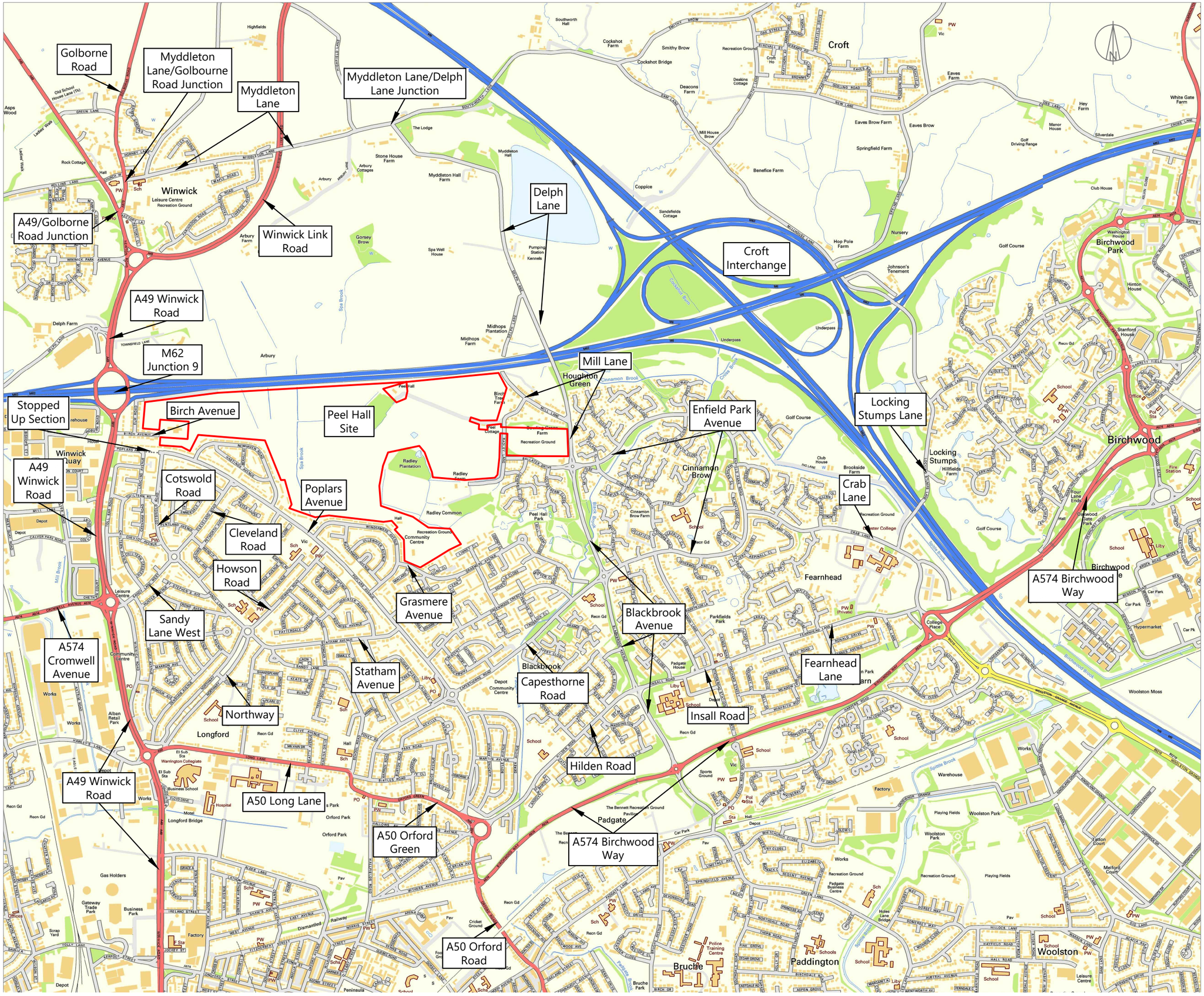

NOTES:

ISSUE	REASON FOR REVISION	DATE

PROJECT:

PEEL HALL, WARRINGTON

CLIENT:

SATNAM MILLENNIUM LTD

PROJECT REFERENCE:	DRAWING NUMBER:	SCALE:
1901	100	NOT TO SCALE

HighgateTransportation
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Box 13, 42 Triangle West
Park Street, Bristol BS8 1ES
07973 375 937 / 07595 892 217

TITLE:

EXISTING HIGHWAY NETWORK WITHIN STUDY AREA

DATE:	DRAWN BY:	CHECKED:
17/03/20	FB	DT

The Planning Inspectorate

Report to the Secretary of State for Housing, Communities and Local Government

by Richard Schofield BA(Hons) MA MRTPI

an Inspector appointed by the Secretary of State

Date: 1 October 2018

Town and Country Planning Act 1990

Appeal by

Satnam Millennium Ltd

against the decision of

Warrington Borough Council

Inquiry held on 23–27 April; 2–4 & 15 May; and 9-11 July 2018

Peel Hall, Warrington WA2 9LH

File Ref: APP/M0655/W/17/3178530

File Ref: APP/M0655/W/17/3178530
Peel Hall, Warrington WA2 9LH

- The appeal is made under section 78 of the Town and Country Planning Act 1990 against a refusal to grant outline planning permission.
- The appeal is made by Satnam Millennium Ltd against the decision of Warrington Borough Council.
- The application Ref 2016/28492, dated 11 July 2016, was refused by notice dated 24 February 2017.
- The development proposed is outline application for a new residential neighbourhood including C2 and C3 uses; local employment (B1 use); local centre including food store up to 2000m2, A1-A5(inclusive) and D1 use class units of up to 600m2 total (with no single unit of more than 200m2) and family restaurant/pub of up to 800m2 (A3/A4 use); site for primary school; open space including sports pitches with ancillary facilities; means of access and supporting infrastructure.

Summary of Recommendation: That the appeal should be dismissed.

1. Procedural Matters

1.1 The Inquiry sat for 12 days, with adjournments arising to allow for additional work to be undertaken, most notably in relation to traffic modelling for Junction 9 of the M62 (M62 J9).

1.2 On 26 April 2018 I undertook an accompanied site visit, following a route agreed between the main parties and local residents. This visit was extensive, taking most of the day. It included a visit to the site itself as well as a tour of surrounding streets, observations of key road junctions and a walk around the village of Winwick to observe traffic on Myddleton Lane, Golborne Road and the A49. At the request of the local residents I drove to the site visit, during the morning peak traffic period, along a specific route set out by them. This brought me into north Warrington from the east, from J11 of the M62, and through Birchwood.

1.3 In addition to the formal site visit, I spent a considerable amount of time walking and driving around the wider area (including on the M6 and M62) at various times of the day, including the morning and evening peak traffic periods. I also visited the site alone on a number of occasions and walked around Mill Lane playing fields, Peel Hall Park, Radley Common and Radley Plantation.

1.4 In advance of the Inquiry the appellant submitted an additional illustrative site layout with revised site access points and off-site highway works proposals. This was referred to as "Option B". During the course of the Inquiry the appellant formally withdrew this option. As such, I have considered the appeal on the basis of the originally proposed illustrative scheme, referred to as "Option A", disregarding references in evidence to Option B and to any off-site highways works associated with it.

1.5 The description of development in the banner heading above is taken from the planning application form. Prior to determination of the application, this was expanded upon as follows:

> *Outline application for a mixed use neighbourhood comprising residential institution (residential care home – Use Class C2) up to 1200 dwelling houses and apartments (Use Class C3); local centre including food store up to 2000*

square metres (Use class A1); financial and professional services; restaurants and cafes; drinking establishments; hot food takeaways (Use Classes A2-A5 inclusive); units within Use Class D1 (non-residential institution) of up to 600 square metres total with no single unit of more than 200 square metres; and family restaurant/pub of up to 800 square metres (Use Classes A3/A4); employment uses (research; assembly and light manufacturing – Use Class B1); primary school; open space including sports pitches with ancillary facilities; means of access (including the demolition of 344; 346; 348; 458 and 460 Poplars Avenue) and supporting infrastructure).

1.6 This description is more detailed than the original, is agreed by the parties and does not introduce any uses previously unknown. As such, I do not consider that anyone would be prejudiced by me using it as the basis for my considerations.

1.7 The application was submitted in outline, with all matters other than access reserved for future consideration. I have reported on the proposal on this basis, albeit that considerable emphasis was placed upon the Option A parameters plan. As such, I have afforded significant weight to the likelihood that, were planning permission to be granted, the site would be developed largely in accordance with it.

1.6 It is stated that the proposed development falls under Schedule 2(10) of the Town and Country Planning (Environmental Impact Assessment) (Amendment) Regulations 2015, being an urban development project exceeding 150 dwellings and with an overall site area in excess of five hectares. The main parties agreed that an Environmental Statement (ES) should be prepared.

1.7 The submitted ES has been reviewed and found to have complied with the requirements of the relevant Environmental Impact Assessment regulations. I have no reason to depart from this position.

1.8 For the sake of completeness I record that the appeal was recovered for determination by the Secretary of State as it involved a proposal for residential development of over 150 units, which would impact significantly upon the Government's objective to secure a better balance between housing demand and supply and to create high quality, sustainable, mixed and inclusive communities.

1.8 The key drawings can be found in Volume 6 of the Addendum to the Environmental Statement, within ID80 (in relation to plans referenced in conditions 5, 6, 11-13 and 21) and in electronic form within the Core Documents APN DOCS folder.

1.9 Various iterations of a planning obligation in the form of a Deed of Agreement under Section 106 of the Town and Country Planning Act 1990 were submitted to the Inquiry. A certified copy of the completed agreement was received before the close of the Inquiry[1]. This is a material consideration and is discussed in more detail below.

[1] Please see ID77

1.10 The revised National Planning Policy Framework (the Framework) was published before the Inquiry closed. The views of the parties were sought upon it[2]. For the avoidance of doubt, I have considered the appeal on the basis of the revised Framework. Thus, any references to "*the Framework*", other than where I have reported the parties' cases, are to the revised edition unless otherwise specified.

1.11 The Inquiry was closed in writing on 13 August 2018.

2. The Site and Surroundings

2.1 The appeal site and its surroundings are described in varying degrees of detail in the Design and Access Statement (DAS) (CD APN28), the Landscape and Visual Assessment (CD APN9), Ecological Reports (CD APN 10), the planning officer's report to the Council's planning committee (CD APP1) and the Statement of Common Ground on Planning Matters (PSoCG) (CD APP5).

2.2 In summary, however, the site is an extensive area of relatively flat former farmland[3] with some fragmented hedgerows. It is now comprised chiefly of semi-natural grassland, with areas of scrub, reed and self-seeded trees. There are some ponds on the site, which is also crossed, north to south, by Spa Brook.

2.3 The site is situated directly to the south of the M62 motorway. There is constant noise from passing traffic on the motorway, which is audible on and well beyond the site.

2.4 The site's southern boundary abuts the rear gardens of dwellings on Poplars Avenue, Newhaven Road, Windermere Avenue and Grasmere Avenue. Many of these dwellings, of which a number are bungalows, have relatively short rear gardens. To the west the site has a common boundary with the rear gardens of dwellings on Elm Road. There is more sporadic residential development, and the open spaces of Peel Hall Park and Radley Plantation, to the east. Many of the dwellings around the site have a largely uninterrupted outlook over it.

2.5 Albeit that it is outwith the red line boundary, the private dwelling of Peel Hall Farm, which houses boarding kennels, lies within and is accessed through the site along Radley Lane[4]. It has reasonably extensive grounds and is well-contained by mature boundary planting.

2.6 There is a United Utilities pumping station within the site, accessed from Elm Road. An underground gas main runs across the site's northern edge, alongside the M62.

2.7 A short section of a public right of way (PROW) lies within the site. It runs along Radley Lane, around Peel Hall Farm, along the edge of the M62 and then over the motorway via a footbridge.

3. The Proposal

3.1 The proposed development would provide up to 1200 dwellings, suggested by the DAS as being a mix of houses, bungalows and apartments. 30% (360 units) would be affordable dwellings. There would also be a care home.

[2] Please see ID74, ID78 and ID79
[3] See ID10 for historic photos of combine harvesting at the site.
[4] Referenced, incorrectly, as Peel Cottage Lane on some drawings.

3.2 The development would have an employment zone, restricted to B1 uses. A local centre is proposed, with a food store and other suitable uses (A1 to A5). A site for a primary school would be provided by the appellant. Sports pitches would be provided, creating a new sports hub for the area.

3.3 Green buffer zones would be created around Spa Brook, Radley Plantation and beside the M62. Hedgerows and existing woodland would be retained, with additional planting provided, seeking to secure a green corridor running north/south from the M62 through to Radley Common. The PROW would be retained.

3.4 The main accesses would be from two points on Poplars Avenue, achieved by the demolition of some existing dwellings, and from Blackbrook Avenue, over the Mill Lane playing fields, via a new roundabout. Accesses off Mill Lane and Birch Avenue would serve discrete developments of around 150 and 20 dwellings respectively.

3.5 Off-site highway works would be implemented in accordance with the recommended conditions (see Appendix B)[5].

3.6 It is proposed that a new bus route through the site would be established as part of a package of mitigation measures[6]. Private vehicles would be prevented from using the route as a rat run by the installation of a bus gate.

3.7 At the time of writing, notwithstanding the provisions of the S.106 agreement, there was no certainty that such a bus service would, or indeed could, be delivered. This is addressed in more detail below.

4. Planning History

4.1 The site's planning history may be found in Section 2 of the PSoCG. In short, residential development of the site was envisaged in the New Town Outline Plan of 1973 but did not take place. The site was subsequently recommended for housing by the Inspector reporting on the Warrington Local Plan in 1998, but this plan was not adopted.

4.2 Parts of the site have been the subject of planning applications for residential and mixed-use development between 1989 and 2012. All have been refused (and dismissed on appeal where appealed) or have been withdrawn before determination.

4.3 Reasons for refusal have included prematurity, highways impact and a limited scope to achieve sustainable development (due to the size of the scheme in question).

5. Planning Policy and Guidance

5.1 The planning policy context for the proposed development is set out in the planning officer's report to the Council's planning committee (CD APP1) and in Section 3 of the PSoCG. A summary of relevant policy, including the revised Framework, is set out below.

[5] Or in accordance with the disputed highways conditions (see Appendix C), if the Secretary of State considers them to be more appropriate.
[6] So referenced at various points in Mr Tighe's Proof

Core Strategy

5.2 The adopted development plan for the District is the Local Plan Core Strategy for Warrington (the Core Strategy) (CD LP1/CD LP7), which was adopted in July 2014. A successful High Court challenge to its adoption means that the Core Strategy does not contain a housing requirement for the plan period. I address the implications of this in my Conclusions.

5.3 Policy CS1 (Overall Spatial Strategy – Delivering Sustainable Development) establishes some general principles to which new development must "*have regard*". It reflects paragraph 11 of the Framework, stating that where relevant policies are out-of-date at the time of making a decision then permission will be granted unless material considerations indicate otherwise, taking into account whether any adverse impacts would significantly and demonstrably outweigh the benefits.

5.4 Policy CS2 (Overall Spatial Strategy – Quantity and Distribution of Development) sets out the broad locations to which new development should be directed, seeking to prioritise brownfield land and maintain the Green Belt. The majority of new residential development is directed to the Inner Warrington area.

5.5 Policy CS3 (Overall Spatial Strategy – Maintaining a 10 Year Forward Supply of Housing Land) is clear that where the Council fails to maintain an adequate supply of developable housing land it will "*bring on-stream*" additional housing sites as required, encouraging re-use of brownfield land and avoiding sites in the Green Belt where possible.

5.6 Policy QE6 (Environment and Amenity Protection) is clear that:

> *"the Council will only support development which would not lead to an adverse impact on the environment or amenity of future occupiers or those currently occupying adjoining or nearby properties, or does not have an unacceptable impact on the surrounding area".*

5.7 Policy QE7 (Ensuring a High Quality Place) supports, among other things, proposals that function well in relation to existing patterns of movement and activity and that reinforce local distinctiveness and enhance the character and function of the local area.

5.8 Policy MP1 (General Transport Principles) seeks to ensure that new development reduces the need for private car use, considers demand management measures, achieves relevant parking standards and mitigates the impact of development on, or improves the performance of, the transport network.

5.9 Policy MP3 (Active Travel) seeks to ensure that high priority is given to the needs and safety of pedestrians and cyclists in new development, including appropriate segregation of users.

5.10 Policy MP4 (Public Transport) reiterates the need to locate development in areas with easy access to public transport, ensuring that it is a viable and attractive alternative to the private car. Additional public transport infrastructure should be provided where existing facilities are in need of improvement.

5.11 Policy MP7 (Transport Assessments and Travel Plans) requires all developments to demonstrate that they will not significantly harm highway safety and that additional trips can be adequately served by the transport network, providing appropriate mitigation to the satisfaction of the local highway authority.

5.12 Policy MP10 (Infrastructure) aims to ensure that development proposals are supported by the timely delivery of necessary transport, utility, social and environmental infrastructure, through planning obligations and a Community Infrastructure Levy. Development should minimise the need for new infrastructure provision, by maximising the benefits of existing provision.

National Planning Policy Framework (the Framework) and Planning Practice Guidance (the Guidance)

5.13 Although the content of the revised Framework, and of the Guidance, will be well-known to the Secretary of State, it is nonetheless helpful to draw attention to the following paragraphs.

5.14 Paragraph 9 states that planning decisions should reflect the character, needs and opportunities of each area.

5.15 Paragraph 11 requires, among other things, that development proposals that accord with the development plan should be approved without delay. Its most pertinent point for this appeal is that if there are no relevant development plan policies, or the policies most important for determining the application are out-of-date (including where a local planning authority cannot demonstrate a five-year supply of deliverable housing sites), planning permission should be granted unless any adverse impacts of doing so would significantly and demonstrably outweigh the benefits, when assessed against the policies in the Framework taken as a whole.

5.16 Paragraph 15 is clear that the planning system should be genuinely plan led. Plans should be a framework for addressing housing needs and other economic, social and environmental priorities, and a platform for local people to shape their surroundings.

5.17 Paragraph 59 emphasises the Government's objective of significantly boosting the supply of homes and notes that it is important that a sufficient amount and variety of land can come forward where it is needed.

5.18 Paragraph 94 highlights the great importance that the Government attaches to ensuring that a sufficient choice of school places is available to meet the needs of existing and new communities.

5.19 Paragraph 97 is clear that existing open space, sports and recreational buildings and land, including playing fields, should not be built on unless, among other things, the loss resulting from the proposed development would be replaced by equivalent or better provision in terms of quantity and quality in a suitable location.

5.20 Paragraph 103 promotes sustainable transport choices and paragraph 110 prioritises pedestrian and cycle movements within schemes and neighbouring areas. Paragraph 111 addresses how one should consider developments that generate a significant amount of movement. Paragraph 109 states that development should only be prevented or refused on highways grounds if there

would be unacceptable impacts on highway safety, or the residual cumulative impact would be severe.

5.21 Paragraphs 110 and 127 focus on the need for decisions to ensure that developments respond to local character; add to the overall quality of the area; are sympathetic to local character and history; and support local facilities and transport networks.

5.22 Paragraphs 170, 180 and 181 set out that new development should not contribute to, or be put at unacceptable risk from, air pollution; ensure that new development is appropriate for its location with regard to the likely effects of pollution on health, as well as the potential sensitivity of the site or wider area to impacts that could arise from the development; and identify opportunities to improve air quality or mitigate impacts.

5.23 The Guidance advises[7] that a negatively worded condition (i.e. limiting development until an obligation is entered into) is unlikely to be appropriate in the majority of cases. It does, however, note that in "*exceptional circumstances*", such a condition may be appropriate in the case of "*more complex and strategically important development*" where there is "*clear evidence that the delivery of the development would otherwise be at serious risk*". The six tests relating to planning conditions must also be met.

6. Agreed Matters

6.1 A PSoCG between the Council and the appellant was submitted prior to the Inquiry. Among other things, it confirms agreement that:

- there is no strategic housing land supply policy in the Core Strategy and, as such, the development plan is silent in this regard;
- the Council is unable to demonstrate a five-year supply of deliverable housing land when measured against the objectively assessed need figure for the borough set out in the most recent Strategic Housing Market Assessment (SHMA) Update (2016);
- there is a considerable shortfall in delivery of affordable housing in the borough and the appeal scheme's contribution of 360 affordable dwellings would be a significant material consideration;
- with regard to local infrastructure, planning obligations are necessary in relation to sports and recreation facilities, healthcare provision, and primary and secondary education;
- as a matter of general principle the appeal site is suitable for housing development;
- the appeal proposal would result in a significant improvement to the quality and quantity of sports provision in this part of the borough;
- potential harm to landscape and ecology could be mitigated by suitable conditions; and

[7] 010 Reference ID: 21a-010-20140306

- significant economic inward investment would arise from the appeal proposal.

6.2 A Statement of Common Ground on Highway and Transportation Matters (HSoCG) between the appellant and the Council (as highways authority) was also submitted to the Inquiry. This highlighted nothing in the way of substantive areas of agreement and, as such, is not summarised here.

7. Matters not Agreed

7.1 The substantive matters of disagreement between the parties were a) whether there is sufficient evidence provided to enable one to reach a conclusion that the appeal proposal would not have adverse air quality, noise and highways impacts and b) whether the proposal would deliver the social infrastructure necessary to support it.

8. The Case for the Warrington Borough Council

8.1 The case for the Council is summarised in their Closing Statement to the Inquiry[8] and is set out under a series of headings below.

Introduction

8.2 There is no objection in principle to the development of the appeal site for the uses proposed. There is also an "*acute unmet need*"[9] for additional market and affordable housing. This means that c. 8000 - 9000 houses may have to be located on land currently identified as Green Belt through the Preferred Development Options plan. In that context, Peel Hall, a non-Green Belt site in the wider urban area, is a valuable asset. The potential 60 bedroom nursing home and the B(1)(c) uses are also welcomed.

8.3 None of these advantages can, however, justify a proposal which is poorly evidenced in key respects and which may realistically result in unacceptable highway related and air quality impacts. In such circumstances, the Framework's so-called 'tilted balance', which is engaged in this case, is rebutted.

Preliminary Issues re Section 106 Matters

8.4 The appellant notes the potential to provide 100 affordable units in the town centre if the parties agree[10]. The Framework looks to on site provision and that is what meets the national policy and legal test in this case.

8.5 The appellants say that the healthcare facilities contribution sought is not Regulation 122 compliant and rely on the Congleton appeal decision at Appendix 15 of Mr Griffiths' Proof. The appeal decision does not assist the appellant. In that case there was no evidence at all as to how the money sought might be spent. In the present case, the clear intention is to move two existing practices into one large centre within the catchment of the appeal site. Plainly, the new on site population will need GP facilities; the money sought is directly related to the development; and it is fairly related in scale and kind.

[8] ID65
[9] Mr Davies cross examination
[10] ID77 Fourth Schedule, Section 9

8.6 To rely on the fact that a scheme has not yet been identified, together with relevant costings and funding, is self-serving. This is a large scheme with an extended build-out period. It is unrealistic at this stage to expect healthcare provision to be signed off. There is no reason to doubt the evidence of Mr Armstrong that those responsible for healthcare provision are committed to finding an appropriate site and no reason to doubt that facilities will be provided as necessary. If Satnam's submissions are accepted, then developers of large schemes up and down the country will be able to side-step their obligations, avoiding making meaningful infrastructure contributions towards meeting the needs arising from their developments.

Background

8.7 The evolution of this case has been difficult. It was submitted without a Transport Assessment (TA) that modelled impacts on the wider network. This was contrary to advice from the Council. Engagement with Highways England appears to have been limited and late. The Option B proposal has now been abandoned.

8.8 The evidence to support the appeal case in respect of wider impacts has had a tortured evolution so that the TA relied upon was only submitted in January 2018 (the appeal having been submitted on 22nd June 2017). Even then it failed to use the Warrington Multi Modal Transport Model 2016 (WMMTM 2016) or, at the least, origin/destination data from it.

8.9 Mr Tighe (of Highgate Transportation (Highgate) for the appellant) knew of the WMMTM 2016 in March 2017[11] and was told in November 2017 that Highgate could use it. Highgate declined, not wishing to "*unpick*" the work that they had thus far done. It was only in Mr Tighe's Proof that some attempt was made to engage with WMMTM 2016.

8.10 Problems with the TA and the appellant's Proofs of Evidence led to a series of Transport Notes having to be produced by the appellant during the course of the Inquiry.

8.11 Air quality issues were similarly troubling. The Air Quality chapter of the Environmental Statement, which was based on 2014 monitoring work, has effectively been abandoned.

8.12 Mr Hawkins' (for the appellant) Proof relied heavily on unevidenced or otherwise unexplained assertions (e.g. his air quality impact work under three scenarios was largely a series of unevidenced outputs). The result was a request from the Inspector for him to submit answers to a series of questions. The answers themselves raised more unanswered questions (see Mr Moore's (for the Council) second supplementary Proof).

8.13 In short, this is a case in which, in respect of Highways and Air Quality issues, the evidence has been running to catch up with, and justify, the proposal. This is not a proposal that was shaped by reliable and comprehensive evidence in respect of these key issues.

[11] Mr Tighe Proof 6.42

Highways

8.14 Cross Examination of Mr Crossley and Mr Taylor (for the Council) emphasised the absence of positive evidence from the Council of "*severe residual impacts*", as indicated by paragraph 32 of the Framework, on the highway network.

8.15 Paragraph 32 begins by noting that developments that generate significant movements should be accompanied by a TA. This assumes, by necessary implication, a competent and comprehensive TA. It is the job of an applicant/appellant to carry out such a task. It is not the job of a Council.

8.16 If an applicant/appellant carries out a competent and reliable TA then that is to be relied upon. Only if it reveals "*severe residual impacts*" should a proposal be refused. The difficulty in the present case is that the TA cannot be relied upon with full confidence.

8.17 Following Mr Taylor's (for the Council) expressed view, in answer to the Inspector's questions, that the appellant's chosen junctions can, with mitigation, accommodate traffic whether using the Satnam model or the WMMTM 2016, the Council's concerns principally fall into two broad categories. First, the absence of an assessment of the impacts of the proposal on unassessed junctions and, second, the impact of the proposal on Poplars Avenue and Capesthorne Road in particular.

8.18 Quite why the appellants never "ran" their proposals using the WMMTM 2016 is not wholly clear. They knew of the existence of the model in March 2017 and, while the Council was not prepared to allow its use, they could have sought access to the more recent origin/destination data within it. There is no clear evidence that they ever did.

8.19 Moreover and in any event, they were told that they could use the model on 22 November 2017[12]. They declined. This is the most up-to-date source of evidence on local traffic flows and distribution. It also appears that there are significant, material differences between the WMMTM 2016 and the Satnam Peel Hall model[13].

8.20 The appellant cannot get away from the fact that their modelling relies upon origin/destination data some 10-13 years old, which they have not sought to validate. That is contrary to guidance set out in WebTAG.

8.21 The local road network is under significant pressure and is congested. The recent Atkins work for the Council using the WMMTM 2016 software indicated 25 junctions with a Reference Flow Capacity ratio in excess of 85%, meriting detailed investigation over and above that carried out by the appellant[14]. These additional movements are likely to be potentially significant.

8.22 Even using the Highgate junction selection methodology, there are 11 junctions requiring investigation[15]. The WMMTM 2016 and the recent Atkins work for M62 J9 both suggest that the Satnam Peel Hall model

[12] Mr Taylor's proof Appendix 4, p7
[13] Mr Crossley Supplementary Proof paras 3.3-3.6
[14] Mr Taylor's Second Supplementary Proof paras 2.64-2.65
[15] Ibid para 2.68

underestimates flows on critical links. The question therefore arises as to whether it is acceptable to permit a large scheme when aspects of its impact are not properly understood and have not been properly investigated.

8.23 Both Poplars Avenue and Capesthorne Road are under significant stress, as testified to by local witness after local witness. From a safety point of view for both pedestrians and cyclists there are widespread local concerns. These roads are essentially residential roads characterised by frontage access and largescale on-road parking. The increase in movements along these roads is likely to be very significant[16]. The appellant's suggestion that the capacity of these roads is circa 10,000+ vehicles per day, by reliance on TA 79/99[17] (A Guide to New Urban Trunk Road Links), is inappropriate. So too is reliance on Manual for Streets, given the actual characteristics of the roads, although the anticipated flows will be significantly in excess of 10,000 vehicles per day in any event.

8.24 There is no evidence to demonstrate that these levels of flow along these roads will be acceptable. Microsimulation has not been undertaken by the appellant and yet it is self-evident that these roads are already carrying large traffic volumes in difficult circumstances.

8.25 There has been no effort to engage 'head on' with the issue of the environmental capacity of the roads. It is not for the Council to carry out microsimulation for the appellant, but rather it is for them to address a very obvious problem. They have not done so. They suggest a possible 20 mph speed limit but there is no evidence that it would address the problems and it would require a Traffic Regulation Order in any event.

Air Quality

8.26 Air quality is not a 'Cinderella' topic. Paragraph 109 of the Framework sets its face clearly against new and/or existing development being put at unacceptable risk from air pollution. That approach is consistent with Core Strategy policy QE6.

8.27 This is a topic that has risen up the planning agenda as the adverse health impacts of poor air quality are better understood. In *Gladman Developments Ltd v. SoSCLG* [2017) EWHC 2968 (Admin), Justice Supperstone supported the approach of an Inspector who adopted a precautionary approach in not simply assuming that the UK would soon comply with the Air Quality Directive.

8.28 The appeal proposes very significant levels of development and the appeal site is in close proximity to two Air Quality Management Areas (AQMA), being the M62 (directly to the north) and the Warrington A49 (some 150 metres to the west of the site). In cross examination Mr Hawkins readily agreed that, in the present case, a) a precautionary approach should be taken to air quality issues and b) that relevant modelling and relevant conclusions should be based on the best evidence reasonably available. Unfortunately the approach to air quality issues

[16] Ibid para 2.46
[17] ID33 Appendix 2

by the appellants has been confused and lacking in transparency.

8.29 The application was supported by an ES chapter on Air Quality. That document has been all but abandoned. The credibility of Mr Hawkins' evidence must be in doubt. A particular problem was that the document relied upon a four month survey in Autumn 2014 using nitrogen dioxide diffusion tubes at nine locations across the appeal site. National guidance at that time (TG(09)) looked to at least six months and preferably twelve months monitoring in most cases.

8.30 No clear explanation was offered as to why such a short period of monitoring was undertaken (Mr Hawkins first became involved with the site in 2012) or how the necessary 'seasonal correction' had been calculated. Similarly, the 'bias correction' factor used did not represent a 'worst case scenario'.

8.31 The survey data produced peculiar results. No tube recorded an exceedance of 40 ug/m^3 for nitrogen dioxide, yet all of the monitoring was proximate to the M62 AQMA. At 50 metres from the M62 a 24.73 ug/m^3 was recorded, for example. Nonetheless, the appellant proceeded to rely upon this work.

8.32 Had they looked at the Council's diffusion tube monitoring for 2013, 2014 and 2015 they would have discovered that 2014 was an atypical year. Similarly, a cross-reference to the Highways England Monitoring Metering Pilot Scheme Air Quality Assessment (2015), or the M62 Junction 8 Improvement Works Air Quality Assessment (2016), would have revealed that the appellant's 2014 survey work did not produce reasonable results.

8.33 In evidence Mr Hawkins abandoned reliance on the 2014 work. The result is that the Inquiry is without on-site air quality monitoring data. That is not critical, as Mr Moore for the Council explained, but the errors leading up to it are troubling.

8.34 In his submitted evidence, which sought to incorporate the ES addendum TA work, Mr Hawkins looked at off-site air quality impacts under three scenarios for both Options A and B:

- Scenario 1: The impact of the proposed flows in the ES addendum;
- Scenario 2: The impact uplifted in line with the Council's 2016 SATURN[18] matrices; and
- Scenario 3: Impacts under Scenario 1 with a 25% uplift.

8.35 Inexplicably, Scenario 3 is no worse in any material regard than Scenario 1.

8.36 These scenarios were seen as a necessary sensitivity test. Surprisingly, no assessment was carried out of the new junction proposed under Option B, which would have been located in the Warrington AQMA. This is another odd approach to evidence.

8.37 The above work was highly unsatisfactory insofar as it tended to produce outcomes only, rather than providing any detailed explanations of how they were achieved. Moreover, the data itself raised questions:

[18] Simulation and Assignment of Traffic to Urban Road Networks

- The grid references used for the sensitive receptors did not marry up with the purported receptors;
- No detail was provided about how the model used had actually been set up; and
- No detail was provided as to what background pollutant levels had been assumed or how future background levels had been accounted for.

8.38 Thus, the Inspector requested significant additional information that was provided by Mr Hawkins in a note dated 4 May 2018[19]. That raised more issues, which Mr Moore and Mr Hawkins have sought to address in a series of e-mails[20].

8.39 The position is an unhappy one and it is the outcome of pursuing a proposal that was based on a wholly inadequate Air Quality ES chapter and which, in respect of air quality issues, has been running to catch up ever since. This problem has been hugely complicated by the fact that the TA modelling work (on which the Air Quality Assessment is of necessity based) was not available until January 2018. The key outstanding problems are as follows:

- The Average Annual Daily Traffic (AADT) data lacks transparency. It appears a factor of 6 (i.e. AM + PM x 6) has been used on some of the links, but no advice recommending the use of such a factor has been made available. *Prima facie*, it is crude. Different roads plainly have different inter peak characteristics. Moreover, why is 6 used when Mr Tighe uses AM + PM / 2.63 x 24[21]? Is that the figure behind some assumed AADTs on some roads and, if so, which? If Mr Hawkins gave comprehensive AADT information, these questions could readily be answered;
- No traffic data has been presented by Mr Hawkins for 2025 or 2030 (years that are modelled by him in his submitted proof);
- It is unclear how junctions have been modelled. Only one example has been provided (Long Lane/Winwick Road), and we are told that queue lengths and speeds used in the modelling are from Mr Hawkins' on-site observations. No evidence of these observations is offered. Local Air Quality Management Technical Guidance (16) has a methodology to be used in the modelling of junctions. It has not been followed in respect of congested junctions and most junctions in the study area are congested.

8.40 The sensitive receptor locations remain an issue. Mr Hawkins says that while the grid references in the Air Quality Assessment model were wrong, the locations of the receptors relative to the roads have always been correct. That may be so. Until he provides a plan showing the 'skewed' locations, however, we cannot check that the allegedly correct locations are indeed correct.

8.41 It is perhaps unsurprising that Mr Hawkins is using a validation factor of 8, but that suggests that the model is under-predicting by a factor of 8. The simple fact is that there are multiple indicators that the air quality modelling work

[19] ID38
[20] Appended to Mr Moore's Supplementary Proof ID54
[21] Please see ID33 page 6 onwards

cannot be relied upon. The overarching concern is the reliance on the bespoke Peel Hall traffic model, which uses old origin/destination data. Nonetheless, other concerns arise.

8.42 An adequate model is necessary to inform judgments as to the acceptability of air quality impacts. One does not exist in this case. As Mr Moore repeated in his cross examination, the result is that there is the potential for unacceptable air quality impacts to arise in this case.

8.43 The proposal will load significant additional traffic into an AQMA. Mr Hawkins expressly agreed that a precautionary approach should be taken based on the best evidence reasonably available. To allow this appeal would not amount to taking a precautionary approach. It would be an exercise in unevidenced guesswork. That is wholly unacceptable given the density of the local population and the close proximity of the site to two AQMAs.

8.44 The appellant emphasises that the Council has not demonstrated unacceptable impacts. It is not the Council's job to carry out an air quality impact assessment. It is the appellant's job to carry out a competent and reliable one and they have failed to do so.

Council's Conclusion

8.45 In summary, there are too many unknowns in respect of this proposal, with a clear potential for unacceptable harm. The appeal should be rejected.

9. The Case for Satnam Millennium Ltd (the appellant)

9.1 The case for the appellant is summarised in their Closing Statement to the Inquiry[22] and is set out under a series of headings below.

9.2 Following a lengthy planning history spanning several decades, it is common ground between the appellant and the Council that there should be 1200 houses on the appeal site. That is perhaps unsurprising given the current level of housing need in the Council's area and the fact that the appeal site lies within the designated "suburban" area of Warrington on the proposals map of the Core Strategy. That is its only notation or allocation. It therefore has no protective or constraining notation at all, whether for planning purposes, landscape purposes, ecological purposes or any other.

9.3 The Council's objections to the appeal scheme are thus illegitimate in so far as their effect is to call into question the principle of residential-led development of the appeal site. As to the objections advanced by the Council that relate to the specific proposals put forward by the appellant, the latter's evidence has shown that those objections do not come near to establishing that the adverse impacts of the appeal scheme significantly and demonstrably outweigh its benefits, which is the threshold that must be met if planning permission is to be refused. To the contrary, the Council itself accepts that the appeal proposals would bring about substantial, positive, transformational change.

9.4 We address the following points in turn. We confirm at the outset that Option A alone is now pursued by the appellant, Option B no longer being pursued.

[22] ID67

The development plan and the Framework

9.5 S38(6) of the Planning and Compulsory Purchase Act 2004 requires this appeal to be determined in accordance with the Council's development plan unless material considerations indicate otherwise. The appellant's evidence has shown that the appeal scheme accords with the development plan and that planning permission should be granted.

9.6 In its decision notice dated 24 February 2017, refusing planning permission, the Council asserts that the appeal scheme fails to accord with the development plan in the following two respects: (i) as regards its impact on highways and consequent air quality and traffic noise effects and (ii) as regards the proposed community provision (school, healthcare, and sport and recreation provision).[23]

9.7 The alleged conflict with the development plan that the Council identifies in relation to highways, air quality and traffic noise impacts is, however, expressed in terms of an absence of information. Whilst the Council continued to assert at the Inquiry that necessary information was outstanding, it did not challenge in any way the evidence of the appellant's planning witness Mr Griffiths that the appeal scheme accords with the development plan as a whole.[24] The evidence provided by the appellant has shown that those impacts do not result in any conflict with the development plan. We return to this below.

9.8 As to the second alleged conflict with the development plan, the community provision that would be provided pursuant to the s.106 agreement satisfies the relevant development plan policies.

9.9 There are no material considerations that indicate that planning permission should be withheld notwithstanding the appeal scheme's compliance with the development plan. In particular, the Framework indicates that planning permission should be granted. Paragraph 14 emphasises that (unless material considerations indicate otherwise) not only should development proposals that accord with the development plan be approved, they should be approved without delay.

9.10 The latter requirement is particularly important here where, in the context of an acute shortfall of both market and affordable housing, the appeal site has for many years failed to realise its obvious potential to make a very significant contribution to housing needs, to economic and social needs, and to regeneration.

9.11 The Framework goes on to provide that:

> *"Where the development plan is absent, silent or relevant policies are out-of-date, granting permission unless: any adverse impacts of doing so would significantly and demonstrably outweigh the benefits, when assessed against the policies in this Framework taken as a whole; or specific policies in this Framework* ["footnote 9 policies"] *indicate development should be restricted".*

It is agreed that this so-called 'tilted balance' applies to the determination of the appeal.

[23] CD APP1, Appendix 2.
[24] Para. 6.9 of his proof of evidence.

9.12 Parts of the Core Strategy having been quashed by the High Court in 2015,[25] the development plan is "silent" in relevant respects.[26] Remaining policies for the supply of housing are "out-of-date" having regard to paragraph 49 of the Framework. There is no housing requirement against which a supply of deliverable housing sites can be measured (the relevant Core Strategy policies having been quashed) and the Council is in any event unable to demonstrate a five-year supply of such sites.[27] No so-called 'footnote 9' policies apply to the appeal site. It is clear from the decision of the Supreme Court in *Hopkins Homes Ltd v SSCLG* [2017] 1 WLR 1865[28] that the 'tilted balance' is engaged in these circumstances.

9.13 The question, therefore, is whether the adverse impacts of granting planning permission would significantly and demonstrably outweigh the benefits, when assessed against Framework policies taken as a whole. It is plain that they would not.

Benefits of the appeal scheme

9.14 As the officer report[29] to the Council's Development Control Committee recognises, the appeal scheme is:

> "*undoubtedly capable of bringing significant potential benefits as a sustainable 'urban extension' to the northern edge of Warrington, without intruding into Green Belt"*.

The report goes on to acknowledge the potential for the appeal scheme to make "*a valuable contribution*" in terms of new homes, jobs, local services and supporting social and other infrastructure[30], and to effect "*very substantial, positive transformational change*" in an area that the Council notes is "*ranked in the bottom 10, 20 and 30 per cent of the most deprived in England"*. Mr Davies, the Council's planning witness, and the author of the report, confirmed in cross-examination that these remained his views.

9.15 Dealing first with the contribution that the appeal scheme would make in terms of new homes, the evidence shows that this contribution is more than valuable: it is vital. Mr Robinson's evidence on behalf of the appellant that the Council's housing land supply stands between 1.47 and 2.17 years[31] has not been challenged. The extent of the shortfall against the Framework requirement of a five-year supply is important: Justice Hickinbottom (as he then was) observed in *Gallagher Homes Ltd v Solihull MBC* [2014] JPL 1117, *"numbers matter"*[32].

9.16 The extent of Warrington's housing need was also emphasised by Helen Jones MP[33], who stated that:

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[25] Court Order at CD OD2.
[26] Silence in this context means an absence of relevant policy: see the judgment of Lindblom J (as he then was) in *Bloor Homes East Midlands Ltd v SSCLG* [2017] PTSR 1283.
[27] Planning Statement of Common Ground para. 3.2 (CD APP5).
[28] CD OD13.
[29] CD APP1, Appendix 1, p. 5.
[30] *Ibid*. See also the proof of evidence of Mr Robinson at sections 4 and 5.
[31] Table 5.4 within Mr Robinson's proof of evidence.
[32] At [94].
[33] Letter to the Inquiry from Helen Jones MP (ID23).

"*Warrington is desperately in need of more houses to rent and affordable homes to allow young people to get a foot on the housing ladder*".

9.17 As Mr Davies agreed in cross-examination, the appeal site forms one of the vital elements of the Council's planned forward supply of housing.

9.18 The officer report[34] notes that, "*the principle of a substantial amount of new housing on part or all of the [appeal] site*", having "*been mooted in various development plan drafts in the past*", found expression in the Council's 2016 Strategic Housing Land Availability Assessment (SHLAA).[35]

9.19 The appeal site was subsequently included in the Council's July 2017 SHLAA[36] as a "*suitable, available and achievable*" site with the potential to contribute 1200 dwellings in total: 135 during 2017–2022; 550 during 2022–2027; and 515 during 2027-2032[37].

9.20 On 10 July 2017 the Council's Executive Board approved the *Warrington Borough Council Local Plan Preferred Development Option Regulation 18 Consultation* (Preferred Development Option)[38]. The July 2017 SHLAA was reported to the Council as a technical background paper in support of the Preferred Development Option. The Preferred Development Option assumes that all sites identified as suitable, available and achievable in the July 2017 SHLAA are to be developed within the plan period.

9.21 The Preferred Development Option confirms a total urban capacity for 15,429 homes[39]. That figure includes 4869 new homes in the "*wider urban area*"[40], which includes (albeit not explicitly) 1200 new homes on the appeal site[41]. Mr Davies agreed in cross-examination that these urban SHLAA sites are, on the current Preferred Development Option evidence base, key and predominant elements of the Council's planned forward housing supply.

9.22 The need for housing within the Council's area is so acute that, following a comprehensive assessment of urban capacity, the Preferred Development Option also proposes substantial Green Belt release to accommodate 9345 new homes.[42] It is not proposed, however, to release this Green Belt capacity until the Preferred Development Option is adopted (presently anticipated for autumn 2019)[43].

9.23 The Preferred Development Option is subject to ongoing sustainability appraisal and strategic environmental assessment, as part of which alternatives have been considered at every stage, both as to the extent of Green Belt release

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[34] At p.35.
[35] CD APP1, Appendix 5.
[36] CD LP10.
[37] The 1200 figure relates to the appeal site excluding that part of the appeal site that is Homes England land.
[38] CD LP8. The Appellant does not rely on any emerging policies of the Preferred Development Options, but does rely on its evidence base.
[39] *Ibid* at para. 4.10.
[40] *Ibid* at para. 5.9 (Table 11).
[41] *Ibid* at paras. 5.19 to 5.23.
[42] *Ibid* at para. 5.9 (Table 11).
[43] Mr Davies's response in cross-examination (N.B. this date will now slip - see ID76)

required and as to the location of that release[44]. As Mr Davies accepted in cross-examination, no option has been considered that omits the appeal site from the base case. It follows that (as was also accepted by Mr Davies) the development of 1200 new homes on the appeal site would secure a significant benefit in that it would tend to reduce the need to go undesirably into the Green Belt in order to meet the housing need within the Council's area. The delivery of the homes that are needed could also be delayed were it necessary to release land from the Green Belt.

9.24 It is common ground between the Council and the appellant that the appeal site is suitable as a matter of general principle for housing development.[45] Given the appeal site's location (within the wider urban area and surrounded on three sides by existing residential development), the impacts identified in the Council's reasons for refusal are the inevitable consequence of the necessary development of the appeal site. Having regard to the vital role that the appeal site plays in the Council's planned forward supply of housing, however, the question is whether those inevitable impacts can be adequately mitigated.

9.25 That is the approach that was taken by the Council in 2016 to the proposal for up to 1100 new homes together with a local centre at Omega South (in effect, an urban extension to west Warrington)[46]. The officer report for the Omega South scheme acknowledges "*that the area does suffer with traffic congestion*"[47] but goes on to record the local highway authority's view as being that:

> "*the highway measures proposed as part of the development are considered to acceptably mitigate the impacts of the development on the local highway network*"[48].

9.26 The approach is also supported by the development plan. As Mr Griffiths explained[49], Core Strategy Policies CS2 and SN1 direct new residential development (i) to the defined Inner Warrington area (60%) and (ii) to the town's suburbs and "*to a lesser extent*" the borough's defined settlements (40%), so as to preserve the Green Belt. The provision made in the Core Strategy for housing growth in Warrington's suburbs in effect acknowledges that the appeal site is the right location in principle for residential development.

9.27 We turn to the contribution that the scheme would make towards meeting affordable housing need in the Council's area. The annual net need for affordable housing is 288 dwellings per annum (dpa)[50]. The completion figures set out in Table 5.2 of Mr Robinson's proof of evidence were not challenged. These show that the Council has failed to deliver sufficient affordable housing every year since 2009/10 (save for 2010/11, when 291 units were delivered). During 2016/17 only 72 affordable housing units were delivered, such that the

[44] Confirmed by Mr Davies in cross-examination.
[45] Subject to demonstrating that it is able to be adequately accessed and that social infrastructure to support its development can be delivered: SCG (CD APP5) at para. 5.36.
[46] Omega South officer report: CD OD9 at p. 4.
[47] *Ibid* p.17
[48] *Ibid* summary at p.28
[49] Evidence-in-chief
[50] Proof of evidence of Mr Robinson; agreed by Mr Davies in cross-examination.

cumulative shortfall against the 288 dpa figure since 2009/10 stands at 919 units.

9.28 Against the above context of a woeful level of provision in relation to defined need, the appeal scheme would provide 360 affordable housing units. That is more than the 335 units that have been delivered, across the entirety of the Council's area, since 2014/15. This contribution is a substantial benefit to weigh in the overall planning balance, as Mr Davies accepted in cross-examination[51].

9.29 Mr Davies also agreed that the option of allowing a modest proportion (up to 100 units) of affordable housing to be delivered off-site on a Warrington town centre site had some planning benefit. This would be more sustainable in terms of accessibility and, generally speaking, those in need of affordable housing had less access to private transport. There is, as Mr Davies acknowledged, an "*understandable case*" for providing smaller units in an accessible location.

9.30 The evidence provided by Mr Robinson[52] as to the economic benefits of the appeal scheme (including job predictions) was not challenged by the Council. It shows[53] that the appeal scheme would impact positively on the local economy by generating a range of direct, indirect and catalytic effects as follows:

- The injection of c.£150 million of private sector investment into Warrington's economy for the construction of the site alone, which could sustain 129 Full Time Equivalent (FTE) construction jobs directly and a further 196 FTE jobs indirectly, across a range of skill levels;
- the generation of c.£20 million of direct and indirect GVA per annum during the construction phase of the appeal scheme;
- the non-residential elements of the appeal scheme are likely to sustain 453 jobs (366 FTE) directly once operational. Mr Robinson estimates that this would equate to around 332 net additional FTE jobs at a local level;
- Residents of the 1200 units are likely to generate around £6.6 million of first occupation expenditure. The total net additional expenditure of new residents is also estimated at around £13 million per year, which could sustain a further 126 local FTE jobs in retail, leisure, hospitality and other service-based sectors; and
- The New Homes Bonus award resulting from the 1200 new dwellings could be as high as £7.3 million over a 4-year period, whilst the additional Council Tax generated by the scheme could equal £1.7 million in perpetuity.

9.31 It is common ground between the appellant and the Council[54] that there is a qualitative and quantitative shortfall in sports provision in the part of Warrington borough in which the appeal site is located (and a qualitative shortfall across the borough) and that the appeal proposals would provide a significant improvement in that regard. The replacement of the Mill Lane pitches

[51] See also the PSoCG at paragraph 5.9.
[52] Proof of evidence of Mr Robinson section 4
[53] *Ibid* para. 4.33.
[54] SCG (CD APP5) at para. 5.39.

to the centre and south of the appeal site is agreed as appropriate with the Council. Sport England raises no objection to that proposal[55]. The proposed sport and recreation provision is agreed to be a significant material consideration[56].

9.32 The open space strategy for the appeal scheme is to create an extension to the existing Peel Hall Park (which lies to the south-east of the appeal site) up through the centre of the appeal site, which is to include the improved Windermere Avenue recreation area, the on-site playing fields, Radley plantation (woodland), the wood to the south of Peel Hall farmhouse and links to the pedestrian routes alongside and over the motorway to the countryside beyond. It is agreed that the provision of this significant area of open space, which would be available to both current and future residents, is a significant material consideration[57]. Of the 69.1ha total area of the appeal site, 13.24ha is to be semi-natural green space[58].

9.33 The appeal proposals in respect of sports and recreation provision and open space accord with the healthy living objectives of the Framework[59].

9.34 Other aspects of the appeal scheme that are common ground between the Council and the appellant include:

- Site layout;[60]
- The absence of any objection on landscape impact grounds;[61]
- There is agreement on ecological/biodiversity matters[62]. It is common ground that there are no designated or natural features within the appeal site that are not able to be satisfactorily protected, managed or resolved at the reserved matters stage[63]. Whilst third parties raised the potential impact on breeding birds as a concern, Mr Ryding's (unchallenged) evidence on behalf of the appellant in response was that having regard to the proposed habitat creation/enhancement and management measures, the residual impact of the construction phase of the appeal scheme might reduce from 'moderate adverse' to 'slight adverse'. His view was that the operational phase of the appeal proposals would result in a 'negligible-low' effect. We return to his evidence in more detail below. As Mr Davies explained in cross-examination, the Council's view is that adequate ecological mitigation can be secured by condition, with input from the Council and the appellant's ecological advisers.
- It is agreed that the drainage and infrastructure requirements of the appeal scheme are capable of delivery via reserved matters submissions

[55] *Ibid*, para. 5.40.
[56] *Ibid* at para. 5.11.
[57] *Ibid*, paras. 5.33 and 5.34.
[58] See the breakdown provided as ID20.
[59] See, in particular, part 8 of the NPPF (CD NP1). This was agreed by Mr Davies in cross-examination.
[60] Confirmed by Mr Davies in cross-examination.
[61] SCG at paras. 5.35 and 5.41.
[62] *Ibid.*
[63] *Ibid* at para. 1.4.

and by condition[64]. Flooding and archaeology would also be dealt with by condition[65].

9.35 The officer's report confirms that the appeal scheme is considered to be a sustainable urban extension[66]. It is not surprising that the Council considers that the appellant's proposal to bring forward significant sustainable development on the appeal site "*clearly*" has the potential to deliver substantial transformational benefits[67] and "*very substantial, positive transformational change*". The report goes on to note that:

> *"the proposal reinforces the evidence that Warrington is capable of attracting large scale new mixed use development, and is a desirable location of choice for land developers, businesses and for those wishing to base themselves in Warrington, as new or re-locating residents*".

9.36 That statement finds support in the Warrington & Co 2018 Annual Property Review.[68] Before summarising the findings of the July 2017 SHLAA, the Review notes that:

> "*this year [Warrington] was named within the 'Top 10 Best Places to Live in the UK' in Property Week's Hot Housing Index, a scale which ranks areas against a range of criteria including affordability, employment levels, transport and school provision*".

9.37 It also notes that Warrington has been awarded the second-place position on Channel 4's programme "UK's Best Place to Live". The Council accepts that there is strong developer interest in Warrington[69].

9.38 Very substantial positive weight should be accorded in the overall planning balance to the range of potential benefits that the appeal scheme would provide. This is accepted by the Council in the officer's report[70].

The Inspector's main considerations

9.39 We turn to consider the main considerations identified by the Inspector.

The effect of the proposed development on the safety and efficiency of the local and strategic highway networks

9.40 Paragraph 32 of the Framework provides that:

> "*development should only be prevented or refused on transport grounds where the residual cumulative impacts of development are severe*".

To the extent that any of the Council's development plan policies indicate that a lower level of impact will justify refusal of planning permission, only limited

[64] *Ibid* at para. 5.42.
[65] Cross-examination of Mr Davies.
[66] CD APP1, Appendix 1, p. 6.
[67] *Ibid*.
[68] ID19.
[69] Response to Inspector's question.
[70] At p. 35.

weight should be given in the overall planning balance to any conflict with those policies, given that they are inconsistent with paragraph 32.

9.41 The Council has signally failed even to attempt to show that the residual cumulative impacts of the appeal scheme would be severe so as to justify refusing planning permission on transport grounds. Mr Crossley accepted in cross-examination that it was not the purpose or effect of his evidence to seek to demonstrate that, on the evidence available to the Inquiry, the appeal scheme would result in a significant adverse impact anywhere on the highway network. Similarly, Mr Taylor accepted that he did not identify any significant or severe cumulative impact that could not be mitigated by an appropriate planning condition. This was confirmed on Day 9 of the Inquiry following the submission of all of the further material that had arisen since his original evidence.

9.42 Mr Taylor acknowledged in cross-examination that in the light of the Council's support in principle for residential development on the appeal site, it was incumbent on the Council to seek solutions to traffic and access matters. It has been clear that officers have been directed by members to take an approach wholly different to that taken in relation to other major recent development sites, for example Omega and South Warrington.

9.43 That is apparent from the lengthy list of criticisms of the appellant's traffic work that is set out in the Council's written traffic evidence. Those criticisms do not appear in relation to the above schemes and do not (either singly or cumulatively) justify a refusal of planning permission on traffic grounds, as the Council's traffic witnesses recognised in oral evidence. The appellant's response to the individual criticisms raised is as follows.

9.44 Modelling: age of data and trip distribution. The Council criticises the appellant for having used the 2008 VISUM model ("2008 WMMTM") as the best available source of origin-destination data for its SATURN model, developed by AECOM. The specific point taken against the appellant is that the trip distribution that resulted from the 2008 WMMTM is unreliable.

9.45 The study area for traffic modelling was (and remains) agreed between the appellant and the Council[71]. In early April 2016, the use of origin-destination data from the 2008 WMMTM was agreed between AECOM and the Council[72]. Use of that data proceeded in the assessments of AECOM, Highgate Transportation ("Highgate") and the Council for 19 months, until Highgate was informed in November 2017 that the view of WSP (for the Council) was that the use of origin-destination data from the 2016 WMMTM would be more robust.

9.46 Mr Crossley acknowledged both AECOM's general expertise and great experience in relation to the Warrington area specifically[73] (AECOM constructed the model in respect of Junction 9 of the M62 for the Highways Agency/Highways England and were instructed by the Council to construct the 2016 WMMTM). He agreed that AECOM's opinions are valuable and are to be

[71] Cross-examination of Mr Taylor.
[72] *Ibid* and CD OD8.
[73] In cross-examination.

respected. Mr Taylor similarly agreed that AECOM are highly respected traffic modellers with extensive local experience[74].

9.47 The Council's officers expressed a similar view at a meeting on 22 March 2017, explaining that they did not intend to review the appellant's SATURN base model as part of the pre-app (nor the outputs at each stage) because they "*had confidence in AECOM*" and agreed that there was no overriding need for the step-by-step review[75].

9.48 The Local Model Validation Report (LMVR) produced by AECOM in September 2017[76] concludes that:

> "*both the AM and PM peak period SATURN models are fit for the purpose of being taking [sic] forward to forecasting in order to understand the likely impact of the proposed Peel Hall Development*".

9.49 That conclusion was informed by a SATURN Forecasting Report that Mr Crossley accepted had calibrated the model. It is the conclusion of independent and highly respected consultants. It is plainly highly relevant to the use of the appellant's SATURN model at this Inquiry.

9.50 By letter dated 23 October 2017 Atkins, Highways England's consultants, reviewed the appellant's transport evidence in relation to the impact of the appeal proposals on the strategic road network. They expressed the view that the extraction of origin-destination data from the 2008 WMMTM was "*robust in lieu of a more up to date model*".[77]

9.51 As Mr Taylor confirmed in cross-examination, there has not been any material change on the highway network between the date of AECOM's conclusion in September 2017 and the present. Mr Crossley confirmed that all of the developments that have been brought forward since 2005, and to which he refers in section 6 of his proof of evidence, were known to transport modellers in 2017.

9.52 In section 5 of his proof of evidence Mr Crossley criticises the use of the 2008 WMMTM for failing to accord with the Department for Transport's WebTAG guidance. As he accepted in cross-examination, however, there is no national or local policy that suggests (still less requires) that WebTAG be used in the assessment of private development schemes. Mr Crossley was unable to identify any appeal decision in respect of such a scheme that had applied the guidance. As the guidance explains, its function is to:

> "*facilitate the appraisal and development of transport interventions, enabling analysts to build evidence to support business case development, to inform investment funding decisions"*[78].

9.53 Moreover, as Mr Crossley agreed, the appellant's SATURN model has, in comparison with the Council's SATURN model, *over*-estimated trips between the

[74] In cross-examination.
[75] See para. 9 of meeting note within CD OD8.
[76] CD APN101, Appendix 57.
[77] CD APN101, Appendix 59, p. 2.
[78] CD CF2 at para. 1.2.1.

appeal site and those roads in the vicinity that have been identified by the Council as sensitive (including Poplars Avenue and Capesthorne Road).

9.54 As regards trip distribution, whilst the Council contends that the appellant's trip distribution is unreliable, Mr Crossley accepted that the focus of its evidence is on establishing the extent to which the appellant's figures differ from its own figures. It has not produced any evidence at all in respect of the *consequences* of those differences (i.e. any evidence of any impact, let alone any severe impact). The Council could have produced its own evidence by running its own SATURN model in relation to the appeal scheme. It chose not to.

9.55 Mr Crossley accepted, in relation to the greater flows in paragraph 3.31 of his supplementary proof, the following:

- That this is a flexible network where with multiple routes to the south, drivers will tend to adapt their route to seek the quickest route on that day;
- This was one run of the model; another run would show slightly different patterns; and
- That in relation to roads/junctions to the south he had provided no evidence of traffic conditions there and no evidence of severe residual impact.

9.56 TN/31[79] was provided at the request of the Inspector. It sets out a summary of the site access and off-site junction modelling results and in particular identifies forecast queues using the modelling results for without mitigation and referring to the mitigation modelling contained within the Transport Assessment (TA/01/A). The conclusion is that either there is no material impact or where there is material impact appropriate mitigation measures have been identified.

9.57 Traffic flow diagram: As Mr Taylor records at paragraph 2.18 of his first supplementary proof of evidence, SATURN output sheets were included in Appendix 66 to the TA and a traffic flow comparison is included at paragraph 8.56 of the proof of evidence of Mr Tighe on behalf of the appellant (Table 8.1). Additional traffic flow diagrams for local streets have been provided as Appendix 1 to Highgate's Technical Note TN/30[80].

9.58 Weekend assessment: Highgate's Technical Note TN/28[81] demonstrates that the weekday and weekend peak hour flows are of a similar magnitude such that additional modelling of a weekend peak hour is unnecessary because the flows are no greater than on a weekday peak period. It should be noted that Omega were not required to carry out a weekend assessment and their food store was also 2000sqm gross floor area. The question of weekend assessments was not pursued in oral evidence at all on Day 9 or 10[82].

[79] ID34
[80] ID33
[81] ID15.
[82] 9 and 10 July 2018.

9.59 Junction design:[83] The Council advances a multitude of queries and comments in relation to the design of both access junctions and off-site junctions. Mr Taylor conceded in cross-examination that whilst Highgate had for many months (indeed, from 2016[84]) been requesting the Council to identify whether any measures were required to mitigate the impacts alleged by the Council (and if so, what measures), the Council had never satisfied that request.

9.60 As indicated in its opening submissions, the appellant's position is that, through a set of carefully drafted conditions, all these highly detailed matters can be resolved at the detailed and/or s.278 stage. Mr Taylor accepted in cross-examination that he does not identify any junction where the Council's concerns cannot be mitigated through the working of an appropriate condition. He was asked specifically about the A49/Sandy Lane West junction and stated that his professional view as a highways engineer with knowledge of the junction was that on the balance of probabilities a suitable mitigation scheme could be delivered.[85] He was also asked specifically about the A50/Orford Green junction and his view, again, was that an acceptable highways solution could be achieved at that junction.

9.61 Highgate's Technical Note TN/33[86] (provided at the request of the Inspector) explains how the mitigation proposed for the A50 Orford Road/Poplars Avenue/Hilden Road junction would tie in to existing pedestrian and cycle facilities at the junction. The mitigation would not increase capacity at the expense of cycle safety[87]. TN/33 also explains how mitigation proposed for the Capesthorne Road/Poplars Avenue junction has been modified, with a view to maintaining low vehicle speeds[88]. Mr Tighe confirmed this position to the Inspector on Day 10.

9.62 Strategy for assessing impact and omission of allegedly key junctions: It was agreed during the course of Mr Taylor's oral evidence that the two additional junctions in respect of which the appellant would provide assessment were (i) M62 J9/A49 Winwick Road and (ii) A49/A50. We address the former below. As to the A49/A50 junction, Highgate's Technical Note TN/31[89] confirms that the A49 can accommodate (in both directions and in both the AM and PM peak hours) the additional length that the appeal scheme impacts would add to queues[90].

9.63 So far as 'omitted' junctions are concerned AECOM confirmed in e-mails in September 2017[91] that there was only the need to model eight specified junctions, which were duly assessed. In relation to appendix 8 to Mr Taylor's

[83] The specific points taken against the appeal scheme relate to: design issues at Poplars Avenue west and central accesses; modelling and design of new A49 signal junction; modelling and design of A49/Sandy Lane West; design of A50/Orford Green; design of Capesthorne Road/Poplars Avenue.
[84] CD OD8.
[85] Evidence-in-chief.
[86] ID36.
[87] *Ibid.*, para. 4.
[88] *Ibid.*, para. 5.
[89] ID34.
[90] *Ibid.* at paras. 23 and 24.
[91] CD OD8.

proof at paragraph 14, the three junctions listed (Junction 9 apart) were confirmed by Mr Tighe to be subject only to minimal impact.

9.64 Since the first part of the Inquiry WSP have apparently conducted some 'high level' assessment of junctions, resulting in Appendix 3 to Mr Taylor's second supplementary proof. Tellingly, no information at all as to the flows being used and the impacts being assessed was provided. Accordingly the Council does not put forward any junction which has not been assessed by Highgate as being the subject of material impact.

9.65 Impact on M62 Junction 9: The impact of the development on Junction 9 is truly minimal. On Highgate's flows, it is of the order of one additional vehicle per minute in the a.m. peak and about three additional vehicles per minute in the p.m. peak. It is essentially for this reason that Mr Marsh of Highways England confirmed in his statement of 25 June 2018[92] that the scale of the impact on the junction was acceptable. In technical terms that impact can be seen in tables 32 and 34 of the Atkins report of 11 June 2018. Even with the marginally greater impact when applying the Council's flows the tables lead, fairly, to Mr Marsh's assessment of overall betterment of the junction.

9.66 There was debate as to the assumption of the LinSig model that there is no blocking back of traffic to the junction. The Council is content that appropriate mitigation can be provided to junctions both to the north and to the south of Junction 9. Second, it is important to appreciate the specific context in which Mr Marsh raised this point. It was in the section of his statement discussing the need for microsimulation. However, the overall assessment in section 6 remains valid i.e. that owing to the marginal impact of development on the junction taken together with the overall improvement that mitigation would provide, the proposed solution is acceptable to Highways England.

9.67 Control of third party land required for access: The parcel of land that it is indicatively (i.e. subject to confirmation at reserved matters stage) proposed to be used for emergency access is unregistered. The appellant currently holds an insurance policy that, in the event that anyone were to establish their ownership of the land parcel, would indemnify that party in respect of the appellant's current use of the land parcel. If it is thought desirable at reserved matters stage to use the land parcel for emergency access, the appellant would increase its insurance cover so that the indemnity extends to emergency access use. This approach is common practice on sites that are in multiple ownership[93]. Mr Taylor agreed that this issue could be dealt with by condition.

9.68 Use of Mill Lane in respect of accessibility and promoting sustainability: The Council's concern is the adequacy of footways along the route[94]. The Inspector in the Mill Lane appeal[95] noted that:

> *"[58] ...There are not footways for the entirety of the length of Mill Lane on both sides of the road, and in some parts the footways are below the Manual for Streets standard recommended width of 2m, some parts are as little as*

[92] ID55
[93] Evidence-in-chief of Mr Griffiths.
[94] Mr Taylor's proof of evidence at 6.2.17.
[95] APP/M0655/A/13/2192076, Appendix DT/B to Mr Tighe's proof of evidence.

1.2m wide. There is also some overgrowth restricting the width of footpaths, but that could be removed.

[59] Nevertheless there is at least 1.8m width on one side of Mill Lane for the majority of its length, which is the absolute minimum width identified in Guidelines for Providing for Journeys on Foot. That document acknowledges that existing narrow footways do provide some level of pedestrian amenity. Whilst there are instances of parking on the pavement, that is a matter for the Police. Because vehicle speeds would be slow, and also because pedestrian visibility would be good, this inadequacy of the footways to meet desirable standards would not be a fundamental objection to the scheme".

9.69 She concluded that the road and footway access would be adequate and the development would not be harmful to highway safety. Mr Taylor confirmed that he was not seeking to unpick or challenge the clear conclusion reached by the Mill Lane Inspector.

9.70 Mr Taylor also accepted that it is not practical to form a 1.8 metre wide footway along the southern side of Mill Lane. The appellant's position is that such a footway is both unnecessary and undeliverable.

9.71 Lack of clarity in respect of bus mitigation measures: Mr Taylor confirmed that, Option B no longer being pursued by the appellant, the Council no longer has any concerns on this score.

9.72 Highgate's Technical Note TN/32[96] provides a detailed account of the bus mitigation proposals, which have been developed in consultation with Network Warrington since January 2016. A two phase strategy has been developed: the extension of existing services into the appeal site during the early phases of development, followed by provision of a new bus service from the town centre, through the appeal site to Birchwood, and back.

9.73 Under the s.106 agreement, the appellant[97] is to pay to the Council (or to Network Warrington/Warrington's Own Buses, if the Council agrees) £41,000 towards the extension of existing bus services, prior to occupation of the 120th dwelling and annually thereafter until the distributor road through the appeal site is completed. The appellant is then required to pay £562,000 annually towards provision of the new bus service, until the earlier of (i) completion of the last dwelling or (ii) the fifth anniversary of the completion of the distributor road. The s.106 agreement requires the Council to procure evidence from Network Warrington/Warrington's Own Buses that all financial contributions paid by the appellant under the s.106 towards bus provision have been applied to bus services only.

9.74 Having regard to the foregoing, we can review the conclusions of Mr Tighe[98] in relation to lack of conflict with the development plan policies that are cited in the first reason for refusal. There was no challenge on Day 10 to his assessment.

[96] ID35.
[97] Together with Satnam Developments Limited, as "the Owner".
[98] Proof of evidence.

9.75 To conclude as regards the first consideration, the appeal scheme is agreed to be sustainable development and the Council is committed in principle to the early development of 1200 new homes on the appeal site. That commitment is bound to result in traffic impacts, including to the south of the appeal site. In particular, a level of impact on Poplars Avenue and Capesthorne Road is inevitable. This was accepted by Mr Taylor in cross-examination.

9.76 Similarly, in the event that residential development did not come forward on the appeal site such that land for an additional 1200 dwellings had to be released from the Green Belt, that additional release would also impact on both the local and (given Warrington's location) strategic road networks.

9.77 There is no evidence at all before the Inquiry that demonstrates that the cumulative highway impacts that would result from the appeal proposals specifically are severe, such that planning permission should be refused, notwithstanding the Council's support in principle for the development of the appeal site. To the contrary, the appellant has addressed each of the specific concerns raised by the Council, many of which can be resolved by condition or at reserved matters stage, and has shown that the highway impacts of the appeal scheme in terms of both safety[99] and efficiency are acceptable.

The effect of the proposed development on the character of the area

9.78 This consideration was introduced by the Inspector during the Inquiry. The primary concern is understood to be the potential effect of traffic from the appeal scheme on the character of the area.

9.79 Highgate have produced Technical Note TN/30[100] to help quantify and explain the implications of increased traffic flows on local streets in terms of impact on local character. The Technical Note shows that traffic flows through the area are expected to increase substantially over time, even without traffic from the appeal scheme[101].

9.80 Using the methodology that is set out in Transport Advice Note TA 79/99, only one of the links considered in the Technical Note (Capesthorne Road) would go above the relevant threshold figure (900) that is given in TA 79/99, and then only in the PM peak and only by 18 vehicles per hour. That equates to around one vehicle every three minutes and falls within the daily variation of flow[102].

9.81 Manual for Streets recommends that the limit for providing direct access on roads with a 30 mph speed restriction is raised to at least 10,000 vehicles per day. When Average Annual Daily Traffic ("AADT") figures are calculated using the Transport in the Urban Environment calculations factors (recommended for traffic purposes), only the Capesthorne Road, Sandy Lane West and Poplars Avenue (between Howson Road and Capesthorne Road) links go above the 10,000 vehicles per day figure in the 2030 future year (with development

[99] Highgate's Technical Note TN/34 explains where in the evidence the Road Safety Audits can be found.
[100] ID33.
[101] *Ibid.*, para. 5.
[102] *Ibid*., para. 17.

traffic)[103]. Furthermore Manual for Streets states that the 10,000 figure could be increased further[104].

9.82 The roads within the immediate area to the south of the appeal site that are road type Urban All Purpose Road Type 3 (UAP3) (including Sandy Lane West, Poplars Avenue and Capesthorne Road) would remain as UAP3 roads. The traffic from the appeal scheme would not result in a change in road hierarchy[105].

9.83 Whilst inevitably there would be an impact on the amenity of the residents in the properties either side of the new accesses onto Poplars Avenue, both Poplars Avenue and the proposed access roads are designed to the appropriate standards. The access junctions have been subject to Road Safety Audit and would not differ from the form of junction in any equivalent residential area. In highway terms the impact of the appeal scheme on the character of the area is acceptable[106]. The benefits of 20 mph limits are clear from Manual for Streets. An extension of the 20 mph zone is obviously an option available to the Council in due course.

9.84 The evidence of Mr Griffiths, which was not challenged, was that:

- If the appeal site were not brought forward for housing, more land within the Green Belt would have to be released. That additional release would, in his professional view, lead to greater planning harm than would the appeal proposals (if indeed any planning harm from the appeal proposals were identified);
- Officers and Members of the Council had seen fit to include the appeal site in the SHLAA and thus in the evidence base for the Preferred Development Options, knowing the location both of the appeal site itself and of its accesses. There had been "*no hint*" of an objection from the Council on grounds relating to the impact of the appeal scheme on the amenity of the area to the south of the appeal site;
- The parameters plan showed that the appeal scheme would be of a very similar urban grain to the surrounding area. The surrounding area was mixed, not wholly residential: it included areas of shops, local facilities and schools. The appeal scheme would be a natural extension of the existing urban grain;
- It was vitally important that the appeal scheme should link with the surrounding area in order to effect the transformational change sought by the Council i.e. to ensure that the surrounding area would also reap the benefits of the appeal proposals, such as increased spending power, additional employment opportunities and new and improved educational facilities. The appeal scheme would change the area, but for the better;
- The surrounding area was not a conservation area nor would any listed buildings be affected, therefore it was not a question of preserving the

[103] *Ibid.*, para. 18.
[104] *Ibid.*, paras. 11 and 19.
[105] *Ibid.*, para. 20.
[106] *Ibid.*, para. 23.

area "*for its own sake*". Planning was about managing change and only preventing change from occurring where properly justified;

- There was nothing exceptional about the proposal to demolish a limited number of properties in order to open up land to the rear for much-needed housing development: that happened "*up and down the country*";
- It was not realistic to suppose that those working in the employment area on the appeal site would park on Elm Road and Birch Avenue; and
- There would be a Travel Plan for the employment area, which would seek to limit the use of cars in the first place and would also show which areas should (and should not) be used for parking.

9.85 As to the potential impact of HGVs serving the employment area within the appeal scheme on the character of the area, it should be noted that under the Use Classes Order 1987 the proposed use (class B1(c)) must be a use:

> "*which can be carried out in any residential area without detriment to the amenity of that area by reason of noise, vibration, smell, fumes, smoke, soot, ash, dust or grit*".

Whilst that proviso regulates the use itself, employment areas in class B1(c) use tend to be serviced by vans and similarly sized vehicles rather than large HGVs owing to the size of the premises, as Mr Griffiths explained. Moreover, the existing area is mixed and includes shops and other facilities that require servicing by HGVs. It also accommodates other larger vehicles that accompany residential development such as refuse collection vehicles, bus services and removal vehicles. Mr Griffiths' view was that the employment area could quite happily co-exist with existing and proposed residential development.

9.86 It is also necessary to consider the potential traffic noise impacts from the appeal scheme on the character of the surrounding area. The original environmental statement predicted a maximum increase in noise levels of 1.9dB. The reassessment undertaken in order to account for variations in traffic flows showed that under Option A there would be a slightly smaller relative increase in traffic flows on the worst affected roads and, therefore, the impact of the appeal scheme would generally be the same or 0.1 to 0.2 dB lower than predicted by the original environmental statement[107].

9.87 As Mr Smith (for the Council) agreed in cross-examination, a change in noise levels of 3dB is generally considered to be only just perceptible[108]. A doubling in traffic flows would be required to reach that magnitude of change[109]. Mr Smith accepted that the predicted increases in traffic levels as a result of the appeal proposals would have to be "*significantly higher*" in order for there to be a perceptible change in noise levels.

9.88 It is also appropriate to address under this heading the question of building heights. The building heights shown in the parameter plan are maxima. There is no expectation that buildings would reach the maximum heights shown. Rather,

[107] Proof of evidence of Mr Hawkins at 2.3.6.
[108] *Ibid.* at para. 2.3.10.
[109] Also accepted by Mr Smith in cross-examination.

they would be developed up to that height in certain locations, if appropriate[110]. This would be determined at reserved matters stage.

The effect of the proposed development on local air quality

9.89 The Council's approach to its air quality evidence mirrors that taken to its highways evidence. Mr Moore accepted in cross-examination that his evidence does not identify any significant adverse air quality impact that would result from the appeal scheme.

9.90 The evidence of Mr Hawkins on behalf of the appellant, on the other hand, establishes the following:

- The original ES shows that the increase in annual mean pollutant concentrations would be small (less than 1 μg/m^3) at all sensitive receptors[111];
- The reassessment of Option A undertaken to reflect variations in traffic flows shows that there would be a slightly smaller relative increase in traffic flows on the worst affected roads, such that the impact of the appeal scheme in air quality terms would generally be the same or marginally lower than shown in the original ES[112];
- The reassessment undertaken does not, overall, change the conclusions of the original ES. At worst the impact of changes in traffic flow on levels of air pollution would be less than 1 μg/m^3 at all receptors. This would be negligible (at worst) and not significant. The concentration of NO_2 is expected to remain below the National Air Quality Objective (NAQO) level at all receptors save that small exceedances are predicted at three locations in 2021. These are predicted to resolve by 2025[113]. Since the NAQO level is the level at which health effects may be noticeable, the predicted small increases in pollutant concentrations are highly unlikely to have any effects on human health[114];
- Tables 3.1 to 3.9 within the proof of evidence of Mr Hawkins show the results of the updated calculations, for Option A in 2021, 2025 and 2030, across three traffic scenarios. The predicted impacts are negligible at all receptors save 451 Winwick Road, where a slight impact is predicted under scenario (ii) in 2025, reducing to negligible by 2030.

9.91 It became apparent in oral evidence that the Council had erroneously been assuming (without having verified the point with Mr Hawkins) that Mr Hawkins had been relying on DEFRA-predicted improvements in background air quality levels. As he confirmed, static (rather than reducing) background concentrations were used. This is a precautionary approach[115].

[110] Evidence-in-chief of Mr Griffiths.
[111] Proof of evidence of Mr Hawkins at para. 3.4.3.
[112] *Ibid.* at para. 3.4.4.
[113] Proof of evidence of Mr Hawkins, tables 3.1 to 3.9. The three locations are 451 Winwick Road, 129 Long Lane and 697 Winwick Road.
[114] *Ibid.* at paras. 3.4.5 and 3.4.6.
[115] Cross-examination of Mr Hawkins.

9.92 Mr Hawkins also explained that the figures given in Tables 3.1 to 3.9 for 2021 are lower than figures for 2018 would be, reflecting an expected improvement in air quality generally. The anticipated improvement is due to a number of factors, primarily a cleaner vehicle fleet. The evidence of Mr Hawkins was that considerable improvements in vehicular emissions are expected in Warrington specifically, because a local air quality strategy has been adopted[116]. The expected reduction in vehicle emissions is reflected in the 'without development' figures provided by Mr Hawkins for 2021, 2025 and 2030, which show the air quality position improving (notwithstanding that Mr Hawkins has used static background concentrations). The Council has not questioned the improvement in air quality shown.

9.93 Any attack on the credibility of Mr Hawkins is both unjustified and inappropriate, given the way in which the Council dealt with the appellant's air quality work.

9.94 In its pre-application response of 26 February 2016 the Council stated that the methodology for air quality assessment had been agreed. The original ES was subsequently submitted in July 2016. Whilst the Council disputed the traffic data that had informed the air quality work in the ES, not a single query was raised by the Council in relation to the methodology and/or the results of the air quality assessment based on the traffic assumptions that the appellant was using. Mr Moore's evidence was that he had considered that there was "*little point*" going into the details of the air quality assessment whilst the traffic data remained disputed. The ES Addendum was submitted in January 2018 and still the Council raised no issue with the air quality assessment methodology.

9.95 The unfortunate result of the Council's stance was that it failed to inform the appellant of its concerns in relation to the methodology until March 2018. Therefore, whilst the Council criticises Mr Hawkins for not having substituted the 2015 monitoring data for the 2014 monitoring data until he produced his proof of evidence, prior to March 2018 the Council had only ever indicated a concern with the traffic data, not the monitoring data. Thus the ES Addendum simply updated the traffic data, so as to enable the impacts of doing so to be understood in response to the sole concern that had at that stage been articulated by the Council.

9.96 The important point is that the appellant's air quality analysis no longer relies on the 2014 monitoring data, it having become apparent as monitoring data for later years became available that the 2014 monitoring data is not representative of typical conditions in the study area. It should be noted, however, that when the original ES was produced the 2014 monitoring data was the best available and certainly the most comprehensive.[117] The appellant's model has since been revalidated using the Council's 2015 air quality monitoring data. The increased concentrations (both on- and off-site) that resulted from the revalidation are reflected in updated calculations in Mr Hawkins' proof of evidence.

9.97 Mr Moore complained that there had not been monitoring undertaken at additional monitoring points and consequently that there had not been different verification factors based on such monitoring points. This complaint is quite

[116] Evidence-in-chief of Mr Hawkins.
[117] Evidence-in-chief of Mr Hawkins.

unjustified in the light of the fact that Mr Moore had never requested that monitoring be undertaken at any additional point(s).

9.98 Mr Moore notes in his addendum proof of evidence that some of the grid references used to plot receptor points within the appellant's model are incorrect. The model is, however, internally accurate such that all of the modelled locations are correct in relation to the relevant local road links[118]. Thus the model does reflect the real world relationship of the receptor points to the roads and predicted pollutant concentrations at those points will be correct[119]. Mr Hawkins confirmed in evidence-in-chief that he was very confident that the error had not affected the actual outcome of the modelling.

9.99 That the appellant's air quality work is robust is particularly evident from consideration of Tables 3.1 to 3.9 in the proof of evidence of Mr Hawkins, which set out the results of sensitivity testing. As he explains[120], Scenario (iii) is an analysis of the impact of the proposed development traffic flows as set out in the ES addendum, plus 25%. The Council has not suggested that traffic flows from the appeal scheme would reach anything like that magnitude.

