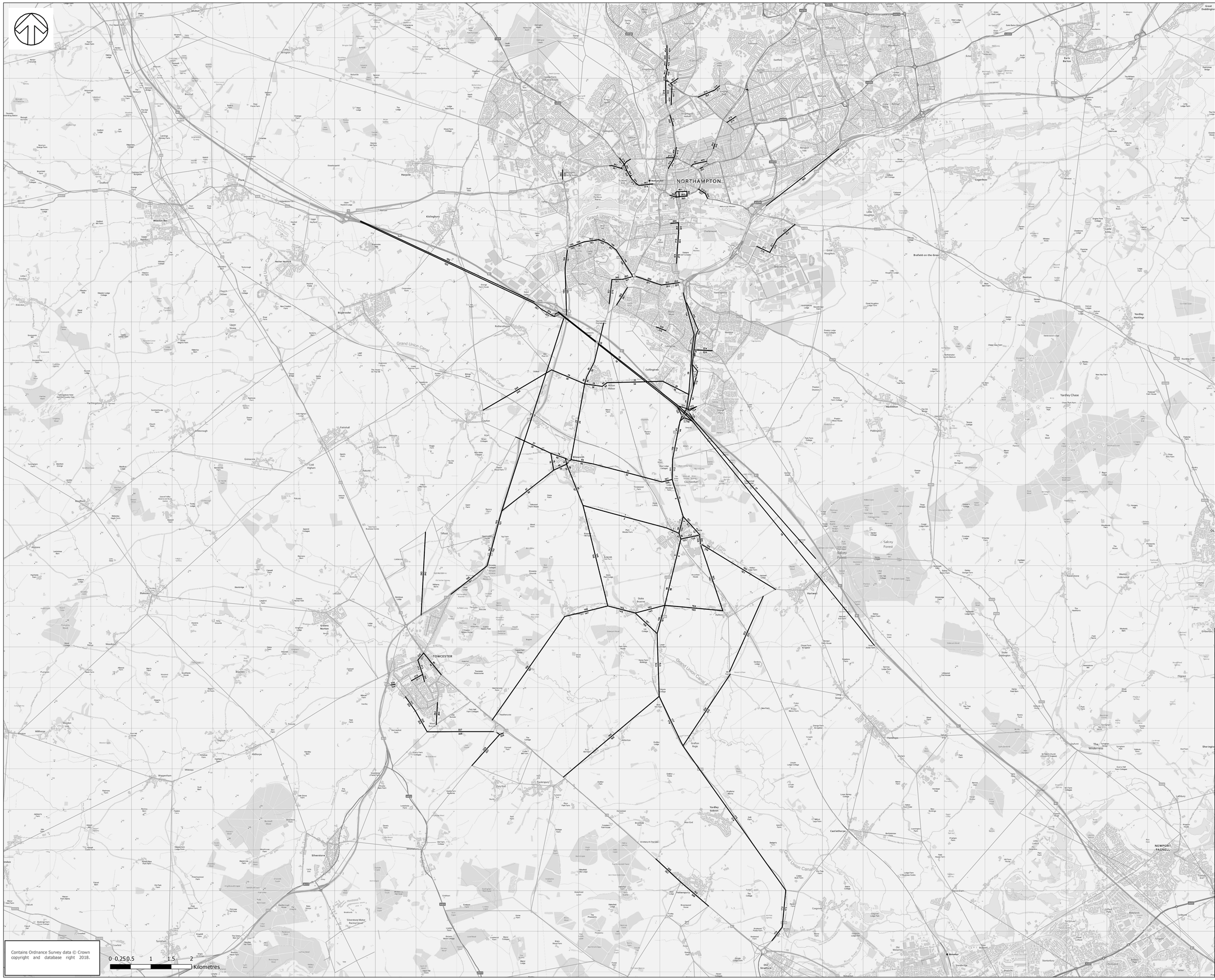

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D1 defined links

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TITLE: AADT/AAWT NUMBERED LINKS
Scenario D1

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NUMBER NUMBER

Drawn By: ukrdt001

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H1 defined links

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PROJECT: NORTHAMPTON GATEWAY

