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Norfolk Vanguard Offshore Wind Farm

Hornsea Project Three HGV Haul Road Reduction Report

(HOW03 Appendix 7 to Deadline 4)

Applicant: Norfolk Vanguard Limited
Document Reference: ExA; ISH; 10.D3.1C
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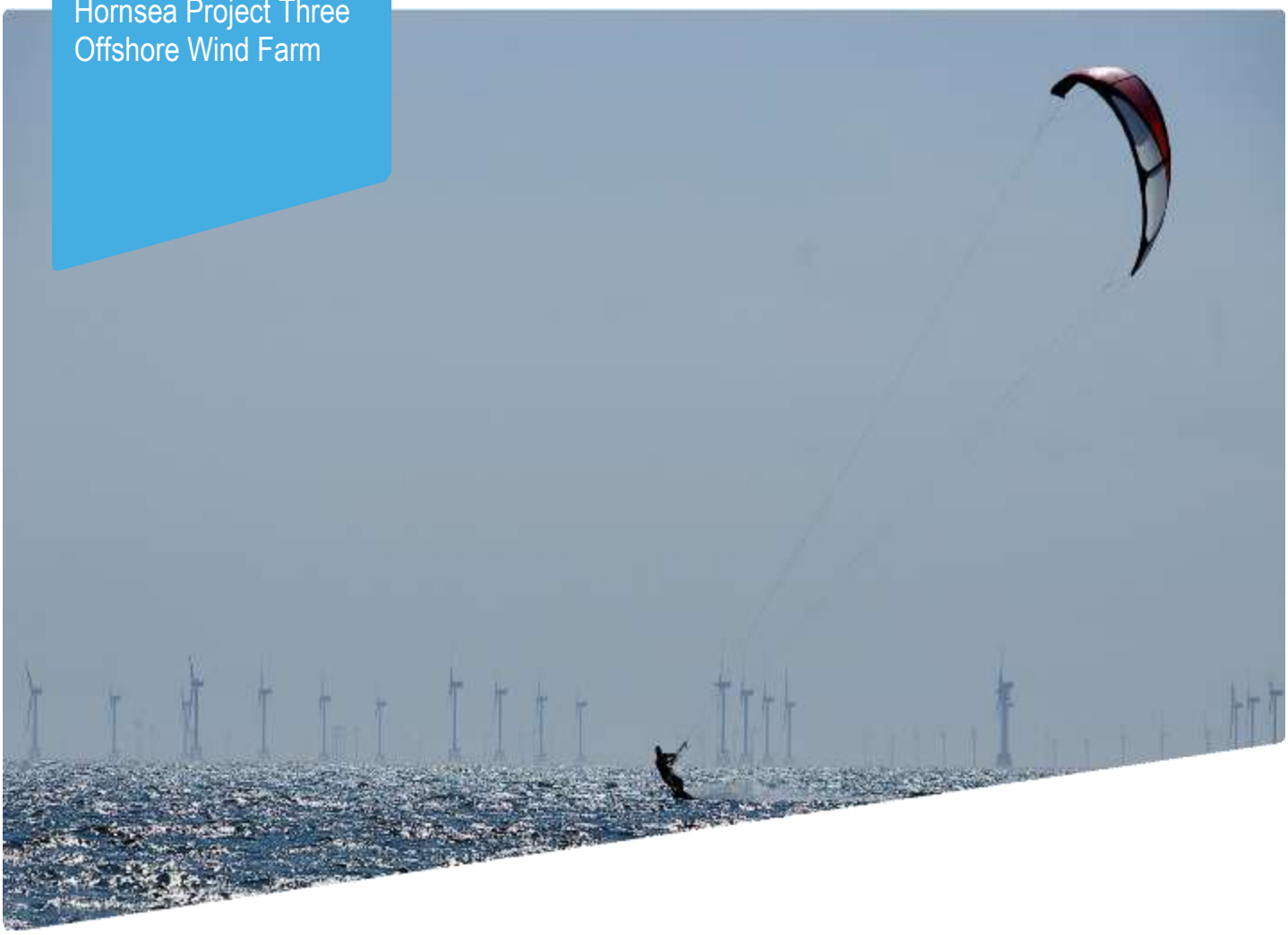
Photo: Kentish Flats Offshore Wind Farm

Hornsea Project Three
Offshore Wind Farm



Hornsea Project Three

Offshore Wind Farm

Appendix 7 to Deadline 4 submission - HGV Haul Road Reduction Report

Date: 15th January 2019

Hornsea 3
Offshore Wind Farm

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Table of Contents

1. Introduction

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1.1 This Technical Note has been prepared following discussions with the Norfolk County Council and Highways England to consider the effects of revising some of the site assumptions within Volume 6, Annex 7.1: Transport Assessment of the Environmental Statement (APP-159), to address some of the changes made to the operations for the delivery of Hornsea Three.

1.2 The principle of the revisions made to reduce the overall haul road depth was discussed during ISH4 and subsequently agreed with Norfolk County Council and Highways England (as set out in the relevant Statement of Common Grounds submitted at Deadline 4) The purpose of this Technical Note is to take the revised HGV flows calculated and distribute onto the highway network. At this point the new HGV distribution for Hornsea Three will be used to inform the preparation of the Outline CTMP and also the cumulative link impact / threshold assessment with Norfolk Vanguard to be reported at Deadline 6.

1.3 Table 1.4 'Maximum design scenario considered the assessment of potential impacts on traffic and transport' within Appendix 31 to Deadline 1: Transport Assessment (REP1-162) summarises the key parameters of the construction works.

1.4 Details of the assignment of the construction traffic onto the highway network was provided at Appendix A of the Transport Assessment and is included as part of Annex A of this report for clarity.

1.5 As part the Appendix 1: Main Construction Compound Briefing Note submission at Deadline 3 (REP3-010), a table indicating the previous and updated HGV vehicle movements by cable route section was provided. This table has been included as Annex B of this report. The principle of this reduction in vehicle movements has been agreed by both Norfolk County Council and Highways England in correspondence and as documented within the Statement of Common Grounds with both Stakeholders (submitted for Deadline 4).

1.6 The assumed haul road depth previously used to calculate number of HGV movements per Access point, has been reduced in depth and the resultant number of HGVs predicted to be generated by the construction works of Hornsea Three is explained in the section 2 of this report, before considering the net effects of this change on the highway network.

2. Clarification of the Revised Trip Generation during Construction

2.1 The Transport Assessment Volume 6, Annex 7.1 (APP-159) set out a number of assumptions relating to the construction methodology to enable a maximum design scenario to be established. These assumptions are set out Volume 6, Annex 7.6 – Construction Vehicle Trip Generation Assumptions (APP-164).

2.2 Some of those original HGV generation assumptions have now been refined based on additional details of the ground conditions along the onshore cable corridor route.

2.3 As a result, the Applicant has committed to a refinement in the maximum depth of the construction haul road which results in a reduction of the HGV numbers presented as part of the Transport Assessment and shown in Appendix A of this report.

2.4 Volume 6, Annex 7.6 – Construction Vehicle Trip Generation Assumptions (APP-164) had assumed a total average haul road depth of 1000mm. After further consideration the requirement for aggregate depths of around 1000mm would be associated with very poor soil types, such as peat and loams and this is not expected to be found along the haul route as defined.

2.5 As a result, the haul road specification within the Outline CTMP (submitted at Deadline 4) has been developed to state;

'1.2.3.2 The depth of the sub-base of the haul road will be dependent on the California Bearing Ratio (CBR) of the substrata. The following table can be used as a guide to the required thickness of the granular sub-base for typical silty clay soils in reasonable condition and at normal depths. The maximum depth of the haul road would not exceed 0.5 m.

Granular Sub-Base Thickness			
CBR 2%	*CBR 3%*	*CBR 4%*	*CBR 5%*
370mm	*310mm*	*240mm*	*200mm*

2.6 As a result of this commitment within the Outline CTMP, the haul road depth has been assumed to not exceed 500mm, which allows for some maintenance works to be completed, if necessary, at locations where the full 500 mm depth is not required, over the contract period. Taking account of the above the revised HGV numbers for the construction vehicle movements by cable route section are shown in Annex C.

3. Reduced HGV traffic applied to Network Links

3.1 The Transport Assessment Volume 6, Annex 7.1 (APP-159), in paragraph 1.6 'Transport Impact of Construction', determines the transport impacts of the construction phase of Hornsea Three.

3.2 Detailed assessments of vehicle generation have been carried out for the construction phase of the development in four scenarios that create different traffic flows on each road link and junction within the study area. To ensure a robust analysis, the maximum construction traffic flow for the four scenarios on each link and junction has been assumed as the peak construction traffic flows and has been assessed, as previously agreed within the Transport Assessment.

3.3 The Hornsea Three construction routes to the access points have been determined in the Transport Assessment as follows:

- A11 – 35%;
- A47 (west) – 35%;
- A148 (west) – 10%;
- A47 (east) – 5%;
- A146 – 5%; and
- A140 – 10%.

3.4 The above distribution is defined as the 'normal' or standard scenario, where all HGVs travel through the maximum number of links within the study area and thus represents the maximum construction movement design scenario.

3.5 To ensure the assessment accounted for day-to-day variances, a sensitivity methodology was also adopted within the Transport Assessment, which increased the proportion of trips from each origin. This methodology doubled the proportion of HGVs would originate from the above six links and thus allowed for day-to-day variances along them. This is considered to be a significant over estimation and, whilst a valid way to consider the link by link Environmental Transport Assessment, it is not a practical means to consider any CTMP interventions measures where construction traffic predictions are 100% above their predicted levels.

3.6 The assessment distribution of HGVs for the 'sensitivity' scenario was therefore as follows:

- A11 – 50%;
- A47 (west) – 50%;
- A148 (west) – 25%;
- A47 (east) – 25%;
- A146 – 25%;
- A140 – 25%; and
- Total – 200%.

3.7 The construction traffic flow diagrams contained within Appendix B of the original Transport Assessment, Volume 6, Annex 7.1 (APP-159) for both normal and sensitivity scenarios summarised above, have been revised and are contained in Annex D of this report.

3.8 Table 1.7 of the Transport Assessment, which indicates the predicted level of construction traffic expressed as a percentage change in daily flows on the assessed links, has been reproduced below in Table 1.1.

3.9 The links shown in Table 1.1 replicate the link network assessment within the original Transport Assessment.

3.10 In order to provide a more realistic traffic assessment of each of those links, as the sensitivity scenario effectively doubles the number of HGVs on each link and through each junction, the standard scenario also defined above has been populated in Table 1.1 to define the significant uplift to construction traffic defined on the highway network.

3.11 Finally, the revised construction traffic for each of the links for the standard scenario has also been included in Table 1.1.

Table 3.1: Percentage impact of Hornsea Three HGV traffic – sensitivity and normal distribution.

Highway Link	Transport Assessment Table 1.7 - Percentage impact of construction traffic – sensitivity testing						Revised Table 1.7 of TA for sensitivity testing (Reduced HGVs)				Percentage impact of construction traffic – standard testing				Revised percentage impact of construction traffic – standard testing (Reduced HGVs)			
	2022 Base		Maximum Construction		Percentage Increase		Maximum Construction		Percentage Increase		Maximum Construction		Percentage Increase		Maximum Construction		Percentage Increase	
	Total	HGVs	Total	HGVs	Total	HGVs	Total	Total	Total	HGVs	Total	Total	Total	HGVs	Total	HGVs	Total	HGVs
Link ID 35: A148, west of The Street and east of Green Lane	13908	838	517	377	3.7%	45%	399	259	2.9%	31%	366	226	2.6%	27%	295	156	2.1%	19%
Link ID 34: A148 west of Holt and east of Letheringsett	11466	691	517	377	4.5%	55%	399	259	3.5%	38%	366	226	3.2%	33%	295	156	2.6%	23%
Link ID 36: A148, east of the B1149 roundabout and west of Station Road	12242	612	380	297	3.1%	48%	286	203	2.3%	33%	262	178	2.1%	29%	205	122	1.7%	20%
Link ID 50: B1354 between the Swanton Road junction and B1110 junctions	4037	292	0	0	0.0%	0%	0	0	0.0%	0%	0	0	0.0%	0%	0	0	0.0%	0%
Link ID 55: B1354 east of Melton Constable and west of Briston	5598	405	0	0	0.0%	0%	0	0	0.0%	0%	0	0	0.0%	0%	0	0	0.0%	0%
Link ID 59: B1149 at Edgefield, north of the village hall and south of Hempstead Road	4537	173	511	373	11.3%	216%	393	256	8.7%	148%	361	224	8.0%	130%	291	153	6.4%	89%
Link ID 37: A148 at High Kelling, south of Kelling Hospital	13893	694	380	297	2.7%	43%	286	203	2.1%	29%	262	178	1.9%	26%	205	122	1.5%	18%
Link ID 41: A148, east of Bodham and west of the Woodlands Leisure centre	13237	712	684	439	5.2%	62%	543	299	4.1%	42%	451	207	3.4%	29%	385	141	2.9%	20%
Link ID 43: A148, west of the B1436 junction and east of the Lion's Mouth junction	14346	645	817	495	5.7%	77%	660	338	4.6%	52%	540	218	3.8%	34%	471	149	3.3%	23%
Link ID 190: B1436, east of Felbrigg	9665	488	817	495	8.5%	101%	660	338	6.8%	69%	540	218	5.6%	45%	471	149	4.9%	30%
Link ID 49: A140, south of Roughton and north of the Topshill Road junction	12041	593	817	495	6.8%	83%	660	338	5.5%	57%	540	218	4.5%	37%	471	149	3.9%	25%
Link ID 1: A149 west of Weybourne and east of The Pheasant Hotel	3567	24	0	0	0.0%	0%	0	0	0.0%	0%	0	0	0.0%	0%	0	0	0.0%	0%
Link ID 2: A149 east of Weybourne, west of the North Norfolk Railway Line	4771	33	354	221	7.4%	675%	288	155	6.0%	473%	243	110	5.1%	337%	210	77	4.4%	237%
Link ID 81: A1067, north of Bridge Road and east of Little Ryburgh	9451	543	285	214	3.0%	39%	214	142	2.3%	26%	199	128	2.1%	24%	157	85	1.7%	16%
Link ID 84: B1145 at Bawdeswell, between The Street junction and Hall Road junction	3390	128	0	0	0.0%	0%	0	0	0.0%	0%	0	0	0.0%	0%	0	0	0.0%	0%
Link ID 86: B1145, west of Reepham and east of the Old Lane junction	2980	113	0	0	0.0%	0%	0	0	0.0%	0%	0	0	0.0%	0%	0	0	0.0%	0%
Link ID 90: B1145 east of Cawston, west of the B1149 crossroads	3477	127	622	379	17.9%	298%	497	254	14.3%	200%	433	190	12.4%	149%	370	127	10.6%	100%
Link ID 78: B1145 east of the B1149 crossroads junction, west of Cawston Park Hospital	4834	163	81	0	1.7%	0%	81	0	1.7%	0%	81	0	1.7%	0%	81	0	1.7%	0%
Link ID 118: A140, south of Aylsham's B1145 / A140 roundabout, and north of Marsham	15732	750	777	495	4.9%	66%	621	338	3.9%	45%	500	218	3.2%	29%	431	149	2.7%	20%
Link ID 111: A1067, between Attlebridge and the Fir Covert Road junction	8995	626	631	356	7.0%	57%	512	237	5.7%	38%	432	157	4.8%	25%	379	104	4.2%	17%
Link ID 145: A140 between the A47 and B1113 junctions	24868	1314	845	528	3.4%	40%	720	402	2.9%	31%	581	264	2.3%	20%	518	201	2.1%	15%
Link ID 146: B1113, south of the A47 near Norwich Sports ground	8848	301	845	528	9.6%	175%	720	402	8.1%	134%	581	264	6.6%	88%	518	201	5.9%	67%
Link ID 129: A47 at Honingham	29944	2928	573	412	1.9%	14%	454	293	1.5%	10%	408	247	1.4%	8%	336	176	1.1%	6%
Link ID 157: A47 at Bawburgh	48143	3435	587	412	1.2%	12%	468	293	1.0%	9%	422	247	0.9%	7%	351	176	0.7%	5%
Link ID 147: A47 at Intwood	58002	4520	970	552	1.7%	12%	819	402	1.4%	9%	692	274	1.2%	6%	622	205	1.1%	5%
Link ID 153: A11 at Hethersett	53652	4522	411	283	0.8%	6%	332	204	0.6%	5%	326	198	0.6%	4%	271	143	0.5%	3%
Link ID 144: A47, between A140 and A146 junctions	55089	3157	803	392	1.5%	12%	686	274	1.2%	9%	641	229	1.2%	7%	570	159	1.0%	5%

Highway Link	Transport Assessment Table 1.7 - Percentage impact of construction traffic – sensitivity testing						Revised Table 1.7 of TA for sensitivity testing (Reduced HGVs)				Percentage impact of construction traffic – standard testing				Revised percentage impact of construction traffic – standard testing (Reduced HGVs)			
Link ID 197: A1065, North of Swaffham	8336	530	353	259	4.2%	49%	274	180	3.3%	34%	273	179	3.3%	34%	218	124	2.6%	23%
Link ID 195: A1065, east of Weasenham	5580	485	353	259	6.3%	77%	274	180	4.9%	54%	273	179	4.9%	37%	218	124	3.9%	37%
Link ID 5: A1082, South of Sheringham	8788	119	354	221	4.0%	185%	288	155	3.3%	130%	243	110	2.8%	93%	210	77	2.4%	65%
Link ID 200: A1270 Northern Distributor Road between A1067 and B1149 junction	21467	1368	671	356	3.1%	26%	493	237	2.3%	17%	372	157	1.7%	11%	294	104	1.4%	8%
Link ID 114: B1149 between A1270 Northern Distributor Road and Buxton Road junctions	11400	594	978	562	8.6%	95%	801	385	7.0%	65%	663	247	5.8%	42%	585	169	5.1%	29%
Link ID 201: A1270 Northern Distributor Road between B1149 and A140 junctions	25000	1593	1070	622	4.3%	39%	874	426	3.5%	27%	722	274	2.9%	17%	635	187	2.5%	12%
Link ID 204: A1270 Northern Distributor Road between A140 and A47 junctions	22933	1461	1093	629	4.8%	43%	897	432	3.9%	30%	741	277	3.2%	19%	655	190	2.9%	13%
Link ID 118: A140 between A1270 and B1145	14967	484	777	495	5.2%	102%	621	338	4.1%	70%	500	218	3.3%	45%	431	149	2.9%	31%
Link ID 204: A1270 between A140 and A47 (Near junction with A47)	35367	2254	1093	629	3.1%	28%	897	432	2.5%	19%	741	277	2.1%	12%	655	190	1.9%	8%
Link ID 137: A47 East of A1270 junction	45233	2882	664	263	1.5%	9%	585	184	1.3%	6%	454	53	1.0%	2%	438	37	1.0%	1%

4. Conclusion and Use of Data

4.1 The purpose of this Technical Note is to provide additional clarity over the changes to be made to the Hornsea Three activities which will change the overall level of HGVs on the highway network, the principle of the changes have been agreed with Norfolk County Council and Highways England which is documented in the Statements of Common Ground (submitted for Deadline 4).

4.2 The change made focused entirely around a reduction in the haul road depth, reducing the depth currently calculated within the Transport Assessment from 1000m to 500m. This justification has been accepted by key Stakeholders.

4.3 The Hornsea Three construction movement calculation table presented as part of Appendix 1: Main Construction Compound Briefing Note submission at Deadline 3 (REP3-010) has been updated to recalculate the change made as presented in Annex C of this report.

4.4 Whilst the HGV numbers assessment within the Transport Assessment and Environmental Statement remain valid for the purpose of the theoretical transport environmental assessment, going forward to consider specific intervention measures the reduced HGV generated by this change are to be used. In general, the number of HGVs for Hornsea Three has been reduced by 30%.

4.5 From this information, the Hornsea Three HGV traffic has been assigned to the network as previously agreed for both normal and sensitivity scenarios and Table 1.1 produced to highlight the percentage changes per distribution scenario.

4.6 In discussion with Norfolk County Council, the HGV update presented in this report will be used to;

- Update the outline CTMP intervention schemes at;
  - The Street Oulton
  - B1145 Cawston
  - Taverham Road at the junction with the A47
- Consider wider CTMP route timing restrictions; and
- Prepare cumulative effects of Hornsea Three / Norfolk Vanguard / Norfolk Boreas on specific highway links to be agreed with Norfolk County Council which will be submitted at Deadline 6.

Annex A - Transport Assessment Appendix A - HGV Movements per Access Point and Calculations Table

HGV Movements per Access Point

Cable Route Section	Description	Total Two-Way Light Vehicle Movements	Total Two-Way HGV Movements	Duration / Days	Daily Two-Way HGV Movements	Accesses	Number of Construction Accesses	*Daily HGVs per access
Landfall	Landfall	9,600	4,800	550	5	47 (B)	1	5
1	Landfall to Holgate Hill	5,528	18,737	180	104	47 (B) | 45 (B) | 44(B) | ACC_P_75	4	26
2	Holgate Hill to woodland north east of High Kelling	3,139	9,854	102	96	42(C) | 41(B)	1	96
3	Woodland northeast of High Kelling to woodland south of Church Road	4,612	14,586	150	97	ACC_P_74 | ACC_P_73 | ACC_P_72 | ACC_P_71 | ACC_P_70 | ACC_P_69	6	16
4	Woodland south of Church Road to woodland south and east of School Lane	5,163	15,727	170	94	ACC_P_68 | ACC_P_67 | 39a(B)	3	31
5	Woodland east of School Lane to Plumstead Road	3,782	11,494	124	94	ACC_P_66 | ACC_P_65 | ACC_P_64 | ACC_P_63 | ACC_P_62 | ACC_P_61	6	16
6	Plumstead Road to the B1149	4,871	16,733	158	106	37(E) | ACC_P_60	2	53
7	B1149 to land South of Town Close Lane	3,315	10,391	108	96	ACC_P_59 | ACC_P_58 | ACC_P_57 | 35(C) | ACC_P_56 | 35(C)	3	32
8	Land south of Town Close Lane to woodland north of Reepham Road	9,180	28,030	300	94	ACC_P_55 | ACC_P_54 | ACC_P_53 | ACC_P_52 | ACC_P_51 | ACC_P_50 | ACC_P_49 | ACC_P_48	8	12
9	Land north of Reepham Road to woodland north of Reepham	4,118	12,530	133	94	ACC_P_47 | ACC_P_46 | 34 (A) | 33(A) | ACC_P_45 | ACC_P_44	6	16
10	Woodland north of Reepham to woodland at Booton Common	3,539	11,081	114	96	ACC_P_43 | ACC_P_42 | 32(B) / 31(B)	3	32
11	Woodland east of Reepham to The Grove	4,211	13,321	137	97	ACC_P_41 | ACC_P_40	2	49
12	The Grove to woodland south of Church Farm Lane	4,524	13,767	149	94	ACC_P_39 | ACC_P_38 | ACC_P_37 | ACC_P_36 | ACC_P_35 | ACC_P_34	6	16
13	Woodland south of Church Farm Lane to River Wensum	4,262	13,296	139	96	29(B) | 29(B) | ACC_P_33 | ACC_P_32 | 28(C) | 27(C) | 26(B) | 25(B)	6	16
14	River Wensum to woodland south west of Ringland	10,094	31,155	330	94	ACC_P_31 | ACC_P_30 | 24(A) | ACC_P_29 | ACC_P_28 | ACC_P_27 | ACC_P_26 | 23(A) | ACC_P_25 | ACC_P_24 | 22(B) | ACC_P_23 | ACC_P_22 | 21(B) | 20(B)	14	7
15	Woodland south west of Ringland to A47	3,250	10,518	106	99	18(B) | 17(B) | 16(A)	3	33
16	A47 to Bawburgh Road	4,882	15,393	158	97	ACC_P_21 | ACC_P_20 | 15(A) | ACC_P_19 | 14(A)	4	24
17	Bawburgh Road to woodland west of Little Melton	6,415	19,891	209	95	ACC_P_18 | 13(C) | ACC_P_17 | ACC_P_16 | ACC_P_15 | ACC_P_14	5	19
18	Woodland west of Little Melton to A11	7,152	22,152	231	95	11(A) | ACC_P_13 | 10(A) | 9(A) | ACC_P_12 | ACC_P_11 | ACC_P_10 | ACC_P_9 | 8(A) | 7(A) | ACC_P_8 | 6(B) | 60(B) | 5(A) | 4(C) / 4(B) | 3(B)	16	6
19	A11 to woodland north west of Swardeston	5,006	15,246	163	94	2(B) | ACC_P_7 | ACC_P_6 | ACC_P_5 | ACC_P_4	5	19
20	Woodland north west of Swardeston to B1113	3,398	10,465	110	95	ACC_P_3 | ACC_P_2 | 1(B)	3	32
21	B1113 to end of cable route	3,923	17,786	127	140	ACC_P_1 | ACC_P_A | ACC_P_B | ACC_P_C | ACC_P_D | A(B)	2	70
HVAC Booster Station	Booster Station	24,012	6,597	275	12	37(C)	1	12
HVAC Substation	Converter / Sub Station	135,000	24,012	825	29	ACC_P_E	1	29
							111	**665**

Monitoring Access only
Crossing Point Only

*Excluding Monitoring Accesses and Crossing Points

Annex B - HGV Calculations used for Transport Assessment

Construction Vehicle Trip Generation Calculations

JNY8772 Hornsea Project Three
Construction Vehicle Movements by Cable Route Section

Section	Description	No. Major HDD Drilling Points (DPs)	Total Length (Km)	Length excluding HDD (H) (Km)	Access Point	Route from Motorway	No. of minor HDDs	No. of total HDDs	Nº. TT DPs Thrust Bore
1	Landfall to Holgate Hill	1	3.0	2.6	A149	-	5	6	6
2	Holgate Hill to woodland north	1	1.6	1.5	Bridge Road	-	2	3	3
3	Woodland northeast of High Kelling	1	2.5	2.2	A148	-	4	5	5
4	Woodland south of Church Road to woodland south and east of School Lane		2.5	2.5	Hempstead Road	-	2	2	2
5	Woodland east of School Lane to Plumstead Road		1.9	1.8	Hempstead Road	-	2	2	2
6	Plumstead Road to the B1149		2.3	2.3	B1149	-	5	5	5
7	B1149 to land South of Town Close Lane	1	1.9	1.6	B1354	-	2	3	3
8	Land south of Town Close Lane to woodland north of Reepham Road		4.4	4.4	Heydon Road	-	7	7	7
9	Land north of Reepham Road to woodland north of Reepham		2.0	1.9	Wood Dalling Road	-	5	5	5
10	Woodland north of Reepham to woodland at Booton Common	1	1.7	1.7	B1145	-	4	5	5
11	Woodland east of Reepham to The Grove	1	2.2	2.0	Church Road	-	3	4	4
12	The Grove to woodland south of Church Farm Lane		2.3	2.2	Norwich Road / Reepham Road	-	2	2	2
13	Woodland south of Church Farm Lane to River Wensum	1	2.3	2.0	Hall Road	-	3	4	4
14	River Wensum to woodland south west of Ringland	1	5.2	4.8	The Street / Marl Hill Road	-	8	9	9
15	Woodland south west of Ringland to A47	2	2.1	1.5	Weston Road	-	2	4	4
16	A47 to Bawburgh Road		2.3	2.3	Church Lane / Marlingford Road	-	5	5	5
17	Bawburgh Road to woodland west of Little Melton	1	3.1	3.0	B1108	-	5	6	6
18	Woodland west of Little Melton to A11	1	4.1	3.4	B1172	-	10	11	11
19	A11 to woodland north west of Swardeston		2.5	2.4	Station Lane	-	4	4	4
20	Woodland north west of Swardeston to B1113		1.7	1.6	B1113	-	4	4	4
21	B1113 to end of cable route		1.9	1.8	B1113 / Mangreen Lane	-	5	5	5
Totals		12	53.5	49.4			89	101	101

Cable Route - General

Section	Temporary Site Compounds: % compound surfaced	m³ stone required	Tonnes stone	HGV loads	Removal of compounds	2-way HGV moves	Site facilities and equipment: assume no HGVs for compound set up proportional to compound areas	Welfare (water, food, etc) assume proportional to compound areas	Removal of equipment etc.	2-way HGV moves
	50%	0.3	1.8	20						
	area (m²)	depth	t/m³	t/load			2000	200		
	3600									
1	1,800	540	972	49	49	**194**	2	18	2	**43**
2	1,800	540	972	49	49	**194**	2	18	2	**43**
3	3,461	1,038	1,869	93	93	**374**	3	35	3	**83**
4	0	0	0	0	0	**0**	0	0	0	**0**
5	0	0	0	0	0	**0**	0	0	0	**0**
6	14,373	4,312	7,761	388	388	**1,552**	14	144	14	**345**
7	1,800	540	972	49	49	**194**	2	18	2	**43**
8	0	0	0	0	0	**0**	0	0	0	**0**
9	0	0	0	0	0	**0**	0	0	0	**0**
10	1,800	540	972	49	49	**194**	2	18	2	**43**
11	3,223	967	1,740	87	87	**348**	3	32	3	**77**
12	0	0	0	0	0	**0**	0	0	0	**0**
13	1,800	540	972	49	49	**194**	2	18	2	**43**
14	1,800	540	972	49	49	**194**	2	18	2	**43**
15	3,600	1,080	1,944	97	97	**389**	4	36	4	**86**
16	3,760	1,128	2,030	102	102	**406**	4	38	4	**90**
17	1,800	540	972	49	49	**194**	2	18	2	**43**
18	1,800	540	972	49	49	**194**	2	18	2	**43**
19	0	0	0	0	0	**0**	0	0	0	**0**
20	1,102	330	595	30	30	**119**	1	11	1	**26**
21	44,356	13,307	23,952	1,198	1,198	**4,790**	44	444	44	**1,065**
Totals	88,274	26,482	47,668	2,383	2,383	9,534	88	883	88	2,119
						454				

Section	Fencing and temporary Roadway construction along cable route: Length (metres)	Fencing	width	depth	Cubic metres stone for roadway	Tonnes stone	HGV loads	Geogrid for underlaying stone	Misc HGVs eg. culvert pipe, temp metal roadway sections	Removal of Roadway	2-way HGV moves
		200	6	1		1.8	20	21600	5		
		m/HGV	m	m		t /m³	t/load	m²/HGV	/km		
1	2,615	26	12	1.0	31,380	56,484	2,824	1	14	2,824	**11,326**
2	1,485	15	12	1.0	17,820	32,076	1,604	0	8	1,604	**6,432**
3	2,180	22	12	1.0	26,160	47,088	2,354	1	11	2,354	**9,441**
4	2,470	25	12	1.0	29,640	53,352	2,668	1	13	2,668	**10,698**
5	1,800	18	12	1.0	21,600	38,880	1,944	1	9	1,944	**7,795**
6	2,300	23	12	1.0	27,600	49,680	2,484	1	12	2,484	**9,961**
7	1,570	16	12	1.0	18,840	33,912	1,696	0	8	1,696	**6,799**
8	4,370	44	12	1.0	52,440	94,392	4,720	1	22	4,720	**18,925**
9	1,935	19	12	1.0	23,220	41,796	2,090	1	10	2,090	**8,380**
10	1,660	17	12	1.0	19,920	35,856	1,793	0	9	1,793	**7,190**
11	1,995	20	12	1.0	23,940	43,092	2,155	1	10	2,155	**8,640**
12	2,160	22	12	1.0	25,920	46,656	2,333	1	11	2,333	**9,354**
13	2,020	20	12	1.0	24,240	43,632	2,182	1	11	2,182	**8,750**
14	4,800	48	12	1.0	57,600	103,680	5,184	1	24	5,184	**20,787**
15	1,535	15	12	1.0	18,420	33,156	1,658	0	8	1,658	**6,648**
16	2,305	23	12	1.0	27,660	49,788	2,489	1	12	2,489	**9,983**
17	3,045	30	12	1.0	36,540	65,772	3,289	1	16	3,289	**13,188**
18	3,355	34	12	1.0	40,260	72,468	3,623	1	17	3,623	**14,529**
19	2,375	24	12	1.0	28,500	51,300	2,565	1	12	2,565	**10,285**
20	1,595	16	12	1.0	19,140	34,452	1,723	0	8	1,723	**6,907**
21	1,840	18	12	1.0	22,080	39,744	1,987	1	10	1,987	**7,970**
Totals	49,410	494	252	21	592,920	1,067,256	53,363	14	255	53,363	213,989

Section	Trench Construction:	Volume of stabilised backfill in cubic metres per trench		m3 backfill	Tonnes backfill	HGV loads	Tile loads (assume 800 tiles per HGV)	Wall support proportional to length of trenches	Removal of excavated material	2-way HGV moves
	trench width (average)	3.25	m	6	1.65	20	800	0.5		
	depth	0.60	m	trenches	t/m³	t/load	tiles per HGV / tiles to cover trench width	loads		
	Cable dia / No. cables per trench	3					20			
1	0.275	4,633		27,800	45,870	2,293	64	5		**4,725**
2	0.275	2,631		15,787	26,048	1,302	37	3		**2,685**
3	0.275	3,863		23,175	38,239	1,912	54	4		**3,941**
4	0.275	4,376		26,258	43,326	2,166	61	5		**4,464**
5	0.275	3,189		19,136	31,574	1,579	44	4		**3,253**
6	0.275	4,075		24,451	40,344	2,017	57	5		**4,158**
7	0.275	2,782		16,690	27,539	1,377	39	3		**2,838**
8	0.275	7,743		46,457	76,654	3,833	107	9		**7,897**
9	0.275	3,428		20,571	33,942	1,697	48	4		**3,498**
10	0.275	2,941		17,647	29,118	1,456	41	3		**3,000**
11	0.275	3,535		21,209	34,994	1,750	49	4		**3,605**
12	0.275	3,827		22,963	37,888	1,894	53	4		**3,903**
13	0.275	3,579		21,474	35,433	1,772	50	4		**3,651**
14	0.275	8,505		51,028	84,197	4,210	117	10		**8,673**
15	0.275	2,720		16,318	26,925	1,346	38	3		**2,775**
16	0.275	4,084		24,504	40,432	2,022	57	5		**4,166**
17	0.275	5,395		32,371	53,412	2,671	75	6		**5,503**
18	0.275	5,944		35,667	58,850	2,942	82	7		**6,062**
19	0.275	4,208		25,248	41,660	2,083	58	5		**4,291**
20	0.275	2,826		16,956	27,978	1,399	39	3		**2,882**
21	0.275	3,260		19,561	32,275	1,614	45	4		**3,325**
Totals	6	87,545	0	525,272	866,698	#####	1,215	99	0	89,297

Section	Drainage Pipe:	Volume of stabilised backfill in cubic metres per trench (m3)		Tonnes backfill	HGV loads	Removal of excavated material	2-way HGV moves	Link Boxes: Volume per trench m3	Total Volume m3	HGV loads	2-way HGV moves	Transition Pits: Volume per bay m3	Total Volume m3	HGV loads	2-way HGV moves
	trench width at bottom	0.5	m	1.65	20			Link Boxes 3m x 3m x 2.0m	Total number of Link Boxes on corridor	6		25m long x 9m wide x 2.5m deep plus Link Boxes 3m x 3m x 2.0m		6	
	depth	1.2	m	t/m³	t/load					m3 / HGV				m2 / HGV	
	/ No. Pipes per	2						18	440			581	8	junction bays	
1	0.250	1,312		2,165	108	108	**217**	18	24	4	**8**		4,644	774	**1,564**
2	0.250	745		1,230	61	61	**123**	18	13	2	**4**				
3	0.250	1,094		1,805	90	90	**181**	18	21	3	**7**				
4	0.250	1,240		2,045	102	102	**205**	18	20	3	**7**				
5	0.250	903		1,490	75	75	**149**	18	16	3	**5**				
6	0.250	1,154		1,904	95	95	**190**	18	19	3	**6**				
7	0.250	788		1,300	65	65	**130**	18	16	3	**5**				
8	0.250	2,193		3,618	181	181	**362**	18	36	6	**12**				
9	0.250	971		1,602	80	80	**160**	18	16	3	**5**				
10	0.250	833		1,374	69	69	**137**	18	14	2	**5**				
11	0.250	1,001		1,652	83	83	**165**	18	18	3	**6**				
12	0.250	1,084		1,789	89	89	**179**	18	19	3	**6**				
13	0.250	1,014		1,673	84	84	**167**	18	19	3	**6**				
14	0.250	2,409		3,974	199	199	**397**	18	43	7	**14**				
15	0.250	770		1,271	64	64	**127**	18	17	3	**6**				
16	0.250	1,157		1,909	95	95	**191**	18	19	3	**6**				
17	0.250	1,528		2,521	126	126	**252**	18	25	4	**8**				
18	0.250	1,684		2,778	139	139	**278**	18	34	6	**11**				
19	0.250	1,192		1,967	98	98	**197**	18	20	3	**7**				
20	0.250	800		1,321	66	66	**132**	18	14	2	**5**				
21	0.250	923		1,524	76	76	**152**	18	16	3	**5**				
Totals		24,795		40,912	2,046	2,046	4,091	378	440		147	0	4,644	774	1,564