9.100 It is necessary to address a number of technical points that are taken by the Council against the appellant's air quality evidence:

- The Council's concerns in relation to the bias adjustment factor used in the air quality assessment[121] have been resolved, as Mr Moore confirmed in cross-examination;
- The conversion factor used to determine AADT from peak hour flow was: (AM Peak + PM Peak) x 6 = AADT. The accuracy of that approximation has been demonstrated by comparing modelled traffic flows (using the approximation) against the latest DfT traffic count data: see the additional information dated 4 May 2018 provided by Mr Hawkins[122] at para. 2.2.2. Mr Hawkins explained in his oral evidence that in addition to the close correlation between the modelled figures (using the approximation) and observed (i.e. traffic count) data, the conversion factor was also suitable (i) because it reflects a worst case scenario and (ii) because it takes into account both AM and PM peaks. All the available evidence shows that x 6 is a robust factor and the Council has not provided any contrary evidence;
- There was a debate about the appropriate average traffic speed to apply at the relevant AQMA junctions. The general advice in TG16[123] paragraph 7.240-7.241 is to apply an average speed of 20-40kph. Mr Hawkins's 32kph is consistent with this. Mr Moore sought to rely on paragraph 7.248 suggesting an average speed of 20kph. This may be appropriate where there is no local information with regards to congestion and associated speeds available. Mr Hawkins's evidence is based on local assessment i.e. his own observations of junctions on site;

[118] *Ibid.*
[119] *Ibid.*
[120] Para. 3.5 ff.
[121] Para. 5.2.2 of Mr Moore's proof of evidence.
[122] ID38
[123] CD CF12

- As to the surface roughness factor, it is common ground that any issue here falls away in the light of the agreed 50 metre condition;

- The Council considers that data from the meteorological station at Rostherne, Cheshire (which has come into operation since the original air quality assessment was undertaken) better represents the geography of Warrington than does data from the meteorological station at Manchester. Mr Hawkins has, as a sensitivity check, compared the two sets of data. The results are presented in his additional information of 4 May 2018[124]. Whilst Rostherne does result in marginally higher concentrations of NO_2 when considering the baseline scenario (0.09 µg/m^3), the differences between the two sets of data for all future scenarios have been minimised by the resultant lower validation and verification factor. Consequently, the results utilising Rostherne data are approximately the same as those using the Manchester data.

9.101 The precautionary approach highlighted by Mr Manley in closing, through the *Gladman* case, was recognised by Mr Hawkins. The background levels were held constant, which shows a high level of precaution. No issue was taken by the Council with the use of the DEFRA Toolkit or Mr Hawkins' assumptions around reductions in car emissions in the future. Thus, Mr Hawkins' Scenario 3 is perfectly logical, due to the Toolkit based reducing vehicle emissions.

9.102 The relevant development plan policy as regards air quality is Core Strategy Policy QE6. The appellant's evidence has shown that the appeal scheme would not result in any materially adverse impact on air quality. There is, thus, no failure to comply with the development plan in air quality terms.

Whether the appeal scheme would provide appropriate living conditions for future occupiers with regard to highway noise and air quality

9.103 We deal first with the impact of highway noise on living conditions on the appeal site. The Council is satisfied that this matter can be dealt with by condition[125]. On-site noise monitoring was undertaken by the appellant, as detailed at 11.4.8 to 11.4.10 and within Table 4.2 of the original ES and at paragraph 2.2.1 of Mr Hawkins's proof of evidence.

9.104 The conclusion reached by Mr Hawkins is that dwellings located at a distance greater than 185m from the M62 would be acceptable in terms of noise and would not require mitigating measures. Dwellings closer to the M62 may require mitigating measures to ensure that suitable internal noise levels are achieved[126]. The worst affected proposed dwellings would be located around 40m from the kerb of the M62. The calculations undertaken by Mr Hawkins indicate that suitable internal noise levels could be achieved provided that bedroom windows had a minimum Rw of 34dB and all other rooms had a minimum window Rw of 30. It is likely that by the second or third line of houses from the M62, a typical double-glazed window system with a Rw of 31 to 33dB would be sufficient in all rooms. Mr Hawkins confirmed in his oral evidence that the apartments and houses closest to the motorway would not require mechanical ventilation.

[124] ID38 at 2.4.
[125] Summary of Mr Smith's evidence at para. 1.5.
[126] Proof of evidence of Mr Hawkins at 2.2.6.

9.105 Noise in gardens could exceed the recommended level (55dB) at distances of up to 110 metres from the M62. Mr Hawkins's recommendation is that the first line of dwellings and the apartment blocks closest to the M62 form a continuous barrier and be sufficiently tall that they provide significant protection to the gardens behind, so as to bring noise levels in all gardens below 55dB. That would include outside space associated with the apartments (i.e. balconies and/or gardens immediately to the south of the block)[127]. This would be a matter for detailed design at reserved matters stage.

9.106 We turn to air quality on the appeal site. The additional information provided by Mr Hawkins dated 4 May 2018[128] outlines the concentrations of NO_2 on the appeal site in the opening year (2021). His calculations incorporate validation factors calculated using 2015 monitoring data. They show that at a distance greater than 25 metres from the M62, pollutant concentrations should be below the NAQO level for NO_2 in 2021. In any event the 50 metre condition deals with this aspect.

9.107 It is evident from the foregoing that the appeal scheme would provide appropriate living conditions for future occupiers with regard to highway noise and air quality.

The effect of the proposed development on local infrastructure

9.108 The terms of a s.106 agreement have been agreed between the Council, the appellant[129] and the University of Chester Academy School. Those terms make provision (*inter alia*) in respect of school places, healthcare facilities and sport and recreation and, thus, address the Council's second Reason for Refusal.

9.109 The only issue that remains in dispute between the Council and the appellant is whether the health contribution complies with regulation 122 of the Community Infrastructure Levy Regulations 2010. Regulation 122(2) provides that a planning obligation may only constitute a reason for granting planning permission for the development if the obligation is (a) necessary to make the development acceptable in planning terms; (b) directly related to the development; and (c) fairly and reasonably related in scale and kind to the development.

9.110 Whilst the appellant accepts that the appeal proposals would result in increased healthcare need, the health contribution is neither directly related nor fairly and reasonably related in scale and kind to the development. The Council wishes to put the healthcare contribution towards a new healthcare facility (the aspiration is to move two existing GP practices into a single new building). However, the evidence of Mr Armstrong to the Inquiry was that the gross floorspace requirement for the new facility has not yet been established, no site has been identified, the cost of the facility cannot yet be ascertained and there is no programme. Indeed, he emphasised that:

> "*it should not be forgotten that any programme has to have significant public consultation with the patients registered with [the existing] practices"*.

[127] Oral evidence of Mr Hawkins.
[128] ID38.
[129] Together with Satnam Developments Limited, as "the Owner".

He accepted that the clinical commissioning group did not accrue funds and that any contributions from development went to a specific scheme.

9.111 Having regard to the present factual position, it is plain that the healthcare contribution does not satisfy the requirements of regulation 122. There is nothing in the Council's apparent suggestion that it suffices that those requirements be met by the point in time at which the contribution becomes due. It is obvious from the wording of regulation 122 that the three requirements must be satisfied before planning permission is granted. We also refer to the Congleton appeal decision[130] at paragraphs 27 to 31.

9.112 There is nothing remarkable about the fact that although the appeal proposals would result in increased healthcare need, the appellant is unable lawfully to contribute to meeting that need. That position is simply the consequence of Parliament having prescribed that developers cannot make unlawful payments. It will have been anticipated by Parliament in enacting the relevant legislation.

9.113 Nor does the appellant's inability lawfully to contribute to meeting the healthcare need generated by the appeal scheme result in a failure to comply with any aspect of the development plan. The Council in its second Reason for Refusal relies on Core Strategy policies CS1 (second and seventh bullet points) and MP10 (first, second and third bullet points).

- Policy CS1 is the Council's overall spatial strategy and simply requires development to have regard to (*inter alia*) the requirement to provide for recognised and identified development needs (second bullet point) and "*the need to … ensure additional [infrastructure] provision where needed to support development*";
- Policy CS2 then states that all new development should where appropriate make provision for supporting infrastructure in accordance with Policy MP10;
- Policy MP10 itself requires the Council to (i) ensure that development maximises the benefits of existing infrastructure and minimises the need for new provision; (ii) support the delivery and enhancement of strategic infrastructure in the borough through the introduction of the Community Infrastructure Levy by building on the Infrastructure Delivery Plan to understand the wider strategic infrastructure requirements; and (iii) where appropriate, negotiate with developers to secure s.106 agreements to meet the infrastructure needs directly arising from development, where viable to do so.

9.114 Nothing in the above policy provisions indicates that there will be a failure to comply with their requirements where, as here, a developer is unable lawfully to contribute towards the needs generated by their development.

9.115 In any event, should the Secretary of State conclude (contrary to the appellant's submissions) that the health contribution is lawful, he may require it to be made by confirming in his decision letter that the health contribution complies with regulation 122 of the Community Infrastructure Levy Regulations 2010 (see clause 7.1 of the s.106 agreement).

[130] APP/R0660/A/14/2219069 - Appendix 15 to Mr Griffiths' proof of evidence

Whether the scheme can be regarded as deliverable

9.116 We have already noted the context against which this consideration falls to be assessed, namely the acknowledgement in the officer's report that:

> *"Warrington is capable of attracting large scale new mixed use development, and is a desirable location of choice for land developers, businesses and for those wishing to base themselves in Warrington, as new or re-locating residents"*

and the Council's more general acceptance that there is strong developer interest in Warrington.

9.117 The appellant expects residential units on the appeal site to be delivered at a rate of 120 units *per annum*. That is a realistic estimate and the rate might well be higher given the high demand for housing in Warrington (above)[131]:

- The appeal site is large with multiple access points, enabling a number of house builders and registered providers to be active on-site at any one time. Appendix 6 to the 2017 SHLAA sets out the build-out rates on sites that are or were active in Warrington during 2016-2017. The average build-out rate on sites that still have units to build is between 35 and 47 units *per annum*, *per* builder. A large site such as the appeal site might accommodate three builders at the same time;
- A 2017 study by Lichfields of large sites (1000 to 1500 homes) outside London found that delivery rates for greenfield sites averaged 122 homes *per annum* (73 for brownfield sites). One of the sites included in the study was Chapelford, an urban village to the west of the A49. This is a brownfield site but has a delivery rate of an average of 200 homes *per annum*;
- The Council's education department was originally working with an estimated delivery rate of 150 units *per annum* on the appeal site;
- Homes England presently decline to join as a party to the s.106 agreement in the absence of a commercial transaction. That transaction is bound to take place in due course. The land is vested in Homes England for their purposes i.e. the delivery of land for homes. It is fanciful to consider that the land will not be brought forward in pursuance of that objective.

9.118 As to the deliverability of the employment area within the appeal site, as Mr Griffiths explained in his evidence-in-chief, there is a large need for small units in class B1(c) use. This is supported by the evidence base for the Preferred Development Options[132].

9.119 We turn to the deliverability of the care home. As a New Town, Warrington is experiencing a faster rate of ageing owing to the number of residents who arrived in its infancy and have remained[133]. Mr Robinson's proof of evidence[134]

[131] Evidence-in-chief of Mr Griffiths.
[132] *Economic Development Needs Study*, October 2016, Executive Summary, p.4 at (x) (ID21).
[133] Evidence-in-chief of Mr Griffiths.
[134] At para. 3.32.

records a 52.2% increase in the number of residents aged 65 or more during the plan period (i.e. to 2037), against a predicted national rate of 48%. Demand for older peoples' accommodation in Warrington borough is likely to increase by 54 units annually between 2012 and 2037[135]. Mr Griffiths' view was that it is "*without doubt*" that there would be a need for the proposed care home. Indeed, the appellant has already received early stage interest in sheltered accommodation on the appeal site[136].

9.120 Significant weight should be attributed to the care home and employment land elements of the appeal proposals. As Mr Griffiths explained, planning is concerned to provide the opportunity for facilities to be provided[137]. The appeal scheme would provide a real opportunity for employment and care home facilities to be provided in an area where they are not currently present. That such facilities have not yet been provided does not mean that they should not be: areas require mixed uses and local facilities in order to become vibrant[138] and provision of these facilities would support the transformational change that the Council wishes to see in this part of Warrington.

Conclusions as to the adverse impacts of the appeal scheme

9.121 The Council has not provided any evidence of any adverse impact. It follows that on the Council's own case, the appeal should be allowed and planning permission granted.

9.122 A useful summary of predicted residual effects is provided in section 15 of the ES addendum[139]. The predicted residual adverse effects are stated to be the following (there was no challenge to these conclusions from the Council):

9.123 Construction phase:

- Landscape and visual amenity: minor adverse at worst, save for one moderate adverse impact on users of the public footpath;
- Highways and transportation: minor adverse;
- Hydrology, flood risk and drainage: negligible adverse;
- Ecology and nature conservation: moderate adverse at worst;
- Air quality: negligible adverse;
- Cultural heritage and archaeology: negligible adverse;
- Noise and vibration: minor adverse;
- Recreation: major adverse at worst.

[135] *Ibid*. at para. 5.31.
[136] Evidence-in-chief.
[137] Such facilities also include the local centre including the food store.
[138] Evidence-in-chief of Mr Griffiths.
[139] CD APN6, Vol. 5.

9.124 Operational phase:

- Landscape and visual amenity: minor adverse at worst, save for one moderate adverse impact on users of the public footpath;
- Ecology and nature conservation: minor adverse at worst;
- Air quality: negligible adverse;
- Cultural heritage and archaeology: negligible adverse;
- Noise and vibration: minor adverse;
- Recreation: moderate adverse at worst.

9.125 On ecology, it is necessary to have regard to Mr Ryding's (unchallenged) evidence in respect of breeding birds, which was that[140]:

- All of the birds recorded as breeding are common on a national scale;
- The appeal site is of 'Local (Parish) – District' value for breeding birds and does not meet any of the Local Wildlife Site selection criteria for the Cheshire Region;
- The Council's professional ecological advisor, the Greater Manchester Ecology Unit, has accepted the survey findings; and
- Having regard to the proposed habitat creation/enhancement and management measures, the residual impact of the construction phase of the appeal scheme might reduce from "moderate adverse" to "slight adverse". A "negligible-low" effect is predicted during the operational phase of the appeal proposals. The appeal scheme would not conflict with either national or local planning policy as regards breeding birds.

9.126 It is apparent that the adverse impacts of the appeal scheme are remarkably few (in number and magnitude) for a proposal of this nature and scale.

Overall planning balance and conclusions

9.127 The appeal proposals would effect genuinely transformational change that the local planning authority itself wishes to see brought about. The Council is right to recognise that the appeal scheme would result in substantial positive benefits (most obviously, a vital and very substantial contribution to the Council's housing land supply) and that very substantial positive weight should be given to those benefits in the overall planning balance.

9.128 The appeal scheme accords with the development plan and no material considerations indicate that planning permission should be withheld. In particular, the very considerable benefits of the appeal scheme are manifestly not outweighed (still less are they significantly and demonstrably outweighed) by the minimal adverse impacts of the appeal scheme. The Council's case in summary remains not a case of attempting to demonstrate the required levels of impacts and, so, the tilted balance cannot be rebutted. Both the development plan and the Framework indicate that planning permission should be granted.

[140] Section 5 of his proof of evidence.

10. The Cases for Interested Parties Appearing at the Inquiry

10.1 Oral representations made at the Inquiry, in addition to points made by the main parties, are set out below:

The Case for Cllr John Kerr Brown

10.2 I have been a ward councillor for the Poplars and Hulme ward for 17 years. This is the second Inquiry in relation to Peel Hall that I have attended. I have been asked by a number of local residents to make the following comments.

10.3 The appeal proposal will result in further traffic congestion on the A49, notably on Winwick Road. Air pollution will increase due to more stationary traffic. Recent new food stores in the area mean that there is even congestion at the weekends, especially on Sandy Lane and Winwick Road.

10.4 The proposed primary school is needed at the start of the development, not at the end. Parents will be unable to get their children into nearby schools, which are full, and so will have to drive further away.

10.5 Warrington needs an additional 30 GPs. Local practices are overstretched. There is insufficient time available to build a new surgery.

10.6 There are existing problems with sewerage and flooding in the Coldstream area.

The Case for Mrs Jo Sullivan

10.7 As well as being a member of the local community, I am a registered nurse and health visitor. I have treated local people with Chronic Obstructive Pulmonary Disease (COPD) and asthma. Although I do not claim to be an expert on air quality matters, there is plenty of information available detailing the adverse effects of air pollution on public health[141]. Warrington Council's Air Quality Action Plan states that there are 80 deaths in the town each year arising from poor air quality.

10.8 Warrington faces significant challenges with regard to air quality, as it is bounded by motorways and busy roads. There is a need to reduce the number of cars on the roads and to build a better transport infrastructure.

10.9 There will be an extra 2500 to 3000 cars in the area as a result of the proposed development. This will lead to increased congestion. North Warrington is already congested, especially at peak times. Even using local knowledge, residents are unable to avoid bottlenecks. The roads are operating beyond their capacity. All this leads to increased pollution.

10.10 The M62 is an Air Quality Management Area. It is not wise to build houses and a care home next to a motorway. The precautionary principle should apply here.

10.11 Cancer, asthma, COPD, and cardiovascular diseases arise from increased pollution levels. Long term, ongoing exposure is most harmful. Toxic air enters cars in stationary traffic and emphasises the effects of pollution.

[141] Please refer to ID2

10.12 With great respect, you don't live here but we do. This scheme will not enhance our quality of life. The tone and feel of the area will be altered forever. We will lose the only remaining green space available to us.

10.13 We don't get to choose the amount of pollution that we breathe in. We ask that the Secretary of State shows a commitment to protecting us.

The Case for Mr Jim Sullivan

10.14 I have lived here for 30 years and, like many people, commute to work out of Warrington by car. The worst part of my lengthy journey is the A49, with the College Place roundabout being dangerous. The Winwick area is worse.

10.15 Having access for 770 dwellings onto Delph Lane would be dangerous. It is laughable to put more traffic onto it.

10.16 The Sandy Land West junction, with the new Costa and Aldi, is intolerable and chaotic. Many residents flagged up the likely problems, before planning permission was granted, and have now been proved correct. Birchwood Science Park added one million square feet of floorspace with no extra infrastructure.

10.17 A one off voucher payment to new residents is no good and will not incentivise non-car travel. Buses have no priority. There is no tram. Padgate Station is around 5.4km from the site using footways. As such there is negligible likelihood of future residents walking to the railway station on a regular basis. A bus journey to Liverpool or Manchester would take at least an hour. Transport infrastructure is not up to scratch. The picture of car use would not change.

10.18 Over 200 people turned out for a public meeting on the appeal proposal. We may not be experts but we are bright and articulate and know enough about the local area. The fundamental geography of the site militates against its development.

The Case for Mrs Margaret Steen[142]

10.19 I refer to the appellant's opening statement and comments about the "*deprivation*" of the area. How long does it take for a development to become "*sustainable*"? The playing fields, for example, will not be delivered until the 500th house is built. Mitigation needs to be on a like-for-like basis or we will suffer a double dose of "*deprivation*". Nor will the full bus service or primary school be provided until the end of year eight. Secondary school provision is likely to be mobile classrooms.

10.20 All local primary schools are oversubscribed and the Peel Hall site is furthest from all of them. There will be further impacts upon them if no new school is provided on site. Class sizes will increase year on year. There is no safe route to Winwick Primary School from Peel Hall.

10.21 We should not have to wait for all of the infrastructure or have to put up with the highways issues. We should be looking at improvements to the area. I

[142] Please see also ID17

believe that the adverse impacts of the appeal proposal would significantly and demonstrably outweigh the benefits.

The Case for Mrs Tina Dutton[143]

10.22 I have lived on Birch Avenue for 28 years and represent the objections of residents to the Winwick Farm end of the proposed development.

10.23 The junction of Birch Avenue and the A49 is sub-standard, yet access for a further 20 houses is proposed. The Alders (NHS Child and Adolescent Mental Health Services centre) unit at the end of Birch Avenue already attracts well over the anticipated number of vehicles each day, which overspill from the car park and have to park on Birch Avenue, which is narrow. Emergency vehicles already have difficulty getting through. The proposed parking bays would be filled, like now, with overspill parking.

10.24 In addition, The Alders has resulted in higher levels of criminal activity, with an average of 14 police call outs a month.

10.25 We strongly oppose any proposal to open up Birch Avenue to become a through route and to allow access to the proposed work units from Elm Road.

10.26 This area becomes gridlocked if there is an accident on the M6, M62 or the M56. Junction 8 was built to relieve some of the congestion, but it was not long before the Alban retail park was extended and the Warrington Wolves rugby ground moved onto the A49. Traffic on match days is impossible and Christmas is even worse. One cannot rely on local buses.

10.27 I played on the Peel Hall site when I was a child and chose to live next to it when I was older. My children have played and walked on it too.

10.28 The appeal scheme may create jobs but it would change lives, and not for the better. Do we really need more houses when there are 40,282 empty houses in the North West, according to the National Housing Federation?

10.29 If the development is built we will be infested with vermin.

10.30 In conclusion, the appeal site is landlocked and the local infrastructure is unsustainable.

The Case for Mrs Sandra Kavanagh

10.31 I have lived here for 35 years. I believe that the appeal proposal will give rise to horrendous congestion. The proposed school will not be built for ages and there will, therefore, be increased traffic on the school run. If there are breakdowns on the M6/M62 then the area will become gridlocked.

10.32 I also share the concerns of the police[144] about the effect of the proposal on the A49/M62 J9 junction in road safety terms. Safety on Winwick Road is also a major issue, and it is often gridlocked. A Travel Plan for the site is a futile exercise.

[143] See ID14
[144] Please refer to ID13

10.33 Pollution affects the lungs of children, as has been shown by research from North America[145]. In Warrington we have one of the worst pollution problems in the North West of England.

10.34 It has been suggested that the proposed supermarket would "*enhance*" our lives. But it will cause businesses to close. I once had a shop, which closed when Morrisons supermarket opened. This proposal will have significant impacts on shops on Poplars Avenue, Cotswold Avenue and Howson Road.

The Case for Ms Helen Jones MP[146]

10.35 I have been the Member of Parliament for Warrington North since 1997. The issue of development on the Peel Hall site has been the issue on which I have received the most correspondence during this time, numbering several thousand letters and emails. Only three have ever expressed support for development on the site.

10.36 This case is a great example of how local residents have engaged with the planning process, as promoted by governments of all political colours, and their voice deserves to be given a significant degree of weight.

10.37 The appeal proposal is massive in scope and would change the nature of the area irrevocably. The housing proposed would not be of the type needed in Warrington, being mainly expensive houses for commuters. The scheme would create adverse knock-on effects on infrastructure; traffic; air pollution; and loss of green space. Nothing has changed materially from when a similar application was last considered at a public Inquiry in 2013.

The Case for Mr Geoff Settle[147]

10.38 I am the Chair of the Warrington Conservation Forum and a former ward councillor for Poulton North.

10.39 The appeal site is the last green space in North Warrington, used by local residents for walking dogs, riding horses and recreation.

10.40 The Forum is proactive in trying to improve biodiversity locally. Bird species on the critical Red 'at risk' list have been identified on the appeal site, which is a good refuge for struggling birds and which features a good range of species.

10.41 There is a thriving population of small mammals on the site, including water voles and hedgehogs. If developed, there will be harm to wildlife as the site is landlocked and there is nowhere for the wildlife to go. It will have a much lower probability of sustaining wildlife.

10.42 Radley Plantation has drainage issues and it is uncertain what the impacts of the appeal proposal upon it may be.

10.43 If the appeal proposal goes ahead there will need to be a removal of invasive species; buffers along Spa Brook and around Radley Plantation; and a site-

[145] Ibid
[146] Ms Jones MP submitted a letter to the Inquiry (ID23). I read this out at the request of local residents.
[147] Please see also ID31

wide ecology plan. It is not clear what the landscaping buffer alongside the M62 would be but it could be of benefit to wildlife. Any lighting plan would need to be sympathetic to wildlife.

10.44 There would be a noise impact upon the new dwellings from the motorway, the noise from which can even now be heard from dwellings a quarter of a mile away.

The Case for Mr Jon Parr[148]

10.45 I have lived in the area for over 30 years and played on the appeal site as a child.

10.46 The appeal proposal would contribute between 60,000 and 80,000 tonnes of CO2 during the construction period alone, with a further contribution of 10,000 tonnes every year upon completion. The nitrous oxide emissions in an air quality management area would also have adverse impacts.

10.47 The information provided by the appellant remains deficient, inaccurate and without substance. It is evident that they cannot make the proposal work, even given the ample time provided to them to do so.

10.48 The option to commute from Warrington, Padgate or Birchwood is unrealistic and proposed by someone who does not use Northern Rail services. Express services will cease to operate in May 2018, with the replacement service being less frequent and with a reduced number of carriages. Peak hour commuters are crammed onto the trains already and many are now opting to drive.

10.49 People do not walk or cycle to the stations in great numbers, especially in inclement weather and I will not leave my bike at a sleepy railway station.

10.50 More realistic traffic volumes need to be assessed as most people living in Warrington do not work here. In addition, approved developments, mainly commercial schemes, from neighbouring boroughs do not appear to have been included; no consideration has been given to traffic between February and October when Warrington Wolves play at home; and the presence of Ikea and one of the largest M&S stores in the country has not been factored in.

10.51 The appeal proposal would result in the loss of Mill Lane playing field and its relocation to Radley Playing Fields. Local residents will not venture to the relocated fields because of local school affinities. This will deprive residents of an easily accessible facility that has stood for over 30 years.

10.52 In addition, there is no evidence that the land is available for development and so the proposal could be undeliverable. The National Planning Policy Framework discusses the importance of delivering a project in a timely manner. The appeal proposal would take 10 years, during which time we will suffer the consequences.

[148] Please see also ID24 (this includes a USB stick with drone footage of local roads on a day in November 2016 with no accidents on the local network or motorway)

The Case for Mr Dave Sawyer[149]

10.53 I have lived on Brathay Close, which is opposite the point on Poplars Avenue where access to the appeal site is proposed, since 1996/97. I am a former employee of the Warrington Development Corporation.

10.54 Warrington was designated as a new town in the 1960s with the intention that new development would be sited in satellite districts around the old town, connected by three major expressway routes. These were never completed, which has resulted in large amounts of cross town traffic having to make use of a totally inadequate road network.

10.55 Tesco's flagship store, with Warrington Wolves' stadium next door, on Winwick Road generates a substantial amount of additional traffic using Winwick Road, Poplars Avenue and Long Lane. The Junction Nine retail park on Winwick Road now contains 18 units with 963 free parking spaces. This has resulted in further traffic volumes on Poplars Avenue, Cleveland Road and Sandy Lane West.

10.56 These same roads are affected by east/west traffic seeking to access Ikea and the flagship M&S store, with Sandy Lane West and Cleveland Avenue also being impacted by traffic trying to leave the recently completed retail site (with Aldi, Costa, a pub and smaller stores) on Sandy Lane West. Substantial tailbacks regularly result, notably as motorists block the road in order to exit from Aldi.

10.57 Traffic exiting the site onto Poplars Avenue would lead to intolerable and unsustainable levels of vehicular movement throughout the ward, with the proposed supermarket likely to generate traffic around the clock. The care home would also be busy with a constant flow of visitors, ambulances and deliveries.

10.58 It is hard to understand why the proposed employment land is required at all, given that there is already a purpose built area in the ward less than half a mile away, with at least c.4600 square metres (50,000 square feet) of office and factory space available. The Gemini and Birchwood business parks are also nearby, as is the Grange Employment Area.

10.59 The area does not need another supermarket. There are four within a mile of the appeal site, with three smaller stores in the locality and an Iceland Food Warehouse at Junction Nine. An additional supermarket could also lead to closures elsewhere.

10.60 The ward suffers from background noise generated by the major highways in the area. Additional local traffic would add to this.

10.61 The prime minister recently said of planning matters that we need to have the right houses in the right places. These would be the wrong houses in the wrong place.

[149] Please see also ID 25

The Case for Ms Catherine Fortune[150]

10.62 I have lived in Fearnhead for 37 years.

10.63 This area is not served well by buses, contrary to the submissions of the appellant. Recent service reductions have occurred here, impacting on Fearnhead and Cinnamon Brow residents.

10.64 Padgate railway station is closest to the appeal site. Served only hourly by Northern Rail it is 'semi slow' and not punctual. The westbound platform has no shelter.

10.65 Birchwood and Warrington Central are better for commuting, but trains are overcrowded and frequently delayed. From May 2018 the TransPennine Express route will be changing. Direct rail from Warrington to Leeds, York and Newcastle will be lost. There is little connectivity, reliability or capacity for Warrington's commuters.

10.66 I do not feel supported as a cyclist in Warrington, in spite of years of experience and a good knowledge of local on and off-road routes. The many parked cars on the Poplars estate are difficult to negotiate. I never cycle on Delph Lane or Blackbrook Avenue. You need a full range of defensive cycling techniques as you cycle around the area.

10.67 A £250 voucher might buy a decent bike and there are some lovely rides on the Transpennine Trail, but you have to get there first. None of the pedestrian and cycle routes proposed with Local Growth Fund money serve this part of Warrington.

10.68 The proposed green corridor along the site's northern boundary would be far too noisy to hold a conversation and I would be worried about traffic fumes there.

10.69 New housing is being developed in this country in a genuinely sustainable way. 'Cambridge North' is a good example of this, with reduced reliance on cars and with good transport links, including a new railway station and the Cambridgeshire Guided Busway. Cycling will be a natural choice. The contrast with transport options that would be available to future residents of Peel Hall is stark. I find the prospect of even more cars on my local roads upsetting.

The Case for Mr Stuart Mann[151]

10.70 I live on Myddleton Lane in Winwick village, where I have resided for over 30 years.

10.71 The roads around the village are on their knees as a result of current vehicle congestion. During that time around 400 houses have been built in the parish, while bus routes have been cut back and no improvements to the highway infrastructure have occurred.

[150] Please see also ID26
[151] Please see also ID27

10.72 There is a massive bottleneck at the M62/M6 junction as a result of the failure to increase capacity here. The smart motorway has made no difference at all, merely slowing vehicles down, creating longer queues and more pollution.

10.73 To reach Manchester in time for work, I have to leave home 30 minutes earlier than I once did. Drivers now cut through Winwick to bypass daily queues on the M62 during peak commuting hours. It only takes one car to break down and the traffic increases fourfold. It is often virtually impossible, as an adult let alone as a child, to cross Myddleton Lane.

10.74 The appeal site has no planned investment in highways infrastructure and has a main exit onto Delph Lane, from where vehicles would naturally head through Winwick to join the motorways.

10.75 One also needs to consider the development of the former Parkside colliery site two miles down the A49 from Winwick and the new houses one junction further west up the M62 at Omega. Drivers from here will also learn of the Winwick village cut through.

10.76 If this appeal is allowed, drivers in Winwick will be trapped on their driveways for long periods because of the sheer volume of traffic using our saturated roads as a rat run.

The Case for Ms Sian Gandy[152]

10.77 My family and I regularly take our ponies and bikes out on the Peel Hall bridleway and other local lanes and tracks. This is an area enjoyed by many, away from the hustle and bustle of town, where I also grew up. It is the only safe place left to ride out and is an off-road area where our children can walk, run, cycle, ride and play. It is not an area that has been "*slightly forgotten*", as the appellant states[153], but a local gem that we cannot afford to give up.

The Case for Ms Emma Fitzpatrick[154]

10.78 I live on Lysander Drive, Padgate, a stone's throw from the proposed development site.

10.79 I have recently had to use Warrington A&E on two occasions, due to sudden illness, where I experienced long delays while waiting to be seen and admitted. I was told that *"the problem is Warrington is growing but our hospital stays the same"*. Anyone considering going ahead with this development should go and look around Warrington A&E and see for themselves that it is only going to push it to breaking point.

The Case for Ms Jean Rogers

10.80 I live on Ballater Drive. I am retired and was hoping to spend my time walking my dogs through this "*forgotten"* place[155].

[152] Please see also ID28
[153] Mr Griffiths' Evidence in Chief
[154] Please see also ID29
[155] Mr Griffiths' Evidence in Chief

10.81 There are a lot of elderly people, living in bungalows, in the wider area. It is hard for them to get across the roads to a bus stop and will get harder with the increased traffic from the appeal proposal.

10.82 There are frogs in the ponds in the park (Mill Lane fields and Radley Woods), as well as bats and foxes. I saw a heron this morning. The appeal proposal means that we will lose wildlife.

10.83 The proposal will affect cyclists, motorists, pedestrians and wildlife. We will all be affected by construction traffic.

10.84 I no longer go into Warrington on a Saturday as it is too busy and there are too many sets of traffic lights on Manchester Road. I will end up being stuck in the house.

The Case for Mrs Helen Gurnani[156]

10.85 I do not live near the appeal site and have never set foot upon it. I am here to make the case that there is no need to build on it or on Warrington's green belt. It is not a case of north versus south Warrington, when considering where new development should go. We should be putting a break on all this explosive development.

The Case for Mrs Julie Kueres

10.86 I am a member of the Save Warrington group. This development is not needed to meet the housing numbers set out in the Council's Preferred Development Option (PDO). We don't need 24,000 houses in Warrington and are asking for the PDO to be scrapped and for the Council to deliver a local plan that meets local community aspirations. We should have 10,000 to 15,000 houses over a twenty-year period.

10.87 Release of green belt land is unacceptable. The PDO is destructive and invasive. Local infrastructure provision is insufficient and the town centre is in decline. Warrington has lots of brownfield land and banked land. It is our town and we intend to keep it.

10.88 Sustainability is a golden thread running through the planning system, which should be full, fair and effective. The benefits of the original sale of the land are not clear. We should know about ownership and any profit share arrangements.

The Case for Mrs Danielle Austen

10.89 I live in Fearnhead. I walk our dog on Peel Hall and use the site on a regular basis. I cannot believe that the appellant is proposing to use four storey apartment buildings as a noise barrier to the M62. These dwellings would be the least expensive and so inhabited by the most vulnerable and needy. Perhaps it is because we live in what the appellant calls a "*deprived area*" and the proposal will help us to, as they said, "*pull our socks up*"[157].

[156] Please see also ID59
[157] Mr Griffiths' Evidence in Chief

The Case for Mrs Kath Robinson

10.90 Residents have ably and admirably described the negative impacts of the proposed development. I worry about the impacts upon my grandchildren of an increased number of vehicles, with their noise, dirt and pollution. There will be a significant human impact. Its effects will be widely felt.

The Case for Ms Catherine Webster

10.91 I am fighting for the next generation and the consequences of increasing traffic on all of our roads.

10.92 There are a number of small convenience stores around the area, all of which have been taken over by larger companies. If the development goes ahead there will be more retail units and businesses relying on bulk deliveries. They are delivered by very large 32 ton HGVs, which deliver to a number of shops over the Warrington area.

10.93 I have witnessed an HGV manoeuvring outside Myddleton Hall on Delph Lane. It is a very tight squeeze. I have also experienced problems with vehicles using Highfield Lane, Delph Lane, etc to access Warrington. They use this route to avoid standing traffic on the M6, etc.

10.94 More retail units on Peel Hall would be a bad thing. It would add to traffic issues. I do not believe that consideration has been given to the full impact of such vehicles on local roads not designed for such.

The Case for Ms Wareham[158]

10.95 I live on Grasmere Avenue. There will not be enough space for the proposed community centre on Radley Common. The current one is vandalised all the time.

10.96 The proposed development will result in crime going up in the area, as has happened at the new development at Chapelford Village, which is supposed to be a 'smart' place. Bus shelters will be used by drunks and drug takers. I will put my house on the market if planning permission is granted for the appeal scheme.

10.97 I am disabled and even as things are I could not get along Poplars Avenue on my mobility scooter due to vehicles blocking the pavement. Grasmere Avenue was not designed for heavy traffic but only as an access for the residents who live there.

The Case for Cllr Cathy Mitchell

10.98 I am the Chair of Warrington Borough Transport, responsible for Warrington's Own Buses (previously Network Warrington), which is the local bus company for Warrington. I can confirm that there is no agreement in place between Warrington's Own Buses and the appellant for the provision of bus services to the appeal site.

[158] Please see also ID63

11. Written Representations

11.1 The written representations received expressed some form of objection to the proposal. Those submitted in response to the original planning application are summarised in the planning officer's report to the Council's Planning Committee[159]. Those submitted in relation to the appeal notification are summarised below. They cover the same ground as those received in relation to the original planning application, notably that:

- nearby dwellings would become unsaleable and their privacy compromised;
- there would be an increase in crime;
- there would be a loss of habitat, wildlife and of green space used by local residents;
- local schools, surgeries, the hospital and roads could not cope;
- the proposed school would be needed earlier in the development process;
- highway safety and efficiency would be compromised on several local roads, road noise would increase and pollution levels would rise;
- access via Birch Avenue is already difficult and the street is not appropriate for more vehicles;
- there would be noise and dust for many years during construction;
- there would be an increased risk of flooding, including from the proposed balancing ponds;
- ground conditions are complex and unstable; and
- brownfield land should be used first.

12. Planning Conditions and Obligations

Conditions

12.1 As set out in the Framework, conditions must be necessary; relevant to planning; relevant to the development to be permitted; enforceable; and reasonable in all other respects. I address these matters, as necessary, under three headings below.

12.2 First, I consider those conditions that the parties agreed were necessary in the event that the Secretary of State decides to grant planning permission. These may be found at Appendix C. I have made a number of minor amendments to and/or conflated some of the agreed conditions as presented (which went through various iterations), in the interests of clarity, precision and implementation and to avoid repetition.

12.3 There was disagreement about the trigger points for the off-site highway works set out in conditions 12 and 13 (see Appendix B). I have set out my reasoning on this below. Even so, I have included in Appendix D the Council's

[159] CD APP1

two alternative conditions, suggested in place of condition 12, should they be preferred by the Secretary of State if granting planning permission.

12.4 It was common ground that a contaminated land/land remediation condition was required, but the parties failed to agree on how this should be framed. For the reasons set out below I consider the Council's approach to be most appropriate. I have, however, included the appellant's proposed condition at Appendix C, again should it be preferred by the Secretary of State if he decides to grant planning permission.

12.5 Second, I raised concerns at the Inquiry about agreed condition 7. Although I have found that this condition can meet the tests as set out in the Framework[160], and thus have included it in the suggested list of conditions, I do not consider that it accords with the relevant parts of the Guidance. Again, I consider this further below.

12.6 Finally, the Council proposed a condition in relation to works to Radley Lane[161] the necessity of which was disputed. This condition is considered separately below and can be found at Appendix C, should the Secretary of State consider that it meets the above tests and wish to apply it if granting planning permission.

12.7 Where any other matters of detail relating to otherwise agreed conditions were debated, I have addressed these under 'Agreed Conditions'.

Agreed Conditions

12.8 The conditions defining the scope of the reserved matters; specifying the time limits for submission of reserved matters and commencement of development; requiring compliance with the relevant plans; setting the maximum number of dwellings; setting the floor space of the non-residential uses; requiring the agreement of a market housing mix; and requiring phasing and master plans are necessary to provide certainty, to define the permission in line with what has been proposed and to ensure an appropriate mix of housing that reflects local needs.

12.9 That removing permitted development rights from the proposed B1 employment units is necessary due to their proximity to residential development, future and proposed, and the need to ensure that all future uses of the units remain compatible with this layout. I consider this situation to be exceptional, such that the condition is justified.

12.10 The condition relating to Secured by Design is necessary in the interests of good design, contributing to the creation of a safe environment.

12.11 A Sports Strategy condition is needed to provide a robust analysis of the appropriate level of new sports facilities required on the appeal site. That relating to the relocation of the Mill Lane playing fields is necessary to ensure that adequate replacement is secured.

[160] Paragraph 55
[161] Please see ID72

12.12 Conditions relating to drainage are required to ensure that the site is properly drained and to mitigate flood risk on and off the site.

12.13 The landscape and ecological management plan condition; that requiring control of invasive plant species; that in relation to nesting birds; and those relating to bats and badgers are necessary to protect and enhance biodiversity on the site. A condition concerning a lighting scheme is necessary for the same reasons, with particular regard to securing foraging corridors for bats and other nocturnal animals.

12.14 Access; parking (including cycle parking); off-site and internal highways design and works; servicing and waste management; and the condition relating to access to the M62 motorway are necessary to ensure highway and pedestrian safety and highway efficiency. The condition requiring Electric Vehicle Charging points is necessary to ensure policy compliance and in the interests of mitigating CO_2 emissions. That referring to The Greenway is necessary to ensure policy compliance with regard to encouraging active travel.

12.15 The conditions relating to bus infrastructure and travel plans are necessary to ensure policy compliance, by encouraging use of sustainable modes of transport and making effective use of existing public transport opportunities.

12.16 The Construction Environment Management Plan condition is necessary to ensure that there is no adverse impact upon the living conditions of local residents, or upon the local highway network, during construction.

12.17 In line with adopted policy, groundwater and archaeological conditions are necessary given, respectively, the presence of water bodies and potential presence of contamination (notably given the past intensive agricultural use of the site), and the likely presence of historic remains, on the site.

12.18 The noise mitigation conditions are necessary in the interests of ensuring acceptable living conditions for future occupiers of the appeal scheme, and to protect the occupiers of neighbouring properties from noise arising.

12.19 The condition relating to tree and hedgerow protection is necessary to ensure that appropriate safeguards are in place for retained trees and hedges.

12.20 I am satisfied that, in order to enable a full and complete understanding of the nature and construction of the development that may come forward as a result of this appeal, all of those conditions requiring action before commencement of development are so structured.

12.21 The trigger points for highways conditions 12 and 13 were debated. I address these in turn.

12.22 The trigger points in dispute in condition 12 were those relating to junctions a), b), c), and g). The Council was of the view that works relating to all of these junctions should be complete before any dwellings were occupied, given the already congested nature of the local network.

12.23 The Council also proposed splitting the off-site highways works into two separate conditions (see Appendix D). A number of the listed works in these

conditions are proposed as the Council considers that there will be impacts upon junctions that have not been modelled to date.

12.24 I have found that it would be appropriate if the impacts of the appeal scheme on the highway network were modelled using the more up-to-date WMMTM 2016. This could very well mean that additional junctions would need more detailed modelling. Nonetheless, if the Secretary of State was minded to grant planning permission, I do not consider that the Council's alternative proposed conditions could be considered reasonable or necessary, given the more limited scope of the modelling work undertaken to date.

12.25 The appellant proposed the triggers that I have incorporated within the condition, derived from the traffic modelling work undertaken, which is based upon WMMTM 2008. Notwithstanding my concerns about the basis for that work, if planning permission was to be granted then the extent of the appellant's traffic modelling work would have been deemed to be acceptable. As such, the assessments of junction capacity derived from it would also be considered acceptable and, therefore, it seems reasonable for the appellant's trigger points to be used.

12.26 Responding to condition 13, Highways England was of the view that the works to M62 J9 should be completed before occupation of the 600th dwelling. At that point, the junction would be operating at 99.9% saturation. The appellant was of the view that 840 dwellings was a more appropriate trigger, at which point the junction would be at 100.4% saturation.

12.27 The difference between these trigger points is relatively slim. Nonetheless, given that the junction is already operating at 90% saturation and would be, as near as makes no odds, at saturation point with traffic from 600 additional dwellings, it seems to me that 600 dwellings is a reasonable trigger. There is no evidence to suggest that such a trigger would place any undue viability burden upon the development.

12.28 A land contamination/site remediation condition is necessary given the site's former intensive agricultural use. The substantive dispute in this instance was over the length of the two conditions proposed by the Council. Although far from concise, the conditions are clear and are logically presented. The Council's justification for them[162] in preference to that proposed by the appellant is compelling and I see no reason not to favour them.

12.29 United Utilities proposed a number of conditions, which have been included as proposed by them or the aims of which have been addressed through other conditions. I do not consider that a condition relating to foul water is necessary as this matter is addressed by other legislation and United Utilities have raised no objection on capacity grounds.

Agreed Condition 7

12.30 The appellant does not control all of the land within the boundary of the appeal site. In terms of the smaller parcels, required for access off Poplars Avenue, this issue is *de minimis* as far as the s.106 agreement is concerned. The

[162] ID65

matter is much more significant with regard to the larger area of land known as Mill Lane playing fields [13.69 onwards].

12.31 Condition 7 seeks to prevent development on Mill Lane playing fields until all those with an interest in the land are bound by the terms of the s.106 agreement. This would be achieved through a further planning obligation.

12.32 Arguably, such a condition would meet the tests set out in the Framework[163]. It is necessary to ensure that all of the land within the appeal site is bound by the terms of the s.106 agreement. It is clearly relevant to planning and to the proposed development. It would be enforceable and is precise and reasonable.

12.33 The Guidance, however, which is a material consideration of considerable weight, sets out a number of other criteria that such a condition should meet [5.23].

12.34 First, there should be exceptional circumstances. There is no definition of what "*exceptional circumstances*" may be. They are, therefore, a matter of judgment. It is not clear what, if any, exceptional (using the common understanding of 'unusual' or 'not typical') circumstances arise in this case. The Council is unable to demonstrate a five-year supply of deliverable housing land, which could be considered as being exceptional, insofar as it is expected that a local planning authority should maintain such a supply. It is, however, far from unusual or atypical to have to consider such an eventuality when making planning decisions.

12.35 Second, is the matter of whether the appeal proposal can be considered complex *and* strategically important. There is no evidence before me to suggest that the appeal proposal, although for a large development, is particularly complex. The proposed planning conditions (that which is the focus of this discussion notwithstanding) and obligations are fairly standard, indicative of a relatively straightforward scheme with no need for, for example, complex engineering, land remediation or infrastructure works.

12.36 In terms of being strategically important, the site does not feature in any currently adopted development plan for the area. Although namechecked, it is not considered explicitly in the Council's emerging Preferred Development Options[164]. The site is included in the Council's SHLAA [9.19], with assumptions made about housing being delivered on it during the five year period going forward, but the SHLAA is not a policy document and carries very little, if any, weight as a decision making tool. In any case, as I have concluded below [13.82], the site does not appear to be available or achievable in its entirety, which would suggest that the SHLAA's judgment is incorrect in any case.

12.37 Turning to the final requirement, the appellant has not presented evidence to suggest that the development would be at serious risk of non-delivery without

[163] Para. 55

[164] Even if that were not the case, that document is at an early stage of development and, as the parties agreed, carries very little if any weight as a material consideration (CD APP5 p.8). Even less so, now that a revised draft is expected later this year for consultation (see ID76).

the proposed condition. Quite the opposite is suggested, in fact, with the site's ability to deliver at a high rate being suggested as a benefit. [9.117]

12.38 The further difficulty is that the condition would make little difference to what I consider, on the basis of the evidence currently before me, to be an undeliverable scheme. The current landowner, namely Homes England, whom the condition seeks ostensibly to tie in to the s.106, has been very clear that it is not proposing to part with the land. It has consistently declined to sign up to a s.106 agreement (hence the need for the proposed condition) and it is difficult to see how the condition would change this. It is not unreasonable to consider, somewhat ironically, that the need to find a landowner (be that Homes England or a subsequent owner) willing to tie themselves to a s.106, already agreed between other parties, before their land could be developed, could well become a risk to scheme delivery of itself.

12.39 In short, I am not persuaded that the proposed condition meets the requirements of the Guidance and, as such, although clearly necessary if the Mill Lane playing fields are to be tied into the relevant planning obligations, is inappropriate in terms and indicative of the appellant's failure to secure the land necessary for the development proposed.

Disputed condition

12.40 The Council proposed a condition relating to lighting on Radley Lane[165], the need for and reasonableness of which was disputed by the appellant. I do not consider such a condition to be necessary. The development will be permeable for pedestrians and cyclists, with bespoke means of crossing through it to access points on various surrounding roads. These would be more suitable than Radley Lane, which is not designed for pedestrian use.

12.41 It is possible that there would be a period of time during construction when Radley Lane would be a primary pedestrian/cyclist access road, which would not be ideal. Nonetheless, this would not be the permanent situation. More fundamentally, the section in question is not in the ownership of the appellant and, as such, I do not consider that the proposed condition would be reasonable as there can be no certainty that the required lighting scheme could be delivered.

Obligations

12.42 Regulation 122 of the Community Infrastructure Levy Regulations 2010 (the CIL Regulations) requires that if planning obligations contained in s.106 Agreements are to be taken into account in the grant of planning permission, those obligations must be necessary, directly related, and fairly and reasonably related in scale and kind to the development in question.

12.43 The obligations relate to affordable housing (with the option to provide some of it off-site if deemed appropriate by the decision maker); the laying out and ongoing maintenance of public open space; the provision of new sports pitches and a community building with changing rooms; bus service contributions; provision, as required, within specified timescales of an area of land sufficient for the construction of a one form entry primary school on the site, along with

[165] Please refer to ID72 and ID73

a Primary School Contribution and a Secondary Education Contribution (payable to the Council or to the University of Chester Academy School); and a Healthcare Contribution.

12.44 Evidence of the necessity, relevance and proportionality of the obligations was set out in detailed submissions by the Council[166] and by Mr Nick Armstrong[167] of Warrington Clinical Commissioning Group, both of which were discussed at the Inquiry and addressed in the Council's closing submissions[168].

12.45 The obligation relating to affordable housing allows the appellant to deliver some affordable dwellings off-site should the Council agree[169]. Development plan policy allows for off-site affordable housing provision only in certain circumstances and, as such, the Council was clear that its preference was for on-site provision [8.4]. Even so, the obligation does not advance an either/or approach. In other words, it ensures that the Council would still have the final say in whether it was appropriate to provide some affordable housing off-site. I do not consider there to be any harm arising from the flexibility that the obligation affords.

12.46 Turning to the obligation sought towards healthcare provision, the appellant was of the view that this failed to satisfy all of the legal tests. This was rebutted by the Council in the documents noted above. [12.44]

12.47 There is no dispute that the obligation is necessary to make the development acceptable in planning terms. Indeed, the appellant acknowledged that the appeal proposal would give rise to increased healthcare need, which should be mitigated. Based on the calculations provided to me, derived from an adopted Planning Contributions Supplementary Planning Document[170], the contribution also appears to be fairly and reasonably related in scale and kind to the development (contextualised by indicative build costs for a new facility[171]).

12.48 The pivotal issue is whether the obligation is directly related to the development. The Council (through Warrington Clinical Commissioning Group) provided extensive evidence in support of its case that the funds would be spent on the co-location of existing medical practices in Fearnhead and Padgate. There is no site yet identified and the proposal is subject to public consultation. Nonetheless, there is a clear, active strategy in place to address the need arising from the proposed development and, in my judgment, the obligation can be regarded as being directly related to the development.

12.49 My attention was drawn to an appeal decision wherein the Inspector found otherwise in relation to a healthcare obligation. In that instance, however, the Council in question appears to have sought a healthcare obligation as a matter of course, with no idea at all as to what it would be spent upon. That is not the case here. [8.5; 9.111]

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[166] A CIL compliance statement was submitted in advance of the Inquiry. This may be found in the green folder on the case file.
[167] Mr Armstrong's Proof and ID18
[168] ID66
[169] S.106 agreement Schedule 4; Section 9
[170] CD LP14
[171] ID18

12.50 Should the Secretary of State determine that this obligation does not satisfy the relevant tests, and also be minded to grant planning permission, he will need to come to a view about whether it would be appropriate for the development to go forward with an acknowledged adverse impact upon local healthcare services.

12.51 I consider that the unmitigated adverse effects of the proposal upon existing healthcare facilities would be a significant material consideration that would weigh against it. Putting to one side the fact that new residents might find themselves unable to access GP services, Core Strategy policy CS1 is clear that to be sustainable, development must accord with national and local planning policy, taking into account other material considerations. It may not address specifically situations where development is legally unable to make required contributions towards local infrastructure, but it sets out a clear desire to ensure additional social infrastructure is provided where needed to support development.

12.52 In addition, the Framework[172] states that achieving sustainable development means that, in social terms, the planning system should support healthy communities by fostering a well-designed and safe built environment, with accessible services that reflect future needs.

12.53 In conclusion, overall I consider that the submissions and oral evidence demonstrate the basis for the obligations and how they relate to the development proposed, set out (or reference) how any financial contributions have been calculated and indicate whether the CIL regulation pooling limits have breached. It is evident how the funds would be spent. They provide evidence that the above obligations meet the tests set out in the Regulations.

13. Inspector's Conclusions

13.1 The following conclusions are based on the written evidence submitted, on my report of the oral and written representations to the Inquiry and on my inspection of the site and the wider area. The numbers in square brackets thus [ ] refer, as necessary, to paragraphs in other sections of the report.

13.2 At the start of the Inquiry, one of my main considerations was:

> "w*hether the appeal scheme would provide appropriate living conditions for future occupiers, with regard to highway noise and air quality".*

13.3 Such matters, should, in my view, be addressed before the reserved matters stage, so that there is a clear basis on which to take forward detailed design. This would certainly seem prudent given the site's proximity to the M62.

13.4 Nonetheless, on the basis of all that I heard, and having regard to what became a joint position between the main parties on this matter, it appears that these considerations could be addressed satisfactorily by condition (notwithstanding my overall conclusions on the wider issue of air quality). Even so, I do not regard this position as ideal, and feel obligated to reiterate the strong proviso that I made at the Inquiry. That is to say, any mitigation in relation to noise and air quality should be addressed through building situation

[172] Paragraph 8(b)

and orientation rather than through such means as non-opening windows and mechanical ventilation. Others may form a different view, but I do not consider that such mechanisms can be regarded as conducive to the provision of optimum living conditions for future residents.

13.5 I also identified *"the effect of the proposed development on local infrastructure"* as a main consideration. This was largely addressed by the submission of a completed s.106 agreement and, as such, I do not consider it further here. The only outstanding points of dispute between the main parties in relation to local infrastructure have been considered in the section on planning obligations above [12.42 onwards].

13.6 Thus, the main considerations in this appeal are:

- *The effect of the proposed development on the safety and efficiency of the local and strategic highway network;*
- *The effect of the proposed development on the character of the area;*
- *The effect of the proposed development on local air quality; and*
- *Whether the appeal proposal can be regarded as deliverable.*

13.7 For reasons of clarity I have addressed these considerations under a range of headings below.

The effect of the proposed development on the safety and efficiency of the local and strategic highway network

Overview

13.8 In addition to the evidence given by the Council and local residents, it was abundantly clear from my many car journeys in and around Warrington that the appeal site is situated in an area that suffers from high levels of traffic congestion, chiefly at peak periods in the morning and evening, on a daily basis. The M62 and A49 appeared to be particularly badly affected. I have no reason to doubt that congestion is more acute still when there are accidents on the M62, resulting in drivers diverting onto local roads. In addition, I observed vehicles queuing back on Sandy Lane West from the A49 junction, giving rise to particular problems for vehicles seeking to exit the Fordton Retail Park.

13.9 In short, the concerns of the Council, Highways England, Cheshire Constabulary[173] and of local residents in relation to highway safety and efficiency are readily understandable.

13.10 Notwithstanding the lengthy exchanges of evidence on this issue, the substantive dispute between the main parties boils down to whether the appellant's use of superseded local highways data to inform their transport assessment (TA), rather than the quality of the transport work *per se,* matters.

13.11 The appellant's most recent TA derives from a bespoke "Peel Hall" SATURN transport model, constructed for the appellant by respected transport

[173] ID13

consultants. This, and other work informed by it[174], shows that the appeal scheme's impacts on the highway network could be successfully mitigated. I have no reason to consider that the TA is not internally consistent or that the evidence used to inform it was not, at the time that it was being put together, considered appropriate.

13.12 But this latter point is key. The Peel Hall model relies on origin/destination data from the Warrington Multi Modal Transport Model 2008 (WMMTM 2008). This, in turn, depends upon roadside interviews undertaken in 2005 and 2008. It was recognised at the time that use of WMMTM 2008 was only appropriate, "*in lieu of a more up-to-date model*"[175].

13.13 WMMTM 2008 was, however, superseded by the Warrington Multi Modal Transport Model 2016 (WMMTM 2016) produced in support of the Council's Local Plan review. WMMTM 2016 includes much more recent roadside interview results and mobile phone tracking for its origin/destination data. Thus, it provides a more detailed, up-to-date and, therefore, more robust basis for transport modelling in the area than does WMMTM 2008.

13.14 There were considerable tit-for-tat exchanges between the parties about who said what, when, and about which data in the run up to the appeal. Ultimately, they are of little value. Mr Tighe acknowledged[176] that if the appellant was starting again then it would be appropriate to use this more up-to-date data. I can find no compelling reason why WMMTM 2016, or at least the origin/destination data from it, could not have been used in advance of the Inquiry, which was purposely held in abeyance[177] to allow the appellant to produce further transport work (finally submitted in January 2018, well after the appeal had been lodged), or why it could not now be used.

13.15 Indeed, having heard Mr Crossley's evidence, I briefly adjourned the Inquiry to give the main parties (and Highways England) further time to explore this option, with the aim of resolving the matter one way or the other, thus addressing head on a key point of dispute. Following discussion, the appellant determined not to follow this route but to proceed with the appeal. The reason for this was the time that it would take to prepare and run the WMMTM 2016 model, and to analyse the results.

13.16 This issue of time is a thread running through the appellant's transport evidence[178] and, as Mr Tighe agreed[179], was part of the reason that the WMMTM 2016 was not used by the appellant. The other part being that WMMTM 2016 is "*not perfect*". The latter point could be so, but WMMTM 2016 is very clearly more up-to-date than WMMTM 2008. Indeed, the fact that the Council decided to produce WMMTM 2016 is itself indicative of the fact that it no longer considered WMMTM 2008 to be fit for purpose.

M62 J9

[174] See ID33 – ID37
[175] Local Model Validation Report - Revised Transport Assessment Appendix 59
[176] In response to my questions
[177] Please refer to correspondence within the blue wallet on the case file
[178] Mr Tighe's Proof para 3.54
[179] In response to my questions

13.17 The appellant did, however, agree to Highways England carrying out additional modelling of M62 J9. The result was a technical report[180], commissioned by Highways England, submitted to the resumed Inquiry. Drawing upon the report's conclusions, Highways England confirmed formally at the Inquiry[181] that, although there would be adverse impacts upon some arms of the junction there would be, overall, a general improvement with the mitigation proposed by the appellant.

13.18 It is notable, however, that the report assumes no blocking of the junction's exits as a result of queuing traffic on the local network. This was a matter upon which Highways England deferred to the local planning authority and upon which it required certainty (which the Council maintained it was unable to provide, to whatever degree, given its position *vis-à-vis* WMMTM 2008 and 2016). The report also identifies that:

> "*…..the flows used previously were significantly lower than those derived using the agreed approach for this work*."[182]

13.19 In other words, like the Council, Highways England also found differences in the way that the Peel Hall model and WMMTM 2016 assigned traffic flows to the network. It also maintained concerns about how the Peel Hall model had assessed the M62 J9 capacity[183].

Birch Avenue and Mill Lane

13.20 In addition to a specific focus on M62 J9, concerns were raised by residents of Birch Avenue and Mill Lane. I address these streets in turn.

13.21 Residents' concerns about the impacts upon the Birch Avenue/Winwick Road junction from additional housing are covered by the wider discussion below. The point was also made, however, that the road itself is unsuitable for additional residential traffic.

13.22 Birch Avenue is a short cul-de-sac accessed from Winwick Road (A49), with another short cul-de-sac, Elm Road, leading off it. It is a residential street with a large NHS building, The Alders, housing Warrington Child and Adolescent Mental Health Services, at the bottom of it. The appeal scheme proposes that a discrete development of 20 units would be accessed from Birch Avenue.

13.23 This street is narrow and would be unlikely to meet current width requirements if it was proposed now. Many dwellings have no, or very limited, off street parking and, on the occasions that I visited, there were several cars and small vans parked on the road. This reduced the carriageway width such that larger vehicles could just about fit past in places[184].

13.24 It was not disputed that vehicles from all three emergency services are called out regularly to The Alders, at various times of day and night, and have, on occasion, had difficulty negotiating Birch Avenue due to the presence of parked

[180] ID55
[181] Mr Marsh in response to my questions
[182] ID55 p31
[183] Mr Marsh in response to my questions
[184] Please see also ID14 for photographs submitted by Mrs Tina Dutton

vehicles. On-road parking is likely to increase considerably following the appellant's actions in limiting the number of cars able to park on land owned by them at the bottom of Birch Avenue[185]. [10.23; 1024]

13.25 It may be that, in a different context, the effects of the addition of 20 dwellings to a short cul-de-sac would be *de minimis* in highway safety and efficiency terms. In this specific context, however, there is a genuine risk that increased vehicle movements along what is an already congested street, which appears to be used regularly by the emergency services, could give rise to additional vehicle conflicts and, thus, compromise highway efficiency and safety. Turning to Mill Lane, again the issue of the degree to which the proposed mitigation is appropriate is covered under the wider consideration of data integrity below.

13.26 The specific concerns of residents replicated those raised in the past, in relation to a residential scheme for 150 dwellings on part of the appeal site. These were addressed by another Inspector, who felt that Mill Lane was adequate for the scheme then proposed. [9.69]

13.27 There is no requirement upon me to accept without question the conclusion of my colleague. That said, I did not see or hear any evidence during the Inquiry that would lead me to a different conclusion. Although there was some limited on street parking on Mill Lane, and a narrowing of the footway in places, overall the road does appear to be adequate, rather than perfect, as an access route for vehicles and pedestrians, including those with disabilities.

13.28 My assessment of the likely use of Radley Lane, which was also drawn to my attention[186] in the context of highways matters, is covered above. [12.40-12.41]

The wider issue

13.29 Returning to the wider issue, it is evident that a validated WMMTM 2016 was available for use in November 2017[187], but was not drawn upon by the appellant, and that the raw origin/destination data was available earlier[188], but was not requested by the appellant[189] [8.19-8.19].

13.30 In addition, as Mr Tighe acknowledged, the validation of the Peel Hall model did not take in its origin/destination data, which was of a vintage well beyond the six years maximum advocated by the Department for Transport's Transport Analysis Guidance[190] (WebTAG). The inference from this guidance being that data beyond six years old is unlikely to be fit for purpose. [8.20]

13.31 There was some debate about whether this conflict with WebTAG mattered, as it is aimed principally at building evidence in support of business cases to inform investment funding decisions requiring government approval. Nonetheless, WebTAG is clear that:

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[185] ID57
[186] See ID62
[187] Mr Taylor's Proof Appendix 4 page 7
[188] Mr Tighe's Proof para 3.42
[189] Mr Tighe Cross Examination
[190] See CF3 paragraph 8.1.1

"For interventions that do not require government approval this guidance should serve as a best practice guide".

13.32 While acknowledging that there is no policy requirement to use WebTAG, it is a relevant material consideration and there is a clear expectation that it should guide, among other things, the creation of trip matrices. I consider that the TA's conflict with this advice attracts considerable weight. Even if this was not so, my basic concerns about the age of the WMMTM 2008 origin/destination data would remain.

13.33 As Mr Crossley's evidence demonstrates, there are some large differences in trip distribution between WMMTM 2008 and WMMTM 2016, reflective of the period of time that has elapsed between the collection of the data underlying each model. It may be that different runs of the WMMTM 2016 data would produce marginally different results [9.55], but there was no suggestion that they would change fundamentally or suddenly complement the WMMTM 2008 results.

13.34 Use, albeit broad brush, of the WMMTM 2016 data also flags up junctions that would require more detailed modelling, which were set aside using the WMMTM 2008 data [8.21; 9.64]. I give this work little weight, given the lack of clarity over the inputs to it, but it is still reasonable to consider that, even without this assessment, use of WMMTM 2008 data could well have resulted in a miscalculation of wider network junction impacts, neglecting junctions that should be subject to greater scrutiny.

13.35 Whether those differences are significant was the focus of much debate at the Inquiry, not least because the Council accepted that any mitigation needed at affected junctions (that have been modelled) could, in principle, be accommodated within the bounds of the existing highway. That said, it seems reasonable to have, in advance, clarity about the full gamut of potentially affected junctions as well as some degree of assurance, rather than a reliance on theoretical solutions, that a full range of junction works could be delivered without unexpected hiccups or knock-on effects.

13.36 Ultimately, this is a matter of judgment. It could be that the results of the WMMTM 2008 data and the Peel Hall model give an accurate picture of the impacts of the appeal scheme on the highway network, insofar as safety and efficiency are concerned. In my view, however, there is sufficient uncertainty, as well as an acceptance by the appellant that one would usually be required to use the most up-to-date data at the point of decision making[191], that a precautionary approach is entirely appropriate in this instance.

13.37 I am also mindful that some junctions in the immediate area have been altered in the past in order to address matters of highway safety, seeking to reduce traffic volumes and speeds while improving conditions for pedestrians, cyclists and bus users[192]. One would wish to be certain that the appeal proposal would not undo any benefits of such work (indicative of an already strained network) by giving rise to works based upon assumptions from now superseded data.

[191] Mr Tighe cross examination
[192] Please see ID11 and ID12 re Poplars Avenue and Hilden Island

13.38 There is no dispute between the main parties that the Council does not demonstrate, nor seek to demonstrate, that the appeal proposal would give rise to unacceptable highway safety impacts or severe residual cumulative impacts on the road network[193]. The appellant is, therefore, dismissive of the Council's case. This rather misses a fundamental point.

13.39 It is for the appellant to demonstrate, beyond reasonable doubt, that its scheme would not give rise to such effects, not for the Council to demonstrate that it would not. I do not consider that the appellant has done this, given the more recent origin/destination data available and the potential implications of it for the local and strategic highway network in an area with evident highway capacity issues.

13.40 To be clear, I am far from unsympathetic to the appellant's predicament or to what appears to have been, for whatever reasons, a protracted and difficult process to achieve *any* sort of TA. I am also mindful that one must draw a line somewhere, insofar as evidence gathering and modelling is concerned, if planning decisions are ever to be made. The Secretary of State may well consider that this is one of those instances and that the appellant's work, the lack of origin/destination data validation aside, is sufficiently robust that it is fit for purpose.

13.41 In my judgment, however, in this instance there does not appear to be any compelling reason why the most up-to-date modelling data, being WMMTM 2016, has not, or could not, be used to provide the most accurate and reliable picture of the impacts of the appeal scheme.

Conclusion on highway safety and efficiency

13.42 I conclude that, overall, the appeal proposal has failed to demonstrate that it would not create an adverse impact upon the safety and efficiency of the local and strategic highway network. It would conflict with Core Strategy policy MP7 and relevant paragraphs of the Framework, the requirements of which are set out above. [Section 5]

13.43 The appellant implied in Closing, albeit not terribly forcefully, that the relevant Core Strategy policies may set a lower bar than the Framework with regard to when highways issues may constitute a reason for refusal. As such, only limited weight should be given to them.

13.44 The word "*severe*" may not feature in policy MP7 but that does not, in my view, render the policy inconsistent with the Framework. Both clearly seek to ensure that highway efficiency is not compromised by new development; severity is a matter of judgment. Either way, with semantics aside, my concern remains that the evidence does not allow one to be satisfied that the requirements of either the development plan or the Framework have been met in this regard. A precautionary approach is appropriate.

The effect of the proposed development on the character of the area

13.45 The focus solely on character here, rather than appearance too, is deliberate. The concern of some local residents, and the Council, being that the additional

[193] Framework para. 109.

traffic arising from the appeal proposal would alter the character of the area. [10.12; 10.37; 10.57; 10.81; 10.83; 10.92; 10.94]

13.46 Briefly, in terms of appearance, there is no reason why a well-designed scheme on the appeal site should appear at odds with the wider area. Nor was there any substantive argument to the contrary.

13.47 The character of the area is, unsurprisingly, residential. It is a dense network of, often winding, interconnected streets, with wide pavements, numerous deep verges and dwellings fronting onto the footway behind short front gardens. The reasonable inference from the positioning of the dwellings in relation to the highway, and the highway layout itself, is that these streets were designed for the purpose of conveying vehicles and pedestrians to and from pre-planned development safely. There does not appear to have been any obvious expectation (at least in terms of the (lack of) provision of access points into the appeal site) of them needing to accommodate additional flows from future major development upon the appeal site.

13.48 This is reflected in the character of the area today. Most vehicles do not appear to travel at speed, streets are straightforward to cross and it is a pleasant area through which to walk (although this situation changes on some streets during the peak hours). Aside from the constant background noise from the M62 in places, the area is relatively quiet.

13.49 The appeal proposal would be unlikely to have any impact upon the majority of residential streets in the area, in as much as there would be no obvious reason for traffic from the site to access them. Even using the appellant's figures[194], however, and having regard to the 'without development' scenarios, peak hour flows along those streets that serve as routes into and out of the residential area, chiefly Poplars Avenue, Capesthorne Road, Cleveland Road, Cotswold Road, Howson Road and Sandy Lane, would increase significantly. Sandy Lane West, Poplars Avenue and Capesthorne Road would see Annual Average Daily Traffic (AADT) levels reach over 10,000 by 2030. [8.23; 8.24; 9.81]

13.50 There was debate at the Inquiry as to whether the technical function of these roads would change with such flows upon them. This is, I suggest, moot. Even if their function was to remain the same, the level of increase in the flow of traffic along them, whether technically appropriate or not, would, inevitably, make them less pleasant routes along which to walk (or cycle) and, indeed, to drive. They would be busier, noisier and, potentially, more difficult to cross especially for certain residents [10.81].

13.51 The extension of the 20 mph speed limit that is in place on Poplars Avenue could serve to address some such concerns. There is not, however, a firm proposal before me such that a judgment can be made, nor is there any certainty that the necessary Traffic Regulation Order could be secured. [8.25; 9.83]

13.52 The nature of the vehicles using the area would change too. Class B1 (c) uses and a local centre can sit comfortably with residential development [9.85]. But that is not the point. The potential presence of an employment area and a local

[194] ID33 p4

centre, accessed through the extant residential area, would result in an increase in commercial vehicles, including a, albeit probably limited, number of HGVs, on streets that currently have, on the basis of my observations, few such vehicles upon them.

13.53 All of this may be considered as an inevitable consequence of any new development. In addition, change does not necessarily equate to harm. Thus, the weight to be attributed to this issue may not be considered very significant. Even so, in this instance, I conclude that the appeal proposal would have an adverse impact upon the character of the area, which would gradually, as the appeal site was built out, change to become a busier and, for pedestrians at least[195], noisier area through which to travel (the issue of air quality is addressed below).

13.54 Thus, the proposal would conflict with policy QE 7 of the Core Strategy, the requirements of which are set out above. It would also conflict with aspects of the Framework[196], which seek to protect local character.

The effect of the proposal on local air quality

13.55 There is no real dispute that the appellant's initial air quality work had some failings, chiefly with regard to the on-site air quality monitoring, and was, in effect, set aside by the appellant to be superseded by that referenced in Mr Hawkins' proof. Additional information was submitted during the course of the Inquiry, in an attempt to secure some further explanation of the evidence thus far provided. I have not found the explanations in all areas to be entirely satisfactory or to answer all of the outstanding queries.

13.56 First, there are clear discrepancies between the grid references used to plot modelled receptor locations/modelled road links and those of the locations themselves. Mr Hawkins' assertion that the modelling remains internally accurate may be correct, but no detail has been provided to show how this may be so or to support his belief that this acknowledged error has not affected the modelling outcomes. [8.40; 9.98]

13.57 Second, the basis for the modelling of affected junctions is unclear with regard to average vehicle speeds. The average speed used by the appellant is 32kph. It is claimed that this is in line with general advice contained within DEFRA's Local Air Quality Management Technical Guidance (TG16)[197]. This is correct, inasmuch as paragraph 7.242 considers a two-way average speed of 20 to 40kph to be most likely.

13.58 TG16 goes on, however, at paragraph 7.246 to consider congested junctions specifically. Those junctions affected by traffic from the appeal site, and around the area of the appeal, are undoubtedly congested at key periods of the day. In this instance, TG16 considers that:

[195] By the end of the Inquiry there was no substantive evidence before me to suggest that this would have a significant adverse impact upon the living conditions of residents insofar as increased traffic noise is concerned.
[196] Paragraphs 9; 110; 127
[197] CD CF12

For a busy junction, assume that traffic approaching the junction slows to an average of 20kph. These should allow for a junction, which suffers from a lot of congestion and stopping traffic.

13.59 Thus, it would appear that the appellant's calculations have not taken TG16's approach to congestion fully into account. If they have, the detail of how the relevant junctions have actually been modelled has not been provided to allow for confirmation of this.

13.60 Even if this was not the case, the basis for the junction modelling appears to derive from on-site observations of vehicle speeds made by the appellant[198]. No detail about when, where or how such observations were made is provided, making it difficult to assess whether they form an appropriate basis for the modelling undertaken. [8.39; 9.100]

13.61 Third, there is no clarity over which traffic data has been used to generate the appellant's air quality results for 2025 and 2031. This means that it is difficult to reach a clear understanding of how the conclusions have been reached and, thus, how robust they may be. [8.39]

13.62 Finally, the lack of consistency in the calculation of AADT between the highways modelling and the air quality modelling is unhelpful and the implications opaque. There is no compelling explanation for the use of the *"x 6"* factor used in the latter, which gives rise to higher AADT figures than the AM=PM + 2.63 x 24 used by the appellant's transport modellers. This is, perhaps, of greater concern in relation to the highways modelling. The use of a higher figure in the air quality assessment would, at least, be looking at a worst case scenario insofar as a comparison with the traffic modelling is concerned. [8.39]

13.63 Sensitivity testing has been undertaken by the appellant. It may be that this is considered as giving the decision maker the required comfort about the degree to which traffic flows would need to increase for there to be harmful air quality impacts. In my view, however, one still needs to have confidence in the underlying assessment methodology and data, and to understand that traffic behaviour [3.39; 9.100; 10.3], as well as volume, is a key issue in order to be confident that the parameters of the sensitivity testing are appropriate. There is also the issue of whether traffic flow data is accurate in the first place, given my findings in relation to WMMTM 2008 and WMMTM 2016 above and, thus, whether the increases are realistic.

13.64 As with its approach to the appellant's highways work, the Council does not seek to identify any significant adverse impacts that arise from the appeal proposal. Again, therefore, the appellant dismisses the Council's case and, again, I must beg to differ.

13.65 The appeal site is in a very sensitive location insofar as air quality management is concerned. This, combined with a wider public policy focus on air quality, which is clearly reflected in the aims of the Framework [5.22], makes it imperative that one can be satisfied that the issue of air quality has been robustly addressed.

[198] See Mr Moore's Proof p.8

13.66 The evidence provided lacks clarity in a number of areas, with some conclusions being presented absent the necessary supporting detail. In addition, given my doubts about some of the transport modelling work from which parts of the air quality work appears to derive, precaution is warranted.

13.67 Thus, I conclude that, overall, the appeal proposal has failed to demonstrate that it would not give rise to an adverse impact upon local air quality. It would conflict with Core Strategy policy QE6, and relevant paragraphs of the Framework, the requirements of which are set out above.

Whether the proposal can be regarded as deliverable

13.68 This consideration was introduced by me and focuses on two issues that became apparent after studying the initial evidence. Namely, that the appellant a) does not have control of the entirety of the appeal site and b) does not appear to have support from a bus operator to run the proposed service through the site. I address each point, and its implications, in turn.

Mill Lane Playing Fields

13.69 The key access route into the eastern part of the site from the Delph Lane/Blackbrook Lane corridor, to serve up to 700 dwellings, would be across a sizeable parcel of land known as Mill Lane playing fields[199]. This land would also accommodate residential units. This is all indicated on the Parameters Plan 1820_24 Rev Z[200].

13.70 Although currently leased to Warrington Borough Council (albeit with a break clause in the lease[201]), the playing fields are owned by Homes England. The evidence before me, in the form of direct correspondence solicited by me from Homes England[202], shows consistently that there is not, nor does there appear ever to have been, an agreement, formal or otherwise, between Homes England and the appellant in relation to the sale, transfer or development of the playing fields. Homes England has also consistently declined to be a party to the s.106 agreement.

13.71 In addition, Homes England has never submitted its land as part of any call for sites by the Council in relation to its Strategic Housing Land Availability Assessment (SHLAA)[203], consistent with the *prima facie* evidence that it is not, in fact, available for development at the present time.

13.72 Without any evidence that the Mill Lane playing field site is available for the development proposed, it is very difficult to see how the scheme can be regarded as deliverable. All of the transport assessment and travel plan work has been predicated on the assumption that an access to the site, for private vehicles and a new bus service, would be achievable from Delph Lane/Blackbrook Avenue. If it is not, there can be even less certainty about the highways implications arising from the proposal.

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[199] See ID42 for ownership plan
[200] See ID80
[201] See ID42
[202] See ID50 and ID64. Pre Inquiry correspondence from Homes England, dated 20th April 2018, may be found on the file.
[203] See ID32

13.73 The appellant's view that it is "*fanciful*" that the playing fields would not be brought forward is itself quixotic given the lack of any evidence to support it. Even if some credence were to be given to the alleged inevitability of development upon them, there is no reason to consider that the site would necessarily be sold to the appellant or that it would come forward as part of, or linked to, *this* scheme.

Bus Service

13.74 The appellant's bus service proposals are explained above [9.73]. They are pitched as a means of providing "*a new and high quality bus route serving the site between Warrington Town Centre and Birchwood*" and ensuring that the site is served by "*excellent public transport links*"[204]. Mr Tighe confirmed that they were a "*key plank*" of the proposals[205], also making clear that they were needed as mitigation, insofar as the accessibility of the site is concerned.

13.75 I expressed reservations in advance of and during the Inquiry about whether the obligations would, in fact, provide an adequate period of financial support for the new service, as well as concerns about the lack of any recent evidence of commitment from a service provider to the proposed routes. Indeed, the most recent evidence before me, rather than being a commitment to the appeal scheme, was one of objection to the Option B proposal and a lack of willingness to consider anything else until that was resolved[206].

13.76 On the penultimate day of the Inquiry, Cllr Cathy Mitchell, Chair of Network Warrington/Warrington's Own Buses, appeared at the Inquiry [10.98]. She confirmed that there was no agreement in place between the bus company and the appellant to provide a service to the site. This was later confirmed by a letter from the Managing Director of Warrington's Own Buses[207].

13.77 I would certainly not expect to see a legal agreement in place between the appellant and a bus service provider, wherein the latter commits with the former to provide a new bus service through the appeal site. Formally securing services would be a matter for the Council. Nor would I expect a bus service provider to be a signatory to a s.106 agreement.

13.78 I would, however, expect there to be some form of recent written commitment in place from a local bus service provider giving an assurance that a "*key plank*" of the appellant's travel strategy, namely an enhanced bus service, would be deliverable and confirming that the s.106 obligations are fit for the purposes expected.

13.79 Although noting the discussion that appears to have taken place in the past between the appellant and Network Warrington/Warrington's Own Buses [9.72], no such assurance is before me. Indeed, the evidence points quite emphatically in the opposite direction.

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[204] Mr Tighe's Proof para. 4.20 and 6.13
[205] Mr Tighe in response to my questions
[206] Email on the case file from Mr Taylor to Mr Davies, cc-ing PINS and the appellant, 18 April 2018
[207] See ID68

13.80 My attention was drawn to transport arrangements for the so-called Omega development[208]. Notwithstanding that there is no evidence before me to suggest that Network Warrington/Warrington's Own Buses did not provide written support for what was being proposed, it is also evident that there was an established Omega Transportation Steering Group, which included Network Warrington/Warrington's Own Buses, the Council and adjoining transport authorities. Thus, this does not appear to be a comparable case to that before me.

Conclusion on deliverability

13.81 At present, given the problems identified above, I am not persuaded that the appeal scheme is deliverable as proposed. The lack of certainty around the availability of the Mill Lane playing fields, for vehicular access generally and bus service penetration specifically, and the lack of clarity around the proposed bus service would give rise to conflict with Core Strategy policies MP1 and MP4, the requirements of which are set out above. [5.8; 5.10]

13.82 In addition, when considering sites for residential development, in the context of a forward supply (to which the appellant claims the appeal site would make a vital contribution [9.15]) the Framework is clear that for a site to be considered "deliverable" it should be "… *available for housing now*…" [209]. That does not appear to be the case here.

Other Considerations

13.83 The appellant made various assertions to the effect that the Council's resistance to the appeal proposal was politically motivated or influenced by political posturing. No substantive evidence was presented in support of these assertions. Planning decisions are no more immune from politics than any other public function but there is nothing in the Council's evidence or behaviour to suggest that its case is in any way frivolous or misguided.

13.84 Various references were also made by the appellant to the so-called Omega scheme and the Council's allegedly more liberal approach to the technical data required for that scheme in comparison with the appeal proposal. There is insufficient detail of Omega before me to allow for any meaningful assessment, however, and in any case I have considered the appeal proposal on its individual merits rather than on the basis of a comparative study.