TITLE: AADT/AAWT NUMBERED LINKS
Scenario H1

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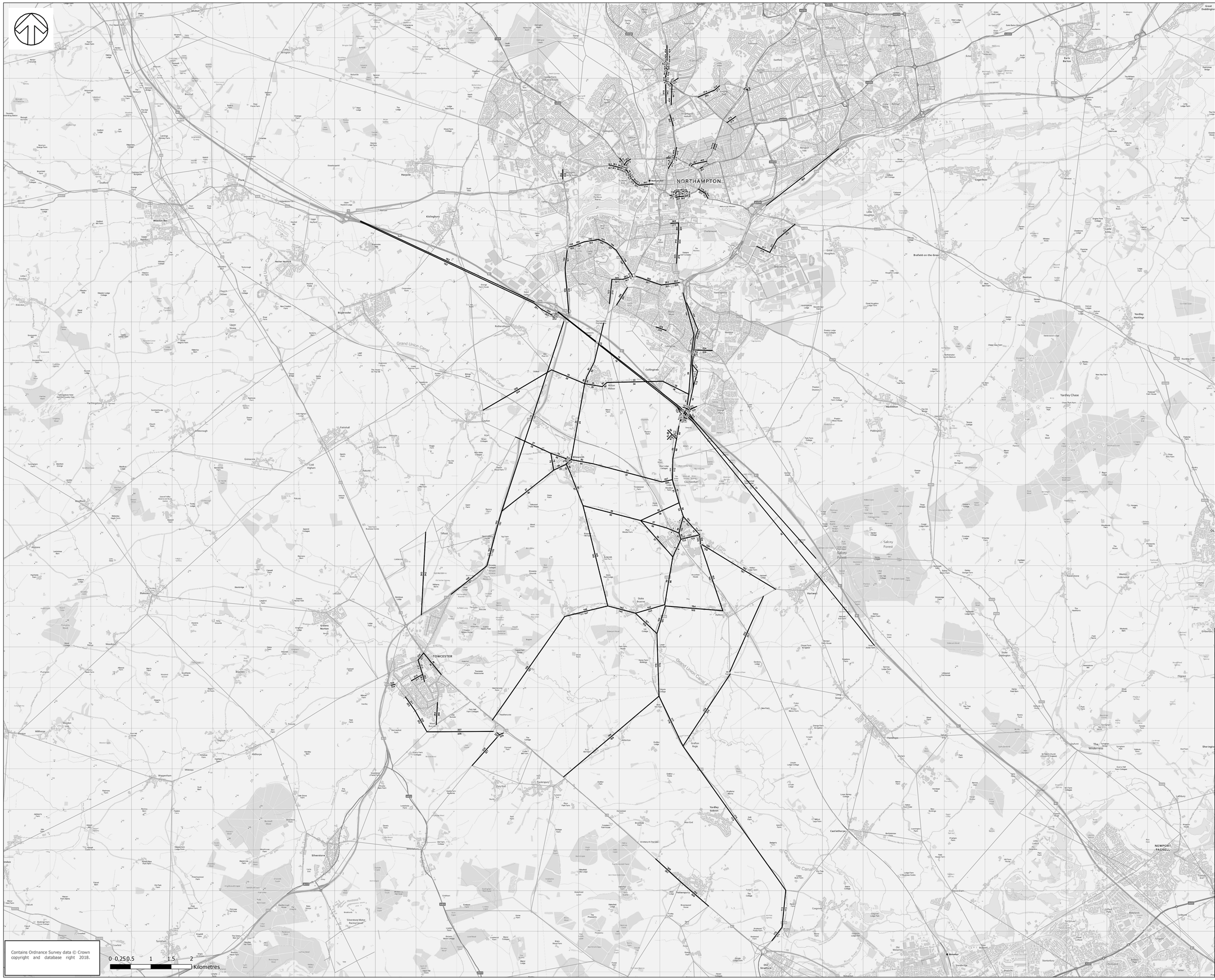

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J1d defined links

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PROJECT: NORTHAMPTON GATEWAY

TITLE: AADT/AAWT NUMBERED LINKS
Scenario J1d

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