Section	Cable and ducting deliveries: m of cable	Number of cable drums	HGV loads	m of ducting	Number of duct loads	2-way HGV moves	TT (HDD / Thrust Bore) Sites: HDD Site Preparation: HGV movements per HDD	HDD Site Reinstatement: HGV movements per HDD	Major HDD works: works	Major HDD: Total Major HDD 2-way HGV Movements	Minor HDD works	Minor HDD: Total Minor HDD 2-way HGV Movements	Total: Total HDD 2-way HGV Movements
	18	800	1		750		15	13	22		20		
	cables	m/cable roll	1/cable		m/HGV		Factor 101 to 120 HDDs (up to 120 HDDs in PE)	1.188					
1	47,070	59	59	47,070	63	**244**	107	91	26	224	119	191	**415**
2	26,730	34	34	26,730	36	**140**	53	46	26	125	48	107	**232**
3	39,240	50	50	39,240	53	**206**	89	76	26	191	95	163	**354**
4	44,460	56	56	44,460	60	**232**	36	30	0	66	48	56	**122**
5	32,400	41	41	32,400	44	**170**	36	30	0	66	48	56	**122**
6	41,400	52	52	41,400	56	**216**	89	76	0	165	119	139	**304**
7	28,260	36	36	28,260	38	**148**	53	46	26	125	48	107	**232**
8	78,660	99	99	78,660	105	**408**	125	107	0	231	166	195	**426**
9	34,830	44	44	34,830	47	**182**	89	76	0	165	119	139	**304**
10	29,880	38	38	29,880	40	**156**	89	76	26	191	95	163	**354**
11	35,910	45	45	35,910	48	**186**	71	61	26	158	71	135	**293**
12	38,880	49	49	38,880	52	**202**	36	30	0	66	48	56	**122**
13	36,360	46	46	36,360	49	**190**	71	61	26	158	71	135	**293**
14	86,400	108	108	86,400	116	**448**	160	137	26	324	190	274	**598**
15	27,630	35	35	27,630	37	**144**	71	61	52	184	48	159	**343**
16	41,490	52	52	41,490	56	**216**	89	76	0	165	119	139	**304**
17	54,810	69	69	54,810	74	**286**	107	91	26	224	119	191	**415**
18	60,390	76	76	60,390	81	**314**	196	168	26	390	238	330	**719**
19	42,750	54	54	42,750	57	**222**	71	61	0	132	95	111	**243**
20	28,710	36	36	28,710	39	**150**	71	61	0	132	95	111	**243**
21	33,120	42	42	33,120	45	**174**	89	76	0	165	119	139	**304**
Totals	889,380	1,121	1,121	889,380	1,196	4,634	1,800	1,538	314	3,652	2,115	3,095	6,746

TT (HDD / Thrust Bore) connection

Section	Description	Total HGV Movements: Cable Route	HDD	Converter Station	Total	Duration/days: Cable route	Daily HGV Movements: Cable Route	Converter Station	HDD	Total	Staff: Cable Route	TT opps	Daily Staff Movements: Cable Route Staff Movements	TT opps	Converter Station	**Total**	Total staff movements: Cable Route Staff movements	TT opps	Converter Station	**Total**	Daily Vehicle Movements: HGV	Lights	Total	Total Vehicle Movements: HGV	Lights	Total	Staff Peak Hour: HGVs	Lights	Total	Hourly Vehicle Movements: HGVs
	Landfall				4,800	550				5											5	10	15	4,800	9,600	14,400		5	5	0
1	Landfall to Holgate Hill	18,322	415		18,737	180	102		2	104	20	70	30	105		135	5,393	135		5,528	104	135	239	18,737	5,528	24,265		68	68	9
2	Holgate Hill to woodland north east of High Kelling	9,622	232		9,854	102	94		2	96	20	31	30	47		77	3,063	77		3,139	96	77	173	9,854	3,139	12,994		38	38	9
3	Woodland northeast of High Kelling to woodland south of Church Road	14,232	354		14,586	150	95		2	97	20	57	30	86		116	4,496	116		4,612	97	116	212	14,586	4,612	19,198		58	58	9
4	Woodland south of Church Road to woodland south and east of School Lane	15,606	122		15,727	170	92		2	94	20	26	30	39		69	5,094	69		5,163	94	69	163	15,727	5,163	20,891		35	35	9
5	Woodland east of School Lane to Plumstead Road	11,372	122		11,494	124	92		2	94	20	26	30	39		69	3,713	69		3,782	94	69	163	11,494	3,782	15,275		35	35	9
6	Plumstead Road to the B1149	16,429	304		16,733	158	104		2	106	20	65	30	98		128	4,744	128		4,871	106	128	233	16,733	4,871	21,604		64	64	10
7	B1149 to land South of Town Close Lane	10,158	232		10,391	108	94		2	96	20	31	30	47		77	3,238	77		3,315	96	77	173	10,391	3,315	13,705		38	38	9
8	Land south of Town Close Lane to woodland north of Reepham Road	27,604	426		28,030	300	92		2	94	20	91	30	137		167	9,013	167		9,180	94	167	260	28,030	9,180	37,209		83	83	9
9	Land north of Reepham Road to woodland north of Reepham	12,226	304		12,530	133	92		2	94	20	65	30	98		128	3,991	128		4,118	94	128	221	12,530	4,118	16,649		64	64	9
10	Woodland north of Reepham to woodland at Booton Common	10,726	354		11,081	114	94		2	96	20	57	30	86		116	3,424	116		3,539	96	116	212	11,081	3,539	14,620		58	58	9
11	Woodland east of Reepham to The Grove	13,028	293		13,321	137	95		2	97	20	44	30	66		96	4,115	96		4,211	97	96	193	13,321	4,211	17,532		48	48	9
12	The Grove to woodland south of Church Farm Lane	13,645	122		13,767	149	92		2	94	20	26	30	39		69	4,455	69		4,524	94	69	163	13,767	4,524	18,291		35	35	9
13	Woodland south of Church Farm Lane to River Wensum	13,002	293		13,296	139	94		2	96	20	44	30	66		96	4,166	96		4,262	96	96	192	13,296	4,262	17,558		48	48	9
14	River Wensum to woodland south west of Ringland	30,557	598		31,155	330	93		2	94	20	109	30	164		194	9,900	194		10,094	94	194	288	31,155	10,094	41,248		97	97	9
15	Woodland south west of Ringland to A47	10,175	343		10,518	106	96		2	99	20	36	30	54		84	3,166	84		3,250	99	84	183	10,518	3,250	13,768		42	42	9
16	A47 to Bawburgh Road	15,059	304		15,363	158	95		2	97	20	65	30	98		128	4,754	128		4,882	97	128	224	15,363	4,882	20,245		64	64	9
17	Bawburgh Road to woodland west of Little Melton	19,476	415		19,891	209	93		2	95	20	70	30	105		135	6,280	135		6,415	95	135	230	19,891	6,415	26,306		68	68	9
18	Woodland west of Little Melton to A11	21,433	719		22,152	231	93		2	95	20	135	30	203		233	6,920	233		7,152	95	233	327	22,152	7,152	29,304		116	116	9
19	A11 to woodland north west of Swardeston	15,002	243		15,246	163	92		2	94	20	52	30	78		108	4,898	108		5,006	94	108	202	15,246	5,006	20,252		54	54	9
20	Woodland north west of Swardeston to B1113	10,222	243		10,465	110	93		2	95	20	52	30	78		108	3,290	108		3,398	95	108	203	10,465	3,398	13,863		54	54	9
21	B1113 to end of cable route	17,481	304		17,786	127	138		2	140	20	65	30	98		128	3,795	128		3,923	140	128	267	17,786	3,923	21,708		64	64	13
	Booster Station			6,597	6,597			12		12					34	34			24,012	24,012	12	34	46	6,597	24,012	30,609		17	17	1
	Converter / Sub Station			24,012	24,012			29		29					82	82			135,000	135,000	29	82	111	24,012	135,000	159,012		41	41	3
	Total	325,374	6,746	30,609	367,529		2,024	41	40	2,111	420	1,217	630	1,826	116	2,571	101,908	2,456	159,012	263,376	2,111	2,581	4,692	367,529	272,976	640,505		1,294	1,294	192

		Staff
	cable route	20
TT site	small	8
	large	13
Mode sha	75%	

Converter Station Staff Movements
Average staff per day 50
Mode share 50%

	months of construction	days
land fall	3	68.75
TT Site	2.2	50.00

working days/week 5.5
working weeks/year 50
working month **23 working days**

cable route rate of construction 3 months per location (per 750m, but calculate as per km to fit minimum construction duration)

Annex C - Revised HGV Movements per Access Point and Calculations Table

Construction Vehicle Trip Generation Calculations

JNY8772 Hornsea Project Three
Construction Vehicle Movements by Cable Route Section

Section	Description	No. Major HDD Drilling Points (DPs)	Total Length (Km)	Length excluding HDD (H) (Km)	Access Point	Route from Motorway	No. of minor HDDs	No. of total HDDs	Nº. TT DPs Thrust Bore
1	Landfall to Holgate Hill	1	3.0	2.6	A149	-	5	6	6
2	Holgate Hill to woodland north	1	1.6	1.5	Bridge Road	-	2	3	3
3	Woodland northeast of High Kelling	1	2.5	2.2	A148	-	4	5	5
4	Woodland south of Church Road to woodland south and east of School Lane		2.5	2.5	Hempstead Road	-	2	2	2
5	Woodland east of School Lane to Plumstead Road		1.9	1.8	Hempstead Road	-	2	2	2
6	Plumstead Road to the B1149		2.3	2.3	B1149	-	5	5	5
7	B1149 to land South of Town Close Lane	1	1.9	1.6	B1354	-	2	3	3
8	Land south of Town Close Lane to woodland north of Reepham Road		4.4	4.4	Heydon Road	-	7	7	7
9	Land north of Reepham Road to woodland north of Reepham		2.0	1.9	Wood Dalling Road	-	5	5	5
10	Woodland north of Reepham to woodland at Booton Common	1	1.7	1.7	B1145	-	4	5	5
11	Woodland east of Reepham to The Grove	1	2.2	2.0	Church Road	-	3	4	4
12	The Grove to woodland south of Church Farm Lane		2.3	2.2	Norwich Road / Reepham Road	-	2	2	2
13	Woodland south of Church Farm Lane to River Wensum	1	2.3	2.0	Hall Road	-	3	4	4
14	River Wensum to woodland south west of Ringland	1	5.2	4.8	The Street / Marl Hill Road	-	8	9	9
15	Woodland south west of Ringland to A47	2	2.1	1.5	Weston Road	-	2	4	4
16	A47 to Bawburgh Road		2.3	2.3	Church Lane / Marlingford Road	-	5	5	5
17	Bawburgh Road to woodland west of Little Melton	1	3.1	3.0	B1108	-	5	6	6
18	Woodland west of Little Melton to A11	1	4.1	3.4	B1172	-	10	11	11
19	A11 to woodland north west of Swardeston		2.5	2.4	Station Lane	-	4	4	4
20	Woodland north west of Swardeston to B1113		1.7	1.6	B1113	-	4	4	4
21	B1113 to end of cable route		1.9	1.8	B1113 / Mangreen Lane	-	5	5	5
Totals		12	53.5	49.4			89	101	101

Cable Route - General

Section	Temporary Site Compounds: % compound surfaced	m³ stone required	Tonnes stone	HGV loads	Removal of compounds	2-way HGV moves	Site facilities and equipment: assume no HGVs for compound set up proportional to compound areas	Welfare (water, food, etc) assume proportional to compound areas	Removal of equipment etc.	2-way HGV moves
	50%	0.3	1.8	20						
	area (m²)	depth	t/m³	t/load			2000	200		
	3600									
1	1,800	540	972	49	49	194	2	18	2	43
2	1,800	540	972	49	49	194	2	18	2	43
3	3,461	1,038	1,869	93	93	374	3	35	3	83
4	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0
6	14,373	4,312	7,761	388	388	1,552	14	144	14	345
7	1,800	540	972	49	49	194	2	18	2	43
8	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0
10	1,800	540	972	49	49	194	2	18	2	43
11	3,223	967	1,740	87	87	348	3	32	3	77
12	0	0	0	0	0	0	0	0	0	0
13	1,800	540	972	49	49	194	2	18	2	43
14	1,800	540	972	49	49	194	2	18	2	43
15	3,600	1,080	1,944	97	97	389	4	36	4	86
16	3,760	1,128	2,030	102	102	406	4	38	4	90
17	1,800	540	972	49	49	194	2	18	2	43
18	1,800	540	972	49	49	194	2	18	2	43
19	0	0	0	0	0	0	0	0	0	0
20	1,102	330	595	30	30	119	1	11	1	26
21	44,356	13,307	23,952	1,198	1,198	4,790	44	444	44	1,065
Totals	88,274	26,482	47,668	2,383	2,383	9,534	88	883	88	2,119
						454				

Section	Fencing and temporary Roadway construction along cable route: Length (metres)	Fencing	width	depth	Cubic metres stone for roadway	Tonnes stone	HGV loads	Geogrid for underlaying stone	Misc HGVs eg. culvert pipe, temp metal roadway sections	Removal of Roadway	2-way HGV moves
		200	6	0.5		1.8	20	21600	5		
		m/HGV	m	m		t /m³	t/load	m²/HGV	/km		
1	2,615	26	12	0.5	15,690	28,242	1,412	1	14	1,412	5,678
2	1,485	15	12	0.5	8,910	16,038	802	0	8	802	3,224
3	2,180	22	12	0.5	13,080	23,544	1,177	1	11	1,177	4,732
4	2,470	25	12	0.5	14,820	26,676	1,334	1	13	1,334	5,363
5	1,800	18	12	0.5	10,800	19,440	972	1	9	972	3,907
6	2,300	23	12	0.5	13,800	24,840	1,242	1	12	1,242	4,993
7	1,570	16	12	0.5	9,420	16,956	848	0	8	848	3,408
8	4,370	44	12	0.5	26,220	47,196	2,360	1	22	2,360	9,486
9	1,935	19	12	0.5	11,610	20,898	1,045	1	10	1,045	4,201
10	1,660	17	12	0.5	9,960	17,928	896	0	9	896	3,605
11	1,995	20	12	0.5	11,970	21,546	1,077	1	10	1,077	4,330
12	2,160	22	12	0.5	12,960	23,328	1,166	1	11	1,166	4,689
13	2,020	20	12	0.5	12,120	21,816	1,091	1	11	1,091	4,386
14	4,800	48	12	0.5	28,800	51,840	2,592	1	24	2,592	10,419
15	1,535	15	12	0.5	9,210	16,578	829	0	8	829	3,332
16	2,305	23	12	0.5	13,830	24,894	1,245	1	12	1,245	5,004
17	3,045	30	12	0.5	18,270	32,886	1,644	1	16	1,644	6,611
18	3,355	34	12	0.5	20,130	36,234	1,812	1	17	1,812	7,283
19	2,375	24	12	0.5	14,250	25,650	1,283	1	12	1,283	5,155
20	1,595	16	12	0.5	9,570	17,226	861	0	8	861	3,462
21	1,840	18	12	0.5	11,040	19,872	994	1	10	994	3,995
Totals	49,410	494	252	11	296,460	533,628	26,681	14	255	26,681	107,263

Section	Trench Construction: Volume of stabilised backfill in cubic metres per trench			m3 backfill	Tonnes backfill	HGV loads	Tile loads (assume 800 tiles per HGV)	Wall support proportional to length of trenches	Removal of excavated material	2-way HGV moves
	trench width (average)	3.25	m	6	1.65	20	800	0.5		
	depth	0.60	m	trenches	t/m³	t/load	tiles per HGV / tiles to cover trench width	loads		
	Cable dia / No. cables per trench	3					20			
1	0.275	4,633		27,800	45,870	2,293	64	5		4,725
2	0.275	2,631		15,787	26,048	1,302	37	3		2,685
3	0.275	3,863		23,175	38,239	1,912	54	4		3,941
4	0.275	4,376		26,258	43,326	2,166	61	5		4,464
5	0.275	3,189		19,136	31,574	1,579	44	4		3,253
6	0.275	4,075		24,451	40,344	2,017	57	5		4,158
7	0.275	2,782		16,690	27,539	1,377	39	3		2,838
8	0.275	7,743		46,457	76,654	3,833	107	9		7,897
9	0.275	3,428		20,571	33,942	1,697	48	4		3,498
10	0.275	2,941		17,647	29,118	1,456	41	3		3,000
11	0.275	3,535		21,209	34,994	1,750	49	4		3,605
12	0.275	3,827		22,963	37,888	1,894	53	4		3,903
13	0.275	3,579		21,474	35,433	1,772	50	4		3,651
14	0.275	8,505		51,028	84,197	4,210	117	10		8,673
15	0.275	2,720		16,318	26,925	1,346	38	3		2,775
16	0.275	4,084		24,504	40,432	2,022	57	5		4,166
17	0.275	5,395		32,371	53,412	2,671	75	6		5,503
18	0.275	5,944		35,667	58,850	2,942	82	7		6,062
19	0.275	4,208		25,248	41,660	2,083	58	5		4,291
20	0.275	2,826		16,956	27,978	1,399	39	3		2,882
21	0.275	3,260		19,561	32,275	1,614	45	4		3,325
Totals	6	87,545	0	525,272	866,698	#####	1,215	99	0	89,297

Section	Drainage Pipe: Volume of stabilised backfill in cubic metres per trench (m3)			Tonnes backfill	HGV loads	Removal of excavated material	2-way HGV moves	Link Boxes: Volume per trench m3	Total Volume m3	HGV loads	2-way HGV moves
	trench width at bottom	0.5	m	1.65	20			Link Boxes 3m x 3m x 2.0m	Total number of Link Boxes on corridor	6	
	depth	1.2	m	t/m³	t/load					m3 / HGV	
	/ No. Pipes per	2						18	440		
1	0.250	1,312		2,165	108	108	217	18	24	4	8
2	0.250	745		1,230	61	61	123	18	13	2	4
3	0.250	1,094		1,805	90	90	181	18	21	3	7
4	0.250	1,240		2,045	102	102	205	18	20	3	7
5	0.250	903		1,490	75	75	149	18	16	3	5
6	0.250	1,154		1,904	95	95	190	18	19	3	6
7	0.250	788		1,300	65	65	130	18	16	3	5
8	0.250	2,193		3,618	181	181	362	18	36	6	12
9	0.250	971		1,602	80	80	160	18	16	3	5
10	0.250	833		1,374	69	69	137	18	14	2	5
11	0.250	1,001		1,652	83	83	165	18	18	3	6
12	0.250	1,084		1,789	89	89	179	18	19	3	6
13	0.250	1,014		1,673	84	84	167	18	19	3	6
14	0.250	2,409		3,974	199	199	397	18	43	7	14
15	0.250	770		1,271	64	64	127	18	17	3	6
16	0.250	1,157		1,909	95	95	191	18	19	3	6
17	0.250	1,528		2,521	126	126	252	18	25	4	8
18	0.250	1,684		2,778	139	139	278	18	34	6	11
19	0.250	1,192		1,967	98	98	197	18	20	3	7
20	0.250	800		1,321	66	66	132	18	14	2	5
21	0.250	923		1,524	76	76	152	18	16	3	5
Totals		24,795		40,912	2,046	2,046	4,091	378	440		147

Section	Transition Pits: Volume per bay m3	Total Volume m3	HGV loads	2-way HGV moves	Cable and ducting deliveries: m of cable	Number of cable drums	HGV loads	m of ducting	Number of duct loads	2-way HGV moves
			6		18	800	1		750	
	25m long x 9m wide x 2.5m deep plus Link Boxes 3m x 3m x 2.0m		m2 / HGV		cables	m/cable roll	1/cable		m/HGV	
	581	8	junction bays							
1		4,644	774	1,564	47,070	59	59	47,070	63	244
2					26,730	34	34	26,730	36	140
3					39,240	50	50	39,240	53	206
4					44,460	56	56	44,460	60	232
5					32,400	41	41	32,400	44	170
6					41,400	52	52	41,400	56	216
7					28,260	36	36	28,260	38	148
8					78,660	99	99	78,660	105	408
9					34,830	44	44	34,830	47	182
10					29,880	38	38	29,880	40	156
11					35,910	45	45	35,910	48	186
12					38,880	49	49	38,880	52	202
13					36,360	46	46	36,360	49	190
14					86,400	108	108	86,400	116	448
15					27,630	35	35	27,630	37	144
16					41,490	52	52	41,490	56	216
17					54,810	69	69	54,810	74	286
18					60,390	76	76	60,390	81	314
19					42,750	54	54	42,750	57	222
20					28,710	36	36	28,710	39	150
21					33,120	42	42	33,120	45	174
Totals	0	4,644	774	1,564	889,380	1,121	1,121	889,380	1,196	4,634

TT (HDD / Thrust Bore) Sites

Section	HDD Site Preparation: HGV movements per HDD	HDD Site Reinstatement: HGV movements per HDD	Major HDD works: works	Major HDD: Total Major HDD 2-way HGV Movements	Minor HDD works	Minor HDD: Total Minor HDD 2-way HGV Movements	Total: Total HDD 2-way HGV Movements
	15	13	22		20		
	Factor 101 to 120 HDDs (up to 120 HDDs in PE)	1.188					
1	107	91	26	224	119	191	415
2	53	46	26	125	48	107	232
3	89	76	26	191	95	163	354
4	36	30	0	66	48	56	122
5	36	30	0	66	48	56	122
6	89	76	0	165	119	139	304
7	53	46	26	125	48	107	232
8	125	107	0	231	166	195	426
9	89	76	0	165	119	139	304
10	89	76	26	191	95	163	354
11	71	61	26	158	71	135	293
12	36	30	0	66	48	56	122
13	71	61	26	158	71	135	293
14	160	137	26	324	190	274	598
15	71	61	52	184	48	159	343
16	89	76	0	165	119	139	304
17	107	91	26	224	119	191	415
18	196	168	26	390	238	330	719
19	71	61	0	132	95	111	243
20	71	61	0	132	95	111	243
21	89	76	0	165	119	139	304
Totals	1,800	1,538	314	3,652	2,115	3,095	6,746

TT (HDD / Thrust Bore) connection

Section	Description	Total HGV Movements: Cable Route	HDD	Converter Station	Total	Duration/days: Cable route	Daily HGV Movements: Cable Route	Converter Station	HDD	Total	Staff: Cable Route	TT opps	Daily Staff Movements: Cable Route Staff Movements	TT opps	Converter Station	Total
	Landfall				4,800	550				5						
1	Landfall to Holgate Hill	12,674	415		13,089	180	70		2	72	20	70	30	105		135
2	Holgate Hill to woodland north east of High Kelling	6,414	232		6,647	102	63		2	65	20	31	30	47		77
3	Woodland northeast of High Kelling to woodland south of Church Road	9,523	354		9,877	150	64		2	66	20	57	30	86		116
4	Woodland south of Church Road to woodland south and east of School Lane	10,270	122		10,392	170	60		2	62	20	26	30	39		69
5	Woodland east of School Lane to Plumstead Road	7,484	122		7,606	124	60		2	62	20	26	30	39		69
6	Plumstead Road to the B1149	11,461	304		11,765	158	72		2	74	20	65	30	98		128
7	B1149 to land South of Town Close Lane	6,767	232		7,000	108	63		2	65	20	31	30	47		77
8	Land south of Town Close Lane to woodland north of Reepham Road	18,164	426		18,590	300	60		2	62	20	91	30	137		167
9	Land north of Reepham Road to woodland north of Reepham	8,046	304		8,350	133	60		2	62	20	65	30	98		128
10	Woodland north of Reepham to woodland at Booton Common	7,141	354		7,495	114	63		2	65	20	57	30	86		116
11	Woodland east of Reepham to The Grove	8,718	293		9,012	137	64		2	66	20	44	30	66		96
12	The Grove to woodland south of Church Farm Lane	8,980	122		9,101	149	60		2	62	20	26	30	39		69
13	Woodland south of Church Farm Lane to River Wensum	8,639	293		8,932	139	62		2	64	20	44	30	66		96
14	River Wensum to woodland south west of Ringland	20,189	598		20,787	330	61		2	63	20	109	30	164		194
15	Woodland south west of Ringland to A47	6,859	343		7,202	106	65		2	67	20	36	30	54		84
16	A47 to Bawburgh Road	10,080	304		10,384	158	64		2	65	20	65	30	98		128
17	Bawburgh Road to woodland west of Little Melton	12,899	415		13,314	209	62		2	64	20	70	30	105		135
18	Woodland west of Little Melton to A11	14,186	719		14,905	231	62		2	63	20	135	30	203		233
19	A11 to woodland north west of Swardeston	9,872	243		10,116	163	60		2	62	20	52	30	78		108
20	Woodland north west of Swardeston to B1113	6,776	243		7,020	110	62		2	64	20	52	30	78		108
21	B1113 to end of cable route	13,507	304		13,811	127	107		2	109	20	65	30	98		128
	Booster Station			6,597	6,597			12		12					34	34
	Converter / Sub Station			24,012	24,012			29		29					82	82
	Total	218,649	6,746	30,609	260,804		1,365	41	40	1,451	420	1,217	630	1,826	116	2,571

Section	Description	Total staff movements: Cable Route Staff movements	TT opps	Converter Station	Total	Daily Vehicle Movements: HGV	Lights	Total	Total Vehicle Movements: HGV	Lights	Total	Staff Peak Hour: HGVs	Lights	Total	Hourly Vehicle Movements: HGVs
	Landfall					5	10	15	4,800	9,600	14,400		5	5	0
1	Landfall to Holgate Hill	5,393	135		5,528	72	135	207	13,089	5,528	18,617		68	68	7
2	Holgate Hill to woodland north east of High Kelling	3,063	77		3,139	65	77	142	6,647	3,139	9,786		38	38	6
3	Woodland northeast of High Kelling to woodland south of Church Road	4,496	116		4,612	66	116	181	9,877	4,612	14,489		58	58	6
4	Woodland south of Church Road to woodland south and east of School Lane	5,094	69		5,163	62	69	131	10,392	5,163	15,555		35	35	6
5	Woodland east of School Lane to Plumstead Road	3,713	69		3,782	62	69	131	7,606	3,782	11,387		35	35	6
6	Plumstead Road to the B1149	4,744	128		4,871	74	128	202	11,765	4,871	16,636		64	64	7
7	B1149 to land South of Town Close Lane	3,238	77		3,315	65	77	141	7,000	3,315	10,314		38	38	6
8	Land south of Town Close Lane to woodland north of Reepham Road	9,013	167		9,180	62	167	229	18,590	9,180	27,770		83	83	6
9	Land north of Reepham Road to woodland north of Reepham	3,991	128		4,118	62	128	190	8,350	4,118	12,469		64	64	6
10	Woodland north of Reepham to woodland at Booton Common	3,424	116		3,539	65	116	180	7,495	3,539	11,034		58	58	6
11	Woodland east of Reepham to The Grove	4,115	96		4,211	66	96	162	9,012	4,211	13,222		48	48	6
12	The Grove to woodland south of Church Farm Lane	4,455	69		4,524	62	69	131	9,101	4,524	13,625		35	35	6
13	Woodland south of Church Farm Lane to River Wensum	4,166	96		4,262	64	96	160	8,932	4,262	13,195		48	48	6
14	River Wensum to woodland south west of Ringland	9,900	194		10,094	63	194	257	20,787	10,094	30,880		97	97	6
15	Woodland south west of Ringland to A47	3,166	84		3,250	67	84	151	7,202	3,250	10,452		42	42	6
16	A47 to Bawburgh Road	4,754	128		4,882	65	128	193	10,384	4,882	15,266		64	64	6
17	Bawburgh Road to woodland west of Little Melton	6,280	135		6,415	64	135	199	13,314	6,415	19,729		68	68	6
18	Woodland west of Little Melton to A11	6,920	233		7,152	63	233	296	14,905	7,152	22,057		116	116	6
19	A11 to woodland north west of Swardeston	4,898	108		5,006	62	108	170	10,116	5,006	15,122		54	54	6
20	Woodland north west of Swardeston to B1113	3,290	108		3,398	64	108	172	7,020	3,398	10,417		54	54	6
21	B1113 to end of cable route	3,795	128		3,923	109	128	236	13,811	3,923	17,734		64	64	10
	Booster Station			24,012	24,012	12	34	46	6,597	24,012	30,609		17	17	1
	Converter / Sub Station			135,000	135,000	29	82	111	24,012	135,000	159,012		41	41	3
	Total	101,908	2,456	159,012	263,376	1,451	2,581	4,032	260,804	272,976	533,779		1,294	1,294	132

		Staff
	cable route	20
TT site	small	8
	large	13
Mode sha	75%	

Converter Station Staff Movements
Average staff per day 50
Mode share 50%

	months of construction	days		
			vorking days/week	5.5
land fall	3	68.75	orking weeks/year	50
TT Site	2.2	50.00	working month	23 working days

cable route rate of construction 3 months per location (per 750m, but calculate as per km to fit minimum construction duration)

HGV Movements per Access Point

Cable Route Section	Description	Total Two-Way Light Vehicle Movements	Total Two-Way HGV Movements	Duration / Days	Daily Two-Way HGV Movements	Accesses																Number of Construction Accesses	*Daily HGVs per access
Landfall	Landfall	9,600	4,800	550	5	47 (B)																1	5
1	Landfall to Holgate Hill	5,528	13,089	180	72	47 (B)	45(B)	44(B)	ACC_P_75													4	18
2	Holgate Hill to woodland north east of High Kelling	3,139	6,647	102	65	42(C)	41(B)															1	65
3	Woodland northeast of High Kelling to woodland south of Church Road	4,612	9,877	150	66	ACC_P_74	ACC_P_73	ACC_P_72	ACC_P_71	ACC_P_70	ACC_P_69											6	11
4	Woodland south of Church Road to woodland south and east of School Lane	5,163	10,392	170	62	ACC_P_68	ACC_P_67	39a(B)														3	21
5	Woodland east of School Lane to Plumstead Road	3,782	7,606	124	62	ACC_P_66	ACC_P_65	ACC_P_64	ACC_P_63	ACC_P_62	ACC_P_61											6	10
6	Plumstead Road to the B1149	4,871	11,765	158	74	37(E)	ACC_P_60															2	37
7	B1149 to land South of Town Close Lane	3,315	7,000	108	65	ACC_P_59	ACC_P_58	ACC_P_57	36(C)	ACC_P_56	35(C)											3	22
8	Land south of Town Close Lane to woodland north of Reepham Road	9,180	18,590	300	62	ACC_P_55	ACC_P_54	ACC_P_53	ACC_P_52	ACC_P_51	ACC_P_50	ACC_P_49	ACC_P_48									8	8
9	Land north of Reepham Road to woodland north of Reepham	4,118	8,350	133	62	ACC_P_47	ACC_P_46	34 (A)	33(A)	ACC_P_45	ACC_P_44											6	10
10	Woodland north of Reepham to woodland at Booton Common	3,539	7,495	114	65	ACC_P_43	ACC_P_42	32(B) / 31(B)														3	22
11	Woodland east of Reepham to The Grove	4,211	9,012	137	66	ACC_P_41	ACC_P_40															2	33
12	The Grove to woodland south of Church Farm Lane	4,524	9,101	149	62	ACC_P_39	ACC_P_38	ACC_P_37	ACC_P_36	ACC_P_35	ACC_P_34											6	10
13	Woodland south of Church Farm Lane to River Wensum	4,262	8,932	139	64	29(B)	29(B)	ACC_P_33	ACC_P_32	28(C)	27(C)	26(B)	25(B)									6	11
14	River Wensum to woodland south west of Ringland	10,094	20,787	330	63	ACC_P_31	ACC_P_30	24(A)	ACC_P_29	ACC_P_28	ACC_P_27	ACC_P_26	23(A)	ACC_P_25	ACC_P_24	22(B)	ACC_P_23	ACC_P_22	21(B)	20(B)		14	5
15	Woodland south west of Ringland to A47	3,250	7,202	106	67	18(B)	17(B)	16(A)														3	22
16	A47 to Bawburgh Road	4,882	10,384	158	65	ACC_P_21	ACC_P_20	15(A)	ACC_P_19	14(A)												4	16
17	Bawburgh Road to woodland west of Little Melton	6,415	13,314	209	64	ACC_P_18	13(C)	ACC_P_17	ACC_P_16	ACC_P_15	ACC_P_14											5	13
18	Woodland west of Little Melton to A11	7,152	14,905	231	63	11(A)	ACC_P_13	10(A)	9(A)	ACC_P_12	ACC_P_11	ACC_P_10	ACC_P_9	8(A)	7(A)	ACC_P_8	6(B)	50(B)	5(A)	4(C) / 4(B)	3(B)	16	4
19	A11 to woodland north west of Swardeston	5,006	10,116	163	62	2(B)	ACC_P_7	ACC_P_6	ACC_P_5	ACC_P_4												5	12
20	Woodland north west of Swardeston to B1113	3,398	7,020	110	64	ACC_P_3	ACC_P_2	1(B)														3	21
21	B1113 to end of cable route	3,923	13,811	127	109	ACC_P_1	ACC_P_A	ACC_P_B	ACC_P_C	ACC_P_D	A(B)											2	54
HVAC Booster Station	Booster Station	24,012	6,597	275	12	37(E)																1	12
HVAC Substation	Converter / Sub Station	135,000	24,012	825	29	ACC_P_1																1	29
																						111	**472**