13.85 Many interested parties objected to the appeal proposal on the grounds that it would lead to the loss of the last green space in north Warrington. It was also evident from interested party statements that the site is used recreationally. On my site visits I noted what appeared to be permissive pathways across, chiefly the western half of, the site. [10.12; 10.27; 10.37; 10.39; 10.45; 10.77; 10.80; 10.89]

13.86 The appeal site is, however, private land. With the exception of the public footpath running along Radley Lane and around Peel Hall Farm to cross the M62, there is no public right of access to the appeal site. As such, its loss to development would not, in real terms, diminish the amount of recreational

[208] See ID71 and appended Development Management Committee Minutes
[209] Glossary

open space that is, legally, available to local residents. The appeal site is largely unremarkable in appearance and situation, and there was no suggestion that it met the Framework's definition of a "*valued landscape*"[210].

13.87 Local residents drew my attention to alleged shortcomings in relation to public transport in the area, in relation to buses and trains [10.17; 10.48; 10.63; 10.65]. I note in particular the contrast drawn between the appeal scheme and the aims of the 'Cambridge North' development. Nonetheless, the site is in an area of Warrington that the Core Strategy regards as appropriate for new development and, the town centre aside, no other areas were suggested as being any better in public transport terms.

13.88 This is not to suggest that one should not be seeking to innovate and improve on what exists and, in addition, my concerns in relation to the establishment of the proposed bus service are set out clearly above. Wider issues in relation to the development and funding of Warrington's public transport infrastructure are not, however, a matter for me.

13.89 It was suggested that the new development would result in an increase in crime in the area. Although another development in the wider area was drawn to my attention in this regard, there is insufficient detail about it before me to enable me to draw any meaningful comparisons. In addition, I note that the concerns of the Cheshire Constabulary related to highway safety, rather than to crime. The condition in relation to Secured by Design would ensure that the new development would be designed so as to deter crime and anti-social behaviour.

13.90 Submissions were made in relation to the Council's Preferred Development Options proposals [10.86]. As I noted at the Inquiry, this is not for me to consider but will be a matter for another Inspector in due course.

13.91 Some local residents expressed concern about the timing of the delivery of the proposed primary school on the site, which is a matter on which I also sought clarity [10.4; 1019]. Ms Hilary Smith, Head of Education at Warrington Borough Council, attended the Inquiry for the s.106 discussions and I have no reason to doubt her assurances that the timing of provision, which has regard to existing and future availability of places and the need to mitigate potential impact of the draw of a new school on existing schools, is appropriate. This was not seriously disputed.

13.92 The Parameters Plan indicates the maximum building heights that could be achievable in different areas of the site [9.88]. For the avoidance of doubt, I do not consider that such heights would necessarily be appropriate in all instances. If planning permission were to be granted, then careful consideration would need to be given at the relevant reserved matters stage(s) to the juxtaposition of new development and extant properties. Particular regard would need to be given to the scale of surrounding dwellings and the current, in some cases expansive, outlook from them.

13.93 I have no reason to doubt that Peel Hall Farm is run as a successful boarding kennels. Nor do I doubt that when the kennels are full the boarded dogs can

[210] Paragraph 170

be noisy. Again, if planning permission were to be granted very careful consideration would need to be given at the relevant reserved matters stage(s) to the relationship between any new dwellings and Peel Hall Farm. One would need to be fully assured that the living conditions of any future occupiers would not be adversely affected and that, equally importantly, the business would not suffer as a result of complaints in relation to noise. The Framework[211] is explicit that:

> *Existing businesses and facilities should not have unreasonable restrictions placed on them as a result of development permitted after they were established. Where the operation of an existing business or community facility could have a significant adverse effect on new development … in its vicinity, the applicant (or 'agent of change') should be required to provide suitable mitigation before the development has been completed.*

13.94 The issue of the capacity of the A&E unit at the local hospital was raised. I am very sympathetic to the genuine concerns, and poor experience, of the resident who highlighted this matter. I am, however, mindful that the only representation from the NHS was in relation to GP services.

13.95 I note the objection to the proposal, on highway safety grounds, from Cheshire Constabulary. I do not take this lightly and the general capacity concerns echo those of others. The specific analysis of potential highway safety issues appears, however, to be based largely upon Option B, with its proposed re-opening of Poplars Avenue, which is no longer being pursued.

14 Planning Balance

14.1 I have found that it has not been proven, to my satisfaction, that the appeal proposal would not have adverse impacts upon the safety and efficiency of the highway network or upon local air quality. I have also found that it would have an adverse impact upon the character of the area. In addition, I have concluded that, on the basis of the evidence before me, the scheme does not appear to be deliverable as proposed.

14.2 In reaching these findings, I have found conflict with a range of Core Strategy policies, to which I attribute full weight. I find that the appeal proposal would conflict with the development plan when taken as a whole and that very significant weight should be attached to this conflict.

14.3 Nonetheless, it was common ground between the parties that the Core Strategy, following a High Court ruling quashing parts of it in 2015, contains no housing requirement. In addition, on the basis of a revised Objectively Assessed Housing Need, the Council was unable to demonstrate a five year supply of deliverable housing land. The Council did not dispute that this remained the case if the so-called "standard method" established by the revised Framework was used. [8.2; 9.15]

14.4 Thus, in line with paragraph 11 of the Framework, which is a significant material consideration, I consider whether the adverse impacts of granting planning permission would significantly and demonstrably outweigh the

[211] Paragraph 182

benefits, when assessed against the policies in the Framework taken as a whole.

14.5 In social terms, the scheme could, assuming for a moment that it was considered as being deliverable, provide up to 1200 dwellings, 30% of which would be affordable, in a borough with a significant undersupply of both market and affordable units. Again, with the caveat that one assumes, contrary to my findings, that the scheme would be deliverable, this must attract significant weight, albeit tempered by what is suggested as being a ten-year build out period. [9.117]

14.6 It was also the view of the Council, perhaps unsurprisingly supported by the appellant, that the appeal proposal had the potential to deliver transformational change to the area. The inference is that this is social change, with reference in the officer's Committee Report being made to the fact that some residential areas to the south of the site are in the 10% to 30% most deprived in England. [9.14]

14.7 That said, areas to the north, east and west of the site are considerably less deprived, being within the top 50% and upwards[212]. In addition, local residents, who attended the Inquiry consistently, often in large numbers, spoke eloquently and at length in opposition to the appellant's suggestion that their area was in need of being transformed in the ways proposed, or that they lived in a "*slightly forgotten part of Warrington*"[213]. They were firmly of the view that the suggested benefits of the appeal scheme would be anything but. No evidence was presented, either by the Council or the appellant, which suggested that local residents had been asked what, if anything, they would find of benefit to their community. [10.12; 10.18-10.19; 10.28; 10.34; 10.36-10.37; 10.77; 10.80; 10.89; 10.90]

14.8 Nor was there any cogent explanation, from either of the main parties, how this transformational social change would be manifested. It might be that the scheme would, eventually, result in a more mixed community in the immediate area but there is no substantive evidence to support such a view. The site is on the edge of, rather than within, the more deprived area, with ready access to less deprived areas. It would, in effect, be a self-contained extension, with its own shops, primary school and sports facilities, rather than an integrated development that may serve to rebalance the socio-economic make-up of the area to the south, even if that was desirable.

14.9 The provision of a new school would be a necessary corollary of the scheme, rather than a benefit to the area. In addition, the locality is, from what I could see, already well served by convenience stores [10.59; 10.92] and public houses, so there is no obvious wider need for the proposed local centre (beyond serving the new development).

14.10 The proposed sports hub would be of greater benefit, albeit that it would be provided chiefly as mitigation for the loss of the Mill Lane playing fields and to meet the demands arising from the new development. It would be a qualitative improvement over what is currently provided in this area of

[212] Please see Mr Robinson's Proof - Figure 3.1 p.14
[213] Mr Griffiths' Evidence in Chief

Warrington. It is also common ground between the main parties that it would be a quantitative improvement, although the rationale behind this agreement is not readily apparent from the evidence.

14.11 Even so, I am mindful of the views expressed by residents living near, and using, the Mill Lane playing fields. They noted, formally and in questions to witnesses, that the appeal proposal would result in the loss of this area of green space, which is used recreationally by many residents for more than just formal sport (e.g. dog walking; informal kickabouts; etc) [10.51; 10.82; 11.1]. This would be detrimental as residents would have to travel further to access such space, with no facility in as close proximity as there is at present.

14.12 Overall, I give this "transformational" factor moderate weight.

14.13 In economic terms, the Government has made clear its view that house building plays an important role in promoting economic growth. There would clearly be substantial construction investment in the scheme, which could provide some local construction jobs during its build out. Post-construction, there would be longer term expenditure in the Warrington economy, but whether this would be manifested *very* locally is questionable. There would also be some jobs arising from the employment uses on the site, as well as from the indirect effects of the scheme. [9.3]

14.14 That said, (in addition to my concerns about wider scheme delivery) there are no mechanisms in place to secure the delivery of the class B1(c) units, care home or local centre, suggested as being significant benefits by the appellant. Nor is there any evidence, beyond promotional literature about the attraction of Warrington, and assertions about the provision of opportunities for delivery, to give comfort that they would ever appear [9.36; 9.37; 9.116]. Overall, I give the economic benefits moderate weight.

14.15 The development would generate New Homes Bonus (NHB) and Council Tax receipts for the Council. The former is an incentive for local planning authorities to provide housing on suitable sites, and no direct beneficial link between the spend of the NHB and the local area has been established. The latter is a means of offsetting increased public expenditure in a local area arising from an increased population. As such, I consider that both attract very little weight as benefits in the planning balance.

14.16 Turning to environmental benefits, the site has some biodiversity value, which could be enhanced through careful ecological planning and management. The most sensitive area, namely Radley Plantation, would be separated from development by a 20 metre buffer. Even so, there was no suggestion that the scheme would result in any significant biodiversity benefits and, indeed, the appellant accepted that overall there would be adverse impacts as one would be losing habitat[214].

14.17 Some additional open space would be created on the site. A large proportion of it, however, would be in the form of a buffer to the motorway, sandwiched between the highway and an indicative row of apartment blocks. Its attractiveness to, and functionality for, users would be very limited.

[214] Mr Ryding in response to my questions.

14.18 Dismissing the appeal could mean that more land within the Green Belt would need to be released in order to accommodate the Borough's future housing requirement. This is, however, a matter for the emerging Preferred Development Options, which is some way off Examination yet alone adoption.

14.19 Thus, I give the environmental benefits limited weight.

14.20 Placing these factors and all of the relevant material considerations in the balance, I find that the adverse impacts of the proposed development would significantly and demonstrably outweigh the benefits when considered against the policies in the Framework taken as a whole. In the circumstances I conclude that the proposal would not represent a sustainable form of development. Indeed, the issues arising from either the scheme's highways or air quality modelling work would alone be sufficient to lead me to this conclusion.

15. Recommendation

15.1 For the reasons given above, and taking all other matters into consideration, I recommend that the appeal should be dismissed.

15.2 If the Secretary of State is minded to disagree with my recommendation, Appendix C lists the conditions that I consider should be attached to any permission granted. The reasons for these suggested conditions are set out in Section 12 of this Report. A consideration of the planning obligations is also given at Section 12.

Richard Schofield

INSPECTOR

APPENDIX A: APPEARANCES

FOR THE LOCAL PLANNING AUTHORITY:

Mr David Manley of Queen's Counsel (assisted by Mr Piers Riley Smith)	Instructed by Warrington Borough Council

He called:

Mr Richard Crossley MICE FCHIT	WSP
Mr Mike Taylor BTEC Dip TEP	Warrington Borough Council
Mr Richard Moore BSc(Hons) MA	Warrington Borough Council
Mr Michael Davies BSc DipTP MRTPI	Warrington Borough Council
Mr Nick Armstrong	Warrington Clinical Commissioning Group

FOR THE APPELLANT:

Mr Christopher Lockhart-Mummery of Queen's Counsel (assisted by Ms Heather Sargent)	Instructed by Satnam Planning Services Ltd

He called:

Mr Colin Robinson BA(Hons) MTP(Dist) MRTPI MIED	Lichfields
Mr David Appleton MA NDH CMLI	Appletons
Mr Ian Ryding	Pennine Ecological
Mr Nick Hawkins MSc MIOA MIAQM MIEnvSc	Hawkins Environmental Ltd
Mr Colin Griffiths BA(Hons) MRTPI	Satnam Planning Services
Mr David Tighe BSc CEng MICE DipTpEng	Highgate Transportation Ltd

Taking part in s.106/Conditions discussion

Ms Hilary Smith	Head of Education, Warrington Borough Council
Ms Joanne Mullally	Environmental Protection Manager, Warrington Borough Council
Mr Robert Heywood	Highways England
Mr Kristian Marsh	Highways England

INTERESTED PERSONS:

Cllr John Kerr Brown
Mrs Jo Sullivan
Mr Jim Sullivan
Mrs Margaret Steen
Mrs Tina Dutton
Mrs Sandra Kavanagh
Ms Helen Jones MP
Mr Geoff Settle
Mr Jon Parr
Mr Dave Sawyer
Ms Catherine Fortune
Mr Stuart Mann
Ms Sian Gandy
Ms Emma Fitzpatrick
Ms Jean Rogers
Mrs Helen Gurnani
Mrs Julie Kueres
Mrs Danielle Austen
Mrs Kath Robinson
Ms Catherine Webster
Mr L Jennings
Cllr Diana Bennett
Ms Wareham

APPENDIX B: DOCUMENTS

A. Core Documents

These may be found electronically on a USB stick with an accompanying hardcopy contents list.

B. Documents Submitted to the Inquiry (prefixed 'ID' in the main report)

1) Supplementary Statements from the Council
2) Various air quality publications submitted by Mrs Jo Sullivan
3) Draft S.106 and summary thereof
4) Draft conditions
5) Opening Statement for the appellant
6) A response by the appellant to Milner Ecology's submission on behalf of Winwick Parish Council
7) Letter from Mr Mark Olly 23 April 2018
8) Letter from Winwick Parish Council 20 April 2018
9) Plans from Mrs Sandra Kavanagh re former sewage works site
10) Historic photos of the site in agricultural use
11) Letters supplied by Mrs Sandra Kavanagh re Poplar tree TPO on, and traffic management proposals for, Poplars Avenue
12) Letters submitted by the Council re Hilden Island Cycle Improvements and re safety concerns in relation to the appeal scheme's proposed highway mitigation works
13) Mrs Jo Sullivan's hand in - article from the Guardian re air quality and a letter to The Planning Inspectorate from Cheshire Constabulary regarding the appeal proposal 3 April 2018
14) Mrs Tina Dutton's statement and photographs of traffic on Birch Avenue
15) Highgate Transportation Technical Note TN/28 A49 ATC Data Review, 23 April 2018
16) Plans supporting ID12
17) Plans and photographs supporting Mrs Margaret Steen's evidence
18) Additional information from Mr Armstrong, Warrington Clinical Commissioning Group, in support of a healthcare planning obligation
19) Extract from the Warrington & Co Annual Property Review 2018, submitted by the appellant
20) Breakdown of semi-natural open space typologies proposed for the site, submitted by the appellant
21) Extract from Warrington Borough Council's Economic Development Needs Study, October 2016
22) Council's response to ID15
23) Letter from Ms Helen Jones MP
24) Statement by Mr John Parr, including USB stick with footage of local road network
25) Statement by Mr David Sawyer
26) Statement by Mrs Catherine Fortune

27) Statement by Mr Stuart Mann
28) Statement by Mrs Sian Gandy
29) Statement by Mrs Emma Fitzpatrick
30) Letter from United Utilities regarding proposed planning conditions, 30 April 2018
31) Statement by Mr Geoff Settle
32) Email from Mr Kevin Usher, Warrington Borough Council confirming that Homes England have not submitted the Mill Lane playing fields site to the SHLAA, 4 May 2018
33) Highgate Transportation Technical Note TN/30 Link Capacity
34) Highgate Transportation Technical Note TN/31 Junction Queue times/lengths analysis
35) Highgate Transportation Technical Note TN/32 Bus Mitigation
36) Highgate Transportation Technical Note TN/33 Off-site Mitigation Works Capesthorne Avenue and Hilden Avenue
37) Highgate Transportation Technical Note TN/34 RSA1
38) Additional Air Quality information by Hawkins Environmental
39) Letter to Mr Colin Griffiths from Wright Hassell Solicitors regarding option agreements on dwellings on Poplars Avenue, 10 May 2018
40) Email from Ms Fiona Pudge of Sport England regarding proposed conditions and S.106, 1 May 2018
41) Letter from Mr and Mrs Steen, 10 May 2018, enclosing information regarding access to Peel Hall Farm
42) Lease for land north of Ballater Drive between the Homes & Communities Agency and Warrington Borough Council, November 2016
43) Photographs of articulated lorries on Mill Lane
44) Email from Mr Kristian Marsh of Highways England with suggested planning conditions, 11 May 2018
45) Supplementary Proof of Evidence from Mr Tighe
46) Revised S.106 Agreement submitted 11 May 2018
47) Email from Mr Dave Starkie regarding the bat roost potential of conifer trees on Birch Avenue, 14 May 2018
48) Email from Hawkins Environmental regarding on-site pollutant concentrations, 14 May 2018
49) Email from Jan McKay of the UCA Trust registering an interest in securing a Free School on the appeal site, 19 February 2018
50) Letter from Mr Karl Tupling of Homes England regarding land in their ownership that forms part of the appeal site, 15 May 2018
51) Email from Ms Hilary Smith of Warrington Borough Council confirming that one Multi Academy Trust would be willing to sponsor a new primary school on the appeal site, 18 May 2018
52) Warrington Borough Council response to Highgate Technical Notes (ID33-37)
53) Email from Ms Fiona Pudge of Sport England confirming Sport England's satisfaction with amended conditions and S.106, 24 May 2018
54) Second Supplementary Proofs of Evidence from the Council (Mr Taylor and Mr Moore)

55) Highways England Supplementary Update, 25 June 2018
56) Further revised list of proposed conditions, 2 July 2018
57) Letter from Satnam Developments, 29 May 2018, re parking on Birch Avenue, and photographs of traffic on Birch Avenue submitted by Mrs Sheila Kavanagh
58) Copy of Heads of Terms for an option agreement to purchase 462 Poplars Avenue, with accompanying emails from July and August 2012, submitted by Mrs Sheila Kavanagh
59) Lyrics to the song sung at the Inquiry on 4 May 2018 by Mrs Helen Gurnani
60) Bus timetable for services 25, 26, 27 from 9 April 2018 submitted by Mrs Margaret Steen
61) Two copies of a revised draft s.106 agreement and further revised list of proposed conditions (version 21)
62) Photographs of Mill Lane and Radley Lane, submitted by Mrs Margaret Steen
63) Photographs of local crime statistics and an accident involving a stolen car, submitted by Ms Wareham
64) Letter from Ms Danielle Gillespie of Homes England, 10 July 2018, re-confirming Homes England's position with regard to the appeal scheme
65) Justification for the Council's proposed contaminated land planning conditions
66) Closing Submissions for the Council
67) Closing Submissions for the appellant
68) Letter from Mr Ben Wakerley of Warrington's Own Buses (formerly Network Warrington), 13 July 2018, confirming the organisation's position with regard to future bus provision to the appeal site
69) Email from the appellant (20 July 2018) to the Planning Inspectorate in response to ID68
70) Advice note to the Council from Mr David Manley QC re the provision of bus services to the appeal site via a planning obligation
71) Email from the appellant (30 July 2018) to the Planning Inspectorate in response to ID70
72) Email from the Council (1 August 2018) to the Planning Inspectorate providing a requested revision to disputed condition 2 (Radley Lane)
73) Email from the appellant (1 August 2018) to the Planning Inspectorate in response to ID72
74) Submission on the revised Framework by the appellant
75) Further email from the appellant (1 August 2018) to the Planning Inspectorate in response to ID70
76) Email from the appellant (3 August 2018) to the Planning Inspectorate re a delay to the preparation of the emerging Warrington Preferred Development Options
77) Executed S.106 Agreement between the appellant and the Council
78) Submission on the revised Framework by the Council
79) Email from the appellant (8 August 2018) to the Planning Inspectorate in response to ID78
80) A set of all plans referred to in the proposed conditions.

APPENDIX C: RECOMMENDED CONDITIONS

1) Details of the appearance, landscaping, layout, and scale, (hereinafter called "the reserved matters") in any phase shall be submitted to and approved in writing by the local planning authority before any development in that phase begins and the development shall be carried out as approved.

2) Application for approval of the first reserved matters shall be made to the local planning authority not later than three years from the date of this permission, and application for approval of all remaining reserved matters shall be made within ten years from the date of this permission.

3) The development hereby permitted shall begin no later than two years from the date of approval of the first of the reserved matters to be approved, and development of any subsequent phase shall begin no later than two years from the date of approval of the final reserved matters for that phase.

4) The number of dwellings to be constructed on the site shall not exceed 1200.

5) The development hereby permitted shall accord with the approved site plan: 150332-D-002-B.

6) Any reserved matters applications shall be substantially in accordance with the details shown on the approved Parameters Plan: 1820_24 rev Z.

7) No works or development authorised by this planning permission shall be carried out by any party on that part of the site known as the Mill Lane playing fields (the freehold interest of which, at the date of grant of this planning permission, is registered at the land registry under title number CH442194) shown edged red on Plan 5 of the Section 106 Agreement related to this planning permission dated 3rd August 2018 and entered into between Warrington Borough Council, Satnam Millennium Ltd and Satnam Developments Limited, unless and until all interests in that land are subject to and bound by the terms of the Section 106 Agreement.

8) No residential dwellings, care homes, children's nurseries or schools shall be permitted within 50 metres of the M62 on any individual phase of development unless a detailed air quality assessment (the assessment), supported by on-site monitoring, is first submitted to, and approved in writing by, the local planning authority to demonstrate to the local planning authority's satisfaction that current and future air pollutant levels within 50 metres of the M62 will not have a risk of exceedance of the relevant national objectives for these uses as set out in the Air Quality Standards Regulations 2010 (as amended or superseded). No residential dwellings, care homes, children's nurseries or schools shall be permitted in those areas of the site not proven by the assessment to be free of risk from exceedances of the relevant national objectives.

9) The local centre hereby approved shall be limited to a food store (A1) of up to 2000 square metres, up to 600 square metres of additional units in use classes A1/A2-5 and D1 with no single unit exceeding 200 square metres, and up to 800 square metres for family restaurant/public house (use classes A3/A4).

10) Notwithstanding the provisions of the Town and Country Planning (General

Permitted Development)(England) Order 2015 (or any order revoking or re-enacting that Order with or without modification) the employment floor space hereby approved shall be limited to use class B1(c) and shall be limited to a maximum floor space of 7500 square metres in total with no single unit exceeding 500 square metres floor space.

11) No development shall take place until schemes for the design and construction of the site access points have been submitted to the local planning authority for approval in writing. The access points shall be designed in accordance with the principles set out in the following drawings: HTp/1107/30/H; HTp/1107/11/L; HTp/1107/9/M; HTp/1107/10/N; HTp/1107/08/P; HTp/1107/12/Q

The access points shall thereafter be completed in accordance with the approved schemes prior to first occupation of the relevant phase(s) accessed from them.

12) No development shall commence until a scheme for the design and construction of off-site highway improvement works, including a timetable for implementation, has been submitted to and approved in writing by the local planning authority. The works shall include the replacement/upgrade of street lighting necessary as part of the detailed design and any drainage works necessary to facilitate the highway works and shall include Road Safety Audits and any Traffic Regulation orders required.

The off-site highway improvement works shall comprise:

a) Widening of Sandy Lane West to the principles of Drawing No. 1107/74/A

b) Widening of Poplars Avenue, removal of Orford Green kerb build-out and creation of two-lane circulatory carriageway through roundabout to the principles of Drawing No. 1107/72/A

c) Widening of Capesthorne Road and widening of carriageway through roundabout to the principles of Drawing No. 1107/71/C

d) Installation of traffic signal junction at Enfield Park Road/Crab Lane to the principles of Drawing No. 1107/70

e) Provision of Keep Clear carriageway markings on A49 at Birch Avenue to the principles of Drawing No. 1107/79

f) Resurfacing of footway on north eastern side of Mill Lane between the new site access and No.2 Mill Lane

g) Widening of the A49 Newton Road at its junction with Delph Lane to the principles of Drawing No. 1107/111/A

The approved works shall thereafter be completed in accordance with the following triggers respectively:

a) Prior to the occupation of the 300th dwelling served from Poplars Avenue

b) Prior to the occupation of the 600th dwelling served from Poplars Avenue

c) Prior to the occupation of the 300th dwelling served from Poplars Avenue

d) Prior to the occupation of the 300th dwelling served from the Mill Lane / Blackbrook Avenue access roundabout

e) Prior to first occupation of any development served from Birch Avenue

f) Prior to first occupation of any development served from the northern end of Mill Lane

g) Prior to the occupation of the 600th dwelling served from the Mill Lane / Blackbrook Avenue access roundabout.

13) No development shall commence until the design and construction of strategic highway improvement works, including a timetable for implementation, has been submitted to and approved in writing by the local planning authority. The works shall include the replacement/upgrade of street lighting necessary as part of the detailed design and any drainage works necessary to facilitate the highway works and shall include Road Safety Audits.

The strategic highway improvement works shall comprise improvements to M62 Junction 9/A49 in accordance with the principles established by drawings: 1107/75; 1107/77; and 1107/78.

The approved works shall thereafter be completed prior to the occupation of the 600th dwelling.

14) Prior to the submission of any reserved matters application, a detailed masterplan and design code covering the entire site shall be submitted to the local planning authority for approval in writing. The masterplan and design code shall be formulated having regard to principles established by the submitted Design and Access Statement and the following plans:

Illustrated Masterplan Option A 140367-B-010-C; Illustrative Local Centre Family Pub Option A 140367-B-012; Illustrative Proposed School Site Master Plan Option A 140367-B-015; Illustrative Employment Area Master Plan Option A 140367-B-013A; Indicative Sports Recreation Provision 1820_28 Rev J; and Indicative Landscape Components Plan Option A 1820_25 Rev N.

Thereafter, any reserved matters application(s) for any phase of development shall comply with the approved masterplan, design code and the requirements of Condition 6.

15) There shall be no direct vehicular or pedestrian access between the site and the motorway network. Before first occupation of any dwellings hereby approved a close boarded fence or barrier of comparable function with a minimum height of two metres to be first approved in writing by the local planning authority shall be installed along the boundary of the development with the motorway at a distance of at least one metre behind the existing motorway boundary fence.

16) No development hereby approved shall commence until a detailed phasing plan for the development has been submitted to and approved in writing by the local planning authority. The phasing plan shall identify the stages at which each element of the proposed development, including the affordable housing, local centre, open space, all equipped areas of play, primary school, public house, care home, employment units, roads and emergency access,

Greenway Network (including walking and cycling measures), bus measures and SuDS drainage infrastructure shall be commenced and made available for use. The development shall thereafter be implemented in full accordance with the approved phasing plan.

17) Development shall not begin until a Surface Water Drainage Strategy for the entire development site, based on sustainable drainage principles and an assessment of the hydrological and hydrogeological context of the development and in accordance with the approved Flood Risk Assessment in respect of Peel Hall, Warrington, reference 1506-45/FRA/01 Rev B, dated June 2016, has been submitted to the local planning authority for written approval. The Surface Water Drainage Strategy shall, as a minimum:

- ensure that no surface water is discharged directly or indirectly into the existing public sewerage systems, unless agreed in writing as part of an updated Surface Water Drainage Strategy;
- investigate the potential for a surface water drainage system based on infiltration through an assessment of site conditions for the entire site;
- identify any surface water drainage infrastructure connections including the volume of flows between the different phases/plots of the development;
- provide details of any improvement works to on-site watercourses/culverts; and
- provide details of any pumping arrangements demonstrated as being necessary.

Each separate phase of development will require the submission to, and written approval of, the local planning authority of a detailed surface water drainage scheme. Each scheme shall subsequently be implemented in accordance with the approved details before the relevant phase of the development is completed. Each scheme shall include as a minimum:

- details of all new retention ponds and linking SUDs infrastructure (to be designed in accordance with the latest version of the CIRIA SuDS manual or subsequent guidance), including new wetland habitat creation;
- details of any new surface water drainage works associated with Spa Brook waterbody and ecological network; and
- details of how the scheme shall be maintained and managed following completion.

18) There shall be no surface water connections between plots or phases of development other than those in accordance with the connections identified and approved by the Surface Water Drainage Strategy.

19) No drainage from the development hereby approved shall connect into or compromise the M62 motorway drainage system.

20) No development shall commence until a quantitative and qualitative risk assessment and mitigation strategy with respect to ground water protection, including details of any extra protection measures necessary to manage the risk

of pollution to public water supply and the water environment during and after construction, has been submitted to the local planning authority for approval in writing. The risk assessment shall be based on the source-pathway-receptor methodology. It shall identify all possible contaminant sources and pathways for the life of the development and provide details of measures required to mitigate any risks to groundwater and public water supply from the development. The development shall thereafter be completed, maintained and managed in accordance with the approved details.

21) Prior to any reserved matters application being submitted, a Sports Strategy (the Strategy) shall be submitted for written approval by the local planning authority. The Strategy shall apply to the planned improvements at Windermere Avenue/ Radley Common shown indicatively on drawing 1820-28 Rev J and include details of the strategic need for and sporting benefits of each pitch type and ancillary facility. Based upon the agreed findings of the Strategy a scale plan(s) shall subsequently be submitted to the local planning authority for written approval showing the location and dimensions of each sports facility and pitch. The development shall thereafter be carried out in accordance with the approved Strategy and scale plan(s).

22) The mix of any market housing for any phase of development authorised by this planning permission, including details of size and type, shall be agreed in writing by the local planning authority as part of any relevant reserved matters application(s). Development of each phase shall thereafter be carried out in accordance with the approved mix.

23) As part of the reserved matters application(s) for each phase a scheme shall be submitted for approval in writing by the local planning authority that demonstrates how the objectives of Secured by Design have been addressed in the development as identified in the submitted Design and Access Statement. The development shall thereafter be completed in accordance with the approved scheme.

24) As part of the reserved matters application(s) for each phase a scheme for the provision of electric vehicle charging points, or passive provision, shall be submitted to the local planning authority for approval in writing. The development shall thereafter be completed in accordance with the approved scheme and the provision maintained and retained thereafter.

25) Except for site clearance and remediation no development shall take place on any particular phase until full details and construction phasing of the internal highway network for that phase have been submitted to and approved in writing by the local planning authority. Such details shall include:

    a) the proposed highway layout including the highway boundary;

    b) the dimensions of any carriageway, cycleway, footway and verges;

    c) visibility splays;

    d) proposed buildings and site layout, including levels;

    e) accesses and driveways;

    f) parking provision;

g) drainage and sewerage system;

h) all types of surfacing (including tactile paving), kerbing and edging; and

i) full working drawings for any structures which affect or form part of the internal highway network.

The development shall thereafter be completed in accordance with the approved drawings, details and phasing schedule.

26) As part of the reserved matters application for any particular phase the details of the specified bus stop infrastructure, including turning facilities, as set out in the approved phasing plan shall be submitted to the local planning authority for approval in writing. Each phase shall thereafter be completed in accordance with the approved details.

27) Prior to any reserved matters application for development of the Mill Lane playing fields being submitted the following documents shall have been submitted to and approved in writing by the local planning authority:

a) An Agronomy Report containing a detailed assessment of ground conditions (including drainage and topography) of the land proposed for the replacement playing field, which identifies all constraints that could affect playing field quality; and

b) Based on the results of the assessment to be carried out pursuant to a) above, a detailed scheme which ensures that the playing field will be provided to the Football Association's Performance Quality Standards. The scheme shall include a written specification and detailed plans of soils structure, proposed drainage, cultivation and other operations associated with grass and sports turf establishment and a programme of implementation.

The approved scheme shall be completed prior to the commencement of any development of the existing Mill Lane playing fields. The replacement playing field land shall thereafter be made available and maintained in accordance with the scheme.

28) No development shall take place on any phase until the implementation of a programme of archaeological work in accordance with a written scheme of investigation which has been submitted to and approved in writing by the local planning authority has been secured. Development shall thereafter be carried out strictly in accordance with the approved scheme.

29) A design and layout led scheme, informed by the principles of ProPG: Planning & Noise (May2017) (or revisions/replacements thereof), for insulating residential dwellings from noise sources, to include any transportation, industrial, commercial and entertainment noise both within and outside the properties, shall be submitted to the local planning authority for approval in writing before construction above ground floor slab level commences on any phase. The scheme must achieve the internal noise levels set out below and shall be based on findings from an appropriate noise assessment. The development shall thereafter be constructed in accordance with the approved scheme.

The following noise levels will need to be achieved in habitable rooms and outdoor areas as set out in BS8233:2014 and/or WHO Guidelines (or any replacements thereof):

- Daytime Noise (0700 to 2300) Living Rooms & Bedrooms - 35 dB LAeq,16hr
- Daytime Noise (0700 to 2300) Dining Areas - 40 dB LAeq,16hr
- Daytime Noise (0700 to 2300) Outdoor Amenity Areas - 50 dB LAeq,16hr. 55dB LAeq,16hr may be accepted in exceptional cases where normal mitigation cannot reach the 50dB level.
- Night time Noise (2300 to 0700) Bedrooms - 30 dB LAeq,8hr,
- Night time noise (2300 to 0700) Bedrooms - 45dBLAmax no more than 10-15 times per night (WHO guidelines)

These levels must be capable of being achieved with windows open (except for short term purge ventilation) or, as a last resort if a design led solution is not achievable, alternatively with passive ventilation systems in the open position. For the purposes of calculation, noise insulation achieved by a partially open window should be assumed to be 15dBA.

If the above levels cannot be achieved in a design led scheme with open windows or with ventilators open, then the scheme must identify how the potential for overheating of affected buildings during warmer months will be mitigated in accordance with the principles of ProPG: Planning and Noise (May 2017).

Prior to the first occupation of any dwelling on any individual phase of development, the developer shall submit a validation report to the local planning authority for approval in writing demonstrating the inclusion of all previously agreed mitigation measures, which shall be maintained and retained thereafter.

30) No development on a relevant phase shall commence until a detailed method statement for the removal/long-term management/control of Japanese knotweed, Giant hogweed and Himalayan balsam identified on the site is submitted to and approved in writing by the local planning authority. The method statement shall include:

- measures that will be used to prevent the spread of the above plants during any operations e.g. mowing, strimming or soil movement; and
- measures to ensure that any soils brought onto the site are free of the seeds/root/stem of any invasive plant covered under the Wildlife and Countryside Act 1981 (as amended).

Development shall take place thereafter in accordance with the approved method statement.

31) Prior to the commencement of any works on site for any phase of development, a Construction Environmental Management Plan (CEMP) for that individual phase shall be submitted to the local planning authority for written approval. The CEMP shall review all construction operations proposed on the site and shall

cover as a minimum the following matters on a phase by phase basis (identifying appropriate mitigation measures as necessary):

- Mechanisms to ensure the ongoing integrity of the M62 motorway embankment, with particular reference to the mitigation of potential impacts from site earthworks;
- Proposed locations of site compounds;
- Proposed routing of, and arrangements for, deliveries and exporting or materials to site compounds and/or deliveries direct to or exports direct from the site (N.B. all construction vehicles shall load/unload within the confines of the site and not on the public highway);
- Entrance/exit points from the site for visitors/contractors/deliveries;
- Hours of construction deliveries to the site;
- Hours of construction;
- Measures to protect surrounding properties from construction noise;
- Measures for controlling dust and maintaining air quality on site, including details of street sweeping/street cleansing/wheel washing facilities;
- Evidence of joining the Considerate Constructors Scheme for the lifetime of the construction period;
- Location of directional signage within the site;
- Siting of temporary containers;
- Parking for contractors, site operatives and visitors;
- Identification of working space and extent of areas to be temporarily enclosed and secured during each phase of demolition/construction;
- Temporary internal roads/areas of hard standing;
- Storage of materials and large/heavy vehicles/machinery on site;
- Details for the recycling/disposing of waste resulting from demolition and construction works;
- Protection of existing utility assets and infrastructure; and
- Start/finish dates of construction.

Development shall thereafter take place in accordance with the approved CEMP and shall be reviewed on a regular basis and in the case of receipt by the developer or local planning authority of any justified complaint. Any changes to the approved CEMP that are deemed necessary following the regular review process or following receipt of a complaint shall be first approved in writing by the local planning authority and thereafter implemented as approved.

32) A landscape and ecological management plan (LEMP) shall be submitted to the local planning authority for approval in writing prior to the commencement of each phase of development. The LEMP shall include the following:

a) Description and evaluation of important landscape and habitat features to be retained, created and managed thereafter;

b) Details of the aims and objectives of ongoing management, including ecological trends and constraints on the site that might influence management;

c) A management work schedule (including an annual work plan capable of being rolled forward over a five-year period) demonstrating how the aims and objectives will be achieved; including details of ongoing monitoring; and setting out how remedial measures would be agreed and implemented if required;

d) Details of the management body or organisation responsible for implementation of the LEMP, including details of how the legal and funding mechanism(s) will be secured to enable that body or organisation to deliver the long-term implementation of the plan.

The LEMP shall thereafter be implemented in accordance with the approved details.

33) No tree felling, vegetation clearance works, demolition work or other works that may affect nesting birds shall be undertaken between March and July inclusive, unless the absence of nesting birds has first been confirmed by further surveys or inspections the conclusions of which have been approved in writing by the local planning authority.

34) No construction of any particular phase of development shall commence until the owner of the phase appoints a Travel Plan Co-ordinator. The Travel Plan Co-ordinator shall be responsible for the implementation, delivery, monitoring and promotion of the Travel Plan for that phase, including the day-to-day management of the steps identified to secure the sustainable transport initiatives set out therein. The details (name, address, telephone number and email address) of the Travel Plan Co-ordinator shall be submitted to, and confirmed in writing by, the local planning authority upon appointment and immediately upon any change.

35) Prior to the first occupation of each residential phase a Residential Travel Plan (the Plan) in accordance with the submitted Framework Travel Plan ref: HTp/1107/FTP/01 (January 2018) shall be submitted to the local planning authority for approval in writing. The Plan shall include immediate, continuing and long-term measures to promote and encourage modes of transport other than the single-occupancy car. The Plan shall include:

a) Information on existing transport policies, services and facilities, travel behaviour and attitudes;

b) Resource allocation including Travel Plan Co-ordinator and budget;

c) Details for the production and distribution of an information pack for residents detailing travel options other than the private car, and how to access them, on the site and in the wider locality;

d) Other appropriate measures and actions to reduce car dependence and encourage sustainable travel;

e) A marketing and communications strategy for the Plan; and

f) An action plan, with a timetable, to include mechanisms for implementing, monitoring and reviewing the Plan.

The Plan shall thereafter be implemented as approved in accordance with the timetable contained therein and shall continue to be implemented as long as any part of the development is occupied.

36) Prior to the first occupation of each non-residential phase a Non-Residential Travel Plan (the Plan) in accordance with the submitted Framework Travel Plan ref: HTp/1107/FTP/01 (January 2018) shall be submitted to the local planning authority for approval in writing. The Plan shall include immediate, continuing and long-term measures to promote and encourage modes of transport other than the single-occupancy car. The Plan shall include:

a) Information on existing transport policies, services and facilities, travel behaviour and attitudes;

b) Resource allocation including Travel Plan Co-ordinator and budget

c) Details of appropriate measures and actions to reduce car dependence and encourage sustainable travel, including details of access to modes of transport other than the private car;

d) Targets for mode share;

e) A car parking management strategy;

f) A marketing and communications strategy for the Plan, including details of how employees will be involved with its implementation;

g) An action plan, with a timetable, to include mechanisms for implementing, monitoring and reviewing the Plan.

The Plan shall thereafter be implemented as approved in accordance with the timetable contained therein and shall continue to be implemented as long as any part of the development is occupied.

37) Any building plant or externally located equipment shall be acoustically insulated to a scheme to be submitted to and approved in writing by the local planning authority prior to the commencement of its use. The scheme shall ensure that the rated noise level at the boundary of the nearest extant or proposed noise sensitive property will not increase above the existing background noise level in accordance with the BS4142:2014 (or replacement) methodology. Any mitigation measures proposed to attain this level shall be clearly identified. The scheme shall be implemented as approved prior to the commencement of use of the plant or equipment and shall be maintained and retained thereafter for the duration of use.

38) Prior to first occupation/use of premises on a particular phase details of vehicle and cycle parking provision in line with the Council's current standards shall be submitted to the local planning authority for approval in writing. The approved vehicle and cycle parking provision will thereafter be constructed as approved and shall be kept free for that specific use. Notwithstanding the provisions of the Town and Country Planning (General Permitted Development) (England)

Order 2015 (or any Order revoking or re-enacting that Order) no building works that reduce this provision shall take place except following the express grant of planning permission by the local planning authority.

39) Prior to first occupation of each phase of the development hereby permitted a servicing and waste management strategy shall be submitted to the local planning authority for approval in writing. The strategy shall, as necessary, include details of how Heavy Goods Vehicle movements will be managed to ensure that no layovers or waiting will occur on the public highway and shall set out design and operational plans for servicing, storage, transfer and collection of goods and waste ensuring that logistical requirements are appropriately considered and addressed. The strategy shall be subsequently implemented prior to first occupation of each phase in accordance with the approved details.

40) No development of any particular phase shall commence until a lighting design strategy for biodiversity for that particular phase has been submitted to the local planning authority for approval in writing. The strategy shall:

- identify those areas of the site (particularly breeding sites, resting places and important routes used to access key areas of territory and/or for foraging) that are of particular importance to nocturnal animals recorded on the site, notably bats, the lighting of or near which is likely to cause disturbance to said animals; and
- show how, where and what external lighting will be installed (through the provision of appropriate lighting contour plans and technical specifications) so that it can be clearly demonstrated that any areas to be lit will not disturb nocturnal animals, notably bats, such that thereafter they would be unable or unlikely to use these areas.

All external lighting shall be installed in accordance with the specifications and locations set out in the approved strategy and shall be maintained thereafter.

Under no circumstances shall any other external lighting be installed without prior written consent from the local planning authority.

41) The gradient of the vehicular access points shall not exceed 1 in 40 for the first 15 metres into the site measured from the nearside edge of the carriageway of the adjacent highway.

42) The layout of the development shall include a turning facility within each phase to enable vehicles to enter and leave the highway in forward gear in accordance with details to be first approved in writing by the local planning authority.

43) No equipment, machinery or materials shall be brought onto the site for the purposes of the development of any phase until details of the proposed type, and a plan of the proposed position of, measures for the protection of trees and hedges that are to be retained on the site, in accordance with BS 5837:2012 'Trees in relation to Design, Demolition and Construction – Recommendations' (or replacement thereof), have been submitted for approval in writing by the local planning authority for that phase of the development. The measures identified, including tree protection barriers, shall be implemented in accordance with the approved details and shall remain in place until all equipment, machinery and surplus materials have been removed from the site. Nothing shall be stored, disposed of, or placed, nor fires lit, in

any area fenced in accordance with this condition and the ground levels within these areas shall not be driven across by vehicles, altered, nor any excavation made (including addition/removal of topsoil/subsoil) without prior written consent of the local planning authority.

44) Prior to any tree felling works required to facilitate the scheme any trees to be lost will be subject to further detailed inspection, the results of which shall be sent to the local planning authority for written approval, for their potential to support bat roosts. If bats are found by survey a Method Statement shall be submitted to the local planning authority giving details of measures to be taken to avoid any possible harm to bats and, once agreed in writing by the local planning authority, this Method Statement must be implemented in full.

45) Prior to any work commencing in an area of the site considered to have potential for badgers and in areas not assessed when the submitted badger surveys (Peel Hall, Warrington Ecological Reports 2012-2016 by Appletons) were undertaken, additional badger surveys, the results of which shall be sent to the local planning authority for written approval, will be required. If badgers are found by survey a Method Statement shall be submitted to the local planning authority giving details of measures to be taken to avoid any possible harm to badgers and, once agreed in writing by the local planning authority, this Method Statement must be implemented in full.

46) No development (other than demolition and site clearance works) for any individual phase shall take place until the steps in Sections A and B below are undertaken for that individual phase:

A: CHARACTERISATION: With specific consideration to human health, controlled waters and wider environmental factors, the following documents must be provided (as necessary) to characterise the site in terms of potential risk to sensitive receptors:

- Preliminary Risk Assessment (PRA or Desk Study)
- Generic Quantitative Risk Assessment (GQRA) informed by Intrusive Site Investigation
- Detailed Quantitative Risk Assessment (DQRA)
- Remedial Options Appraisal

Completing a PRA is the minimum requirement. DQRA should only to be submitted if GQRA findings require it.

B: SUBMISSION OF A REMEDIATION & VERIFICATION STRATEGY: As determined by the findings of Section A above, a remediation strategy (if required) and verification (validation) strategy shall be submitted to and agreed in writing by the local planning authority. This strategy shall ensure the site can be made suitable for the intended use and set out how any risks to identified receptors will be mitigated. This strategy should be derived from a Remedial Options Appraisal and must detail the proposed remediation measures/objectives and how proposed remedial measures will be verified.

The actions required in Sections A and B shall adhere to the following guidance: CLR11 (Environment Agency/DEFRA, 2004); BS10175 (British Standards Institution, 2011); C665 (CIRIA, 2007).

47) No part of the development hereby permitted shall be brought into use on any individual phase until the following requirements have been met and the required information submitted to and approved in writing by the local planning authority:

A: REMEDIATION & VERIFICATION: Remediation (if required) and verification shall be carried out in accordance with an approved strategy. Following completion of all remediation and verification measures, a Verification Report must be submitted to the local planning authority for approval in writing.

B: REPORTING OF UNEXPECTED CONTAMINATION: All unexpected or previously-unidentified contamination encountered during development works must be reported immediately to the local planning authority and works halted within the affected area(s). Prior to site works recommencing in the affected area(s) the contamination must be characterised by intrusive investigation, risk assessed (with remediation/verification measures proposed as necessary) and a revised remediation and verification strategy submitted to and agreed in writing by the local planning authority.

C: LONG-TERM MONITORING & MAINTENANCE: If required in the agreed remediation or verification strategy, all monitoring and/or maintenance of remedial measures shall be carried out in accordance with the approved details.

No part of the development shall be brought into use until remediation and verification are completed. The actions required to be carried out in Sections A to C above shall adhere to the following guidance (or replacements thereof): CLR11 (Environment Agency/DEFRA, 2004); BS10175 (British Standards Institution, 2011); C665 (CIRIA, 2007).

APPENDIX D – DISPUTED CONDITIONS

1. Contaminated Land/Land remediation

Conditions proposed by Council

See Conditions 46 and 47 above.

Alternative Condition proposed by the appellants

No phase or sub-phase of the development hereby approved shall be commenced until a scheme to identify and control any contamination of land, or pollution of controlled waters has been submitted to and approved in writing by the Local Planning Authority and until the measures approved in that scheme have been implemented.

In the event that it is proposed to import soil onto any part of the development site this shall comply with the requirements of the approved scheme.

If required by the approved scheme, no development shall take place until monitoring at the site for the presence of ground gas and a subsequent risk assessment has been submitted to and approved in writing by the Local Planning Authority and any recommendations implemented in full.

2. RADLEY LANE

Condition proposed by the Council[215]

Prior to first occupation of any phase of development adjacent to Radley Lane a scheme for an appropriate system of street lighting along the length of Radley Lane as defined by drawing no ERGE/DC/1 shall be submitted to the Local Planning Authority for approval in writing. The approved scheme shall subsequently be implemented prior to first occupation of any phase of development adjacent to Radley Lane.

3. HIGHWAYS

Condition proposed by the Council

No development shall commence until a scheme for the design and construction of off-site highway improvement works, including a timetable for implementation, has been submitted to and approved in writing by the Local Planning Authority. The works shall include the replacement/upgrade of street lighting necessary as part of the detailed design and any drainage works necessary to facilitate the highway works and shall include Road Safety Audits.

The highway improvement works comprise:

a) Widening of Poplars Avenue at the junction of A50 Orford Green

b) Installation of traffic signal junction at Enfield Park Road/Crab Lane to the principles of Drawing No. 1107/70

[215] Please refer to ID72

c) Provision of Keep Clear carriageway markings on A49 at Birch Avenue to the principles of Drawing No. 1107/79

d) Resurfacing of footway on north eastern side of Mill Lane between new site access and No.2 Mill Lane

e) Provision of footway/hardstand verge on southwestern side of Mill Lane between the new site access and Radley Lane

The approved schemes shall be implemented in accordance with the following triggers respectively:

a) Prior to occupation of any development served from Poplars Avenue

b) Prior to occupation of any development served from Mill Lane

c) Prior to occupation of any development served from Poplars Avenue

d) Prior to first occupation of any development served from the northern end of Mill Lane

e) Prior to first occupation of any development served from the northern end of Mill Lane

Condition proposed by Council

No development shall commence until a scheme to mitigate the impacts of the development on the following areas of highway, including a timetable for implementation, has been submitted to and approved in writing by the Local Planning Authority. The works shall include the replacement/upgrade of street lighting necessary as part of detailed design and any drainage works necessary to facilitate the highway works and shall include Road Safety Audits.

The junctions are:

a) A49 Winwick Road/Sandy Lane traffic signal junction

b) A50 Orford Green/Hilden Road roundabout junction

c) Capesthorne Road/Poplars Avenue roundabout junction

d) A49 Newton Road between M62 J9 and Delph Lane

The approved schemes shall be implemented in accordance with the following triggers respectively:

a) Prior to any development served from Poplars Avenue

b) Prior to any development served from Poplars Avenue

c) Prior to any development served from Poplars Avenue

d) Prior to the occupation of the 250th dwelling

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0117 934 9121
Company Registration Number: 07500534

TECHNICAL NOTE

PROJECT: Peel Hall, Warrington

REPORT: 1901/TN/03 – Transport and Highways Scoping Note for Use of WMMTM16

DATE: April 2019 *(Updated 10th July 2019)*

---

1. This Technical Note has been provided to set out the scope for using the WMMTM16 SATURN model to test the traffic impact of the proposed Peel Hall development.

2. This scoping note covers the following points:

   i. Development profile
   ii. Access strategy
   iii. Vehicle Trips
   iv. Years of assessment
   v. Study area
   vi. TEMPRO growth factors
   vii. Committed development

Development Profile

3. The development profile is now confirmed as follows:

   i. 1,200 dwellings
   ii. Care home (up to 100 bedrooms)
   iii. Local centre – A1 food store up to 2,000sqm, A1-A5 up to 600sqm (no single unit larger than 200sqm), A3/A4 family pub/restaurant up to 800sqm
   iv. Community sports pitches
   v. Primary School (assumed two-form entry for the purpose of the transport assessment work)

4. It should be noted that the local centre is provided to serve the new residential neighbourhood and is not intended as an attractor in its own right and that pupils attending the primary school will be local.

Access Strategy

5. The main access strategy for the Peel Hall site is the creation of a non-through route with the development served off five separate access points including a new roundabout from Mill Lane in the east. (See **Appendix 1** for overview and access drawings – which can be provided as dwg format to AECOM for inclusion within SATURN). This is known as Option A.

6. The developer has agreed to test a further access strategy using WMMTM16, which will be a through route that connects the proposed new roundabout junction on Mill Lane with the A49 in the west via a new signalised junction on Poplars Avenue. (See **Appendix 2** for overview and access drawings). This sensitivity test is known as Option B.

Vehicle Trips

7. The trip rates were agreed at the Appeal and are available in the Transport Assessment HTp/1107/TA/01/A (dated January 2018) – Section 8.0 of the TA on trip rates and discounting is provided as **Appendix 3** for ease of reference regarding actual trip rates (only).

8. The development trips are set out in Table 8.11 from TA/01/A, with the employment land use reduced to reflect the updated development profile. This is updated and provided below as **Table 1**.

Table 1 - Peel Hall vehicular trip generation summary (no discounts applied)

Development Traffic	AM Peak Hour		PM Peak Hour	
	Arrival	Departure	Arrival	Departure
Residential Trips (1,200)	270	628	594	368
Care Home Trips (100 beds)	7	7	8	8
Food Store Trips (2,000sqm)	92	61	181	191
Local Centre Shop Trips (600sqm)	30	29	36	39
Family Pub/Restaurant Trips	-	-	23	15
Primary School Trips (two form entry)	113	79	19	27
Community Uses	10	5	7	8
Total Trips	**522**	**809**	**868**	**656**

9. A discounting strategy is applied to these trip rates, as set out in TA/01/A. In summary trip discounts for the AM and PM peak hours are as follows:

    i. Residential 0%
    ii. Care Home 0%
    iii. Food Store 100% (70% discounted and 30% pass-by)
    iv. Local Centre 100%
    v. Family Pub/Restaurant 0%
    vi. Primary School 50%
    vii. Community uses 0%

10. The corresponding trips at each access are set out below under 'Years of Assessment'.

11. It is assumed that AECOM may also require peak period vehicle trip information to cover either side of the peak hour within the SATURN modelling. This was provided in Appendix 41 of TA/01/A.

Years of Assessment

12. The agreed years of assessment are as follows:

    WMMTM16 Base 2016
    No development

    2018
    No development (required for Air Quality)

    Opening Year 2022 (To be Run for Access Strategy Option A and Access Strategy Option B)
    a. Do Minimum (no development)
    b. Do Something (120 dwellings)
    c. Do Something (full development - to define mitigation for HE at Junction 9 and required for Air Quality assessments)

    Five Years After Opening 2027 (To be Run for Access Strategy Option A and Access Strategy Option B)
    a. Do Minimum (no development)
    b. Do Something (600 dwellings and Local Centre)

    10 years After Opening 2032 (To be Run for Access Strategy Option A and Access Strategy Option B)
    a. Do Minimum (no development)
    b. Do Something (full development)

13. The WMMTM16 will be run for the AM and PM peak hours and for an inter-peak scenario.

14. The vehicle trips for these assessment years are set out below for the AM and PM peak hours. Inter-peak vehicle trips will be provided in Technical Note TN/06 following.

Opening Year - 120 Dwellings

15. These 120 dwellings will be built out (60) from the Mill Lane extension north of the junction with Radley Lane and (60) from the proposed priority junction with Poplars Avenue (central). The corresponding trips are set out in **Table 2** below.

Table 2 - Summary of 2022 peak hour vehicle trip numbers at each access location

Access	Quantum of Development	AM Arrival	AM Departure	PM Arrival	PM Departure
Mill Lane	60 dwellings	14	31	30	18
Poplars Avenue (central)	60 dwellings	14	31	30	18
Total		28	62	60	36

Full Development

16. The full development trips were summarised in Table 8.14 and Table 8.16 of TA/01/A for Option A and Option B access strategies respectively. These are reproduced below in **Table 3** and **Table 4** for the Option A access strategy and the Option B access strategy sensitivity test respectively, and adjusted for the removal of the employment land use and to better reflect the impact of pass-by trips.

Table 3 - Summary of full development peak hour vehicle trip numbers at each access location Option A (with discounts applied)

Access	Quantum of Development	AM Arrival	AM Departure	PM Arrival	PM Departure
Poplars Avenue (Central)	180 dwellings	41	94	89	55
	care home	7	7	8	8
	food store*	28	18	54	57
	local shops	0	0	0	0
	family pub	0	0	23	15
	*Sub Total***	*48*	*101*	*120*	*78*
Poplars Avenue (West)	150 dwellings	34	79	74	46
Mill Lane	150 dwellings	34	79	74	46
Mill Lane/Blackbrook Avenue	700 dwellings	158	366	347	215
	primary school	57	40	10	14
Birch Avenue	20 dwellings	5	11	10	6
Grasmere Avenue	community uses	10	5	7	8
	Total**	**346**	**681**	**642**	**413**

*** pass-by trips only**
**** excluding pass-by**

Table 4 - Summary of full development peak hour vehicle trip numbers at each access location Option B (with discounts applied)

Access	Quantum of Development	AM Arrival	AM Departure	PM Arrival	PM Departure
Poplars Avenue (Central)	180 dwellings	41	94	89	55
	care home	7	7	8	8
	food store*	28	18	54	57
	local shops	0	0	0	0
	family pub	0	0	23	15
	*Sub Total***	*48*	*101*	*120*	*78*
Poplars Avenue (West) through to A49 & Mill Lane/Blackbrook Avenue	850 dwellings	191	445	421	261
	primary school	57	40	10	14
	Sub Total	*248*	*485*	*431*	*275*
Mill Lane	150 dwellings	34	79	74	46
Birch Avenue	20 dwellings	5	11	10	6
Grasmere Avenue	community uses	10	5	7	8
	Total**	**345**	**681**	**642**	**413**

*** pass-by trips only**
**** excluding pass-by**

Intermediate Assessment Year – 600 dwellings, care home and Local Centre

17. An intermediate year of 2027 (five years after opening) will be assessed in terms of the traffic impact on the local highway network before the internal link to the local centre is created. It is agreed that this will present a worst-case intermediate build out scenario, with no discounting of vehicular trips for any of the land uses, because residents on the development would have to use the local highway network to access shops without the direct vehicular link to the local centre through the site. The resultant trips are set out in **Table 5** and **Table 6** for access strategy Option A and the sensitivity test through route access strategy Option B respectively.

Peel Hall network 2027 before road link to local centre

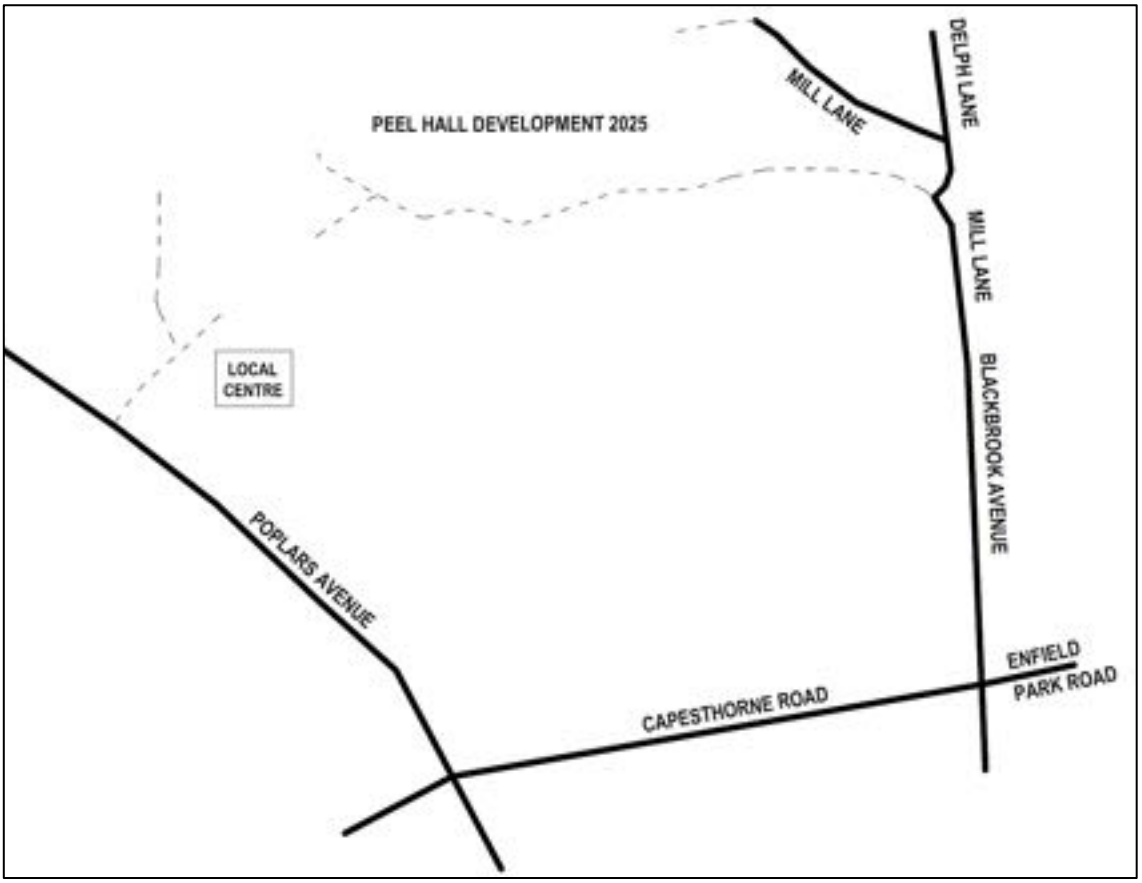


Table 5 - Summary of 2027 peak hour vehicle trip numbers at each access location (Option A)

Access	Quantum of Development	AM Arrival	AM Departure	PM Arrival	PM Departure
Poplars Avenue (Central)	75 dwellings	17	39	37	23
	care home	7	7	8	8
	food store	92	61	181	191
	local shops	30	29	36	39
	family pub	0	0	23	15
	Sub Total	*146*	*136*	*285*	*276*
Poplars Avenue (West)	75 dwellings	17	39	37	23
Mill Lane	150 dwellings	34	79	74	46
Mill Lane/Blackbrook Avenue	280 dwellings	63	147	139	86
Birch Avenue	20 dwellings	5	11	10	6
Grasmere Avenue	community uses	10	5	7	8
	Total	**275**	**417**	**552**	**445**

Table 6 - Summary of 2027 peak hour vehicle trip numbers at each access location (Option B)

Access	Quantum of Development	AM Arrival	AM Departure	PM Arrival	PM Departure
Poplars Avenue (Central)	70 dwellings	16	37	35	22
	care home	7	7	8	8
	food store	92	61	181	191
	local shops	30	29	36	39
	family pub	0	0	23	15
	Sub Total	*145*	*134*	*283*	*275*
Poplars Avenue (West) through to A49 & Mill Lane/Blackbrook Avenue	360 dwellings	81	188	178	111
Mill Lane	150 dwellings	34	79	74	46
Birch Avenue	20 dwellings	5	11	10	6
Grasmere Avenue	community uses	10	5	7	8
	Total	**275**	**417**	**552**	**446**

Study Area

18. The study area for Peel Hall has been agreed and the previously modelled network is shown on the plan contained in **Appendix 4**.

19. It is understood that the WMMTM16 layout is slightly different within this Peel Hall area (see **Appendix 5**). It is agreed that AECOM will update the WMMTM16 network to include for Howson Road; Birch Avenue; Poplars Avenue from A49; and Mill Lane up to Radley Lane

20. AECOM are to provide a revised network model plan for agreement of the Peel Hall study area, for use within WMMTM16, with the junction nodes clearly marked.

TEMPRO Growth Factors

21. It is understood that AECOM will be confirming the appropriate NTEM adjusted TEMPRO growth factors with Warrington Borough Council as part of the modelling exercise.

22. WBC have requested that background growth be forecast to NTEM levels, with known committed developments explicitly modelled as follows:

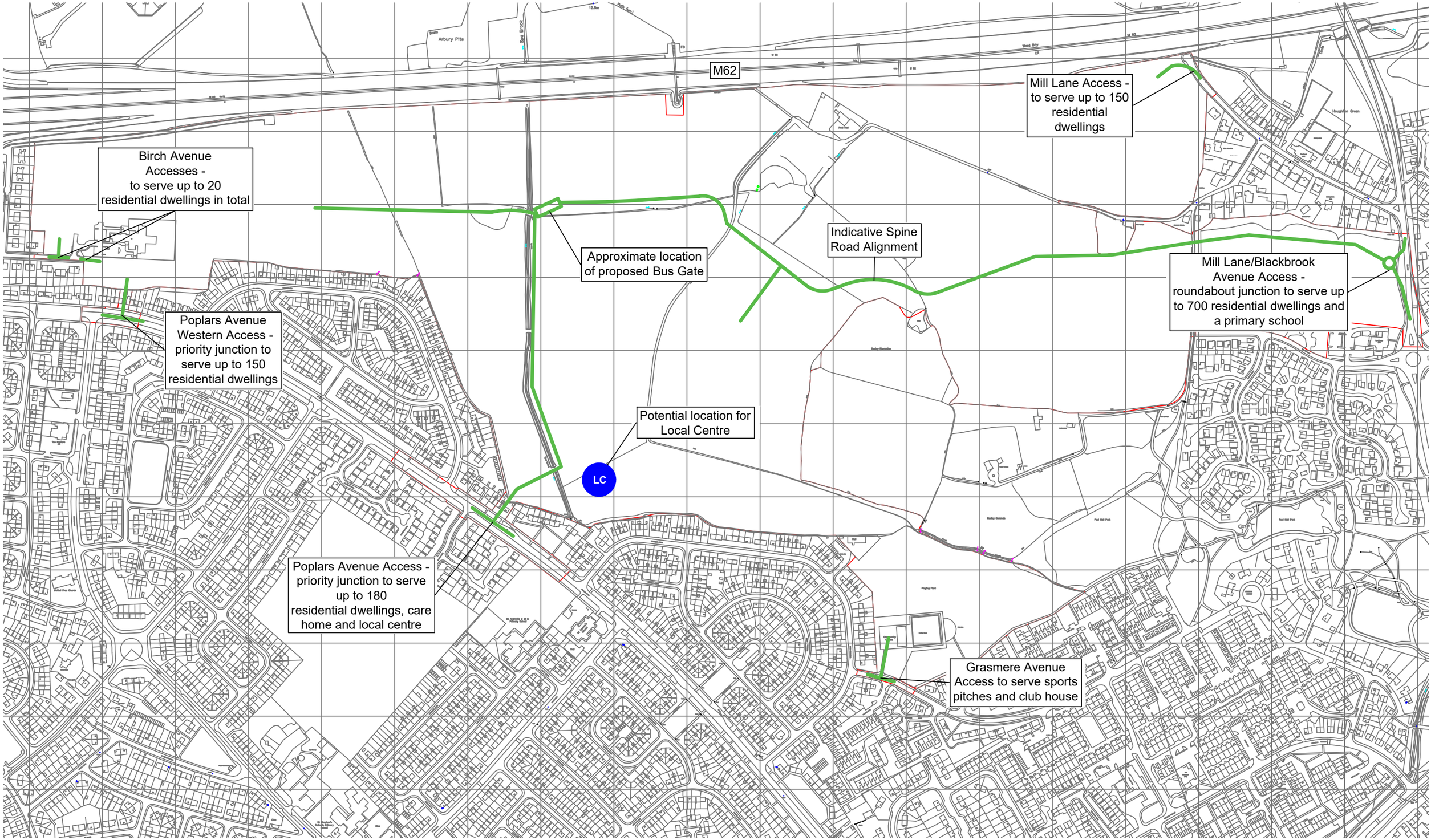
    i. J9 Retail Park (2016/29425).
    ii. Parkside Phase 1 (2018/32247).
    iii. Birchwood Park (2015/26044).

23. WBC have confirmed that if the committed development forecast exceeds NTEM levels, then the higher growth level is to be used.

Appendix 1

Option A

Overview and Access Drawings



NOTES:

ISSUE	REASON FOR REVISION	DATE
H	Update re: employment land use	03/07/19
G	Update to location of local centre	16/01/18
F	Amendment to annotation	10/05/17
E	Amendment to annotations	10/05/16
D	Amendment to bus gate location	04/05/16
C	Amendment to dwelling numbers at access points	12/04/16
B	Alteration to dwelling numbers at access points	04/03/16
A	Reduction in number of dwellings shown off Birch Avenue	19/02/16

DATE:	DRAWN BY:	CHECKED:
12/01/15	FB	DT

PROJECT:

PEEL HALL, WARRINGTON

CLIENT:

SATNAM

TITLE:

PROPOSED ACCESS POINTS AND INDICATIVE SPINE ROAD

PROJECT REFERENCE:	DRAWING NUMBER:	SCALE:
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HighgateTransportation
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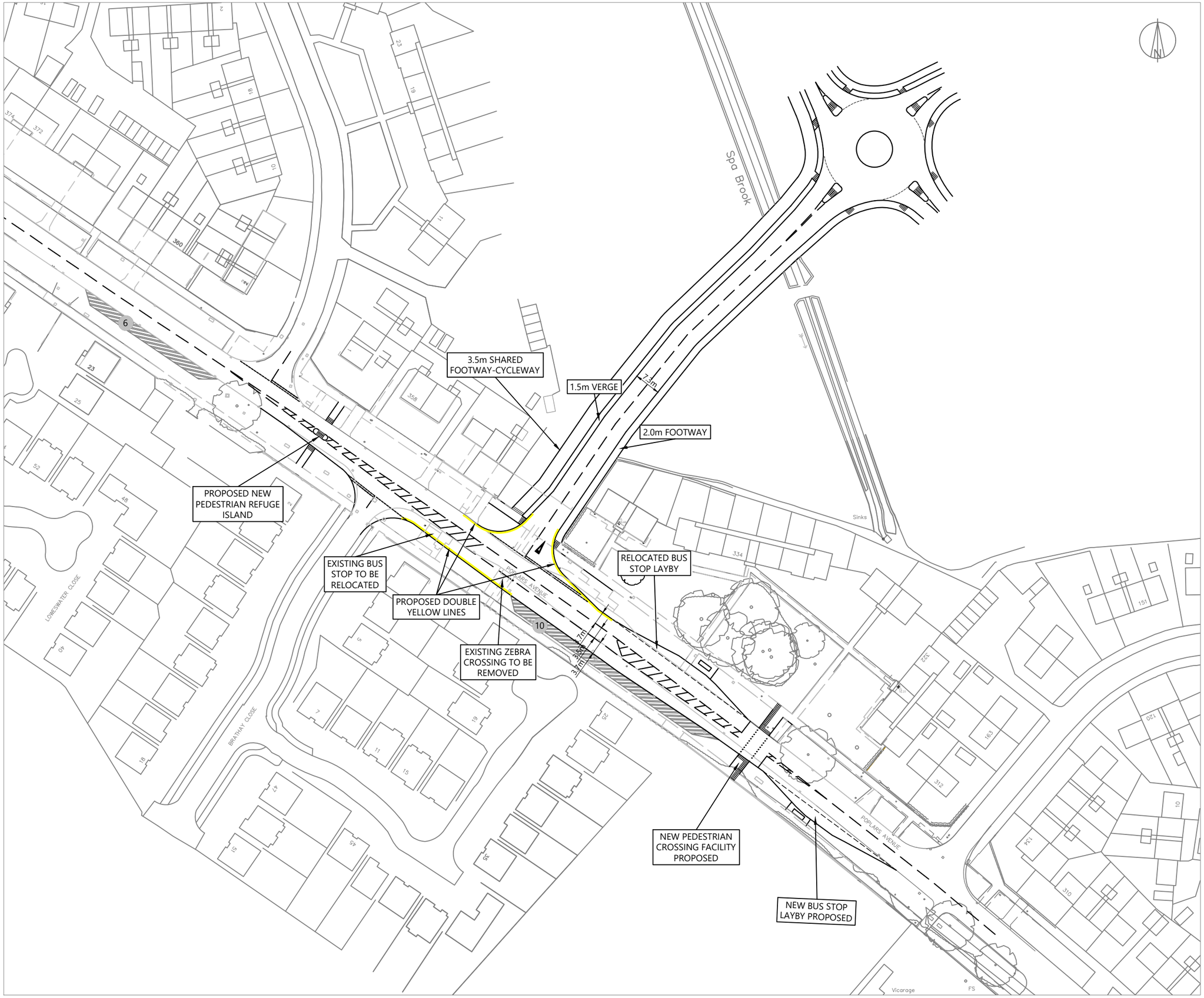
Bristol BS5 1NL
01179 349 121



NOTES:

Drawing based on Appletons plan 140367-B-001G dated January 2016.

KEY:

Parking Areas (number of cars that can be accommodated) (6)

ISSUE	REASON FOR REVISION	DATE

PROJECT:

PEEL HALL, WARRINGTON

CLIENT:

SATNAM MILLENNIUM LTD

PROJECT REFERENCE:	DRAWING NUMBER:	SCALE:
1107	12/Q	1:1,000 @ A3

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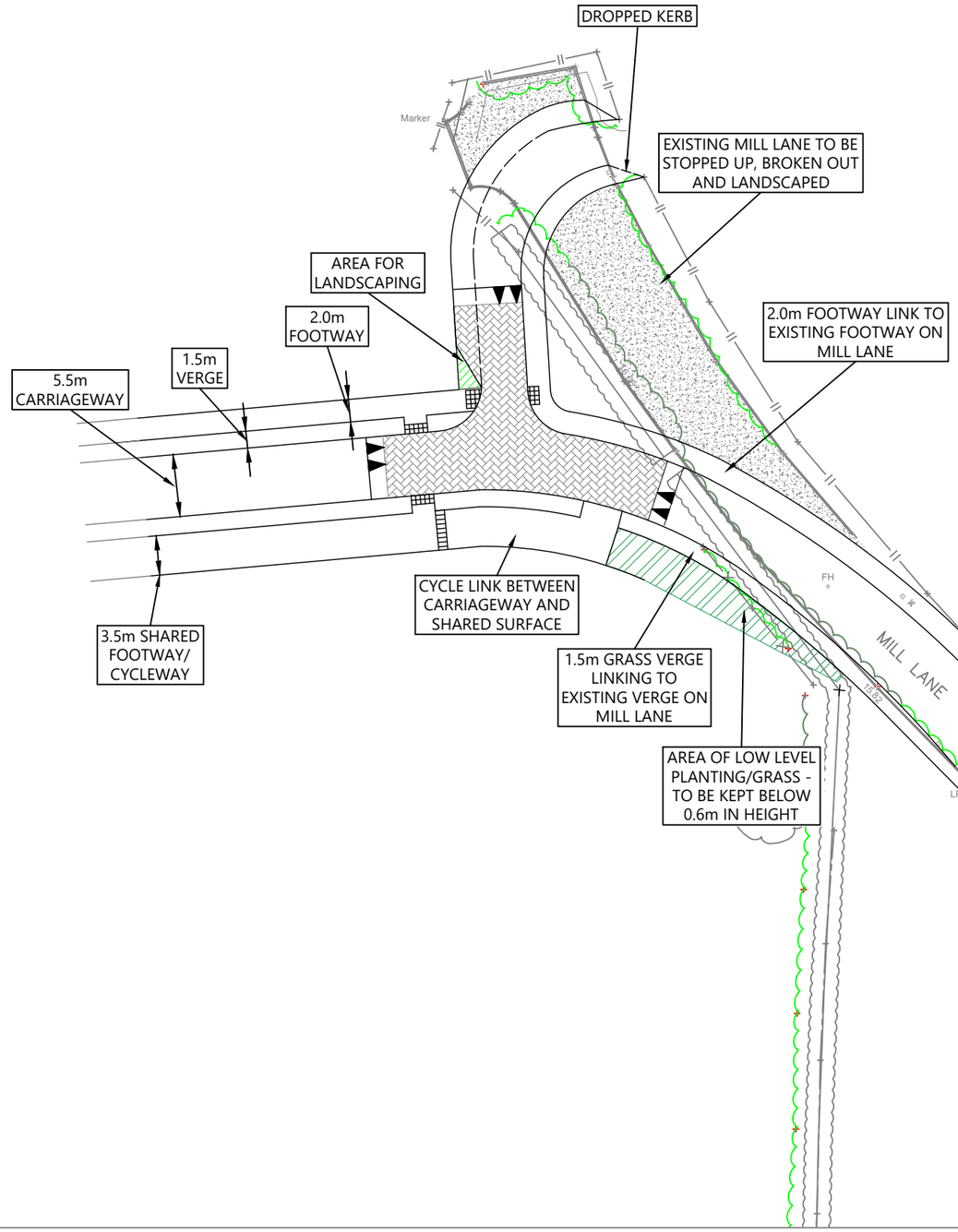
TITLE:

PROPOSED ACCESS FROM POPLARS AVENUE TO RESIDENTIAL LAND AND LOCAL CENTRE

DATE:	DRAWN BY:	CHECKED:
03/02/17	FB	DT



Drawing based on Powers & Tiltman topographical survey 6297_01 dated 25/07/11.

PROJECT:

PEEL HALL, WARRINGTON

CLIENT:

SATNAM MILLENNIUM LTD

PROJECT REFERENCE:	DRAWING NUMBER:	SCALE:
1107	11/L	1:500 @A3

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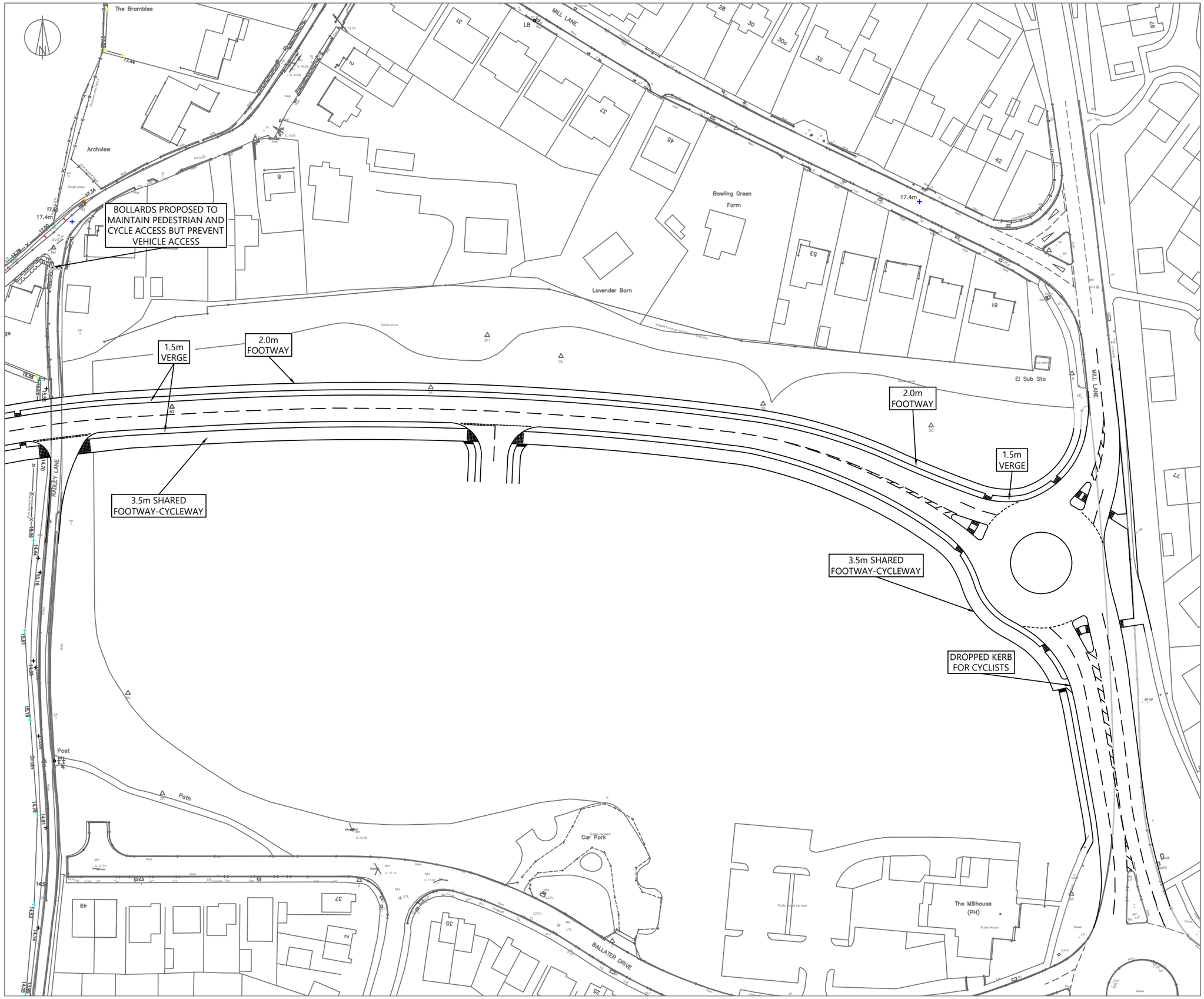
01179 349 121

TITLE:

PROPOSED ACCESS AT MILL LANE

DATE:	DRAWN BY:	CHECKED:
03/02/17	BL	DT



NOTES:
Drawing based on Powers & Tiltman topographical survey 6297/01 dated 25/07/11 and Geomatic Surveys Ltd topographical survey 01532/01 dated 27/07/15.

ISSUE	REASON FOR REVISION	DATE

PROJECT:

PEEL HALL, WARRINGTON

CLIENT:

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PROJECT REFERENCE:	DRAWING NUMBER:	SCALE:
1107	10/N	1:1,000 @ A3

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TITLE:

PROPOSED MAIN SITE ACCESS AT BLACKBROOK AVENUE

DATE:	DRAWN BY:	CHECKED:
17/01/18	FB	DT

TURNING HEAD AND EMERGENCY ACCESS LINK TO WIDER SITE

3.5m SHARED FOOTWAY-CYCLEWAY

1.0m VERGE

2.0m FOOTWAY

7.3m

ALTERATION TO EXISTING KERB LINE TO WIDEN CARRIAGEWAY THROUGH THE BEND

POPLARS AVENUE

COTSWOLD ROAD

El Sub Sta

1:1,000 @ A3

ALTERATION TO EXISTING KERB LINE TO WIDEN CARRIAGEWAY THROUGH THE BEND

1:500 @ A3

NOTES:

Drawing based on Geomatic Surveys Ltd topographical survey 01532/01 dated 27/07/15.

KEY:

Parking Areas (number of cars that can be accommodated) 6

ISSUE	REASON FOR REVISION	DATE

PROJECT:

PEEL HALL, WARRINGTON

CLIENT:

SATNAM MILLENNIUM LTD

PROJECT REFERENCE:	DRAWING NUMBER:	SCALE:
1107	09/M	AS SHOWN

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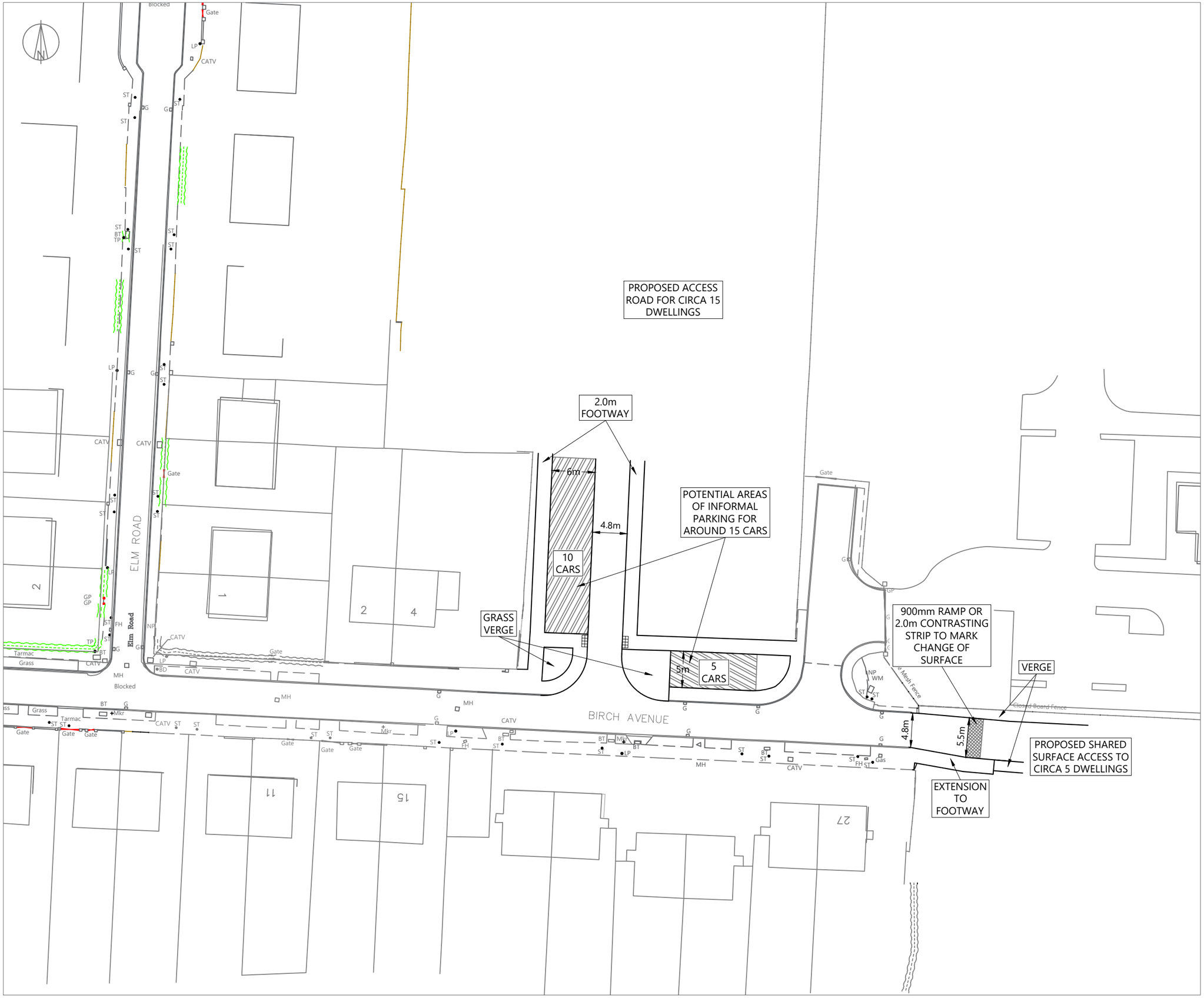
First Floor, 43-45 Park Street
Bristol BS1 5NL
01179 349 121

TITLE:

PROPOSED ACCESS TO EMPLOYMENT LAND AT POPLARS AVENUE

DATE:	DRAWN BY:	CHECKED:
03/02/17	FB	DT



NOTES:

Drawing based on Geomatic Surveys Ltd topographical survey 01532/01 dated 27/07/15.

ISSUE	REASON FOR REVISION	DATE

PROJECT:

PEEL HALL, WARRINGTON

CLIENT:

SATNAM MILLENNIUM LTD

PROJECT REFERENCE:	DRAWING NUMBER:	SCALE:
1107	08/P	1:500 @ A3

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TITLE:

PROPOSED ACCESS TO RESIDENTIAL LAND AT BIRCH AVENUE

DATE:	DRAWN BY:	CHECKED:
03/02/17	FB	DT

NOTES:

Drawing based on Geomatic Surveys Ltd topographical survey 01532/01 dated 27/07/15.

ISSUE	REASON FOR REVISION	DATE

PROJECT:

PEEL HALL, WARRINGTON

CLIENT:

SATNAM MILLENNIUM LTD

PROJECT REFERENCE:	DRAWING NUMBER:	SCALE:
1107	30/H	1:500 @ A3

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Park Street, Bristol BS1 5NL
01179 349 121

TITLE:

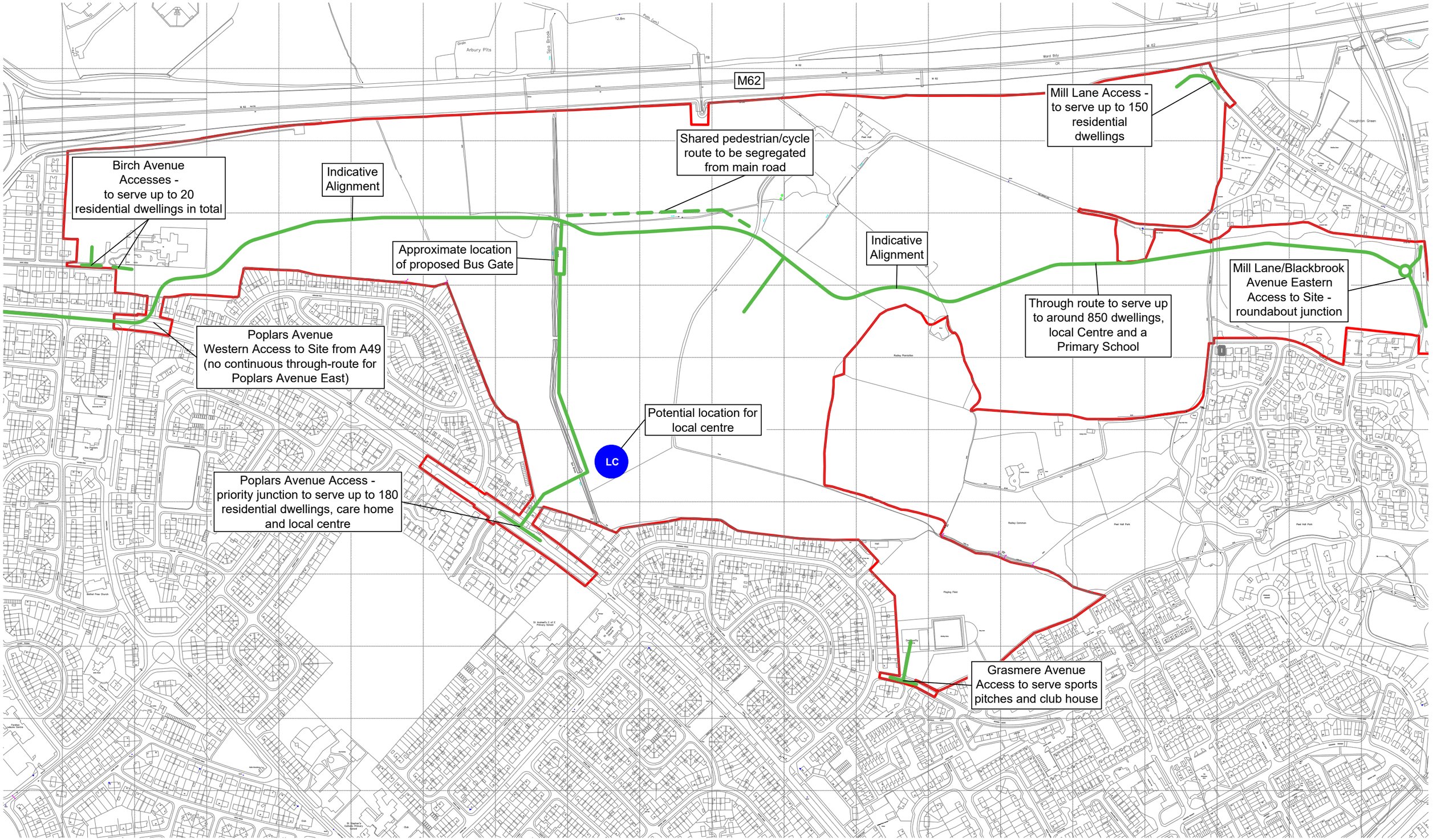
PROPOSED ALTERATIONS TO EXISTING ACCESS AT GRASMERE AVENUE

DATE:	DRAWN BY:	CHECKED:
15/01/18	BL	FB

Appendix 2

Option B

Overview and Access Drawings



NOTES:

ISSUE	REASON FOR REVISION	DATE

DATE:	DRAWN BY:	CHECKED:
18/04/19	FB	DT

PROJECT: PEEL HALL, WARRINGTON

CLIENT: SATNAM MILLENNIUM LTD

TITLE: INDICATIVE THROUGH ROUTE AND ACCESS POINTS

PROJECT REFERENCE:	DRAWING NUMBER:	SCALE:
1901	01	Not to scale

HighgateTransportation
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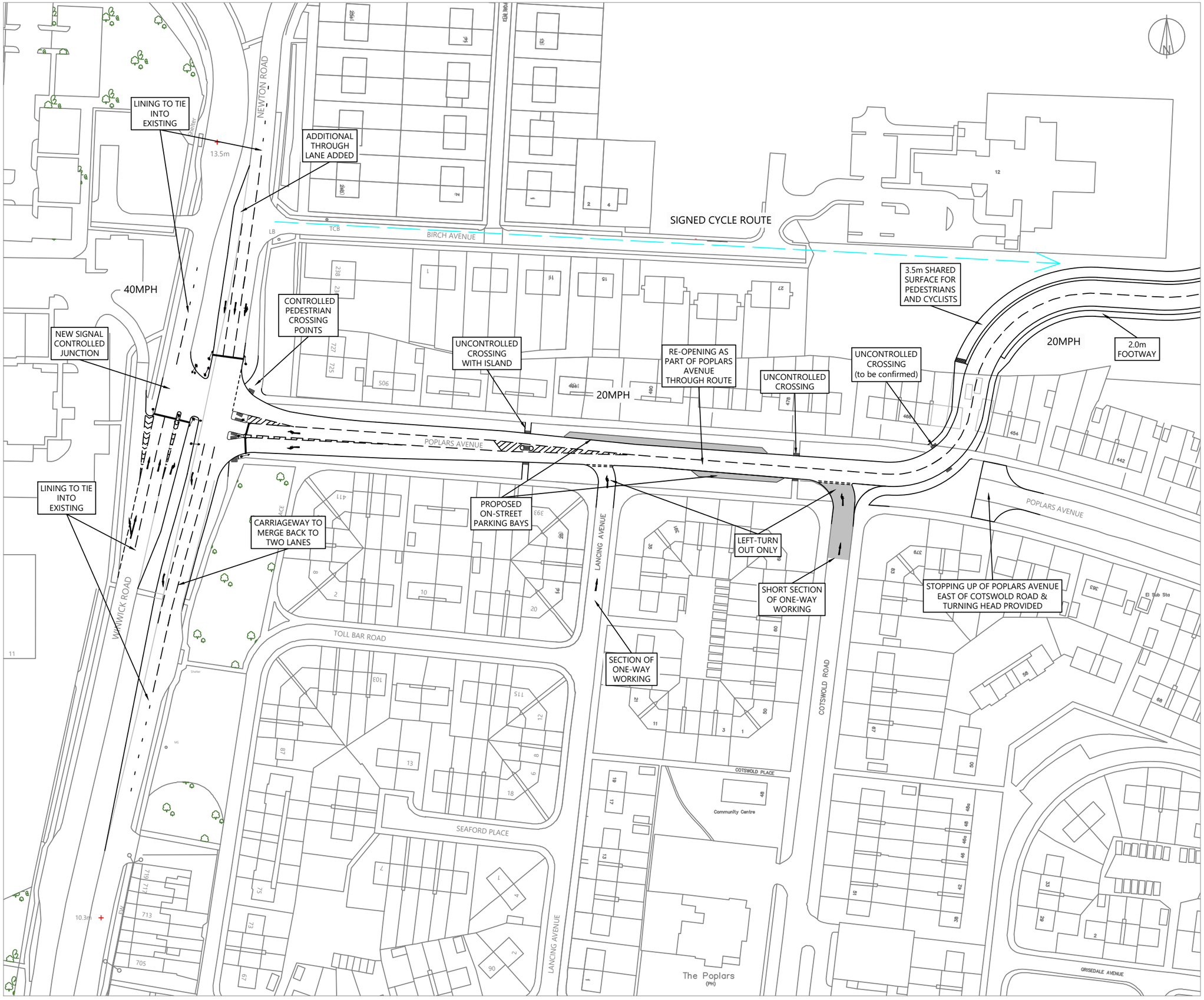
First Floor, 43-45 Park Street
Bristol BS1 5NL
07973 375 937 / 07595 892 217



NOTES:

Drawing based on Appletons Opportunities & Constraints plan 1820_21 dated 21/10/14.

KEY

New on-street parking bays

ISSUE	REASON FOR REVISION	DATE

PROJECT:

PEEL HALL, WARRINGTON

CLIENT:

SATNAM MILLENNIUM LTD

PROJECT REFERENCE:	DRAWING NUMBER:	SCALE:
1107	52/F	1:1,250 @ A3

HighgateTransportation

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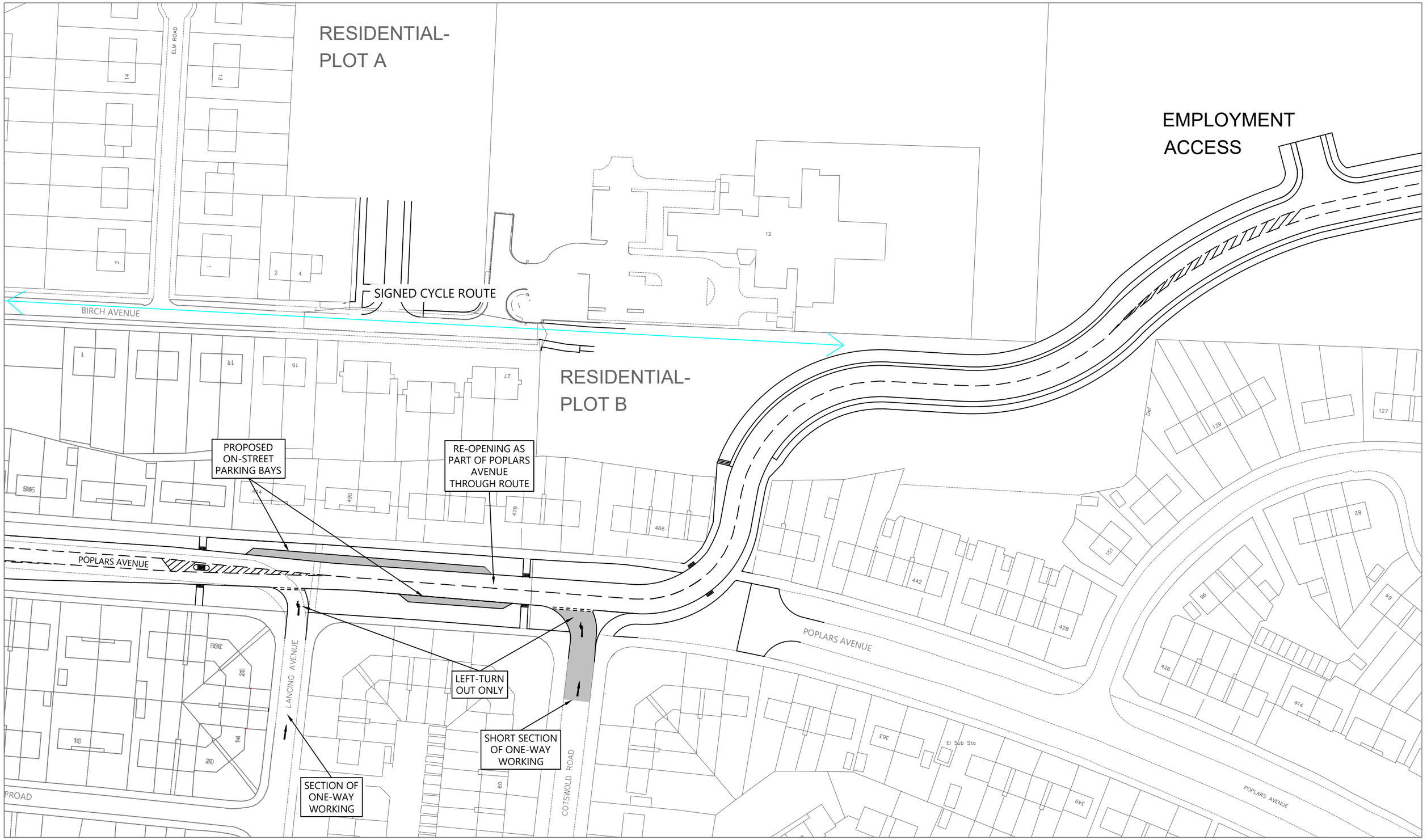
First Floor, 43-45 Park Street
Bristol BS8 1ES
07973 375 937 / 07595 892 217

TITLE:

PEEL HALL PROPOSED ALIGNMENT FOR THROUGH ROUTE TO A49

DATE:	DRAWN BY:	CHECKED:
26/01/18	BL	FB



NOTES:

ISSUE	REASON FOR REVISION	DATE

DATE:	DRAWN BY:	CHECKED:
26/01/18	FB	DT

PROJECT:
PEEL HALL, WARRINGTON

CLIENT:
SATNAM MILLENNIUM LTD

TITLE:
WESTERN ACCESS AT POPLARS AVENUE - THROUGH ROUTE

PROJECT REFERENCE:	DRAWING NUMBER:	SCALE:
1107	46/B	1:1,000 @ A3

HighgateTransportation
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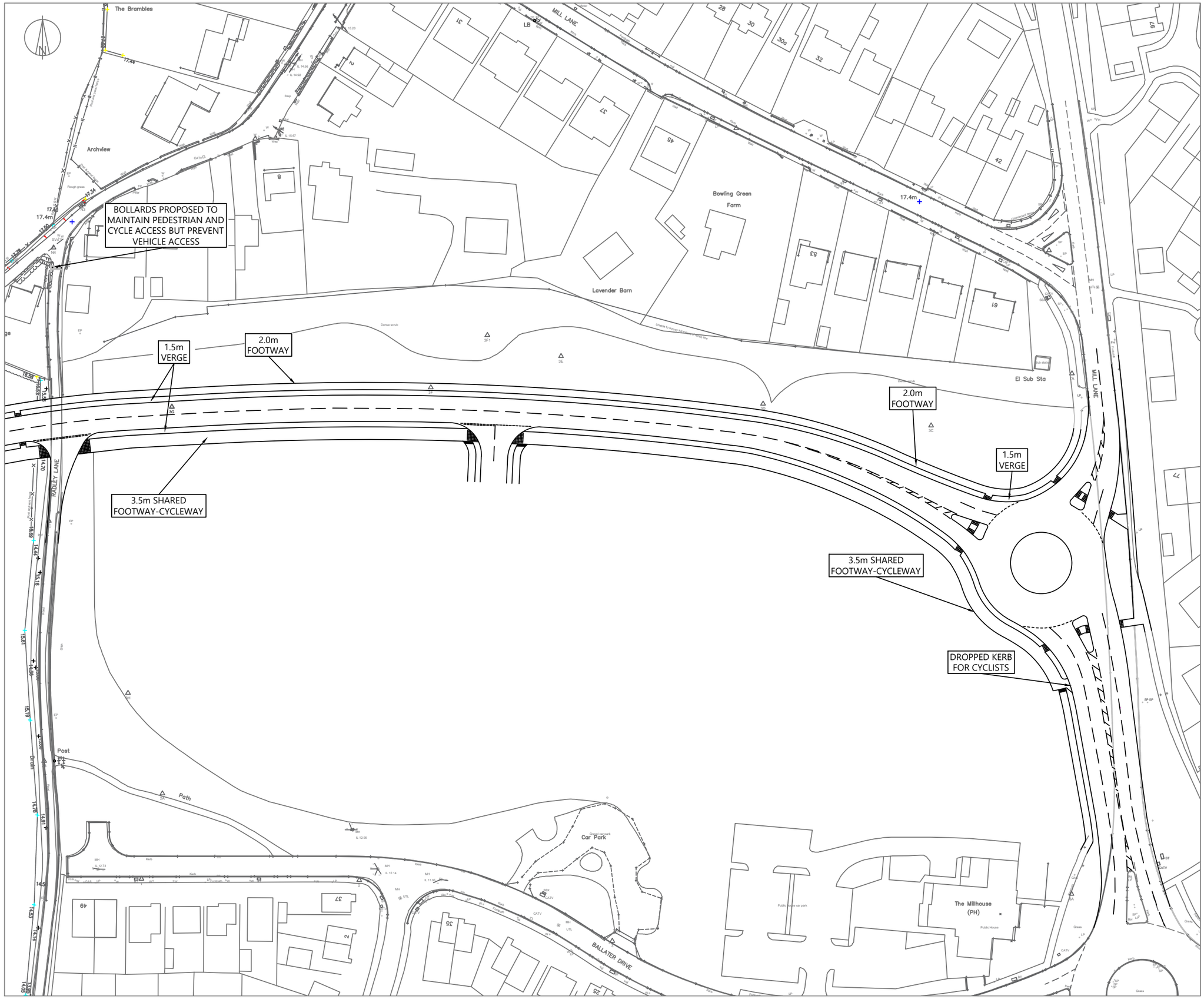
First Floor, 43-45 Park Street
Bristol BS1 5NL
07973 375 937 / 07595 892 217



NOTES:
Drawing based on Powers & Tiltman topographical survey 6297/01 dated 25/07/11 and Geomatic Surveys Ltd topographical survey 01532/01 dated 27/07/15.

ISSUE	REASON FOR REVISION	DATE

PROJECT:

PEEL HALL, WARRINGTON

CLIENT:

SATNAM MILLENNIUM LTD

PROJECT REFERENCE:	DRAWING NUMBER:	SCALE:
1107	10/N	1:1,000 @ A3

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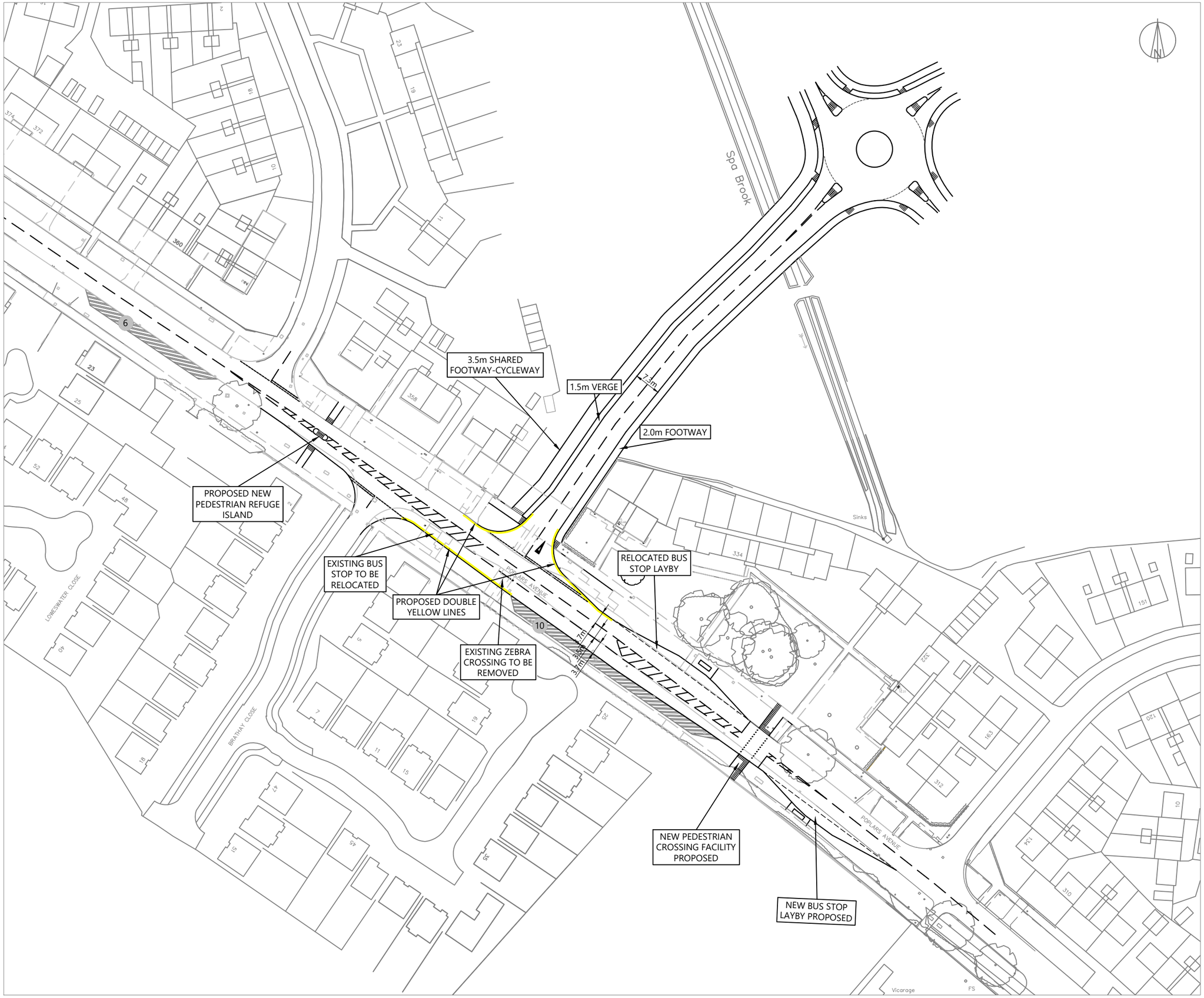
TITLE:

PROPOSED MAIN SITE ACCESS AT BLACKBROOK AVENUE

DATE:	DRAWN BY:	CHECKED:
17/01/18	FB	DT



NOTES:

Drawing based on Appletons plan 140367-B-001G dated January 2016.

KEY:

Parking Areas (number of cars that can be accommodated) (6)

ISSUE	REASON FOR REVISION	DATE

PROJECT:

PEEL HALL, WARRINGTON

CLIENT:

SATNAM MILLENNIUM LTD

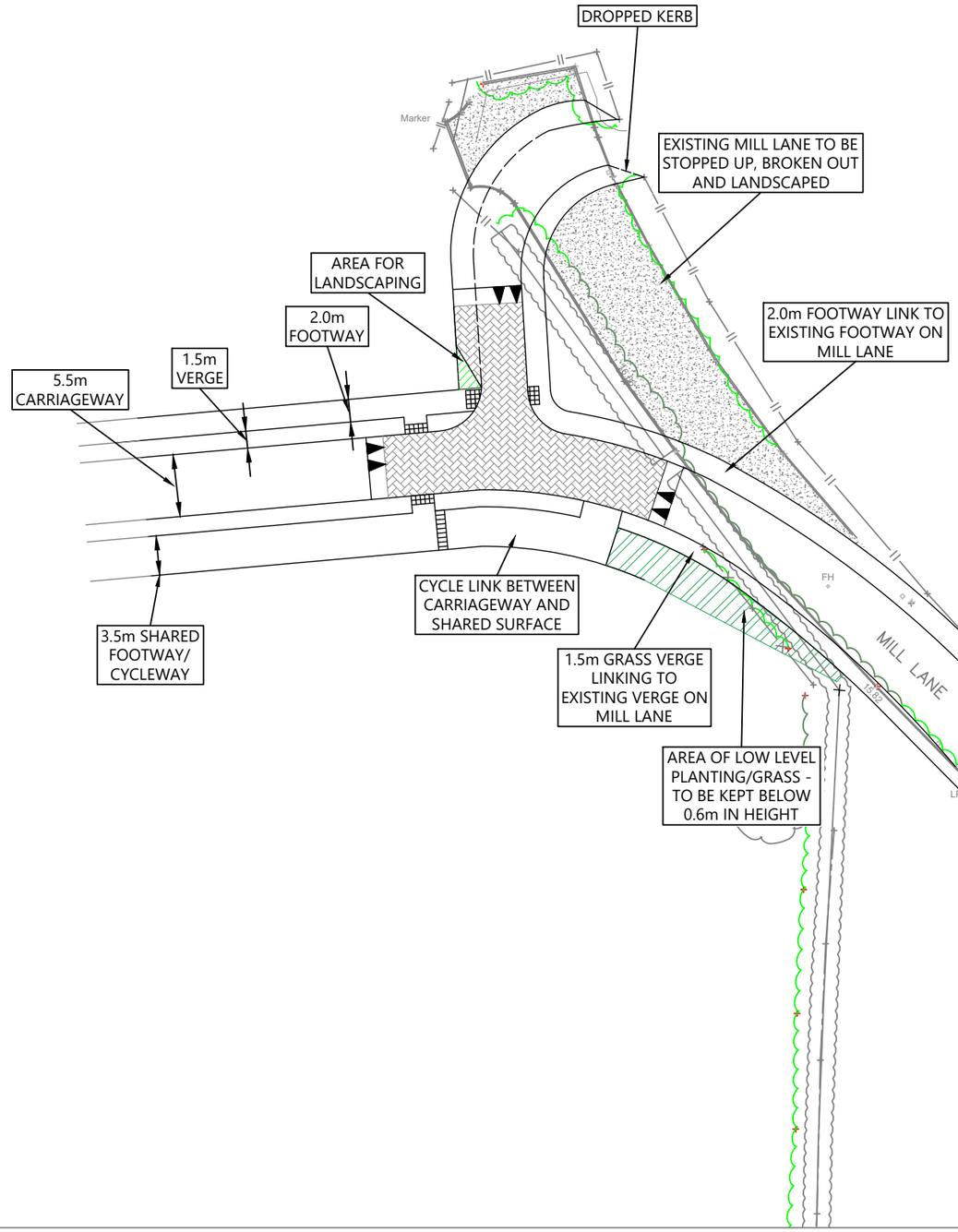
PROJECT REFERENCE:	DRAWING NUMBER:	SCALE:
1107	12/Q	1:1,000 @ A3

HighgateTransportation
www.highgatetransportation.co.uk
First Floor, 43-45 Park Street
Bristol BS1 5NL
01179 349 121

TITLE:

PROPOSED ACCESS FROM POPLARS AVENUE TO RESIDENTIAL LAND AND LOCAL CENTRE

DATE:	DRAWN BY:	CHECKED:
03/02/17	FB	DT



Drawing based on Powers & Tiltman topographical survey 6297_01 dated 25/07/11.

PROJECT:

PEEL HALL, WARRINGTON

CLIENT:

SATNAM MILLENNIUM LTD

PROJECT REFERENCE:	DRAWING NUMBER:	SCALE:
1107	11/L	1:500 @A3

HighgateTransportation

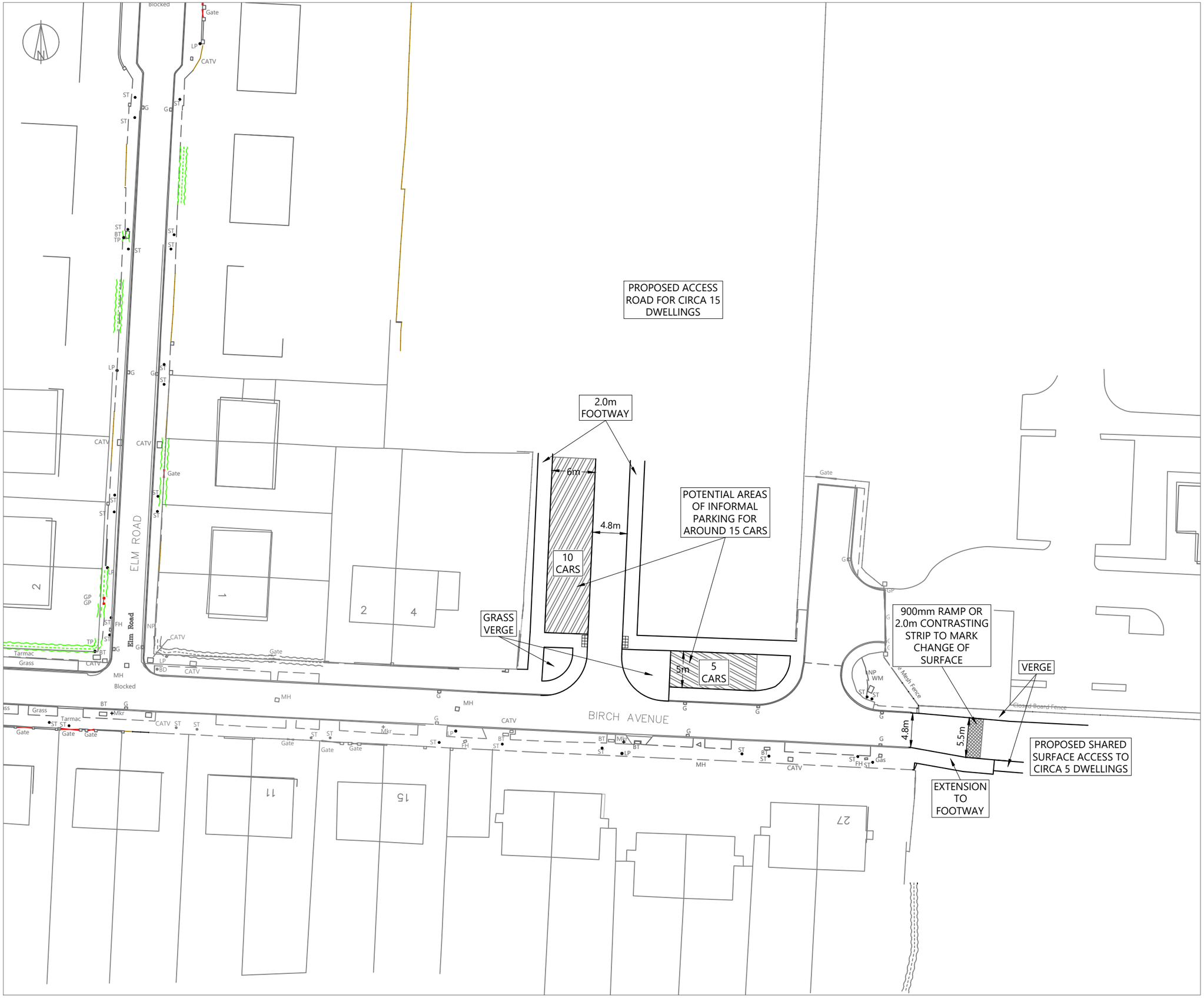
www.highgatetransportation.co.uk

First Floor, 43-45 Park Street
Bristol BS1 5NL
01179 349 121

TITLE:

PROPOSED ACCESS AT MILL LANE

DATE:	DRAWN BY:	CHECKED:
03/02/17	BL	DT



NOTES:

Drawing based on Geomatic Surveys Ltd topographical survey 01532/01 dated 27/07/15.

ISSUE	REASON FOR REVISION	DATE

PROJECT:

PEEL HALL, WARRINGTON

CLIENT:

SATNAM MILLENNIUM LTD

PROJECT REFERENCE:	DRAWING NUMBER:	SCALE:
1107	08/P	1:500 @ A3

HighgateTransportation
www.highgatetransportation.co.uk
First Floor, 43-45 Park Street
Bristol BS1 5NL
01179 349 121

TITLE:

PROPOSED ACCESS TO RESIDENTIAL LAND AT BIRCH AVENUE

DATE:	DRAWN BY:	CHECKED:
03/02/17	FB	DT

NOTES:

Drawing based on Geomatic Surveys Ltd topographical survey 01532/01 dated 27/07/15.

ISSUE	REASON FOR REVISION	DATE

PROJECT:

PEEL HALL, WARRINGTON

CLIENT:

SATNAM MILLENNIUM LTD

PROJECT REFERENCE:	DRAWING NUMBER:	SCALE:
1107	30/H	1:500 @ A3

HighgateTransportation
www.highgatetransportation.co.uk
First Floor, 43-45 Park Street
Park Street, Bristol BS1 5NL
01179 349 121

TITLE:

PROPOSED ALTERATIONS TO EXISTING ACCESS AT GRASMERE AVENUE

DATE:	DRAWN BY:	CHECKED:
15/01/18	BL	FB

Appendix 3

Section 8.0 of TA/01/A

8.0 Development Trip Generation and Discounting

8.1 This Transport Assessment considers all modes of transport and the demands that the proposed development will place on the existing transport infrastructure.

8.2 A vehicular trip generation and attraction assessment has been carried out for the proposed development based on the development profile set out in **paragraph 4.6**, using multi-modal TRICS surveys.

8.3 The trip generation assessment has been carried out generally mirroring the Omega approach, as requested in 2016 by WBC and HE. If anything, the Peel Hall trip rates are more robust, with the privately-owned housing residential trip rates covering all tenure houses and apartments as well as retirement accommodation.

8.4 The number of development trips associated with each use and each access was calculated using the TRICS database in 2016. These rates were set out in detail in Technical Notes HTp 1107 series of reports TN/02/A, TN/02/A/Addendum, TN/06 and TN/12 that have previously been provided to WBC highway officers. The trip rate tables are provided in this section of the report and the TRICS output reports are contained in **Appendix 40** for ease of reference.

8.5 The trip rates, discounting and distribution (**Section 9.0**) have been provided and reviewed further to WBC's consultation response (**Appendix 5**), various meetings held with WBC and HE between January 2016 and March 2017 and correspondence since January 2016 regarding the highways and transportation elements of the scheme.

8.6 It should be noted that 85th percentile trip rates are not available for every use class, but in our judgement what has been used is robust and more so than the Omega approach previously accepted by WBC. 85th percentile rates are only available for residential use, which is the predominant use proposed in any event. Nevertheless, it should be noted that the TRICS database is owned and run by a consortium of councils and is therefore is a reliable and properly managed dataset, which is subject to an appropriate level of scrutiny. The selection process provides an accurate and reliable average trip rate for developments across the country. If the 85% percentile trip rates were relied upon for all land uses, particularly for a site as large as Peel Hall and with a mixed-use profile, this would represent an unreasonable and significant overestimate of the likely development impact on the highway network; pushing up the burden of highway infrastructure improvement costs onto the developer. Furthermore, this mixed-use site and the excellent bus service proposed will reduce car trips, therefore minimising the impact of development traffic on the local and wider highway network.

8.7 The residential and care home trip rates mirror that agreed for use within the Omega application. However, higher trip rates for the food store were used in the Peel Hall assessment than compared to the Omega application.

8.8 Furthermore, although average trip rates were used for the B1(c) land uses, sensitivity tests were carried out (as set out below) and the highest rates subsequently used. It is therefore considered that a robust approach has been adopted to forecast development traffic.

8.9 Many of the vehicular trips will be contained within the development and will not impact on the wider transport network due to the inclusion, location and accessibility of the local centre and food store facilities as well as the primary school. As previously set out (**Section 5.0**), the local centre car park has been designed to be split in two, with two points of vehicular access (Option A), but designed so that a through route is not created that could allow traffic to bypass the bus gate on the new local distributor road. Therefore, the local centre car park can be accessed from within the development by car without having to drive on the local highway network under the Option A scenario.

8.10 For the purposes of the traffic assessments the peak hour has been taken as 0800-0900 and 1700-1800, with peak periods of 0700-0930 and 1600-1830 used in the VISSIM modelling, which were subsequently transferred to the SATURN model. This has previously been agreed with highway officers at WBC and HE. The peak period trip rates report 1107/TN/02/A/Addendum is contained in **Appendix 41** for reference, and an updated extract for the family pub/restaurant is set out in **paragraphs 8.43** to **8.45** further to the change in GFA of this proposed land use, which was contained in HTp report 1107/TN/12 (see **Appendix 42**).

8.11 Following the trip rate tables in this section of the report, each of the access strategy options will be set out in terms of trip loading at each access point.

8.12 Trip discounting and sensitivity tests (i.e. M62 test) are set out in this section, along with the development trips for an intermediate assessment year of 2025 (with a phased build out) and an end year of 2030 (full build out). Saturday and Sunday trips are also discussed, further to the peak hour traffic flow review set out in **Section 3.0.**

8.13 The resultant development trips have been reflected in the SATURN modelling carried out by AECOM.

Trip Rates – Residential, Care Home and Employment

8.14 It was agreed with WBC at the March 2016 meeting (**Appendix 4**) that the starting point for trip rates was to follow those trips rates set out in the AECOM technical note for the Omega South application (extract provided in **Appendix 43**).

8.15 The trips rates used for assessing the impact of the Peel Hall development have previously been set out in HTp 1107 Technical Notes TN/02/A (March 2016, **Appendix 44**) and TN/12 (April 2016, **Appendix 42**). These trip rates were collated in TN/13 (July 2016, **Appendix 45**).

8.16 A summary of the peak hour trip rate data for the Peel Hall development and the resultant trips for each land use are set out below (taken from 1107/TN/02/A, **Appendix 44**).

8.17 The residential trip rates mirror those agreed by WBC from the AECOM review of the Omega residential trip rates inserted into the HE's VISSIM model, and these are set out below in **Table 8.1** for the proposed 1,200 residential dwellings.

Table 8.1 – Residential vehicular trip rate and generation summary

Development Traffic	AM Peak Hour		PM Peak Hour	
	Arrival	Departure	Arrival	Departure
85th Percentile Trip Rates (per unit)	0.225	0.523	0.495	0.307
Residential Trips (1,200 units)	270	628	594	368

8.18 Within the 1,200 dwellings proposed there will be up to 60 retirement apartments, which have significantly lower weekday peak hour trip rates than those set out in **Table 8.1** above. It should be noted that no allowance has been made for this discount within these trip rate calculations.

8.19 Residential apartments and social housing will also make up a proportion of the 1,200 dwellings proposed on site. No discount has been made to reflect this.

8.20 Therefore, it is considered that this approach is robust and gives confidence to the overall figures used in the assessment.

8.21 The care home trip rates also mirror those agreed by WBC used in the Omega Transport Assessment that were inserted into the VISSIM model. An extract of the AECOM technical note containing these trip rates is contained in **Appendix 43**. The resultant trip rates for a 100-bedroomed care home are set out in **Table 8.2** below.

Table 8.2 – Care Home vehicular trip rates and attraction summary

Development Traffic	AM Peak Hour		PM Peak Hour	
	Arrival	Departure	Arrival	Departure
Trip Rates (per bedroom)	0.068	0.068	0.083	0.113
Care Home Trips (100-beds)	7	7	8	8

8.22 It is considered that this approach is suitable and as these trip rates mirror that set out in the Omega assessment, gives confidence to the overall figures used in the assessment.

8.23 It is proposed that the development scheme will include an employment zone of up to around 7,500sqm GFA of B1(c) light industry.

8.24 TRICS has been used to provide an indication of the number of AM and PM peak hour vehicular that are likely to be attracted by an employment zone of this size.

8.25 An assessment was first made in early 2016 using the TRICS 7.2.4 database for B1(c) Industrial Units; TRICS Land Use Code 02/C highlighted for B1(c) land classifications. The dataset was reviewed based on multi-modal surveys from sites within England, on weekdays for up to 10,000sqm GFA. Sites within Greater London were excluded at that time due to their unrepresentative trip rate as a result of greater public transport opportunities. Sites within suburban and edge of town locations were available. Four of these sites were then manually removed from the dataset as they did not contain operations classed as B1(c) land uses. This returned two surveys and the trip rates demonstrate that 22 arrivals and 11 departures in the AM peak hour and 4 arrivals and 25 departures in the PM peak hour may result from a development of 7,500sqm GFA. The TRICS data is contained at **Appendix 40**.

8.26 A sensitivity test of all surveys within TRICS for this category was then carried out, excluding those in Greater London. This returned five surveys but there was negligible difference between the two sets of average trip rates.

8.27 However, it was considered that these trip rates could be too low for the proposed development at Peel Hall if, for example, there were 75 units of 100sqm GFA operating as starter-type units, and so a further sensitivity test was carried out.

8.28 The TRICS 7.2.4 database was next interrogated for surveys of B1(c) units within Industrial Estates; TRICS Land Use Code 02/D. The dataset was reviewed based on multi-modal surveys from sites within England, on weekdays for up to 10,000sqm GFA. Sites within Greater London were again excluded. An Edge of Town Centre site was manually excluded based on the conflict of location between this and the Edge of Town setting.

8.29 Further to this, three sites were also manually removed from the dataset as they did not contain operations classed as B1(c) land uses, and another four sites were removed as they only had very low proportions of B1(c) activity on site (i.e. B8 with generally much lower trip rates per square metre GFA). This returned four surveys. Due to the range of sites available within the TRICS database for this land use category, 85th percentile figures were not able to be assessed.

8.30 A sensitivity test of all surveys within TRICS for this category (02/D) was then carried out, excluding those in Greater London, which returned exactly the same survey results.

8.31 The average trip rate data for industrial estates of B1(c) land uses from the search identified in **paragraph 8.25** above is summarised in **Table 8.3** below and the TRICS data is contained at **Appendix 40**.

Table 8.3 – Employment vehicular trip rates and attraction summary

Development Traffic	AM Peak Hour		PM Peak Hour	
	Arrival	Departure	Arrival	Departure
Trip Rates (per 100sqm GFA)	0.919	0.514	0.260	0.621
Employment Trips (7,500sqm GFA)	69	39	20	47
HGV %Proportion	7%	10%	10%	4%

8.32 In terms of **Table 8.3** above, the use of B1(c) trip rates has been further substantiated in HTp Technical Note response to HE Review 1107/TN/13, which is contained in **Appendix 45** for reference. It should be noted that the developer would be prepared to accept a planning condition restricting the land use to B1(c) activities to ensure suitability with the location next to existing and proposed housing.

8.33 The level of interrogation on the TRICS database to find specific sites to mirror the proposed development has led to a robust assessment of potential impact of the employment land use and this gives confidence to the overall figures used in the assessment.

Trip Rates – Neighbourhood Centre

8.34 The proposed development will include a neighbourhood centre comprising a food store of up to 2,000sqm GFA, plus up to a further 600sqm GFA of local centre type facilities as well as a family pub and restaurant facility of up to 800sqm GFA.

8.35 A comparison was previously carried out between the trip rates from the Discount Food Stores category (01/C) within the TRICS 7.2.4 database and the generic food stores (Food Superstore 01/A) category. It should be noted that the sub land use category of 'Superstore' is misleading as the dataset includes stores from 800sqm to 12,642sqm GFA (for surveys carried out between 01/01/07 and 29/11/14 across the whole of the UK).

8.36 The peak hour trip rates from the Discount Food Stores dataset are set out in **Table 8.4** below, based on all weekday multi-modal surveys of sites within England, excluding Greater London, in Suburban Areas, Edge of Town and Neighbourhood Centre locations. Due to the low number of surveys returned, 85th percentile data was not reliable and so the average dataset has been used. The resultant TRICS report is contained in Appendix 4 of 1107/TN/02/A (**Appendix 44**). It should be noted that these trip rates are mirrored in the AECOM technical note as those used within the Omega Transport Assessment and subsequent VISSIM modelling; an extract of which can be found in **Appendix 43** for reference.

Table 8.4 – Discount food store vehicular trip rate and generation summary

Development Traffic	AM Peak Hour		PM Peak Hour	
	Arrival	Departure	Arrival	Departure
Trip Rates (per 100sqm GFA)	0.660	0.321	2.799	3.280
Discount Food Store Trips (2,000sqm GFA)	14	7	56	66

8.37 It was considered that the trip rates set out in **Table 8.4** above were too low. Therefore, further to discussions with the highway officers following the March 2016 meeting (see **Appendix 4**), the peak hour trip rates and generation from the TRICS Food Superstores dataset are set out in **Table 8.5** below; based on all weekday multi-modal surveys of sites within England, excluding Greater London, in Suburban Areas and Edge of Town locations. Again, due to the low number of surveys returned, 85th percentile data was not reliable and so the average dataset has been used. The TRICS data is also contained in **Appendix 40**.

Table 8.5 – Food store vehicular trip rate and attraction summary

Development Traffic	AM Peak Hour		PM Peak Hour	
	Arrival	Departure	Arrival	Departure
Trip Rates (per 100sqm GFA)	4.615	3.030	9.056	9.550
Food Store Trips (2,000sqm GFA)	92	61	181	191

8.38 As a sensitivity test, TRICS was also interrogated for all multi-modal site surveys within the UK-wide Food Superstore dataset, using the same parameters as set out in **paragraph 8.37**. This returned one additional site in the Isle of Anglesey which slightly reduced the average trip rates shown in **Table 8.5**. Therefore, although the lower discount food store trip rate figures have been agreed for use by Omega in their modelling for the same sized store (2,000sqm GFA), we have used the higher trip rate figures set out in **Table 8.5** to reflect a robust approach and give confidence to the overall figures used in the assessment.

8.39 The proposed development includes a 600 square metre GFA local centre. The local centre may be comprised of, for example, a chemist, dry cleaners, estate agent, take-away, café and/or health care facilities.

8.40 TRICS was again used to provide an indication of the number of AM and PM peak hour vehicular that are likely to be attracted by a local centre of this size, based on the category 'local shops' for all sites within England, with multi-modal weekday surveys, for Suburban Area, Edge of Town and Neighbourhood Centre locations. Average trip rates were used due to the survey sample size available.

8.41 Sites within Greater London were excluded due to their unrepresentative trip rate as a result of greater public transport opportunities. The full TRICS reports are contained in **Appendix 40** to this report, and the peak hour vehicular trip rates and generation for the local centre are set out in **Table 8.6**.

Table 8.6 – Local centre vehicular trip rate and attraction summary

Development Traffic	AM Peak Hour		PM Peak Hour	
	Arrival	Departure	Arrival	Departure
Trip Rates (per 100sqm GFA)	5.025	4.780	6.039	6.495
Local Centre Trips (600sqm GFA)	30	29	36	39

8.42 It is considered that this approach is suitable.

8.43 The size of the proposed family pub/restaurant was changed in April 2016 as the scheme evolved, reducing to 800sqm GFA. The change in floor area was set out in Technical Note 1107/TN/12 (**Appendix 41**) and the resulting trips are represented in **Table 8.7** below.

Table 8.7 – Family pub/restaurant vehicular trip rate and attraction summary

Development Traffic	AM Peak Hour		PM Peak Hour	
	Arrival	Departure	Arrival	Departure
Trip Rates (per 100sqm GFA)	-	-	2.847	1.845
Family Pub/Restaurant Trips (800sqm GFA)	-	-	23	15

8.44 For reference the peak period trip rates and trip generation figures for the revised family pub/restaurant GFA of 800sqm is set out in **Table 8.8** below, taken from HTp/1107/TN/12 (**Appendix 41**). This supersedes the data for a family pub/restaurant contained in HTp Technical Note on peak period trip rates 1107/TN/02/A/Addendum (**Appendix 41**).

Table 8.8 – Family pub/restaurant (800sqm)

Hour	Trip Rates (per 100sqm)		Trips	
	Arrival	Departure	Arrival	Departure
1600-1700	1.828	1.195	15	10
1700-1800	2.847	1.845	23	15
1800-1900	3.023	2.513	24	20
1800-1830*	*1.512*	1.257	*12*	*10*

8.45 It is considered that this approach is fair and reasonable given the location of the family pub/restaurant in each development scenario (Option A and Option B).

Trip Rates – Primary School

8.46 The proposed development scheme includes for up to a two-form entry new primary school, which could have up to around 420 pupils. The proposed primary school is not intended as a replacement educational establishment.

8.47 From previous discussions with WBC the indication is that the development of 1,200 houses would result in a demand for around 360 primary school places. This Transport Assessment will therefore assume that 360 places from the on-site 420 primary school intake would come from within the proposed development, with the remaining 60 pupil places being made-up from those residents living within the area of Poplars and Hulme immediately surrounding the site.

8.48 TRICS has been used to provide an indication of the number of AM and PM peak hour vehicular trips that are likely to be attracted by a primary school on this site, and an assessment has been made from the TRICS 7.2.4 database based on average data, due to the number of surveys available. The data sets were reviewed based on multi-modal surveys from sites within England for primary schools with up to 450 pupils, on weekdays. The actual range of pupil numbers for the schools surveyed was between 147 and 414.

8.49 The location types returned were Suburban Area, Edge of Town and Neighbourhood Centre. The Edge of Town Centre survey location was discounted in accordance with the TRICS Good Practice Guide due to its conflict in location type with Neighbourhood Centre. The full TRICS reports are contained in **Appendix 40** to this report.

8.50 The peak hour vehicular trip rates and generation for the primary school are set out in **Table 8.9**.

Table 8.9 – Primary school vehicular trip rate and attraction summary

Development Traffic	AM Peak Hour		PM Peak Hour	
	Arrival	Departure	Arrival	Departure
Trip Rates (per pupil)	0.269	0.189	0.045	0.063
Primary School Trips (all 420 pupils)	113	79	19	27

8.51 The school has been included in the assessment as a two-form entry and as 100% of the residential trips are used on the external highway network in this assessment, it is therefore considered that this approach is robust and gives confidence to the overall figures used in the assessment.

Trip Rates – Sports Pitches

8.52 The proposed development at Peel Hall will include the existing open space and local authority community buildings and sports area on the land off Windermere Avenue and Grasmere Avenue to the southeast of the site. This will be linked to the site and new sports pitches will be provided to replace those currently located on the HCA land to the east of the site, off Mill Lane. It is confirmed that the existing playing fields at Mill Lane are to be moved and provided on a like for like basis in terms of number of pitches and site area in the southern part of the site.

8.53 This relocation will be provided to a higher standard than the current provision, with enhancements such as the addition of changing facilities and improved drainage, and will be linked to the improved provision on the council owned Radley Common recreation area at Windermere Avenue

8.54 The new facilities will likely include full-sized grass pitches, a multi-use games area, junior grass pitches and changing facilities for up to four teams. The expectation is that these proposals will also include a clubhouse/function room for community use.

8.55 The sports pitches will predominantly be used at the weekends and it was agreed at the 2013 Public Inquiry (Appeal ref: APP/M0655/A/13/2192076) that this element of the development proposals would not need to be included within the weekday modelling. Furthermore, there will be an offset in trip generation from the current on-site uses at the existing location and from the sports pitches on the HCA land, which are to be relocated.

8.56 It is likely that the proposed clubhouse facilities will be used by the local community, for example, by a mother and toddler group, and also that the sports pitches may be used during the evening after 1800 hours. Therefore, it was agreed at the 2013 Inquiry that the clubhouse facilities for local community use may attract up to 15 car movements over two-hour time slots during the day between the hours of 0900 and 1800. As this is cannot be accurately modelled within our one hour peak AM and PM time periods, the 15 movements have been concentrated into each peak hour. This is set out on **Table 8.10** below.

Table 8.10 – Sports pitches and ancillary facilities vehicular trip rate and attraction summary

Development Traffic	AM Peak Hour		PM Peak Hour	
	Arrival	Departure	Arrival	Departure
Community Use Trips	10	5	7	8

8.57 This approach has been agreed by the previous inspector and therefore it is considered that this approach is suitable and gives confidence to the overall figures used in the assessment.

Summary

8.58 The vehicle trips associated with each land use are tabulated below for ease of reference in **Table 8.11**. Please note that no trip discount has been applied to these figures.

Table 8.11 – Peel Hall vehicular trip generation summary (no discounts applied)

Development Traffic	AM Peak Hour		PM Peak Hour	
	Arrival	Departure	Arrival	Departure
Residential Trips	270	628	594	368
Care Home Trips	7	7	8	8
Employment Trips*	69	39	20	47
Food Store Trips**	92	61	181	191
Local Centre Shop Trips	30	29	36	39
Family Pub/Restaurant Trips	-	-	23	15
Primary School Trips	113	79	19	27
Community Uses	10	5	7	8
Total Trips	**591**	**848**	**888**	**703**

**** See Table 8.3 for HGV proportion of peak hour traffic***
***** Reference Table 8.5 for avoidance of doubt***

8.59 In summary, there could be up to around 1,591 vehicle trips on the local highway network associated with the Peel Hall development in the busiest peak hour when considering the development overall if no discounting were to be applied, and not taking into account Travel Plan measures, the proposed bus mitigation and trips contained within the site itself. It should be noted that internal connectivity for sustainable travel modes i.e. walking, cycling and bus travel is shown within the Parameters Plans and would be secured through future reserved matters applications. This will provide excellent connectivity for all sustainable modes of travel.

M62 – Trip Discounting Sensitivity Test

8.60 Following the receipt of the 2016 WBC consultation response (**Appendix 5**) and a meeting with HE in January 2017 (**Appendix 4**), it was decided to provide an assessment of the previously proposed trip rate discounts of residential 20%; food store 60%; local centre 70%; primary school 75% AM (50% PM); family pub/restaurant (25% PM) compared to a new approach, which was subsequently adopted, of accounting for 100% of the residential trips and discounting the following only:

i. Food store 70% discounted and 30% pass-by trips to mirror the Omega approach.

ii. Primary school 50% discount in both peaks only.
iii. Local centre 100% discounted to mirror the agreed Omega approach.
iv. Family pub 0% discounted.

8.61 Our summary report provided to HE for review, HTp Technical Note 1107/TN/15 (contained in **Appendix 46**), also provided a summary on the impact of the Peel Hall development on the M62 network.

8.62 From this is was concluded that there was no material difference in trip rate reduction strategy. However as set out above, the discounting for development trips taken forward with the SATURN model has been based on the preference of highway officers at WBC for 0% reduction in residential trips.

8.63 It was also concluded from the VISSIM modelling at that time that the actual level of development vehicular trips on the M62 network north of the Peel Hall site is shown to be relatively low in the AM peak hour, with up to around 50 vehicular trips, which was considered to be within the daily variation of flow on the M62 and Junction 9 and Junction 10 of the M62. Furthermore, it was shown that there may be up to around 120 vehicular trips on the M62 as a result of the Peel Hall development in the PM peak hour, which is around an additional two vehicles per minute. This is not considered to constitute a severe impact.

8.64 The next part of this section will review the access strategies and set out in more detail the level of discounting for vehicular trips that was adopted.

Access Strategy - Option A

8.65 The access strategy for Option A has not changed from that previously set out, in that whilst the whole site will be fully permeable for pedestrians and cyclists the parcels of land for residential development correspond directly to a single point of vehicular access only. This is set out in **Table 8.12** below and on the access strategy plan contained in **Appendix 30**.

Table 8.12 – Quantum of development served off each access (Option A)

Access	Units/sqm
Mill Lane	150 Dwellings
Mill Lane/ Blackbrook Avenue	700 Dwellings
	Primary School (up to 420 pupils)
Poplars Ave. *(Central)*	330 Dwellings
	Food Store (2,000sqm)
	Local Centre (600sqm)
	Family Pub/ Restaurant (800sqm)
	100-Bed Care Home
Poplars Ave. *(West)*	Employment (7,500sqm)
Birch Avenue	20 Dwellings
Grasmere Avenue	Sports Pitches and Community Facilities

8.66 For assessment purposes, it is assumed that first occupation will be in 2021, with 120 dwellings being occupied per year through to 2030. This has been agreed with officers at WBC. Therefore, the number of vehicle trips at each access point considering full build out (i.e. a future year of 2030) has been provided below in **Table 8.13** using the trip rates set out above for the whole Peel Hall development. Again, no discounts have been applied to these figures.

Table 8.13 – Summary of 2030 peak hour vehicle trip numbers at each access location (Option A)

Access	Quantum of Development	AM Arrival	AM Departure	PM Arrival	PM Departure
Poplars Avenue (Central)	330 dwellings	74	173	163	101
	care home	7	7	8	8
	food store	92	61	181	191
	local shops	30	29	36	39
	family pub	0	0	23	15
	Total	*203*	*270*	*411*	*354*
Poplars Avenue (West)	employment land	69	39	20	47
Mill Lane	150 dwellings	34	79	74	46
Mill Lane/Blackbrook Avenue	700 dwellings	158	366	347	215
	primary school	113	79	19	27
Birch Avenue	20 dwellings	5	11	10	6
Grasmere Avenue	community uses	10	5	7	8
	Total	**592**	**849**	**888**	**703**

***Note splitting the residential parcels results in discrepancies in rounding; the minor differences in total flows set out in Table 8.11 and 8.13 are not a cause for concern.**

8.67 It can be seen from the above that when considering the total number of vehicle trips at each access location there may be up to around 1,441 vehicle movements arising from the Peel Hall development profile in AM peak hour and 1,591 in the PM peak hour, when no adjustments are made for internal trips or discounting.

8.68 However, it is considered appropriate to apply a trip discount to these figures, as the above represents double counting of vehicular trips when considering, for example, that the vehicular trip associated with a resident travelling to the local centre will be represented as both a trip departing from the dwellings and a trip arriving at the local centre. Furthermore, that a trip to the local centre from a residential dwelling within the main areas of the site would not actually travel onto the local highway network in any event and therefore should not be assessed for impact.

8.69 Further to discussions with WBC, it is proposed that no discounting of trips will occur with the residential, care home, community uses, and family pub/restaurant or employment land uses.

8.70 The food store trips are to be discounted by 100% in the SATURN modelling in terms of new trips on the network, to mirror the agreed approach for Omega, but 30% of these trips will be redistributed from existing traffic on the network passing by the Poplars Avenue access. Again, in line with the Omega process agreed and accepted by WBC. These pass-by trips will have no material impact on the operation of the wider highway network.

8.71 It is proposed that the local centre car park will be split into two sections with a physical barrier to prevent through-traffic between both sections of the site, whilst facilitating access to the local centre from both Poplars Avenue in the south and Blackbrook Avenue/Mill Lane in the east. This arrangement results in 86% of the 1,200 dwellings having vehicular access to the local centre and as such will be contained within the Peel Hall site i.e. not travelling onto the local highway network. An indicative layout of the local centre car park is shown on the extract contained at **Figure 5.9** of this report.

8.72 It should also be noted that the local centre car park will also facilitate school drop off and pick up for all pupils due to the split sections i.e. facilitating access for drop off/collection associated with the school from Poplars Avenue as well as Blackbrook Avenue/Mill Lane in the east. This has been designed with the intention of further reducing the traffic impact of the Peel Hall development on the local highway network and avoid the local residential roads becoming congested with parked cars associated with dropping-off/picking-up of school pupils. The high standard and level of provision of cycle and pedestrian links throughout the development will also help to reduce car use and car miles travelled.

8.73 Furthermore, it has previously been set out in HTp Technical Note 1107/TN/13 (**Appendix 45**) that the proposed primary school is not intended as a replacement facility and that primary school trip discounts should be based on internal trip containment; the number of pupils expected to be generated by the development based on the calculation factor supplied by WBC, and comparing this to the number of children expected in a school with up to two-form entry i.e. up to 30 children in each class (therefore 60 children per year group from reception to year 6 i.e. 420 children).

8.74 The information for primary school places issued by WBC was based on census data and the following calculation:

0.3 pupil places per dwelling x number of dwellings

0.3 x 1,200 = 360 (85% of 420 primary school places)

8.75 The calculation indicates that the development may generate around 360 primary school places. In consideration that not all of the primary school aged pupils will use the new on-site facility and that not all of the 1,200 dwellings will have primary school aged children, it is considered appropriate to apply a 50% discount to the primary school trips rates rather than an 85% discount.

8.76 Therefore, in summary trip discounts can be summarised as follows for both the AM and PM peak hours:

i. Residential 0%
ii. Care Home 0%
iii. Employment 0%
iv. Food Store 100% (70% discounted and 30% pass-by)
v. Local Centre 100%
vi. Family Pub/Restaurant 0%
vii. Primary School 50%
viii. Community uses 0%

8.77 These discounts have been applied to the figures contained in **Table 8.13** (taken from HTp Technical Note 1107/TN/19 contained in **Appendix 46** for reference) and a revised summary of the proposed Peel Hall development trips for access scenario Option A is set out on **Table 8.14** following.

Table 8.14 – Summary of 2030 peak hour vehicle trip numbers at each access location (Option A - with discounts applied)

Access	Quantum of Development	AM Arrival	AM Departure	PM Arrival	PM Departure
Poplars Avenue (Central)	330 dwellings	74	173	163	101
	care home	7	7	8	8
	food store*	28	18	54	57
	local shops	0	0	0	0
	family pub	0	0	23	15
	Total	*109*	*198*	*248*	*181*
Poplars Avenue (West)	employment land	69	39	20	47
Mill Lane	150 dwellings	34	79	74	46
Mill Lane/Blackbrook Avenue	700 dwellings	158	366	347	215
	primary school	57	40	10	14
Birch Avenue	20 dwellings	5	11	10	6
Grasmere Avenue	community uses	10	5	7	8
	Total	**442**	**738**	**716**	**517**

*** pass-by trips only**

8.78 It can be seen from the above that when considering the total number of vehicle trips at each access location there may be up to around 1,180 vehicle movements arising from the Peel Hall development profile in AM peak hour and 1,233 in the PM peak hour.

8.79 The figures from **Table 8.14** have used in the SATURN modelling for the Option A Do Something scenarios for the future year of 2030.

8.80 WBC officers also required comfort in the analysis due to the length of the build and in the event that full build out may not be achieved to ensure that the operation of the network is safeguarded against any mid build out changes and risk is minimised. Therefore, a sensitivity test has been carried out for an intermediate year of 2025 for the Option A access strategy.

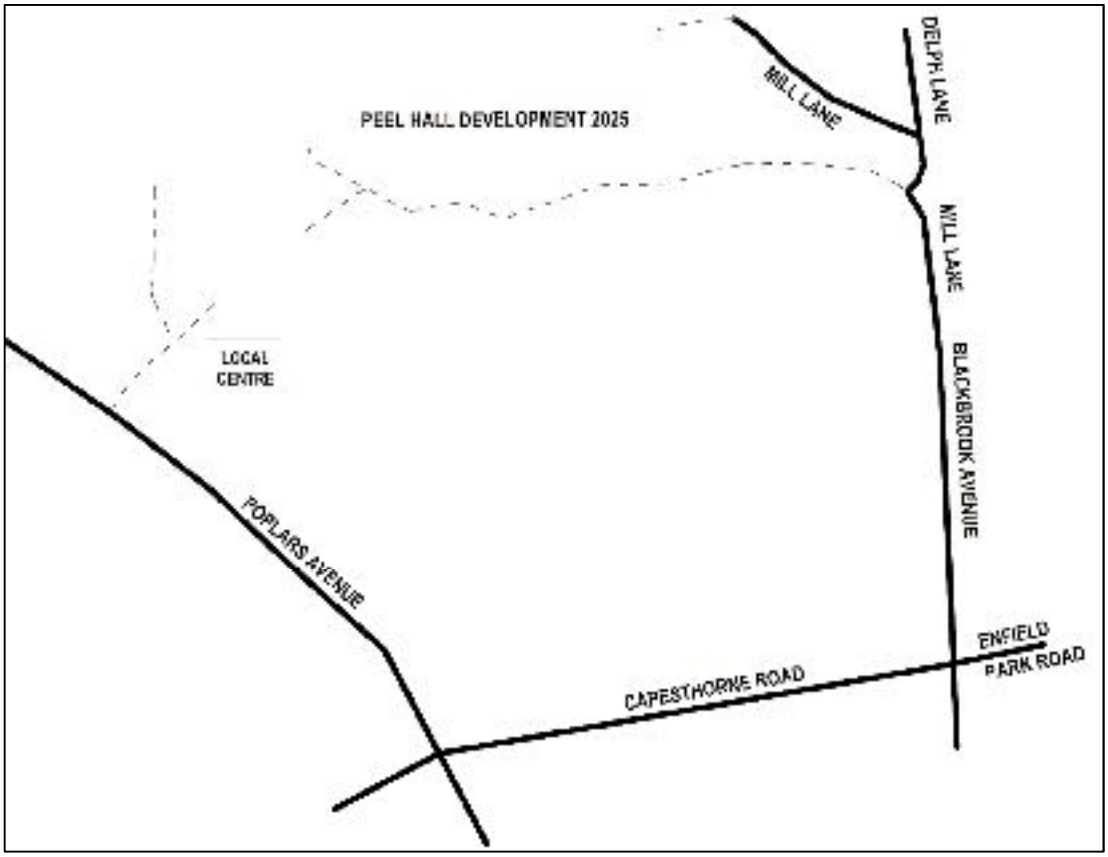
Access Strategy - Option A (intermediate assessment year of 2025)

8.81 Further to their December consultation response (**Appendix 5**), it has been agreed with WBC that an intermediate year of 2025 will be assessed in terms of the traffic impact on the local highway network before the internal link to the local centre is created. As such, all dwellings taking access from the Mill Lane/Blackbrook Avenue access will have to drive onto the surrounding local highway network in order to access the local centre by car. It is agreed that this will present a worst-case intermediate build out scenario, with no discounting of vehicular trips for any of the land uses.

8.82 The indicative highways build out programme is set out in **Table 7.1** and on the accompanying plan contained in **Appendix 38**), and this has informed the 2025 assessment in terms of the loading of development traffic (and for which land uses) at each respective access point from the existing local highway network.

8.83 The assessment for a future year of 2025 will be for 600 residential dwellings, the care home, employment land and local centre as well as the relocation of the sports pitches. However, there will be no connecting through route for dwellings accessed from the Mill Lane/Blackbrook Avenue access point (48% of the 600 dwellings), which is scheduled by the end of that year (as shown in **Figure 8.1** below). Therefore, these trips have been added onto the network for the 2025 scenario.

Figure 8.1 - Peel Hall network 2025 before road link to local centre



8.84 From **Table 7.1** the anticipated number of dwellings coming forward in each year from each part of the development, and hence off each access point, are set out. The table also demonstrates when the other land uses such as the local centre, school and employment land will come forward for development. It can be seen from this table that:

i. The sports pitches will be relocated to the land off Grasmere Avenue in year one (i.e. 2021).
ii. The local centre and care home will come forward in year two (i.e. 2022).
iii. Employment land may come forward in year three (i.e. 2023).
iv. There will be circa 600 dwellings occupied by 2025, as follows:
    - Blackbrook Avenue/Mill Lane – 285 dwellings (main site access).
    - Poplars Avenue – 145 dwellings (local centre access).
    - Mill Lane – 150 dwellings.
    - Birch Avenue – 20 dwellings.

8.85 Therefore, based on the number of dwellings and other land uses coming forward by 2025 as set out above, the number of vehicle trips at each access point are provided in **Table 8.15** below using the trip rates set out as also provided above.

Table 8.15 – Summary of 2025 peak hour vehicle trip numbers at each access location (Option A)

Access	Quantum of Development	AM Arrival	AM Departure	PM Arrival	PM Departure
Poplars Avenue (Central)	145 dwellings	33	76	72	45
	care home	7	7	8	8
	food store	92	61	181	191
	local shops	30	29	36	39
	family pub	0	0	23	15
	Total	*162*	*173*	*320*	*298*
Poplars Avenue (West)	employment land	69	39	20	47
Mill Lane	150 dwellings	34	79	74	46
Mill Lane/Blackbrook Avenue	285 dwellings	64	149	141	88
Birch Avenue	20 dwellings	5	11	10	6
Grasmere Avenue	community uses	10	5	7	8
	Total	**344**	**456**	**572**	**493**

8.86 It can be seen from the above **Table 8.15** that when considering the total number of vehicle trips at each access location there may be up to around 800 vehicle movements arising from the Peel Hall development profile in the AM peak hour and 1,065 in the PM peak hour in the intermediate assessment year of 2025.

8.87 No trip discounting for any of the land uses has been carried out for this intermediate build out assessment, and no pass-by trips have been taken into account for the food store and other local centre uses. Furthermore, as set out above, no discounting for internal trips to the local centre facilities have been made to account for those dwellings accessed from Poplars Avenue (145 dwellings) or linked trips between the non-residential land uses. It is therefore considered that this is a robust approach that gives confidence to the impact assessment arising.

Access Strategy - Option B (Through Route)

8.88 The trip rates will be the same for both access strategies. However, the proposed through route will carry local traffic as well as serve to facilitate access to the following elements of the development profile:

i. Up to around 850 dwellings.
ii. Local centre (comprising a food store of up to 2,000sqm GFA plus up to a further 600sqm GFA of local centre type facilities plus a family pub and restaurant of up to 800sqm GFA).
iii. Up to two-form entry primary school.
iv. An area of employment land comprising up to 7,500sqm GFA of light industrial units.

8.89 For reference, the remaining development profile is proposed to be served as follows:

i. Up to 20 dwellings off Birch Avenue.
ii. Up to 180 dwellings and a 100 bedroomed care home off Poplars Avenue (central); with a bus gate to prevent general vehicular traffic travelling between the through route and the residential area of Poplars Avenue.
iii. Up to 150 dwellings off Mill Lane (north).
iv. Sports pitches and community uses served from Grasmere Avenue.

8.90 The development profile and respective vehicular trip levels (and discounts as set out in **paragraph 8.68** to **8.78**) are provided in **Table 8.16** for the Option B through route scenario (taken from 1107/TN/21 contained in **Appendix 48**).

Table 8.16 – Summary of 2030 peak hour vehicle trip numbers at each access location Option B (with discounts applied)

Access	Quantum of Development	AM Arrival	AM Departure	PM Arrival	PM Departure
Poplars Avenue (Central)	180 dwellings	41	94	89	55
	care home	7	7	8	8
	Total	*48*	*101*	*97*	*63*
Poplars Avenue (West) through to A49 & Mill Lane/Blackbrook Avenue	food store*	28	18	54	57
	local shops	0	0	0	0
	family pub	0	0	23	15
	850 dwellings	191	445	421	261
	primary school	57	40	10	14
	employment land	69	39	20	47
	Total	*345*	*542*	*528*	*394*
Mill Lane	150 dwellings	34	79	74	46
Birch Avenue	20 dwellings	5	11	10	6
Grasmere Avenue	community uses	10	5	7	8
	Total	**442**	**738**	**716**	**517**

*** pass-by trips only**

8.91 The through route assessment for the Peel Hall SATURN model has been carried out with the above vehicle trips and loading. It can be seen from **Table 8.16** that there will be up to around an additional 1,200 vehicle trips on the local highway network in each of the weekday peak hours as a result of the Peel Hall development under the Option B through route access strategy in a future year of 2030 (as per **Table 8.14** for access strategy Option A in 2030).

Saturday and Sunday Trip Rates Review

8.92 A sensitivity test has been carried out further to the review of Saturday and Sunday peak hour traffic data (**Section 2.0**) to forecast the Peel Hall development traffic impact on weekends using trip rate data.

8.93 There is a limited number of weekend TRICS datasets for some of the land uses. For example, only one Saturday and two Sunday residential datasets were identified that satisfied the selection criteria. TRICS data was obtained for residential, food store and family pub/restaurant trips and this in contained in **Appendix 49** for reference.

8.94 Trip rates for the Care Home land uses have been taken from the busiest week day peak hour in order to provide a comparison (**Appendix 40**). Employment trips and primary school trips have been assumed to be negligible on a weekend (no TRICS surveys available) and therefore not included for within this comparison.

8.95 The community uses trip rates for weekends has been based on the calculations set out in the 2013 Mill Lane Appeal, which was based on forecast participation associated with the football facilities and the following key assumptions:

i. Up to four matches could be played at any one time, although in reality the start times would be staggered.
ii. Up to 11 players per team for the three full-sized pitches, plus two substitutes per team ((11+2) x2 teams x3 pitches).
iii. Nine players per team for the junior pitches, plus two substitutes per team ((9+2) x2 teams x1 pitch).
iv. One referee per match only (4).
v. A conservative occupancy of 1.5 players per car and each one referee per car.

8.96 Therefore it is calculated that there could be up to around 71 vehicles to transport these players and referees. If accounting for all arrivals and departures occurring within the same hour to assess for the overlap of games, this is up to around 142 vehicular movements.

8.97 The resultant trip rates and forecast weekend trips are set out on **Table 8.17** below.

Table 8.17 – Peel Hall weekend vehicular trip generation summary

Development Traffic	Peak Hour 1100-1200			
	Arrival Trip Rates**	**Departure Trip Rates**	**Arrival Trips**	**Departure Trips**
Residential (1,200 dwellings)	0.193	0.280	232	336
Care Home (100 beds)	0.098	0.113	10	11
Food Store* (2,000sqm)	6.516	6.110	(39) 30%	(37) 30%
Family Pub/Restaurant (800sqm)	1.783	0.578	14	5
Community Uses	-	-	71	71
		Total Trips	**366**	**460**

*** 30% pass-by trips only**
**** per dwelling/bedroom/100sqm**

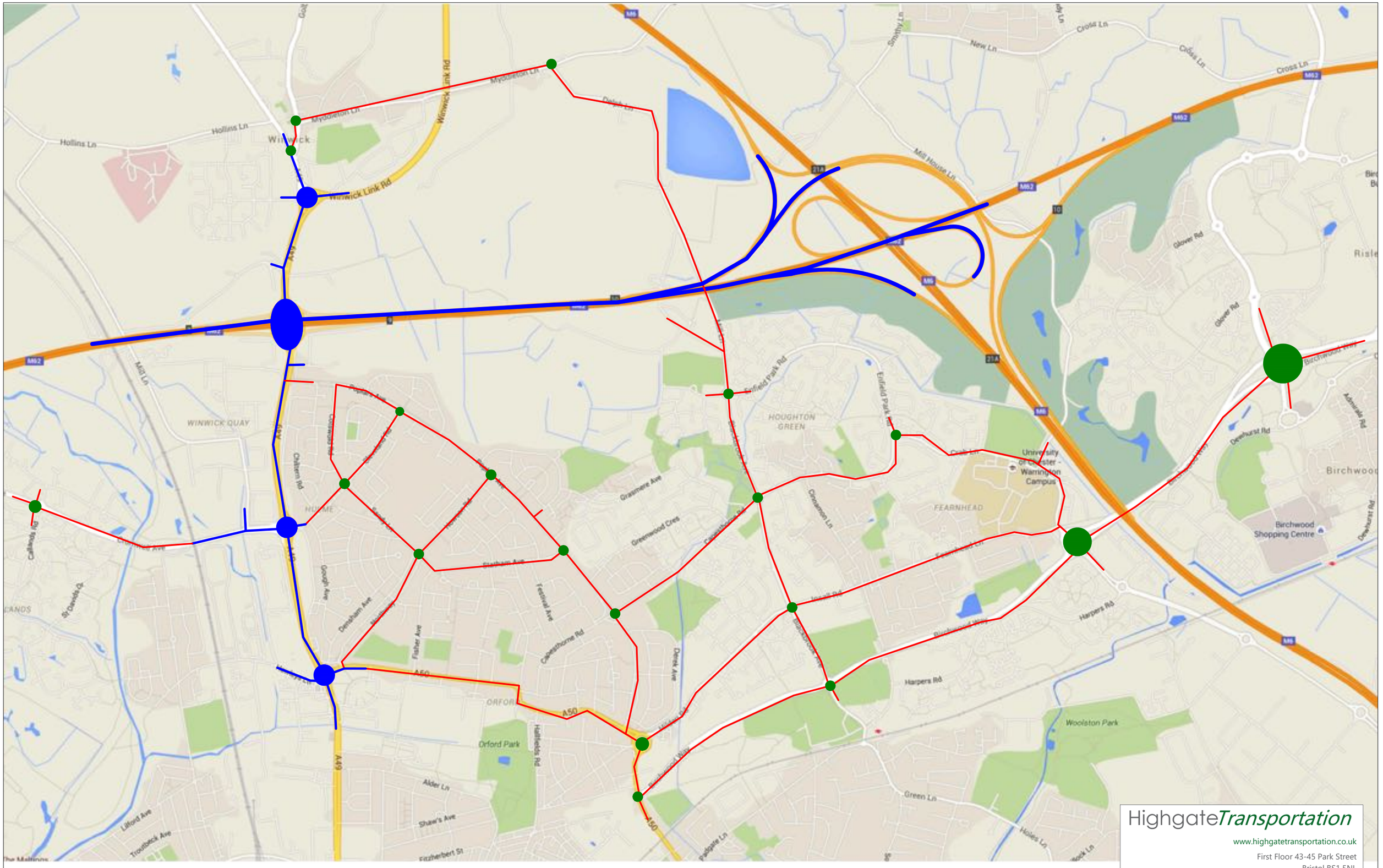
8.98 It can be seen from **Table 8.17** that there may be up to around 826 vehicle trips on the local highway network during the weekend peak hour. This is in excess of 350 vehicle trips less that the quietest week day peak hour assessed for (1,180 in the AM peak hour and 1,233 in the PM peak hour, see **Table 8.16**).