Monitoring Access only
Crossing Point Only

*Excluding Monitoring Accesses and Crossing Points

Annex D - Revised Transport Assessment Appendix B Traffic Flow Diagrams

Traffic Flow Diagrams

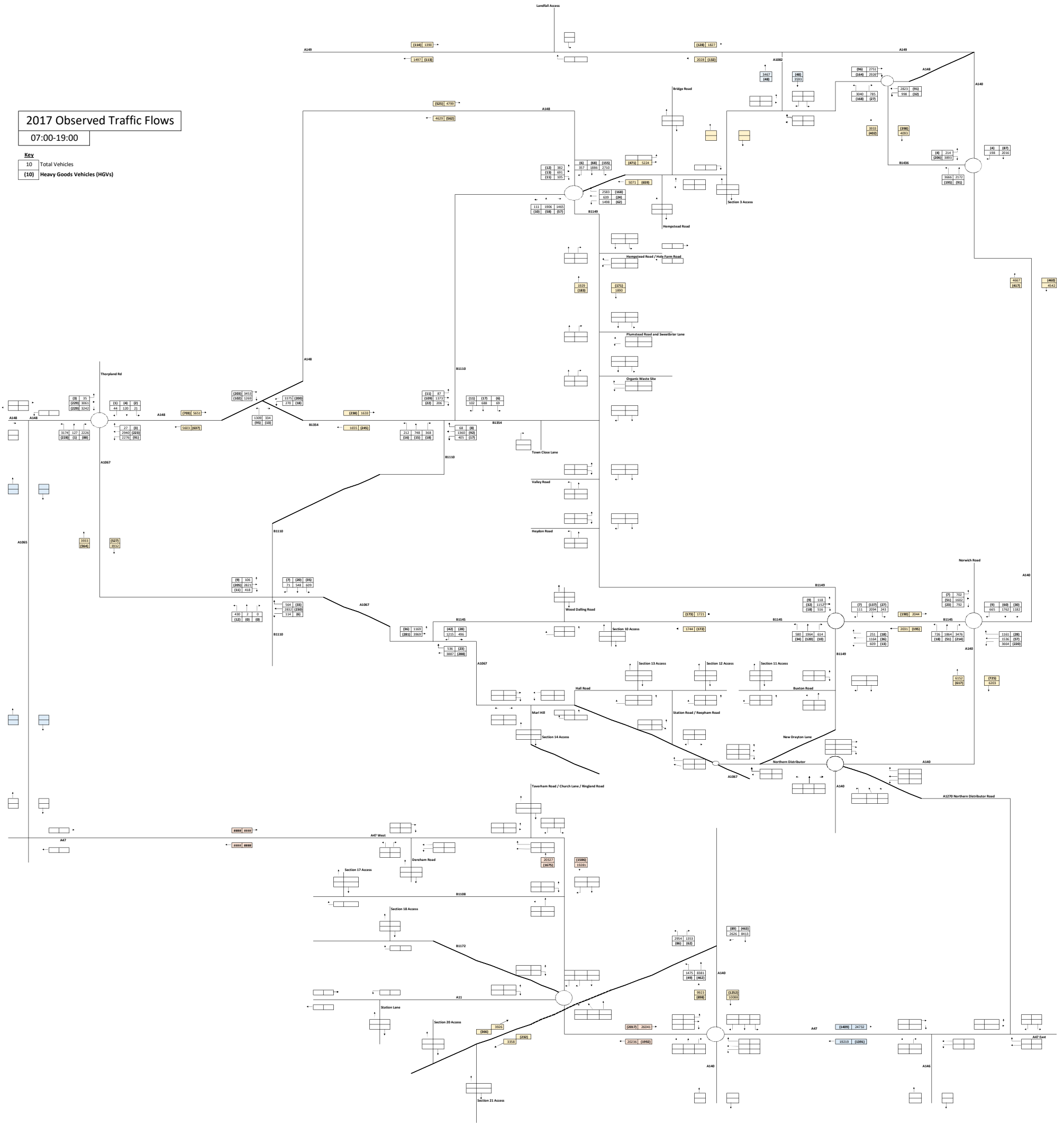
12hr Total Construction Traffic

2017 Observed Traffic Flows

07:00-19:00

Key

10	Total Vehicles
(10)	**Heavy Goods Vehicles (HGVs)**



TEMPRO

Average Weekday

Trunk
1.10 growth 2017-2022

Principal
1.09 growth 2017-2022

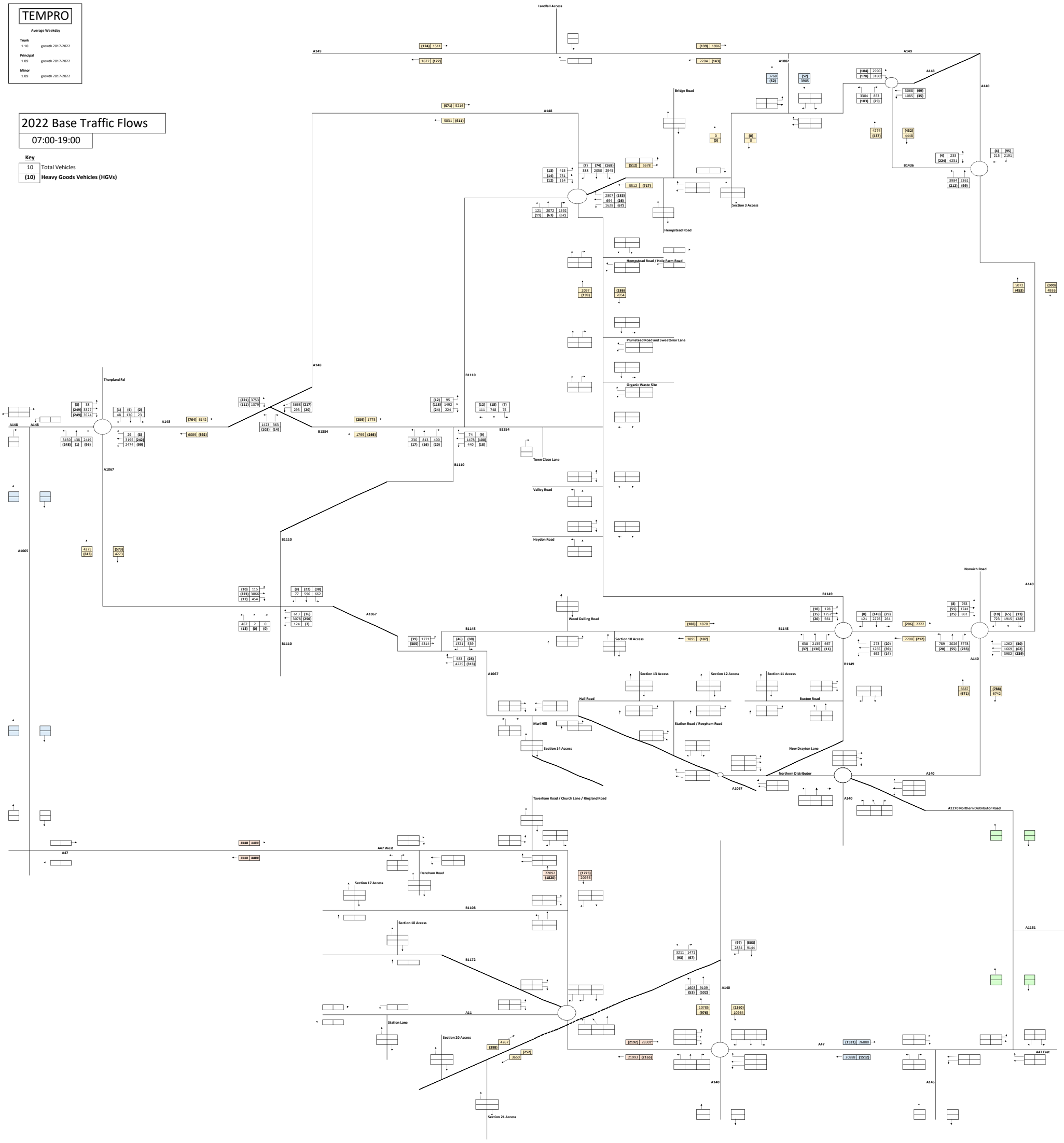
Minor
1.09 growth 2017-2022

2022 Base Traffic Flows

07:00-19:00

Key

10	Total Vehicles
(10)	**Heavy Goods Vehicles (HGVs)**



Tables Linked to Construction Vehicle Movements Spreadsheet

Route Section	Description	12hr Vehicle Flows			
		Total	HGV	Lights	Phase
1	Landfall to Holgate Hill	228	72	123	1
2	Holgate Hill to woodland north east of High Kelling	173	65	77	1
3	Woodland northeast of High Kelling to woodland south of Church Road	223	66	128	1
4	Woodland south of Church Road to woodland south and east of School Lane	163	62	69	1
5	Woodland east of School Lane to Plumstead Road	163	62	69	1
6	Plumstead Road to the B1149	233	74	128	2
7	B1149 to land South of Town Close Lane	173	65	77	-
8	Land south of Town Close Lane to woodland north of Reepham Road	260	62	167	2
9	Land north of Reepham Road to woodland north of Reepham	221	62	128	2
10	Woodland north of Reepham to woodland at Booton Common	212	65	116	2
11	Woodland east of Reepham to The Grove	193	66	96	2
12	The Grove to woodland south of Church Farm Lane	163	62	69	3
13	Woodland south of Church Farm Lane to River Wensum	192	64	96	3
14	River Wensum to woodland south west of Ringland	277	63	182	3
15	Woodland south west of Ringland to A47	173	67	72	3
16	A47 to Bawburgh Road	224	65	128	3
17	Bawburgh Road to woodland west of Little Melton	241	64	147	4
18	Woodland west of Little Melton to A11	316	63	221	4
19	A11 to woodland north west of Swardeston	191	62	96	4
20	Woodland north west of Swardeston to B1113	203	64	108	4
21	B1113 to end of cable route	267	109	128	4
Landfall	Landfall	15	5	10	
Booster Station	Booster Station	46	12	34	
Converter / Sub Station	Converter / Sub Station	111	29	82	
	Total:	**4,661**	**1,451**	**2,545**	**3,996**

HGVs

Assume	10%	from Kings Lynn via A148
	5%	from Great Yarmouth
	5%	from Lowestoft
	35%	from A47
	0%	from A1065
	35%	from A11
	10%	from A140 south
	0%	from A140 north
	100%	

Staff Vehicle Movements

Assume	8%	via A148
	28%	via A47 east
	11%	from A146
	7%	from A47 west
	6%	from A1065
	16%	from A11
	13%	from A140 south
	12%	from A140 north
	100%	

123 Light Vehicles

72 Total HGVs

12hr Total Construction Traffic Route Section 1

Key	
10	Total Vehicles
(10)	**Heavy Goods Vehicles (HGVs)**

Landfall Access
A149
A1082
A148
A140
Bridge Road
B1436
B1149
Hemstead Road
Section 3 Access
Hempstead Road / Hole Farm Road
Plumstead Road and Sweetbriar Lane
Organic Waste Site
B1110
B1354
Town Close Lane
Valley Road
Hevdon Road
Thoroland Rd
A1067
A1065
Norwich Road
Wood Dalling Road
B1145
Section 10 Access
Section 13 Access
Section 12 Access
Section 11 Access
Hall Road
Buxton Road
Marl Hill
Station Road / Reepham Road
Section 14 Access
New Drayton Lane
Northern Distributor
A1270 Northern Distributor Road
Taverham Road / Church Lane / Ringland Road
A47 West
Dereham Road
Section 17 Access
B1108
Section 18 Access
B1172
A11
Station Lane
Section 20 Access
Section 21 Access
A140
A47
A47 East
A146
A1151

A47 Traffic routes onto A1065

HGVS

Assume		
	10%	from Kings Lynn via A148
	5%	from Great Yarmouth
	5%	from Lowestoft
	35%	from A47
	0%	from A1065
	35%	from A11
	10%	from A140 south
	0%	from A140 north
	100%	

Staff Vehicle Movements

Assume		
	8%	via A148
	28%	via A47 east
	11%	from A146
	7%	from A47 west
	6%	from A1065
	16%	from A11
	13%	from A140 south
	12%	from A140 north
	100%	

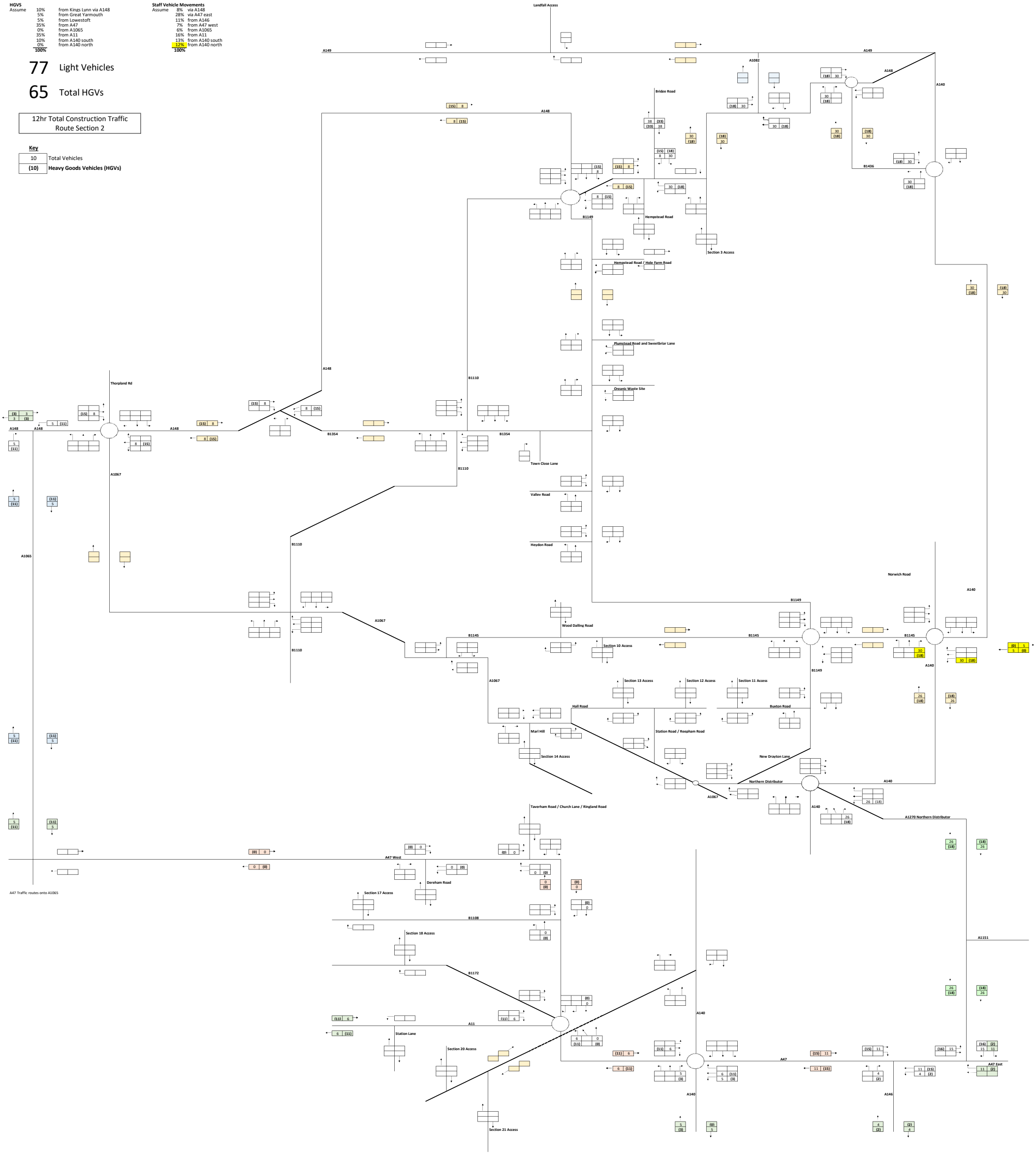
77 Light Vehicles

65 Total HGVs

12hr Total Construction Traffic
Route Section 2

Key

10	Total Vehicles
(10)	**Heavy Goods Vehicles (HGVs)**



HGVS

Assume		
	10%	from Kings Lynn via A148
	5%	from Great Yarmouth
	5%	from Lowestoft
	35%	from A47
	0%	from A1065
	35%	from A11
	10%	from A140 south
	0%	from A140 north
	100%	

Staff Vehicle Movements

Assume		
	8%	via A148
	28%	via A47 east
	11%	from A146
	7%	from A47 west
	6%	from A1065
	16%	from A11
	13%	from A140 south
	12%	from A140 north
	100%	

128 Light Vehicles

66 Total HGVs

12hr Total Construction Traffic
Route Section 3

Key

10	Total Vehicles
(10)	**Heavy Goods Vehicles (HGVs)**

Landfall Access
A149
A1082
A148
A140
Bridge Road
B1436
B1149
Hempstead Road
Section 3 Access
Hempstead Road / Hole Farm Road
Plumstead Road and Sweetbriar Lane
Organic Waste Site
B1110
B1354
Town Close Lane
Valley Road
Heydon Road
Thorpland Rd
A1067
A1065
Norwich Road
Wood Dalling Road
B1145
Section 10 Access
Section 13 Access
Section 12 Access
Section 11 Access
Hall Road
Buxton Road
Marl Hill
Station Road / Reepham Road
Section 14 Access
New Drayton Lane
Northern Distributor
A1270 Northern Distributor
Taverham Road / Church Lane / Ringland Road
A47 West
Dereham Road
Section 17 Access
B1108
Section 18 Access
B1172
A11
Station Lane
Section 20 Access
Section 21 Access
A47
A47 East
A146
A1151

A47 Traffic routes onto A1065

HGVS

Assume		
	10%	from Kings Lynn via A148
	5%	from Great Yarmouth
	5%	from Lowestoft
	35%	from A47
	0%	from A1065
	35%	from A11
	10%	from A140 south
	0%	from A140 north
	100%	

Staff Vehicle Movements

Assume		
	8%	via A148
	28%	via A47 east
	11%	from A146
	7%	from A47 west
	6%	from A1065
	16%	from A11
	13%	from A140 south
	12%	from A140 north
	100%	

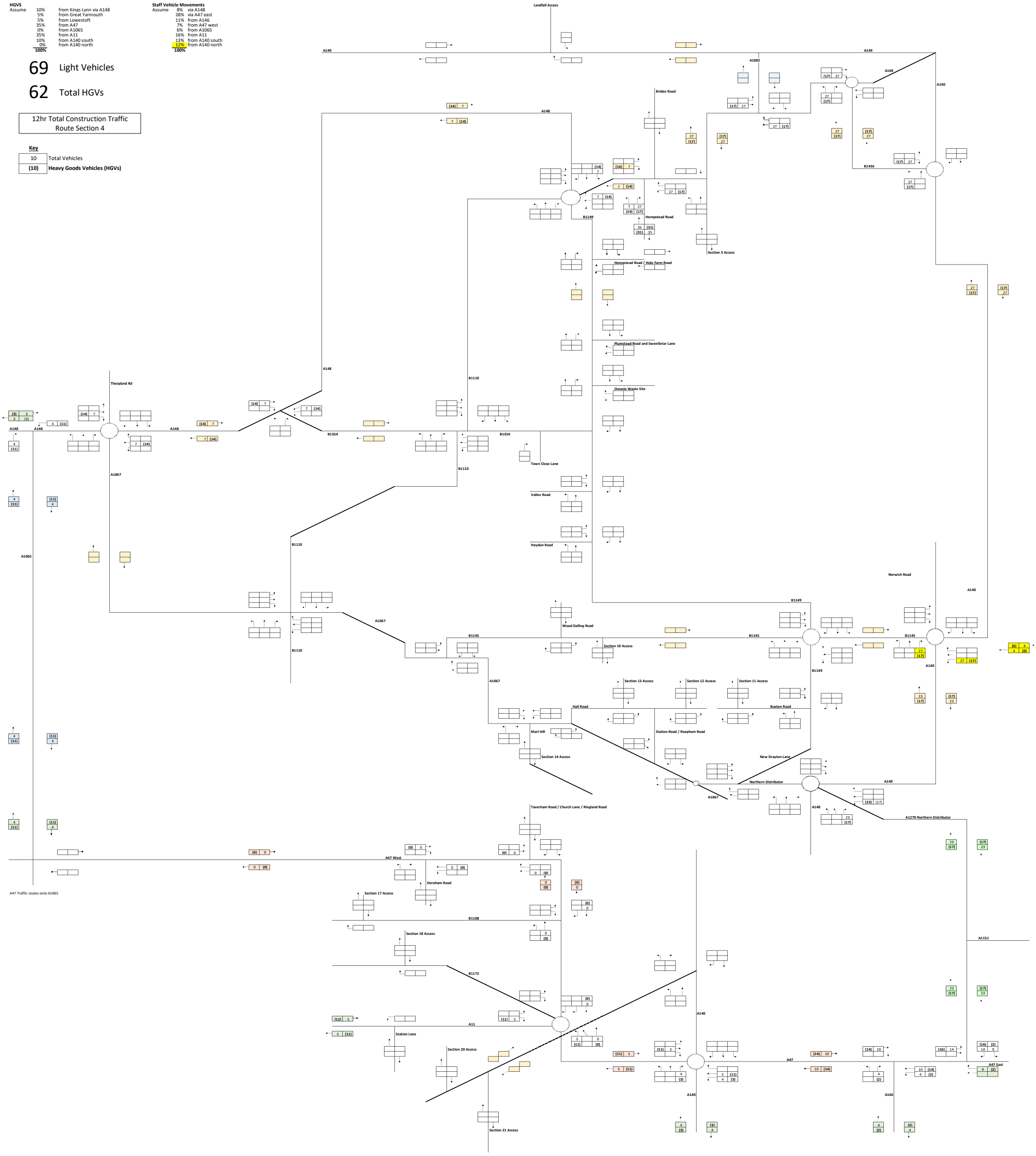
69 Light Vehicles

62 Total HGVs

12hr Total Construction Traffic
Route Section 4

Key

10	Total Vehicles
(10)	**Heavy Goods Vehicles (HGVs)**



HGVS

Assume		
	10%	from Kings Lynn via A148
	5%	from Great Yarmouth
	5%	from Lowestoft
	35%	from A47
	0%	from A1065
	35%	from A11
	10%	from A140 south
	0%	from A140 north
	100%	

Staff Vehicle Movements

Assume		
	8%	via A148
	28%	via A47 east
	11%	from A146
	7%	from A47 west
	6%	from A1065
	16%	from A11
	13%	from A140 south
	12%	from A140 north
	100%	

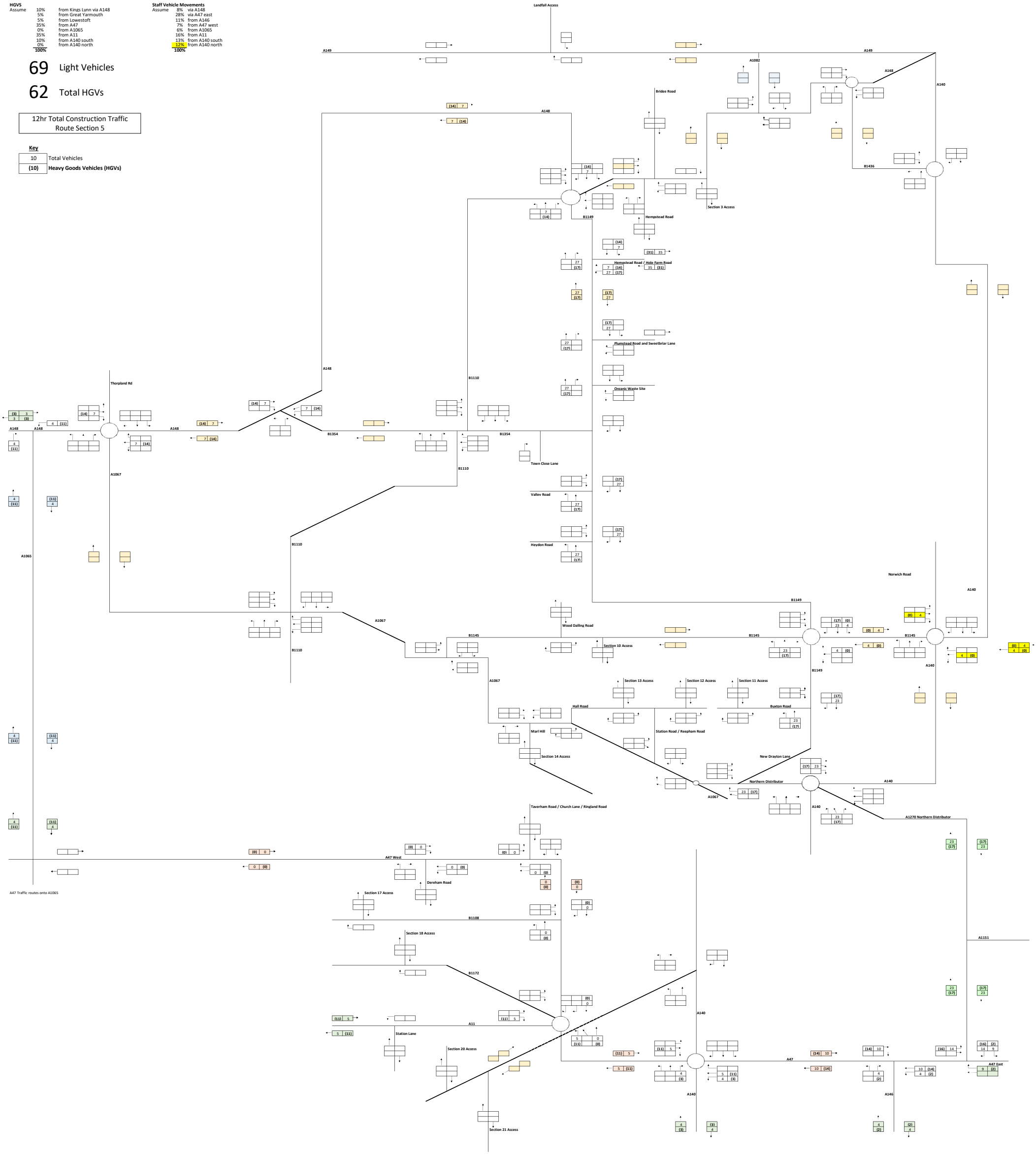
69 Light Vehicles

62 Total HGVs

12hr Total Construction Traffic Route Section 5

Key

10	Total Vehicles
(10)	**Heavy Goods Vehicles (HGVs)**



A47 Traffic routes onto A1065

12hr Total Construction Traffic
Phase 1 Total

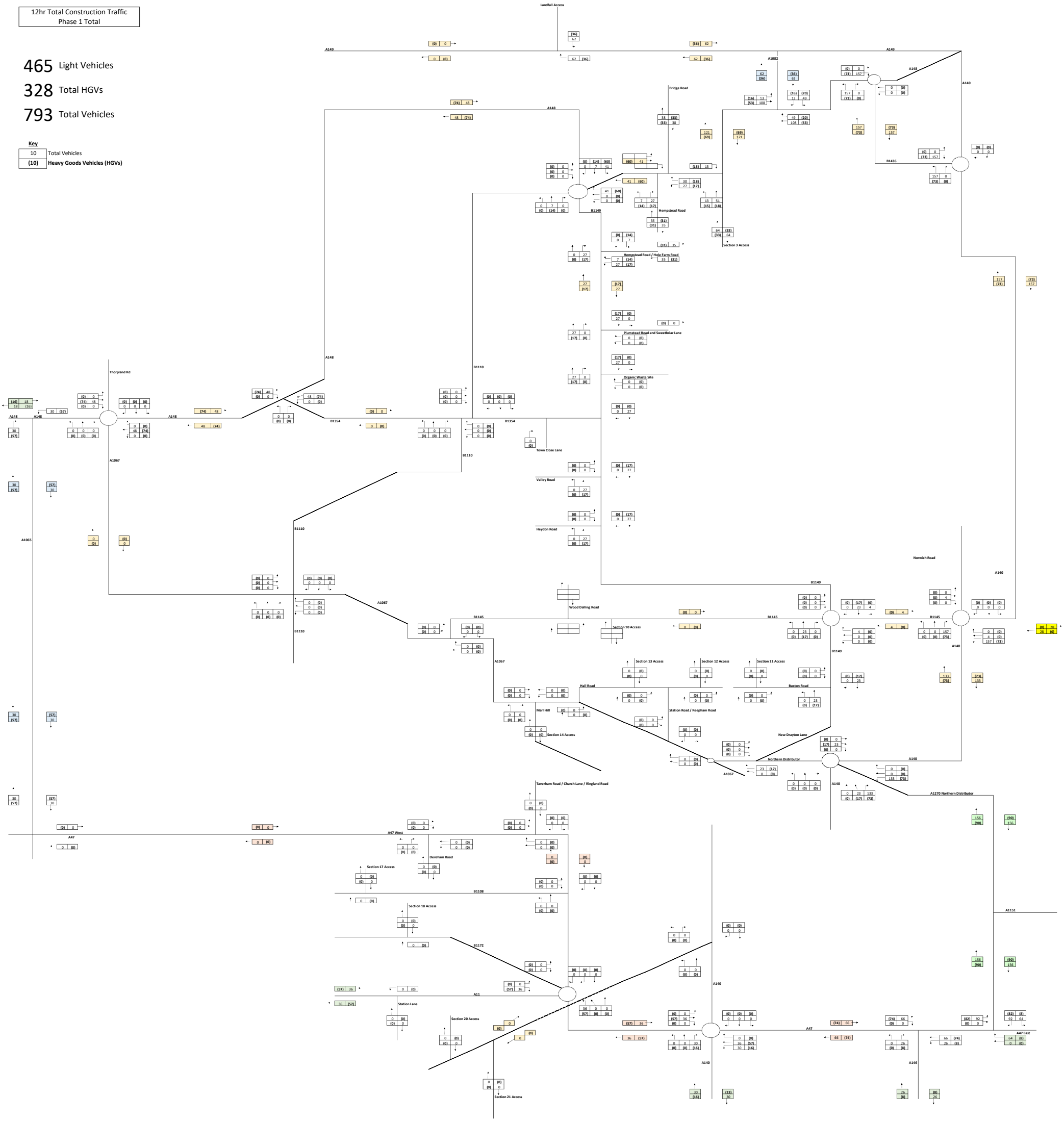
465 Light Vehicles

328 Total HGVs

793 Total Vehicles

Key

10	Total Vehicles
(10)	**Heavy Goods Vehicles (HGVs)**



HGVS

Assume	10%	from Kings Lynn via A148
	5%	from Great Yarmouth
	5%	from Lowestoft
	35%	from A47
	0%	from A1065
	35%	from A11
	10%	from A140 south
	0%	from A140 north
	100%	

Staff Vehicle Movements

Assume	8%	via A148
	28%	via A47 east
	11%	from A146
	7%	from A47 west
	6%	from A1065
	16%	from A11
	13%	from A140 south
	12%	from A140 north
	100%	

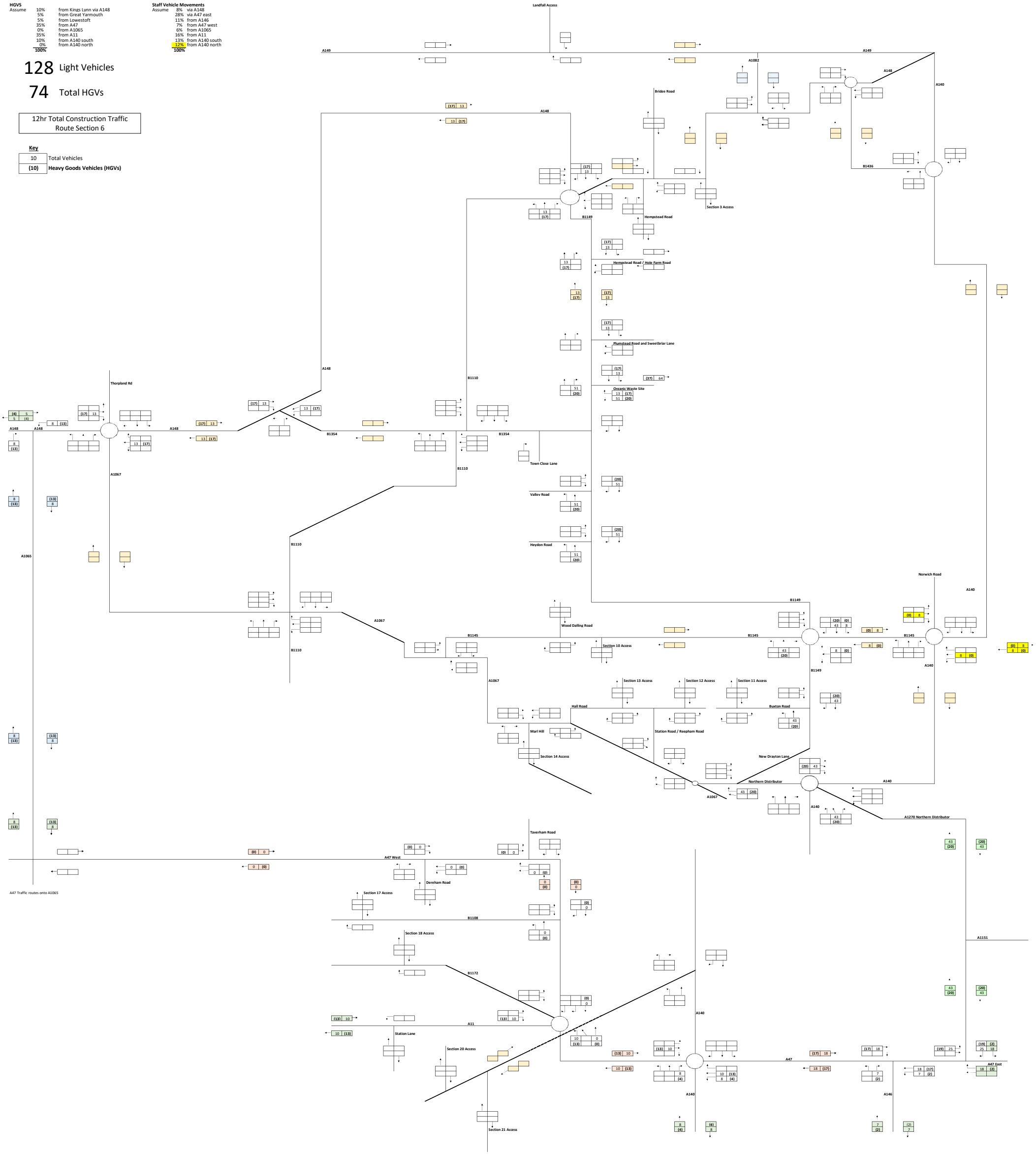
128 Light Vehicles

74 Total HGVs

12hr Total Construction Traffic
Route Section 6

Key

10	Total Vehicles
(10)	**Heavy Goods Vehicles (HGVs)**



HGVS

Assume	10%	from Kings Lynn via A148
	5%	from Great Yarmouth
	5%	from Lowestoft
	35%	from A47
	0%	from A1065
	35%	from A11
	10%	from A140 south
	0%	from A140 north
	100%	

Staff Vehicle Movements

Assume	8%	via A148
	28%	via A47 east
	11%	from A146
	7%	from A47 west
	6%	from A1065
	16%	from A11
	13%	from A140 south
	12%	from A140 north
	100%	

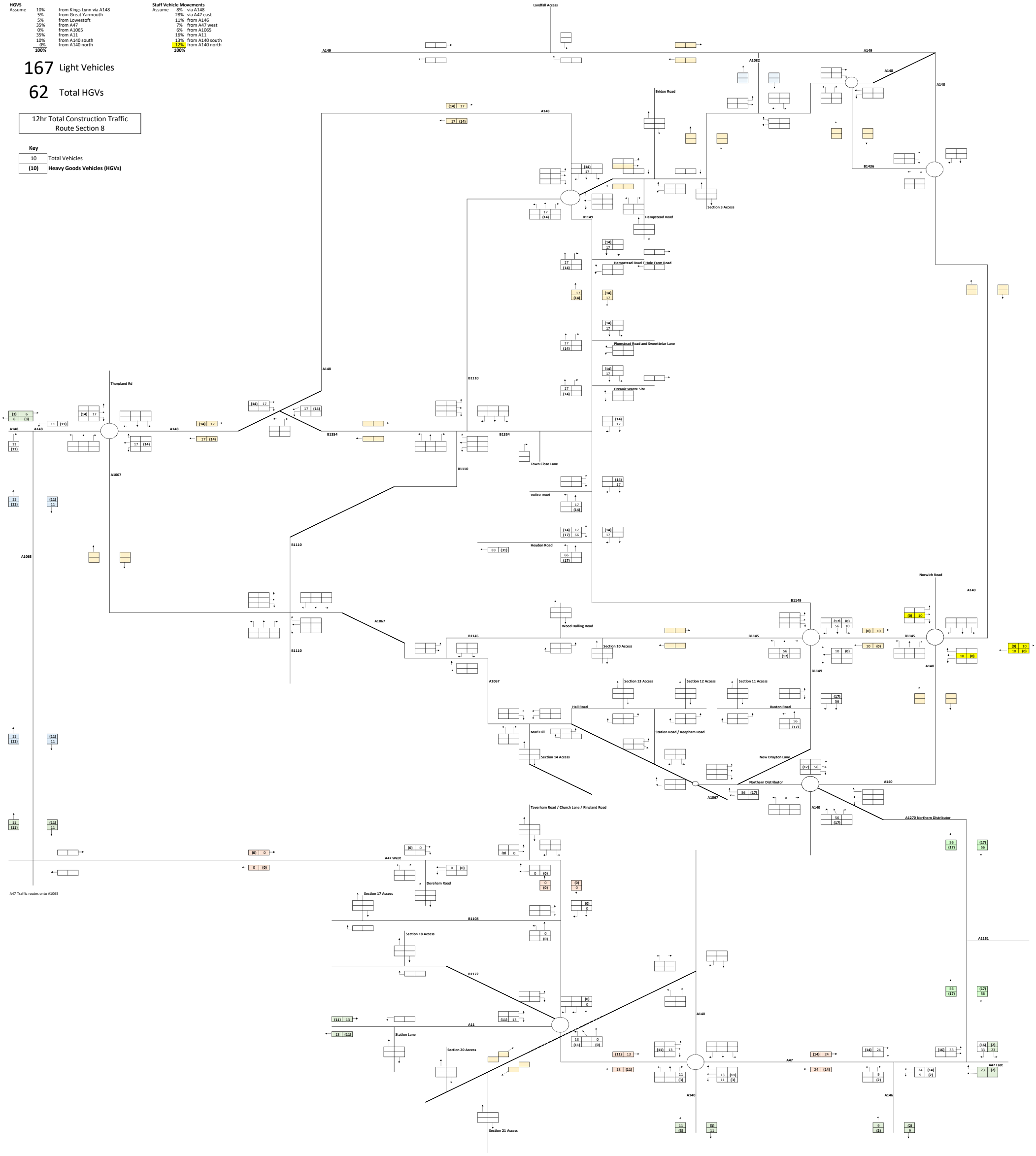
167 Light Vehicles

62 Total HGVs

12hr Total Construction Traffic
Route Section 8

Key

10	Total Vehicles
(10)	**Heavy Goods Vehicles (HGVs)**



A47 Traffic routes onto A1065

HGVS

Assume	10%	from Kings Lynn via A148
	5%	from Great Yarmouth
	5%	from Lowestoft
	35%	from A47
	0%	from A1065
	35%	from A11
	10%	from A140 south
	0%	from A140 north
	100%	