8.99 Even considering 100% of food store traffic with no discounts applied (an additional 177 vehicle movements) this only brings the total peak hour development traffic to circa 1,000 vehicle movements in the weekend peak hour. Some 200 movements below that already assessed for.

8.100 It is therefore concluded that weekend peak period traffic assessments are not required as these would be broadly similar in magnitude or lower than the weekday peak hours included for within this assessment, even when taking into consideration the traffic flow data contained in **Section 2.0** (**paragraphs 2.13** to **2.17**).

Appendix 4

Peel Hall Study Area



PEEL HALL MODEL NETWORK

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07973 375 937 / 07595 892 217

Appendix 5

WMMTM16 within Peel Hall Study Area

The minor roads represented have been identified through an inspection of the network and an assessment of the potential to serve through movements. These definitions were then reviewed by WBC and an independent auditor to verify that the network representation included routes of local concern where 'rat running' was observed or the potential was judged to exist. Table 1 summarises the association between each model area and the road types included.

Table 2 provides a summary of the key network features. Figure 2 displays the extent of the model simulation area and Figure 3 shows the simulation nodes within Warrington by junction type.

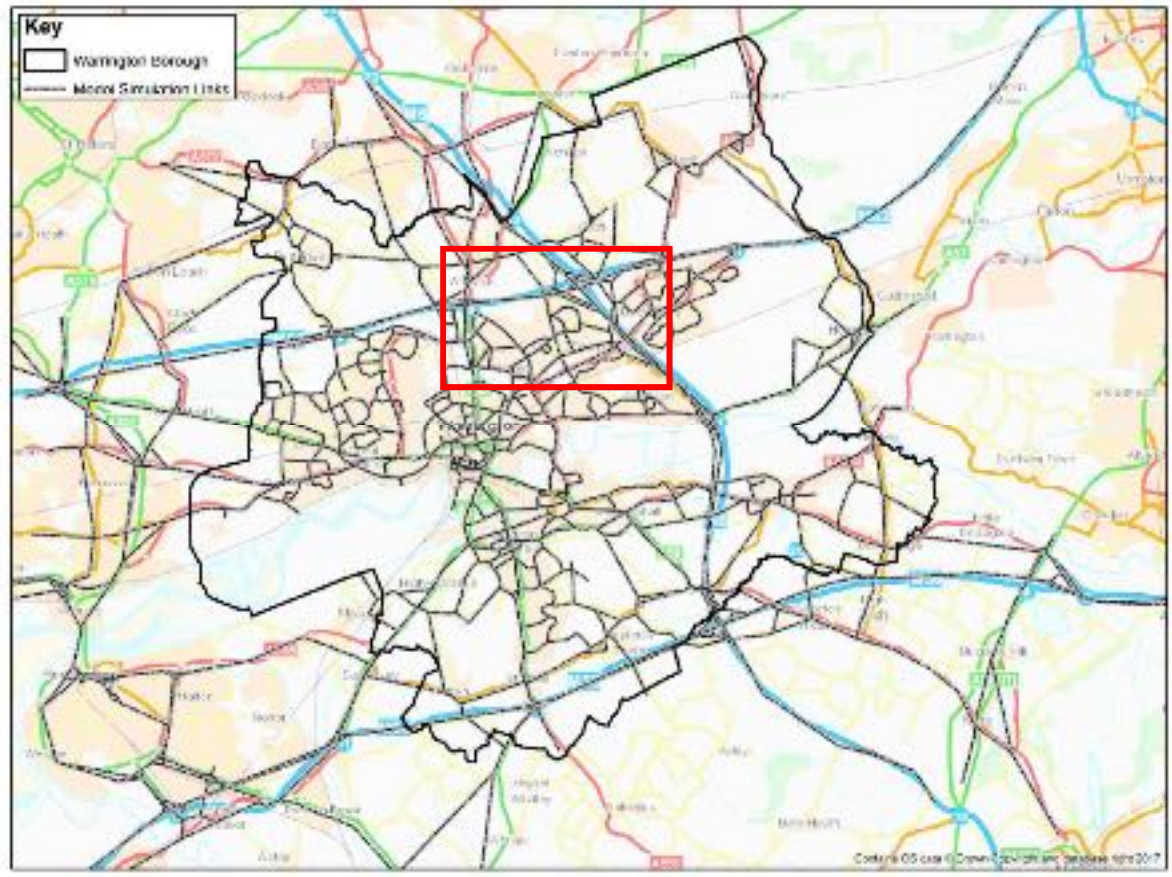
Table 1 Network Density and Detail

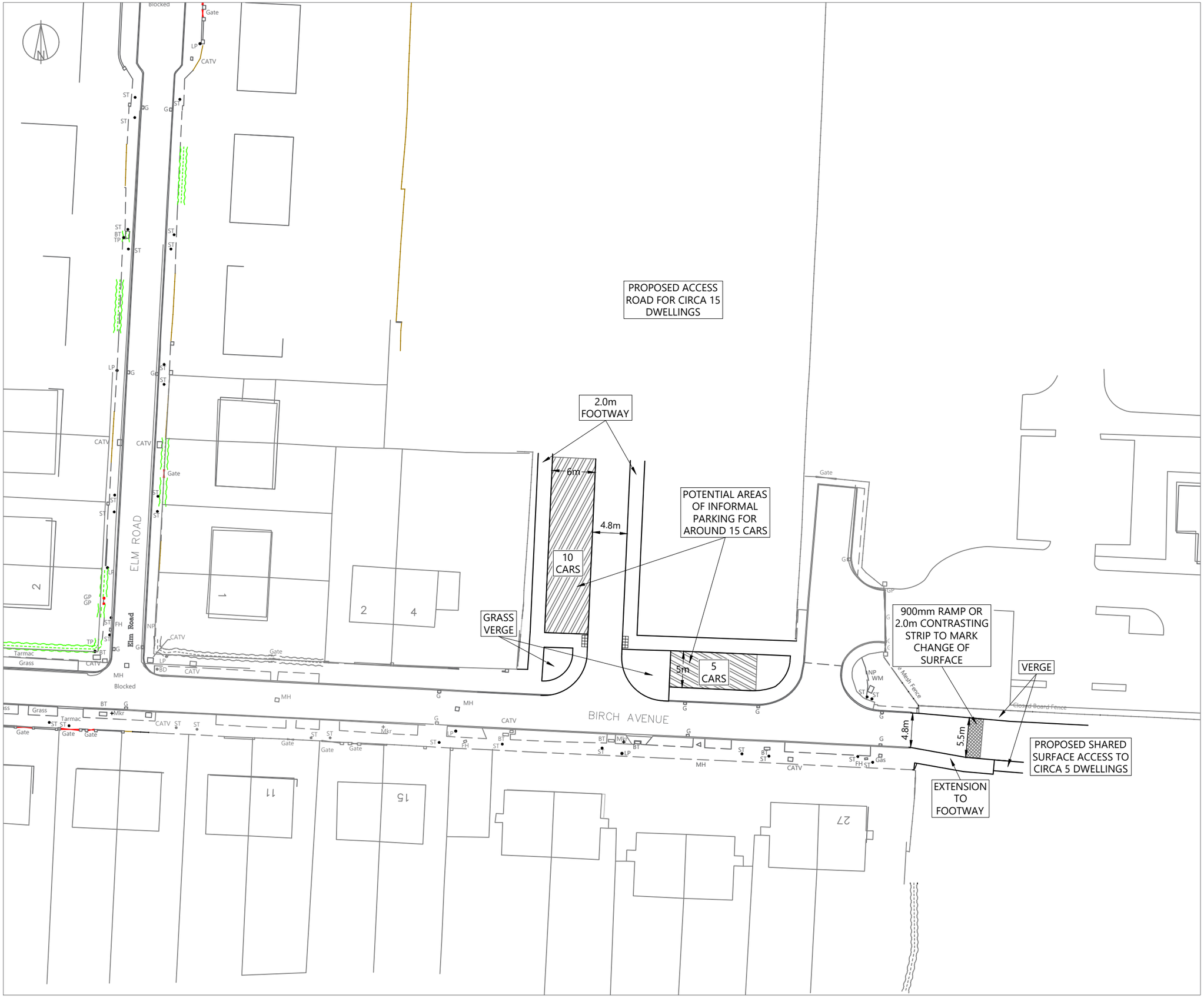
Area	Sub – Area	Network Density	Network Detail
Fully Modelled Area	Area of Detailed Modelling	Motorway A Roads B Roads Key Minor Roads	Simulation
	Rest of Fully Modelled Area	Motorway A Roads B Roads	Simulation
External Area	External Area	Motorway Some A Roads	Buffer

Figure 2 Extent of Model Simulation Area

Approximate Peel Hall study area indicated within red rectangle – Howson Road link missing

Figure 2 Extent of Model Simulation Area





NOTES:

Drawing based on Geomatic Surveys Ltd topographical survey 01532/01 dated 27/07/15.

ISSUE	REASON FOR REVISION	DATE

PROJECT:

PEEL HALL, WARRINGTON

CLIENT:

SATNAM MILLENNIUM LTD

PROJECT REFERENCE:	DRAWING NUMBER:	SCALE:
1107	08/P	1:500 @ A3

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TITLE:

PROPOSED ACCESS TO RESIDENTIAL LAND AT BIRCH AVENUE

DATE:	DRAWN BY:	CHECKED:
03/02/17	FB	DT

TURNING HEAD AND EMERGENCY ACCESS LINK TO WIDER SITE

3.5m SHARED FOOTWAY-CYCLEWAY

1.0m VERGE

2.0m FOOTWAY

7.3m

ALTERATION TO EXISTING KERB LINE TO WIDEN CARRIAGEWAY THROUGH THE BEND

POPLARS AVENUE

COTSWOLD ROAD

El Sub Sta

1:1,000 @ A3

ALTERATION TO EXISTING KERB LINE TO WIDEN CARRIAGEWAY THROUGH THE BEND

1:500 @ A3

NOTES:

Drawing based on Geomatic Surveys Ltd topographical survey 01532/01 dated 27/07/15.

KEY:

Parking Areas (number of cars that can be accommodated) 6

ISSUE	REASON FOR REVISION	DATE

PROJECT:

PEEL HALL, WARRINGTON

CLIENT:

SATNAM MILLENNIUM LTD

PROJECT REFERENCE:	DRAWING NUMBER:	SCALE:
1107	09/M	AS SHOWN

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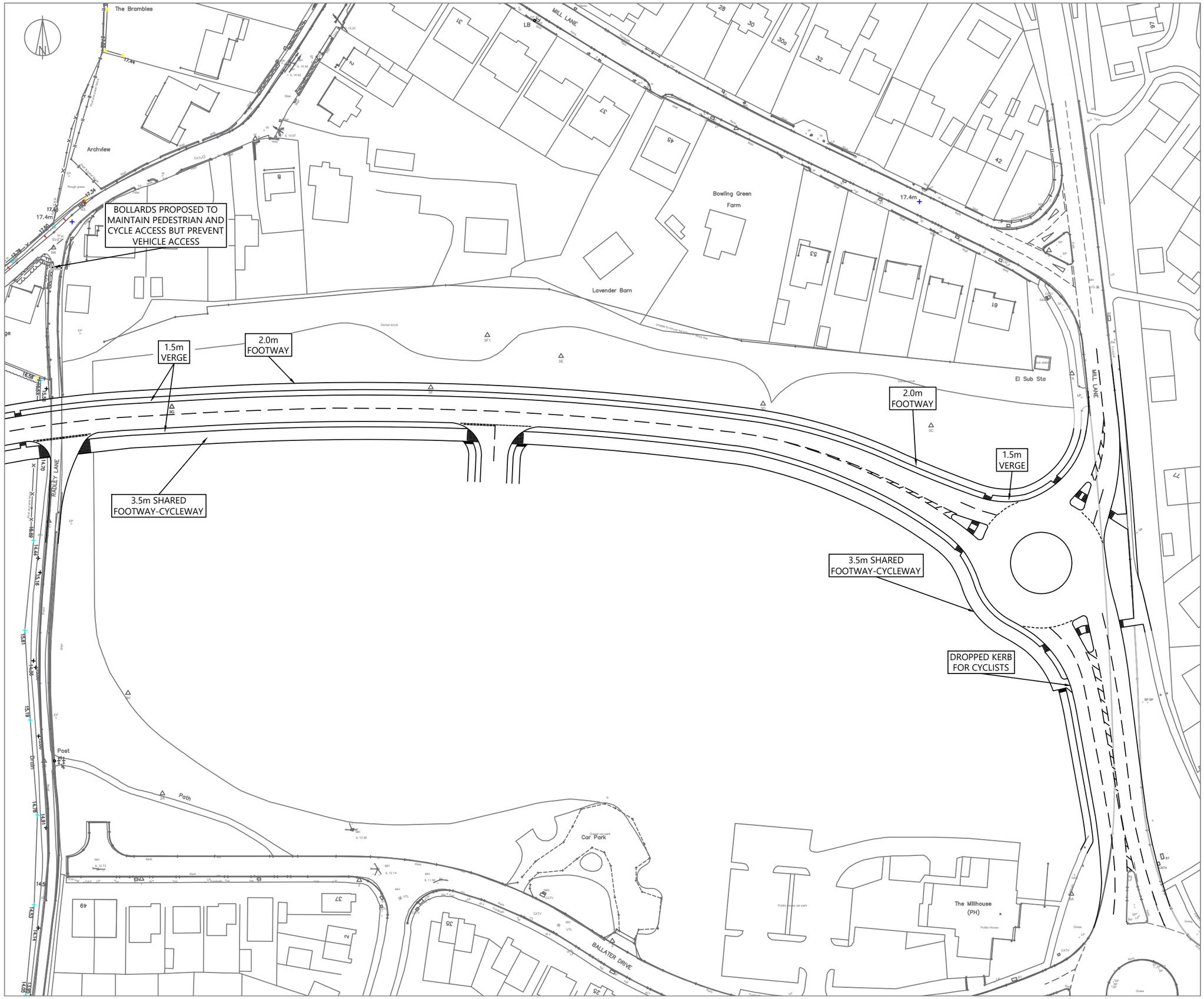
TITLE:

PROPOSED ACCESS TO EMPLOYMENT LAND AT POPLARS AVENUE

DATE:	DRAWN BY:	CHECKED:
03/02/17	FB	DT



NOTES:
Drawing based on Powers & Tiltman topographical survey 6297/01 dated 25/07/11 and Geomatic Surveys Ltd topographical survey 01532/01 dated 27/07/15.

ISSUE	REASON FOR REVISION	DATE

PROJECT:

PEEL HALL, WARRINGTON

CLIENT:

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PROJECT REFERENCE:	DRAWING NUMBER:	SCALE:
1107	10/N	1:1,000 @ A3

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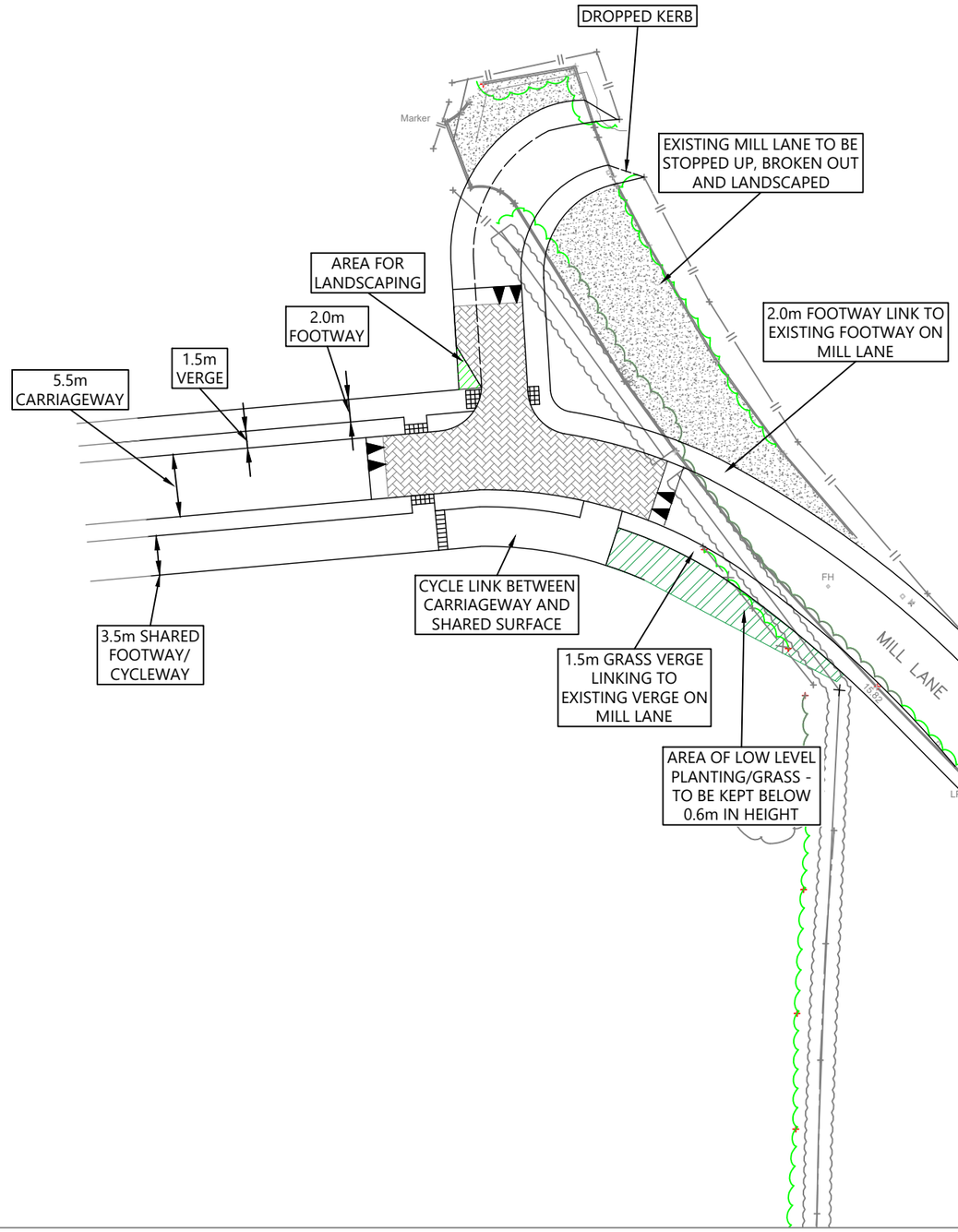
01179 349 121

TITLE:

PROPOSED MAIN SITE ACCESS AT BLACKBROOK AVENUE

DATE:	DRAWN BY:	CHECKED:
17/01/18	FB	DT



Drawing based on Powers & Tiltman topographical survey 6297_01 dated 25/07/11.

PROJECT:

PEEL HALL, WARRINGTON

CLIENT:

SATNAM MILLENNIUM LTD

PROJECT REFERENCE:	DRAWING NUMBER:	SCALE:
1107	11/L	1:500 @A3

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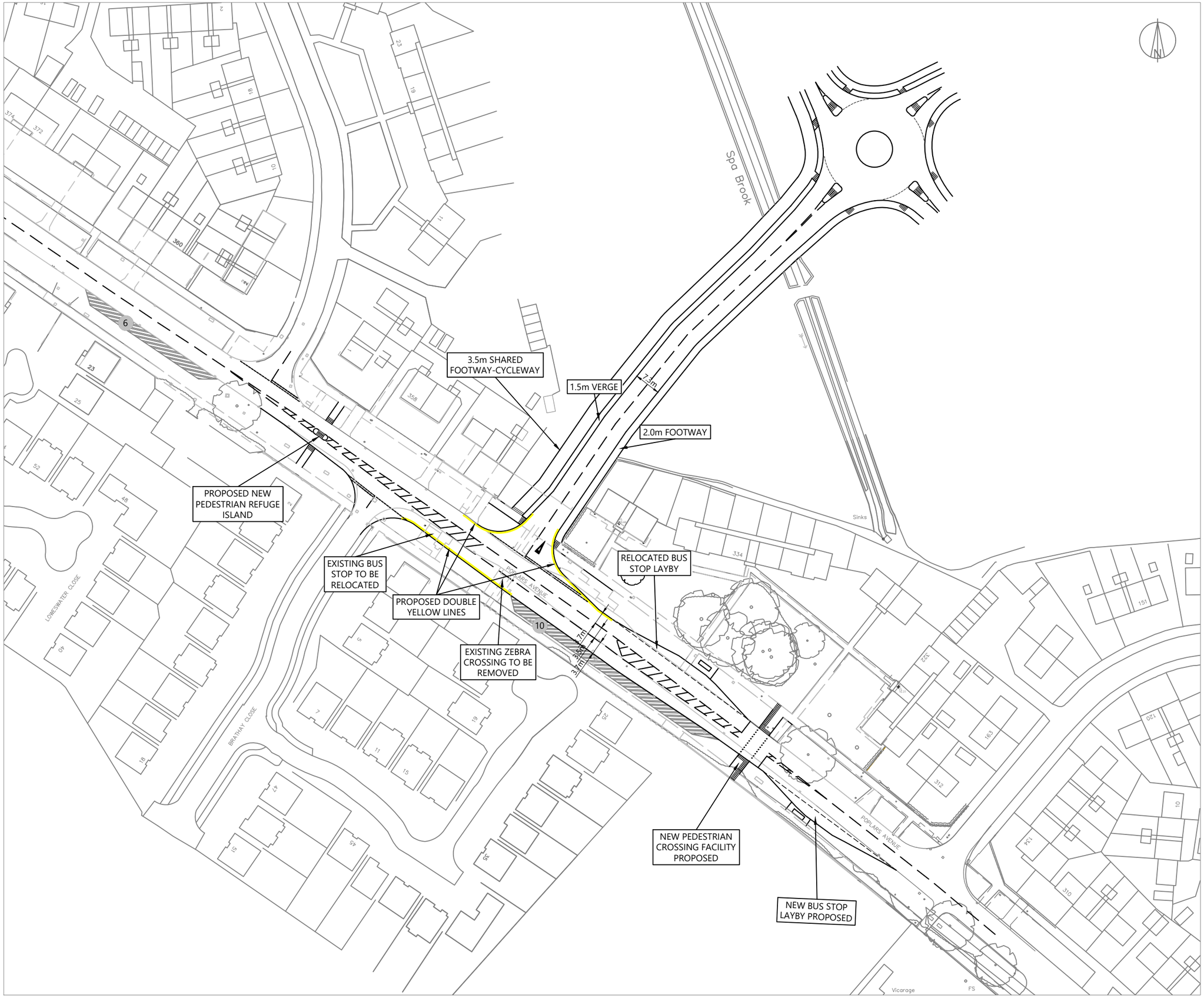
Bristol BS1 5NL
01179 349 121

TITLE:

PROPOSED ACCESS AT MILL LANE

DATE:	DRAWN BY:	CHECKED:
03/02/17	BL	DT



NOTES:

Drawing based on Appletons plan 140367-B-001G dated January 2016.

KEY:

Parking Areas (number of cars that can be accommodated) (6)

ISSUE	REASON FOR REVISION	DATE

PROJECT:

PEEL HALL, WARRINGTON

CLIENT:

SATNAM MILLENNIUM LTD

PROJECT REFERENCE:	DRAWING NUMBER:	SCALE:
1107	12/Q	1:1,000 @ A3

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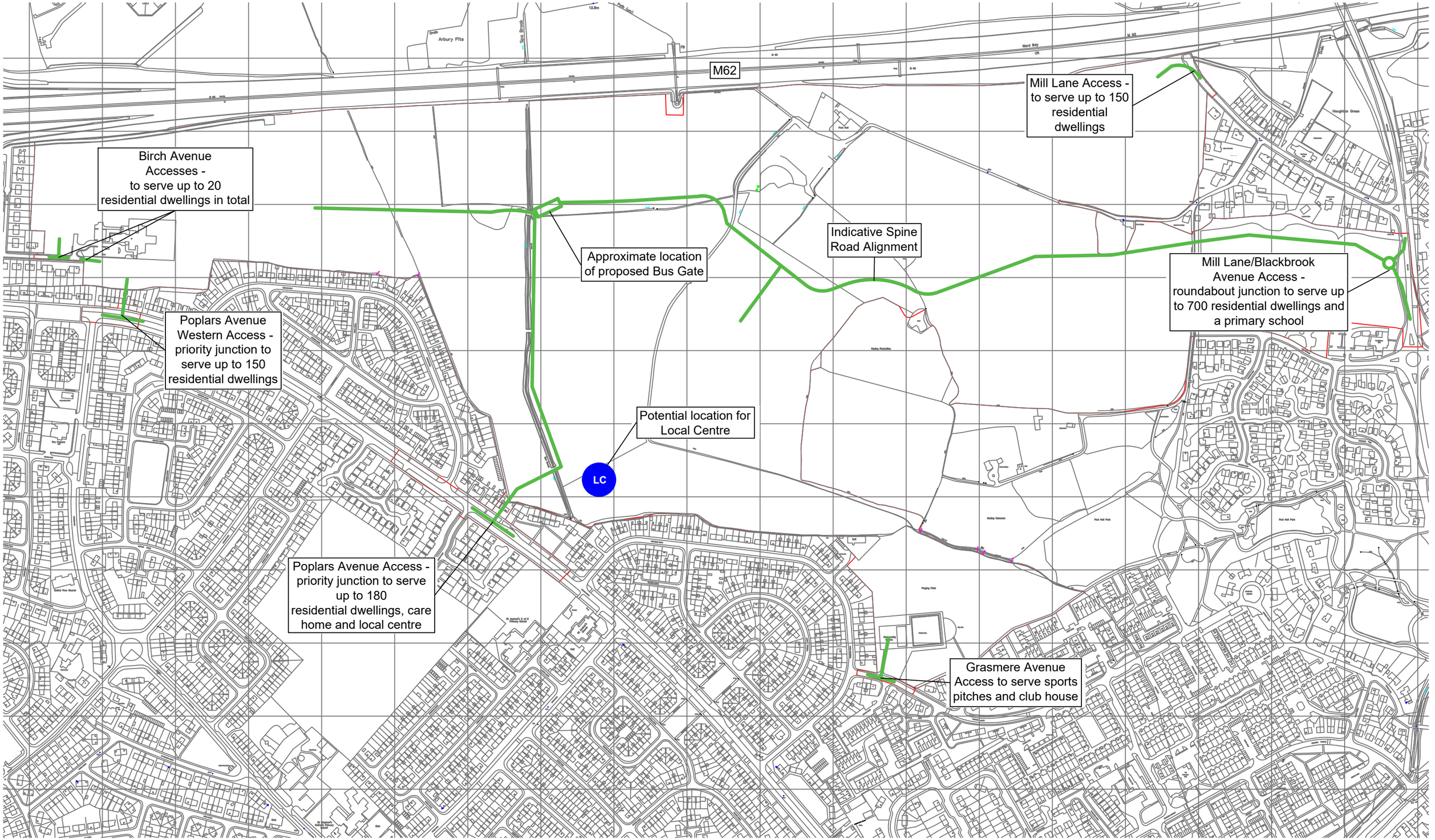
TITLE:

PROPOSED ACCESS FROM POPLARS AVENUE TO RESIDENTIAL LAND AND LOCAL CENTRE

DATE:	DRAWN BY:	CHECKED:
03/02/17	FB	DT



NOTES:

ISSUE	REASON FOR REVISION	DATE
H	Update re: employment land use	03/07/19
G	Update to location of local centre	16/01/18
F	Amendment to annotation	10/05/17
E	Amendment to annotations	10/05/16
D	Amendment to bus gate location	04/05/16
C	Amendment to dwelling numbers at access points	12/04/16
B	Alteration to dwelling numbers at access points	04/03/16
A	Reduction in number of dwellings shown off Birch Avenue	19/02/16

DATE:	DRAWN BY:	CHECKED:
12/01/15	FB	DT

PROJECT:

PEEL HALL, WARRINGTON

CLIENT:

SATNAM

TITLE:

PROPOSED ACCESS POINTS AND INDICATIVE SPINE ROAD

PROJECT REFERENCE:	DRAWING NUMBER:	SCALE:
1107	19	Not to scale

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NOTES:

Drawing based on Geomatic Surveys Ltd topographical survey 01532/01 dated 27/07/15.

ISSUE	REASON FOR REVISION	DATE

PROJECT:

PEEL HALL, WARRINGTON

CLIENT:

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PROJECT REFERENCE:	DRAWING NUMBER:	SCALE:
1107	30/H	1:500 @ A3

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01179 349 121

TITLE:

PROPOSED ALTERATIONS TO EXISTING ACCESS AT GRASMERE AVENUE

DATE:	DRAWN BY:	CHECKED:
15/01/18	BL	FB

Access Strategy B
2032 Do Something (Full Development)
PM Peak Hour (17:00 to 18:00)

Key for Development Junction Flows:			
		=	0 to 49
		=	50 to 199
		=	200 +
		Site Access Junctions (G, H, J, M, AD & AE)	

	=	Junctions with > 5% Traffic Flow Increase	

Development Traffic							Do Minimum Demand					Development % Increase on Do Minimum Demand Junction Flows
Turn Flows			>>>	Arm Flows	>>>	Junction Flows	Turn Flows	>>>	Arm Flows	>>>	Junction Flows	
A49 NewR/GbR	A1	7	=	8	=	44	474	=	749	=	2324	2%
	A2	1					275					
	A3	1	=	15			240	=	467			
	A4	14					227					
	A5	16	=	21			479	=	1108			
	A6	6					629					
GolbR/MyddleL	B1	13	=	15	=	35	156	=	348	=	1651	2%
	B2	2					192					
	B3	2	=	4			238	=	548			
	B4	2					311					
	B5	2	=	17			414	=	754			
	B6	15					341					
DelphL/MyddL	C1	0	=	16	=	39	372	=	512	=	1611	2%
	C2	16					140					
	C3	4	=	17			74	=	471			
	C4	13					397					
	C5	5	=	5			352	=	629			
	C6	0					277					
A49 J9 Roundabout incl. M62 J9 Slips	D1	0	=	27	=	103	0	=	1612	=	5301	2%
	D2	0					453					
	D3	27					988					
	D4	0					171					
	D5	-	=	11			-	=	573			
	D6	0					115					
	D7	-					-					
	D8	11					458					
	D9	9	=	51			5	=	1949			
	D10	0					292					
	D11	33					1168					
	D12	9					484					
	D13	-	=	14			-	=	1167			
	D14	14					513					
	D15	-					-					
	D16	0					654					
DelphL RPark	E1	0	=	26	=	60	104	=	1608	=	4094	1%
	E2	26					1504					
	E3	28	=	33			1805	=	1938			
	E4	5					132					
	E5	2	=	2			109	=	549			
	E6	0					440					
k Ave	F1	-	=	21			-	=	703			
	F2	0					14					
	F3	20					618					

A49/Winwick Link Road/Winwick Par	F4	1						71						
	F5	-	=	6	=	55		-	=	1030	=	4011		1%
	F6	1						39						
	F7	0						19						
	F8	5						972						
	F9	-	=	28				-	=	2245				
	F10	6						1087						
	F11	21						1065						
	F12	1						93						
	F13	-	=	0				-	=	33				
	F14	0						18						
	F15	0						9						
	F16	0						6						
A49/BirchAve	G1	51	=	61	=	118		1952	=	1965	=	3917		3%
	G2	10						13						
	G3	-	=	6				-	=	3				
	G4	6						3						
	G5	-	=	51				-	=	1949				
	G6	51						1949						
NewA PAve (W)	H1	15	=	57	=	351		0	=	0	=	39		899%
	H2	43						0						
	H3	48	=	165				0	=	28				
	H4	117						28						
	H5	126	=	128				11	=	11				
	H6	3						0						
PAve/CleveR	I1	0	=	26	=	53		28	=	200	=	564		9%
	I2	26						173						
	I3	27	=	27				345	=	352				
	I4	0						7						
	I5	0	=	0				0	=	11				
	I6	0						11						
NewA PAve (C)	J1	22	=	78	=	205		0	=	0	=	635		32%
	J2	56						0						
	J3	96	=	100				0	=	262				
	J4	4						262						
	J5	3	=	27				374	=	374				
	J6	24						0						
PAve/HowR	K1	83	=	83	=	159		252	=	264	=	660		24%
	K2	0						12						
	K3	0	=	17				14	=	23				
	K4	17						9						
	K5	17	=	59				5	=	374				
	K6	42						368						
PAve/GrasAve	L1	3	=	6	=	130		20	=	20	=	857		15%
	L2	3						0						
	L3	3	=	83				0	=	427				
	L4	80						427						
	L5	40	=	41				411	=	411				
	L6	1						0						
A GrasAve	M1	1	=	6	=	16		0	=	0	=	20		81%
	M2	5						0						
	M3	4	=	7				0	=	20				
	M4	3						20						

New	M5	3					0						
	M6	0	=	3			0	=	0				
PAve/StathAve	N1	2					1						
	N2	41	=	43			410	=	411				
	N3	82					425						
	N4	9	=	91	=	135	362	=	787	=	1290	10%	
	N5	0					91						
	N6	1	=	1			2	=	93				
PAve/GrCres	O1	41					474						
	O2	0	=	41			27	=	501				
	O3	0					17						
	O4	0	=	0	=	132	27	=	44	=	1337	10%	
	O5	0					22						
	O6	91	=	91			770	=	792				
Poplars Ave/Capesthorne R Roundabout	P1	-					0						
	P2	58	=	65			407	=	480				
	P3	1					51						
	P4	6					22						
	P5	-					-						
	P6	15	=	46			17	=	423				
	P7	32					380						
	P8	0					26						
	P9	-					-						
	P10	0	=	6	=	158	18	=	123	=	1527	10%	
	P11	4					100						
	P12	1					4						
	P13	-					-						
	P14	7	=	41			21	=	501				
	P15	10					276						
	P16	25					204						
A50/Hilden Road RB	Q1	-					0						
	Q2	1	=	49			228	=	663				
	Q3	23					377						
	Q4	24					58						
	Q5	-					0						
	Q6	70	=	89			106	=	960				
	Q7	19					725						
	Q8	0					130						
	Q9	-			=	176	0			=	2640	7%	
	Q10	0	=	2			6	=	133				
	Q11	2					123						
	Q12	0					4						
	Q13	-					0						
	Q14	0	=	36			16	=	885				
	Q15	7					587						
	Q16	29					281						
A50/BirchWay	R1	31					648						
	R2	0	=	31			6	=	655				
	R3	0					177						
	R4	0	=	0	=	120	0	=	177	=	1637	7%	
	R5	0					0						
	R6	89	=	89			806	=	806				
	S1	-					-						
			=	8				=	363				

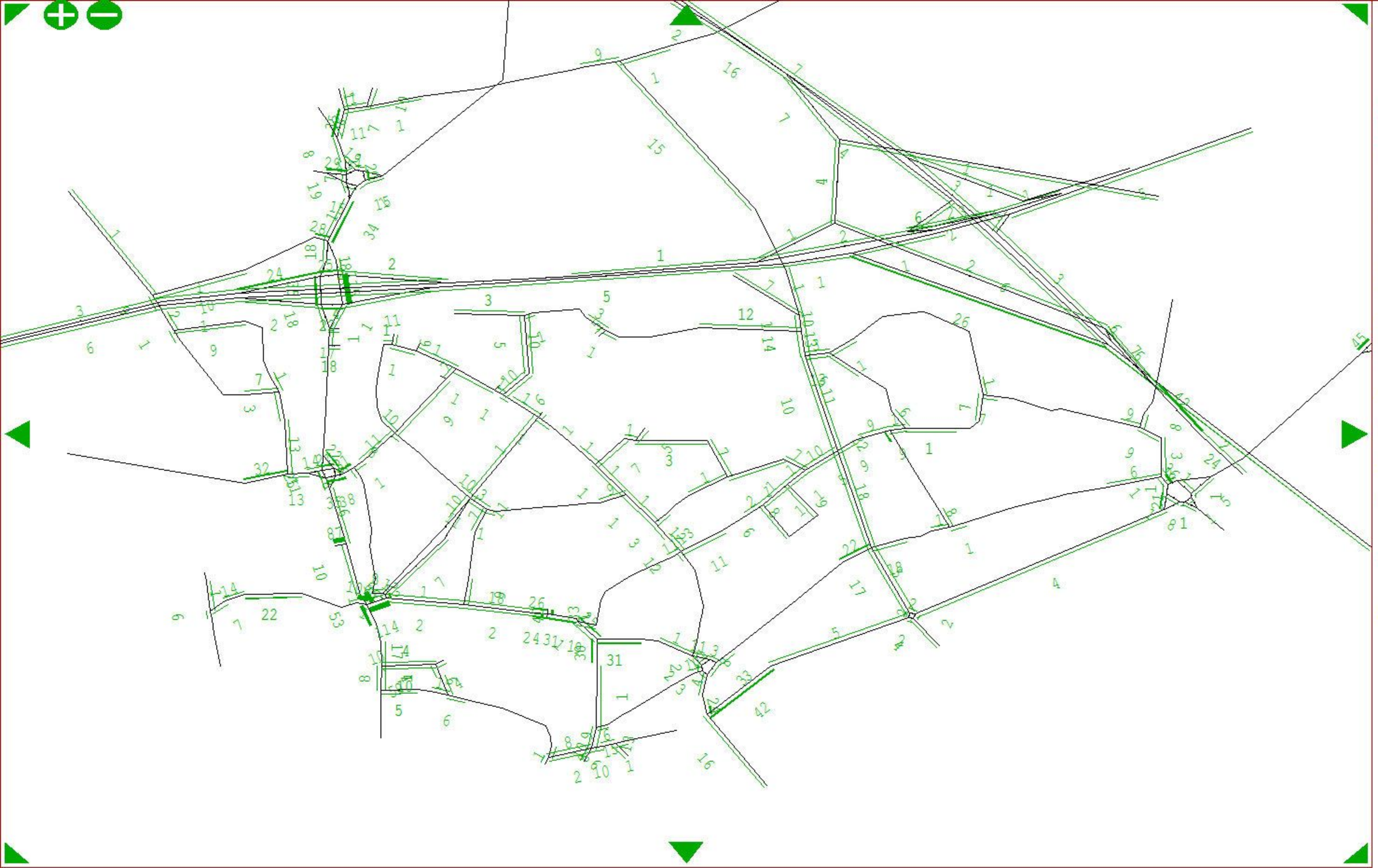
A50/PopAve	S2	8	=	8	=	78	363	=	505	=	1916	4%		
	S3	21	=	21			419	=	959					
	S4	0					540							
	S5	29	=	49			522	=	593					
	S6	19					71							
A50/Hallfields	T1	0	=	0	=	57	475	=	492	=	1477	4%		
	T2	0					17							
	T3	49	=	49			239	=	460					
	T4	1					221							
	T5	7	=	7			147	=	525					
	T6	0					378							
A50/FisherAve	U1	10	=	11	=	27	78	=	133	=	1362	2%		
	U2	2					55							
	U3	2	=	7			159	=	728					
	U4	6					570							
	U5	8	=	8			468	=	501					
	U6	0					33							
A50/Northway	V1	21	=	29	=	60	231	=	331	=	1540	4%		
	V2	8					101							
	V3	0	=	15			223	=	648					
	V4	15					425							
	V5	0	=	16			400	=	561					
	V6	16					161							
A49/A50/HawleysL Crossroads	W1	4	=	48	=	177	135	=	1739	=	4840	4%		
	W2	44					1430							
	W3	0					174							
	W4	6	=	37			156	=	655					
	W5	5					196							
	W6	26					303							
	W7	16	=	77			203	=	1757					
	W8	61					1468							
	W9	0					87							
	W10	0	=	15			27	=	689					
	W11	0					184							
	W12	15					477							
A49/JNINE RP	X1	12	=	60	=	165	119	=	1673	=	4149	4%		
	X2	48					1554							
	X3	82	=	82			1992	=	2101					
	X4	0					110							
	X5	0	=	22			185	=	375					
	X6	22					190							
CromA/CalR	Y1	-	=	5	=	80	-	=	232	=	2853	3%		
	Y2	5					232							
	Y3	13	=	47			397	=	1429					
	Y4	34					1033							
	Y5	27	=	27			784	=	1191					
	Y6	0					408							
W Roundabout	Z1	0	=	132			0	=	1954					
	Z2	36					423							
	Z3	59					1163							
	Z4	36					368							
	Z5	0	=	19			0	=	696					
	Z6	5					252							

A49/Cromwell Ave/Sandy L	Z7	11	=	19	=	288	399	=	696	=	5847	5%
	Z8	3					45					
	Z9	0	=	105			0	=	2181			
	Z10	8					160					
	Z11	97					1460					
	Z12	0					561					
	Z13	0	=	33			46	=	1016			
	Z14	0					466					
	Z15	7					266					
	Z16	26					238					
Sandy L W/Cots R/Cleve R Roundabout	AA1	-	=	0	=	61	-	=	6	=	1119	5%
	AA2	0					0					
	AA3	0					6					
	AA4	0					0					
	AA5	-	=	26			-	=	190			
	AA6	10					0					
	AA7	15					150					
	AA8	0					40					
	AA9	-	=	2			-	=	410			
	AA10	0					1					
	AA11	1					6					
	AA12	1					402					
	AA13	-	=	33			-	=	513			
	AA14	4					148					
	AA15	29					365					
	AA16	0					0					
Sandy L/Howson R/Northway Roundabout	AB1	-	=	17	=	40	-	=	65	=	866	5%
	AB2	0					25					
	AB3	15					38					
	AB4	2					2					
	AB5	-	=	3			-	=	432			
	AB6	1					2					
	AB7	2					426					
	AB8	0					4					
	AB9	-	=	16			-	=	119			
	AB10	0					18					
	AB11	16					60					
	AB12	0					42					
	AB13	-	=	5			-	=	250			
	AB14	0					78					
	AB15	3					133					
	AB16	2					39					
SandyL/FishA	AC1	1	=	11	=	17	294	=	382	=	694	2%
	AC2	10					88					
	AC3	0	=	2			21	=	158			
	AC4	2					137					
	AC5	2	=	4			50	=	154			
	AC6	3					104					
MillL/MillL	AD1	5	=	21	=	148	0	=	492	=	962	15%
	AD2	16					492					
	AD3	12	=	81			471	=	471			
	AD4	69					0					
	AD5	41	=	46			0	=	0			

	AD6	5	=	40			0	=	0				
NewA MillL RB	AE1	-	=	57	=	531	-	=	496	=	973	55%	
	AE2	21					0						
	AE3	36					496						
	AE4	-	=	328			-	=	477				
	AE5	60					477						
	AE6	267					0						
	AE7	-	=	146			-	=	0				
	AE8	126					0						
	AE9	20					0						
Ballater D/Mill L/Enfield PR	AF1	-	=	162	=	489	-	=	506	=	1051	47%	
	AF2	115					440						
	AF3	47					66						
	AF4	-	=	108			-	=	156				
	AF5	108					132						
	AF6	0					24						
	AF7	-	=	220			-	=	389				
	AF8	0					23						
	AF9	220					366						
EPR/CinnLN	AG1	105	=	105	=	154	129	=	129	=	253	61%	
	AG2	0					0						
	AG3	0	=	2			0	=	32				
	AG4	2					32						
	AG5	1	=	47			17	=	93				
	AG6	46					77						
EPR/CrabL	AH1	0	=	45	=	179	10	=	63	=	638	28%	
	AH2	45					53						
	AH3	105	=	122			142	=	426				
	AH4	18					284						
	AH5	12	=	12			143	=	149				
	AH6	0					6						
CrabL/LockSL	AI1	50	=	57	=	178	156	=	202	=	1337	13%	
	AI2	7					46						
	AI3	87	=	87			258	=	663				
	AI4	0					405						
	AI5	0	=	34			276	=	471				
	AI6	34					195						
CrabL/FearnL	AJ1	0	=	49	=	85	131	=	563	=	1610	5%	
	AJ2	49					432						
	AJ3	34	=	35			452	=	833				
	AJ4	1					381						
	AJ5	0	=	0			177	=	214				
	AJ6	0					37						
A/Oakwood G Roundabout	AK1	-	=	0	=	81	-	=	463	=	4236	2%	
	AK2	0					145						
	AK3	0					69						
	AK4	0					249						
	AK5	-	=	23			-	=	1671				
	AK6	0					0						
	AK7	23					1459						
	AK8	0					212						
	AK9	-	=	30			-	=	780				
	AK10	0					101						

BW Way/BW P	AK11	0	=	30			192	=	780				
	AK12	30					487						
	AK13	-	=	27			-	=	1322				
	AK14	10					255						
	AK15	14					551						
	AK16	4					516						
BW Way/Crab L/Woolston G Roundabout	AL1	-	=	49	=	162	-	=	610	=	4156	4%	
	AL2	0					87						
	AL3	22					333						
	AL4	27					190						
	AL5	-	=	53			-	=	2090				
	AL6	17					294						
	AL7	36					835						
	AL8	0					961						
	AL9	-	=	59			-	=	1211				
	AL10	0					538						
	AL11	19					423						
	AL12	41					250						
	AL13	-	=	0			-	=	245				
	AL14	0					36						
	AL15	0					92						
	AL16	0					117						
undabout	AM1	-	=	48	=	157	-	=	562	=	2567	6%	
	AM2	0					0						
	AM3	48					397						
	AM4	0					165						
	AM5	-	=	77			-	=	1173				
	AM6	77					265						
	AM7	0					127						
	AM8	0					781						
BW Way/Blackbrook Ave Roundabout	AM9	-	=	32			-	=	826				
	AM10	0					562						
	AM11	32					216						
	AM12	0					48						
	AM13	-	=	0			-	=	6				
	AM14	0					1						
	AM15	0					5						
	AM16	0					0						
Hilden R/BB Ave Crossroads	AN1	48	=	97	=	315	84	=	441	=	1827	17%	
	AN2	47					341						
	AN3	1					16						
	AN4	6	=	8			45	=	451				
	AN5	1					374						
	AN6	0					32						
	AN7	0	=	110			20	=	466				
	AN8	109					269						
	AN9	1					177						
	AN10	0	=	101			190	=	470				
	AN11	0					149						
	AN12	101					131						
R/GwC	AO1	0	=	6	=	125	0	=	66	=	984	13%	
	AO2	6					66						
	AO3	5	=	71			101	=	577				

Capes	AO4	66	=	71	=	125	476	=	577	=	984	13%	
	AO5	48	=	48			341	=	342				
	AO6	0					0						
Capes R/BB Ave/Enfield PR Roundabout	AP1	-	=	115	=	404	-	=	464	=	1609	25%	
	AP2	25					155						
	AP3	87					295						
	AP4	4					14						
	AP5	-	=	19			-	=	293				
	AP6	1					4						
	AP7	18					236						
	AP8	0					52						
	AP9	-	=	216			-	=	446				
	AP10	0					27						
	AP11	188					233						
	AP12	28					185						
	AP13	-	=	54			-	=	407				
	AP14	10					93						
	AP15	13					161						
	AP16	31					152						
EPR/CinnL	AQ1	18	=	18	=	35	288	=	297	=	489	7%	
	AQ2	0					9						
	AQ3	0	=	0			5	=	10				
	AQ4	0					4						
	AQ5	4	=	16			28	=	183				
	AQ6	12					154						
EPR/CropR	AR1	0	=	0	=	31	0	=	6	=	465	7%	
	AR2	0					6						
	AR3	1	=	19			4	=	300				
	AR4	18					297						
	AR5	12	=	12			155	=	160				
	AR6	0					5						
FearnL/CinnL	AS1	0	=	4	=	10	7	=	35	=	662	2%	
	AS2	4					29						
	AS3	0	=	6			9	=	446				
	AS4	6					437						
	AS5	0	=	0			174	=	181				
	AS6	0					7						



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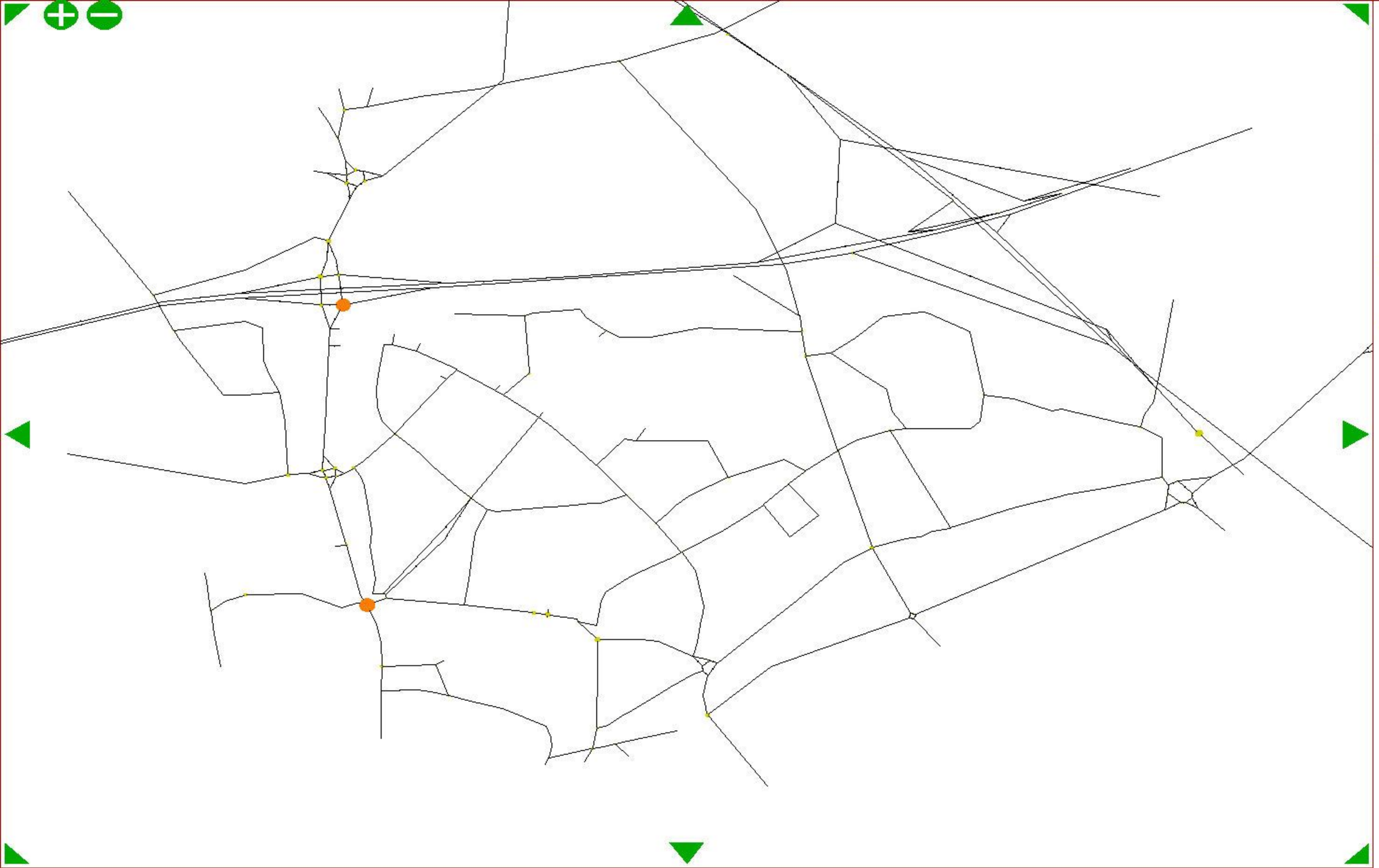

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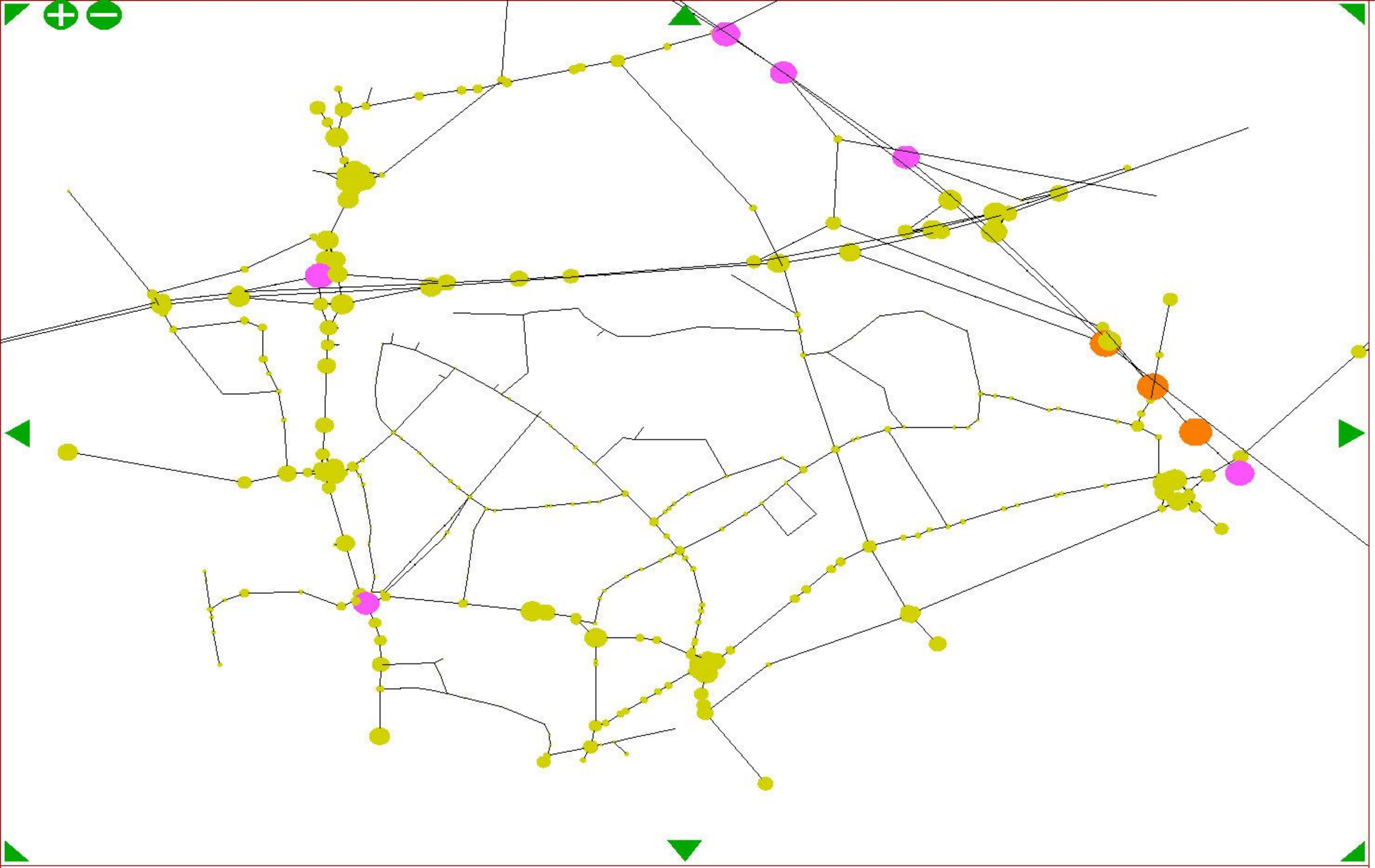

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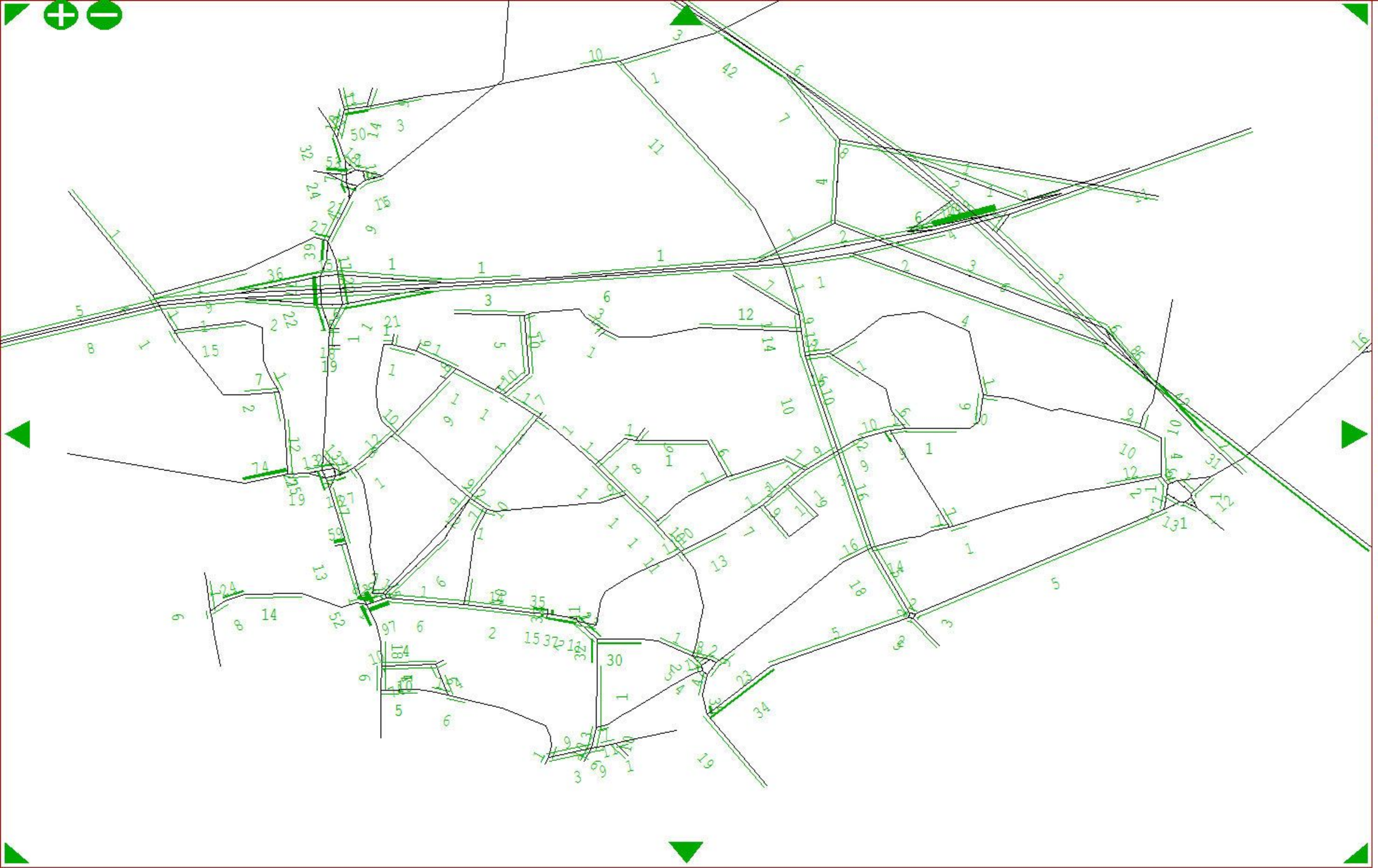

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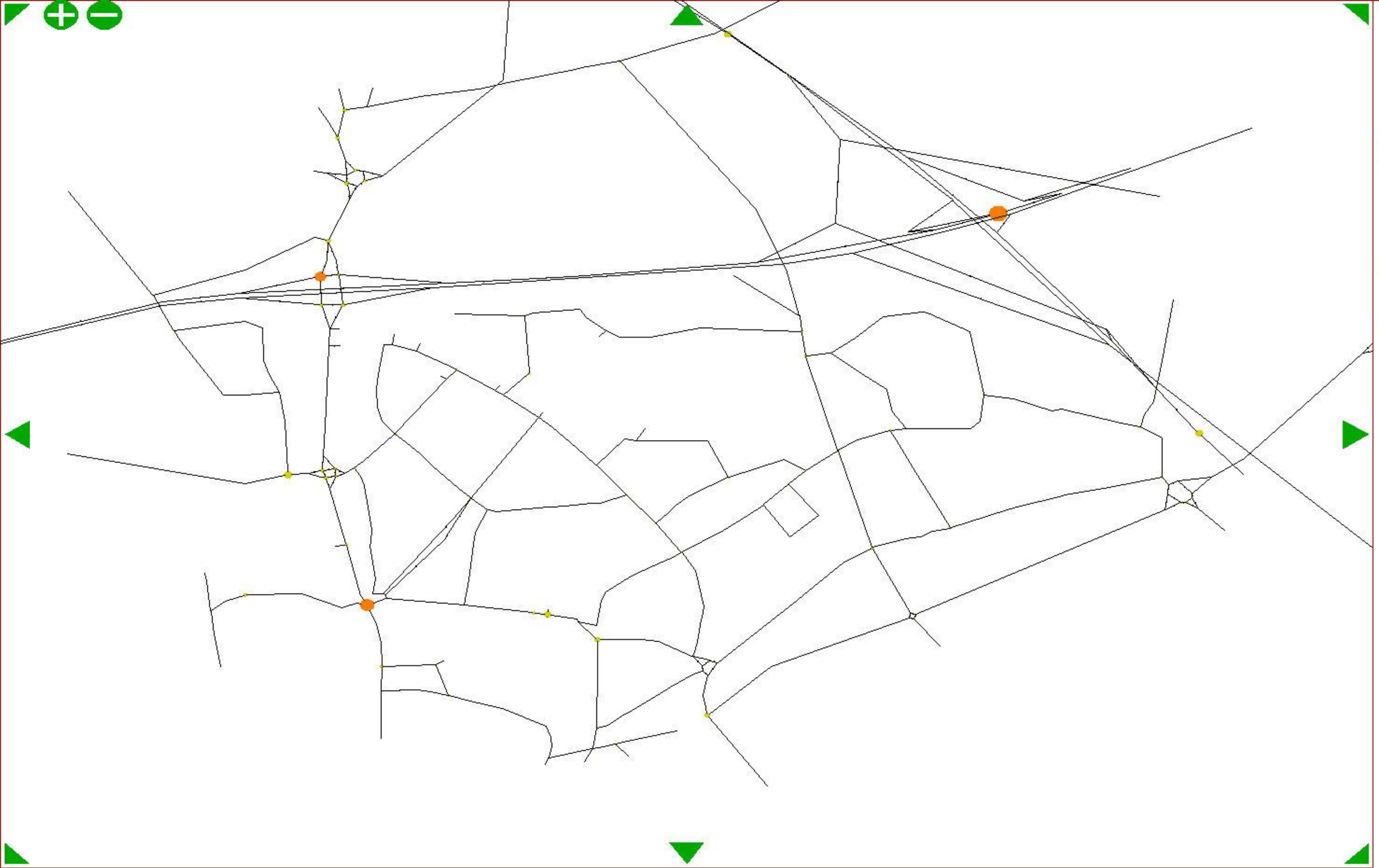

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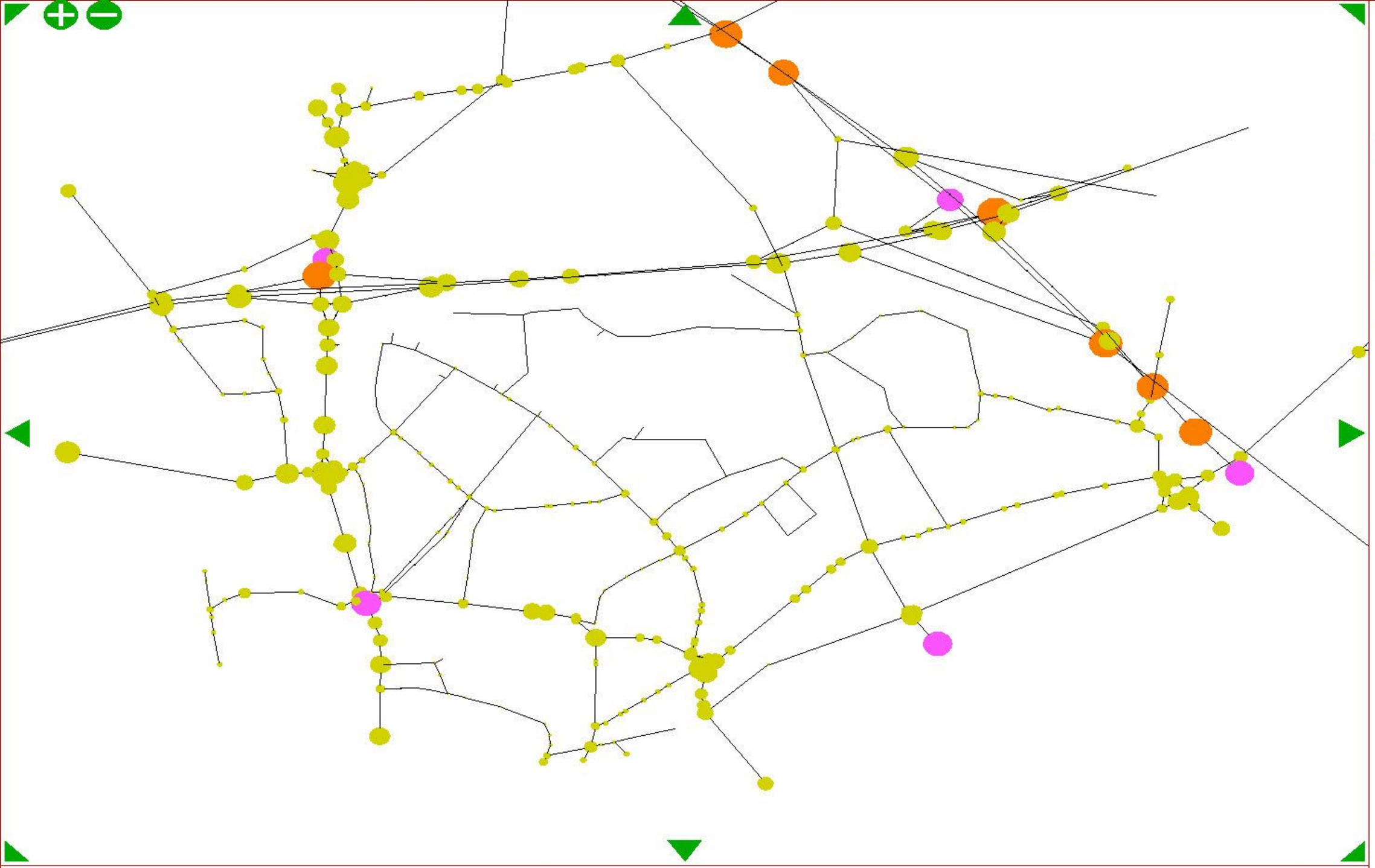

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Colours:

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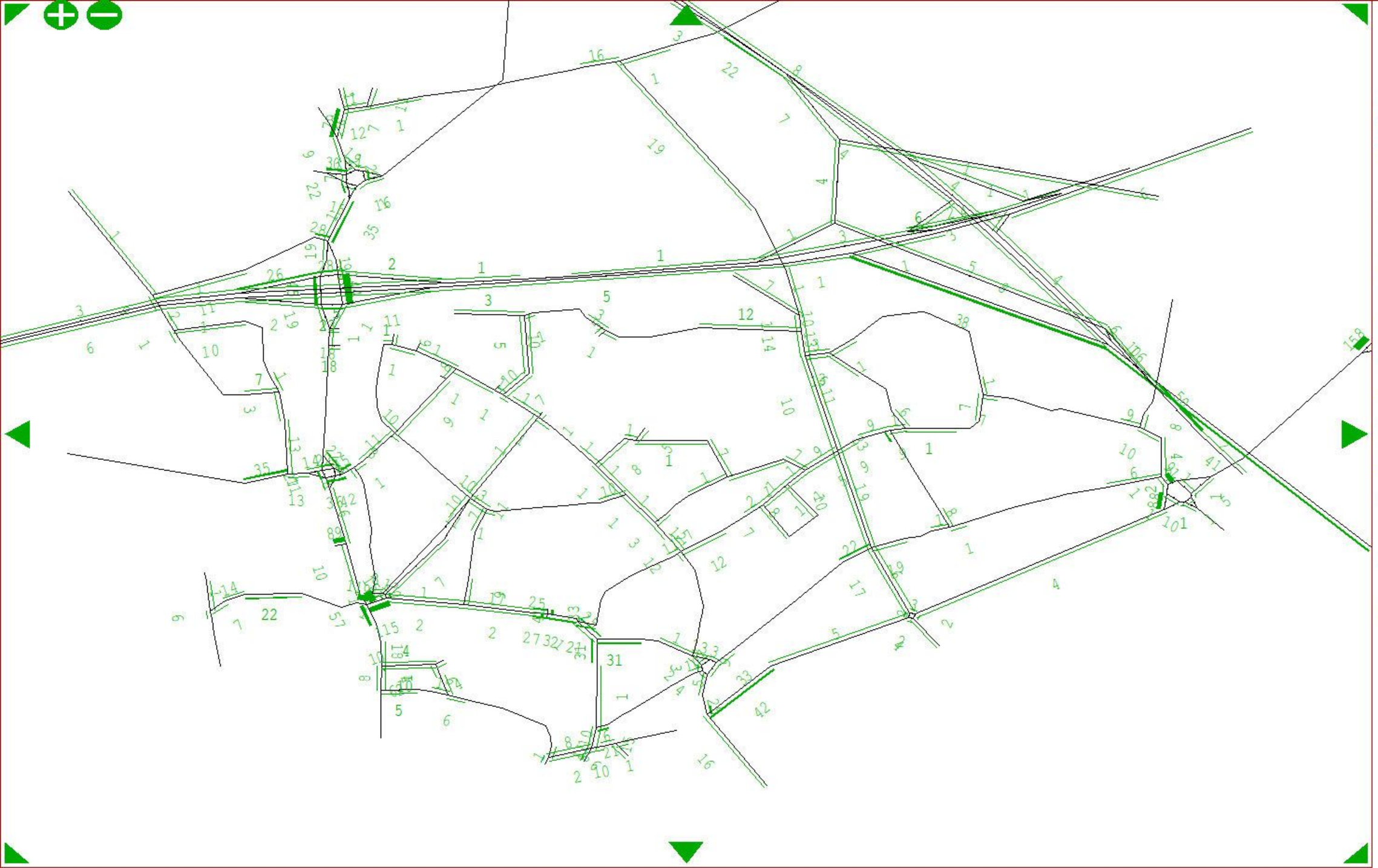

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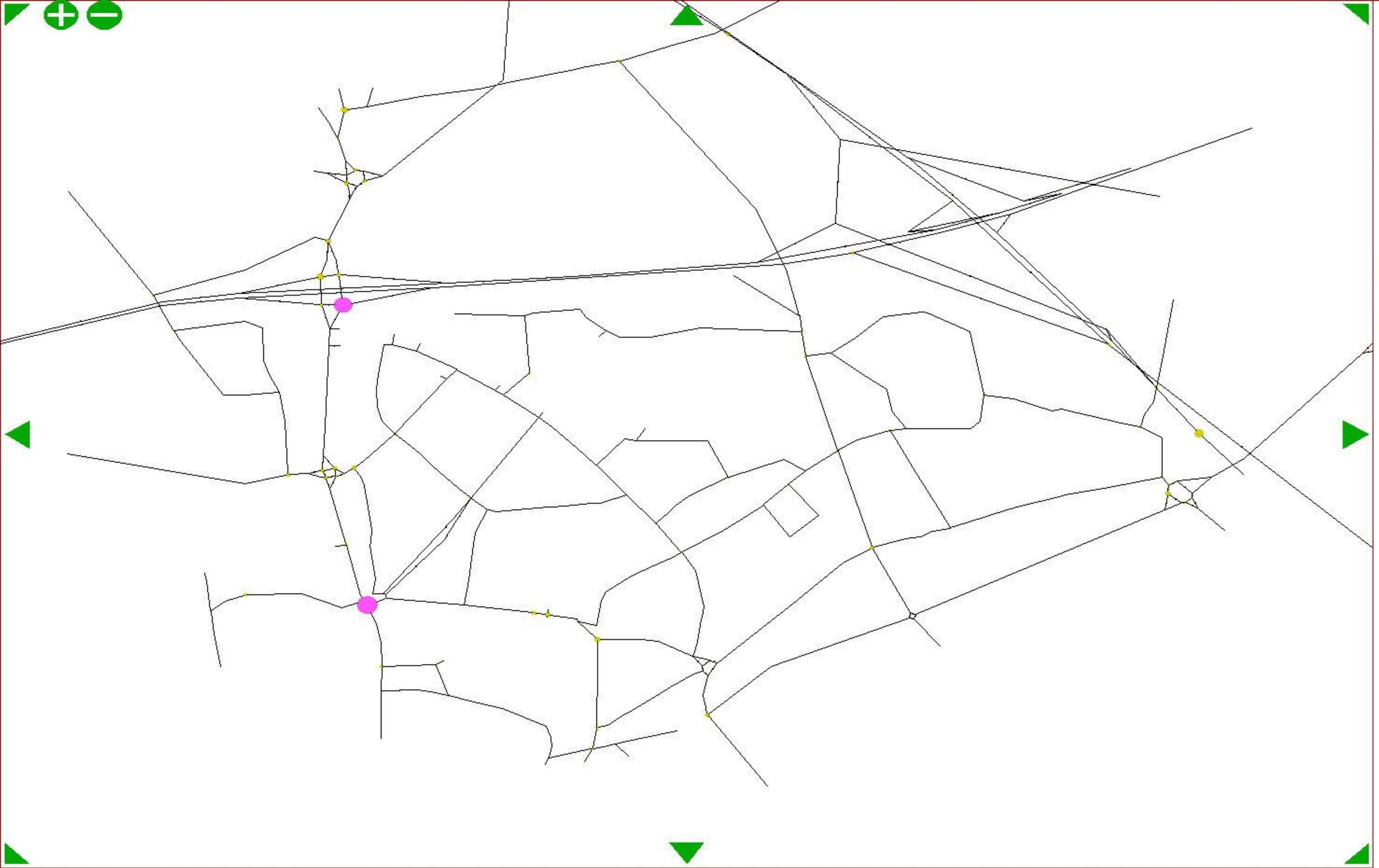

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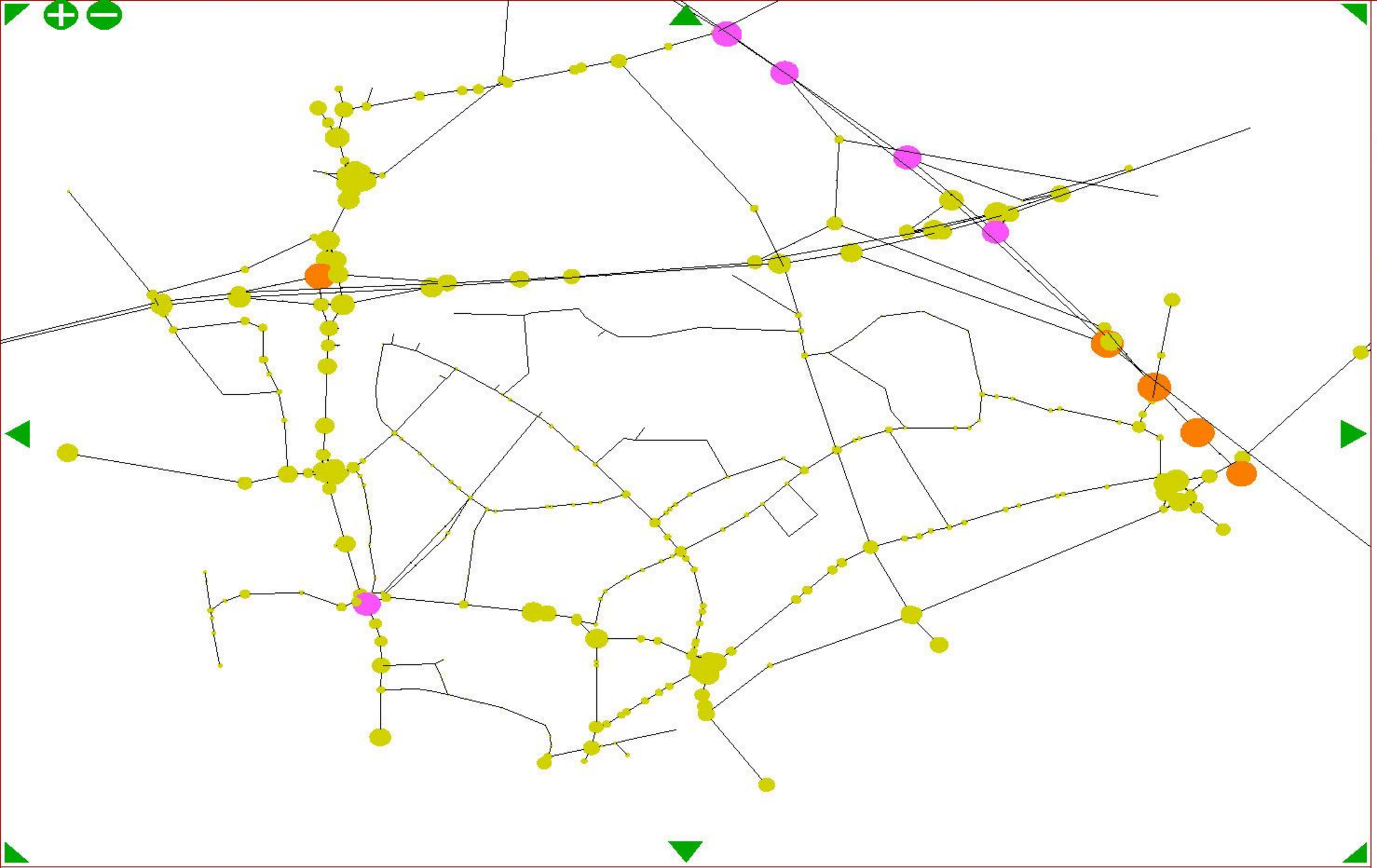

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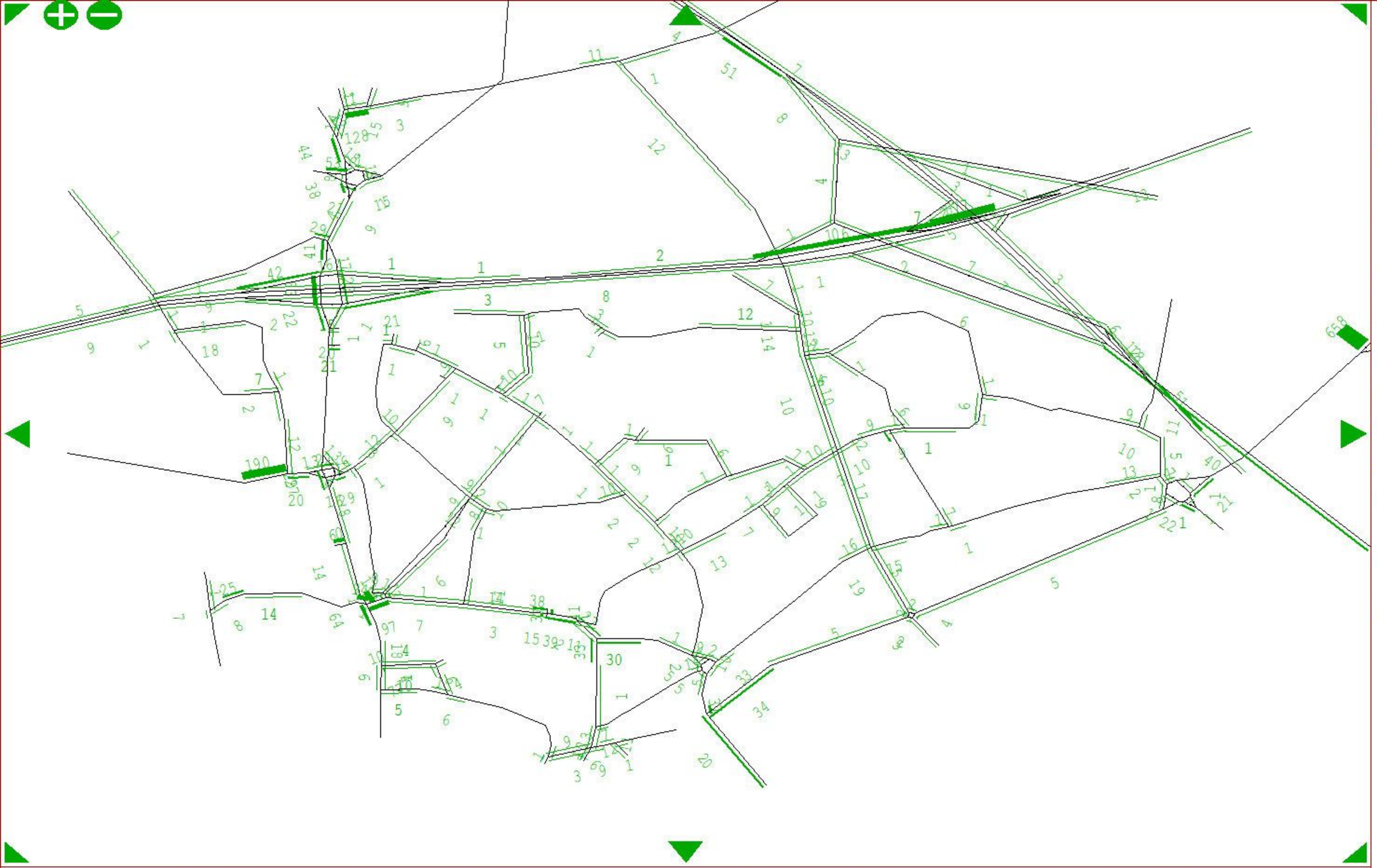

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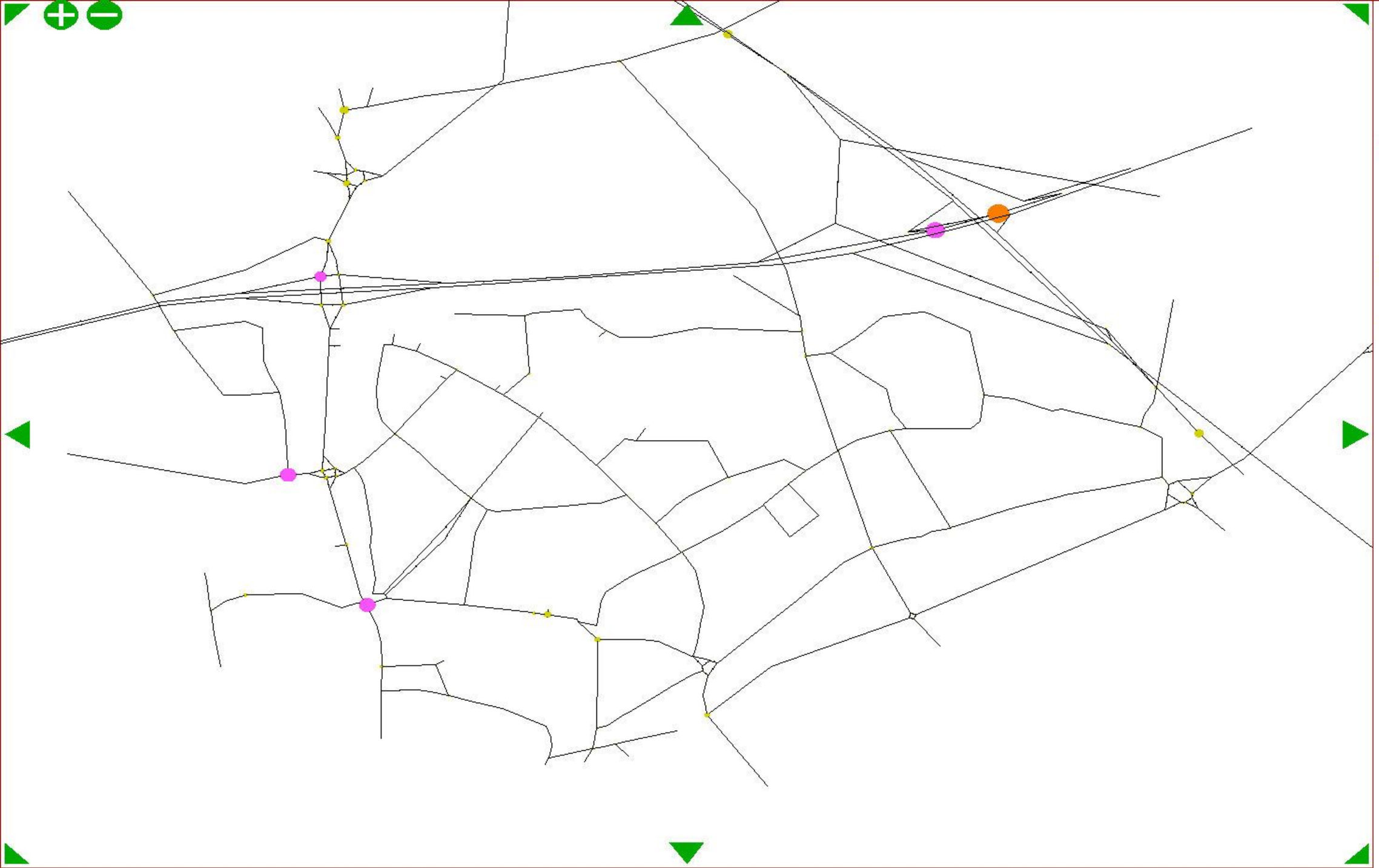

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& Options:

Colours:

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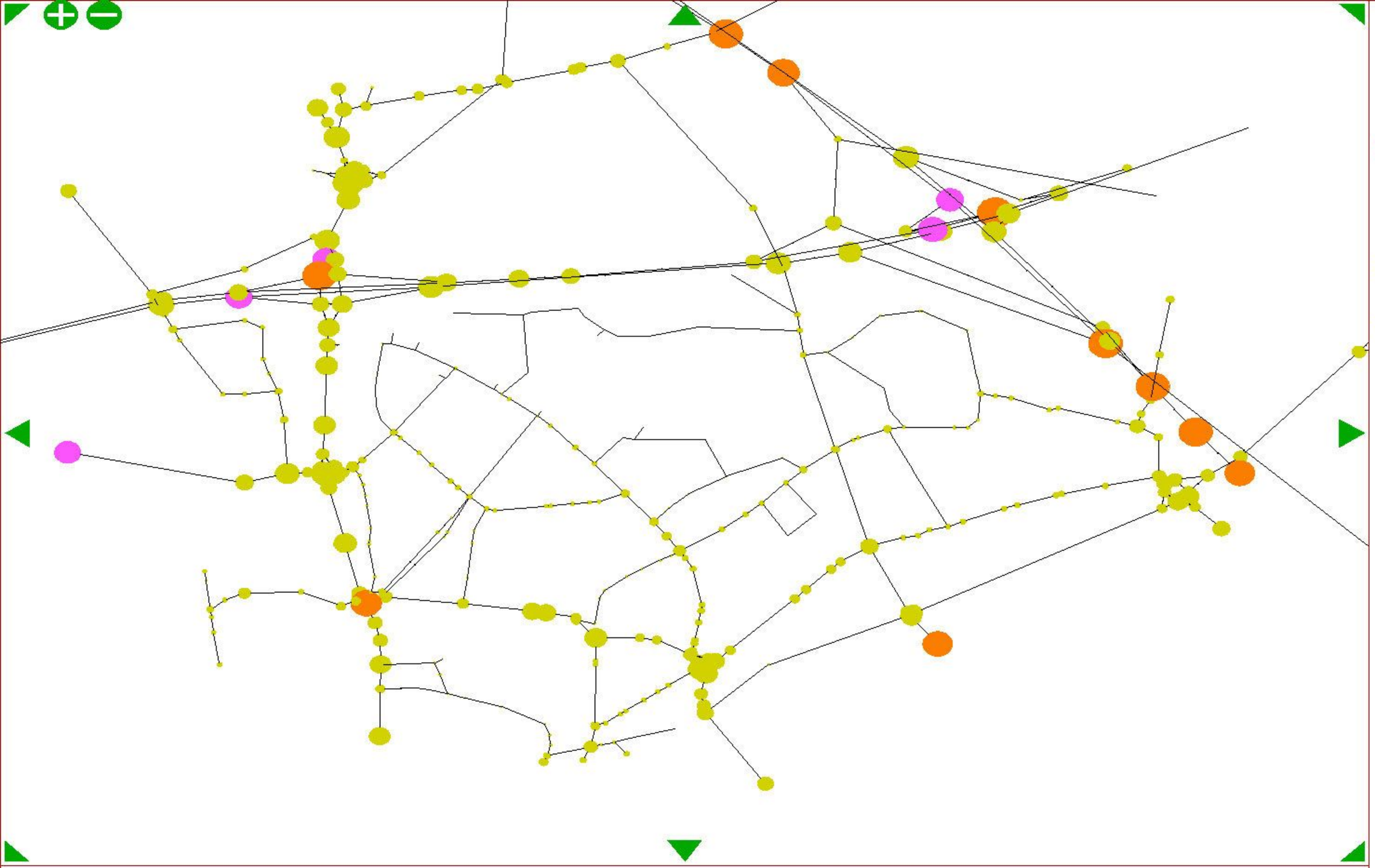

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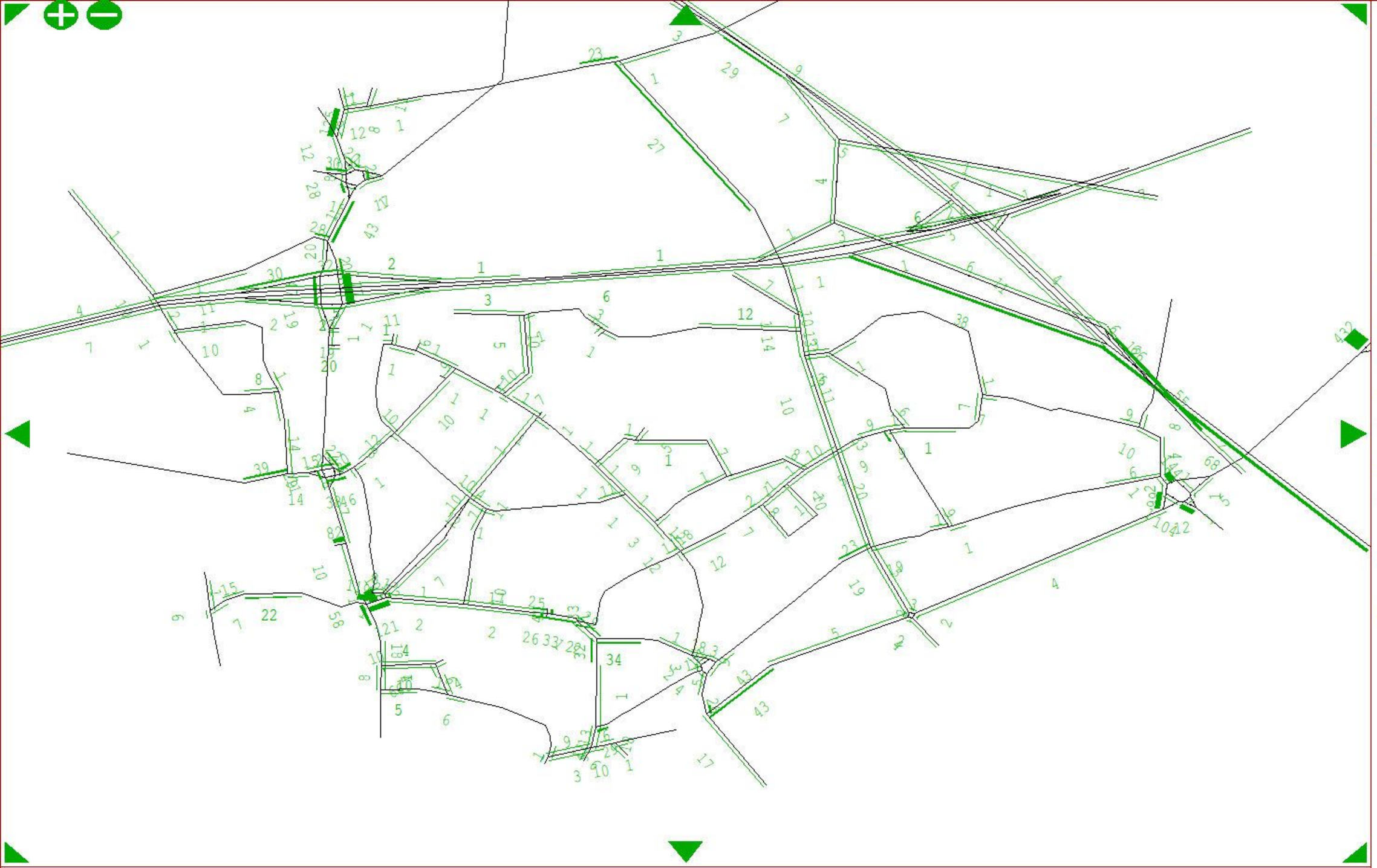

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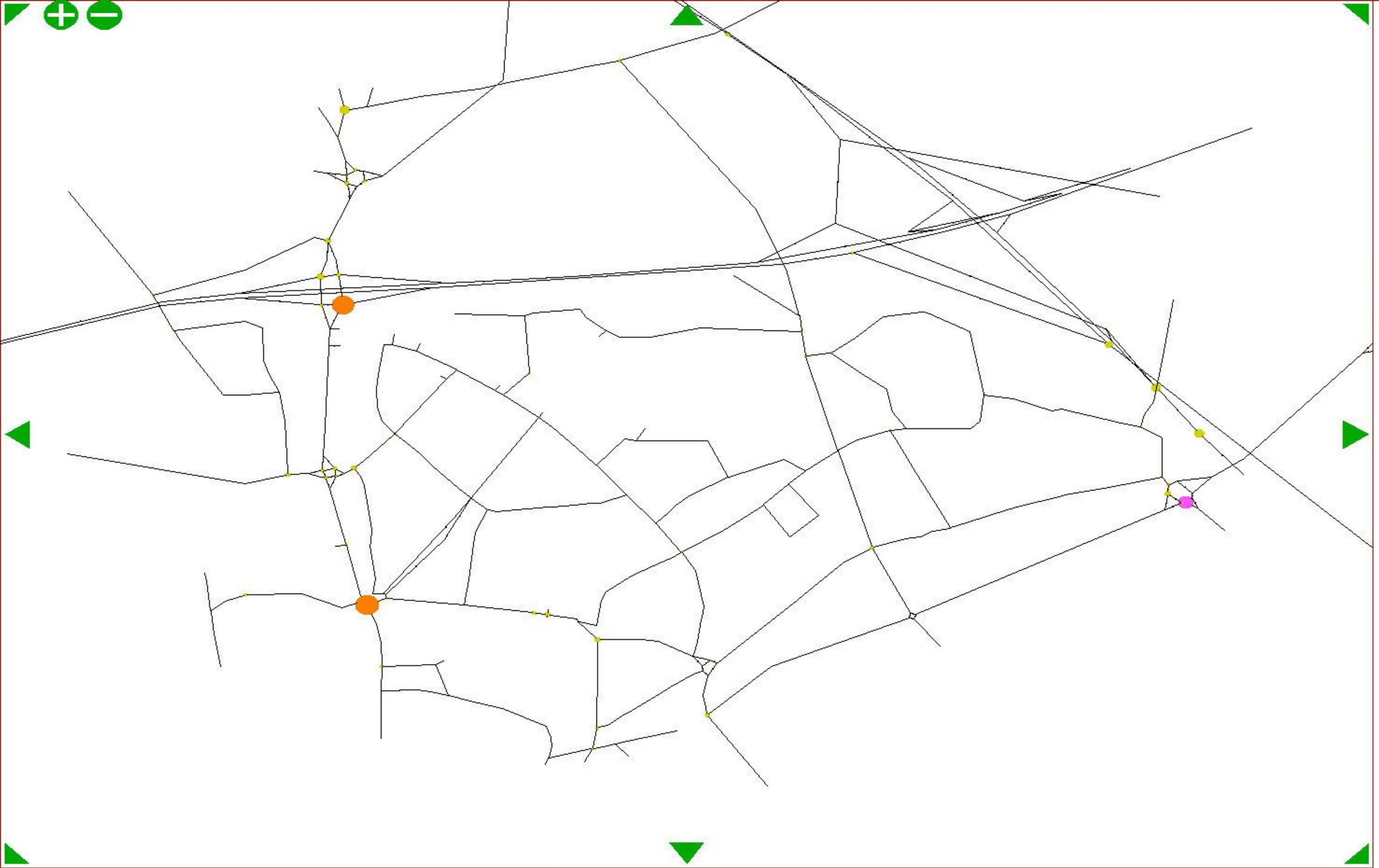

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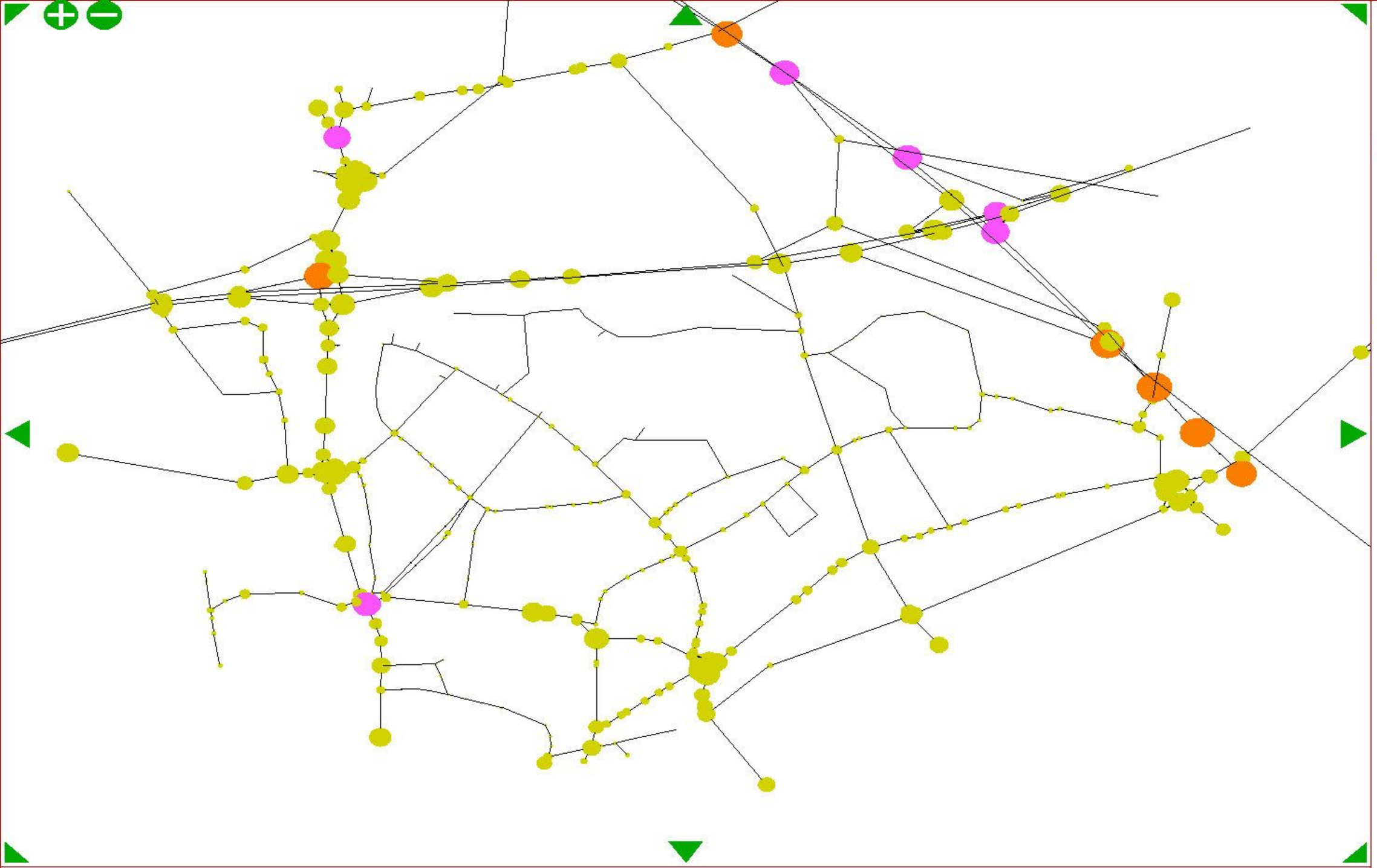

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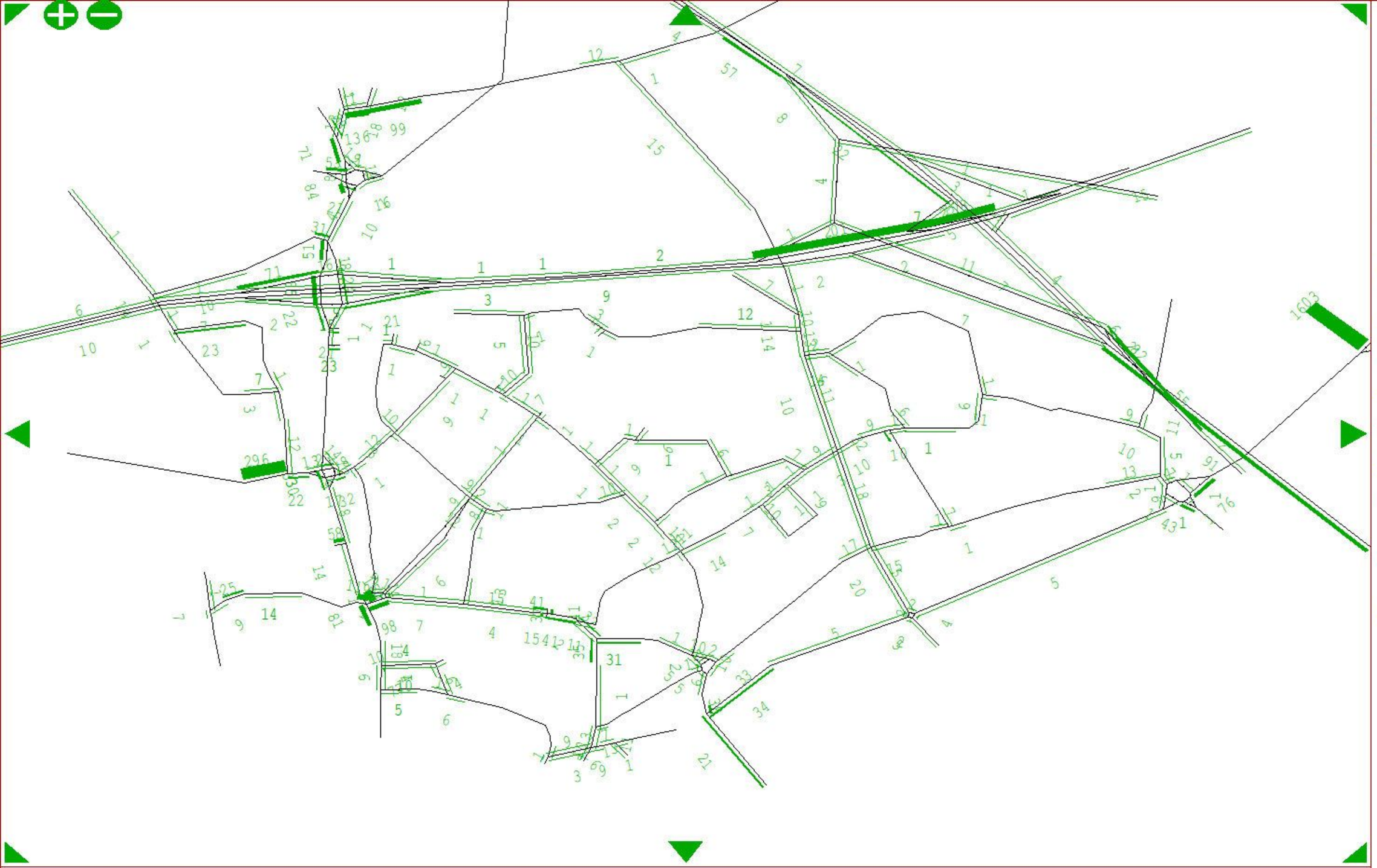

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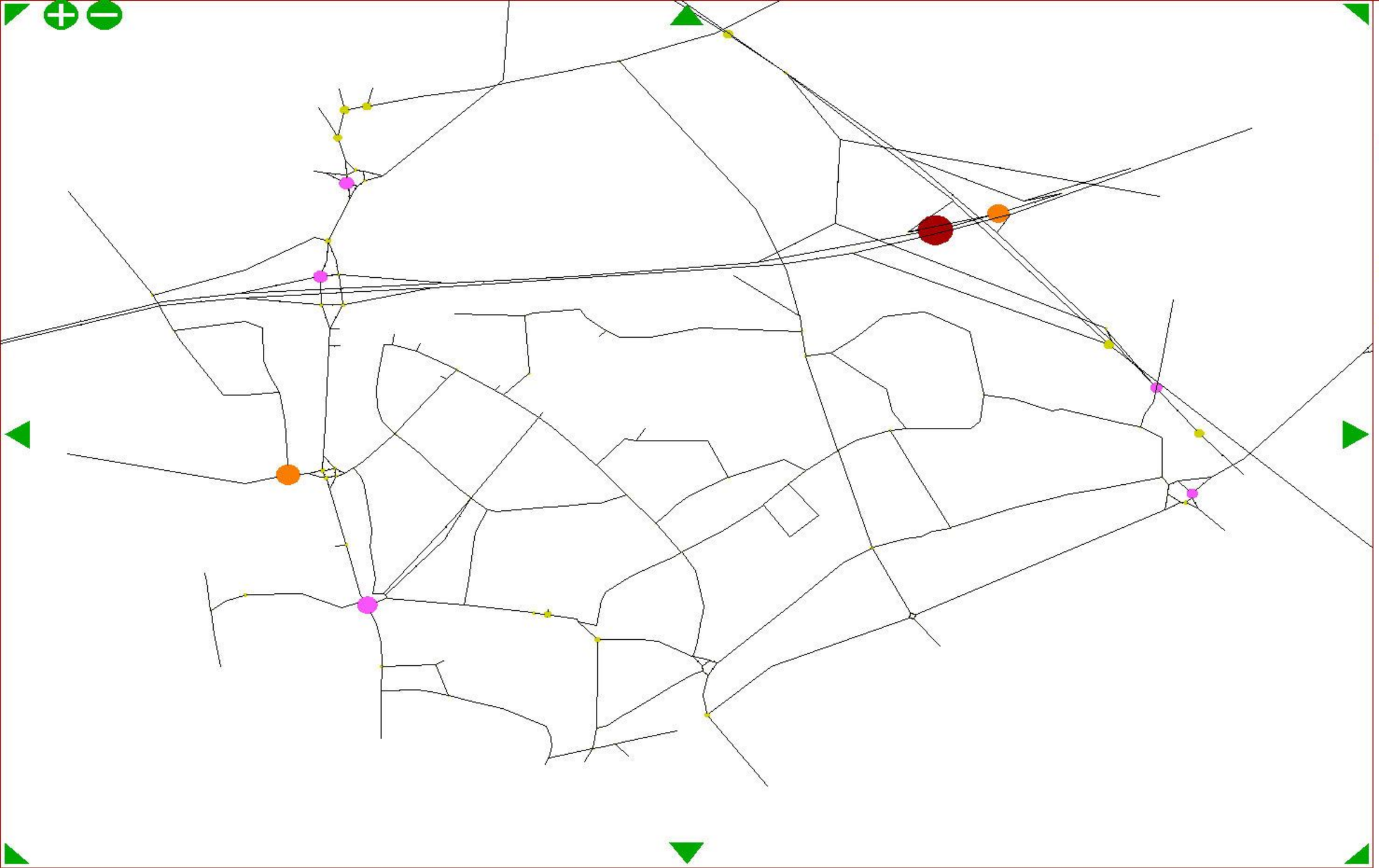

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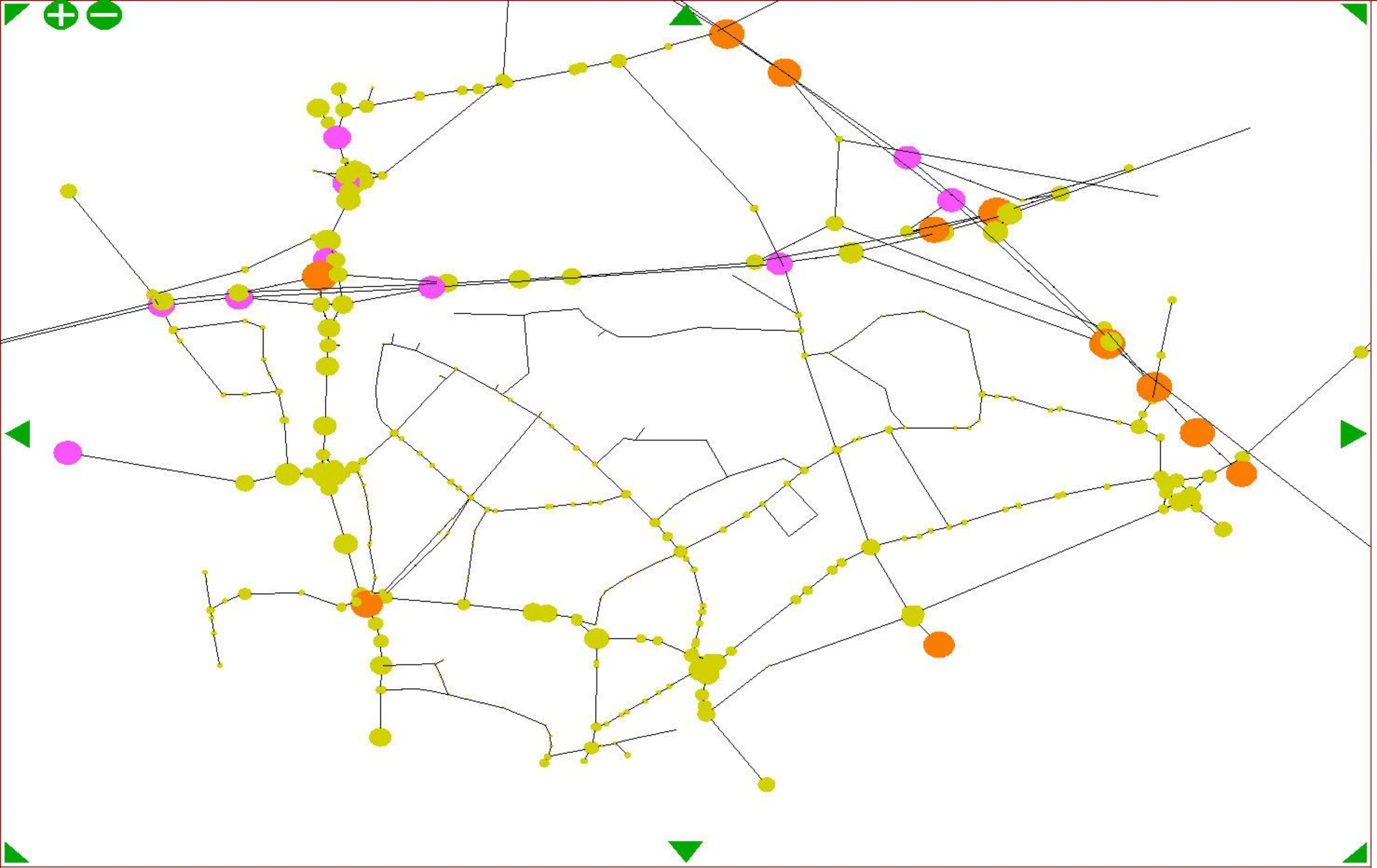

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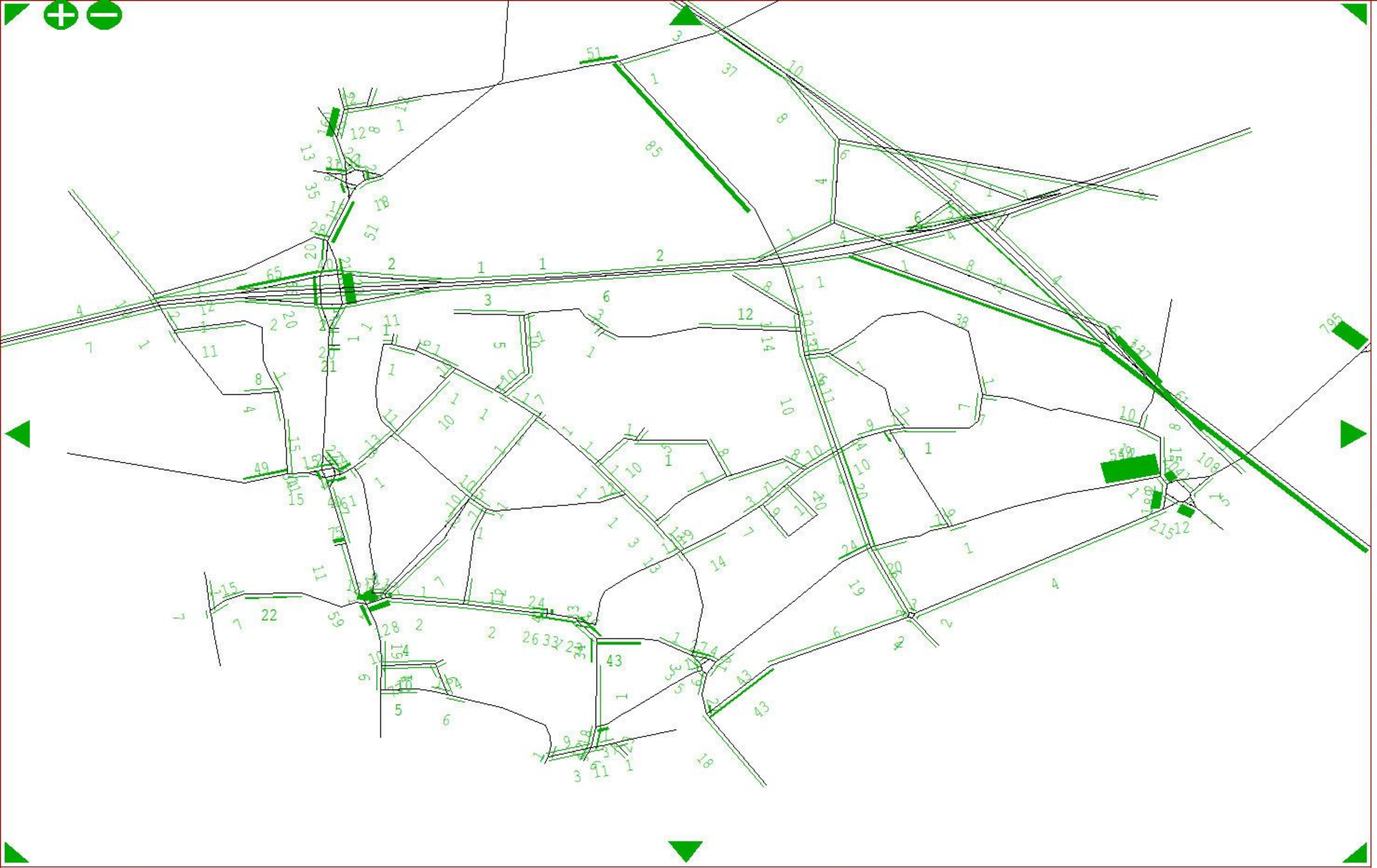

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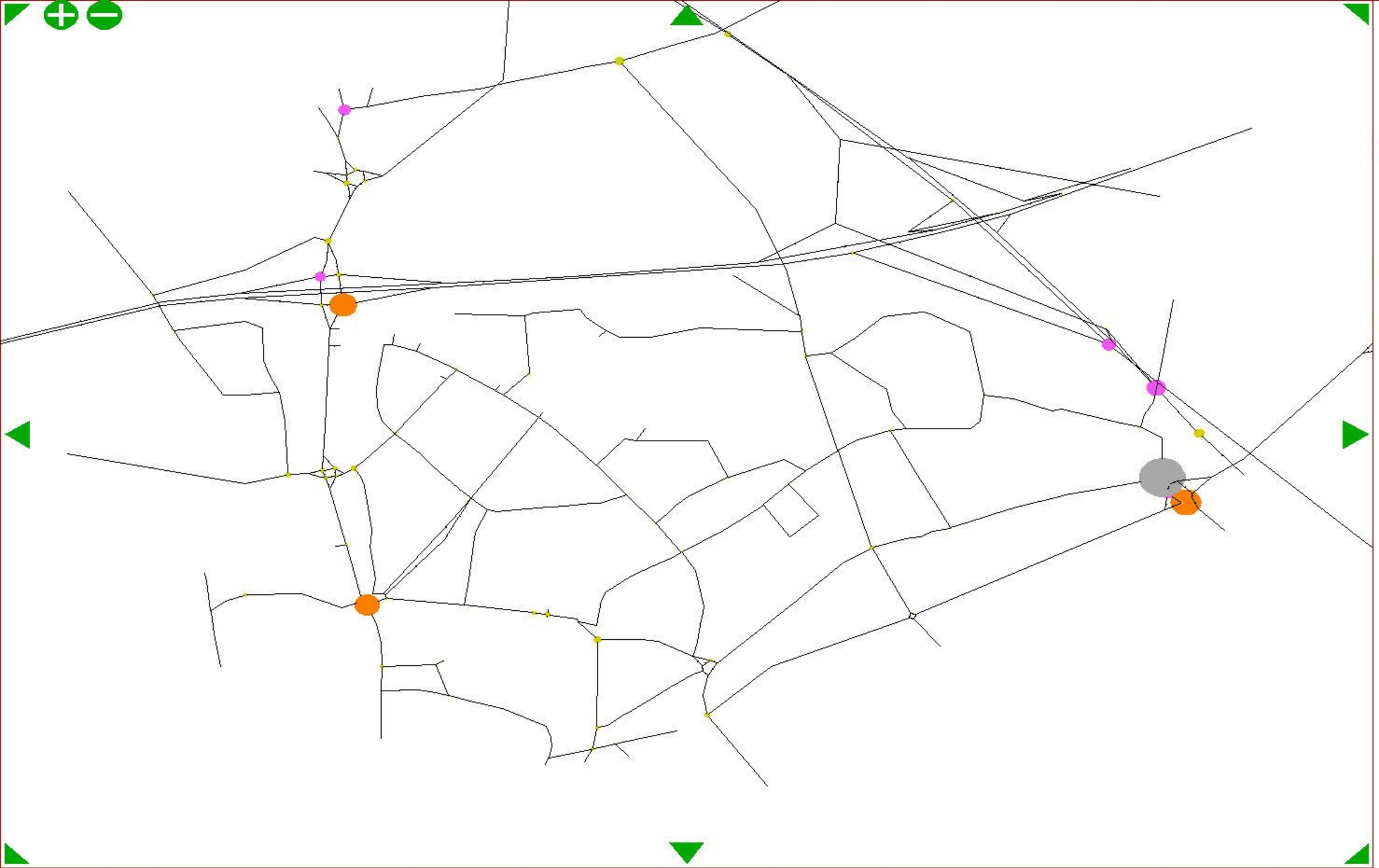

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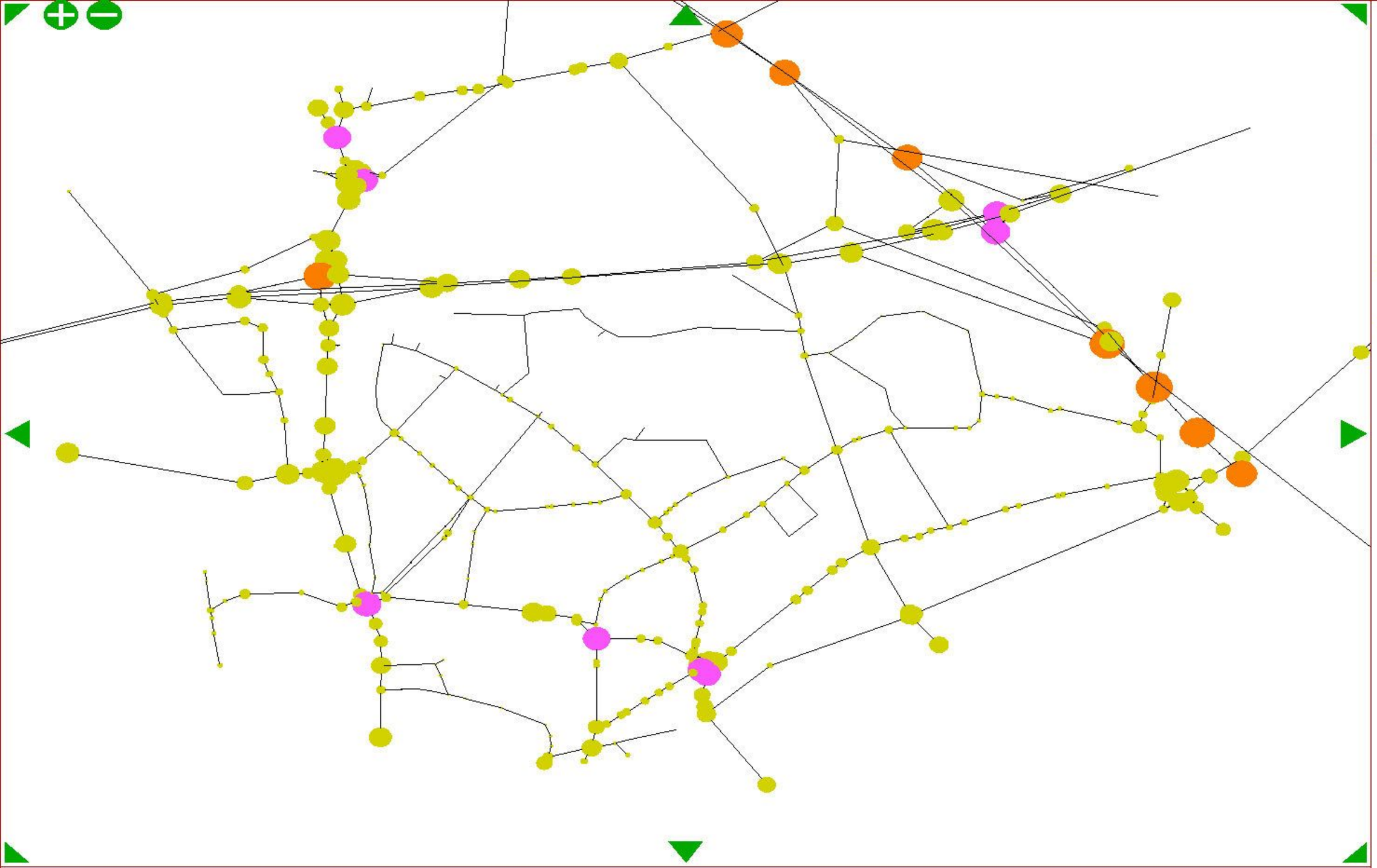

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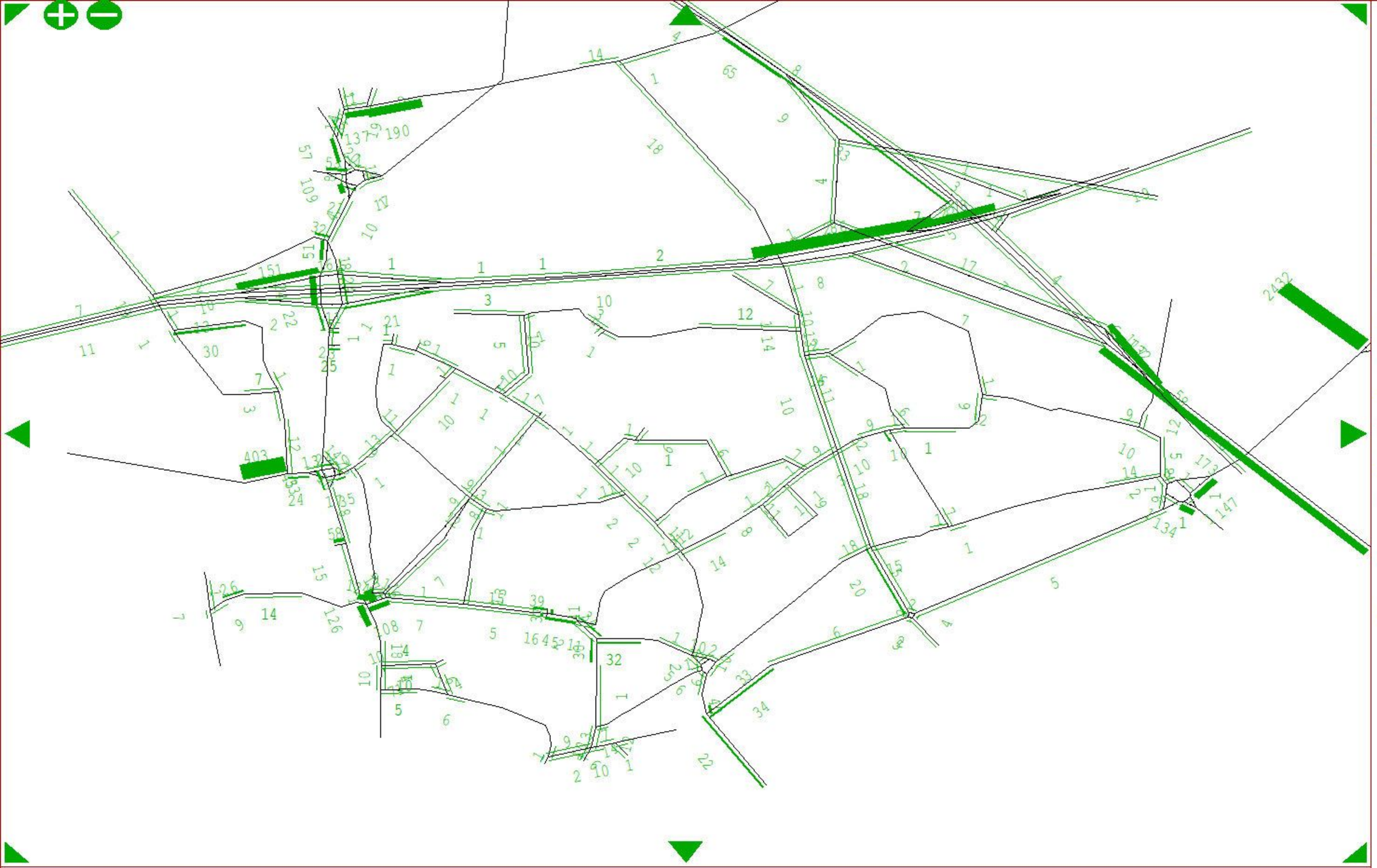

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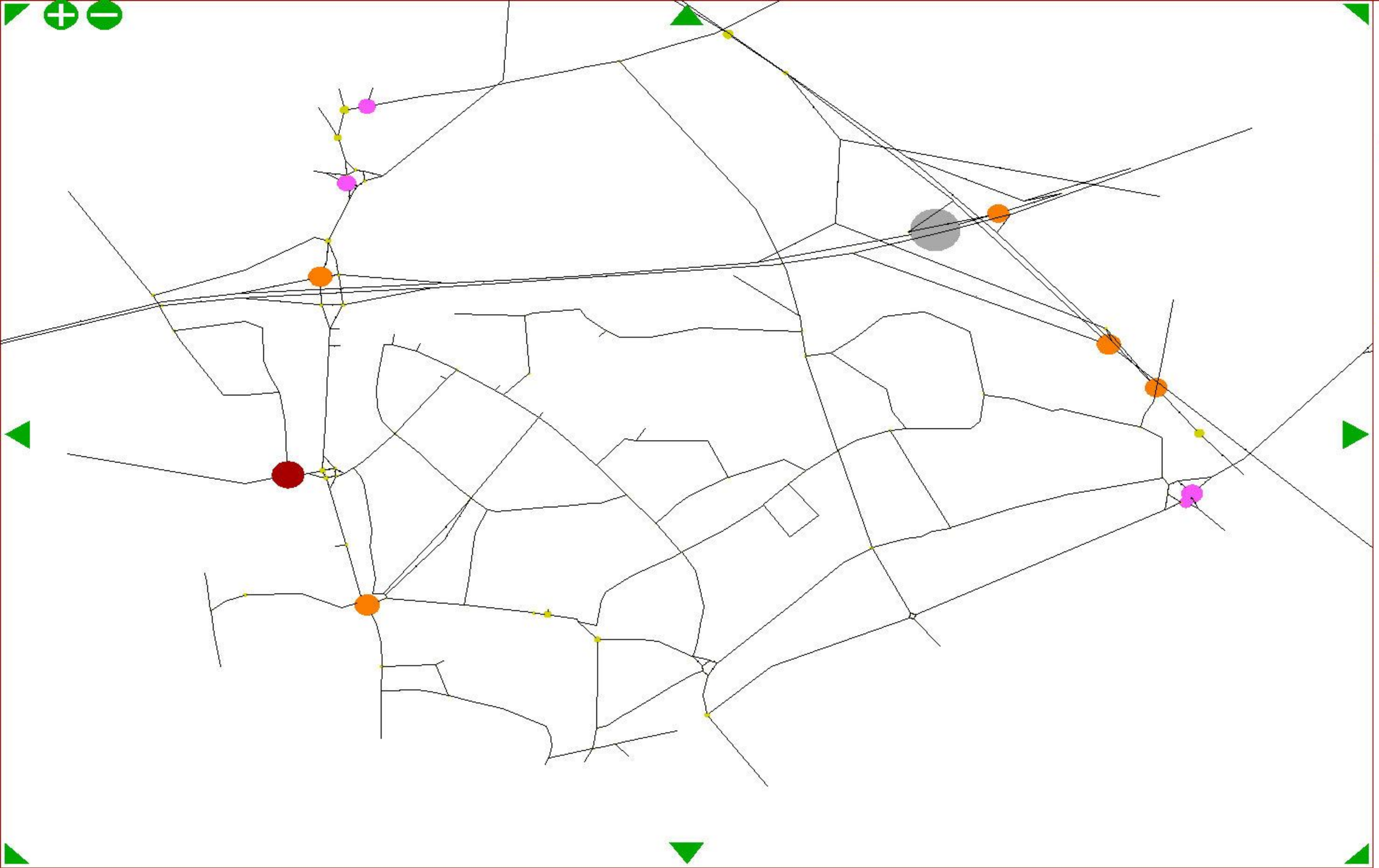

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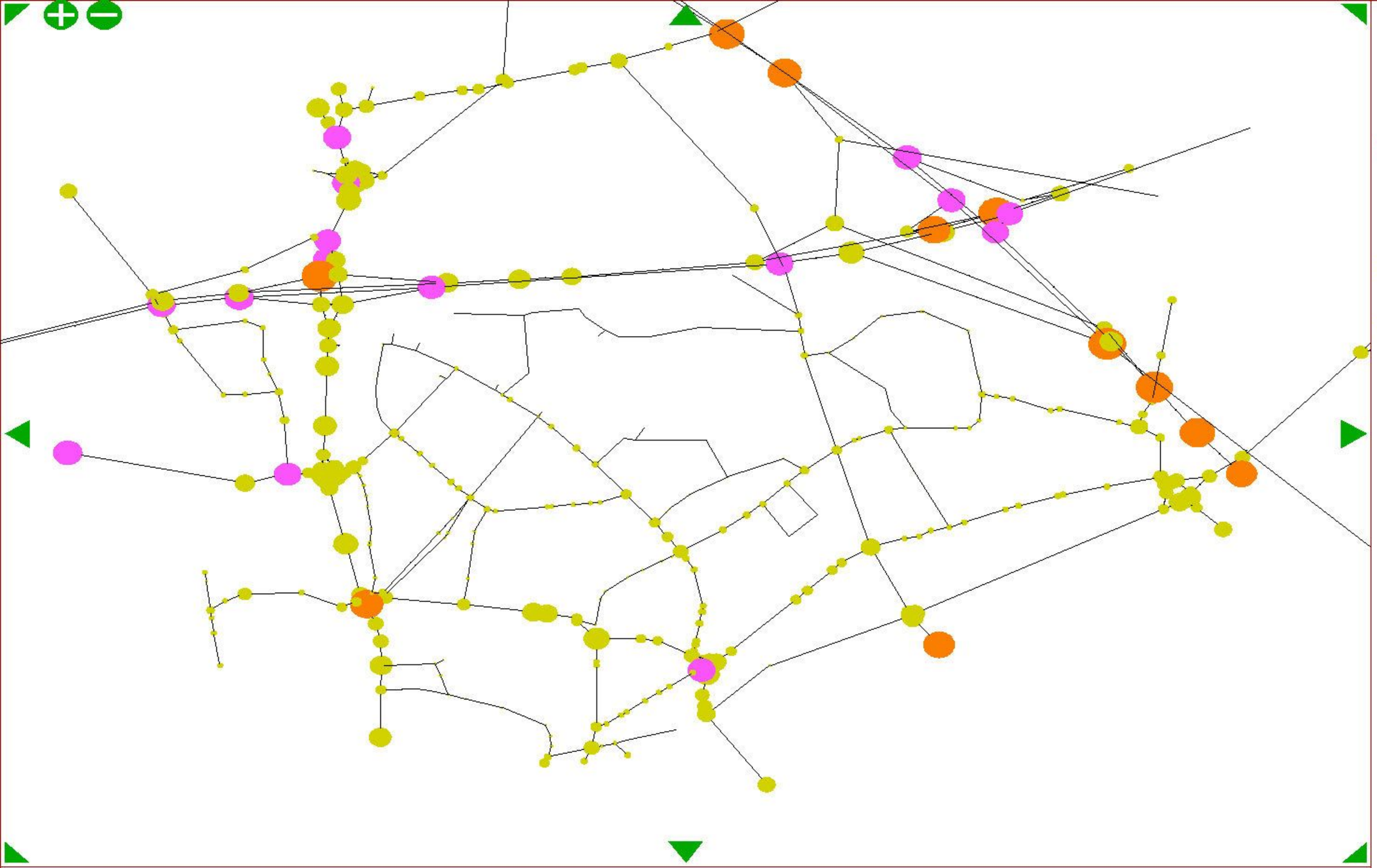

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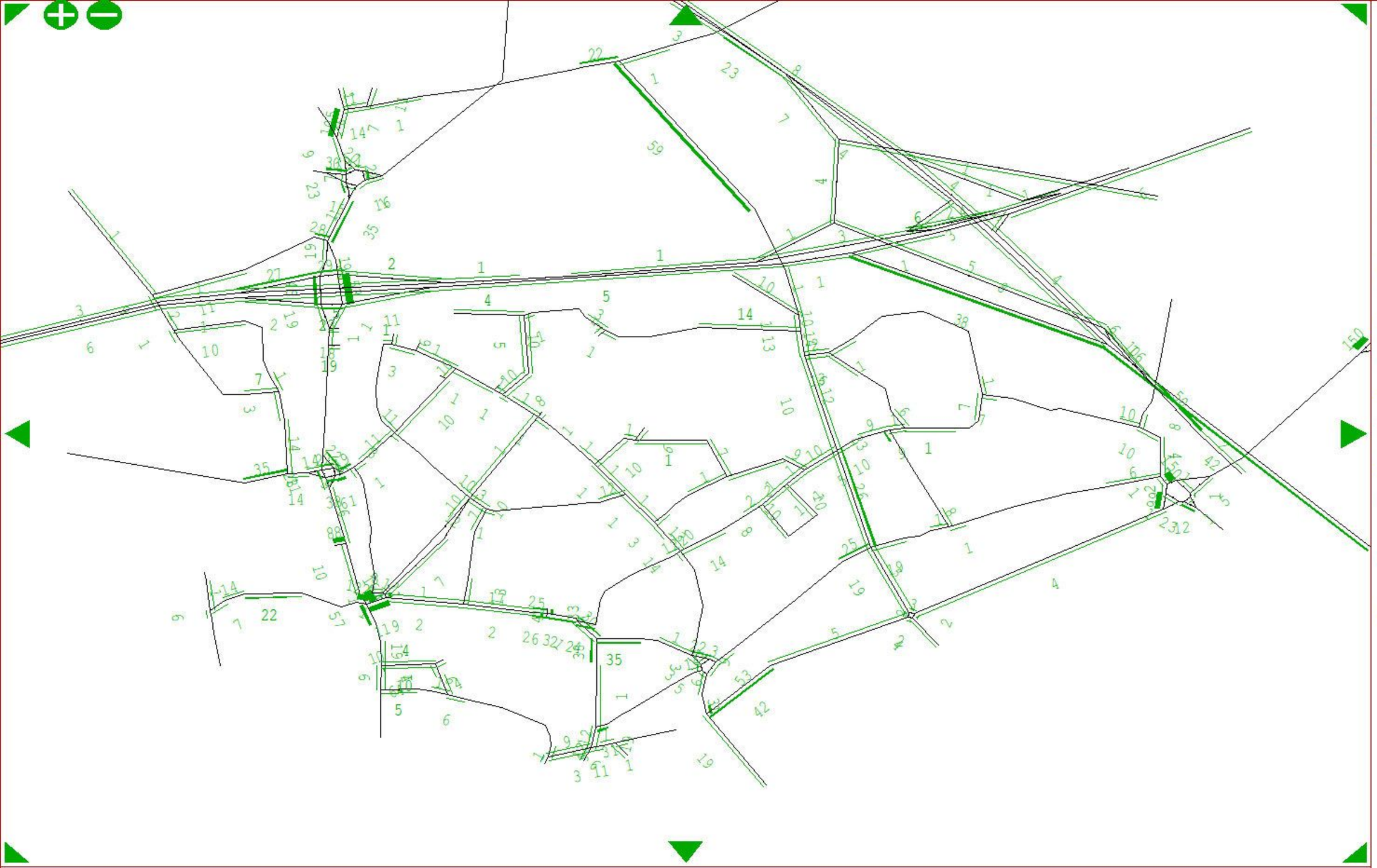

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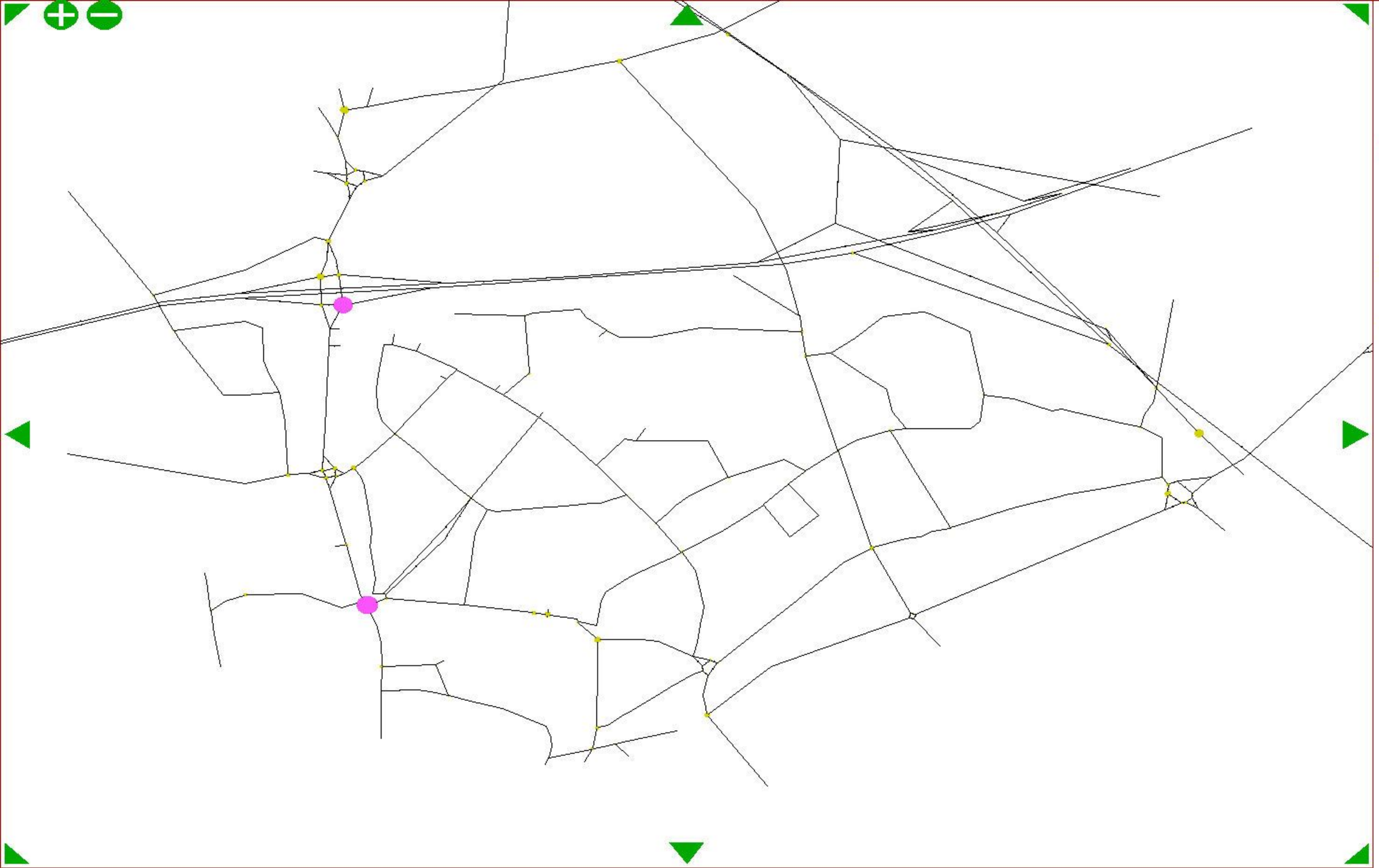

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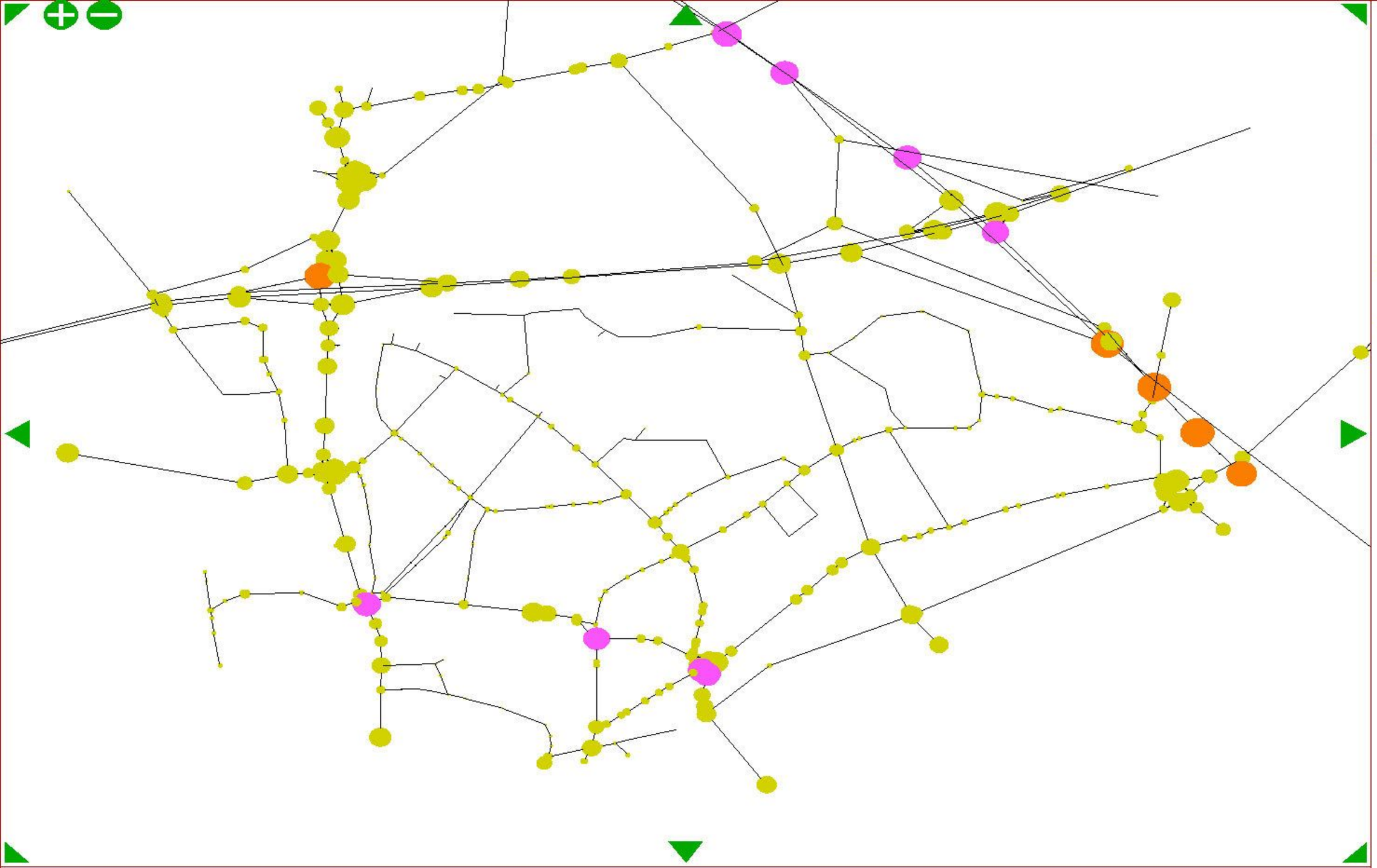

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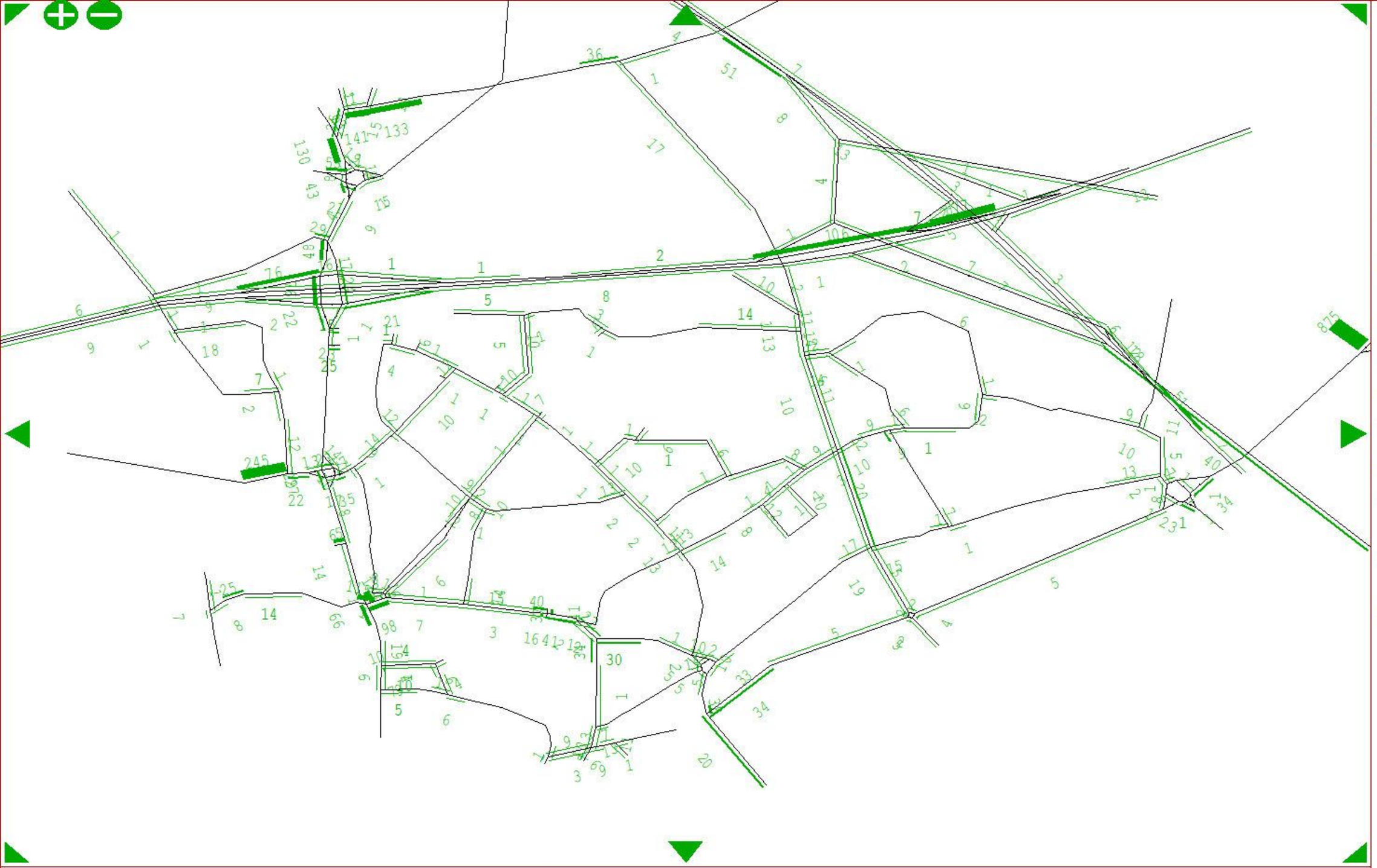

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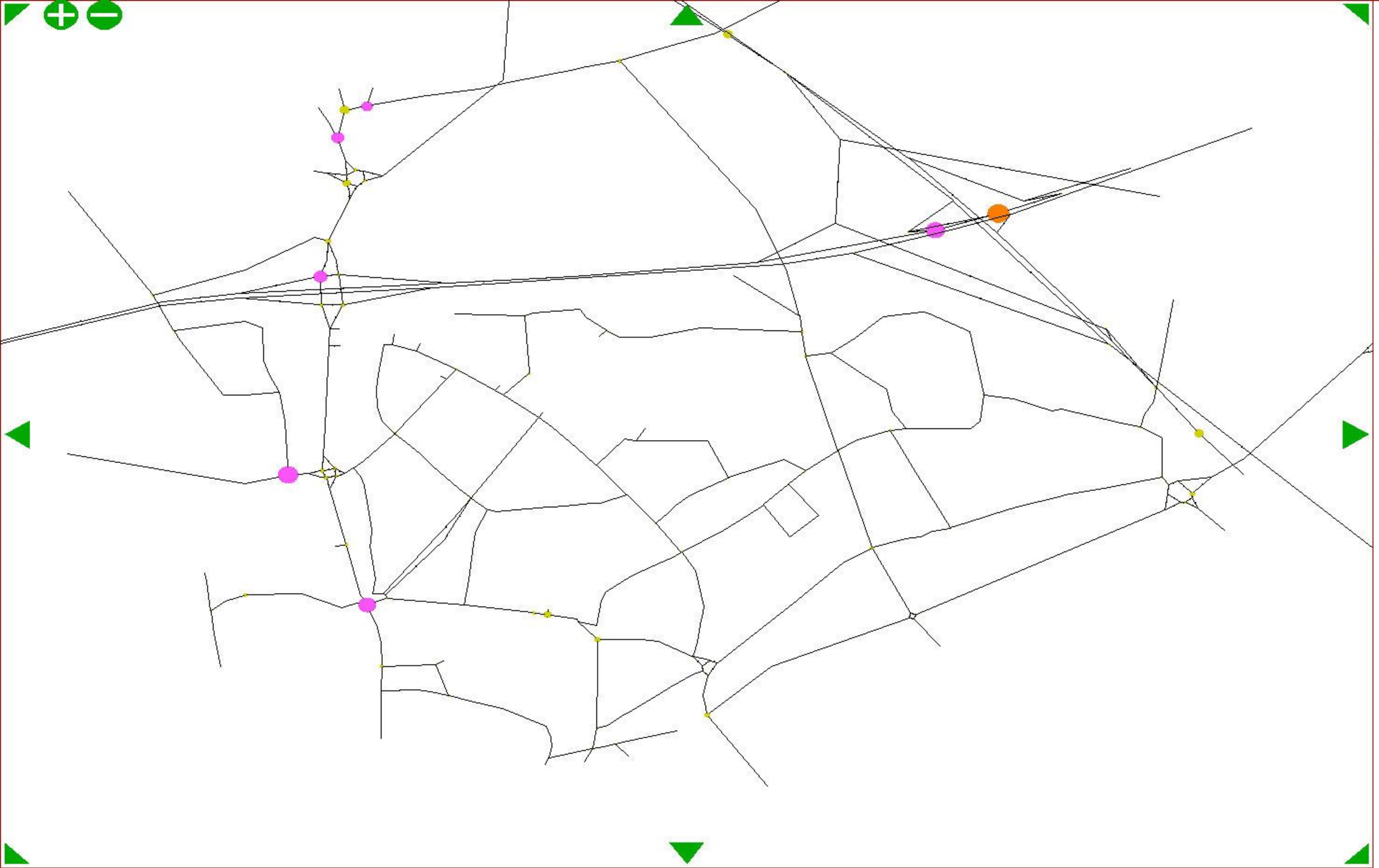

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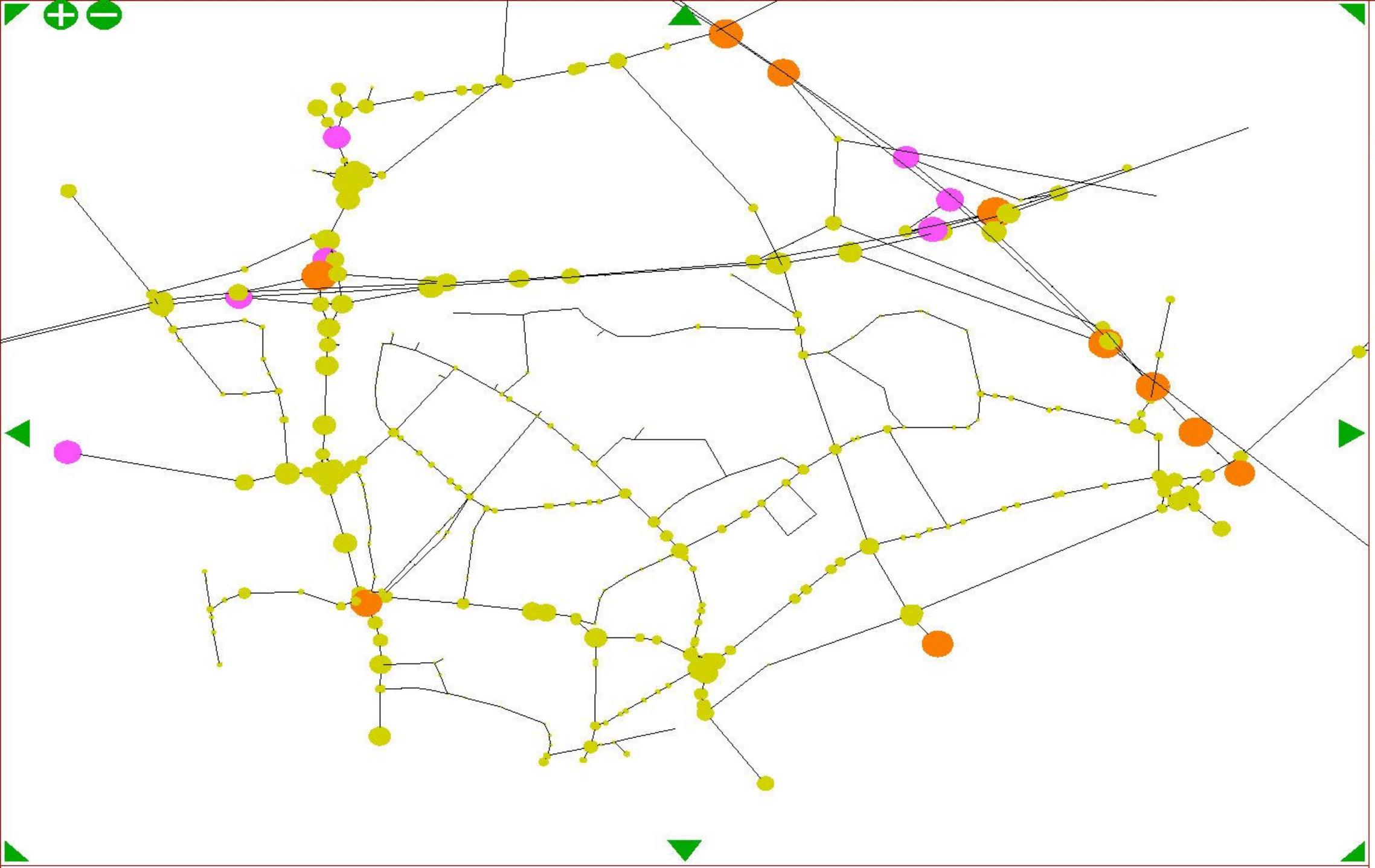

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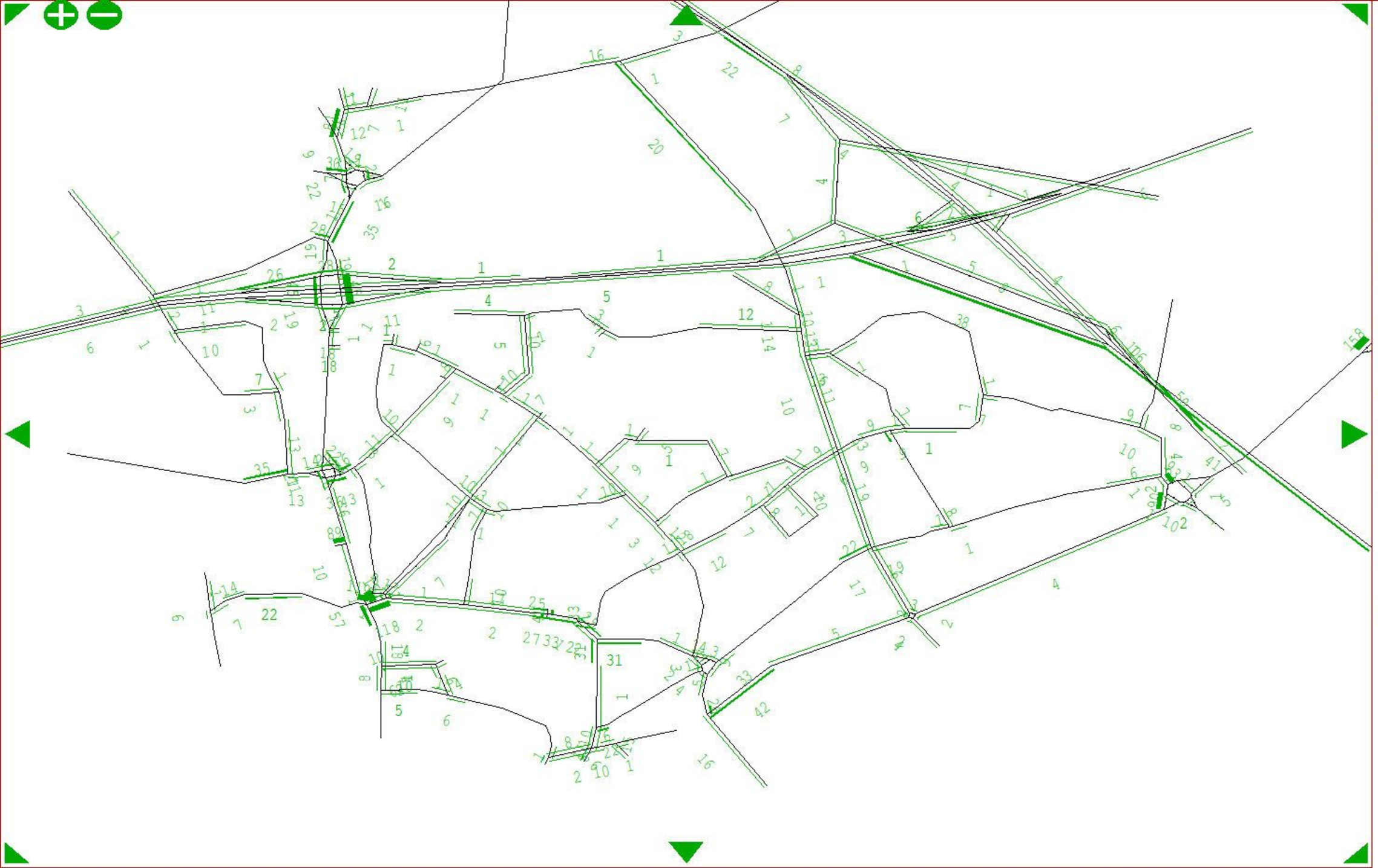