Staff Vehicle Movements

Assume	8%	via A148
	28%	via A47 east
	11%	from A146
	7%	from A47 west
	6%	from A1065
	16%	from A11
	13%	from A140 south
	12%	from A140 north
	100%	

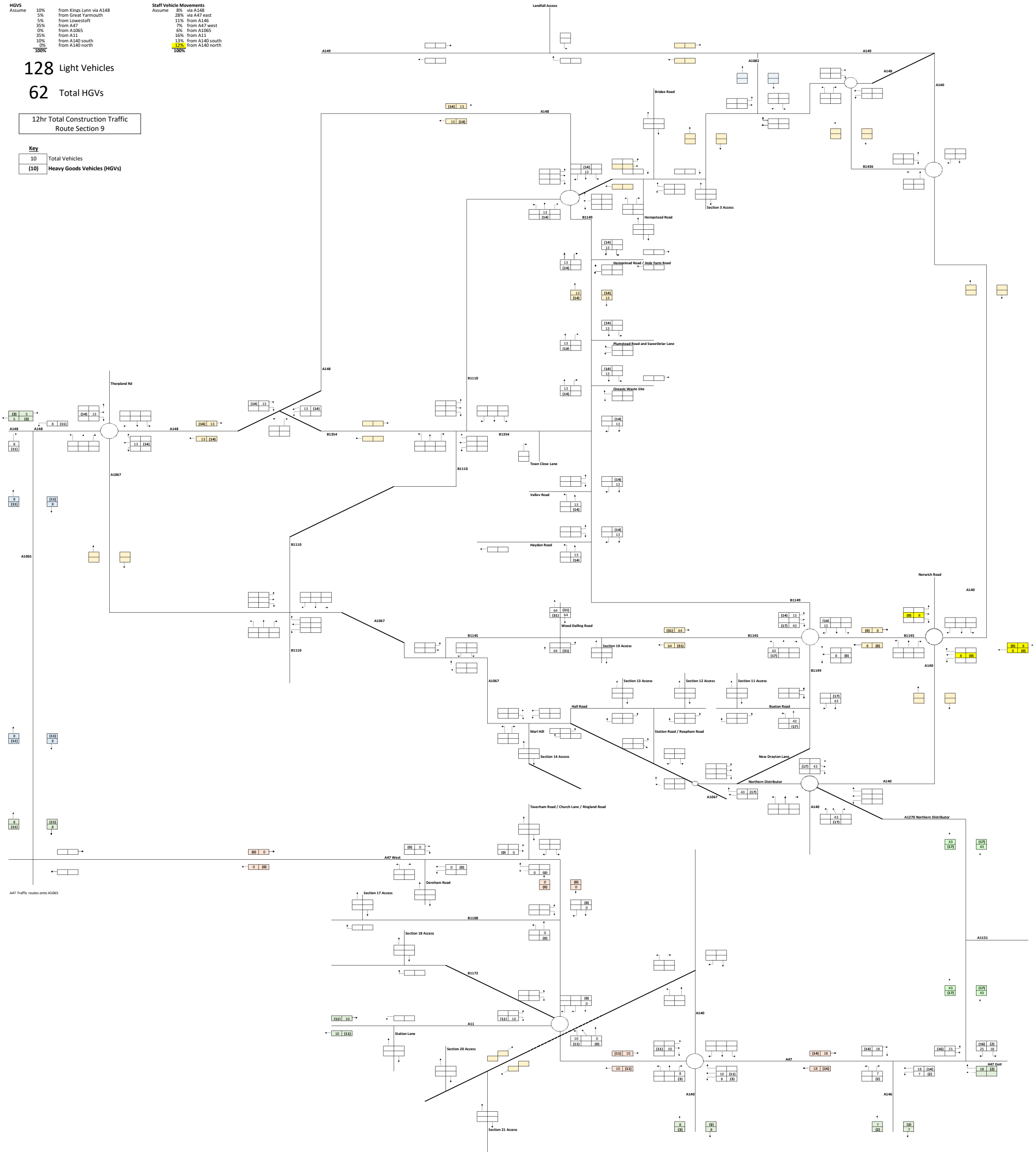
128 Light Vehicles

62 Total HGVs

12hr Total Construction Traffic
Route Section 9

Key

10	Total Vehicles
(10)	**Heavy Goods Vehicles (HGVs)**



HGVS

Assume	10%	from Kings Lynn via A148
	5%	from Great Yarmouth
	5%	from Lowestoft
	35%	from A47
	0%	from A1065
	35%	from A11
	10%	from A140 south
	0%	from A140 north
	100%	

Staff Vehicle Movements

Assume	8%	via A148
	28%	via A47 east
	11%	from A146
	7%	from A47 west
	6%	from A1065
	16%	from A11
	13%	from A140 south
	12%	from A140 north
	100%	

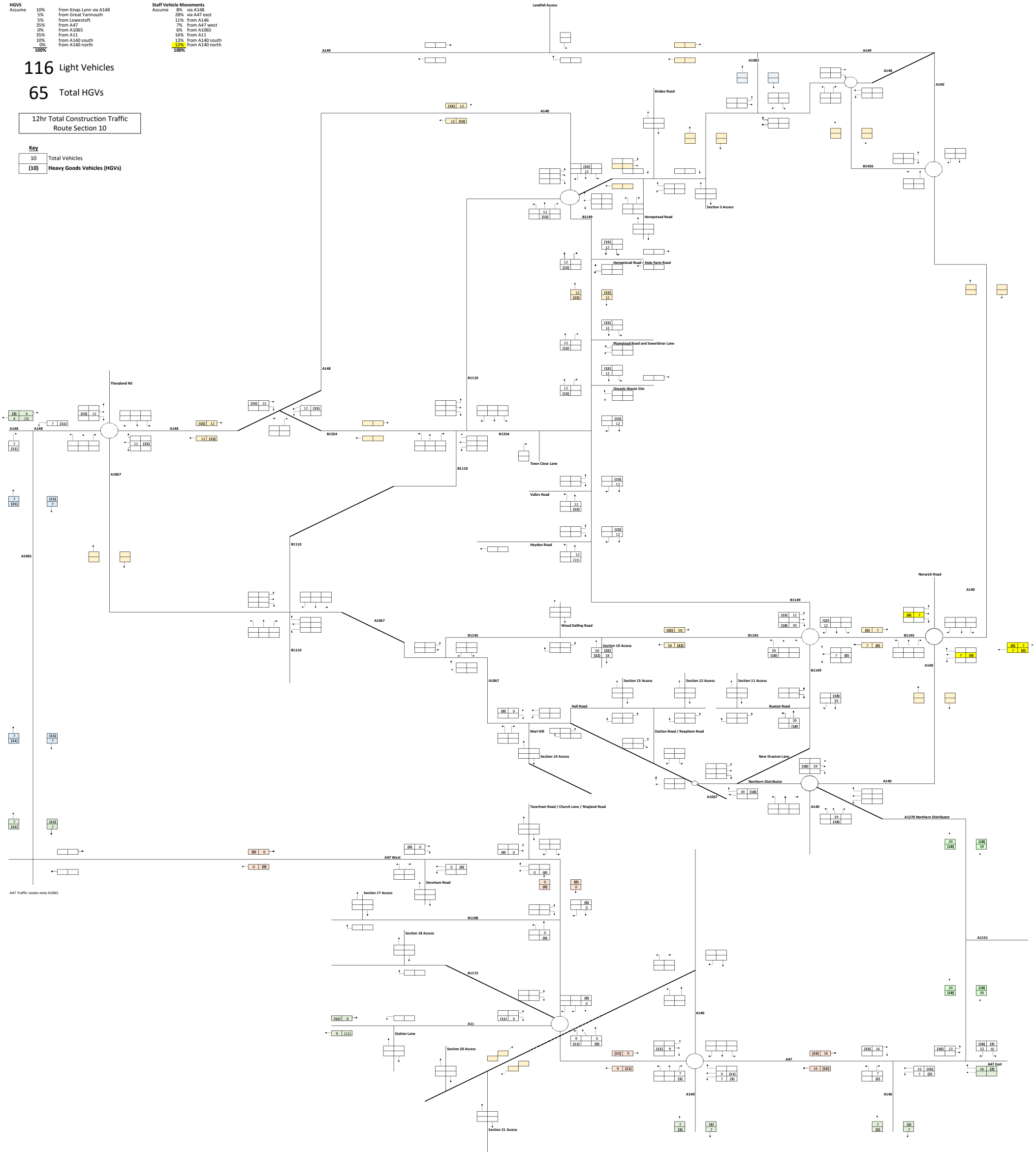
116 Light Vehicles

65 Total HGVs

12hr Total Construction Traffic Route Section 10

Key

10	Total Vehicles
(10)	**Heavy Goods Vehicles (HGVs)**



HGVS

Assume	10%	from Kings Lynn via A148
	5%	from Great Yarmouth
	5%	from Lowestoft
	35%	from A47
	0%	from A1065
	35%	from A11
	10%	from A140 south
	0%	from A140 north
	100%	

Staff Vehicle Movements

Assume	8%	via A148
	28%	via A47 east
	11%	from A146
	7%	from A47 west
	6%	from A1065
	16%	from A11
	13%	from A140 south
	12%	from A140 north
	100%	

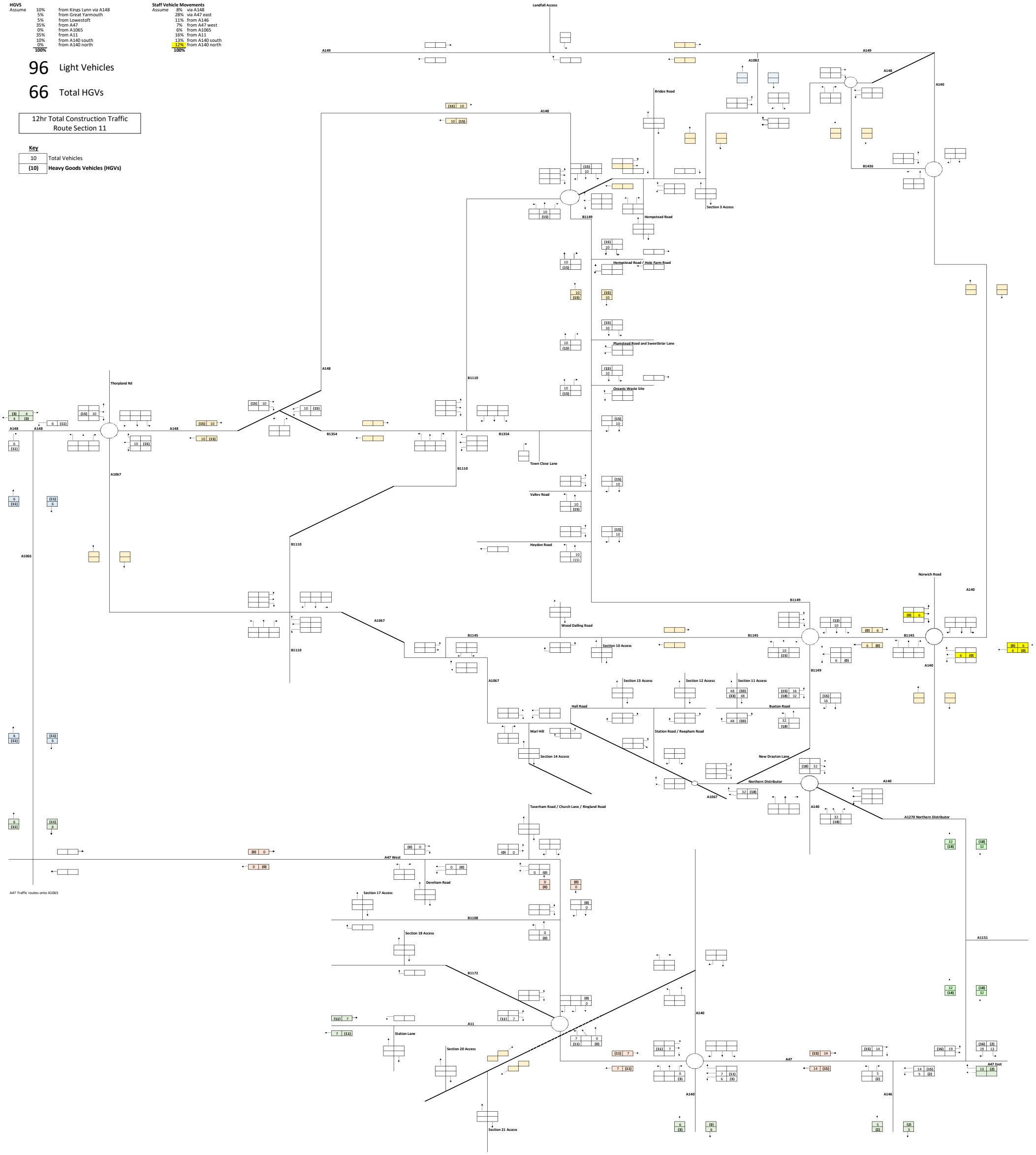
96 Light Vehicles

66 Total HGVs

12hr Total Construction Traffic
Route Section 11

Key

10	Total Vehicles
(10)	**Heavy Goods Vehicles (HGVs)**



12hr Total Construction Traffic
Phase 2 Total

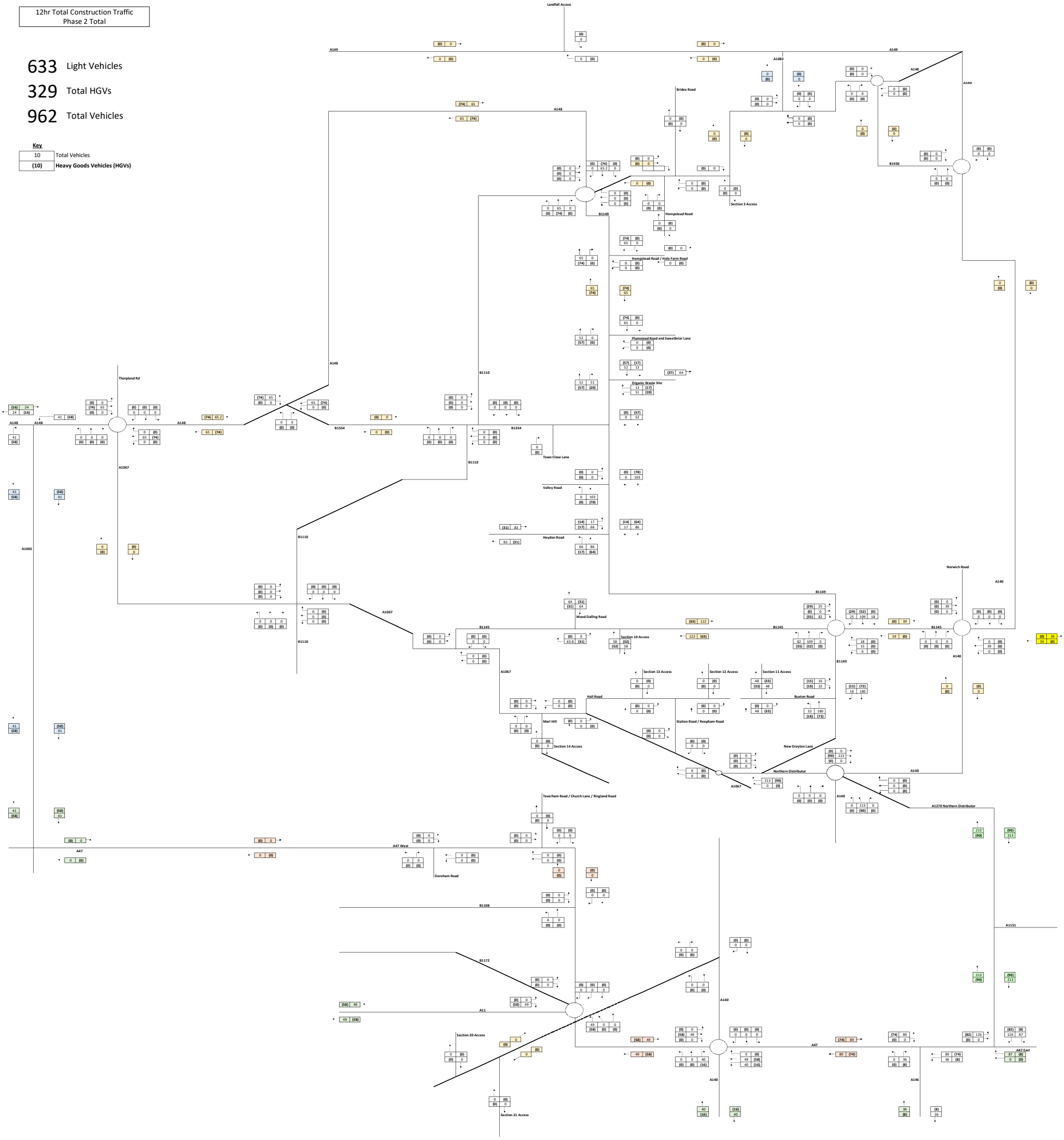
633 Light Vehicles

329 Total HGVs

962 Total Vehicles

Key

10	Total Vehicles
(10)	**Heavy Goods Vehicles (HGVs)**



HGVS

Assume	10%	from Kings Lynn via A148
	5%	from Great Yarmouth
	5%	from Lowestoft
	35%	from A47
	0%	from A1065
	35%	from A11
	10%	from A140 south
	0%	from A140 north
	100%	

Staff Vehicle Movements

Assume	8%	via A148
	28%	via A47 east
	11%	from A146
	7%	from A47 west
	6%	from A1065
	16%	from A11
	13%	from A140 south
	12%	from A140 north
	100%	

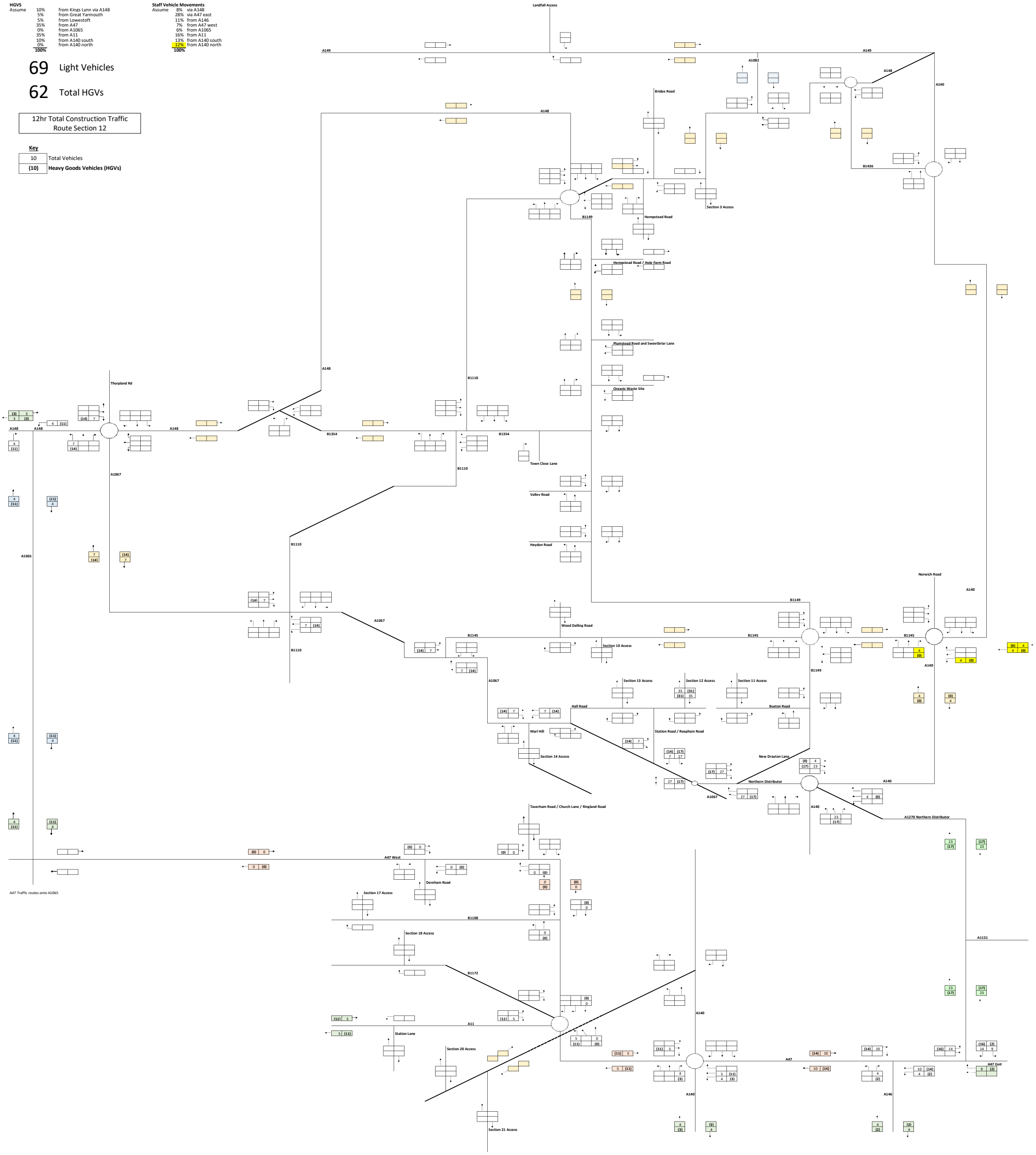
69 Light Vehicles

62 Total HGVs

12hr Total Construction Traffic Route Section 12

Key

10	Total Vehicles
(10)	**Heavy Goods Vehicles (HGVs)**



HGVS

Assume	10%	from Kings Lynn via A148
	5%	from Great Yarmouth
	5%	from Lowestoft
	35%	from A47
	0%	from A1065
	35%	from A11
	10%	from A140 south
	0%	from A140 north
	100%	

Staff Vehicle Movements

Assume	8%	via A148
	28%	via A47 east
	11%	from A146
	7%	from A47 west
	6%	from A1065
	16%	from A11
	13%	from A140 south
	12%	from A140 north
	100%	

96 Light Vehicles

64 Total HGVs

12hr Total Construction Traffic Route Section 13

Key

10	Total Vehicles
(10)	**Heavy Goods Vehicles (HGVs)**

Landfall Access
A149
A1082
A148
A140
Bridge Road
B1436
Section 3 Access
B1149
Hempstead Road
Hempstead Road / Hole Farm Road
Plumstead Road and Sweetbriar Lane
Organic Waste Site
B1110
B1354
Town Close Lane
Valley Road
Heydon Road
Thorpland Rd
A1067
A1065
Norwich Road
Wood Dalling Road
B1145
Section 10 Access
Section 13 Access
Section 12 Access
Section 11 Access
Hall Road
Buxton Road
Marl Hill
Station Road / Reepham Road
Section 14 Access
New Drayton Lane
Northern Distributor
A1270 Northern Distributor
Taverham Road / Church Lane / Ringland Road
A47 West
Dereham Road
Section 17 Access
B1108
Section 18 Access
B1172
A11
Station Lane
Section 20 Access
Section 21 Access
A140
A47
A47 East
A146
A1151

A47 Traffic routes onto A1065

HGVS

Assume	10%	from Kings Lynn via A148
	5%	from Great Yarmouth
	5%	from Lowestoft
	35%	from A47
	0%	from A1065
	35%	from A11
	10%	from A140 south
	0%	from A140 north
	100%	

Staff Vehicle Movements

Assume	8%	via A148
	28%	via A47 east
	11%	from A146
	7%	from A47 west
	6%	from A1065
	16%	from A11
	13%	from A140 south
	12%	from A140 north
	100%	

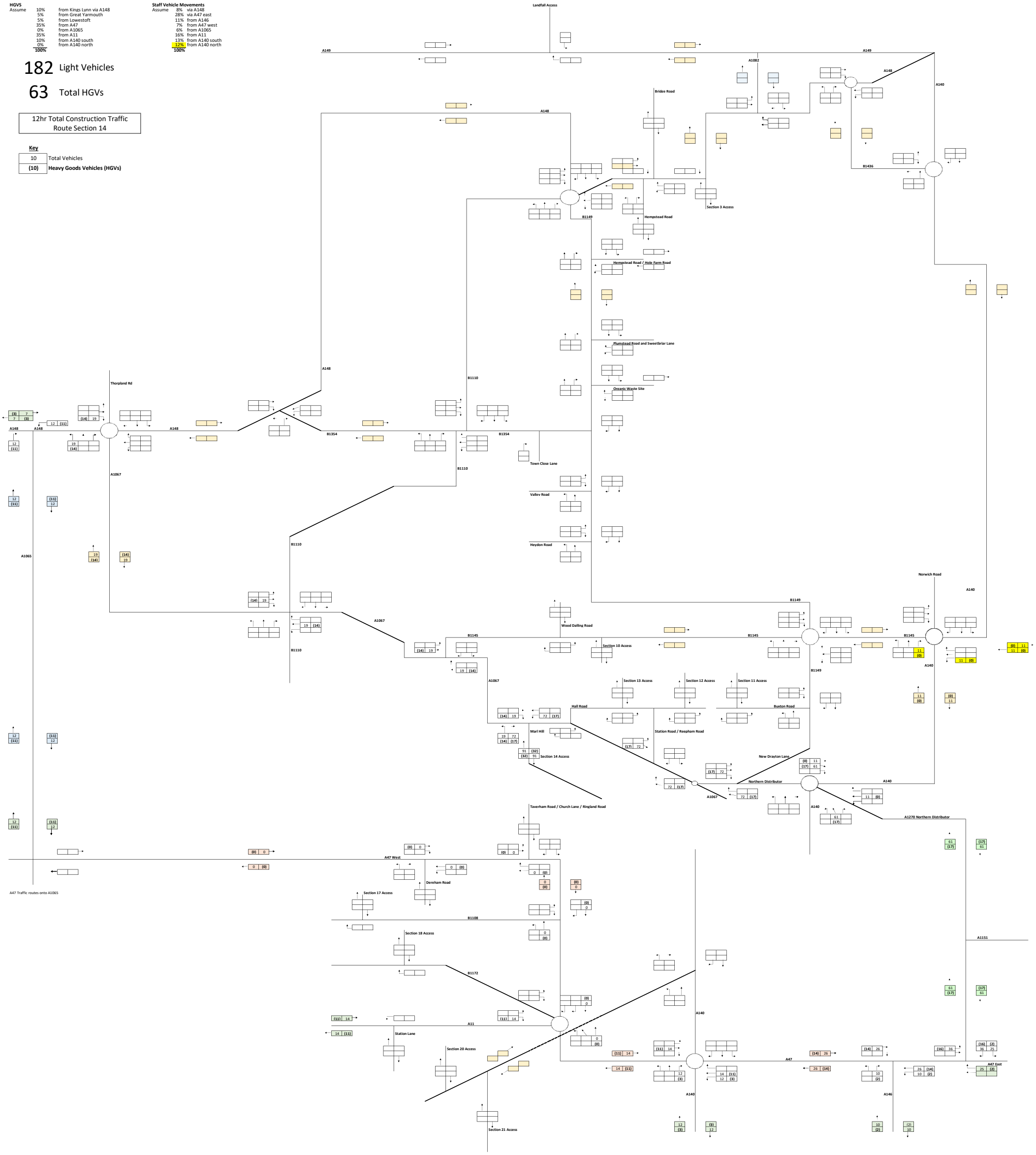
182 Light Vehicles

63 Total HGVs

12hr Total Construction Traffic Route Section 14

Key

10	Total Vehicles
(10)	**Heavy Goods Vehicles (HGVs)**



HGVS

Assume	10%	from Kings Lynn via A148
	5%	from Great Yarmouth
	5%	from Lowestoft
	35%	from A47
	0%	from A1065
	35%	from A11
	10%	from A140 south
	0%	from A140 north
	100%	

Staff Vehicle Movements

Assume	8%	via A148
	28%	via A47 east
	11%	from A146
	7%	from A47 west
	6%	from A1065
	16%	from A11
	13%	from A140 south
	12%	from A140 north
	100%	

72 Light Vehicles

67 Total HGVs

12hr Total Construction Traffic Route Section 15

Key

10	Total Vehicles
(10)	**Heavy Goods Vehicles (HGVs)**

Traffic from A1065 routeing onto A47
Traffic from A148 routeing south on A1065

HGVS

Assume	10%	from Kings Lynn via A148
	5%	from Great Yarmouth
	5%	from Lowestoft
	35%	from A47
	0%	from A1065
	35%	from A11
	10%	from A140 south
	0%	from A140 north
	100%	

Staff Vehicle Movements

Assume	8%	via A148
	28%	via A47 east
	11%	from A146
	7%	from A47 west
	6%	from A1065
	16%	from A11
	13%	from A140 south
	12%	from A140 north
	100%	

128 Light Vehicles

65 Total HGVs

12hr Total Construction Traffic Route Section 16

Key

10	Total Vehicles
(10)	**Heavy Goods Vehicles (HGVs)**

Traffic from A1065 routeing onto A47
Traffic from A148 routeing south on A1065 and onto A47

12hr Total Construction Traffic
Phase 3 Total

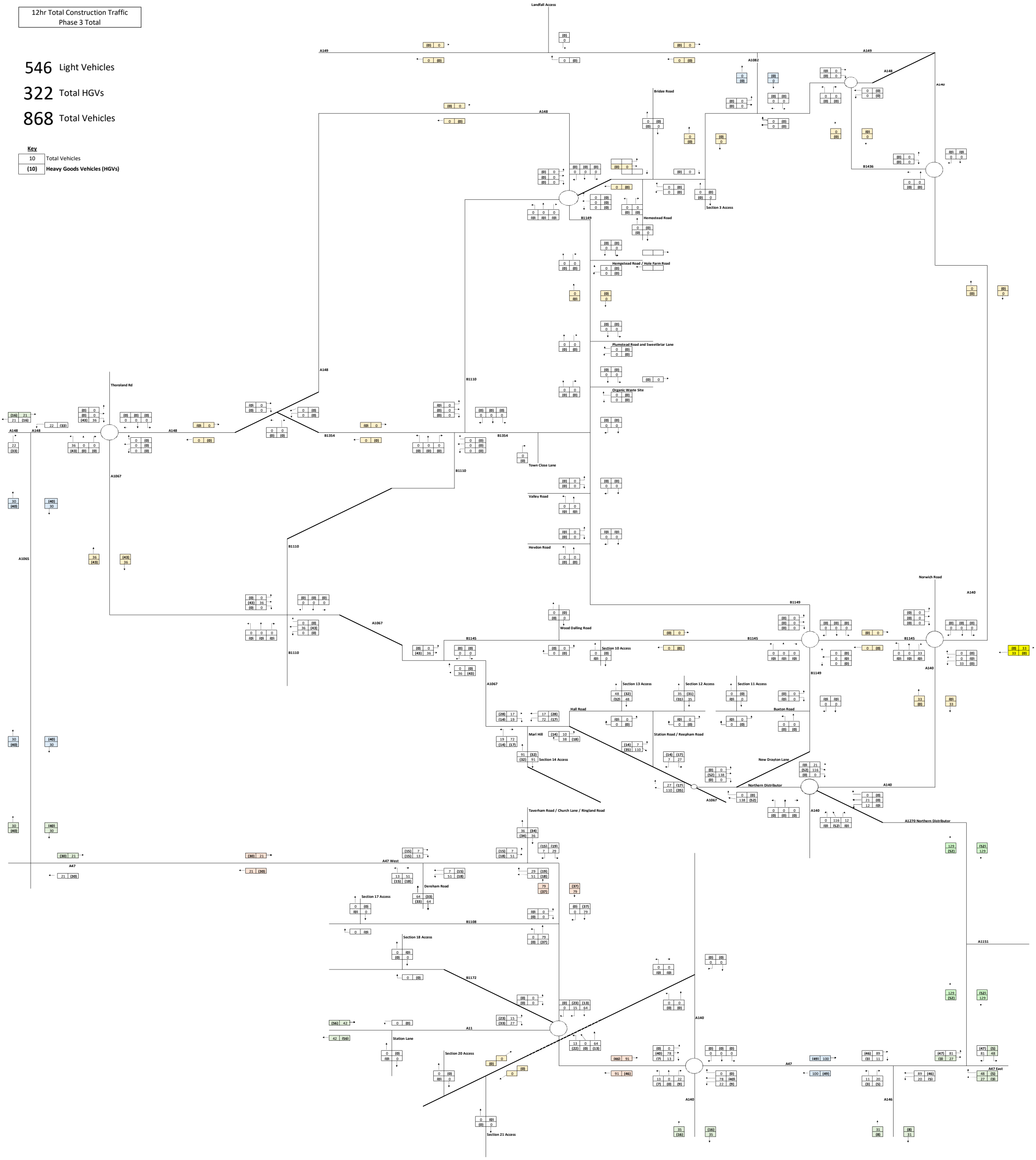
546 Light Vehicles

322 Total HGVs

868 Total Vehicles

Key

10	Total Vehicles
(10)	**Heavy Goods Vehicles (HGVs)**



HGVS

Assume	10%	from Kings Lynn via A148
	5%	from Great Yarmouth
	5%	from Lowestoft
	35%	from A47
	0%	from A1065
	35%	from A11
	10%	from A140 south
	0%	from A140 north
	100%	

Staff Vehicle Movements

Assume	8%	via A148
	28%	via A47 east
	11%	from A146
	7%	from A47 west
	6%	from A1065
	16%	from A11
	13%	from A140 south
	12%	from A140 north
	100%	

147 Light Vehicles

64 Total HGVs

12hr Total Construction Traffic Route Section 17

Key

10	Total Vehicles
(10)	**Heavy Goods Vehicles (HGVs)**

Traffic from A1065 routeing onto A47
Traffic from A148 routeing south on A1065 and onto A47

HGVS

Assume	10%	from Kings Lynn via A148
	5%	from Great Yarmouth
	5%	from Lowestoft
	35%	from A47
	0%	from A1065
	35%	from A11
	10%	from A140 south
	0%	from A140 north
	100%	

Staff Vehicle Movements

Assume	8%	via A148
	28%	via A47 east
	11%	from A146
	7%	from A47 west
	6%	from A1065
	16%	from A11
	13%	from A140 south
	12%	from A140 north
	100%	

221 Light Vehicles

63 Total HGVs

12hr Total Construction Traffic Route Section 18

Key

10	Total Vehicles
(10)	**Heavy Goods Vehicles (HGVs)**

Traffic from A1065 routeing onto A47
Traffic from A148 routeing south on A1065 and onto A47

HGVS

Assume	10%	from Kings Lynn via A148
	5%	from Great Yarmouth
	5%	from Lowestoft
	35%	from A47
	0%	from A1065
	35%	from A11
	10%	from A140 south
	0%	from A140 north
	100%	

Staff Vehicle Movements

Assume	8%	via A148
	28%	via A47 east
	11%	from A146
	7%	from A47 west
	6%	from A1065
	16%	from A11
	13%	from A140 south
	12%	from A140 north
	100%	

96 Light Vehicles

62 Total HGVs

12hr Total Construction Traffic Route Section 19

Key

10	Total Vehicles
(10)	**Heavy Goods Vehicles (HGVs)**

Traffic from A1065 routeing onto A47
Traffic from A148 routeing south on A1065 and onto A47

HGVS

Assume	10%	from Kings Lynn via A148
	5%	from Great Yarmouth
	5%	from Lowestoft
	35%	from A47
	0%	from A1065
	35%	from A11
	10%	from A140 south
	0%	from A140 north
	100%	

Staff Vehicle Movements

Assume	8%	via A148
	28%	via A47 east
	11%	from A146
	7%	from A47 west
	6%	from A1065
	16%	from A11
	13%	from A140 south
	12%	from A140 north
	100%	

108 Light Vehicles

64 Total HGVs

12hr Total Construction Traffic Route Section 20

Key

10	Total Vehicles
(10)	**Heavy Goods Vehicles (HGVs)**

Traffic from A1065 routeing onto A47
Traffic from A148 routeing south on A1065 and onto A47

HGVS

Assume	10%	from Kings Lynn via A148
	5%	from Great Yarmouth
	5%	from Lowestoft
	35%	from A47
	0%	from A1065
	35%	from A11
	10%	from A140 south
	0%	from A140 north
	100%	

Staff Vehicle Movements

Assume	8%	via A148
	28%	via A47 east
	11%	from A146
	7%	from A47 west
	6%	from A1065
	16%	from A11
	13%	from A140 south
	12%	from A140 north
	100%	

128 Light Vehicles

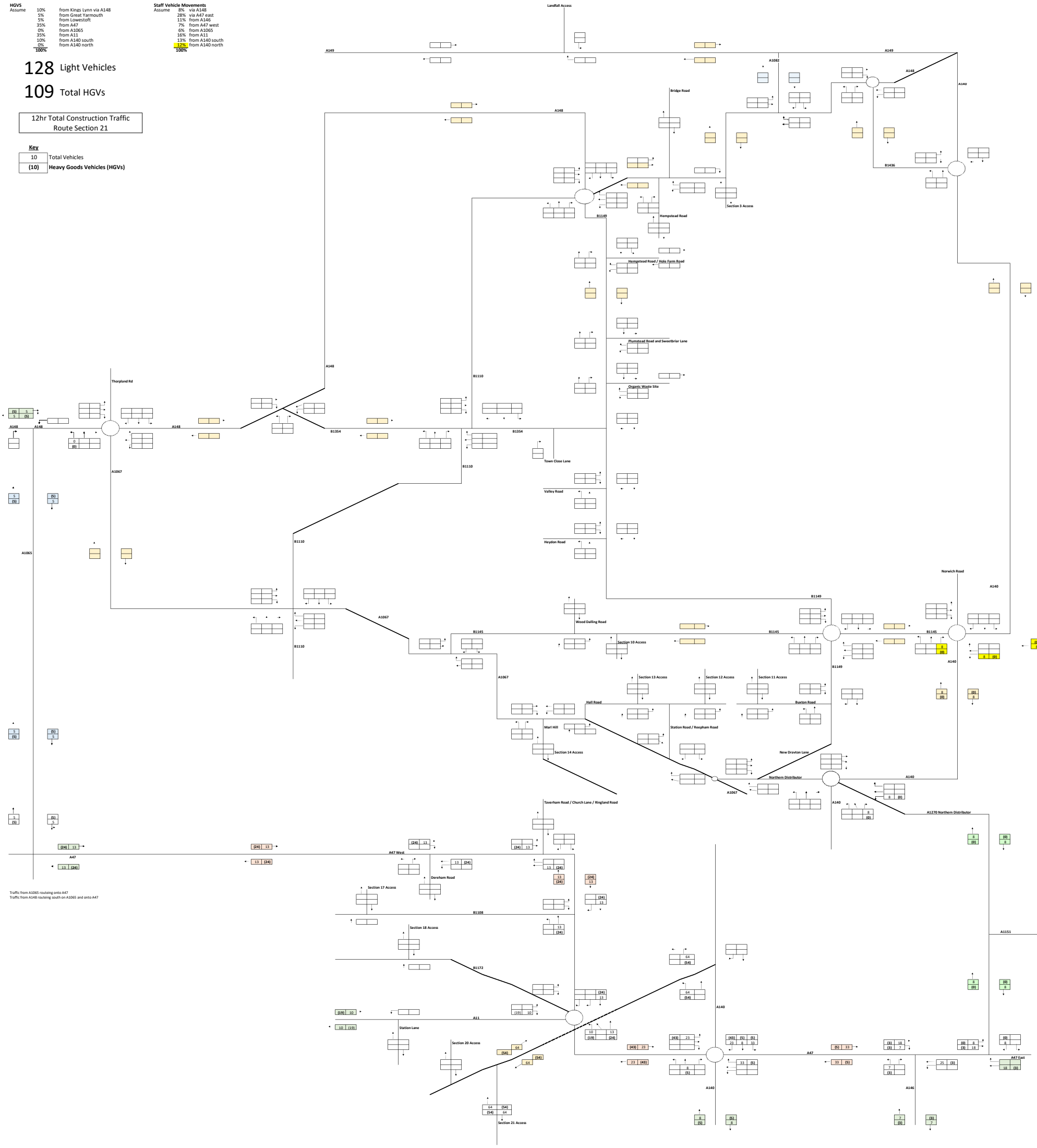
109 Total HGVs

12hr Total Construction Traffic
Route Section 21

Key

10	Total Vehicles
(10)	**Heavy Goods Vehicles (HGVs)**

Traffic from A1065 routeing onto A47
Traffic from A148 routeing south on A1065 and onto A47



12hr Total Construction Traffic
Phase 4 Total

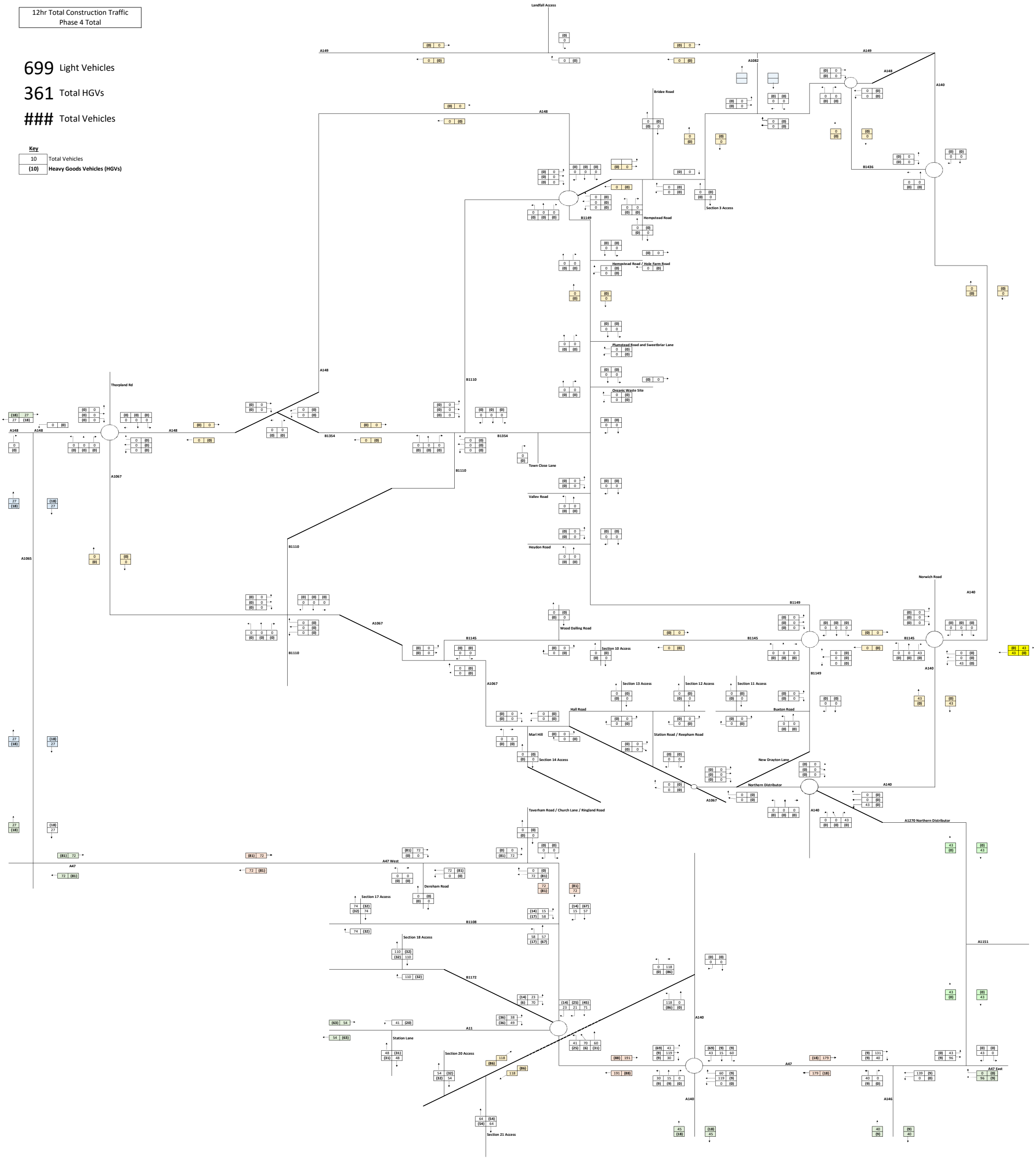
699 Light Vehicles

361 Total HGVs

Total Vehicles

Key

10	Total Vehicles
(10)	**Heavy Goods Vehicles (HGVs)**



HGVS

Assume		
	10%	from Kings Lynn via A148
	5%	from Great Yarmouth
	5%	from Lowestoft
	35%	from A47
	0%	from A1065
	35%	from A11
	10%	from A140 south
	0%	from A140 north
	100%	

Staff Vehicle Movements

Assume		
	8%	via A148
	28%	via A47 east
	11%	from A146
	7%	from A47 west
	6%	from A1065
	16%	from A11
	13%	from A140 south
	12%	from A140 north
	100%	

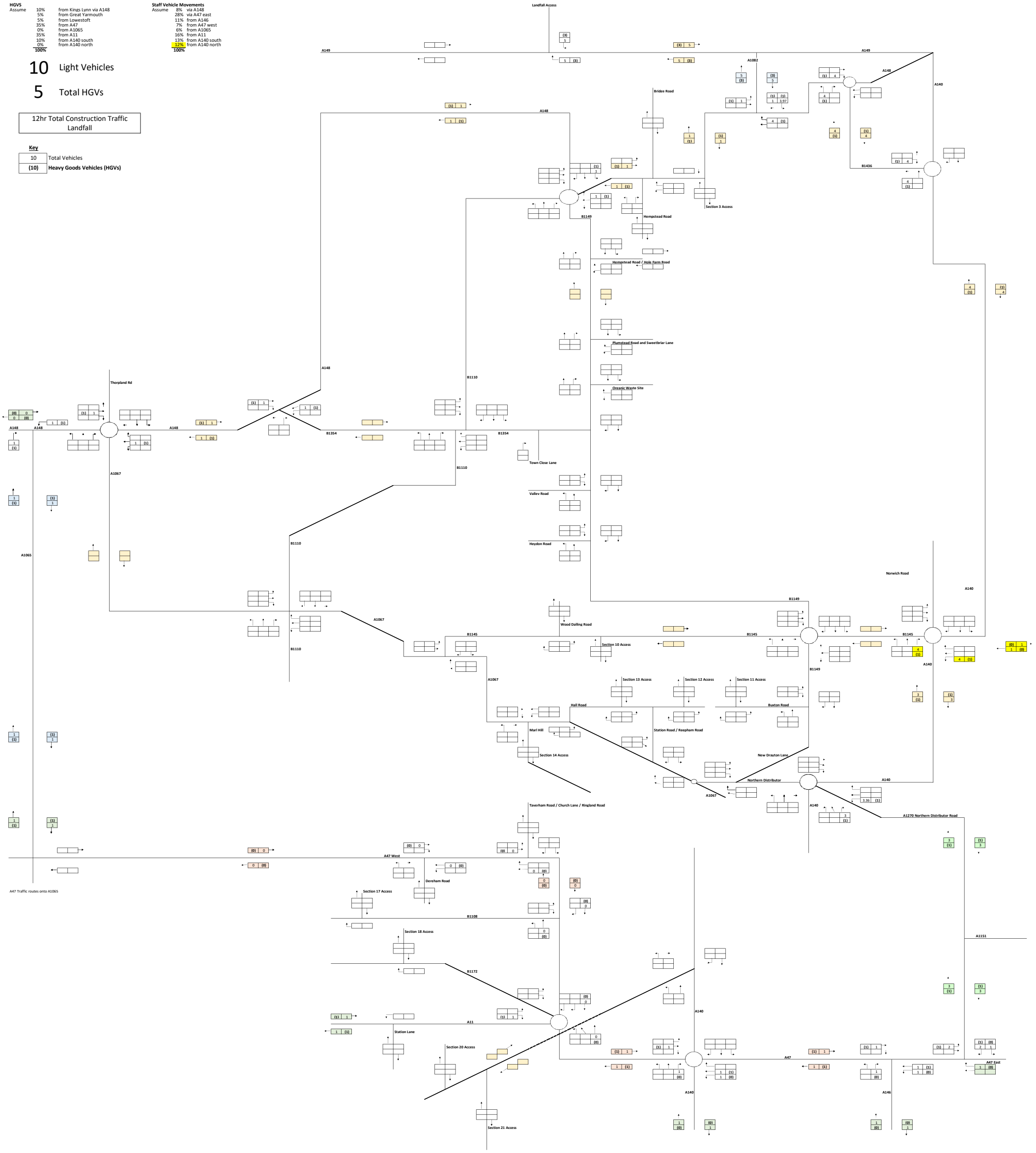
10 Light Vehicles

5 Total HGVs

12hr Total Construction Traffic Landfall

Key

10	Total Vehicles
(10)	**Heavy Goods Vehicles (HGVs)**



A47 Traffic routes onto A1065

HGVS

Assume	10%	from Kings Lynn via A148
	5%	from Great Yarmouth
	5%	from Lowestoft
	35%	from A47
	0%	from A1065
	35%	from A11
	10%	from A140 south
	0%	from A140 north
	100%	

Staff Vehicle Movements

Assume	8%	via A148
	28%	via A47 east
	11%	from A146
	7%	from A47 west
	6%	from A1065
	16%	from A11
	13%	from A140 south
	12%	from A140 north
	100%	

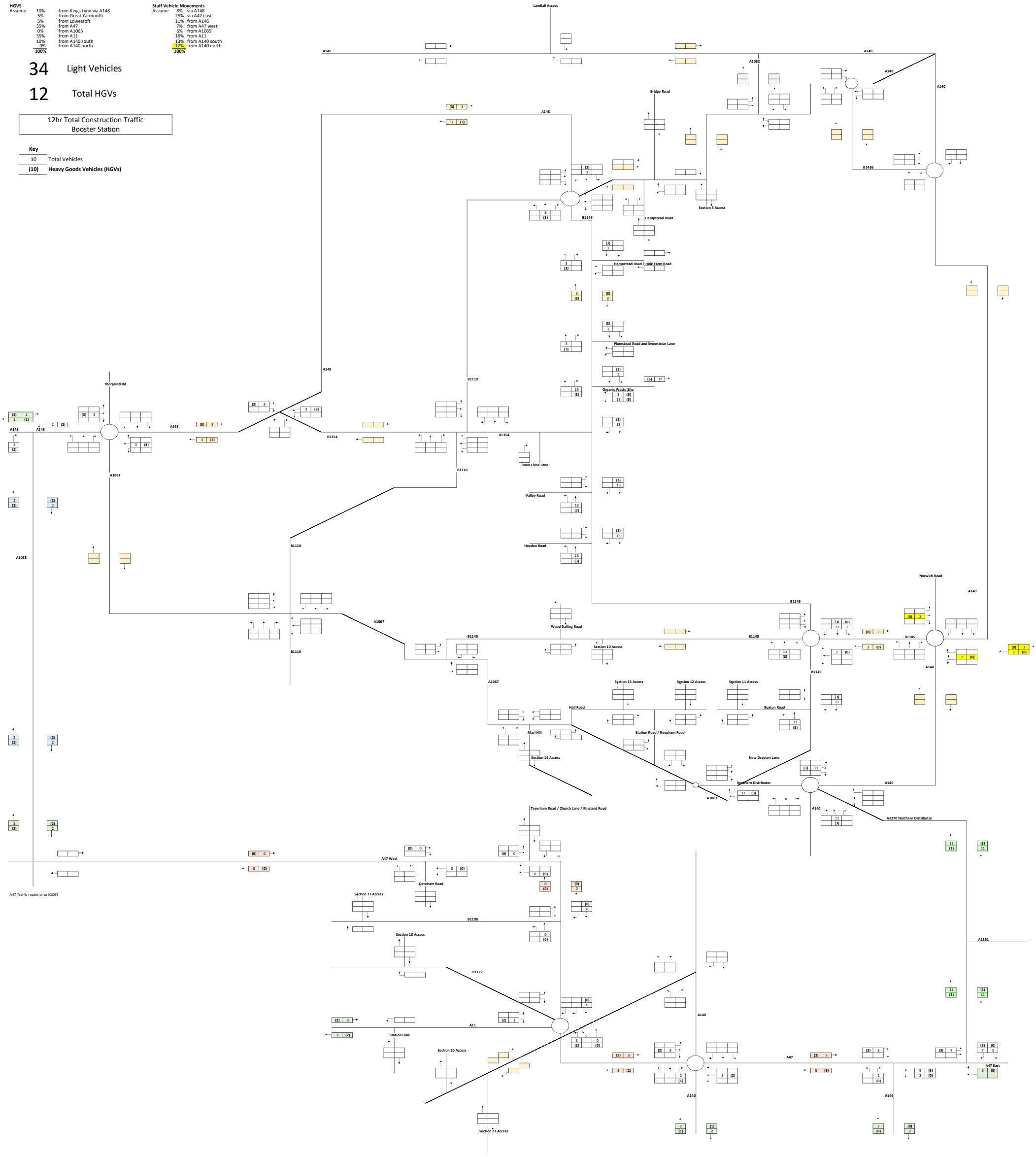
34 Light Vehicles

12 Total HGVs

12hr Total Construction Traffic
Booster Station

Key

10	Total Vehicles
(10)	**Heavy Goods Vehicles (HGVs)**



HGVS

Assume	10%	from Kings Lynn via A148
	5%	from Great Yarmouth
	5%	from Lowestoft
	35%	from A47
	0%	from A1065
	35%	from A11
	10%	from A140 south
	0%	from A140 north
	100%	

Staff Vehicle Movements

Assume	8%	via A148
	28%	via A47 east
	11%	from A146
	7%	from A47 west
	6%	from A1065
	16%	from A11
	13%	from A140 south
	12%	from A140 north
	100%	

82 Light Vehicles

29 Total HGVs

12hr Total Construction Traffic
HVAC Substation

Key

10	Total Vehicles
(10)	**Heavy Goods Vehicles (HGVs)**

Traffic from A1065 routeing onto A47
Traffic from A148 routeing south on A1065 and onto A47

12hr Total Construction Traffic
Maximum Construction Traffic

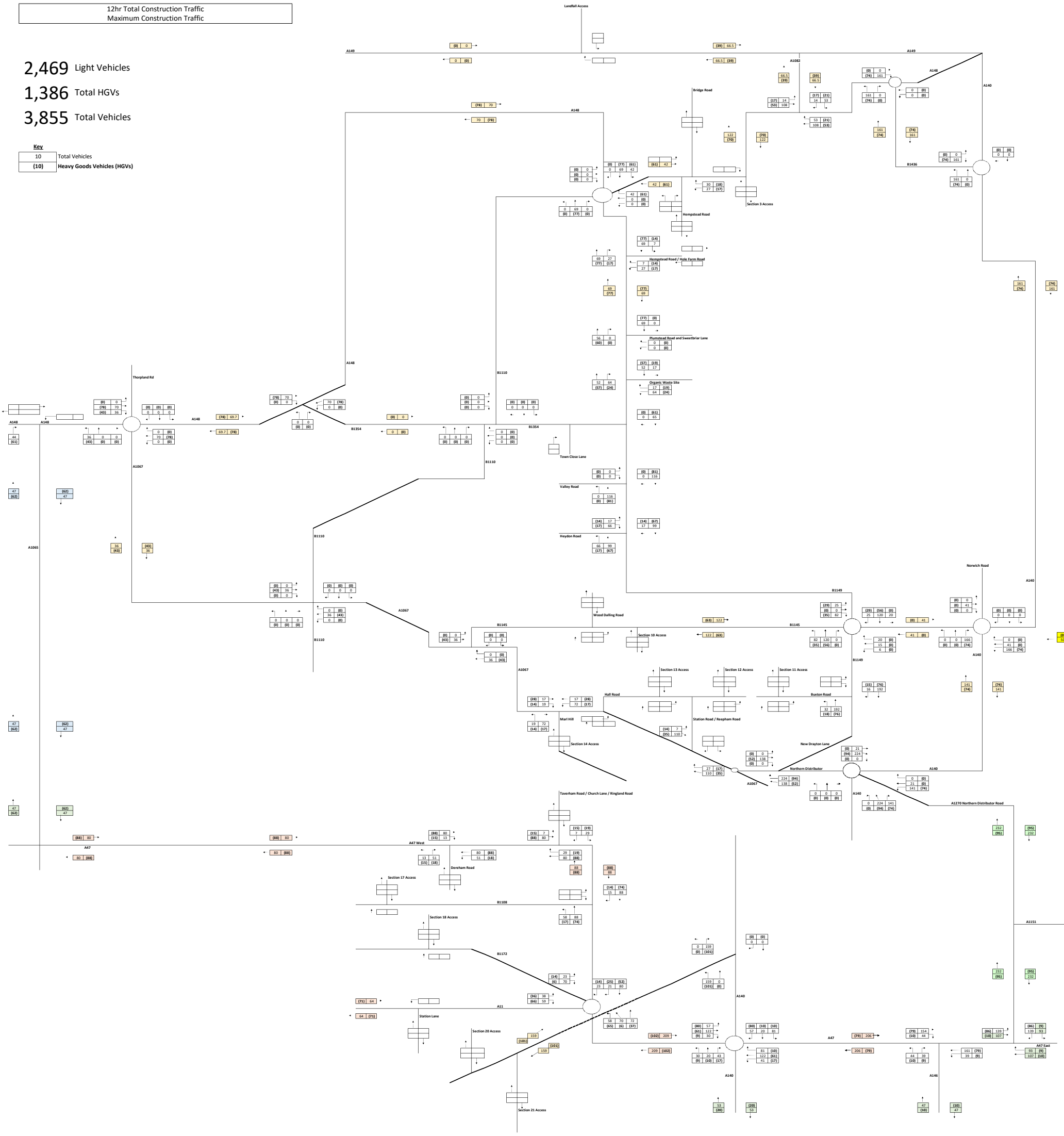
2,469 Light Vehicles

1,386 Total HGVs

3,855 Total Vehicles

Key

10	Total Vehicles
(10)	**Heavy Goods Vehicles (HGVs)**



12hr Total Construction Traffic
Total Construction Traffic (excluding Section 7)

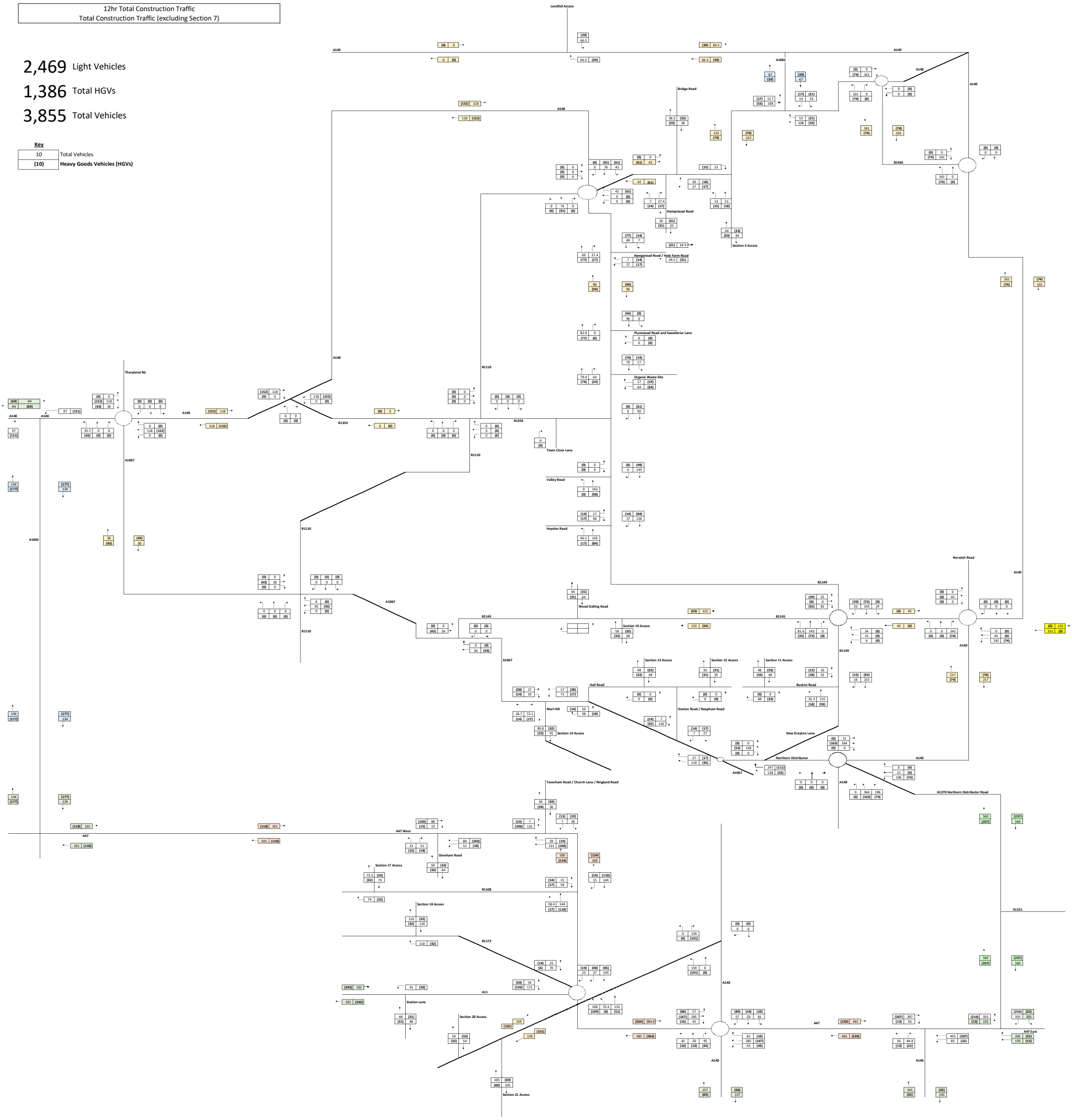
2,469 Light Vehicles

1,386 Total HGVs

3,855 Total Vehicles

Key

10	Total Vehicles
(10)	**Heavy Goods Vehicles (HGVs)**

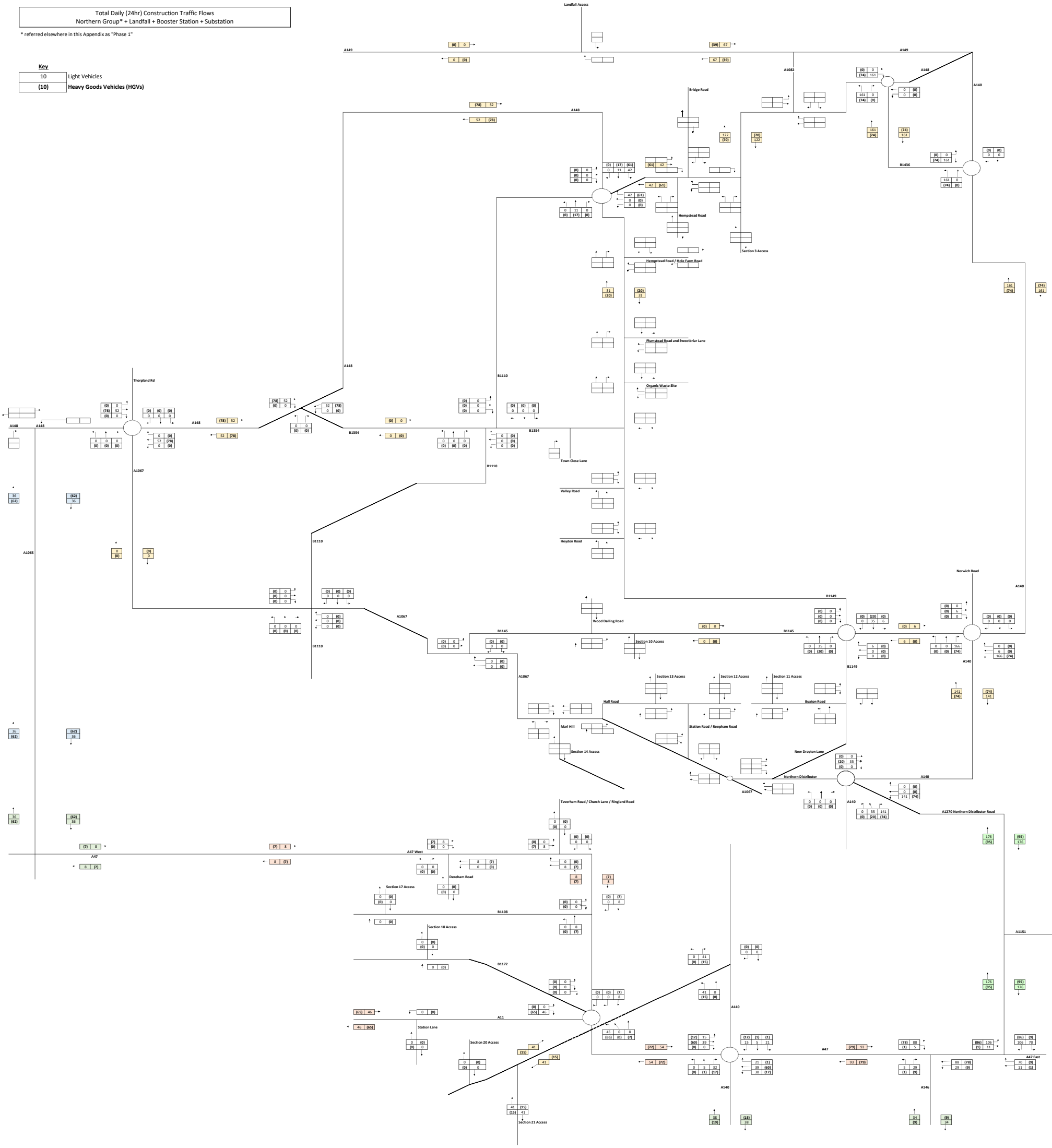


Total Daily (24hr) Construction Traffic Flows
Northern Group* + Landfall + Booster Station + Substation

* referred elsewhere in this Appendix as "Phase 1"

Key

10	Light Vehicles
(10)	**Heavy Goods Vehicles (HGVs)**

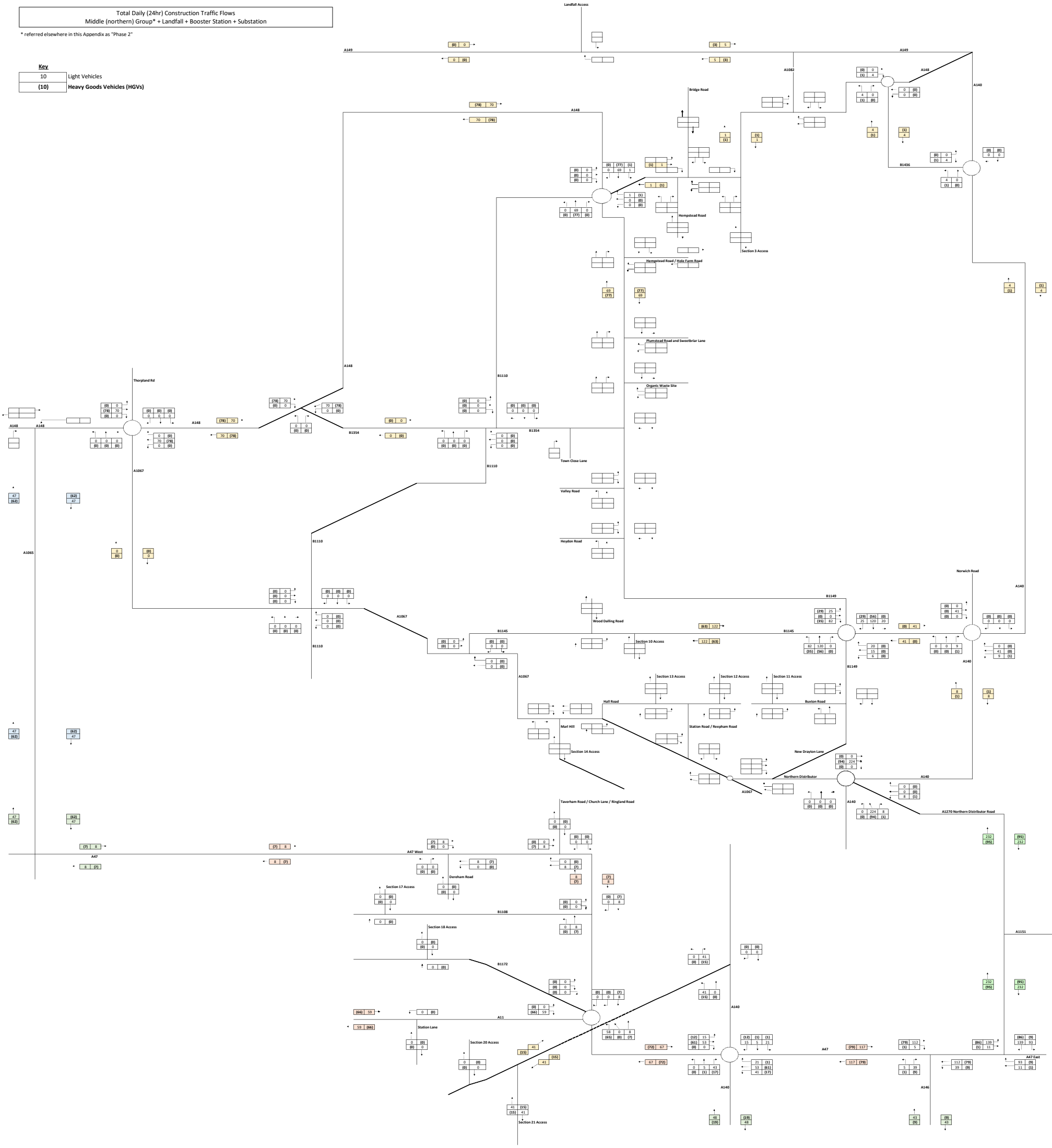


Total Daily (24hr) Construction Traffic Flows
Middle (northern) Group* + Landfall + Booster Station + Substation

* referred elsewhere in this Appendix as "Phase 2"

Key

10	Light Vehicles
(10)	**Heavy Goods Vehicles (HGVs)**

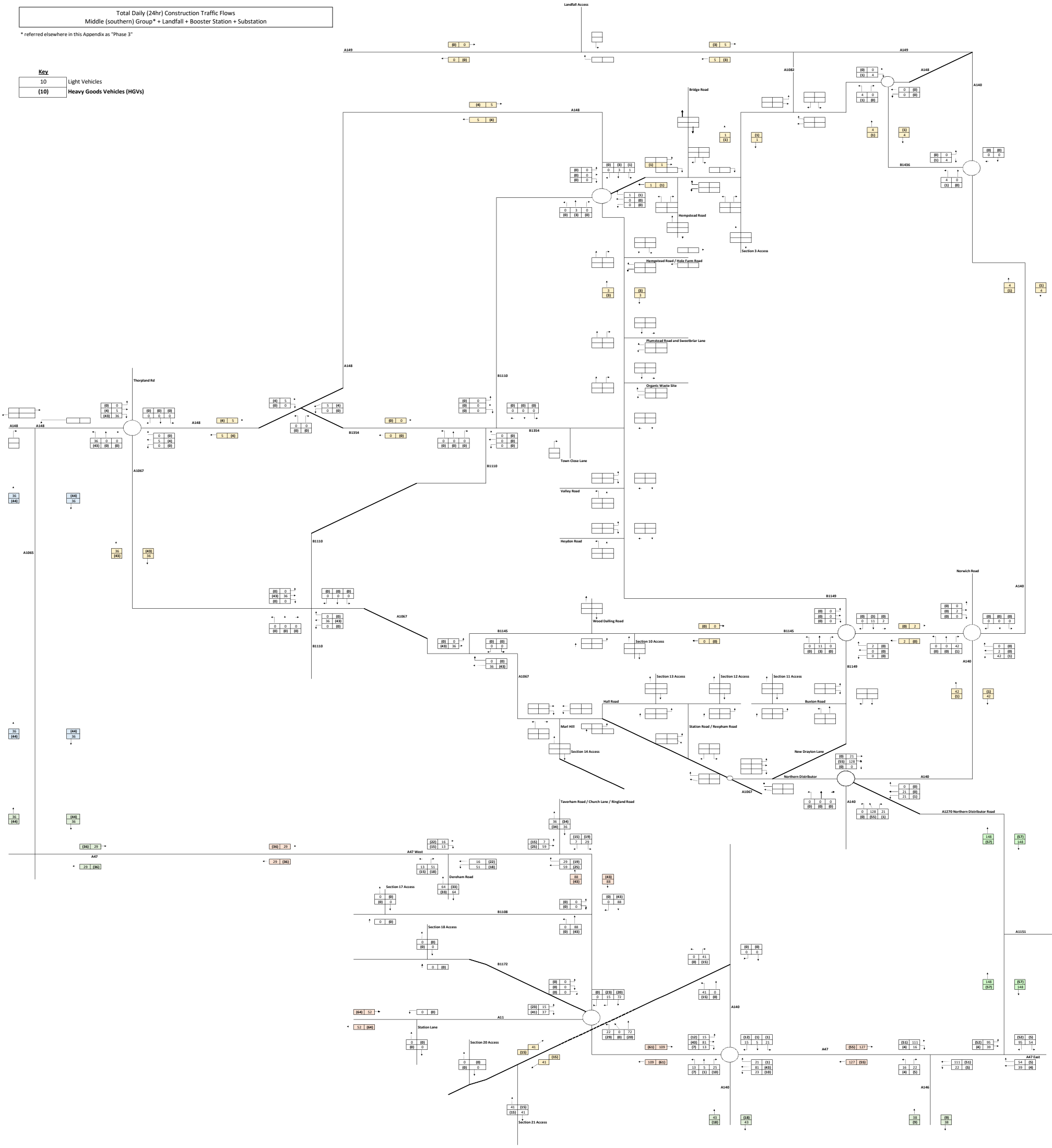


Total Daily (24hr) Construction Traffic Flows
Middle (southern) Group* + Landfall + Booster Station + Substation