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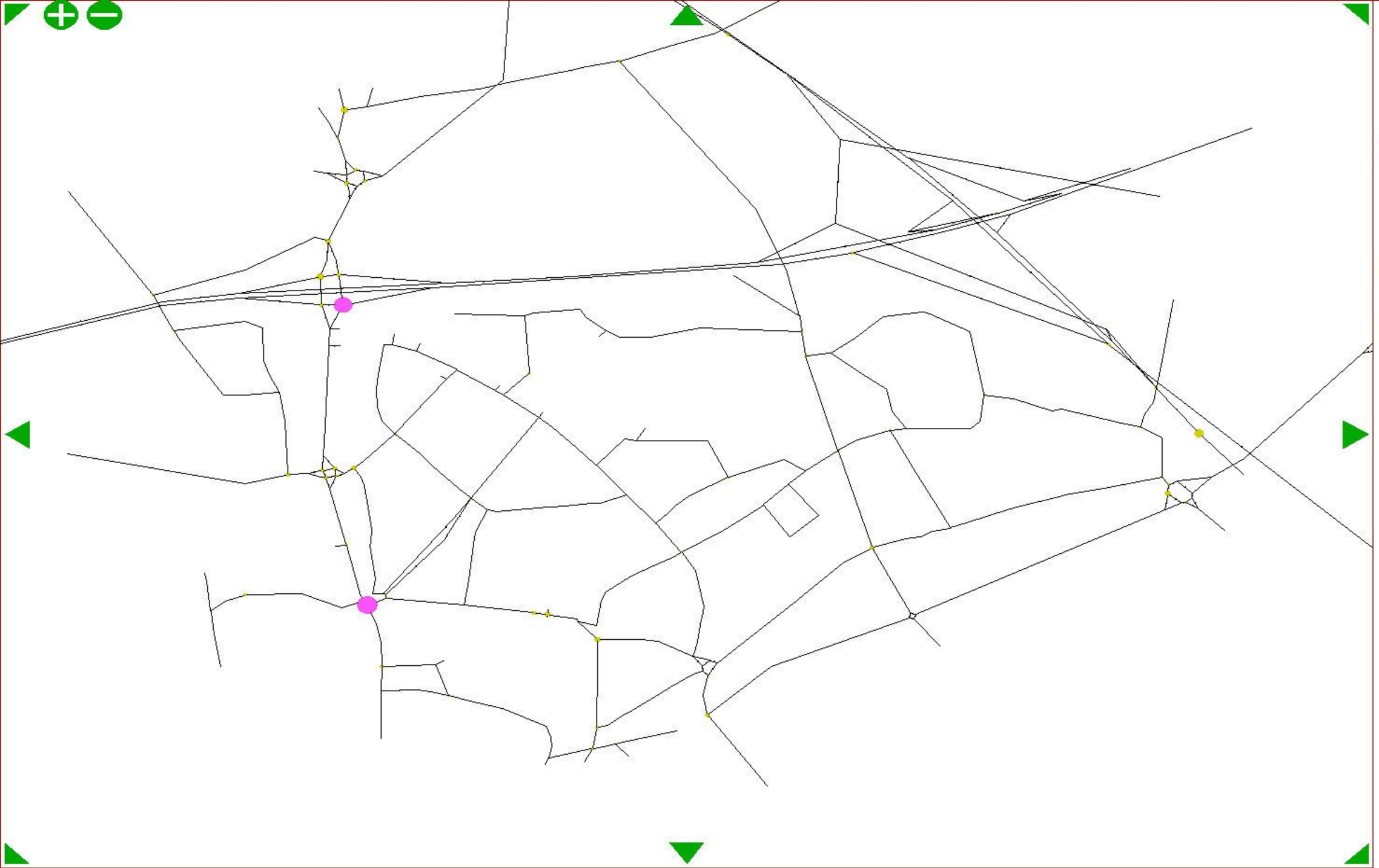

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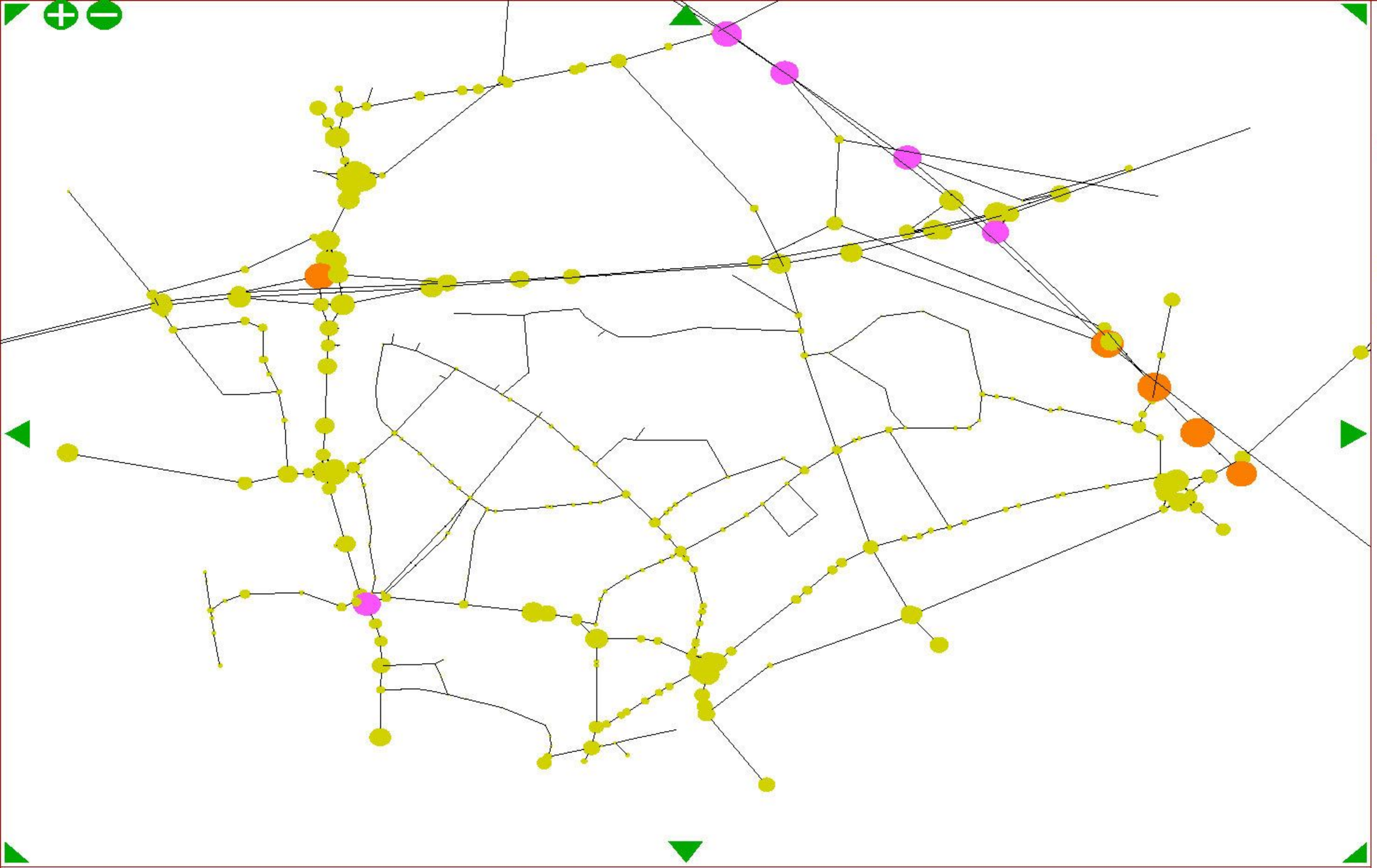

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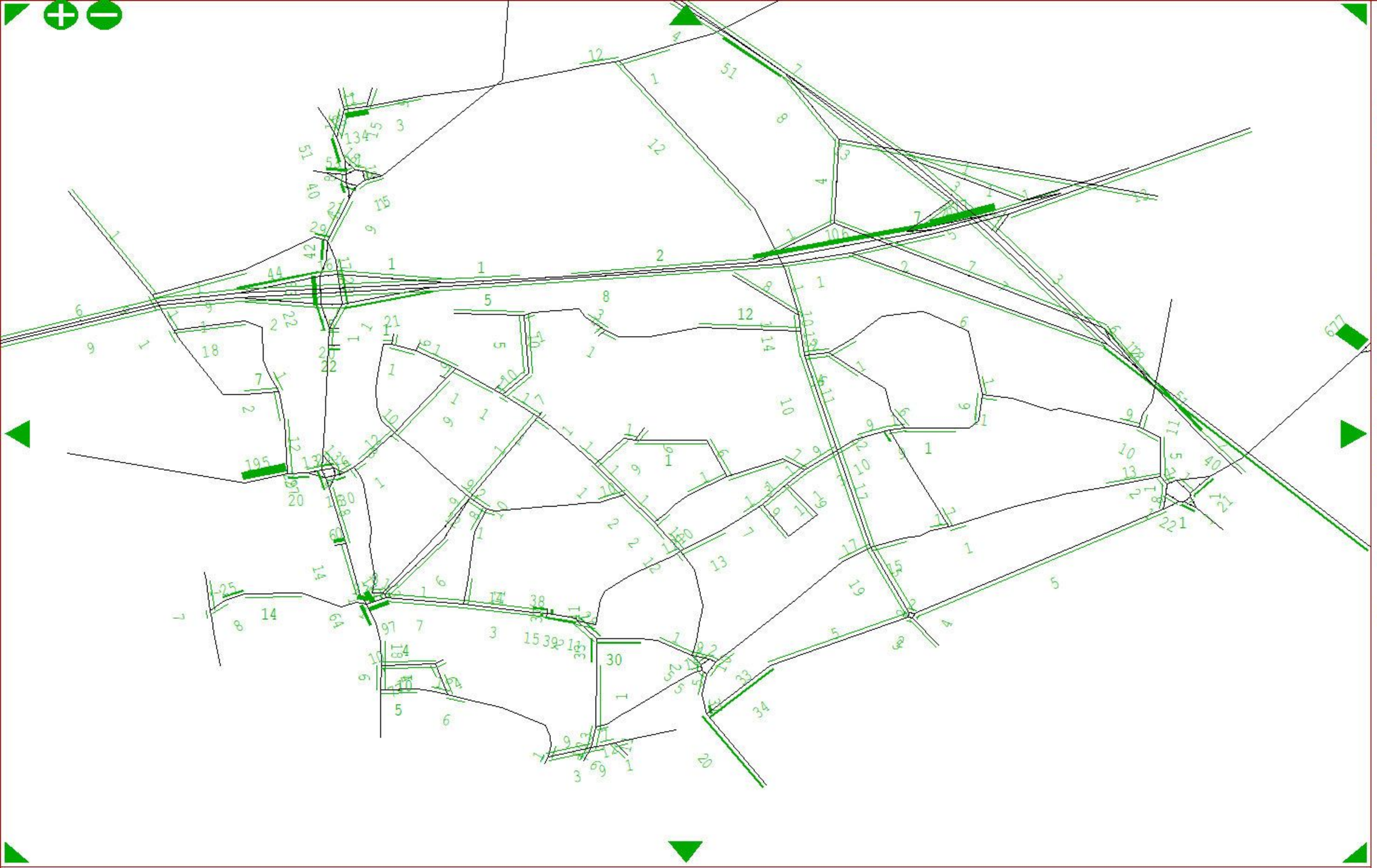

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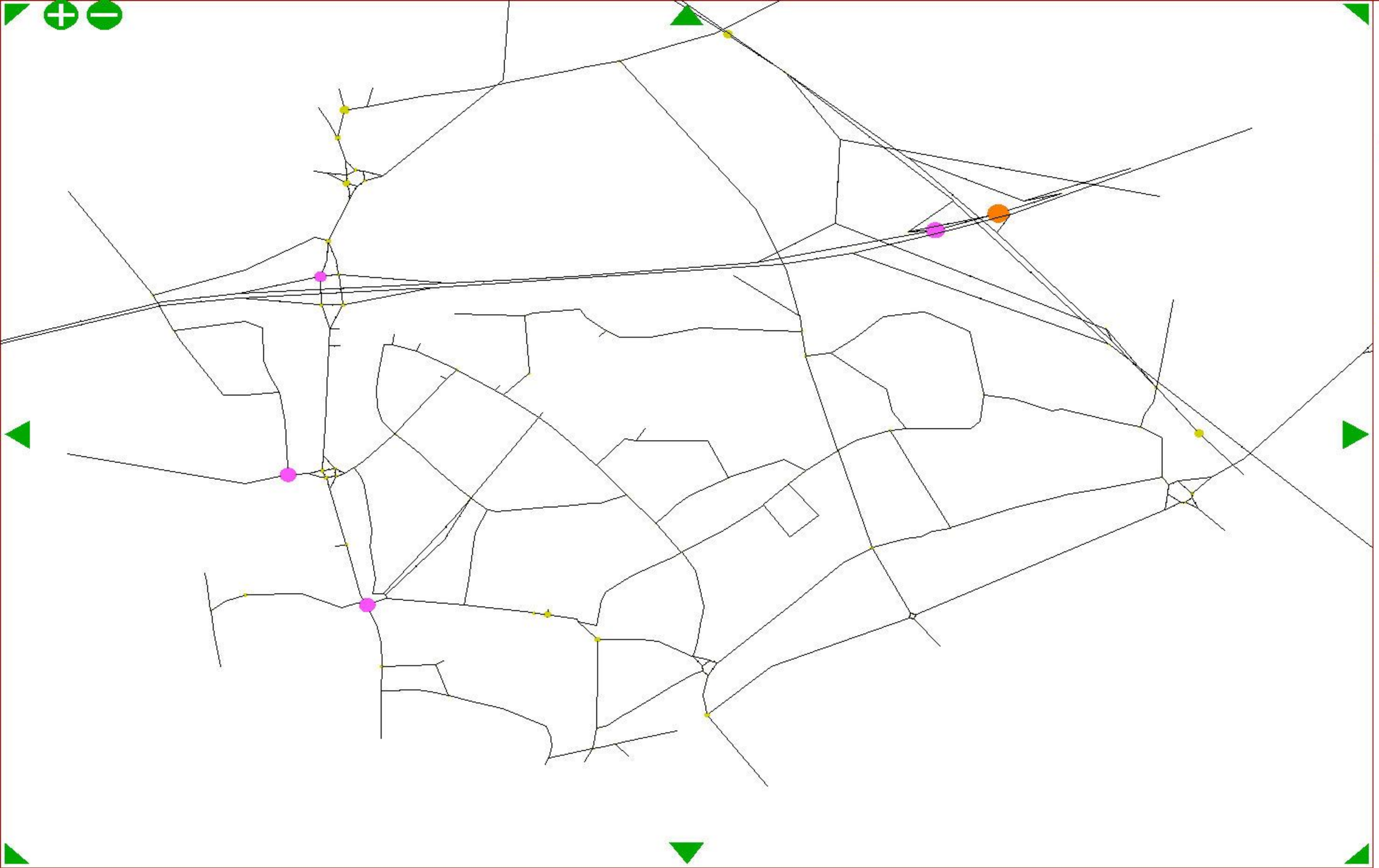

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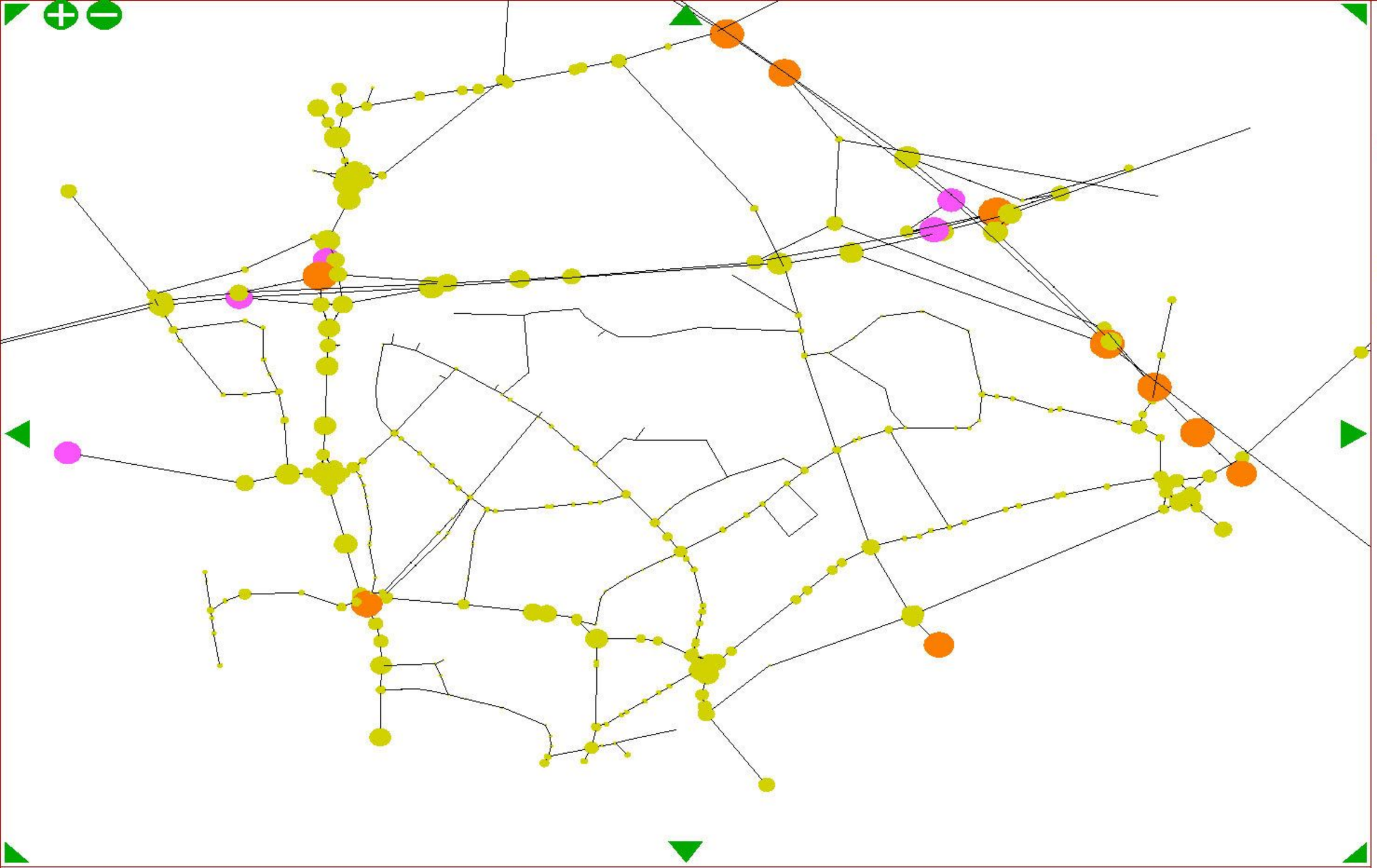

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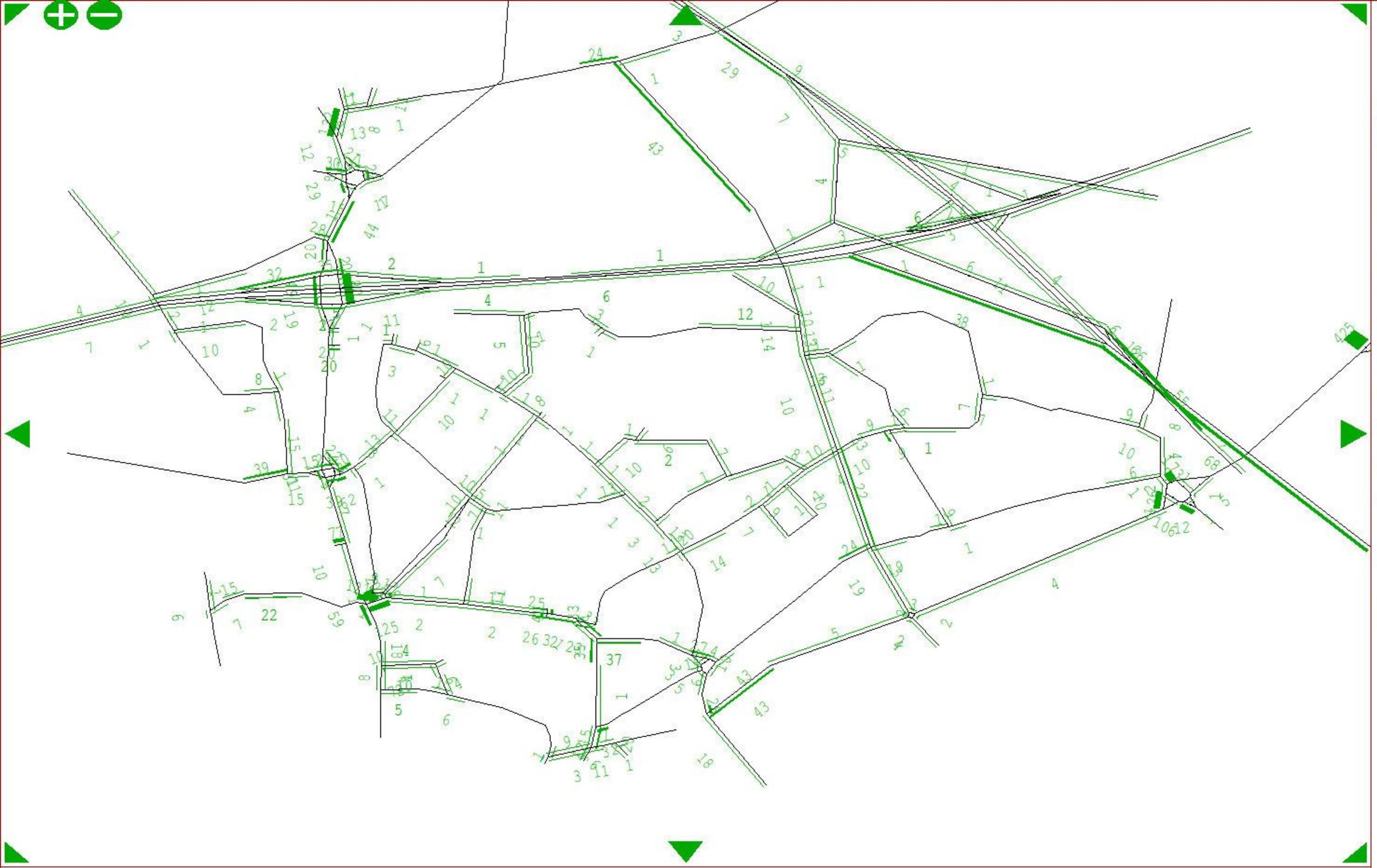

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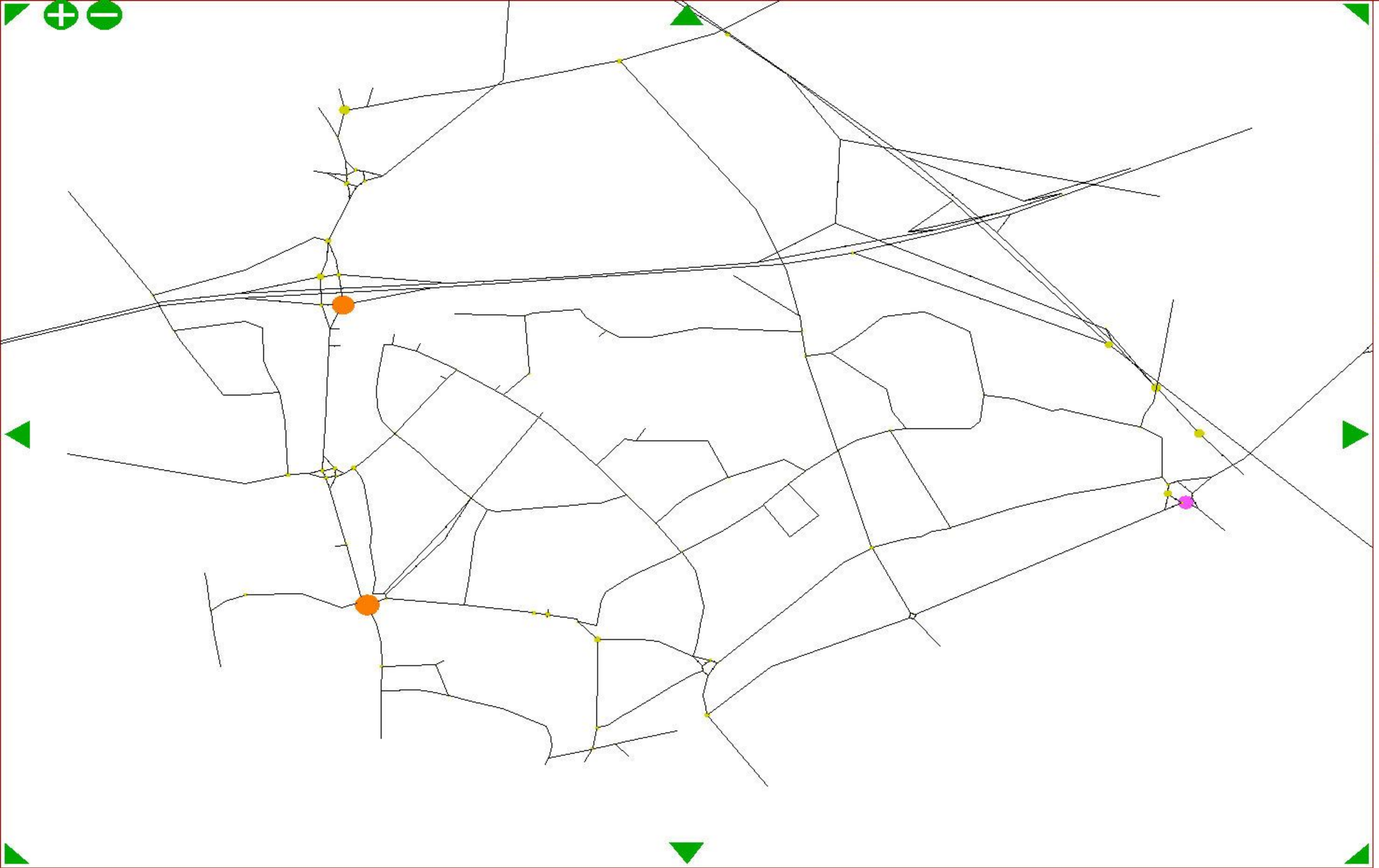

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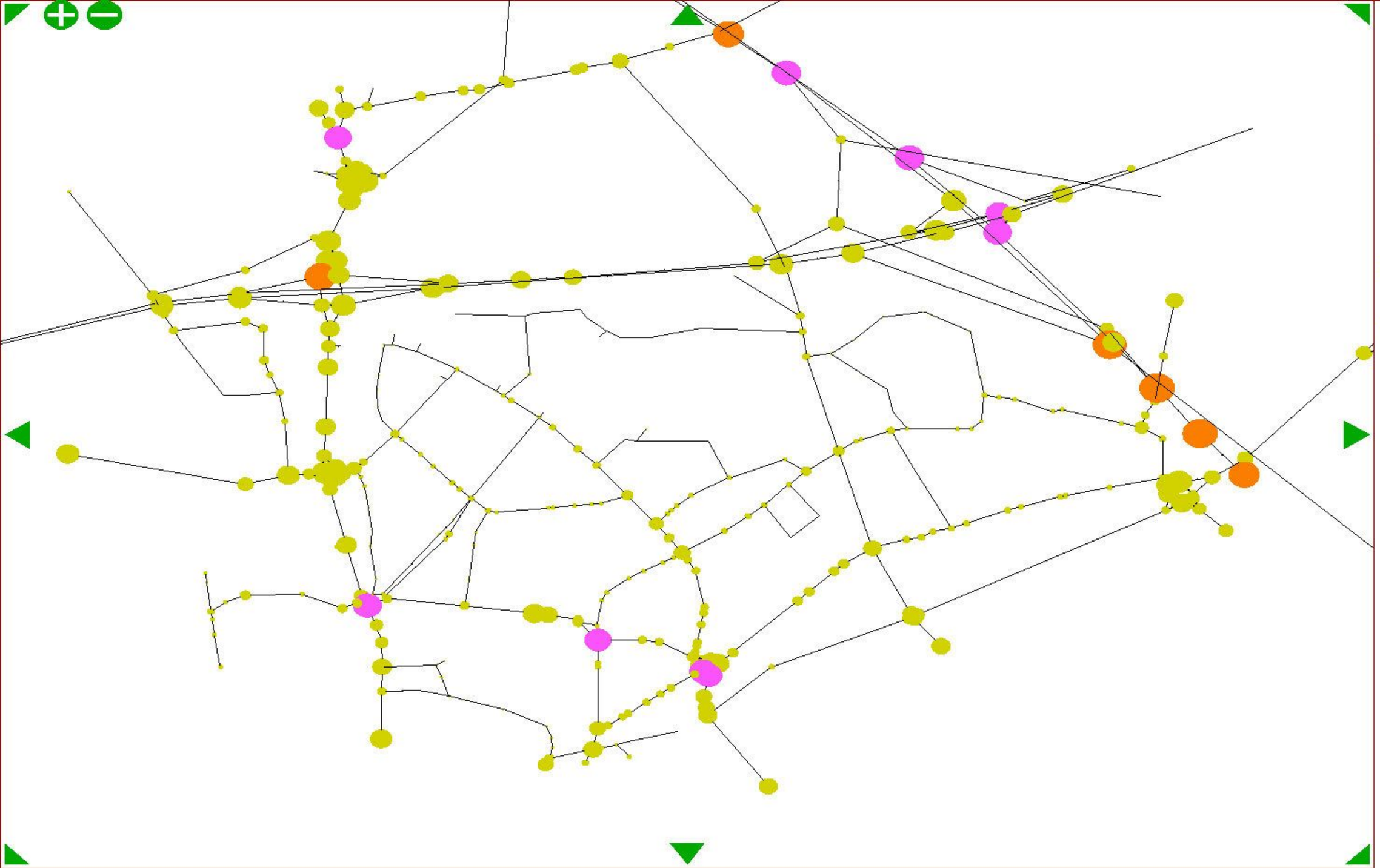

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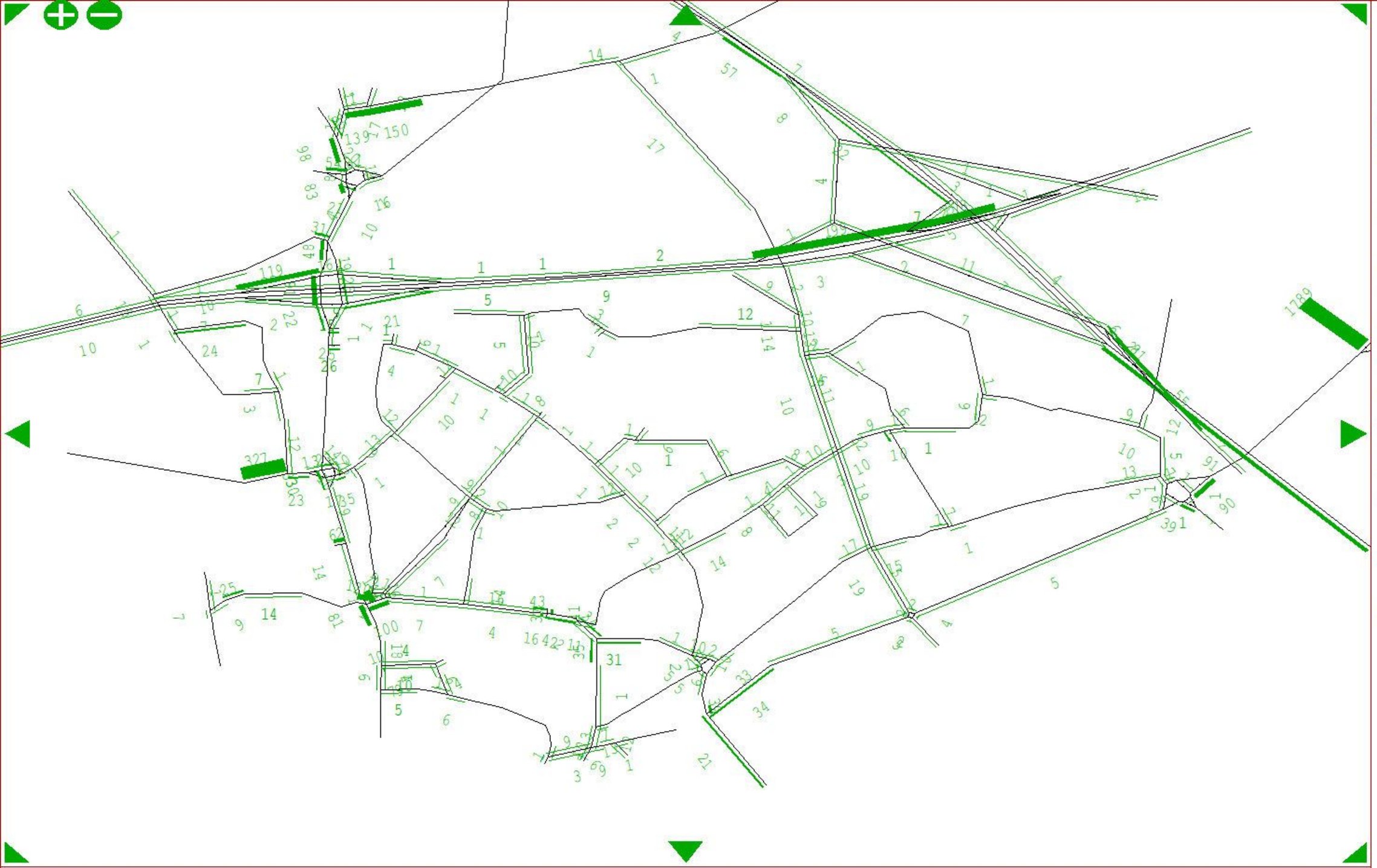

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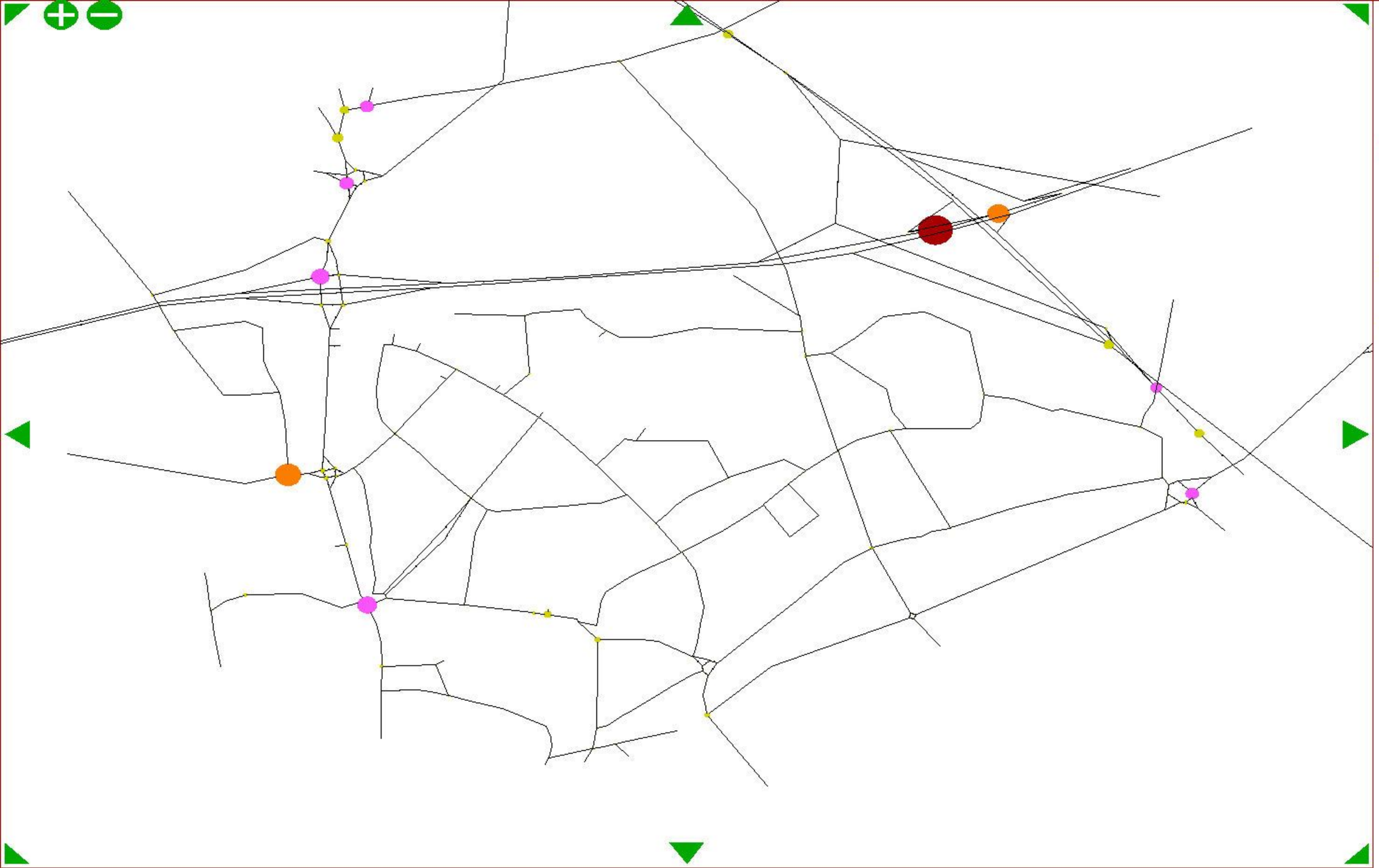

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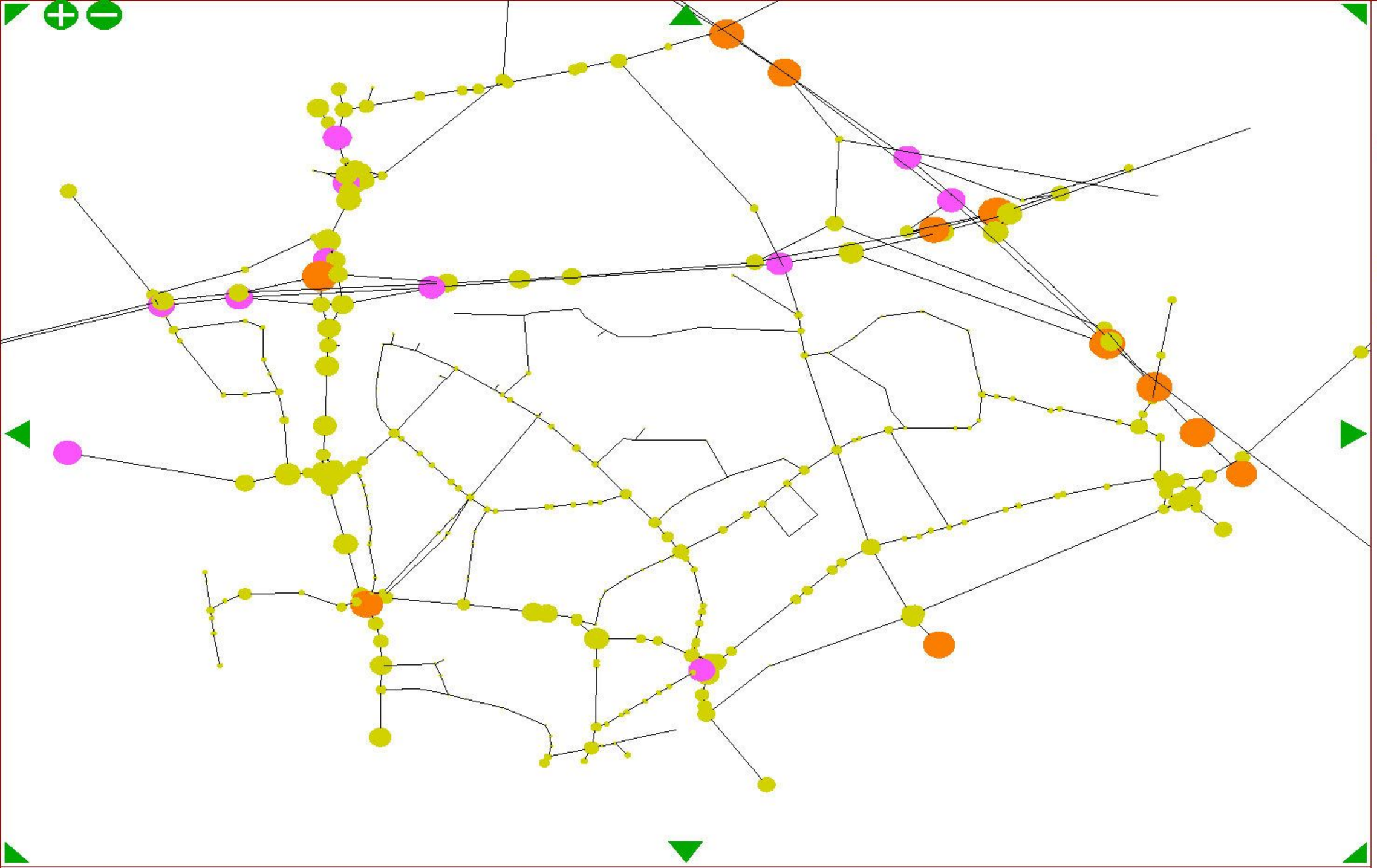

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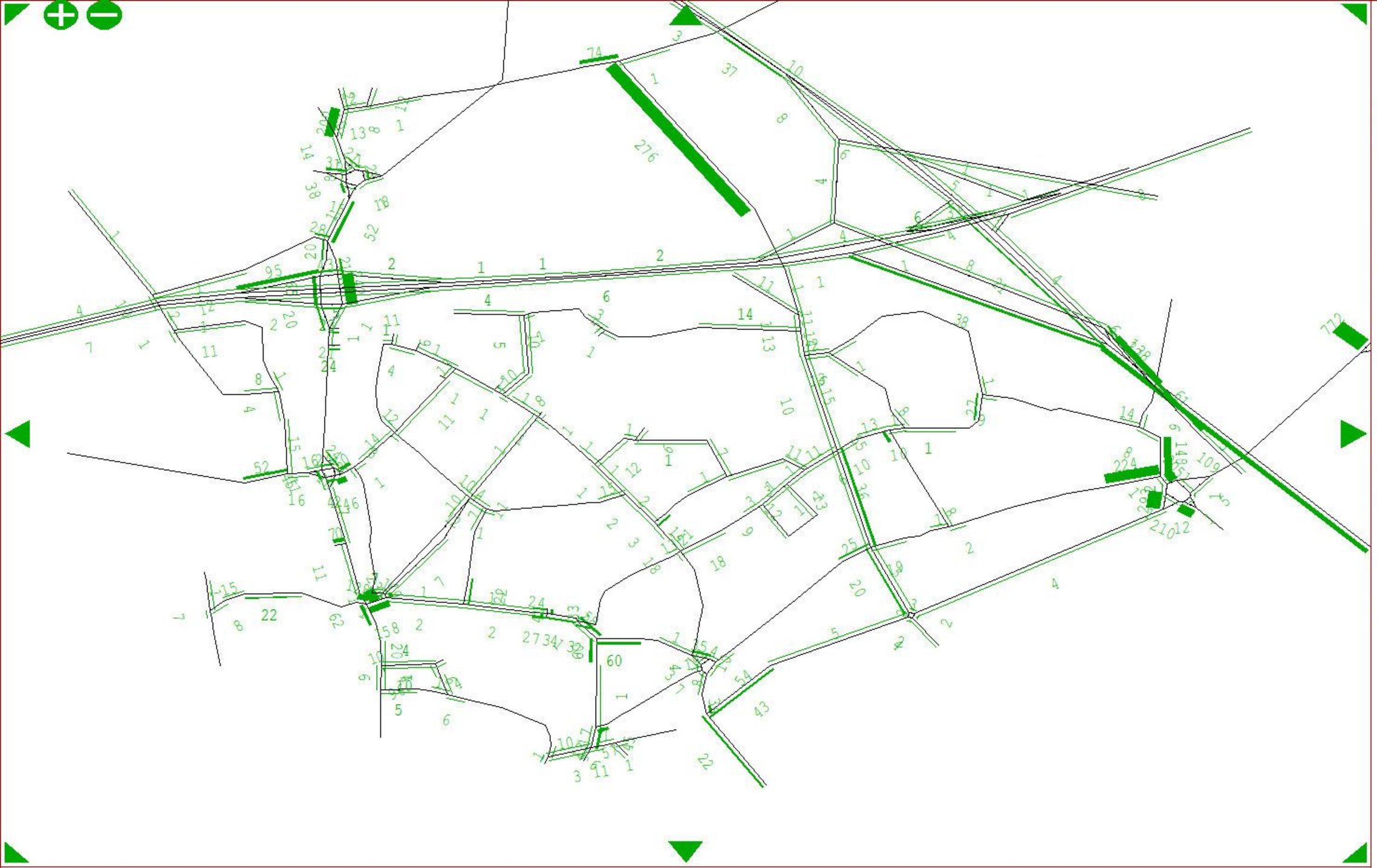

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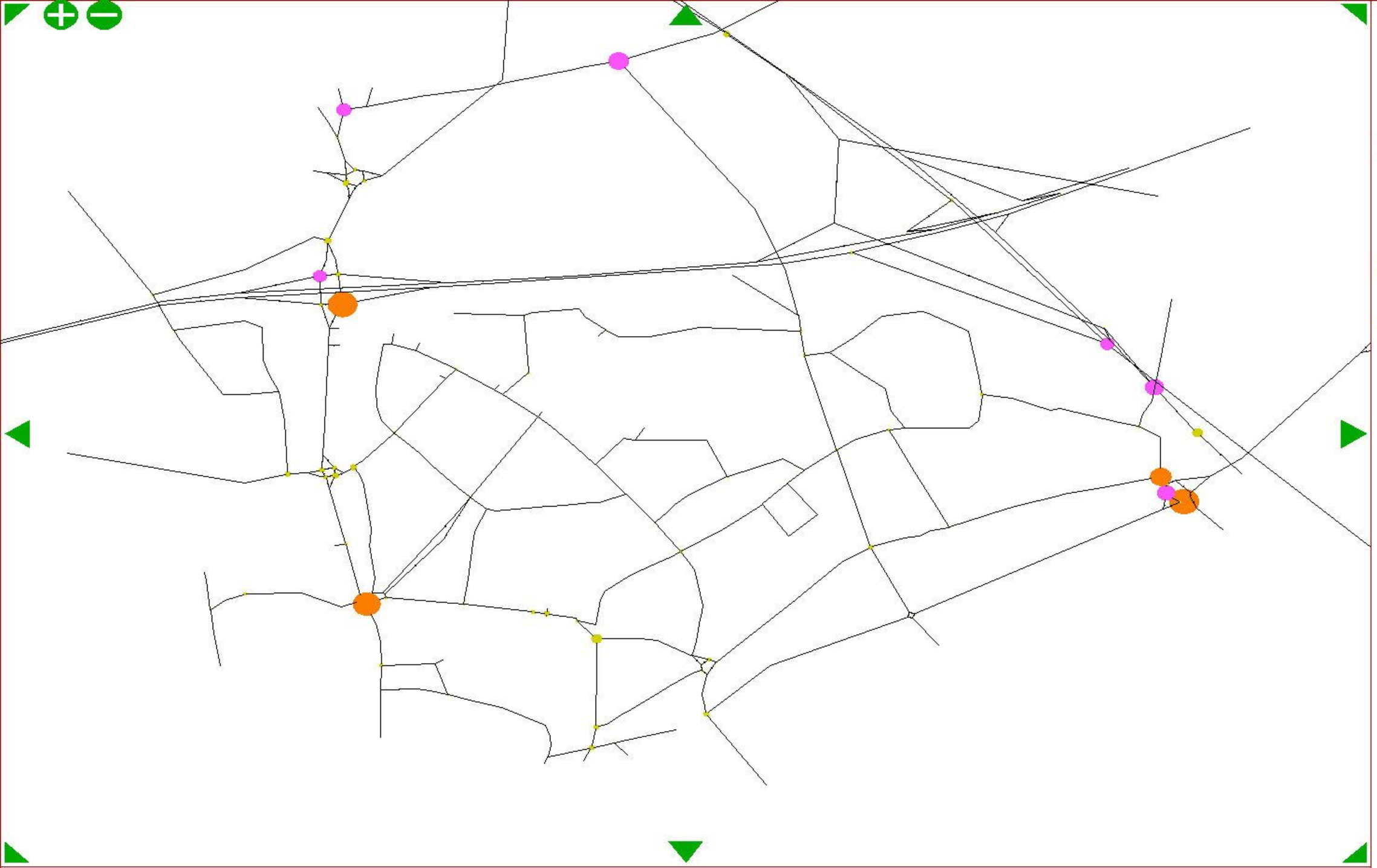

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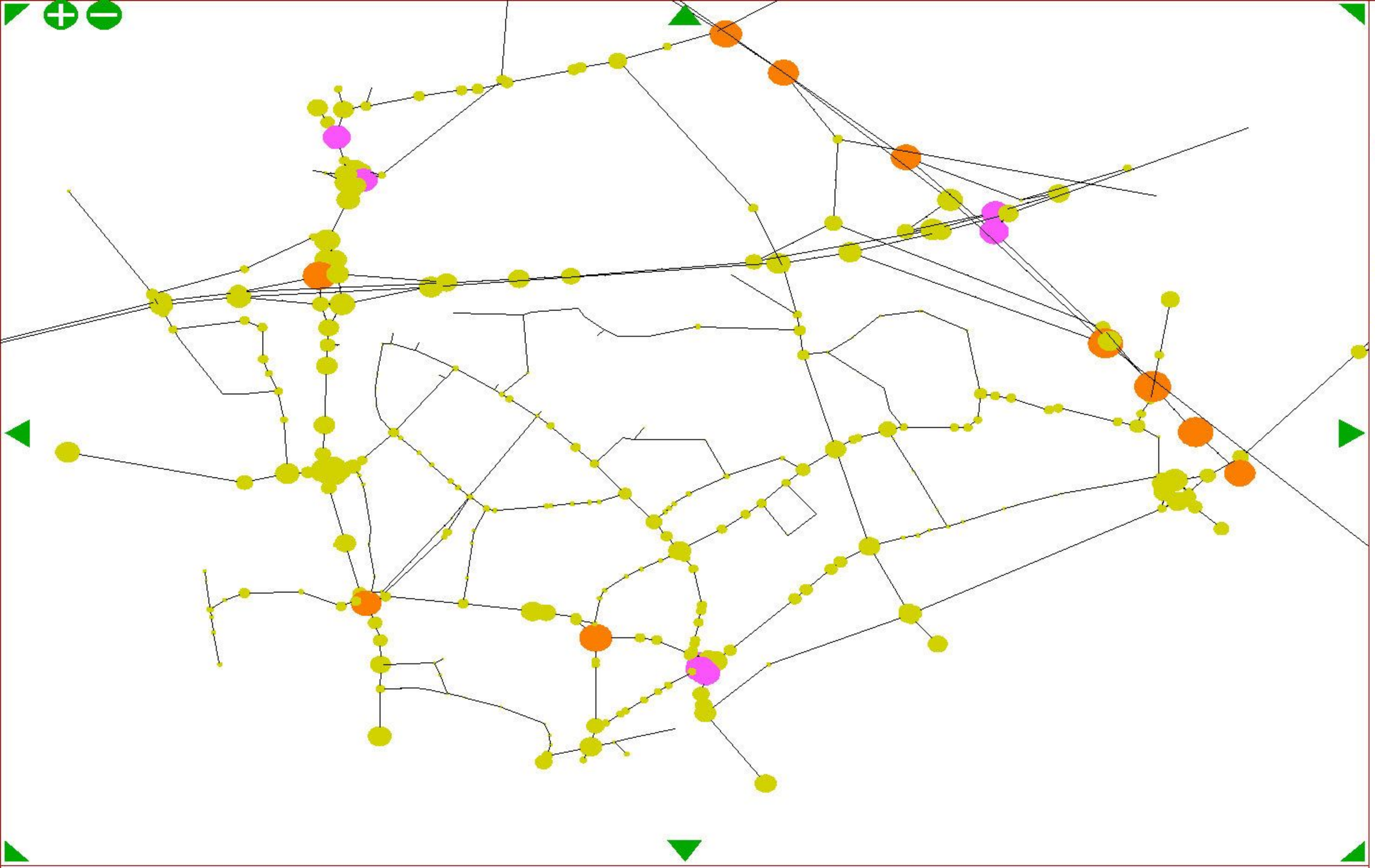

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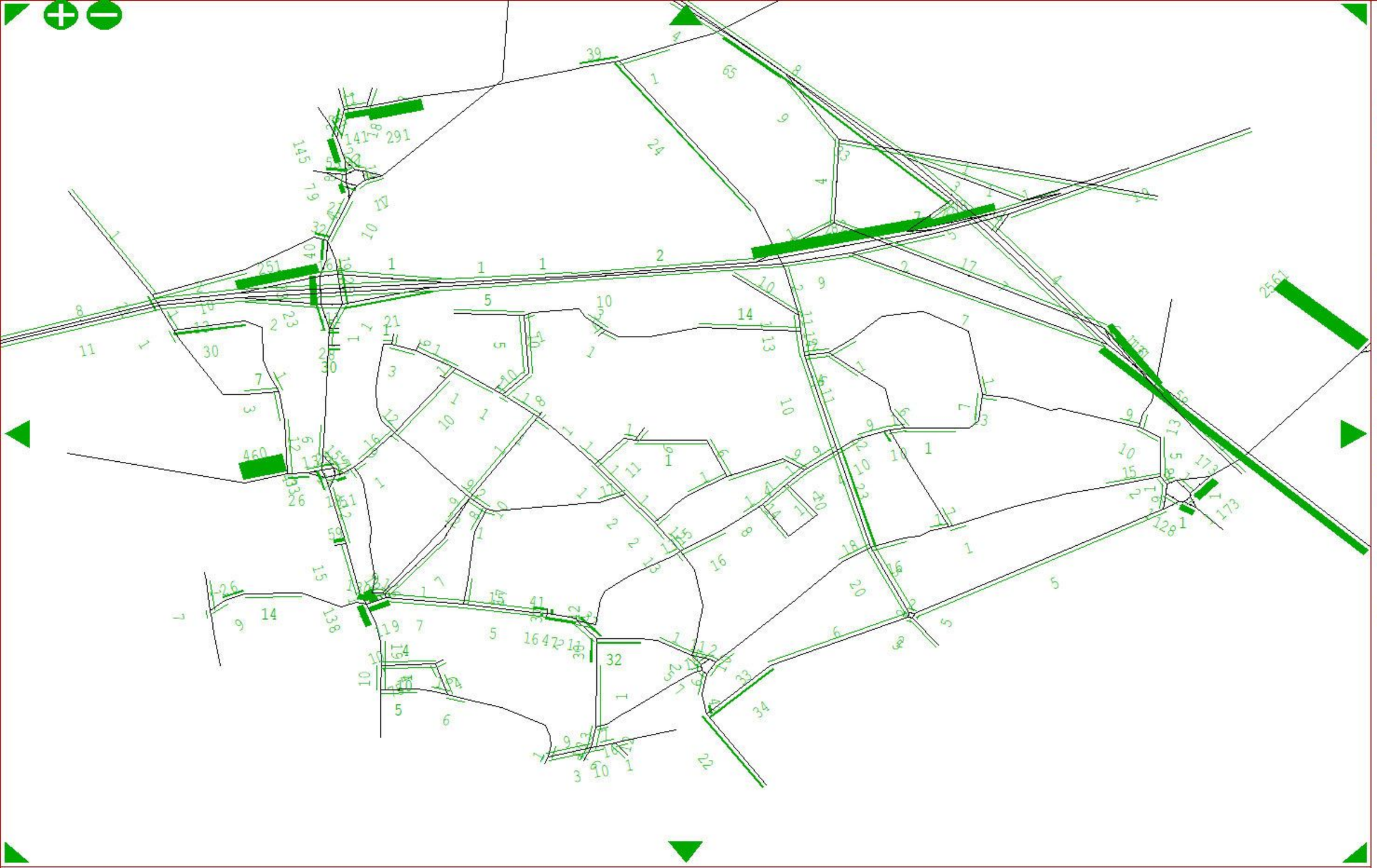

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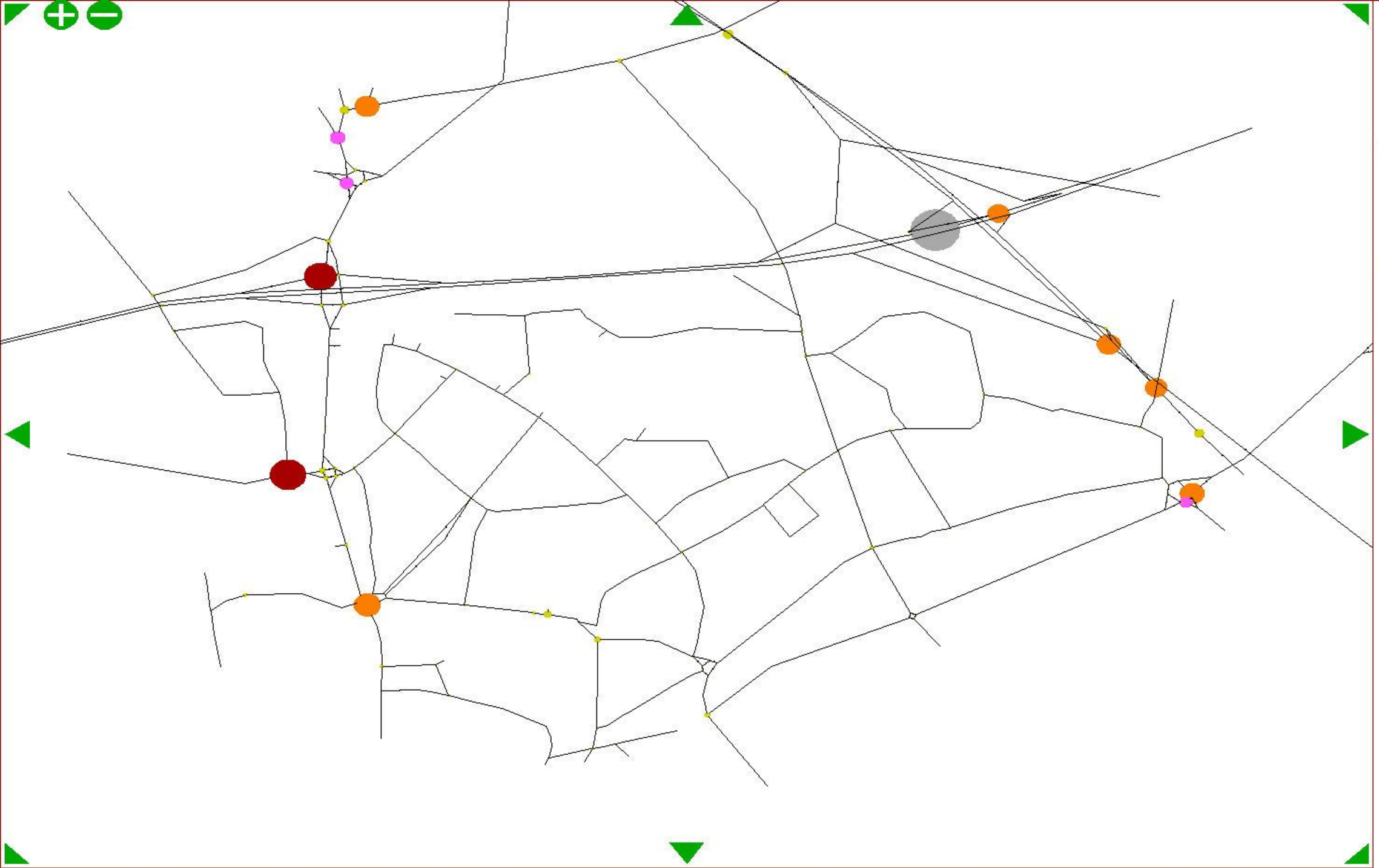

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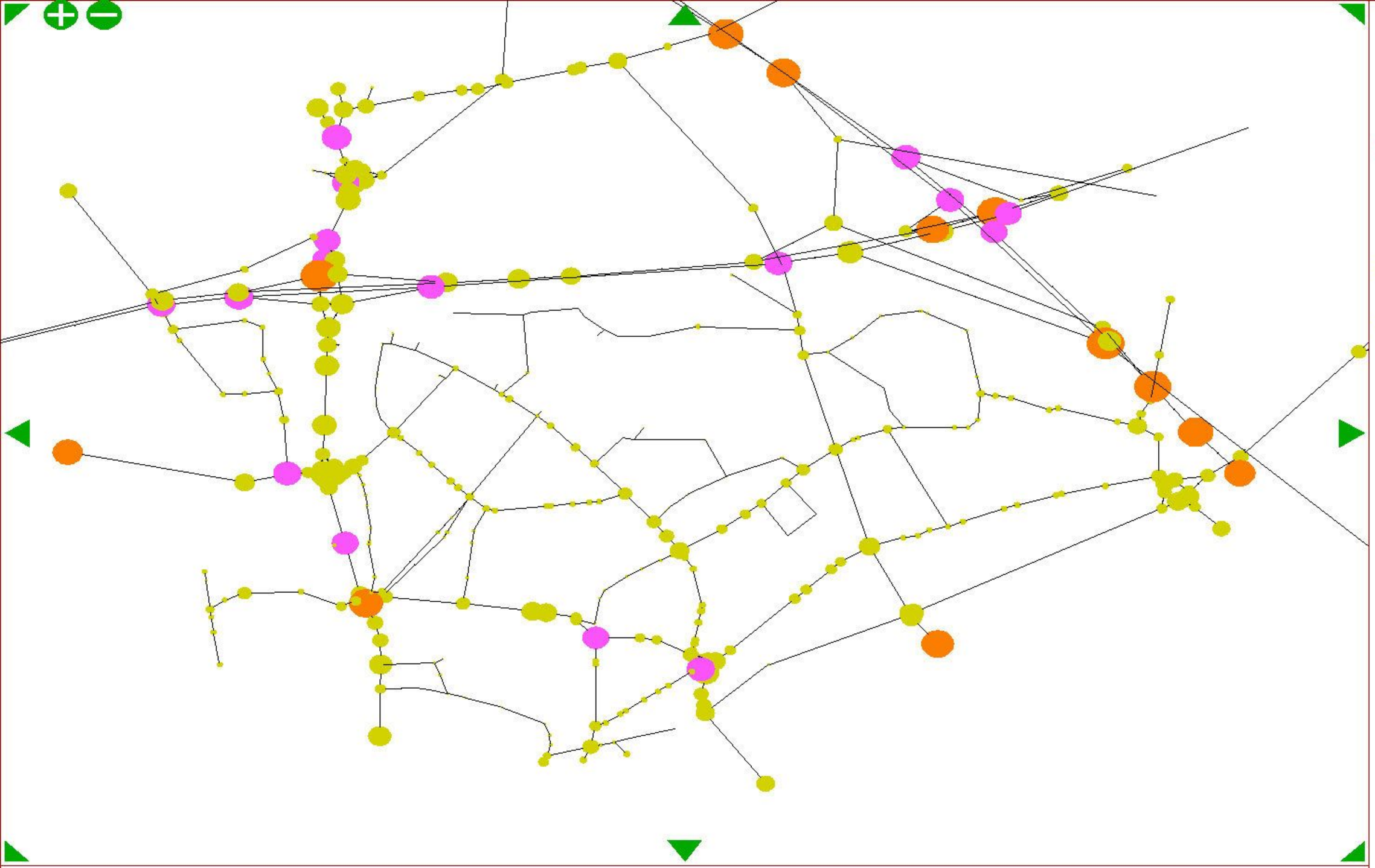

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HighgateTransportation

Highgate Transportation Ltd
First Floor, 43-45 Park Street, BRISTOL BS1 5NL
0117 934 9121
Company Registration Number: 07500534

TECHNICAL NOTE

PROJECT: Peel Hall, Warrington

REPORT: 1901/TN/14 – Development Impact Summary

DATE: January 2020

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1. This Technical Note has been provided to summarise the impact of vehicular trips arising from the proposed Peel Hall development on the highway network within the study area.

2. The Warrington Bourgh Council WMMTM16 SATURN model was tested for Peel Hall development impact with the following scenarios:

   Opening Year 2022
   a. Do Minimum (no development)
   b. Do Something (120 dwellings)
   c. Do Something (full development - to define mitigation for HE at Junction 9 and required for Air Quality assessments)

   Five Years After Opening 2027
   a. Do Minimum (no development)
   b. Do Something (600 dwellings and Local Centre)

   10 years After Opening 2032
   a. Do Minimum (no development)
   b. Do Something (full development)

3. The Access Strategy A site access junctions are set out in **Table 1**.

Table 1 – Site access junctions for the proposed Peel Hall development site

Junction Letter Reference (corresponds with flow diagrams)	Site Access Description
G	Birch Avenue
H	Poplars Avenue (West)
J	Poplars Avenue (Central)
M	Grasmere Avenue
AD	Mill Lane turn off/Mill Lane
AE	Mill Lane new roundabout

4. Junctions G, H, J, AD and AE will be assessed for Do Something scenarios with stand-alone junction modelling using Junctions9. The Birch Avenue (G) and Mill Lane (AD) junctions are existing, and therefore a Do Minimum capacity analysis and comparison with Do Something will also be provided.

5. An initial analysis has been carried out on the WMMTM16 Peel Hall SATURN Access Strategy A results to obtain a first level indication of development impact. Development impact spreadsheets (**Appendix 1**) provide development traffic flow data at all junctions on the flow diagrams and a comparison against Do Minimum flows, with the resulting percentage impact.

6. **Table 2** lists the junctions on the highway network where traffic flows are forecast to increase by a total of 5% or greater as a result of the proposed Peel Hall development (in 2022, 2027 and/or 2032). There are 28 junctions in total.

Table 2 – Junctions close to the site with 5%> increase as a result of the development

Junction Letter Reference (corresponds with flow diagrams)	Junction Description
B	Golborne Road/Myddleton Lane
C	Delph Lane/Myddleton Lane
I	Poplars Avenue/Cleveland Road
K	Poplars Avenue/Howson Road
L	Poplars Avenue/Grasmere Avenue
N	Poplars Avenue/Statham Avenue
O	Poplars Avenue/Greenwood Crescent
P	Poplars Avenue/Capesthorne Road roundabout
Q	A50/Hilden Road roundabout
R	A50/Birchwood Way
S	A50/Poplars Avenue
T	A50/Hallfields Lane
U	A50/Fisher Avenue
V	A50/Northway
AA	Sandy Lane West/Cotswold Road/Cleveland Road roundabout
AB	Sandy Lane/Howson Road/Northway roundabout
AC	Sandy Lane/Fisher Avenue
AF	Ballater Drive/Mill Lane/Enfield Park Road roundabout
AG	Enfield Park Road/Cinnamon Lane North
AH	Enfield Park Road/Crab Lane
AI	Crab Lane/Locking Stumps Lane
AJ	Crab Lane/Fearnhead Lane
AM	Birchwood Way/Blackbrook Avenue roundabout

AN	Hilden Road/Blackbrook Avenue crossroads
AO	Capesthorne Road/Greenwood Crescent
AP	Capesthorne Road/Blackbrook Avenue/Enfield Park Road roundabout
AQ	Enfield Park Road/Cinnamon Lane
AR	Enfield Park Road/Croppers Road

7. The second stage analysis was to review the SATURN Node Delay and V over C outputs provided (**Appendix 2**). Junctions with a difference between Do Minimum and the corresponding Do Something scenarios are listed in **Table 3**, where the junction performance was increased to over 1 minute of delay or operation above 75% capacity. Those highlighted in yellow are not listed in **Table 2** above; those with an asterisk are flagged in the future year of 2032 only.

Table 3 – Difference from Do Minimum to Do Something – junction results

Junction Letter Reference (corresponds with flow diagrams)	Junction Description
B	Golborne Road/Myddleton Lane
C	Delph Lane/Myddleton Lane*
D	A49 J9 roundabout including M62 slip roads*
Q	A50/Hilden Road roundabout
S	A50/Poplars Avenue
T	A50/Hallfields Lane
W	A49/A50/Hawleys Lane crossroads
X	A49/JunctionNINE Retail Park*
Y	Cromwell Avenue/Calver Road
AL	Wolston Grange Roundabout (2027 only)

8. From **Table 3** it can be seen that there are 10 junctions listed for review in terms impact on capacity and delay, one of which is flagged for 2027 scenario and three of which are flagged in the 2032 scenarios only. Five of these junctions were not flagged as part of the initial review in **Table 2**.

9. The A49/Sandy Lane West roundabout (junction Z) is linked to the Cromwell Avenue junction with Calver Road (Y), and as such both junctions would be modelled.

10. Therefore, we propose to model the following junctions from **Table 3**, with the addition of the site access junctions (G, H, J, AD and AE) and A49/Sandy Lane West roundabout (junction Z):

    i. Golborne Road/Myddleton Lane
    ii. Delph Lane/Myddleton Lane
    iii. A49 J9 roundabout including M62 slip roads
    iv. A50/Hilden Road roundabout, linked with the A50/Poplars Avenue
    v. A50/Hallfields Lane

vi. A49/A50/Hawleys Lane crossroads
vii. A49/JunctionNINE Retail Park
viii. Cromwell Avenue/Calver Road linked with Sandy Lane West/A49 roundabout

11. The junctions to be modelled are shown diagrammatically on **Figure 1** below.

Figure 1 – Junctions to be modelled further

12. It is considered that the VISSIM modelling will serve for further testing of the A49 corridor junctions, with additional stand-alone junction modelling for the junctions on this corridor only carried out if required for mitigation testing. The remaining junctions and site accesses will be modelled using Junctions9 and LinSig.

13. It can be noted that the whole of the A49 corridor within the study area is being tested in VISSIM, so the impact at all these junctions will be scrutinised further regardless of the results indicated above.

Part Development 2022 (120 dwellings) – Access Strategy A

14. We have also reviewed the part development scenario for the opening year of 2022 with 102 dwellings built out on site (**Appendices 1** and **2**). This demonstrates that junctions with a 5% impact or greater would be:

i. Poplars Avenue junction with Grasmere Avenue (L)
ii. Poplars Avenue junction with Howson Road (K)
iii. Ballater Drive/Blackbrook Avenue RA (AF)
iv. Cinnamon Lane North and Enfield Park Road (AG)

15. However, the delay and capacity output plots forecast nothing significant in terms of changes to the Do Minimum scenario, therefore it is considered that no mitigation or further modelling for this scenario of opening year with part development is required.

Access Strategy B – Sensitivity Test

16. Access Strategy B, the sensitivity test for a through route between the A49 in the west and Blackbrook Avenue in the east, has been reviewed as part of the initial analysis. In terms of **Table 2**, Access Strategy B was the same except for there being no Golbourne Road/Myddleton Lane (B); Delph Lane/Myddleton Lane (C); A50/Fisher Avenue (U); Sandy Lane/Fisher Avenue (AC).

17. The following three junctions were forecast to also have a development traffic impact of 5% or greater under Access Scenario B:

    i. A49/Hawleys Lane/A50 (W)
    ii. A49/Junction NINE retail park (X)
    iii. A49/Cromwell Avenue/Sandy Lane West (Z)

18. In terms of the second stage analysis, the changes to delay and capacity in Access Strategy B identified the following junctions for further investigation:

    i. A49/Hawleys Lane/A50 (W)
    ii. A50/Hilden Lane roundabout (Q)
    iii. Cromwell Avenue/Calver Road (Y)
    iv. Newton Road/Golbourne Road (A)
    v. A49/M62 J9 roundabout (D)

19. As such, it is considered that these junctions will be investigated further with stand-alone modelling analysis.

20. The new site access signal junction onto the A49 from Poplars Avenue would also be modelled, along with the following site accesses:

    i. Birch Avenue
    ii. Poplars Avenue (Central)
    iii. Mill Lane turn off/Mill Lane
    iv. Mill Lane new roundabout

21. Again, it is considered that the VISSIM modelling will cover the additional modelling required for the A49 corridor, with additional stand-alone junction modelling for the junctions on this corridor only carried out if required for mitigation testing. The remaining junctions and site accesses will be modelled using Junctions9 and LinSig.

22. It was noted in the Access Strategy B scenario that there were some slight improvements to operation across the network in 2032 compared to 2032 Do Minimum. This is considered to be very positive.

Next Steps

23. To agree the junctions to be taken forward for stand-alone modelling.
24. Continue to progress the VISSIM modelling to assess the development impact on the A49 corridor.
25. Confirm the mitigation strategy.

Appendix 1

Impact Spreadsheets

Appendix 2

Node Outputs Results – Delay and V/C

NOTE OF MEETING

PROJECT: Peel Hall, Warrington

DATE: 14th January 2020

HELD: Warrington BC, New Town House, Buttermarket Street, Warrington WA1 2NH @ 11:30.

PRESENT:		
	Mike Taylor	WBC
	Martha Hughes	WBC
	Colin Wright	WSP
	Dave Tighe	Highgate Transportation
	Fiona Bennett	Highgate Transportation

---

1. The meeting was arranged to discuss the development traffic impact further to the analysis of the WMMTM16 SATURN results, structured around Technical Note HTp/TN/14/Development Traffic Impact Summary, and to agree a scope for the next stage of modelling,

2. FB confirmed that, in TN/14, the 5% impact was provided in terms of total junction flows.

3. CW to review submitted technical information. **Post Meeting Note** MT confirmed that he is: *comfortable with the approach taken and the work carried out so far; a final review will only take place once the TA that packages everything together is produced.*

4. CW requested HTp to confirm from AECOM (WMMTM16) why there are slight differences between Access Strategy A and Access Strategy B Do Minimum outputs. It was confirmed that we could proceed with using Access Strategy A Do Minimum in any event as previously agreed. **Post Meeting Note** Response from AECOM received 15/01/20.

5. The methodology for junction selection was agreed and further to discussion, the final list of agreed junctions for stand-alone modelling, subject to CW detailed review, is:

    i. Golborne Road/Myddleton Lane
    ii. Delph Lane/Myddleton Lane
    iii. A49 J9 roundabout including M62 slip roads
    iv. A50/Hilden Road roundabout, linked with the A50/Poplars Avenue
    v. A50/Hallfields Lane
    vi. A49/A50/Hawleys Lane crossroads
    vii. A49/JunctionNINE Retail Park
    viii. Cromwell Avenue/Calver Road linked with Sandy Lane West/A49 roundabout
    ix. Site Access junction – Birch Avenue/A49
    x. Site Access junction – Poplars Avenue (West)
    xi. Site Access junction – Poplars Avenue (Central)
    xii. Site Access junction – Mill Lane/Mill Lane
    xiii. Site Access junction – Mill Lane/Blackbrook Avenue new roundabout

xiv. Blackbrook Avenue roundabout with Enfield Park Road and Ballater Drive
xv. Blackbrook Avenue roundabout with Enfield Park Road and Capesthorne Road
xvi. Poplars Avenue roundabout with Capesthorne Road

6. It was agreed that modelling of the large Woolston Grange roundabout would not be required.

7. It was also agreed that those junctions on the A49 corridor will be modelled using the VISSIM and as such further stand-alone modelling for these junctions is unlikely to be required.

8. Development impact and mitigation on the Hilden Road/A50 roundabout was discussed. MT confirmed that, depending on impact, he would rather retain the safety scheme at this junction than remove it, with funds instead diverted to support measures aimed at offsetting impact on the area to the immediate south of the Peel Hall site and/or Travel Plan measures to reduce travel. MT confirmed that the same approach could apply to other locations.

9. The Hawleys Lane/A49/A50 signalised junction was also discussed. MT confirmed that, depending on impact, he would consider accepting a contribution to MOVA rather than physical engineering measures.
Post Meeting Note MT said that whilst adopting *a pragmatic approach it may be that more comprehensive measures are needed to address impacts but until the modelling results are known it is too early to agree specifics*.

10. The need for mitigation at the M62 junction 9 would form part of the VISSIM analysis, given the committed works on the A49 to the immediate north of this. It was discussed that sensitivity testing for the 2022 Full Development scenario would be needed in VISSIM for with and without the approved (third-party) mitigation on the A49 to the immediate north of the M62. **Post Meeting Note** HTp discussed with VISSIM team and results to be provided when available.

11. MT asked HTp to speak to the public transport officer, Alyn Jones, at Warrington BC. **Post Meeting Note** MT supplied contact details.

12. MT to provide feedback on potential measures suitable for the area immediately south of the Peel Hall site, having spoken with his traffic management colleagues. DT mentioned the proposals discussed at the inquiry i.e. extend 20mph speed limit and provision of verge parking. MT reiterated that the removal of the proposed employment land use is a benefit.
Post Meeting Note MT confirmed that *this is likely to involve the provision of parking bays, the replacement of measures along Capesthorne Road with more appropriate traffic calming and additional traffic calming/traffic management measures in the wider area.*

13. HTp confirmed that they are reviewing Access Strategy B as a sensitivity test.

14. HTp confirmed expectation was to have completed the modelling and produced an Addendum Transport Assessment by the beginning of March 2020, and that they would feed MT and CW results on a regular basis.

15. HTp to purchase updated accident data from Warrington BC. **Post Meeting Note** Data requested 23/01/20

16. Masterplan comments:

    i. MT would like SATNAM to consider the 150 dwelling extension to Mill Lane in the longer term i.e. access served from Mill Lane during the early phases of development, but with eventual connection to the internal spine road and closure of the new access for motor vehicles once the wider development is sufficiently progressed.

    ii. MT asked if SATNAM would consider accessing the c20 dwellings proposed from Birch Avenue through the former employment area and onto Poplars Avenue to address the inspector's concerns. However, after discussion it was agreed that the situation described by the inspector was more onerous than the reality and putting additional traffic onto Poplars Avenue could be considered a dis-benefit under Access Strategy A.

SATNAM MILLENNIUM LIMITED

Warrington's own buses

Memorandum of Understanding

Between Warrington's Own Buses and Satnam Millennium Ltd

In relation to the strategic development of the Peel Hall site

This is a Memorandum of Understanding between Warrington's Own Buses and Satnam Millennium Ltd in relation to the strategy development of the Peel Hall site, Warrington.

An illustrative parameters plan for the proposed Peel Hall site is contained in **Appendix 1**. The development includes up to 1,200 residential dwellings and a local centre, with access from Mill Lane/Blackbrook Avenue in the east and Poplars Avenue in the south.

From discussion between the parties the following is agreed within this Memorandum of Understanding:

- Warrington's Own Buses intend to divert their existing 25 and 20 routes into the proposed Peel Hall development, subject to funding agreement between the parties. Draft timetables are contained in **Appendix 2** for reference and summarised below.
- It is assumed that the development will be carried out in phases, with service 25 first (i.e. the easterly part of the site from Blackbrook Avenue), followed by service 20 from the south (i.e. the southern and western areas of the site from Poplars Avenue.
- Service 25 is assumed to operate Monday to Saturday every 30 minutes.
- Service 20 is assumed to operate up to every 10 minutes Monday to Friday and every 12-13 minutes on Saturday, with a reduced service on Sundays.
- If for some reason the routes listed above are not operational at the time of the development, Warrington's Own Buses are willing to provide costs for the funding of an entirely new service.
- It is agreed that frequencies of the services set out in **Appendix 2** will be subject to review.

It is agreed that these services will offer Peel Hall residents regular bus connections for Warrington Town Centre, Warrington Central Railway Station and Bus Interchange/Shopping Centre, Birchwood Rail Station and Business Park/Shopping, Warrington Vale Royal & Priestley Colleges as well as the Orford Jubilee Hub and Winwick Road retail parks.

<u>Costings</u>

On the basis of the above, the costs will be £106,000 per annum for service 25 and £117,000 per annum for service 20.

SATNAM MILLENNIUM LIMITED

Warrington's own buses

On the basis of developer funding, it is agreed that these services would run for a period of 5 years (with a 3 year break clause for Warrington's Own Buses).

The above costings are based on 2019 prices and will be index linked.

Service 21

It is agreed that there is the potential to operate service 21 into the site, which would offer additional services. This will be subject to additional cost, but for the purpose of this Memorandum of Understanding it is expected to be broadly similar to that associated with service 20.

Other Matters

The above is subject to:

- final agreement on mileages, once the site is built and these are known.
- sufficient infrastructure and road widths (suitable to accommodate full size buses).

Warrington's Own Buses enter this Memorandum of Understanding on the basis that it (or its successor) will still be trading at the time the development phases are complete, and that these services remain operational.

Signed:

On behalf of Warrington's Own Buses: (DAVID WOODS)

Date: 7.6.19

(ON BEHALF OF BEN WAKERLEY)

11.6.19 (BEN WAKERLEY)

On behalf of Satnam Millennium Ltd:

Date: 25.6.19

Memorandum of Understanding
Appendix 1

Illustrative Parameters Plan

KEYS

- Site Boundary
- Boundary between the historic townships of Arbury and Winwick (Important Hedgerow)
- Existing Culvert
- 10m Foraging bat corridor
- Location for Care Home
- Location for Community Facility
- Area suitable for apartments with mechanical ventilation
- Proposed wildlife corridor
- Areas within Site boundary and excluded from the development
- Peel Hall Manor Farm Moat Area (Archeological Feature)
- Existing hedgerows to be retained
- 40m Bufferzone to M62 (Air Quality & Noise)
- Location for Local Centre
- Location for Bus Gate
- Radley Common
- Public right of way
- Gas Main and Easement
- Existing Pond to be retained
- Developable Land to include for pedestrian and cycle links between plots.
- Location for Employment Area
- Proposed Tree/ Shrub Planting
- Existing areas of off site vegetation
- Boundary between the historic townships of Arbury and Houghton (Important Hedgerow)
- 8m Water Vole buffer zone to Spa Brook.
- Existing areas of woodland trees and vegetation to be retained.
- Indicative Road Line
- Location for Primary School
- Proposed Sports Pitches/ Public Open Space

*Note: Heights shown are proposed from ground level. Heights shown are fixed and take precedent over number of storeys shown.