* referred elsewhere in this Appendix as "Phase 3"

Key

10	Light Vehicles
(10)	**Heavy Goods Vehicles (HGVs)**

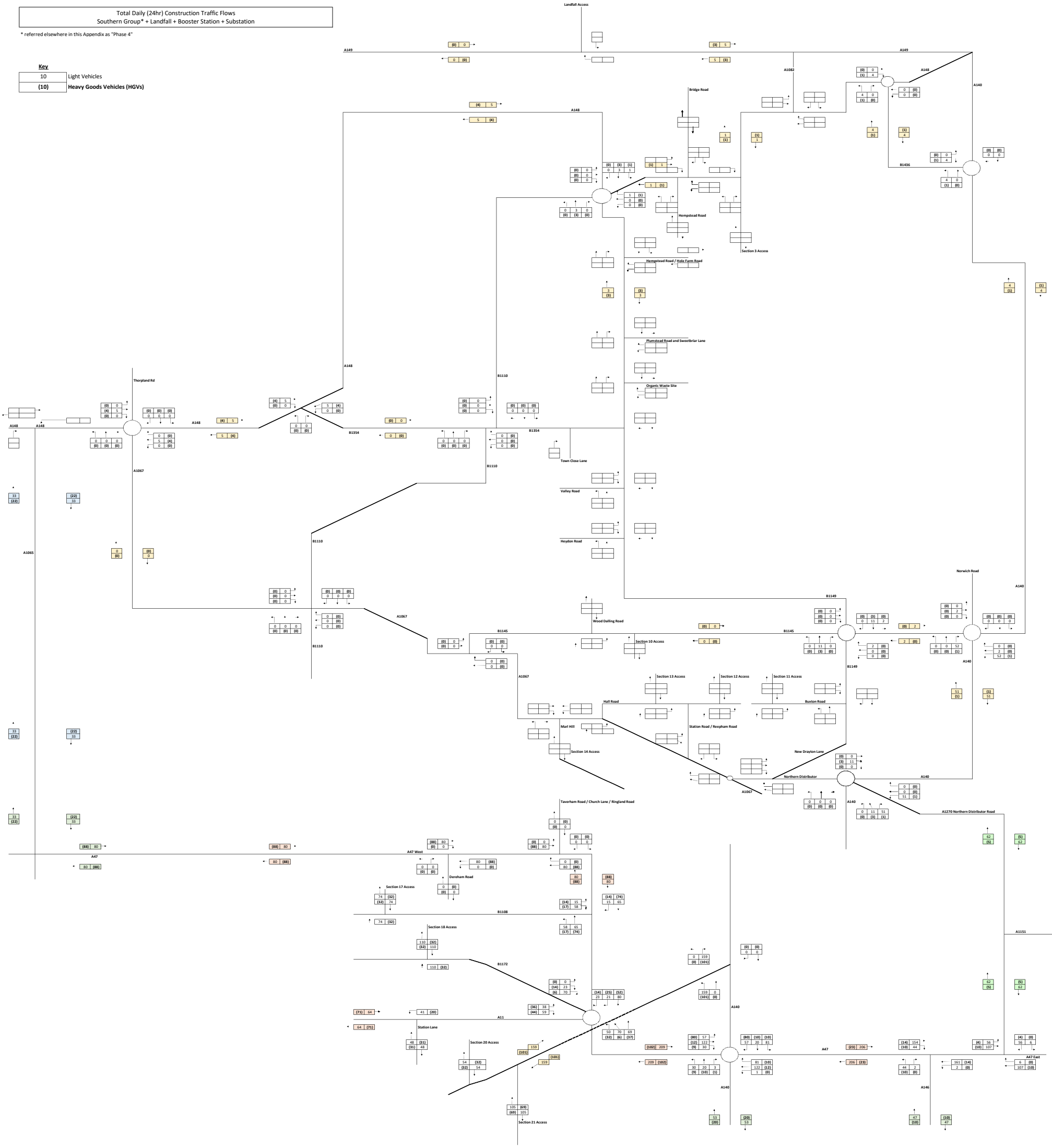


Total Daily (24hr) Construction Traffic Flows
Southern Group* + Landfall + Booster Station + Substation

* referred elsewhere in this Appendix as "Phase 4"

Key

10	Light Vehicles
(10)	**Heavy Goods Vehicles (HGVs)**



Traffic Flow Diagrams

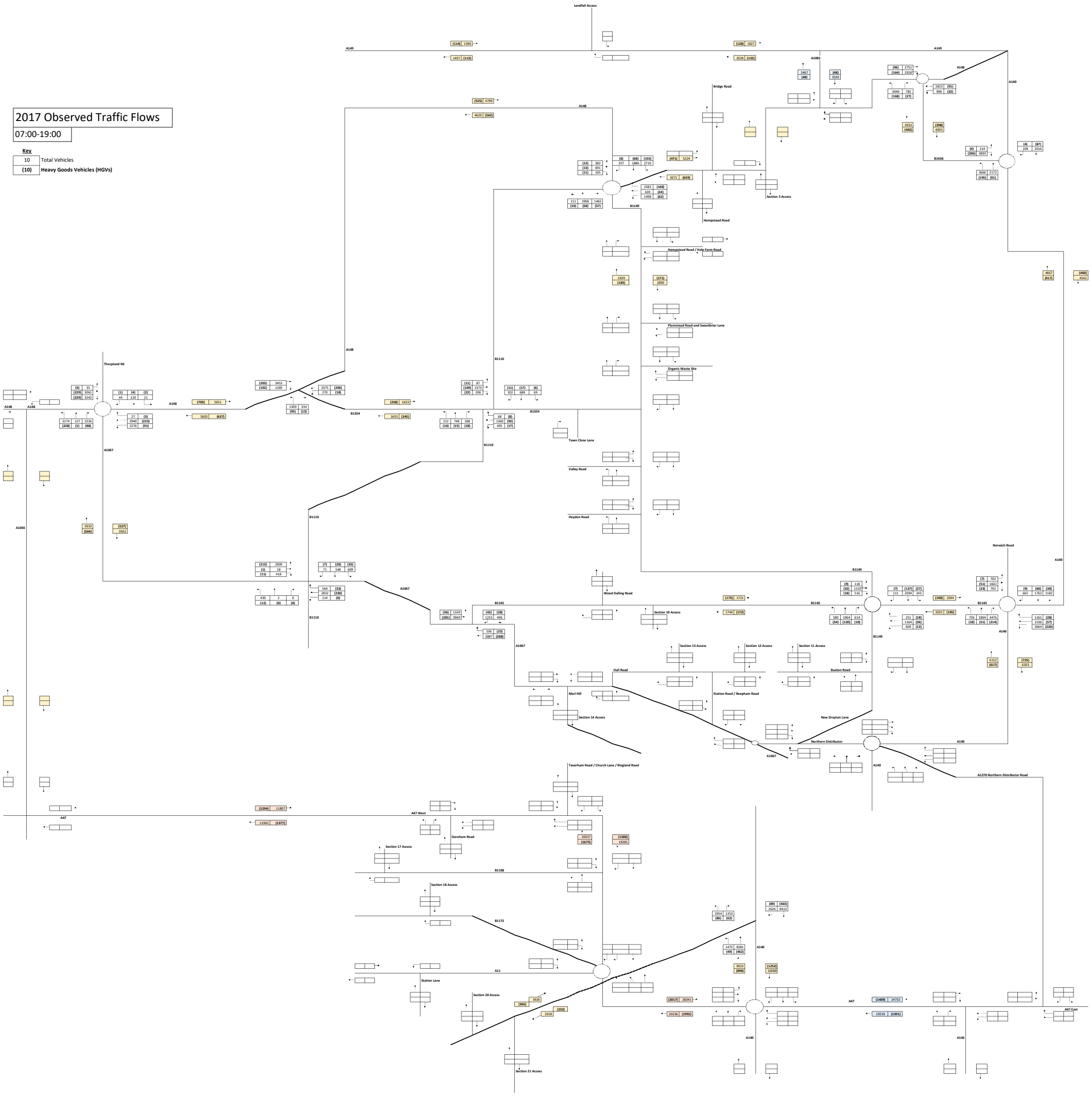
12hr Total Construction Traffic
Sensitivity Scenario

2017 Observed Traffic Flows

07:00-19:00

Key

10	Total Vehicles
(10)	**Heavy Goods Vehicles (HGVs)**



TEMPRO

Average Weekday

Trunk
1.10 growth 2017-2022

Principal
1.09 growth 2017-2022

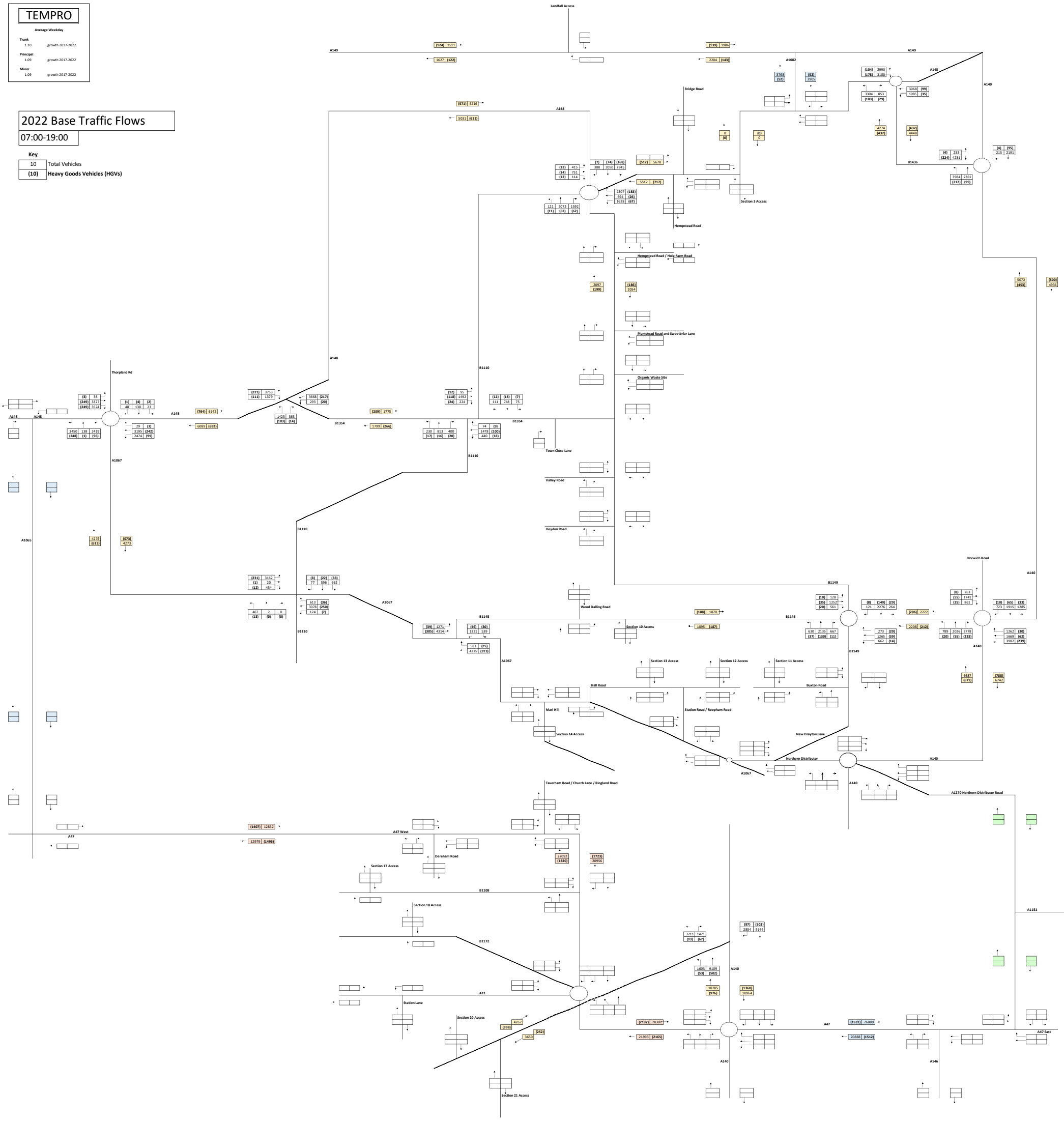
Minor
1.09 growth 2017-2022

2022 Base Traffic Flows

07:00-19:00

Key

10	Total Vehicles
(10)	**Heavy Goods Vehicles (HGVs)**



Tables Linked to Construction Vehicle Movements Spreadsheet

Route Section	Description	12hr Vehicle Flows			
		Total	HGV	Lights	Phase
1	Landfall to Holgate Hill	207	72	135	1
2	Holgate Hill to woodland north east of High Kelling	142	65	77	1
3	Woodland northeast of High Kelling to woodland south of Church Road	181	66	116	1
4	Woodland south of Church Road to woodland south and east of School Lane	131	62	69	1
5	Woodland east of School Lane to Plumstead Road	131	62	69	1
6	Plumstead Road to the B1149	202	74	128	2
7	B1149 to land South of Town Close Lane	141	65	77	-
8	Land south of Town Close Lane to woodland north of Reepham Road	229	62	167	2
9	Land north of Reepham Road to woodland north of Reepham	190	62	128	2
10	Woodland north of Reepham to woodland at Booton Common	180	65	116	2
11	Woodland east of Reepham to The Grove	162	66	96	2
12	The Grove to woodland south of Church Farm Lane	131	62	69	3
13	Woodland south of Church Farm Lane to River Wensum	160	64	96	3
14	River Wensum to woodland south west of Ringland	257	63	194	3
15	Woodland south west of Ringland to A47	151	67	84	3
16	A47 to Bawburgh Road	193	65	128	3
17	Bawburgh Road to woodland west of Little Melton	199	64	135	4
18	Woodland west of Little Melton to A11	296	63	233	4
19	A11 to woodland north west of Swardeston	170	62	108	4
20	Woodland north west of Swardeston to B1113	172	64	108	4
21	B1113 to end of cable route	236	109	128	4
Landfall	Landfall	15	5	10	
Booster Station	Booster Station	46	12	34	
Converter / Sub Station	Converter / Sub Station	111	29	82	
	Total:	**4,032**	**1,451**	**2,581**	**4,032**

HGVS

Assume	25%	from Kings Lynn via A148
	25%	from Great Yarmouth
	25%	from Lowestoft
	50%	from A47
	0%	from A1065
	50%	from A11
	25%	from A140 south
	0%	from A140 north
	200%	

Staff Vehicle Movements

Assume	8%	via A148
	28%	via A47 east
	11%	from A146
	7%	from A47 west
	6%	from A1065
	16%	from A11
	13%	from A140 south
	12%	from A140 north
	100%	

135 Light Vehicles

72 Total HGVs

12hr Total Construction Traffic - Sensitivity Scenario
Route Section 1

Key

10	Total Vehicles
(10)	**Heavy Goods Vehicles (HGVs)**

A47 Traffic routes onto A1065

Landfall Access
A149
A1082
A148
A140
Bridge Road
B1436
B1149
Hempstead Road
Section 3 Access
Hempstead Road / Hole Farm Road
Plumstead Road and Sweetbriar Lane
Organic Waste Site
B1110
B1354
Town Close Lane
Valley Road
Heydon Road
Thorpland Rd
A1067
A1065
Norwich Road
Wood Dalling Road
B1145
Section 10 Access
Section 13 Access
Section 12 Access
Section 11 Access
Hall Road
Buxton Road
Marl Hill
Station Road / Reepham Road
Section 14 Access
New Drayton Lane
Northern Distributor
A1270 Northern Distributor Road
Taverham Road / Church Lane / Ringland Road
A47 West
Dereham Road
Section 17 Access
B1108
Section 18 Access
B1172
A11
Station Lane
Section 20 Access
Section 21 Access
A47
A47 East
A1151
A146

HGVS

Assume		
	25%	from Kings Lynn via A148
	25%	from Great Yarmouth
	25%	from Lowestoft
	50%	from A47
	0%	from A1065
	50%	from A11
	25%	from A140 south
	0%	from A140 north
	200%	

Staff Vehicle Movements

Assume		
	8%	via A148
	28%	via A47 east
	11%	from A146
	7%	from A47 west
	6%	from A1065
	16%	from A11
	13%	from A140 south
	12%	from A140 north
	100%	

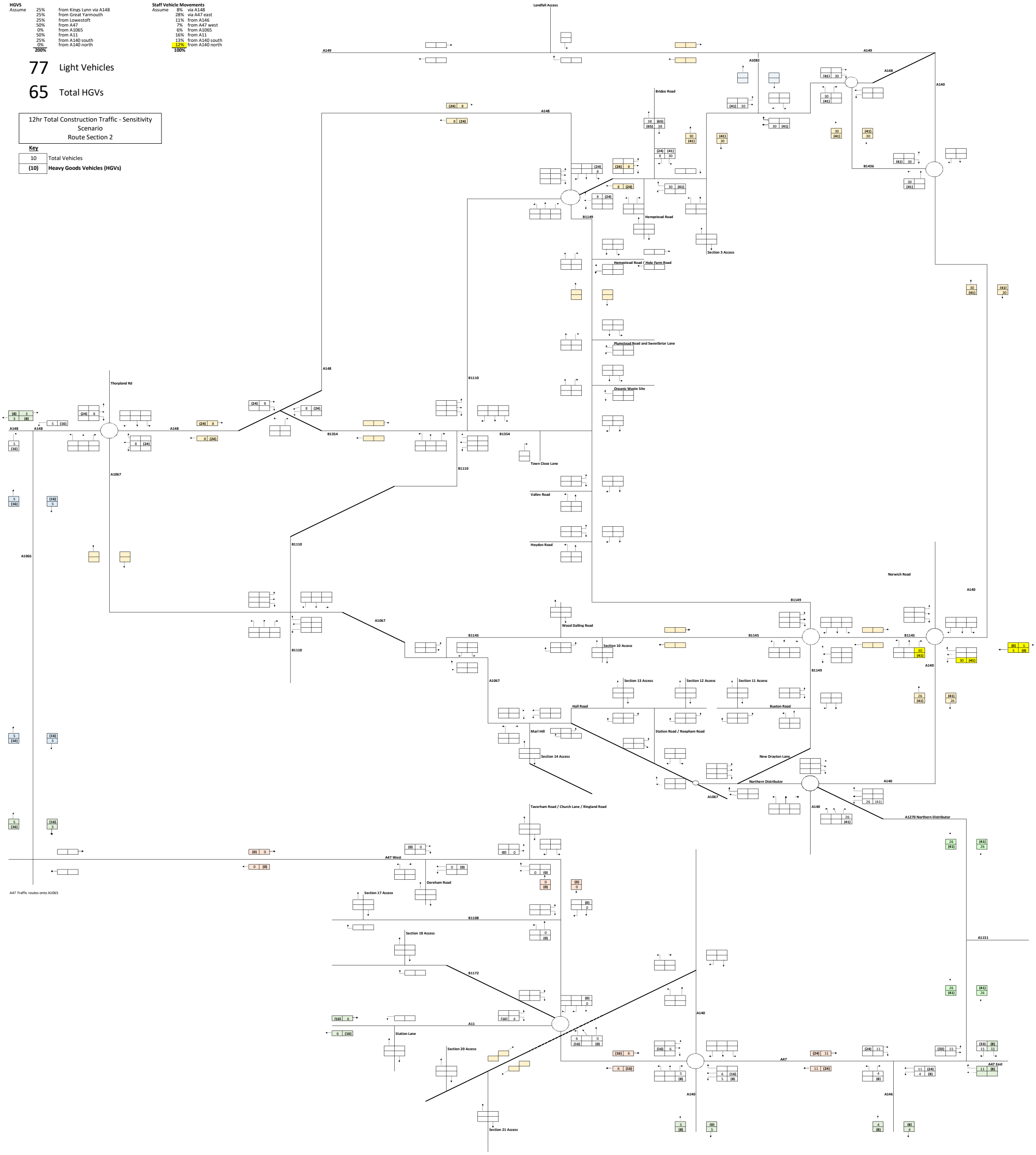
77 Light Vehicles

65 Total HGVs

12hr Total Construction Traffic - Sensitivity Scenario
Route Section 2

Key

10	Total Vehicles
(10)	**Heavy Goods Vehicles (HGVs)**



A47 Traffic routes onto A1065

HGVS

Assume	25%	from Kings Lynn via A148
	25%	from Great Yarmouth
	25%	from Lowestoft
	50%	from A47
	0%	from A1065
	50%	from A11
	25%	from A140 south
	0%	from A140 north
	200%	

Staff Vehicle Movements

Assume	8%	via A148
	28%	via A47 east
	11%	from A146
	7%	from A47 west
	6%	from A1065
	16%	from A11
	13%	from A140 south
	12%	from A140 north
	100%	

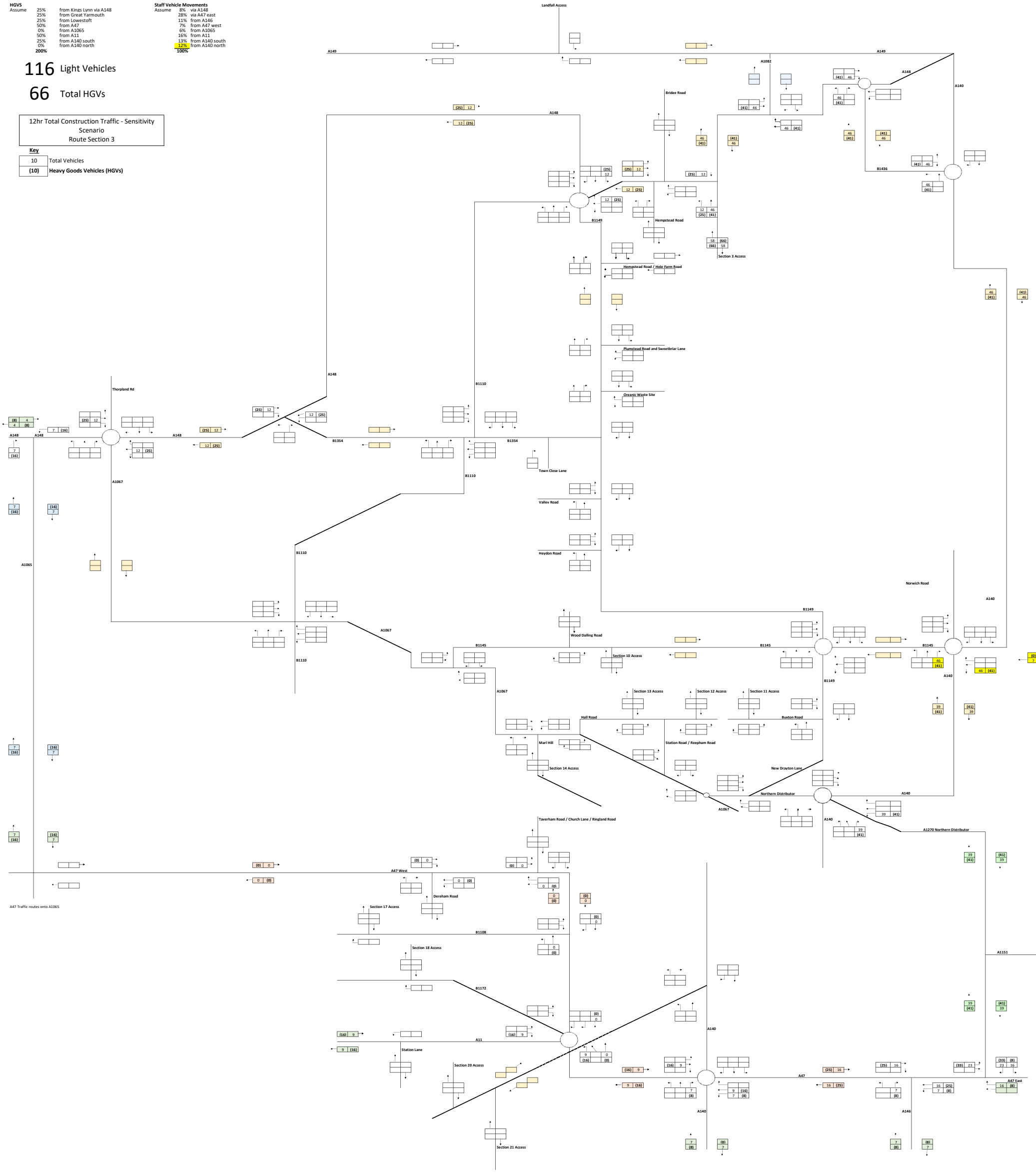
116 Light Vehicles

66 Total HGVs

12hr Total Construction Traffic - Sensitivity Scenario
Route Section 3

Key

10	Total Vehicles
(10)	**Heavy Goods Vehicles (HGVs)**



HGVS

Assume	25%	from Kings Lynn via A148
	25%	from Great Yarmouth
	25%	from Lowestoft
	50%	from A47
	0%	from A1065
	50%	from A11
	25%	from A140 south
	0%	from A140 north
	200%	

Staff Vehicle Movements

Assume	8%	via A148
	28%	via A47 east
	11%	from A146
	7%	from A47 west
	6%	from A1065
	16%	from A11
	13%	from A140 south
	12%	from A140 north
	100%	

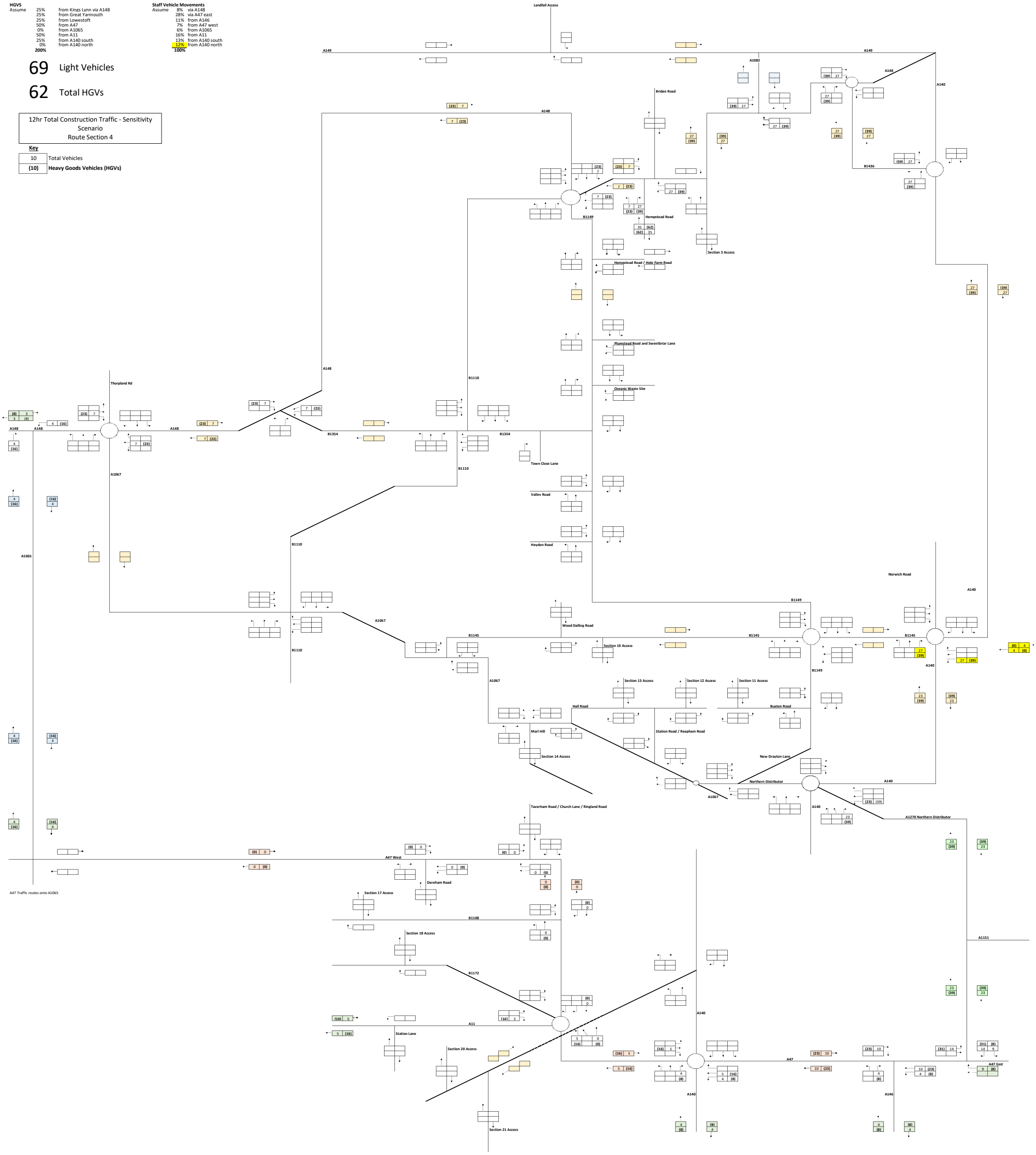
69 Light Vehicles

62 Total HGVs

12hr Total Construction Traffic - Sensitivity Scenario
Route Section 4

Key

10	Total Vehicles
(10)	**Heavy Goods Vehicles (HGVs)**



HGVS

Assume	25%	from Kings Lynn via A148
	25%	from Great Yarmouth
	25%	from Lowestoft
	50%	from A47
	0%	from A1065
	50%	from A11
	25%	from A140 south
	0%	from A140 north
	200%	

Staff Vehicle Movements

Assume	8%	via A148
	28%	via A47 east
	11%	from A146
	7%	from A47 west
	6%	from A1065
	16%	from A11
	13%	from A140 south
	12%	from A140 north
	100%	

69 Light Vehicles

62 Total HGVs

12hr Total Construction Traffic - Sensitivity Scenario
Route Section 5

Key

10	Total Vehicles
(10)	**Heavy Goods Vehicles (HGVs)**

A47 Traffic routes onto A1065

12hr Total Construction Traffic - Sensitivity Scenario
Phase 1 Total

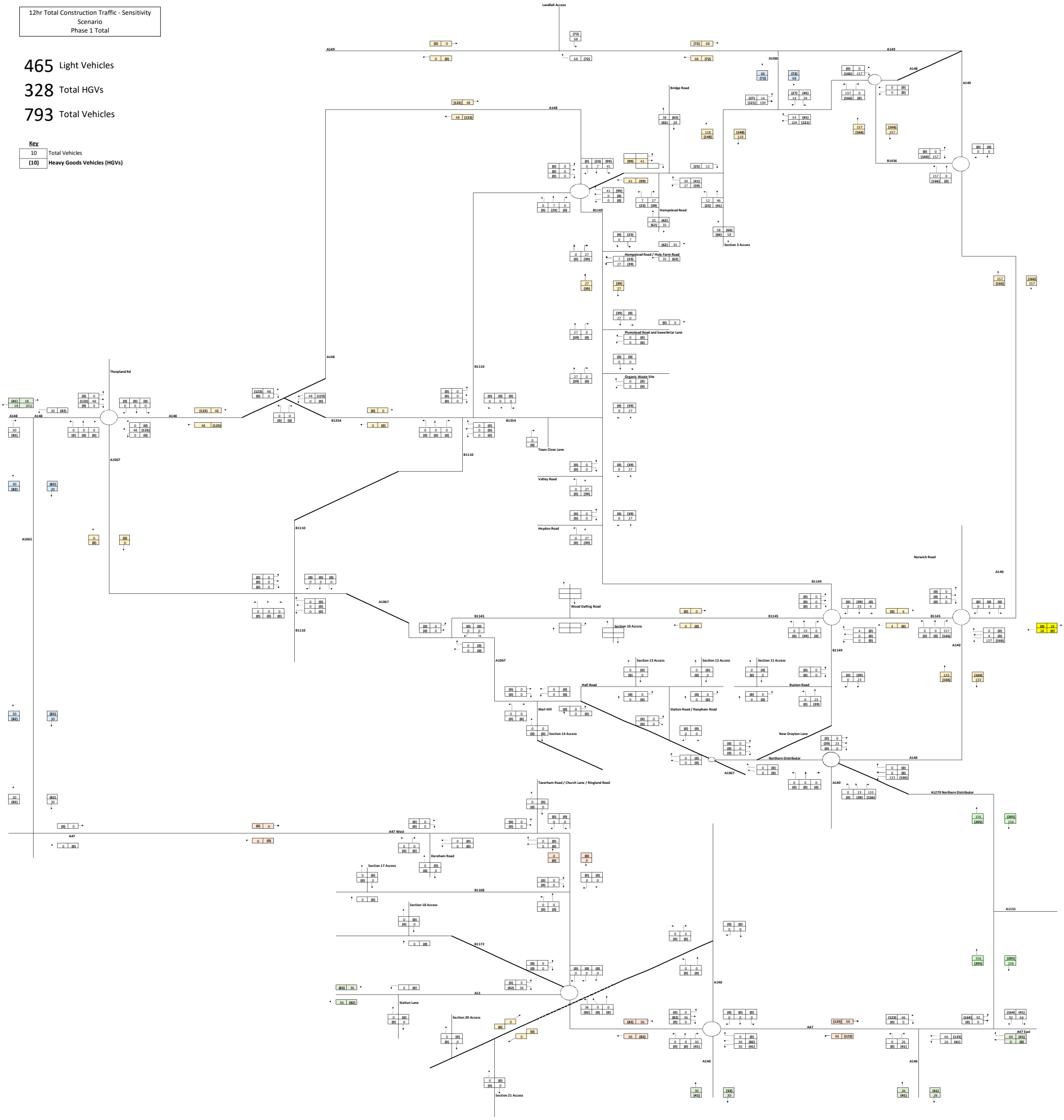
465 Light Vehicles

328 Total HGVs

793 Total Vehicles

Key

10	Total Vehicles
(10)	**Heavy Goods Vehicles (HGVs)**



HGVS

Assume	25%	from Kings Lynn via A148
	25%	from Great Yarmouth
	25%	from Lowestoft
	50%	from A47
	0%	from A1065
	50%	from A11
	25%	from A140 south
	0%	from A140 north
	200%	

Staff Vehicle Movements

Assume	8%	via A148
	28%	via A47 east
	11%	from A146
	7%	from A47 west
	6%	from A1065
	16%	from A11
	13%	from A140 south
	12%	from A140 north
	100%	

128 Light Vehicles

74 Total HGVs

12hr Total Construction Traffic - Sensitivity Scenario
Route Section 6

Key

10	Total Vehicles
(10)	**Heavy Goods Vehicles (HGVs)**

Landfall Access
A149
A1082
A148
A140
Bridge Road
B1436
Section 3 Access
B1149
Hempstead Road
Hempstead Road / Hole Farm Road
Plumstead Road and Sweetbriar Lane
Organic Waste Site
B1110
B1354
Town Close Lane
Valley Road
Heydon Road
Thorpland Rd
A1067
A1065
Wood Dalling Road
B1145
Section 10 Access
Norwich Road
Section 13 Access
Section 12 Access
Section 11 Access
Hall Road
Buxton Road
Marl Hill
Station Road / Reepham Road
Section 14 Access
New Drayton Lane
Northern Distributor
A1270 Northern Distributor
A47 Traffic routes onto A1065
A47 West
Taverham Road
Dereham Road
Section 17 Access
B1108
Section 18 Access
B1172
A11
Station Lane
Section 20 Access
Section 21 Access
A47
A47 East
A146
A1151

HGVS

Assume	25%	from Kings Lynn via A148
	25%	from Great Yarmouth
	25%	from Lowestoft
	50%	from A47
	0%	from A1065
	50%	from A11
	25%	from A140 south
	0%	from A140 north
	200%	

Staff Vehicle Movements

Assume	8%	via A148
	28%	via A47 east
	11%	from A146
	7%	from A47 west
	6%	from A1065
	16%	from A11
	13%	from A140 south
	12%	from A140 north
	100%	

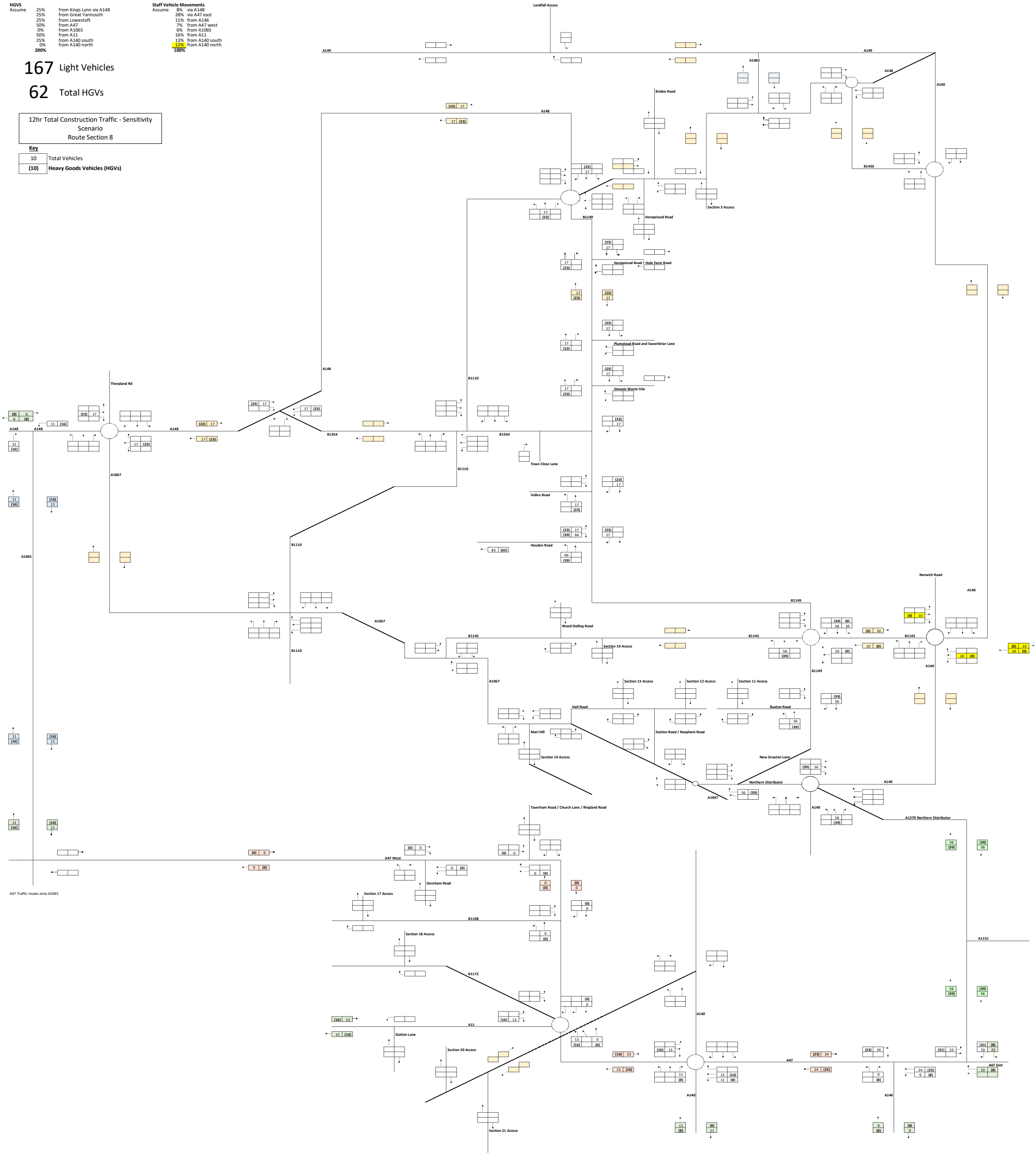
167 Light Vehicles

62 Total HGVs

12hr Total Construction Traffic - Sensitivity Scenario
Route Section 8

Key

10	Total Vehicles
(10)	**Heavy Goods Vehicles (HGVs)**



HGVS

Assume		
	25%	from Kings Lynn via A148
	25%	from Great Yarmouth
	25%	from Lowestoft
	50%	from A47
	0%	from A1065
	50%	from A11
	25%	from A140 south
	0%	from A140 north
	200%	

Staff Vehicle Movements

Assume		
	8%	via A148
	28%	via A47 east
	11%	from A146
	7%	from A47 west
	6%	from A1065
	16%	from A11
	13%	from A140 south
	12%	from A140 north
	100%	

128 Light Vehicles

62 Total HGVs

12hr Total Construction Traffic - Sensitivity Scenario
Route Section 9

Key

10	Total Vehicles
(10)	**Heavy Goods Vehicles (HGVs)**

Landfall Access
A149
A1082
A148
A140
Bridge Road
B1436
Section 3 Access
B1149
Hempstead Road
Hempstead Road / Hole Farm Road
Plumstead Road and Sweetbriar Lane
Organic Waste Site
B1110
B1354
Town Close Lane
Valley Road
Heydon Road
Thorpland Rd
A1067
A1065
Norwich Road
Wood Dalling Road
B1145
Section 10 Access
Section 13 Access
Section 12 Access
Section 11 Access
Hall Road
Buxton Road
Marl Hill
Station Road / Reepham Road
Section 14 Access
New Drayton Lane
Northern Distributor
A1270 Northern Distributor
Taverham Road / Church Lane / Ringland Road
A47 West
Dereham Road
Section 17 Access
B1108
Section 18 Access
B1172
A11
Station Lane
Section 20 Access
Section 21 Access
A47
A47 East
A146
A1151

A47 Traffic routes onto A1065

HGVS

Assume		
	25%	from Kings Lynn via A148
	25%	from Great Yarmouth
	25%	from Lowestoft
	50%	from A47
	0%	from A1065
	50%	from A11
	25%	from A140 south
	0%	from A140 north
	200%	

Staff Vehicle Movements

Assume		
	8%	via A148
	28%	via A47 east
	11%	from A146
	7%	from A47 west
	6%	from A1065
	16%	from A11
	13%	from A140 south
	12%	from A140 north
	100%	

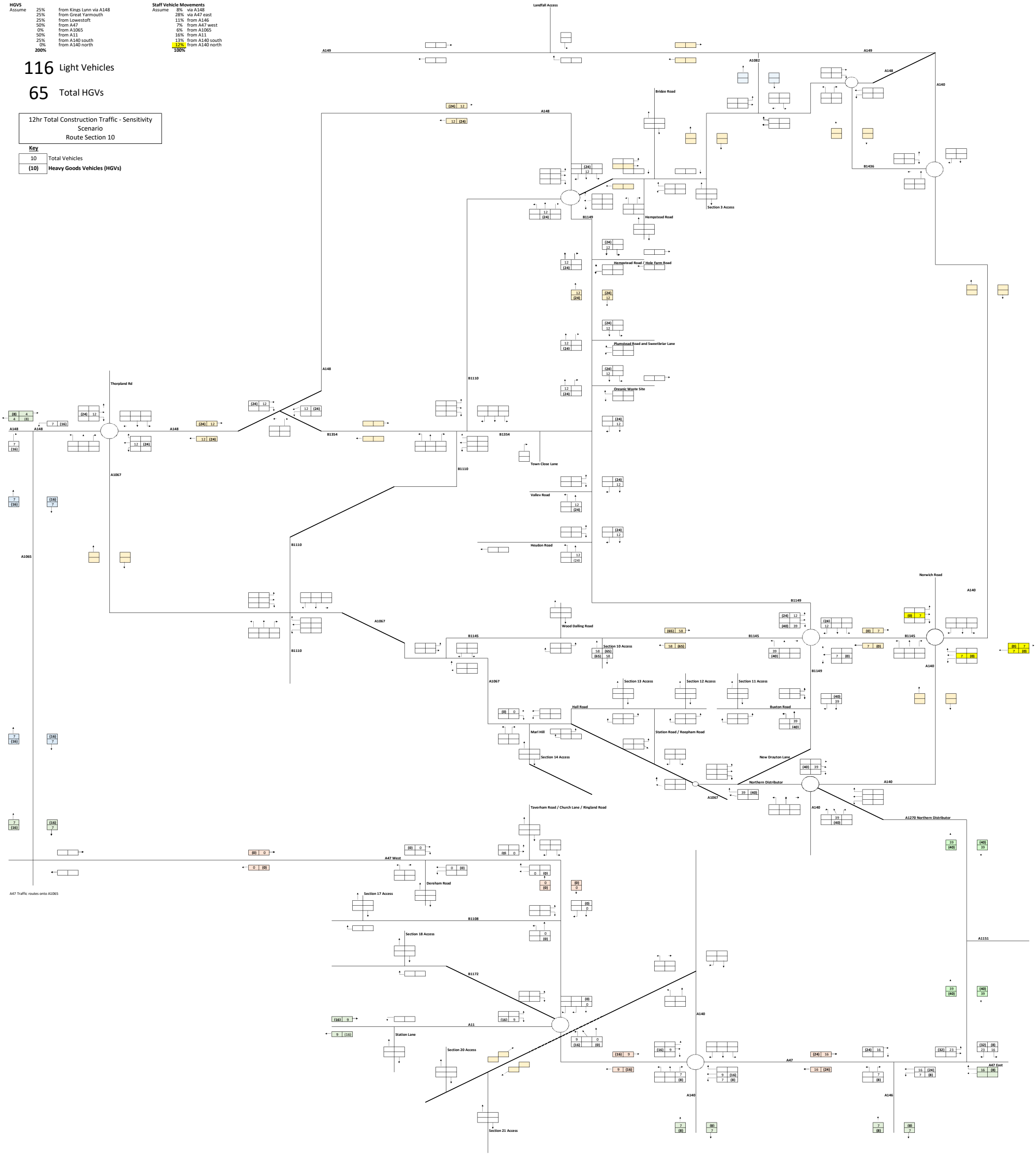
116 Light Vehicles

65 Total HGVs

12hr Total Construction Traffic - Sensitivity Scenario
Route Section 10

Key

10	Total Vehicles
(10)	**Heavy Goods Vehicles (HGVs)**



HGVS

Assume		
	25%	from Kings Lynn via A148
	25%	from Great Yarmouth
	25%	from Lowestoft
	50%	from A47
	0%	from A1065
	50%	from A11
	25%	from A140 south
	0%	from A140 north
	200%	

Staff Vehicle Movements

Assume		
	8%	via A148
	28%	via A47 east
	11%	from A146
	7%	from A47 west
	6%	from A1065
	16%	from A11
	13%	from A140 south
	12%	from A140 north
	100%	

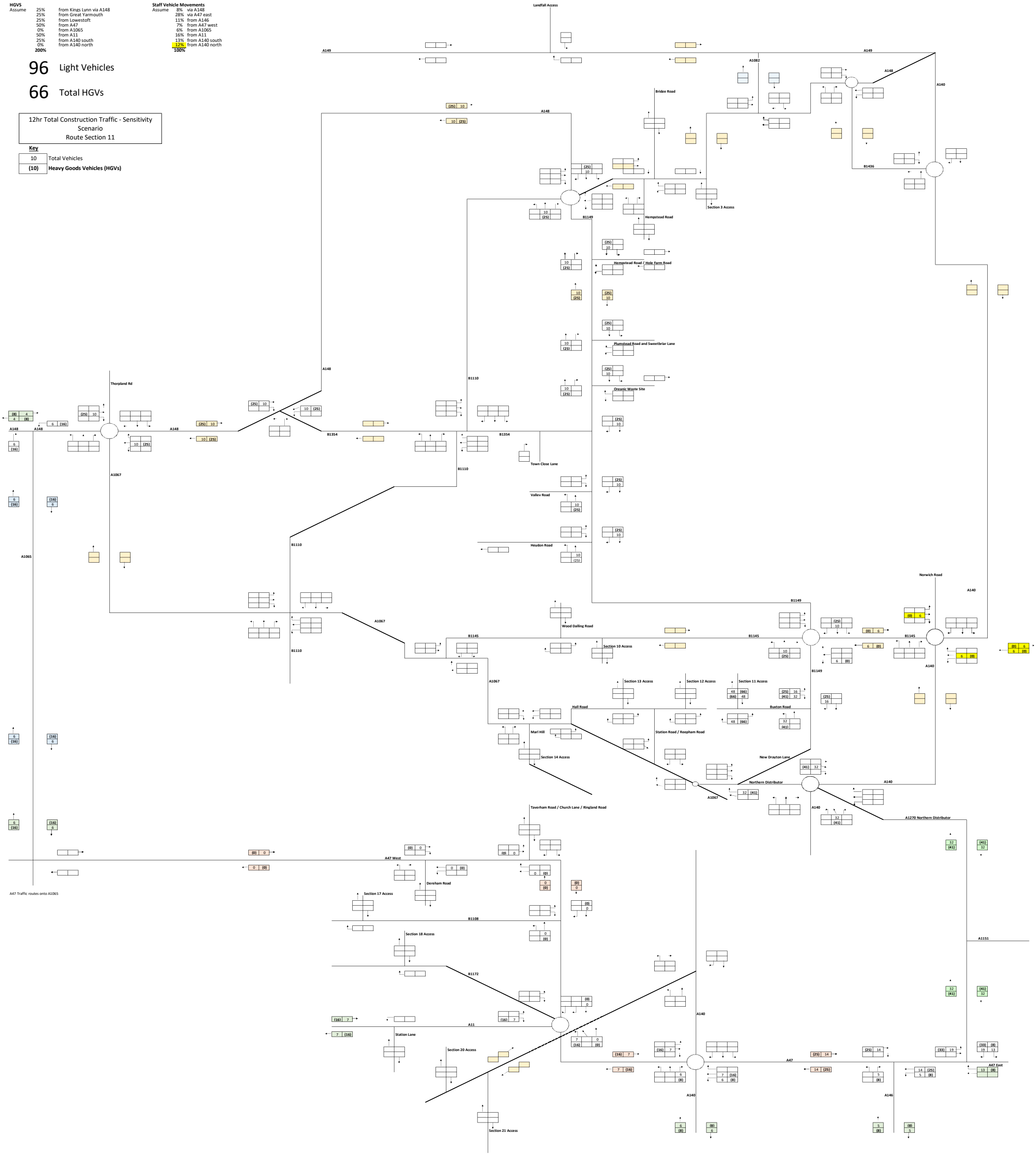
96 Light Vehicles

66 Total HGVs

12hr Total Construction Traffic - Sensitivity Scenario
Route Section 11

Key

10	Total Vehicles
(10)	**Heavy Goods Vehicles (HGVs)**



A47 Traffic routes onto A1065

12hr Total Construction Traffic - Sensitivity Scenario
Phase 2 Total

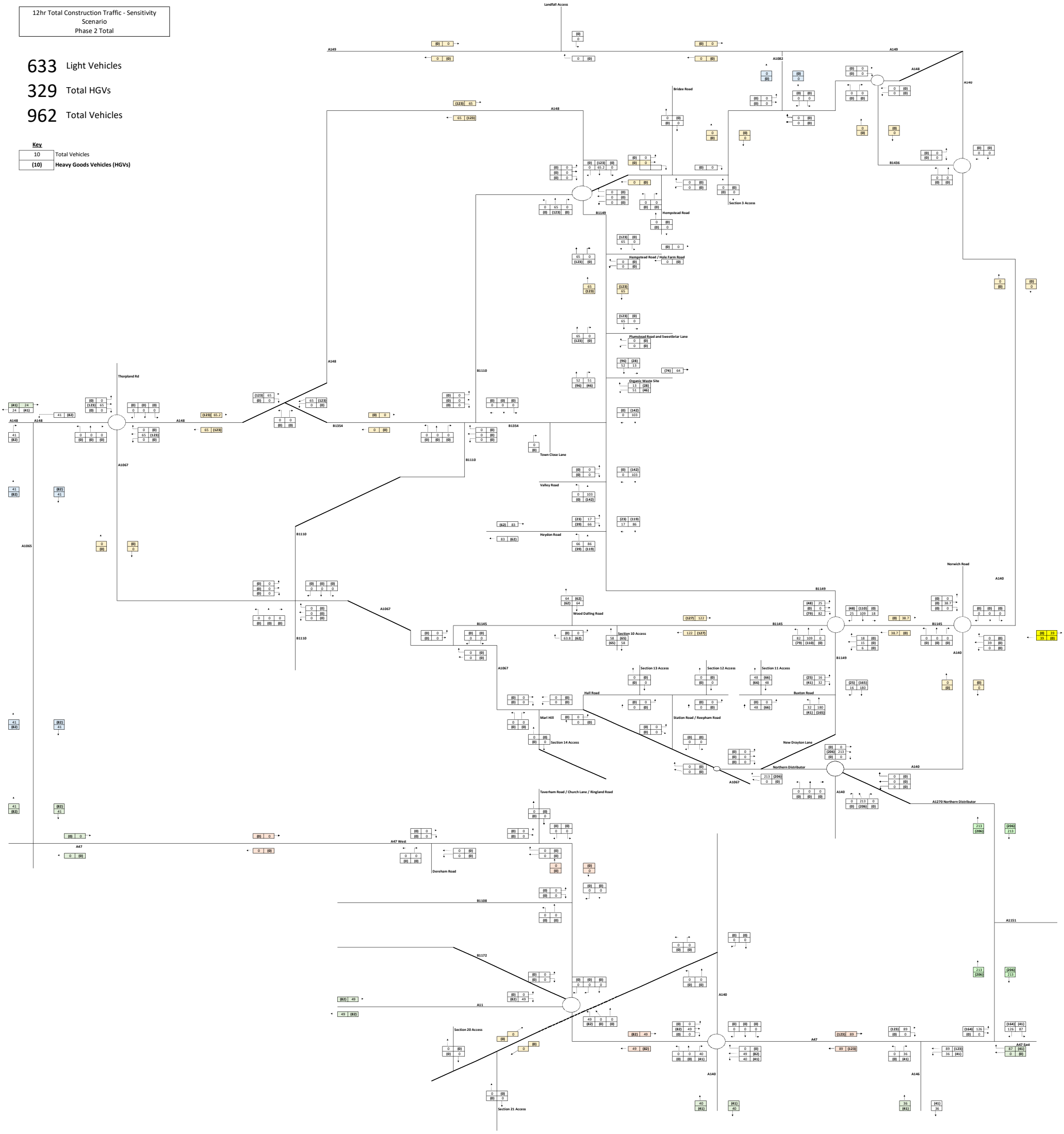
633 Light Vehicles

329 Total HGVs

962 Total Vehicles

Key

10	Total Vehicles
(10)	**Heavy Goods Vehicles (HGVs)**



HGVS

Assume	25%	from Kings Lynn via A148
	25%	from Great Yarmouth
	25%	from Lowestoft
	50%	from A47
	0%	from A1065
	50%	from A11
	25%	from A140 south
	0%	from A140 north
	200%	

Staff Vehicle Movements

Assume	8%	via A148
	28%	via A47 east
	11%	from A146
	7%	from A47 west
	6%	from A1065
	16%	from A11
	13%	from A140 south
	12%	from A140 north
	100%	

69 Light Vehicles

62 Total HGVs

12hr Total Construction Traffic - Sensitivity Scenario
Route Section 12

Key

10	Total Vehicles
(10)	**Heavy Goods Vehicles (HGVs)**

A47 Traffic routes onto A1065

HGVS

Assume	25%	from Kings Lynn via A148
	25%	from Great Yarmouth
	25%	from Lowestoft
	50%	from A47
	0%	from A1065
	50%	from A11
	25%	from A140 south
	0%	from A140 north
	200%	

Staff Vehicle Movements

Assume	8%	via A148
	28%	via A47 east
	11%	from A146
	7%	from A47 west
	6%	from A1065
	16%	from A11
	13%	from A140 south
	12%	from A140 north
	100%	

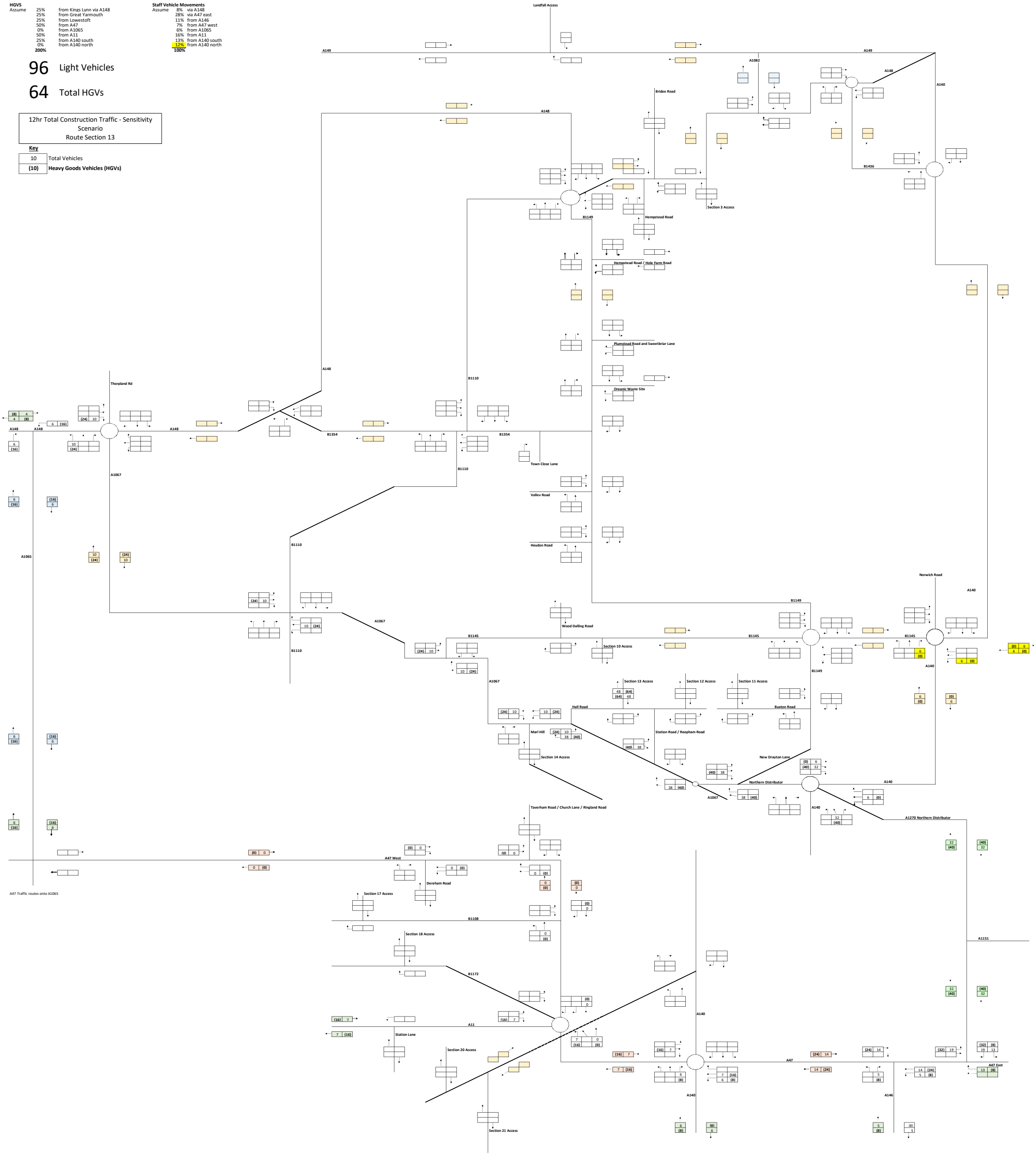
96 Light Vehicles

64 Total HGVs

12hr Total Construction Traffic - Sensitivity Scenario
Route Section 13

Key

10	Total Vehicles
(10)	**Heavy Goods Vehicles (HGVs)**



HGVS

Assume	25%	from Kings Lynn via A148
	25%	from Great Yarmouth
	25%	from Lowestoft
	50%	from A47
	0%	from A1065
	50%	from A11
	25%	from A140 south
	0%	from A140 north
	200%	

Staff Vehicle Movements

Assume	8%	via A148
	28%	via A47 east
	11%	from A146
	7%	from A47 west
	6%	from A1065
	16%	from A11
	13%	from A140 south
	12%	from A140 north
	100%	

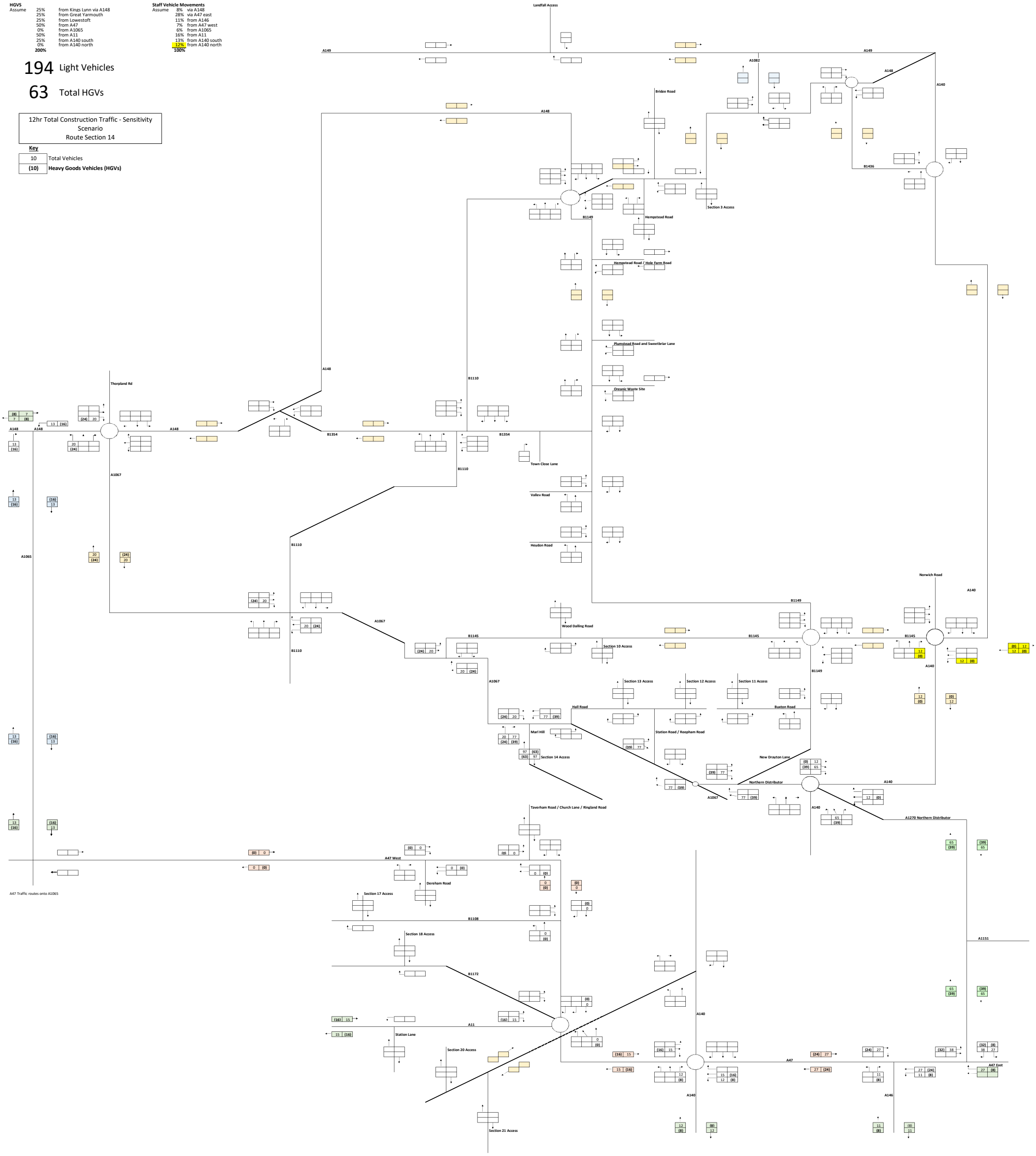
194 Light Vehicles

63 Total HGVs

12hr Total Construction Traffic - Sensitivity Scenario
Route Section 14

Key

10	Total Vehicles
(10)	**Heavy Goods Vehicles (HGVs)**



HGVS

Assume	25%	from Kings Lynn via A148
	25%	from Great Yarmouth
	25%	from Lowestoft
	50%	from A47
	0%	from A1065
	50%	from A11
	25%	from A140 south
	0%	from A140 north
	200%	

Staff Vehicle Movements

Assume	8%	via A148
	28%	via A47 east
	11%	from A146
	7%	from A47 west
	6%	from A1065
	16%	from A11
	13%	from A140 south
	12%	from A140 north
	100%	

84 Light Vehicles

67 Total HGVs

12hr Total Construction Traffic - Sensitivity Scenario
Route Section 15

Key

10	Total Vehicles
(10)	**Heavy Goods Vehicles (HGVs)**

Traffic from A1065 routeing onto A47
Traffic from A148 routeing south on A1065

HGVS

Assume	25%	from Kings Lynn via A148
	25%	from Great Yarmouth
	25%	from Lowestoft
	50%	from A47
	0%	from A1065
	50%	from A11
	25%	from A140 south
	0%	from A140 north
	200%	

Staff Vehicle Movements

Assume	8%	via A148
	28%	via A47 east
	11%	from A146
	7%	from A47 west
	6%	from A1065
	16%	from A11
	13%	from A140 south
	12%	from A140 north
	100%	

128 Light Vehicles

65 Total HGVs

12hr Total Construction Traffic - Sensitivity Scenario
Route Section 16

Key

10	Total Vehicles
(10)	**Heavy Goods Vehicles (HGVs)**

Traffic from A1065 routeing onto A47
Traffic from A148 routeing south on A1065 and onto A47

12hr Total Construction Traffic - Sensitivity Scenario
Phase 3 Total

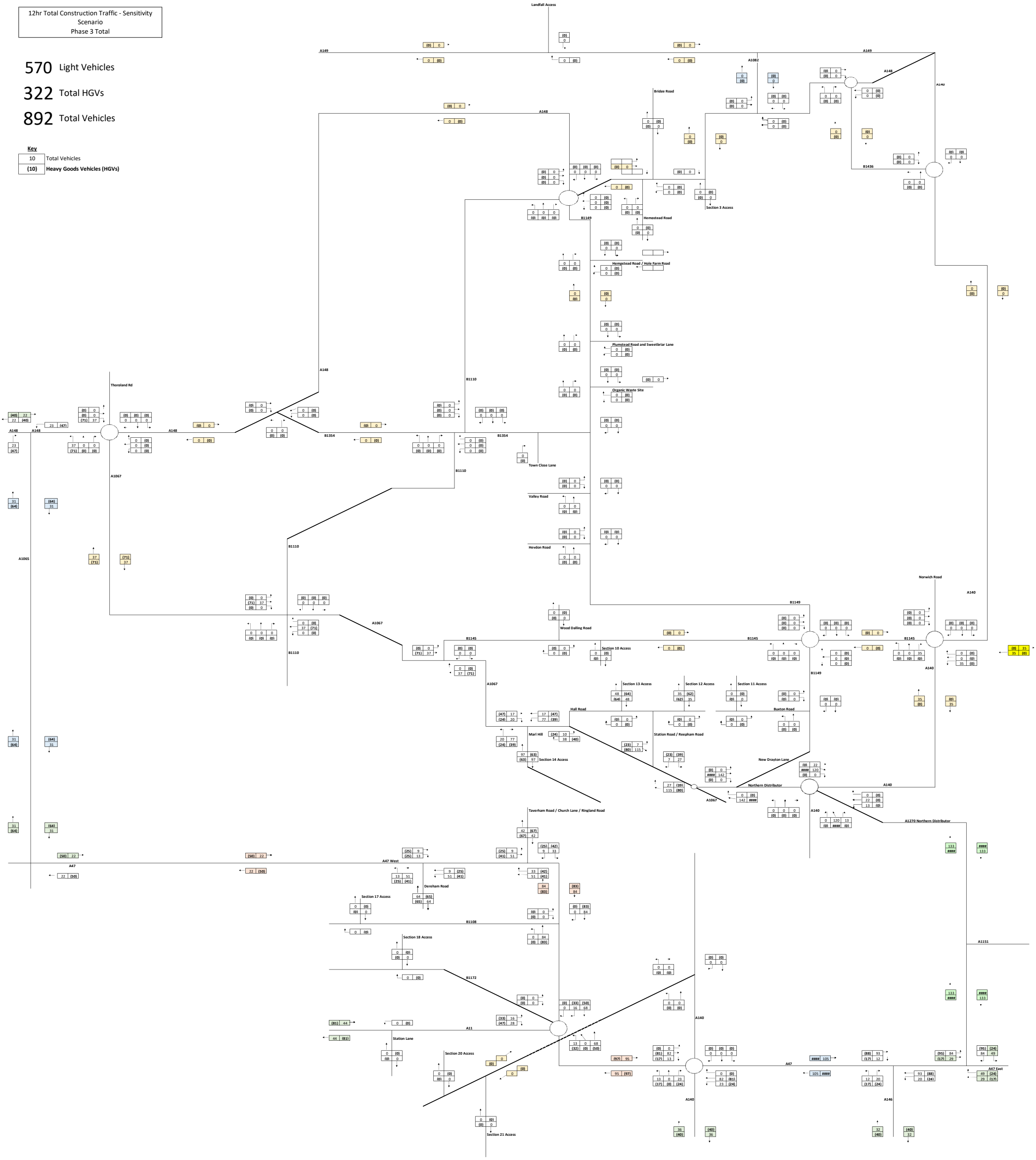
570 Light Vehicles

322 Total HGVs

892 Total Vehicles

Key

10	Total Vehicles
(10)	**Heavy Goods Vehicles (HGVs)**



HGVS

Assume	25%	from Kings Lynn via A148
	25%	from Great Yarmouth
	25%	from Lowestoft
	50%	from A47
	0%	from A1065
	50%	from A11
	25%	from A140 south
	0%	from A140 north
	200%	

Staff Vehicle Movements

Assume	8%	via A148
	28%	via A47 east
	11%	from A146
	7%	from A47 west
	6%	from A1065
	16%	from A11
	13%	from A140 south
	12%	from A140 north
	100%	

135 Light Vehicles

64 Total HGVs

12hr Total Construction Traffic - Sensitivity Scenario
Route Section 17

Key

10	Total Vehicles
(10)	**Heavy Goods Vehicles (HGVs)**

Traffic from A1065 routeing onto A47
Traffic from A148 routeing south on A1065 and onto A47

HGVS

Assume		
	25%	from Kings Lynn via A148
	25%	from Great Yarmouth
	25%	from Lowestoft
	50%	from A47
	0%	from A1065
	50%	from A11
	25%	from A140 south
	0%	from A140 north
	200%	

Staff Vehicle Movements

Assume		
	8%	via A148
	28%	via A47 east
	11%	from A146
	7%	from A47 west
	6%	from A1065
	16%	from A11
	13%	from A140 south
	12%	from A140 north
	100%	

233 Light Vehicles

63 Total HGVs

12hr Total Construction Traffic - Sensitivity Scenario
Route Section 18

Key

10	Total Vehicles
(10)	**Heavy Goods Vehicles (HGVs)**

Traffic from A1065 routeing onto A47
Traffic from A148 routeing south on A1065 and onto A47

HGVS

Assume	25%	from Kings Lynn via A148
	25%	from Great Yarmouth
	25%	from Lowestoft
	50%	from A47
	0%	from A1065
	50%	from A11
	25%	from A140 south
	0%	from A140 north
	200%	

Staff Vehicle Movements

Assume	8%	via A148
	28%	via A47 east
	11%	from A146
	7%	from A47 west
	6%	from A1065
	16%	from A11
	13%	from A140 south
	12%	from A140 north
	100%	

108 Light Vehicles

62 Total HGVs

12hr Total Construction Traffic - Sensitivity Scenario
Route Section 19

Key

10	Total Vehicles
(10)	**Heavy Goods Vehicles (HGVs)**

Traffic from A1065 routeing onto A47
Traffic from A148 routeing south on A1065 and onto A47

HGVS

Assume	25%	from Kings Lynn via A148
	25%	from Great Yarmouth
	25%	from Lowestoft
	50%	from A47
	0%	from A1065
	50%	from A11
	25%	from A140 south
	0%	from A140 north
	200%	

Staff Vehicle Movements

Assume	8%	via A148
	28%	via A47 east
	11%	from A146
	7%	from A47 west
	6%	from A1065
	16%	from A11
	13%	from A140 south
	12%	from A140 north
	100%	

108 Light Vehicles

64 Total HGVs

12hr Total Construction Traffic - Sensitivity Scenario
Route Section 20

Key

10	Total Vehicles
(10)	**Heavy Goods Vehicles (HGVs)**

Traffic from A1065 routeing onto A47
Traffic from A148 routeing south on A1065 and onto A47

HGVS

Assume	25%	from Kings Lynn via A148
	25%	from Great Yarmouth
	25%	from Lowestoft
	50%	from A47
	0%	from A1065
	50%	from A11
	25%	from A140 south
	0%	from A140 north
	200%	

Staff Vehicle Movements

Assume	8%	via A148
	28%	via A47 east
	11%	from A146
	7%	from A47 west
	6%	from A1065
	16%	from A11
	13%	from A140 south
	12%	from A140 north
	100%	

128 Light Vehicles

109 Total HGVs

12hr Total Construction Traffic - Sensitivity Scenario
Route Section 21

Key

10	Total Vehicles
(10)	**Heavy Goods Vehicles (HGVs)**

Traffic from A1065 routeing onto A47
Traffic from A148 routeing south on A1065 and onto A47

12hr Total Construction Traffic - Sensitivity Scenario
Phase 4 Total

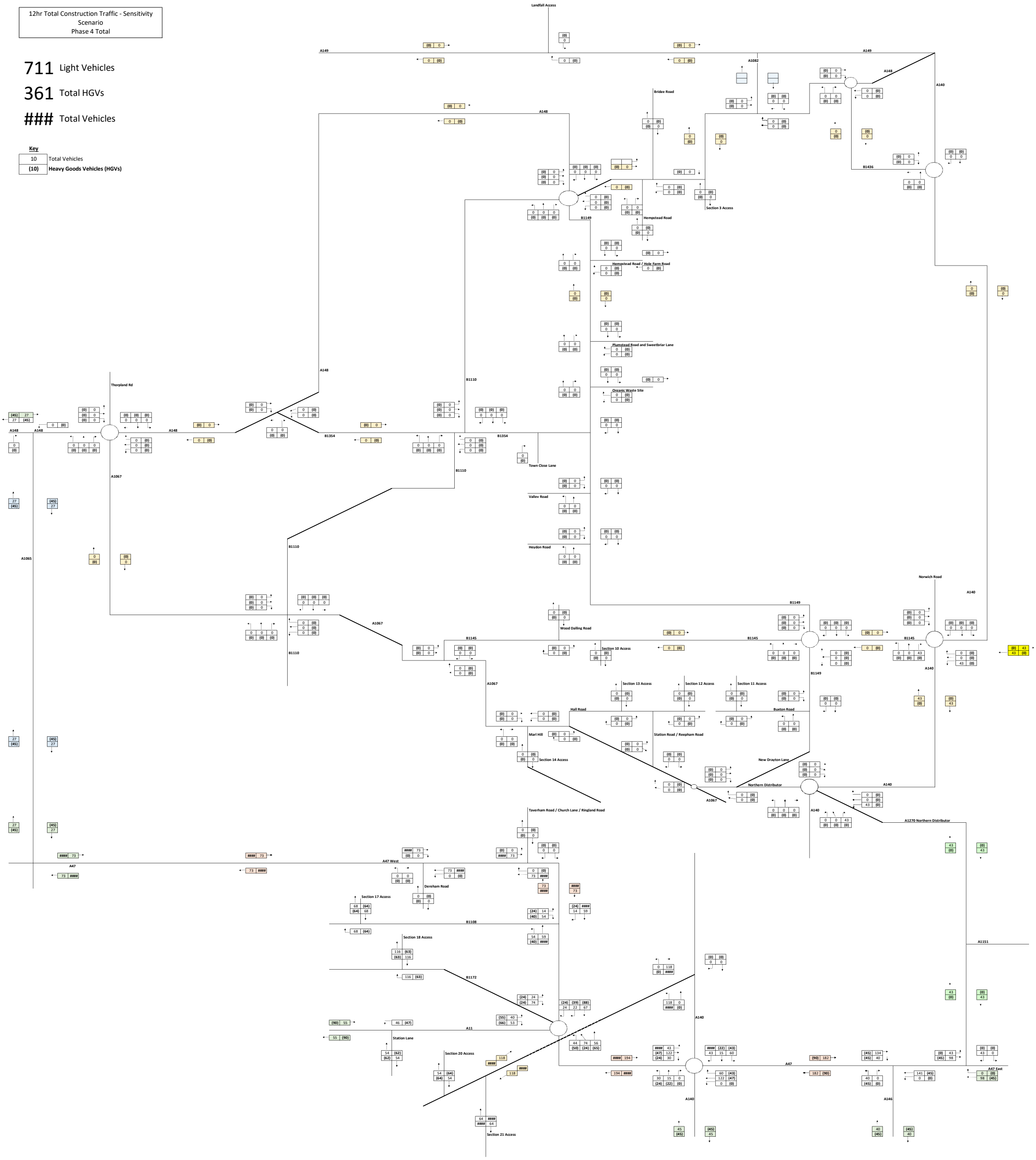
711 Light Vehicles

361 Total HGVs

Total Vehicles

Key

10	Total Vehicles
(10)	**Heavy Goods Vehicles (HGVs)**



HGVS

Assume		
	25%	from Kings Lynn via A148
	25%	from Great Yarmouth
	25%	from Lowestoft
	50%	from A47
	0%	from A1065
	50%	from A11
	25%	from A140 south
	0%	from A140 north
	200%	

Staff Vehicle Movements

Assume		
	8%	via A148
	28%	via A47 east
	11%	from A146
	7%	from A47 west
	6%	from A1065
	16%	from A11
	13%	from A140 south
	12%	from A140 north
	100%	

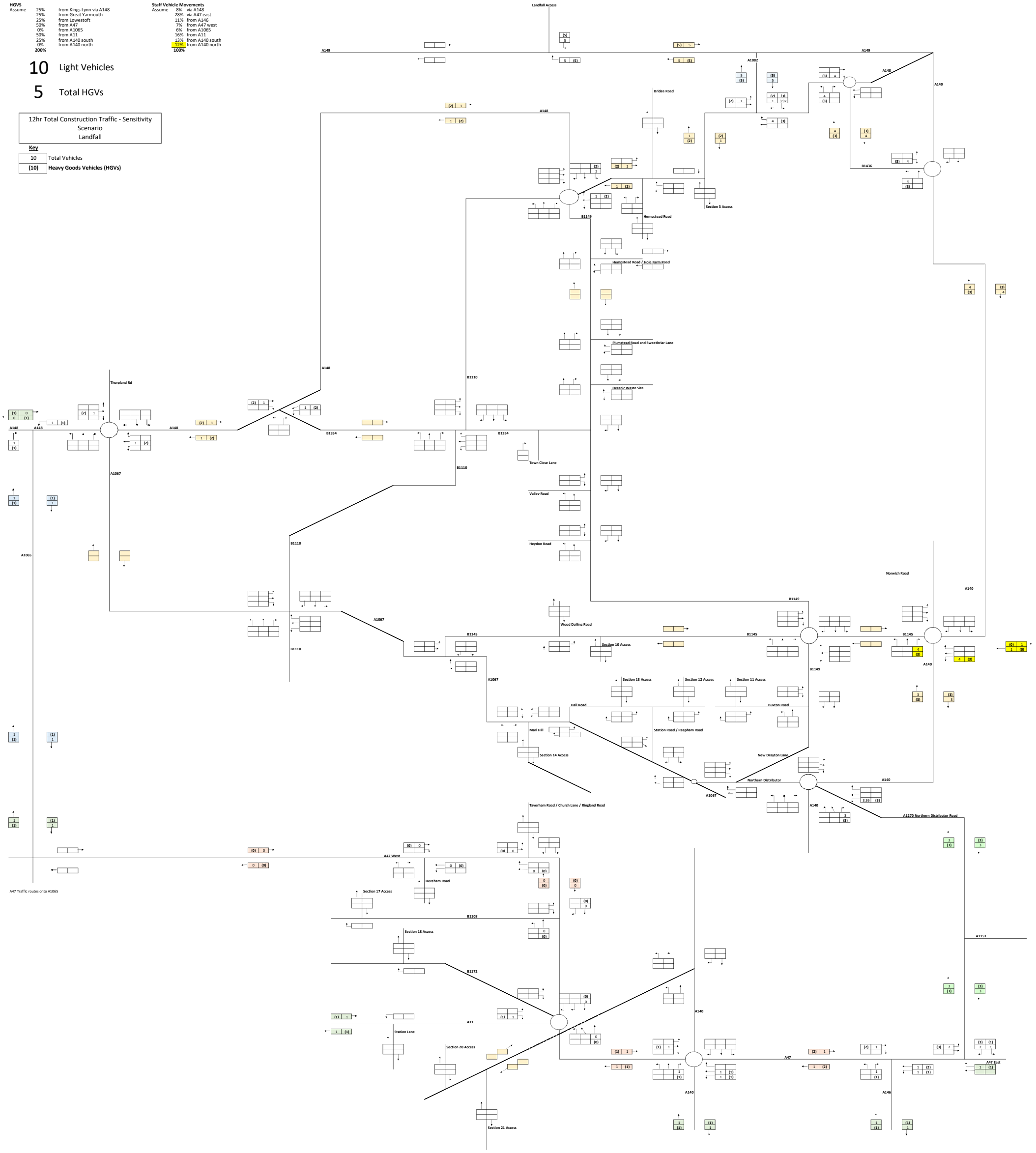
10 Light Vehicles

5 Total HGVs

12hr Total Construction Traffic - Sensitivity Scenario
Landfall

Key

10	Total Vehicles
(10)	**Heavy Goods Vehicles (HGVs)**



HGVS

Assume	25%	from Kings Lynn via A148
	25%	from Great Yarmouth
	25%	from Lowestoft
	50%	from A47
	0%	from A1065
	50%	from A11
	25%	from A140 south
	0%	from A140 north
	200%	

Staff Vehicle Movements

Assume	8%	via A148
	28%	via A47 east
	11%	from A146
	7%	from A47 west
	6%	from A1065
	16%	from A11
	13%	from A140 south
	12%	from A140 north
	100%	

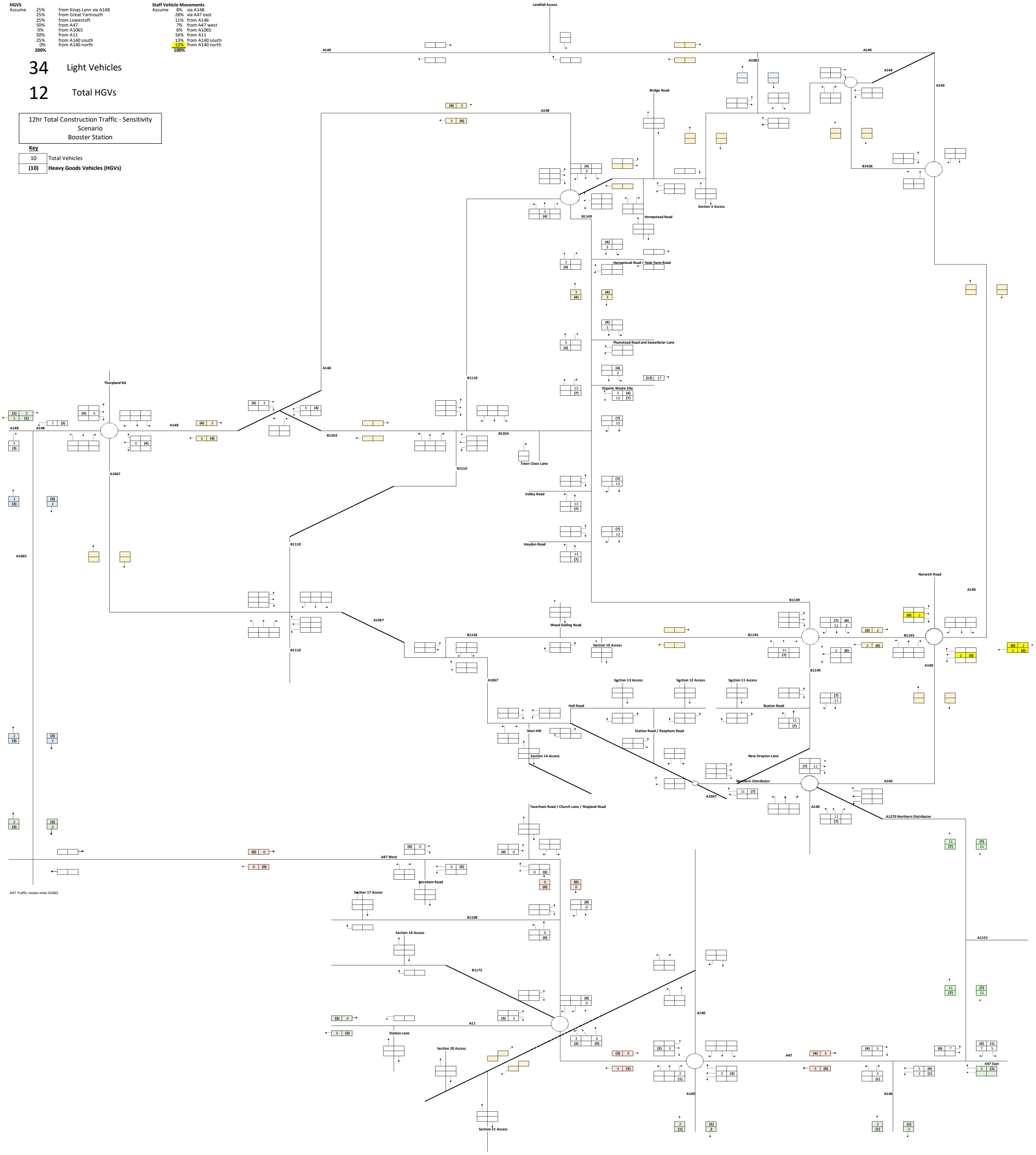
34 Light Vehicles

12 Total HGVs

12hr Total Construction Traffic - Sensitivity Scenario
Booster Station

Key

10	Total Vehicles
(10)	**Heavy Goods Vehicles (HGVs)**



HGVS

Assume		
	25%	from Kings Lynn via A148
	25%	from Great Yarmouth
	25%	from Lowestoft
	50%	from A47
	0%	from A1065
	50%	from A11
	25%	from A140 south
	0%	from A140 north
	200%	

Staff Vehicle Movements

Assume		
	8%	via A148
	28%	via A47 east
	11%	from A146
	7%	from A47 west
	6%	from A1065
	16%	from A11
	13%	from A140 south
	12%	from A140 north
	100%	

82 Light Vehicles

29 Total HGVs

12hr Total Construction Traffic - Sensitivity Scenario
HVAC Substation

Key

10	Total Vehicles
(10)	**Heavy Goods Vehicles (HGVs)**

Traffic from A1065 routeing onto A47
Traffic from A148 routeing south on A1065 and onto A47

12hr Total Construction Traffic - Sensitivity Scenario
Maximum Construction Traffic

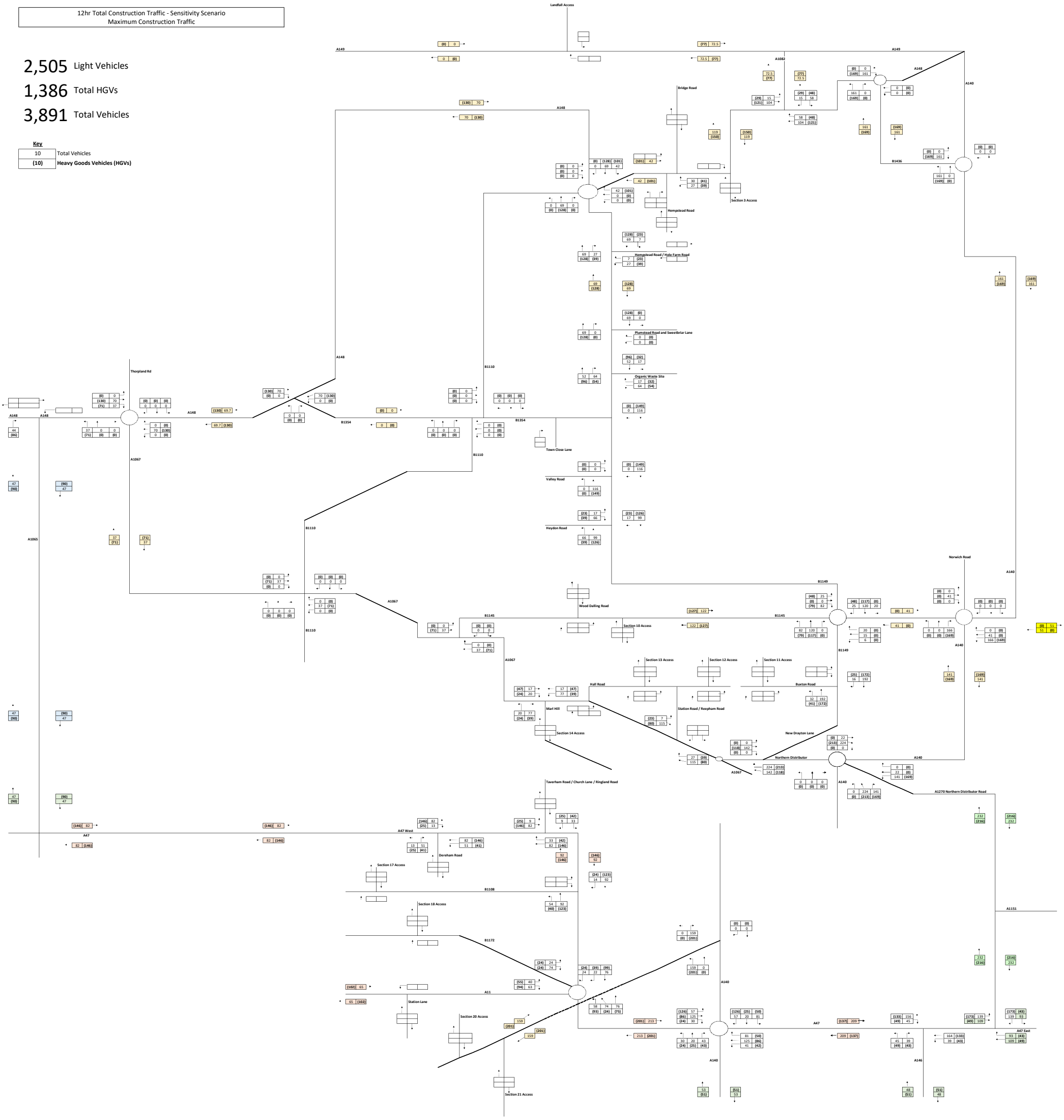
2,505 Light Vehicles

1,386 Total HGVs

3,891 Total Vehicles

Key

10	Total Vehicles
(10)	**Heavy Goods Vehicles (HGVs)**



12hr Total Construction Traffic - Sensitivity Scenario
Total Construction Traffic (Refined HGVs)

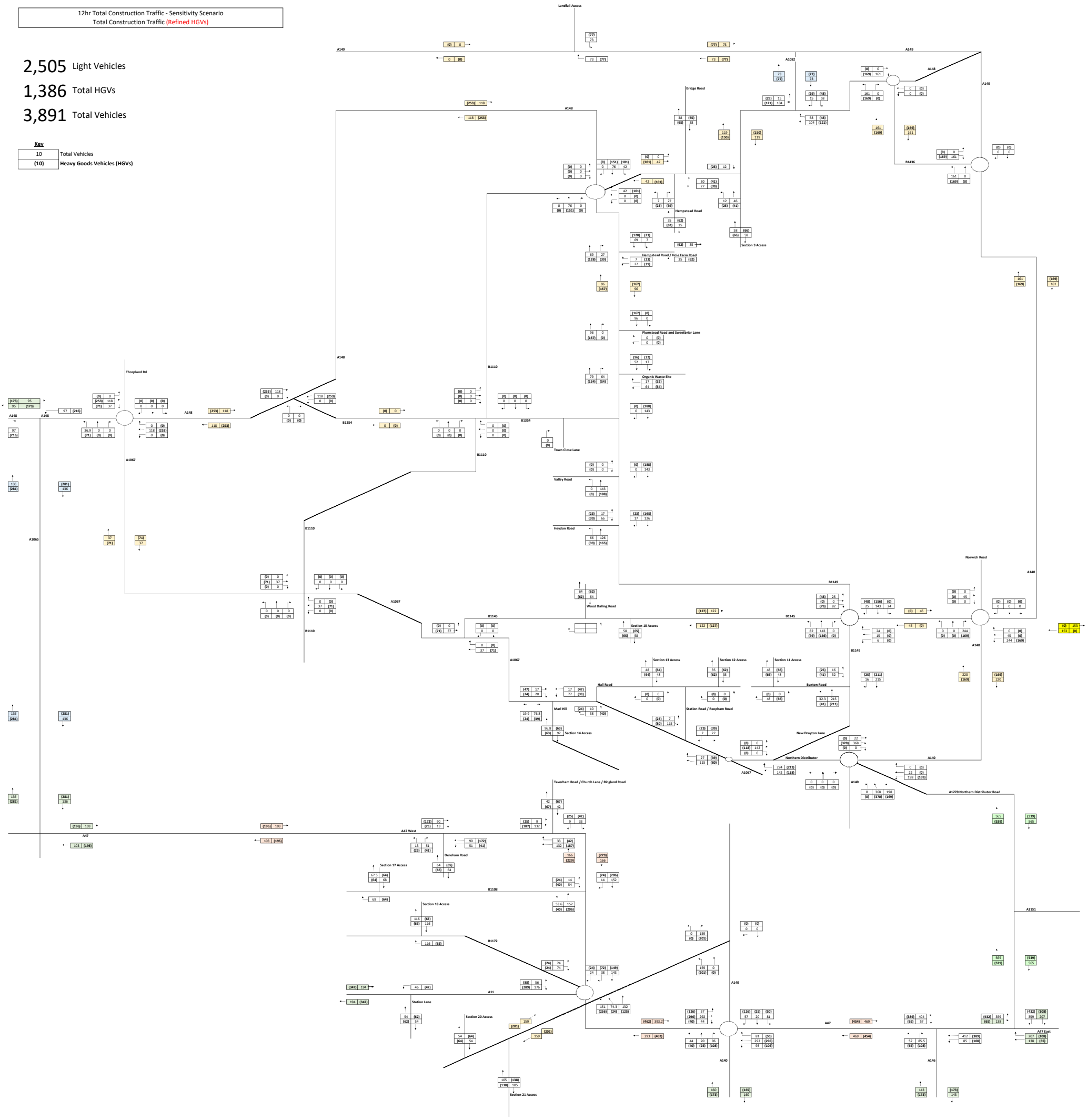
2,505 Light Vehicles

1,386 Total HGVs

3,891 Total Vehicles

Key

10	Total Vehicles
(10)	**Heavy Goods Vehicles (HGVs)**

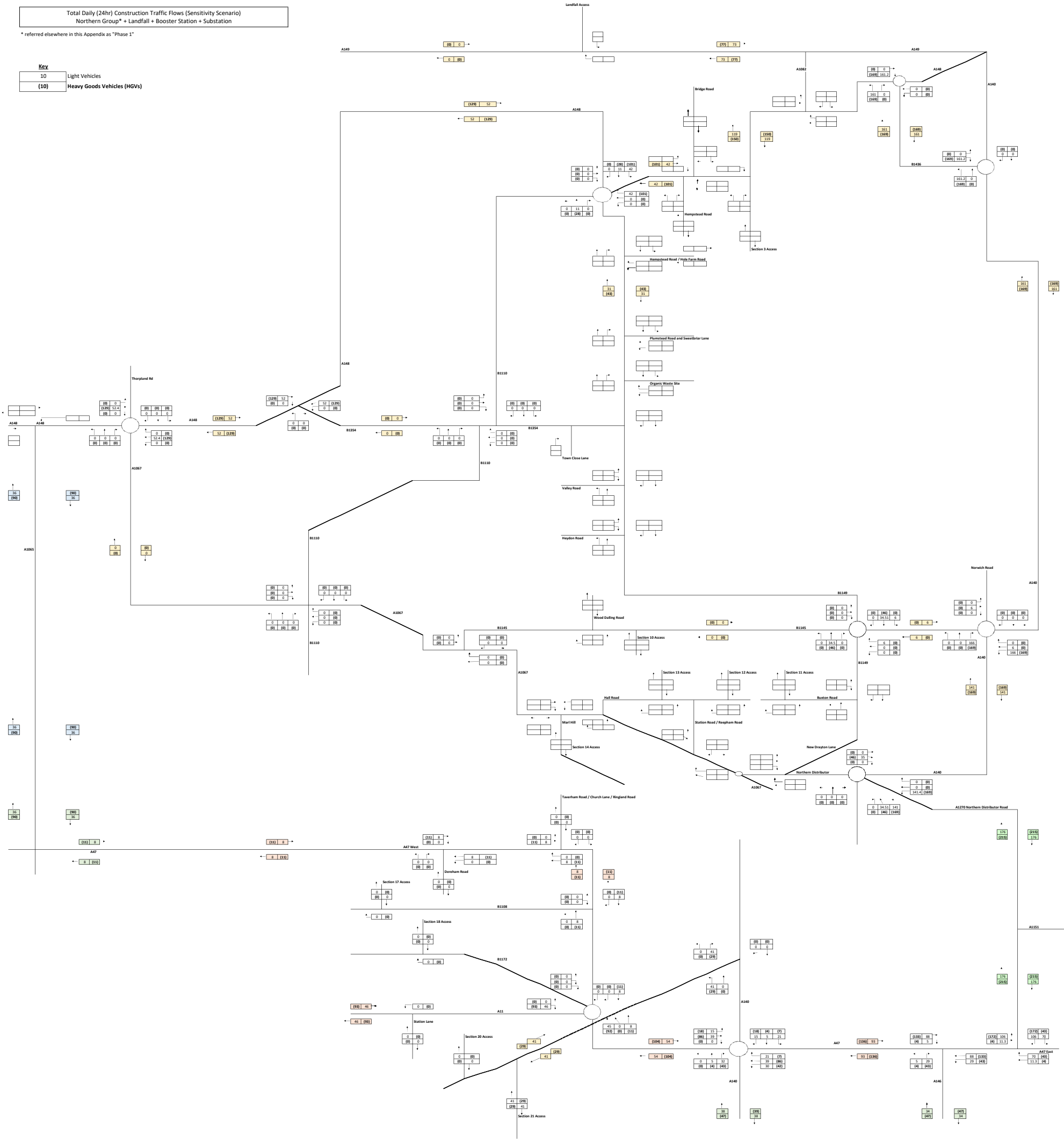


Total Daily (24hr) Construction Traffic Flows (Sensitivity Scenario)
Northern Group* + Landfall + Booster Station + Substation

* referred elsewhere in this Appendix as "Phase 1"

Key

10	Light Vehicles
(10)	**Heavy Goods Vehicles (HGVs)**

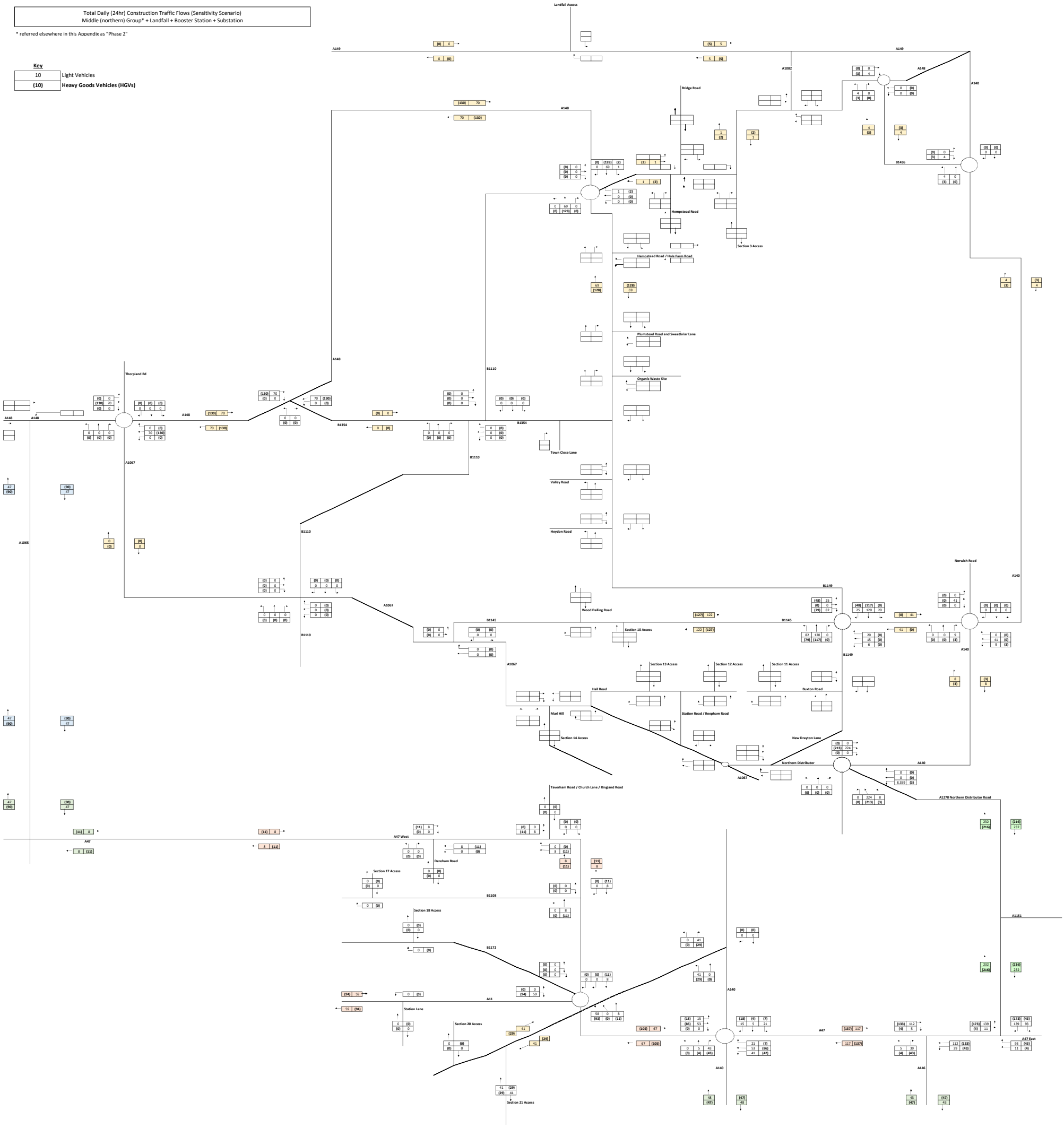


Total Daily (24hr) Construction Traffic Flows (Sensitivity Scenario)
Middle (northern) Group* + Landfall + Booster Station + Substation

* referred elsewhere in this Appendix as "Phase 2"

Key

10	Light Vehicles
(10)	**Heavy Goods Vehicles (HGVs)**

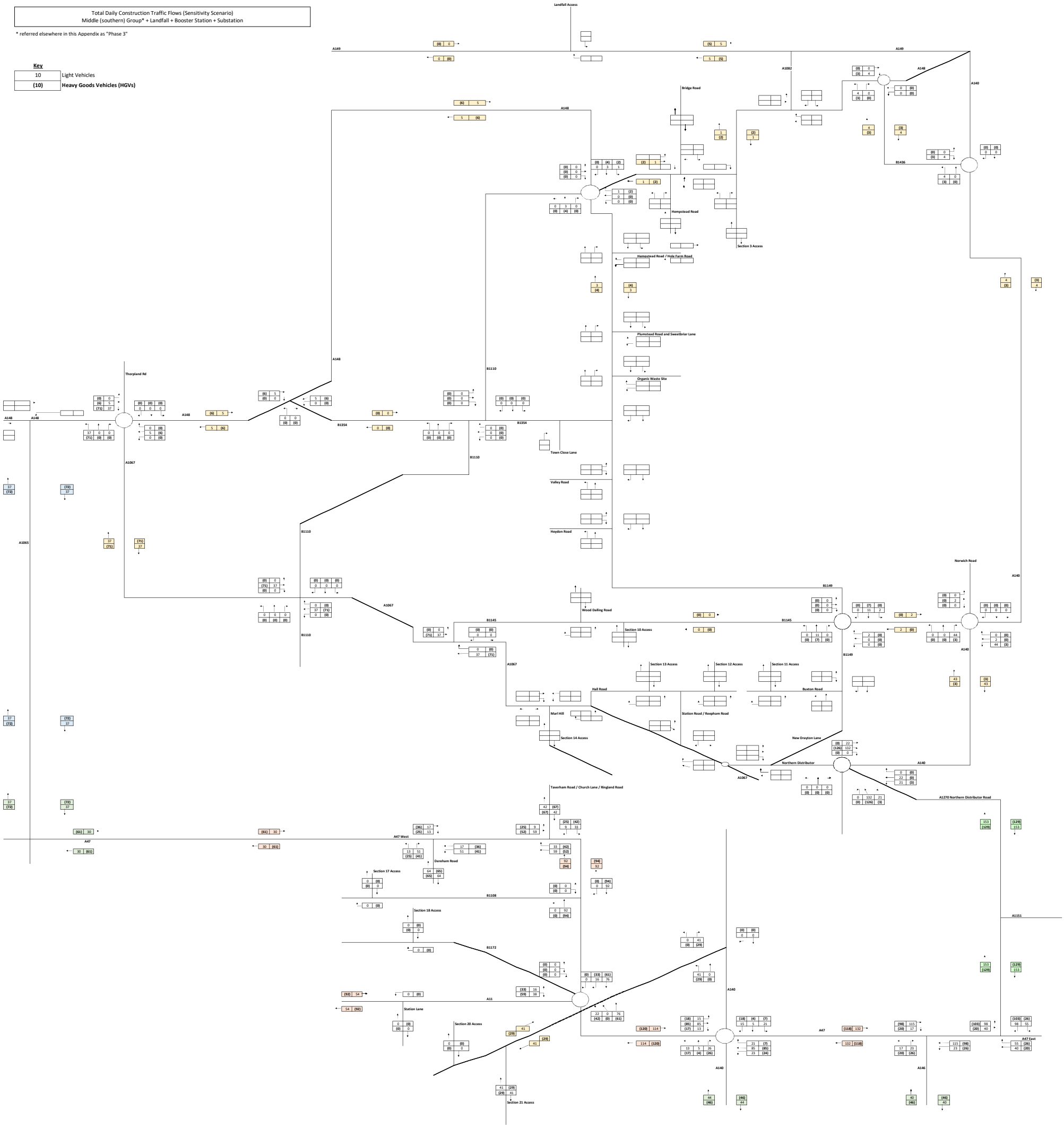


Total Daily Construction Traffic Flows (Sensitivity Scenario)
Middle (southern) Group* + Landfall + Booster Station + Substation

* referred elsewhere in this Appendix as "Phase 3"

Key

10	Light Vehicles
(10)	**Heavy Goods Vehicles (HGVs)**



Total Daily Construction Traffic Flows (Sensitivity Scenario)
Southern Group* + Landfall + Booster Station + Substation

* referred elsewhere in this Appendix as "Phase 4"

Key

10	Light Vehicles
(10)	**Heavy Goods Vehicles (HGVs)**