PEEL HALL, WARRINGTON

Parameters Plan- **Option A**

FIGURE APP 6A

Project	PEEL HALL, WARRINGTON
Title	Parameters Plan- **Option A**
Client	Satnam Millennium Ltd
Date	21.10.15
Scale	1:2,500@A1
Drawn	SW/ DS
Drawing No.	1820_24
Checked	DA/ DS
Revision	Y

Landscape Institute Registered practice

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Web: www.appletons.uk.com Email: info@appletons.uk.com

Memorandum of Understanding
Appendix 2

Draft Timetables

Warrington - Longford/Orford (Circ) via Orford Park Centre 20

Warrington - Longford/Orford (Circ) via Warrington Hospital - Dallam 20A

Monday to Friday

Ref PEEL From 17/06/19 To 31/12/29

Service No:	20A	20A	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
Warrington, Interchange [4]	0617	0645	0705	0715	0725	0735	0745	0755	0805	0815	0825	0835	0845	0855	0905	***0915***	0925	0935	0945	0955	1005	1015	***1025***	***1035***	***1045***	***1055***	1105	1115	1125	1135	1145	1155	1205	***1215***	1225	1235	1245	1255	1305	***1315***	***1325***	1335	***1345***	1355	1405	1415	1425	1435	1445	1455	***1503***	1513	1528	1543	1553	1608	1623	***1633***	***1648***	1703	1713	1728	1743	1753	1808	1840
Winwick Road, McDonalds	|	|	0708	0718	0728	0738	0748	0758	0808	0818	0828	0838	0848	0858	0908	0918	0928	0938	0948	0958	1008	1018	1028	1038	1048	1058	1108	1118	1128	1138	1148	1158	1208	1218	1228	1238	1248	1258	1308	1318	1328	1338	1348	1358	1408	1418	1428	1438	1448	1458	1506	1516	1531	1546	1556	1611	1626	1636	1651	1706	1716	1731	1746	1756	1811	1843
Orford Park Centre	|	|	0713	0723	0733	0743	0753	0803	0813	0823	0833	0843	0853	0903	0913	0923	0933	0943	0953	1003	1013	1023	1033	1043	1053	1103	1113	1123	1133	1143	1153	1203	1213	1223	1233	1243	1253	1303	1313	1323	1333	1343	1353	1403	1413	1423	1433	1443	1453	1503	1512	1522	1537	1552	1602	1617	1632	1642	1657	1712	1722	1737	1752	1802	1814	1846
Winwick Road, Collegiate Inst	|	|	0715	0725	0735	0745	0755	0805	0815	0825	0835	0845	0855	0905	0915	0925	0935	0945	0955	1005	1015	1025	1035	1045	1055	1105	1115	1125	1135	1145	1155	1205	1215	1225	1235	1245	1255	1305	1315	1325	1335	1345	1355	1405	1415	1425	1435	1445	1455	1505	1514	1524	1539	1554	1604	1619	1634	1644	1659	1714	1724	1739	1754	1804	1816	1848
General Hospital	0622	0650	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|
Folly Lane, Tyrol House	0624	0652	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|
Dallam, Harrison Square	0627	0655	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|
Longford, Cotswold Road	0633	0701	0721	0731	0741	0751	0801	0811	0821	0831	0841	0851	0901	0911	0921	0931	0941	0951	1001	1011	1021	1031	1041	1051	1101	1111	1121	1131	1141	1151	1201	1211	1221	1231	1241	1251	1301	1311	1321	1331	1341	1351	1401	1411	1421	1431	1441	1451	1501	1511	1520	1530	1545	1600	1610	1625	1640	1650	1705	1720	1730	1745	1800	1810	1821	1853
Poplars Avenue, Cleveland Road	0635	0703	0723	0733	0743	0753	0803	0813	0823	0833	0843	0853	0903	0913	0923	0933	0943	0953	1003	1013	1023	1033	1043	1053	1103	1113	1123	1133	1143	1153	1203	1213	1223	1233	1243	1253	1303	1313	1323	1333	1343	1353	1403	1413	1423	1433	1443	1453	1503	1513	1522	1532	1547	1602	1612	1627	1642	1652	1707	1722	1732	1747	1802	1812	1823	1855
Peel Hall Bus Turning Circle	|	|	0733	0743	0753	0803	0813	0823	0833	0843	0853	0903	0913	0923	0933	0943	0953	1003	1013	1023	1033	1043	1053	1103	1113	1123	1133	1143	1153	1203	1213	1223	1233	1243	1253	1303	1313	1323	1333	1343	1353	1403	1413	1423	1433	1443	1453	1503	1513	1523	1532	1542	1557	1612	1622	1637	1652	1702	1717	1732	1742	1757	1812	1822	1833	1905
Orford Avenue	0641	0709	0740	0750	0800	0810	0820	0830	0840	0850	0900	0910	0920	0930	0940	0950	1000	1010	1020	1030	1040	1050	1100	1110	1120	1130	1140	1150	1200	1210	1220	1230	1240	1250	1300	1310	1320	1330	1340	1350	1400	1410	1420	1430	1440	1450	1500	1510	1520	***1530***	1539	1549	1604	1619	***1629***	***1644***	1659	1709	1724	1739	1749	1804	1819	1829	1839	1911
Warrington, Interchange	0651	0719	0751	0801	0811	0821	0831	0841	0851	0901	0911	0921	0931	0939	0948	0958	1008	1018	1028	1038	1048	1058	1108	1118	1128	1138	1148	1158	1208	1218	1228	1238	1248	1258	1308	1318	1328	1338	1348	1358	1408	1418	1428	1438	1448	1458	1508	1518	1530	1540	1549	1559	1614	1629	1639	1654	1709	1719	1734	1749	1759	1814	1829	1838	1845	1917

Warrington - Longford/Orford (Circ) via Orford Park Centre 20

Warrington - Longford/Orford (Circ) via Warrington Hospital - Dallam 20A

Saturday **Ref PEEL From 22/06/19 To 31/12/29**

Service No:	20A	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
Warrington, Interchange [4]	0645	0730	0800	0824	0848	0906	0919	0931	0944	0956	1008	1021	1033	1045	1058	1110	1122
Winwick Road, McDonalds	|	0733	0803	0827	0851	0909	0922	0934	0947	0959	1011	1024	1036	1048	1101	1113	1125
Orford Park Centre	|	0736	0808	0832	0856	0914	0927	0939	0952	1004	1016	1029	1041	1053	1106	1118	1130
Winwick Road, Collegiate Inst	|	0738	0810	0834	0858	0916	0929	0941	0954	1006	1018	1031	1043	1055	1108	1120	1132
General Hospital	0652	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|
Folly Lane, Tyrol House	0654	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|
Dallam, Harrison Square	0657	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|
Longford, Cotswold Road	0703	0743	0816	0840	0904	0922	0935	0947	1000	1012	1024	1037	1049	1101	1114	1126	1138
Poplars Avenue, Cleveland Road	0705	0745	0818	0842	0906	0924	0937	0949	1002	1014	1026	1039	1051	1103	1116	1128	1140
Peel Hall Bus Turning Circle	|	0755	0828	0852	0916	0934	0947	0959	1012	1024	1036	1049	1101	1113	1126	1138	1150
Orford Avenue	0711	0801	0835	0859	0923	0941	0954	1006	1019	1031	1043	1056	1108	1120	1133	1145	1157
Warrington, Interchange	0717	0807	0843	0907	0931	0949	1002	1014	1027	1039	1051	1104	1116	1128	1141	1153	1205

Service No:	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
Warrington, Interchange [4]	1135	1147	1159	1212	1224	1236	1249	1301	1313	1326	1338	1350	1403	1415	1427	1440	1452
Winwick Road, McDonalds	1138	1150	1202	1215	1227	1239	1252	1304	1316	1329	1341	1353	1406	1418	1430	1443	1455
Orford Park Centre	1143	1155	1207	1220	1232	1244	1257	1309	1321	1334	1346	1358	1411	1423	1435	1448	1500
Winwick Road, Collegiate Inst	1145	1157	1209	1222	1234	1246	1259	1311	1323	1336	1348	1400	1413	1425	1437	1450	1502
General Hospital	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|
Folly Lane, Tyrol House	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|
Dallam, Harrison Square	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|
Longford, Cotswold Road	1151	1203	1215	1228	1240	1252	1305	1317	1329	1342	1354	1406	1419	1431	1443	1456	1508
Poplars Avenue, Cleveland Road	1153	1205	1217	1230	1242	1254	1307	1319	1331	1344	1356	1408	1421	1433	1445	1458	1510
Peel Hall Bus Turning Circle	1203	1215	1227	1240	1252	1304	1317	1329	1341	1354	1406	1418	1431	1443	1455	1508	1520
Orford Avenue	1210	1222	1234	1247	1259	1311	1324	1336	1348	1401	1413	1425	1438	1450	1502	1515	1527
Warrington, Interchange	1218	1230	1242	1255	1307	1319	1332	1344	1356	1409	1421	1433	1446	1458	1510	1523	1535

Service No:	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
Warrington, Interchange [4]	1504	1517	1529	1541	1554	1606	1618	1631	1643	1655	1708	1720	1732	1745	1800	1815	1845
Winwick Road, McDonalds	1507	1520	1532	1544	1557	1609	1621	1634	1646	1658	1711	1723	1735	1748	1803	1818	1848
Orford Park Centre	1512	1525	1537	1549	1602	1614	1626	1639	1651	1703	1716	1728	1740	1753	1808	1821	1851
Winwick Road, Collegiate Inst	1514	1527	1539	1551	1604	1616	1628	1641	1653	1705	1718	1730	1742	1755	1810	1823	1853
General Hospital	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|
Folly Lane, Tyrol House	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|
Dallam, Harrison Square	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|
Longford, Cotswold Road	1520	1533	1545	1557	1610	1622	1634	1647	1659	1711	1724	1736	1748	1801	1816	1828	1858
Poplars Avenue, Cleveland Road	1522	1535	1547	1559	1612	1624	1636	1649	1701	1713	1726	1738	1750	1803	1818	1830	1900
Peel Hall Bus Turning Circle	1532	1545	1557	1609	1622	1634	1646	1659	1711	1723	1736	1748	1800	1813	1828	1840	1910
Orford Avenue	1539	1552	1604	1616	1629	1641	1653	1706	1718	1730	1743	1755	1807	1820	1835	1846	1916
Warrington, Interchange	1547	1600	1612	1624	1637	1649	1701	1714	1726	1738	1751	1803	1815	1828	1843	1852	1922

Warrington - Longford/Orford (Circ) via Orford Park Centre 20

Warrington - Longford/Orford (Circ) via Warrington Hospital - Dallam 20A

SUNDAY & PUBLIC HOLIDAYS

Ref PEEL From 23/06/19 To 31/12/29

Service No:	20A	20	20A	20	20A	20	20A	20	20A	20	20A	20	20A	20	20A	20	20A
Warrington, Interchange [4]	0915	0939	1015	1039	1115	1139	1215	1239	1315	1339	1415	1439	1515	1539	1615	1639	1715
Winwick Road, McDonalds	|	0942	|	1042	|	1142	|	1242	|	1342	|	1442	|	1542	|	1642	|
Orford Park Centre	|	0946	|	1046	|	1146	|	1246	|	1346	|	1446	|	1546	|	1646	|
Winwick Road, Collegiate Inst	|	0948	|	1048	|	1148	|	1248	|	1348	|	1448	|	1548	|	1648	|
General Hospital	0922	|	1022	|	1122	|	1222	|	1322	|	1422	|	1522	|	1622	|	1722
Folly Lane, Tyrol House	0924	|	1024	|	1124	|	1224	|	1324	|	1424	|	1524	|	1624	|	1724
Dallam, Harrison Square	0927	|	1027	|	1127	|	1227	|	1327	|	1427	|	1527	|	1627	|	1727
Longford, Cotswold Road	0933	0954	1033	1054	1133	1154	1233	1254	1333	1354	1433	1454	1533	1554	1633	1654	1733
Poplars Avenue, Cleveland Road	0935	0956	1035	1056	1135	1156	1235	1256	1335	1356	1435	1456	1535	1556	1635	1656	1735
Peel Hall Bus Turning Circle	|	0959	|	1059	|	1159	|	1259	|	1359	|	1459	|	1559	|	1659	|
Orford Avenue	0942	1009	1042	1109	1142	1209	1242	1309	1342	1409	1442	1509	1542	1609	1642	1709	1742
Warrington, Interchange	0949	1016	***1049***	1116	1149	1216	1249	1316	***1349***	1416	***1449***	***1516***	1549	***1616***	1649	1716	1749

Gorse Covert - Warrington via Birchwood - Locking Stumps - Orford 25
Cinnamon Brow - Warrington via Winwick Road 26E
Culcheth - Cinnamon Brow - Warrington via Croft - Orford 27E

Monday to Friday **Ref PEEL From 17/06/19 To 31/12/29**

Service Number:	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
Gorse Covert, Spar Store	-	-	0637	0651	0717	0743	0815	0847	0920	0950	1020	1050	1120	1150	1220	1250	1320	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gorse Covert, Ashdown Lane	-	-	0639	0653	0719	0745	0817	0849	0922	0952	1022	1052	1122	1152	1222	1252	1322	1352	1422	1452	1530	1558	1628	1657	1732	1757	1824	1849	1914	1944
Oakwood, Keyes Close	-	-	0643	0657	0723	0749	0822	0854	0926	0956	1026	1056	1126	1156	1226	1256	1326	1356	1426	1456	1535	1602	1632	1701	1736	1801	1827	1852	1917	1947
Birchwood, Railway Station	-	-	0647	0701	0727	0754	0828	0859	0930	1000	1030	1100	1130	1200	1230	1300	1330	1400	1430	1500	1540	1607	1637	1706	1741	1806	1831	1855	1920	1950
Birchwood Centre	-	-	0648	0702	0728	0755	0829	0900	0931	1001	1031	1101	1131	1201	1231	1301	1331	1401	1431	1501	1541	1608	1638	1707	1742	1807	1832	1856	1921	1951
Heathfield House	-	-	0654	0708	0735	0802	0836	0907	0938	1008	1038	1108	1138	1208	1238	1308	1338	1408	1438	1508	1550	1616	1645	1714	1749	1814	1838	1902	1927	1957
Glover Road, Turf & Feather	-	-	0655	0709	0736	0803	0837	0908	0939	1009	1039	1109	1139	1209	1239	1309	1339	1409	1439	1509	1551	1617	1646	1715	1750	1815	1839	1903	1928	1958
Locking Stumps, Copperfield Cl	-	-	0658	0712	0739	0807	0841	0911	0942	1012	1042	1112	1142	1212	1242	1312	1342	1412	1442	1512	1555	1621	1649	1718	1753	1818	1842	1906	1931	2001
Crab Lane, Uni of Chester	-	-	0701	0715	0742	0811	0845	0915	0945	1015	1045	1115	1145	1215	1245	1315	1345	1415	1446	1516	1559	1625	1653	1722	1757	1821	1845	1909	1934	2004
Enfield Park Rd, Tweedsmuir Close	0522	0622	0702	0717	0744	0813	0847	0917	0947	1017	1047	1117	1147	1217	1247	1317	1347	1417	1448	1518	1601	1627	1655	1724	1759	1823	1847	1911	1935	2005
Cinnamon Brow, Millhouse Rdbt	0524	0624	0704	0719	0746	0815	0849	0919	0949	1019	1049	1119	1149	1219	1249	1319	1349	1419	1449	1519	1602	1628	1656	1725	1800	1824	1848	1912	1936	2006
Peel Hall Bus Turning Circle	0534	0634	0714	0729	0756	0825	0859	0929	0959	1029	1059	1129	1159	1229	1259	1329	1359	1429	1459	1529	1612	1638	1706	1735	1810	1834	1858	1922	1946	2016
Cinnamon Lane North	0536	0636	0716	0731	0758	0827	0901	0931	1000	1030	1100	1130	1200	1230	1300	1330	1400	1430	1501	1531	1614	1640	1708	1737	1812	1836	1900	1924	1948	2018
Orange Grove, Avery Close	|	|	|	|	|	|	|	|	1002	|	1102	|	1202	|	1302	|	1402	|	1502	|	|	|	|	|	|	|	|	|	|	|
Greenwood Crescent, Merrick Cl	0538	0638	0718	0733	0801	0830	0904	0933	1004	1032	1104	1132	1204	1232	1304	1332	1404	1432	1505	1534	1617	1643	1710	1739	1814	1838	1902	1926	1950	2020
Statham Avenue, Kirkstone Av	0540	0640	0722	0737	0805	0835	0909	0937	1008	1036	1108	1136	1208	1236	1308	1336	1408	1436	1509	1538	1622	1647	1714	1743	1818	1842	1905	1929	1953	2023
Ryfields Village	|	|	|	|	|	|	|	|	|	1042	|	1142	|	1242	|	1342	|	1442	|	|	|	|	|	|	|	|	|	|
O'Leary Street	0545	0645	0727	0743	0813	0843	0917	0943	1014	1044	1114	1144	1214	1244	1314	1344	1414	1444	1515	1544	1630	1654	1721	1751	1826	1849	1910	1934	1958	2028
Warrington, Interchange	0551	0651	***0736***	***0753***	***0823***	***0853***	***0927***	***0952***	***1022***	***1052***	***1122***	***1152***	***1222***	***1252***	***1322***	***1352***	***1422***	***1452***	***1523***	***1553***	***1640***	***1704***	***1731***	***1801***	1835	1858	1917	***1941***	2005	2035

Warrington - Gorse Covert via Orford - Locking Stumps - Birchwood 25
Warrington - Cinnamon Brow via Winwick Road 26E
Warrington - Cinnamon Brow - Culcheth via Orford - Croft 27E

Monday to Friday **Ref PEEL From 17/06/19 To 31/12/29**

Service Number:	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
Wilderspool, Causeway Avenue	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1532	-	-	1608	-	-	-	-	-	-	-
Wilderspool, St James Church	0456	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	|	-	-	|	-	-	-	-	-	-	-
Warrington, Interchange (arr)	|	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1540	-	-	1616	-	-	-	-	-	-	-
Warrington, Interchange [14] (dep)	|	0542	0555	0621	0645	0707	0738	0811	0847	***0915***	0945	***1015***	1045	1115	***1145***	1215	1245	***1315***	***1345***	1415	1445	***1515***	1545	1545	1545	1620	1620	1620	1645	1715	***1745***	1815	1845
O'Leary Street	0501	0550	0603	0629	0653	0717	0748	0821	0857	0925	0955	1025	1055	1125	1155	1225	1255	1325	1355	1425	1455	1526	1556	1556	1556	1631	1631	1631	1656	1727	1756	1824	1854
Ryfields Village	|	|	|	|	|	|	|	|	|	|	0957	|	1057	|	1157	|	1257	|	1357	|	|	|	|	|	|	|	|	|	|	|	|	|
Statham Avenue, Kirkstone Av	0506	0555	0608	0634	0658	0723	0755	0828	0903	0931	1003	1031	1103	1131	1203	1231	1303	1331	1403	1431	1501	1532	1602	1602	1602	1637	1637	1637	1702	1733	1802	1830	1900
Greenwood Crescent, Merrick Cl	0509	0559	0612	0638	0702	0728	0800	0833	0907	0935	1007	1035	1107	1135	1207	1235	1307	1335	1407	1436	1506	1537	1607	1607	1607	1642	1642	1642	1707	1738	1806	1833	1903
Orange Grove, Avery Close	|	|	|	|	|	|	|	|	|	0937	|	1037	|	1137	|	1237	|	1337	|	1438	|	1539	|	|	|	|	|	|	|	|	|
Cinnamon Lane North	|	0600	0613	0640	0704	0730	0802	0835	0909	0939	1009	1039	1109	1139	1209	1239	1309	1339	1409	1440	1508	1541	1609	1609	1609	1644	1644	1644	1709	1740	1808	1835	1905
Cinnamon Brow, Millhouse Rdbt	|	0601	0614	0641	0705	0731	0803	0836	0910	0940	1010	1040	1110	1140	1210	1240	1310	1340	1410	1441	1509	1542	1610	1610	1610	1645	1645	1645	1710	1740	1809	1836	1906
Peel Hall Bus Turning Circle	0520	0611	0624	0651	0715	0741	0813	0846	0920	0950	1020	1050	1120	1150	1220	1250	1320	1350	1420	1451	1519	1552	1620	1620	1620	1655	1655	1655	1720	1750	1819	1846	1916
Enfield Park Rd, Tweedsmuir Close	0522	0613	0626	0653	0717	0743	0815	0848	0922	0952	1022	1052	1122	1152	1222	1252	1322	1352	1422	1453	1521	1554	1622	1622	1622	1657	1657	1657	1722	1753	1821	1848	1918
Crab Lane, Uni of Chester	-	0615	0628	0655	0719	0746	0818	0851	0924	0954	1024	1054	1124	1154	1224	1254	1324	1354	1424	1456	1524	1557	1625	1625	1625	1700	1700	1700	1725	1755	1823	1850	1920
Locking Stumps, Copperfield Cl	-	0619	0632	0659	0723	0751	0823	0856	0928	0958	1028	1058	1128	1158	1228	1258	1328	1358	1428	1500	1528	1601	1630	1630	1630	1705	1705	1705	1730	1759	1827	1854	1924
Glover Road, Turf & Feather	-	0621	0634	0701	0725	0753	0825	0858	0930	1000	1030	1100	1130	1200	1230	1300	1330	1400	1430	1502	1530	1603	1632	1632	1632	1707	1707	1707	1732	1801	1829	1856	1926
Heathfield House	-	0622	0635	0702	0726	0754	0826	0859	0931	1001	1031	1101	1131	1201	1231	1301	1331	1401	1431	1503	1531	1604	1633	1633	1633	1708	1708	1708	1733	1802	1830	1857	1927
Birchwood Centre	-	0627	0640	0708	0732	0801	0833	0906	0937	1007	1037	1107	1137	1207	1237	1307	1337	1407	1437	1513	1541	1611	1640	1640	1640	1715	1715	1715	1740	1809	1836	1903	1933
Birchwood, Railway Station	-	0628	0641	0709	0733	0803	0835	0908	0939	1009	1039	1109	1139	1209	1239	1309	1339	1409	1439	1515	1543	1614	1643	1643	1643	1718	1718	1718	1743	1811	1837	1904	1934
Oakwood, Keyes Close	-	0631	0644	0712	0736	0807	0839	0912	0942	1012	1042	1112	1142	1212	1242	1312	1342	1412	1442	1519	1547	1618	1647	1647	1647	1722	1722	1722	1747	1815	1840	1907	1937
Gorse Covert, Spar Store	-	0635	0648	0716	0740	0811	0843	0916	0946	1016	1046	1116	1146	1216	1246	1316	1346	1416	1446	1524	1552	1622	1651	1651	1651	1726	1726	1726	1751	1819	1844	1911	1941
Gorse Covert, Ashdown Lane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1348	1418	1448	1526	1554	1624	1653	1653	1653	1728	1728	1728	1753	1821	1846	1913	1943

Gorse Covert - Warrington via Birchwood - Locking Stumps - Orford — 25
Cinnamon Brow - Warrington via Winwick Road — 26E
Cinnamon Brow - Warrington via Orford — 27E

Saturday — **Ref PEEL From 18/05/19 To 31/12/29**

Service No:	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	27E	25	27E	26E	27E	26E	27E	26E	27E	26E
Gorse Covert, Spar Store	0727	0757	0825	0855	0925	0955	1025	1055	1125	1155	1225	1255	1325	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gorse Covert, Ashdown Lane	0729	0759	0827	0857	0927	0957	1027	1057	1127	1157	1227	1257	1327	1357	1427	1457	1527	1557	1627	1655	1725	1755	1825	1850	-	1920	-	-	-	-	-	-	-	-
Oakwood, Keyes Close	0732	0802	0831	0901	0931	1001	1031	1101	1131	1201	1231	1301	1331	1401	1431	1501	1531	1601	1631	1659	1729	1758	1828	1853	-	1923	-	-	-	-	-	-	-	-
Birchwood, Railway Station	0736	0806	0835	0905	0935	1005	1035	1105	1135	1205	1235	1305	1335	1405	1435	1505	1535	1605	1635	1703	1733	1802	1832	1856	-	1926	-	-	-	-	-	-	-	-
Birchwood Centre	0737	0807	0836	0906	0936	1006	1036	1106	1136	1206	1236	1306	1336	1406	1436	1506	1536	1606	1636	1704	1734	1803	1833	1857	-	1927	-	-	-	-	-	-	-	-
Heathfield House	0743	0813	0843	0913	0943	1013	1043	1113	1143	1213	1243	1313	1343	1413	1443	1513	1543	1613	1643	1711	1741	1809	1839	1903	-	1933	-	-	-	-	-	-	-	-
Glover Road, Turf & Feather	0744	0814	0844	0914	0944	1014	1044	1114	1144	1214	1244	1314	1344	1414	1444	1514	1544	1614	1644	1712	1742	1810	1840	1904	-	1934	-	-	-	-	-	-	-	-
Locking Stumps, Copperfield Cl	0747	0817	0847	0917	0947	1017	1047	1117	1147	1217	1247	1317	1347	1417	1447	1517	1547	1617	1647	1715	1745	1813	1843	1907	-	1937	-	-	-	-	-	-	-	-
Crab Lane, Uni of Chester	0750	0820	0850	0920	0950	1020	1050	1120	1150	1220	1250	1320	1350	1420	1450	1520	1550	1620	1650	1718	1748	1816	1846	1910	-	1940	-	-	-	-	-	-	-	-
Cinnamon Brow, Millhouse Rdbt	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	1911	|	1941	2010	2041	2110	2143	2213	2243	2307
Enfield Park Rd, Stirrup Cl	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	1913	|	1943	2012	2043	2112	2145	2215	2245	2309
Insall Road, Valiant Close	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	1915	|	1945	|	2045	|	2147	|	2247	|
Enfield Park Rd, Tweedsmuir Close	0752	0822	0852	0922	0952	1022	1052	1122	1152	1222	1252	1322	1352	1422	1452	1522	1552	1622	1652	1720	1750	1818	1848	1912	|	1942	|	|	|	|	|	|	|	|
Cinnamon Brow, Millhouse Rdbt	0754	0824	0854	0924	0954	1024	1054	1124	1154	1224	1254	1324	1354	1424	1454	1524	1554	1624	1654	1722	1752	1820	1850	1914	|	1944	|	|	|	|	|	|	|	|
Peel Hall Bus Turning Circle	0804	0834	0904	0934	1004	1034	1104	1134	1204	1234	1304	1334	1404	1434	1504	1534	1604	1634	1704	1732	1802	1830	1900	1924	|	1954	|	|	|	|	|	|	|	|
Cinnamon Lane North	0805	0835	0905	0935	1005	1035	1105	1135	1205	1235	1305	1335	1405	1435	1505	1535	1605	1635	1705	1733	1803	1831	1901	1925	|	1955	|	|	|	|	|	|	|	|
Orange Grove, Avery Close	|	|	|	|	1007	|	1107	|	1207	|	1307	|	***1407***	|	1507	|	1607	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|
Greenwood Crescent, Merrick Cl	0807	0837	0907	0937	1009	1037	1109	1137	1209	***1237***	1309	1337	1409	***1437***	1509	1537	1609	1637	1707	1735	1805	1833	1903	1927	|	1957	|	2013	|	2113	|	2216	|	2310
Statham Avenue, Kirkstone Av	0810	0840	0911	0941	1013	1041	1113	1141	1213	1241	1313	1341	1413	1441	1513	1541	1613	1641	1711	1739	1809	1836	1906	1930	|	2000	|	2016	|	2116	|	2219	|	2313
Ryfields Village	|	|	|	|	|	1047	|	1147	|	1247	|	1347	|	1447	|	1547	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|
O'Leary Street	0815	0845	0917	0947	1019	1049	1119	1149	1219	1249	1319	1349	1419	1449	1519	1549	1619	1647	1717	1745	1815	1841	1911	1935	1919	2005	1949	|	2049	|	2151	|	2251	|
Winwick Road, Collegiate Inst	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	2018	|	2118	|	2221	|	2315
Orford Park Centre	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	2019	|	|	|	|	|	|
Warrington, Interchange	0822	0852	0925	0955	1027	1057	1127	1157	1227	1257	1327	1357	1427	1457	1527	1557	1627	1655	1725	1753	1823	1848	1918	1942	1926	2012	1956	2027	2056	2126	2156	2227	2256	2321

Warrington - Gorse Covert via Orford - Locking Stumps - Birchwood — 25
Warrington - Cinnamon Brow via Winwick Road — 26E
Warrington - Cinnamon Brow via Orford — 27E

Saturday — **Ref PEEL From 18/05/19 To 31/12/29**

Service No:	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	27E	26E	27E	26E	27E	26E	27E	26E	27E
Warrington, Interchange [14]	0632	0701	0720	0750	0820	0850	0920	***0950***	***1020***	1050	***1120***	***1150***	1220	1250	***1320***	***1350***	***1420***	1450	1520	***1550***	1620	***1650***	1720	1750	1820	1854	***1923***	1954	2023	2054	2129	2159	2229	2253
Orford Park Centre	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	1929	|	2029	|	|	|	|	|
Winwick Road, Collegiate Inst	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	1930	|	2030	|	2134	|	2234	|
O'Leary Street	0640	0709	0730	0800	0830	0900	0930	1000	1030	1100	1130	1200	1230	1300	1330	1400	1430	1500	1530	1600	1630	1700	1730	1758	1828	1901	|	2001	|	2101	|	2206	|	2300
Ryfields Village	|	|	|	|	|	|	|	1002	|	1102	|	1202	|	1302	|	1402	|	1502	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|
Statham Avenue, Kirkstone Av	0646	0715	0736	0806	0836	0906	0936	1008	1036	1108	1136	1208	1236	1308	1336	1408	1436	1508	1536	1606	1636	1706	1736	1804	1834	|	1933	|	2033	|	2136	|	2236	|
Greenwood Crescent, Merrick Cl	0649	0718	0740	0810	0840	0910	0940	1012	1040	1112	1140	1212	1240	1312	1340	1412	1440	1512	1540	1610	1640	1710	1740	1807	1837	|	1937	|	2037	|	2140	|	2240	|
Orange Grove, Avery Close	|	|	|	|	|	|	0942	|	1042	|	1142	|	1242	|	1342	|	1442	|	1542	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|
Insall Rd, Valiant Cl	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	1906	|	2006	|	2106	|	2210	|	2304
Cinnamon Lane North	0650	0720	0742	0812	0842	0912	0944	1014	1044	1114	1144	1214	1244	1314	1344	1414	1444	1514	1544	1612	1642	1712	1742	1809	1839	|	|	|	|	|	|	|	|	|
Cinnamon Brow, Millhouse Rdbt	0651	0721	0743	0813	0843	0913	0945	1015	1045	1115	1145	1215	1245	1315	1345	1415	1445	1515	1545	1613	1643	1713	1743	1810	1840	1911	1941	2010	2041	2110	2143	2213	2243	2307
Peel Hall Bus Turning Circle	0701	0731	0753	0823	0853	0923	0955	1025	1055	1125	1155	1225	1255	1325	1355	1425	1455	1525	1555	1623	1653	1723	1753	1820	1850	-	-	-	-	-	-	-	-	-
Enfield Park Rd, Tweedsmuir Close	0703	0733	0755	0825	0855	0925	0957	1027	1057	1127	1157	1227	1257	1327	1357	1427	1457	1527	1557	1625	1655	1725	1755	1822	1852	-	-	-	-	-	-	-	-	-
Crab Lane, Uni of Chester	0705	0735	0757	0827	0857	0927	0959	1029	1059	1129	1159	1229	1259	1329	1359	1429	1459	1529	1559	1627	1657	1727	1757	1824	1854	-	-	-	-	-	-	-	-	-
Locking Stumps, Copperfield Cl	0709	0739	0801	0831	0901	0931	1003	1033	1103	1133	1203	1233	1303	1333	1403	1433	1503	1533	1603	1631	1701	1731	1801	1828	1858	-	-	-	-	-	-	-	-	-
Glover Road, Turf & Feather	0711	0741	0803	0833	0903	0933	1005	1035	1105	1135	1205	1235	1305	1335	1405	1435	1505	1535	1605	1633	1703	1733	1803	1830	1900	-	-	-	-	-	-	-	-	-
Heathfield House	0712	0742	0804	0834	0904	0934	1006	1036	1106	1136	1206	1236	1306	1336	1406	1436	1506	1536	1606	1634	1704	1734	1804	1831	1901	-	-	-	-	-	-	-	-	-
Birchwood Centre	0717	0747	0810	0840	0910	0940	1012	1042	1112	1142	1212	1242	1312	1342	1412	1442	1512	1542	1612	1640	1710	1740	1810	1837	1907	-	-	-	-	-	-	-	-	-
Birchwood, Railway Station	0718	0748	0812	0842	0912	0942	1014	1044	1114	1144	1214	1244	1314	1344	1414	1444	1514	1544	1614	1642	1712	1742	1812	1838	1908	-	-	-	-	-	-	-	-	-
Oakwood, Keyes Close	0721	0751	0815	0845	0915	0945	1017	1047	1117	1147	1217	1247	1317	1347	1417	1447	1517	1547	1617	1645	1715	1745	1815	1841	1911	-	-	-	-	-	-	-	-	-
Gorse Covert, Spar Store	0725	0755	0819	0849	0919	0949	1021	1051	1121	1151	1221	1251	1321	1351	1421	1451	1521	1551	1621	1649	1719	1749	1819	1845	1915	-	-	-	-	-	-	-	-	-
Gorse Covert, Ashdown Lane	-	-	-	-	-	-	-	-	-	-	-	-	-	1353	1423	1453	1523	1553	1623	1651	1721	1751	1819	1847	1917	-	-	-	-	-	-	-	-	-

Model Use Proforma

WARRINGTON Borough Council

Request Title	WMMTM16 Modelling Work - Peel Hall DRAFT
Date of Request	30/04/2019 & 18/06/19
Contact	Fiona Bennett
User Organisation	Highgate Transportation Ltd
User Type	(to be completed by WBC)
User Group	(to be completed by WBC)

A. Request Description
(to be completed by request initiator)

Use of the most appropriate WMMTM16 base model to provide future forecasting for Peel Hall site (1,200 houses) in the following years - see scoping note for detail: 2018 (no development); 2022 (opening year - DM and DS; Option A and B access strategies); 2027 (DM and DS; Option A and B access strategies); 2032 (DM and DS; Option A and B access strategies). Provision of appropriate growth rates for each year. Committed development from WMMTM16 for relevant years to be agreed with WBC planning team.

B. Outputs Required
(to be completed by request initiator)

Results for all above to inlcude link and turning count data in an excel table format for all scenario's; Screenshots of flows, queue and delay plots, total V/C plots and difference plots for all scenario's; provision of appropriate report(s) detailing LMVR, Forecasting and summary results as necessary

C. Interpretation of Request
inc. model runs required
(to be completed by model team)

From the Scoping note provided, the assumed task list is as follows:

Part 1
1a). Updates to the 2016 Base Model (Sub tasks involve updating the model with any missing links required and providing a network diagram)

Part 2
2a). Need to agree outputs and factors to be applied
2b). Identify forecast years and confirm inputs in terms of network and demand for each
2c). Develop a 2018 model for Air Quality assessments
2d). Develop Matrices for 8 identified Demand scenarios (as per scoping note) - assuming 4 growth and 2 access scenarios)
2e). Develop and prepare model networks
2f). Run Models (assuming 3 peaks * 14 network scenarios - total = 42 model runs required)
2g). Create output template
2h). Produce model outputs (assuming Link and Turning Data, Screenshots of flows, queues and delay, Total V/C Plots and difference plots for all scenarios)
2i). Review outputs and reporting

Following initial scoping meeting on Monday 17/06/19, there are additional requirements as follows (REFERENCE **PROFORMA 2A - 18/06/19**):

Part 0 - to be undertaken prior to Part 1
0a). Review WMMTM16 Base model in study area and confirm location of calibration counts and journey time routes and resulting performance.
0b). Cordon WMMTM16 Base model as per network coverage outlined in emailed received from Fiona Bennett (18/06/19) - ref cordon3[1].PDF.
0c). Collate and analyse additional count data held by HTp/WBC for June 2016.
0d). Add additional counts to calibration of cordon model and assess performance.
0e). ASSUMES NO FURTHER LOCALISED CALIBRATION REQUIRED AND MODEL IS SUITABLE FOR USE AS IS.

Update to Part 2h:
- In addition to the model ouptuts noted above, Select Link Analysis outputs are required for all scenarios (excel and model screenshots). It is assumed that these SLAs will be required for all development zones (assuming 6 entry points)

D. Deliverables to be provided
(to be completed by model team)

Deliverables required:
- updated network diagram
- copies of relevant WMMTM reports
- model outputs in spreadsheet format and SATURN screenshots

Highgate to provide additional count data for June 2016 for the study area.

E. Cost Estimate:
(to be completed by model team)

Access Fee =	£0.00
Time based consultancy costs =	£21,651.00
Uplift =	£4,330.20
Total =	**£25,981.20**

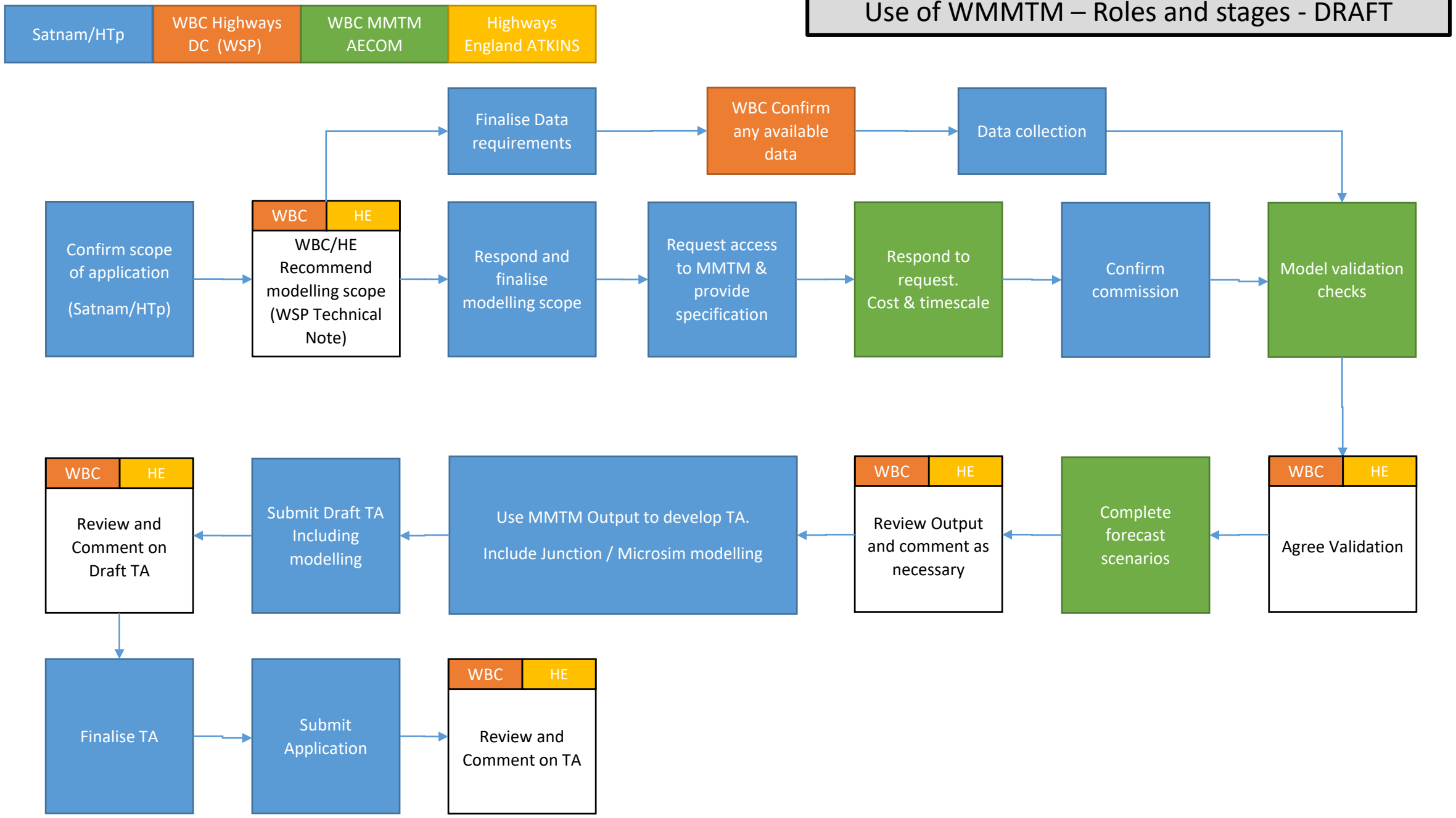
WBC Contact Name:

Approved by: Fiona Bennett on behalf of: Satnam Millennium Ltd

date: 26/06/19

Reference Numbers: (complete as needed)
type: (e.g. Purchase Order No.)
type: (e.g. Project reference)
type: (e.g. other reference)

Use of WMMTM – Roles and stages - DRAFT



AECOM Imagine it. Delivered.

Peel Hall Farm SATURN Modelling

Specification No. TN001	**Client name** Highgate / Satnam	**Client reference** Proforma 2A - 26/06/19 1901 TN03 Draft Scoping Note - Use of WMMTM16_Issue.pdf	**Discipline** Transport Planning
Project name WMMTM 3rd Party Request	**Date** 09 Aug 2019	**Project number** 60566720/M001.106	**Prepared by** Ian Taylor
Approved by Laura Appleton	**Checked by** Frank Mohan	**Verified by** Frank Mohan	

Revision History

Revision	Revision date	Details	Authorised	Position
1.0	09/07/19	DRAFT		
2.1	19/07/19	DRAFT		
2.2	09/08/19	DRAFT		
3.1	22/08/19	DRAFT		
4.1	17/09/19	DRAFT		
4.1	17/02/20	FINAL	L.Appleton	Principal Consultant, AECOM

1. Introduction

Warrington Borough Council (WBC) use a transport model to help estimate and assess future year traffic conditions, inform transport related policy and scheme decision making, as well as informing wider planning decision making.

AECOM were appointed by WBC to build the model in July 2016. The model is referred to as the Warrington Multi Modal Transport Model 2016 (WMMTM16).

The model has been used in a number of ways:

- Its primary purpose is to provide supporting evidence in the development of WBC's Local Plan. The 'Proposed Submission Version Local Plan' (PSVLP) as published in March 2019 is expected to involve substantial development over the next 20 years requiring investment in infrastructure to support both the delivery of this development as well as addressing known congestion issues in the Borough; and
- Be used as a tool by WBC and other 3rd parties who wish to provide supporting modelling evidence as part of the planning application process.

AECOM have been instructed by WBC via the 3rd Party Request proforma to assist with a request for modelling and associated outputs by Highgate Transportation in relation to the Peel Hall Farm development application (**ref. 1901/TN/03, dated June 2019**). The purpose of the modelling is to identify links and junctions on the Warrington network that are impacted by the traffic generated by the development.

This note presents the details of the scope of works and associated modelling assumptions in response to 1901/TN/03.

2. Existing Model

The WMMTM16 has been developed using SATURN modelling software, version 11.3.12U, for highway assignment modelling aspects integrated with EMME 4.29 software for public transport and demand modelling aspects. The following models have been produced:

- A base year highway model for 2016; and
- Two forecast models for 2026 and 2036 based on the Council's Draft Local Plan (as published in March 2019).

Each of these models assess three time periods:

- AM – Average hour 07:45-09:15;
- IP – Average hour 10:00-16:00; and
- PM – Average hour 16:30-18:00.

Agreed Methodology/Approach:

- As this development is not proposing any significant Public Transport improvements, only the highway model is required for assignment.
- As the WMMTM16 is a strategic multi-modal model, a cordoned version of the WMMTM16 will be used in this assessment.
- This assessment will only be looking at the AM and PM peak models.

3. Development Profile & Scenarios

Paragraph 13 of 1901/TN/03 sets out the scenarios to be modelled. In summary, they are:

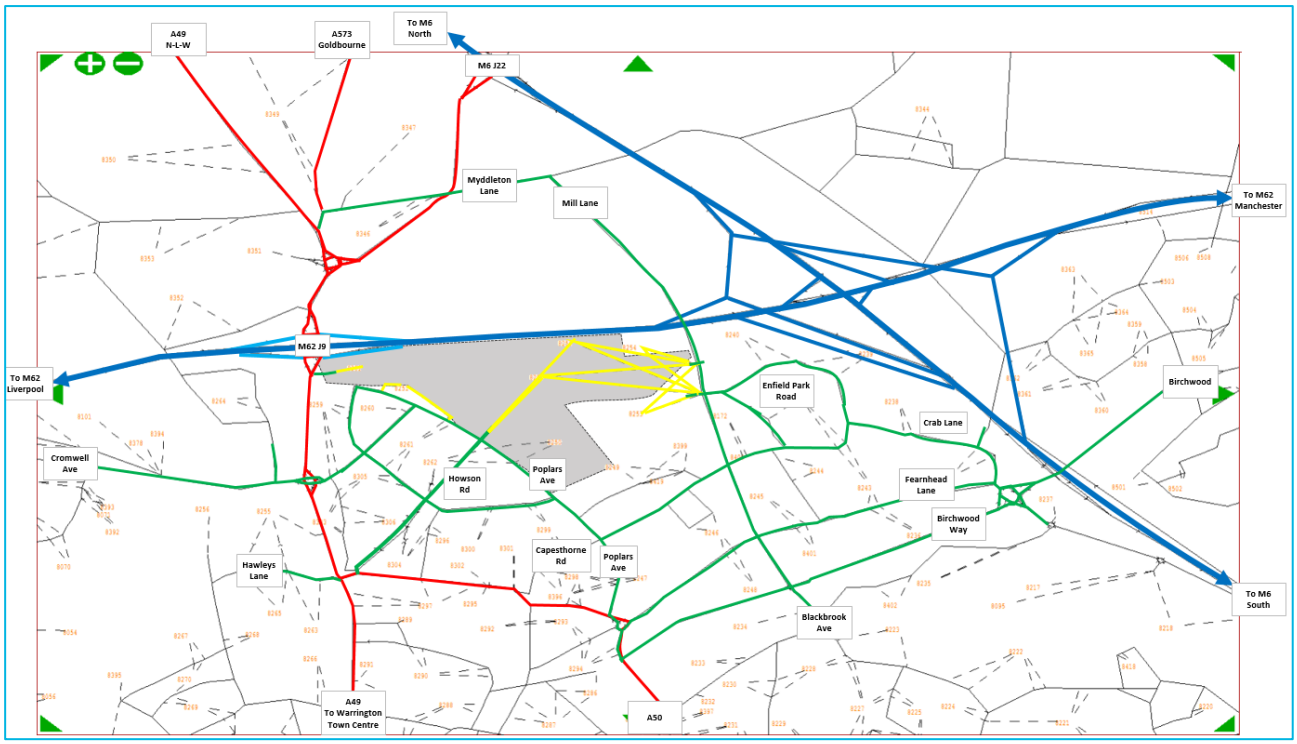
- Existing 2016 Base Model
- 2018 baseline model (no development)
- Opening Year 2022
  - Access Strategy A & B
  - No development, partial development (120), full development
- 5 year after opening 2027
  - Access Strategy A & B
  - No development, partial development (600)
- 10 year after opening 2032
  - Access Strategy A & B
  - No development, full development

Each scenario will be run for the AM and PM peak time periods. Highgate and WBC have confirmed that an Inter-peak model is no longer required. Excluding the 2016 base model runs, as this scenario is already assigned, this is a total of 24 model runs.

4. Study Area

Figure 1 shows the existing 2016 base model network. This has been signed off by WBC on 27/06/19. This image is a confirmation of the proposed study area noted in 1901/TN/03, Appendix 4. All links and junctions highlighted are present in the 2016 WMMTM base model.

Figure 1 2016 WMMTM Base Model Study Area – Existing Network & Zoning

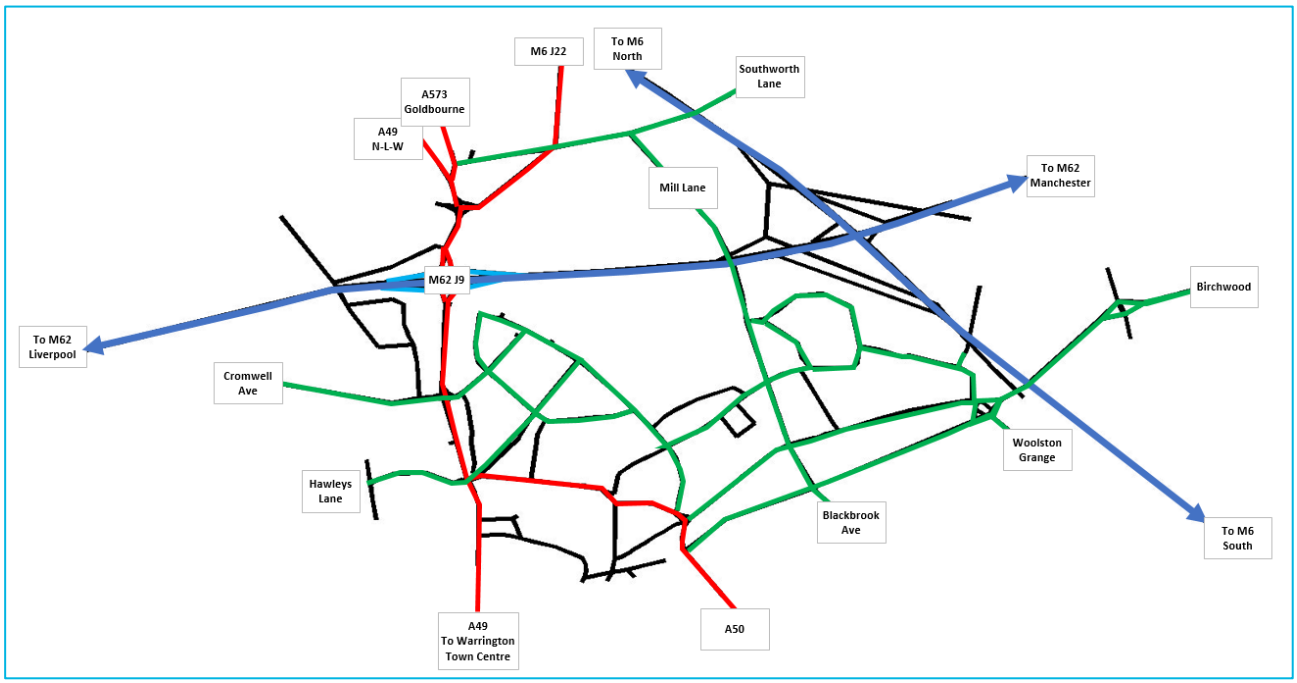


Source: WMMTM16 Base Model Network

5. Model Cordon & Proposed Model Network

The full WMMTM16 model is to be cordoned in line with the extent of the study area shown in **Figure 1** and matches the cordon plans provided by WSP and Highgate on 18/06/19. This cordon matches the structure that has been used in earlier modelling work for the Peel Hall Farm development site. The resulting model network proposed for use in this assessment is shown in **Figure 2**. Based on what has been provided, and known future year committed development locations that need to be considered in this assessment, the extent of this cordon does not currently include all of the Parkside local network.

Figure 2 Extent of Cordoned Model Network (Based on Existing WMMTM 2016 Base Model Network)



Source: WMMTM16 Base Model Network

Agreed Methodology/Approach:

The assumption at this stage is to load southbound Parkside development demand that is deemed to impact on the cordon network directly onto the A49 at Newton-le-Willows. Highgate has confirmed that the cordon network is not required to be extended to include Parkside local network and demand can be loaded directly onto the A49.

Following feedback on the 2016 base model network shown in **Figure 1**, one additional link and updates to the zone structure within the development area was required to be included in the network for this assessment. The revised changes, including network coding for Access Strategy A and B are shown in **Figure 3** for Option A and **Figure 4** for Option B.

Figure 3 Option A SATURN Network Coding & Zone Layout

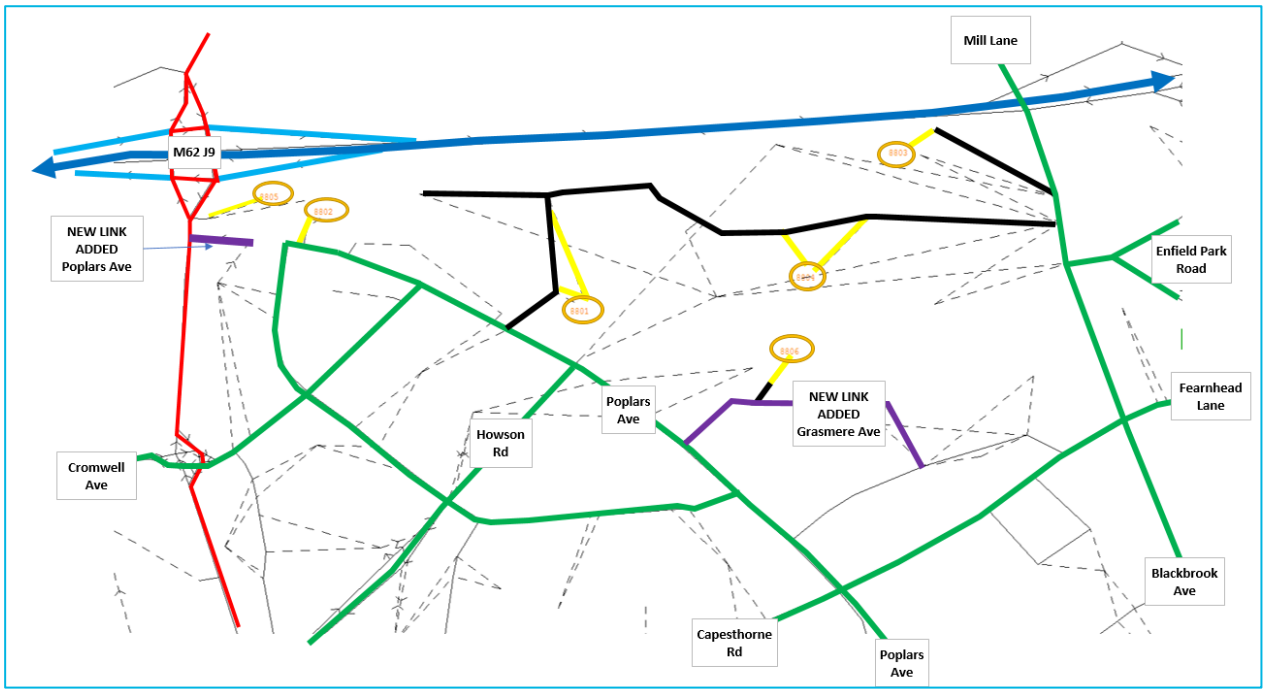
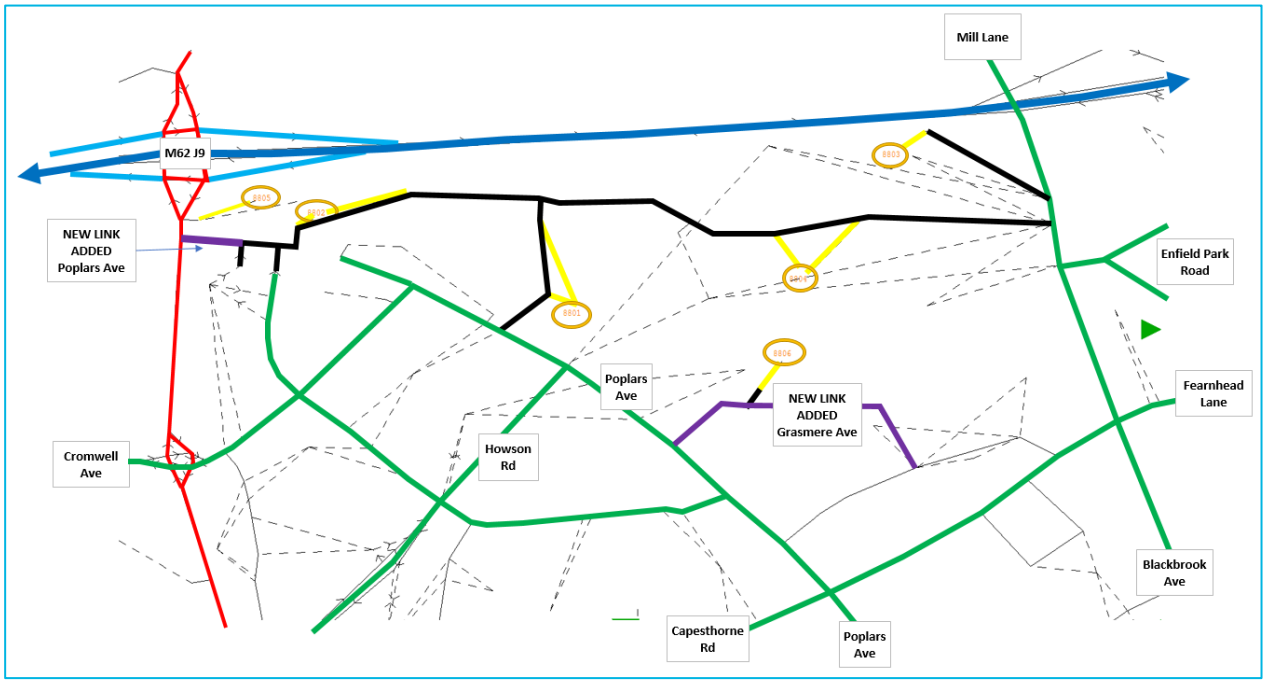


Figure 4 Option B SATURN Network Coding & Zone Layout



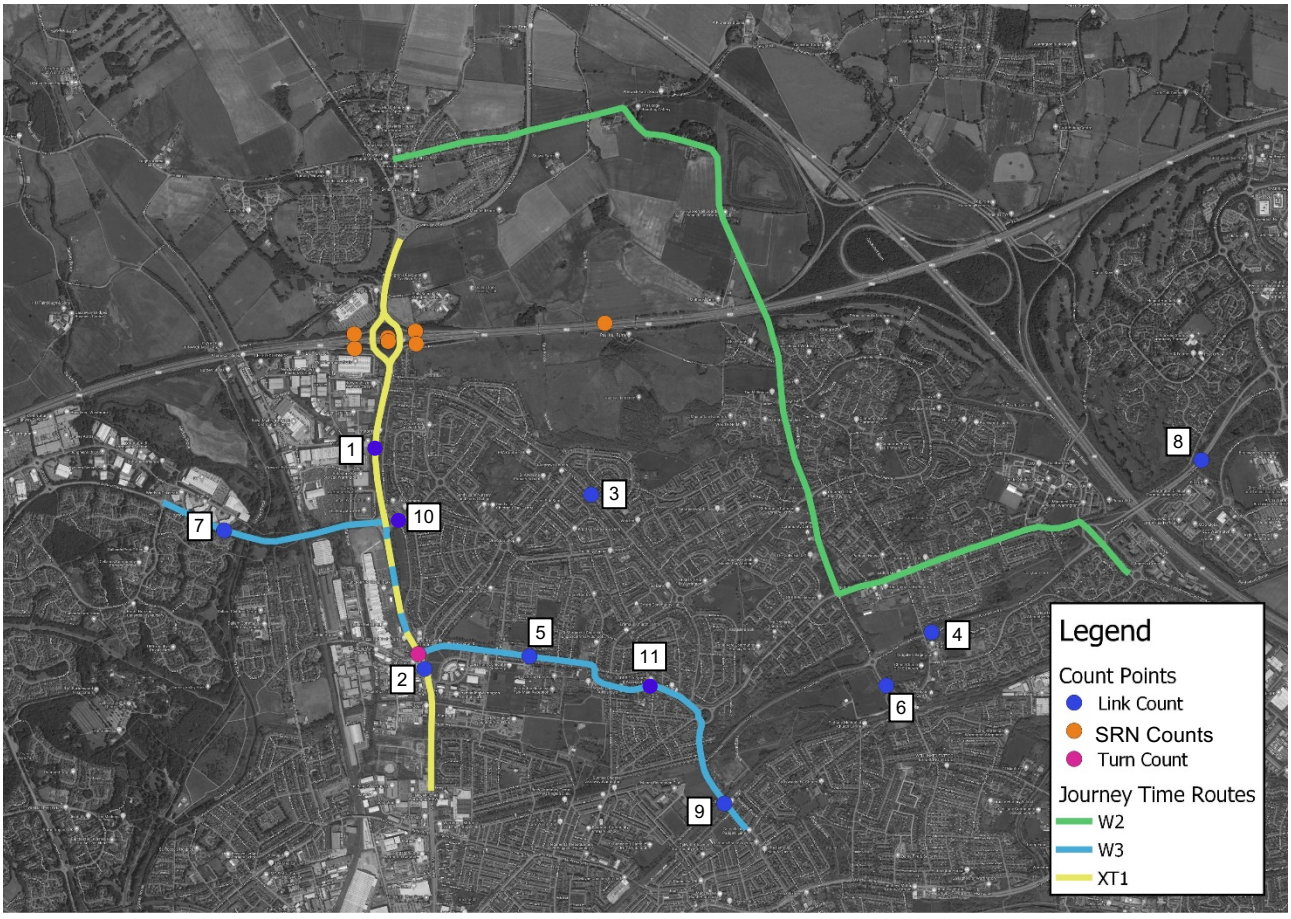
6. Existing Model Calibration & Validation

The WMMTM16 has a simulation area that covers the entire WBC boundary, with an extensive buffer network beyond that. To support this scale of model development, an extensive data collection exercise was undertaken to calibrate and validate the model flows against observed conditions. The WMMTM16 calibrates well against DfT guidance.

However, it is possible that some areas of the network perform better than others due to the level of data coverage. Therefore, the first task in this assessment was to check the level of highway model performance in the vicinity of the study area represented in **Figure 1** & **Figure 2**.

There are a total of 29 link and SRN counts and 12 turning count movements within the study area in WMMTM16, alongside 3 journey time routes that pass through the area. These are shown in **Figure 5**.

Figure 5 WMMTM16 Available Count Sites & Journey Time Routes



Link Counts

The existing count data for sites within the cordoned area have been considered. There are eleven two-way link count sites on the local road network within the cordoned area and a further seven one-way counts on the M62 and slip roads around Junction 9. The level of calibration achieved at each site in the 2016 base year model validation is shown in

Table 2 and **Table 3**.

In summary, the number of link counts achieving a GEH statistic of 5 or less is as shown in **Table 1.** The model achieves a good level of link flow validation in each peak.

WebTAG M3.1, Section 3.2 outlines the guidance criteria for highway calibration/validation. On this basis, all three peaks meet WebTAG guidance for link flows.

Table 1 Proportion of Sites Achieving a GEH Statistic of 5 or Less

Period	All Sites	GEH <=5	Proportion <=5
AM	29	26	90%
PM	29	27	93%

Table 2 Observed and Modelled Counts for Cordon Area – Local Road Network

FRef	Site	AM Peak			PM Peak		
		Obs	Mod	GEH	Obs	Mod	GEH
1	Winwick Road (s of M62)	1,682	1,773	2.2	1,348	1,573	5.9
	Winwick Road (s of M62)	1,205	1,157	1.4	1,823	1,638	4.4
2	Winwick Rd (south of Long lane)	1,846	1,689	3.7	1,374	1,349	0.7
	Winwick Rd (south of Long lane)	1,065	1,064	0.0	1,591	1,589	0.0
3	Poplars Avenue	212	192	1.4	350	326	1.3
	Poplars Avenue	369	353	0.8	284	286	0.1
4	Birchwood Way (west of M6)	1,014	716	10.1	603	611	0.3
	Birchwood Way (west of M6)	490	526	1.6	1,003	1,026	0.7
5	Long Lane	644	545	4.1	602	589	0.5
	Long Lane	433	395	1.9	526	534	0.4
6	Blackbrook Av (cordon entry point)	830	835	0.2	559	608	2.0
	Blackbrook Av (cordon entry point)	714	829	4.1	947	847	3.3
7	Cromwell Av (cordon entry point)	637	651	0.5	908	903	0.2
	Cromwell Av (cordon entry point)	866	845	0.7	955	961	0.2
8	Birchwood Way (east of M6) (cordon entry point)	2,419	2,173	5.1	1,098	1,114	0.5
	Birchwood Way (east of M6) (cordon entry point)	971	1,027	1.8	1,855	1,744	2.6
9	Orford Road (cordon entry point)	703	651	2.0	686	560	5.0
	Orford Road (cordon entry point)	564	408	7.1	599	301	14.1
10	Sandy Lane (EB)	315	364	2.7	408	457	2.3
	Sandy Lane (WB)	341	421	4.1	422	425	0.1
11	Orford Green (West)	451	423	1.3	476	449	1.3
	Orford Green (East)	496	464	1.5	547	538	0.4

Table 3 Observed and Modelled Counts for Cordon Area – Motorway Network

Site	AM Peak			PM Peak		
	Obs	Mod	GEH	Obs	Mod	GEH
M62 J9 EB on-slip	511	773	10.4	623	396	10.1
M62 J9 Wb off-slip	701	830	4.7	785	528	10.0
M62 J9 WB on-slip	767	639	4.8	1039	712	11.1
M62 J9 EB off-slip	866	827	1.3	936	958	0.7
M62 EB (J9-J10)	3,767	3,968	3.2	4,645	4,287	5.4
M62 through J9 WB	3,681	3,670	0.2	4,596	4,596	0.0
M62 through J9 EB	3,143	3,194	0.9	3,879	3,891	0.2

Turning Counts

Turning count data was collected at one junction in the cordoned study area; the A49 junction with Hawleys Lane and Long Lane. The comparison of modelled and observed turning count movements is shown in

Table 5.

The criteria used to assess these movements are:

- A GEH value less than 5; and
- For turn flows less than 700 vehicles, absolute error less than 100; or
- For turn flows greater than 700 vehicles, absolute error less than 15%.

These criteria are given in WebTAG Unit M3.1 as acceptability guidelines for link flows and turning movements. The Unit notes in paragraph 3.2.9 that the acceptability level of 85% may be difficult to achieve for turning counts.

The results summary shows that 56% of flow comparisons have a GEH value less than 5. The proportion achieving the flow criteria is higher, the AM peak proportion is 67% while the PM peak is close to or above 85%.

Table 4 Proportion of Turning Count Movements Achieving GEH Less Than 5

Period	All Sites	GEH <=5	Proportion GEH <=5	GEH <= 5 or flow error <100	Proportion
AM	12	6	50%	8	67%
PM	12	7	58%	10	83%

Table 5 Turning Count Validation

From Arm	To Arm	AM Peak Obs	AM Peak Mod	AM Peak GEH	PM Peak Obs	PM Peak Mod	PM Peak GEH
B	A	208	254	3.0	304	612	14.4
B	D	119	111	0.8	140	176	2.9
B	C	54	2	9.9	97	24	9.4
A	D	253	76	13.8	254	184	4.7
A	C	1,404	1,404	0.0	998	1,127	4.0
A	B	216	188	1.9	180	112	5.7
D	C	388	288	5.5	280	198	5.3
D	B	157	182	1.9	141	183	3.3
D	A	237	124	8.4	253	114	10.2
C	B	65	133	6.9	73	75	0.3
C	A	769	838	2.4	1,273	1,297	0.7
C	D	231	93	10.9	245	217	1.9

Arm	Approach
A	Winwick Road North
B	Hawleys Lane
C	Winwick Road South
D	Long Lane

Journey Time Validation

The modelled journey time routes that pass through the study area were identified and data for the relevant sub-sections of three routes that pass through the study area was extracted. The 3 routes identified are:

- Warrington 2 – M6 J21 to M62;
- Warrington 3 – Cromwell Avenue to Chestier Road; and
- Cross Town route XT1 –A49.

The sections within the study area were extracted and a comparison between observed and modelled times is shown in **Table 7**. A summary of the results is shown in **Table 6**. Overall, for all routes and time periods, the percentage within ±15% is above the recommended WebTAG value of 85%. In the AM peak period only one site falls below the standard while in the PM peak all routes are within ±15%.

Table 6 Summary of Journey Time Runs

Period	Sections within ±15%	Percentage within ±15%
AM	5	83%
PM	6	100%
Total	**16**	89%

Table 7 Journey Time Comparisons (mins)

		AM Obs	AM Mod	AM Error	PM Obs	PM Mod	PM Error
Wton_2 - Woolston Grange Road to Winwick via Fearnhead Ln and Blackbrook Ave	NB	11.07	8.26	-25.4%	9.58	8.97	-6.4%
	SB	10.31	11.78	14.3%	9.11	8.60	-5.6%
Wton_3- Cromwell Avenue to Birchwood Way via Long Lane	CW	9.86	8.63	-12.5%	8.46	8.88	5.0%
	ACW	7.06	7.27	2.9%	8.87	8.37	-5.6%
XT1 - A49 between Kerfoot St and B&Q Junction	NB	6.95	7.76	11.6%	10.09	9.08	-10.1%
	SB	10.76	10.83	0.7%	7.48	8.46	13.1%

Summary of WMMTM16 Validation

Reviewing the available count data from the original WMMTM16 base model in the study area shows that the model gave a good representation of flows and times in the cordon area, though not all time periods and sites were able to meet WebTAG guidance criteria when looking at turning counts.

Figures Figure 6**,** Error! Reference source not found. and **Figure** 7 summarise the GEH performance for each of the model time periods.

Figure 6 WMMTM16 AM GEH Summary

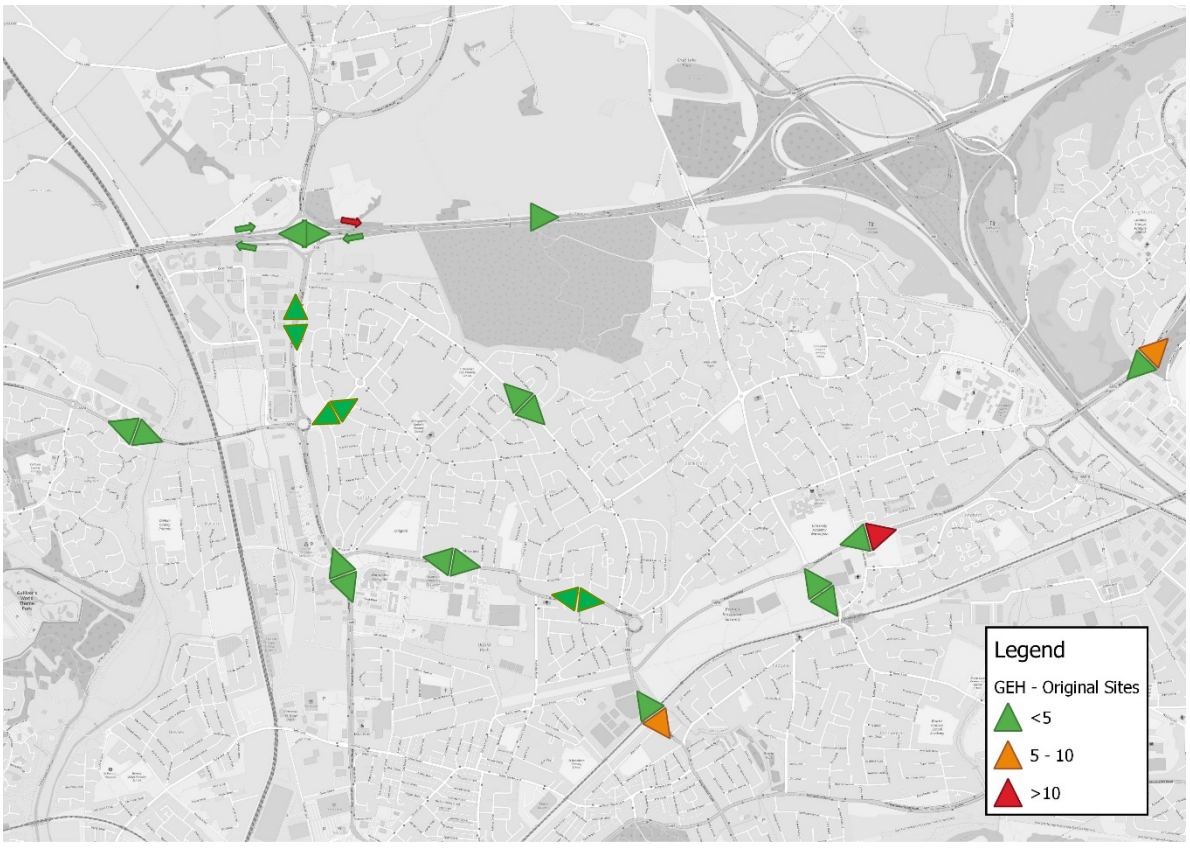


Figure 7 WMMTM16 PM GEH Summary

Additional count data information was provided by Highgate on 04/07/19 to determine whether further work is needed on the cordon base model to ensure a more accurate reflection of traffic demand in the study area. The results of this secondary review are presented in the next section.

7. Additional Data Available

Additional data from Highgate has been provided in the form of manual classified turning counts (a single day survey) and automatic traffic counts (a one-week survey). The majority of the count data available relates to April 2019 and are spread across the cordoned area.

In addition to 2019 data, the following data was also requested:

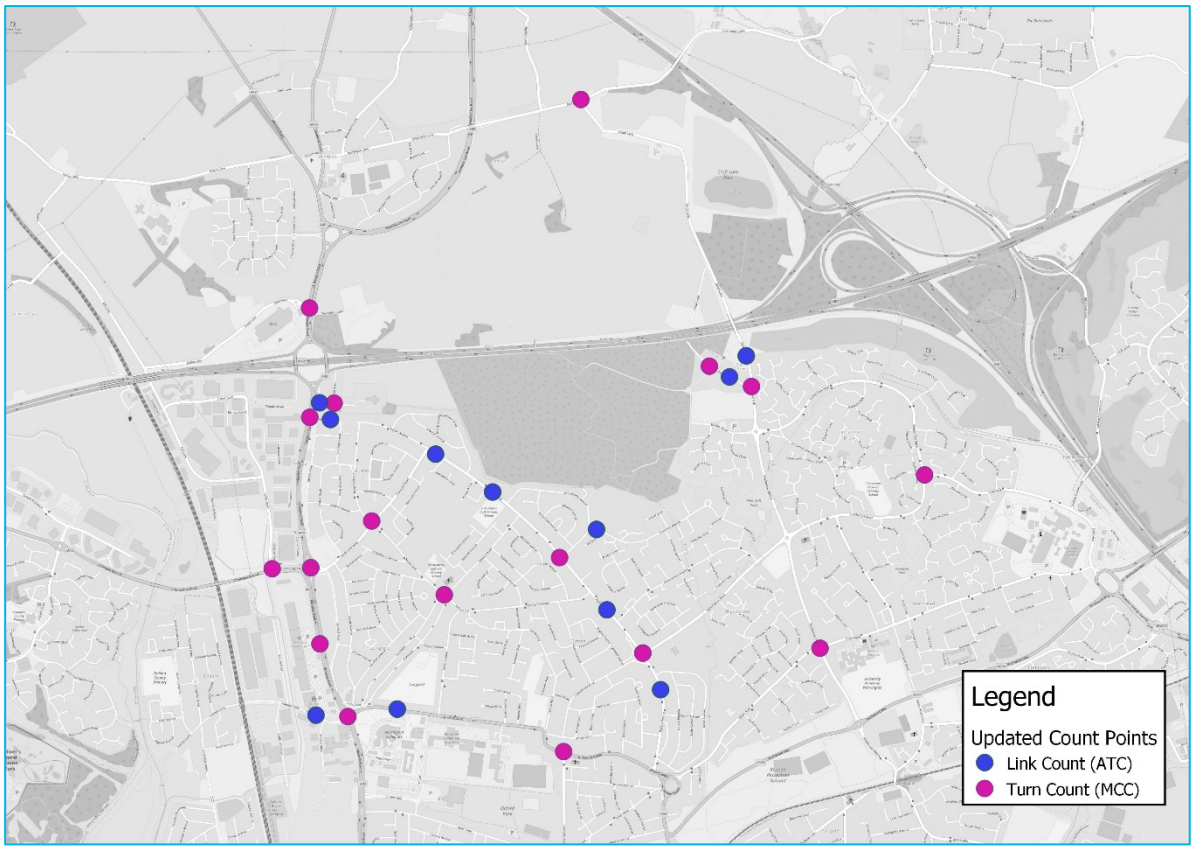
- October and November 2017 - A49 ATC and March 2018; and
- February and March 2016.

The cordon model has been reviewed against data from the original 2016 Base Model (June 2016 counts) and the 2019 April data provided by Highgate as this was the largest dataset offering the largest coverage. The April 2019 dataset (locations shown in **Figure 8**) represents:

- 17 manual classified junction turning counts; and
- 11 link-based automatic traffic counts.

This dataset has been reviewed against the WMMTM16 base model outputs. Comparisons have been carried out with the AM Peak counts for the hour 0800-0900 and the PM peak 1700-1800. These periods do not match exactly with the WMMTM16 modelled hours but should not give a significant difference when being used in the context of this analysis.

Figure 8 Location of Highgate 2019 Counts



Agreed Methodology/Approach:

The assumption at this stage was not to re-base the secondary count data to 2016 levels as it was felt that there would not have been significant growth or reduction in traffic levels between 2016 and 2019. However seasonal variation in addition to 2016-2019 changes will impact on what will be deemed to be a suitable performance from the model.

Link Counts

Link flows have been extracted from the count dataset for key links in the cordoned area. The results are derived from a combination of one-day manual classified turning counts and one-week automatic traffic counts. The turning counts were carried out for AM and PM peak periods only.

A summary of the fit between observed and modelled counts is shown in **Table 8**. Full details of locations and counts is given in **Table 9**. **Table 10** presents 2017 and 2018 link count results for 2 additional sites along Winwick Road as these were missing from the 2019 dataset.

Table 8 Proportion of Sites achieving GEH less than 5

Period	All Sites	GEH <=5	Proportion <=5
AM	18	6	33%
PM	18	4	22%

Figure 9 AM GEH Summary - Highgate Sites 2019

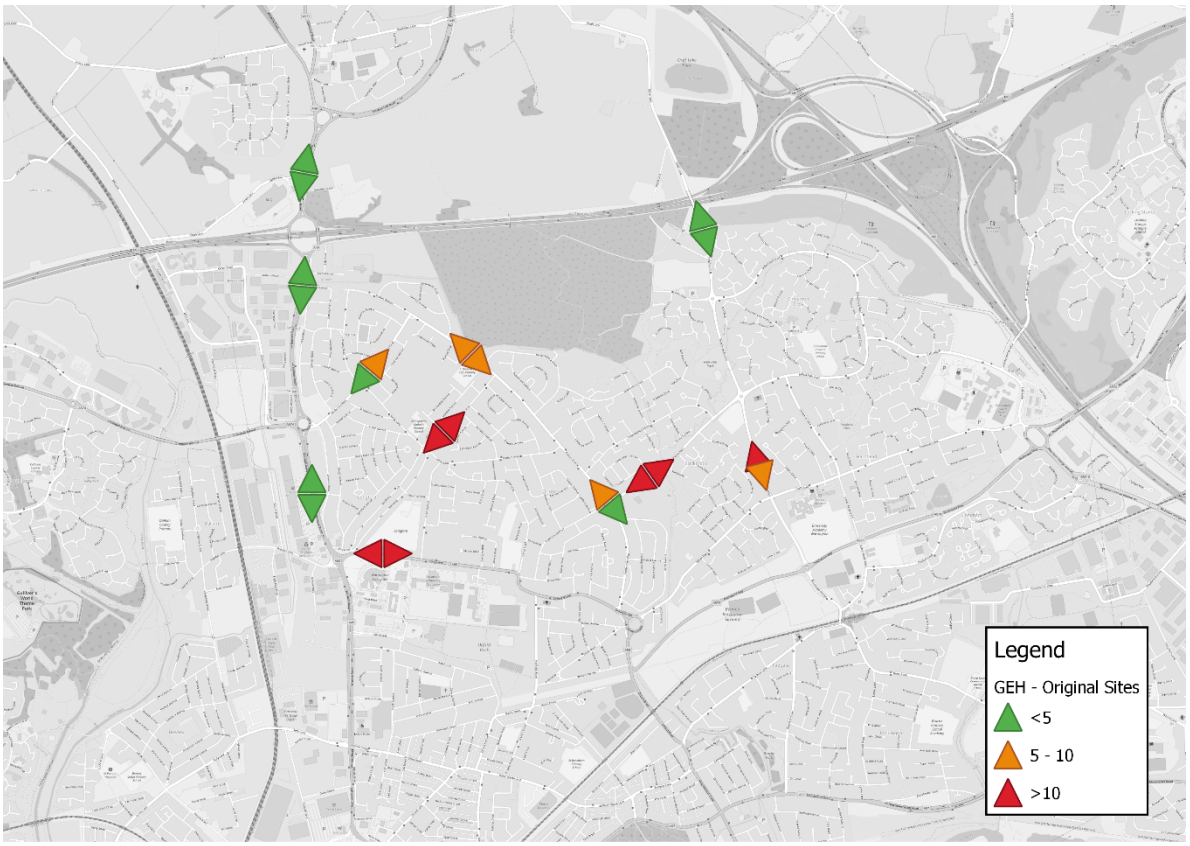


Figure 10 PM GEH Summary - Highgate Sites 2019

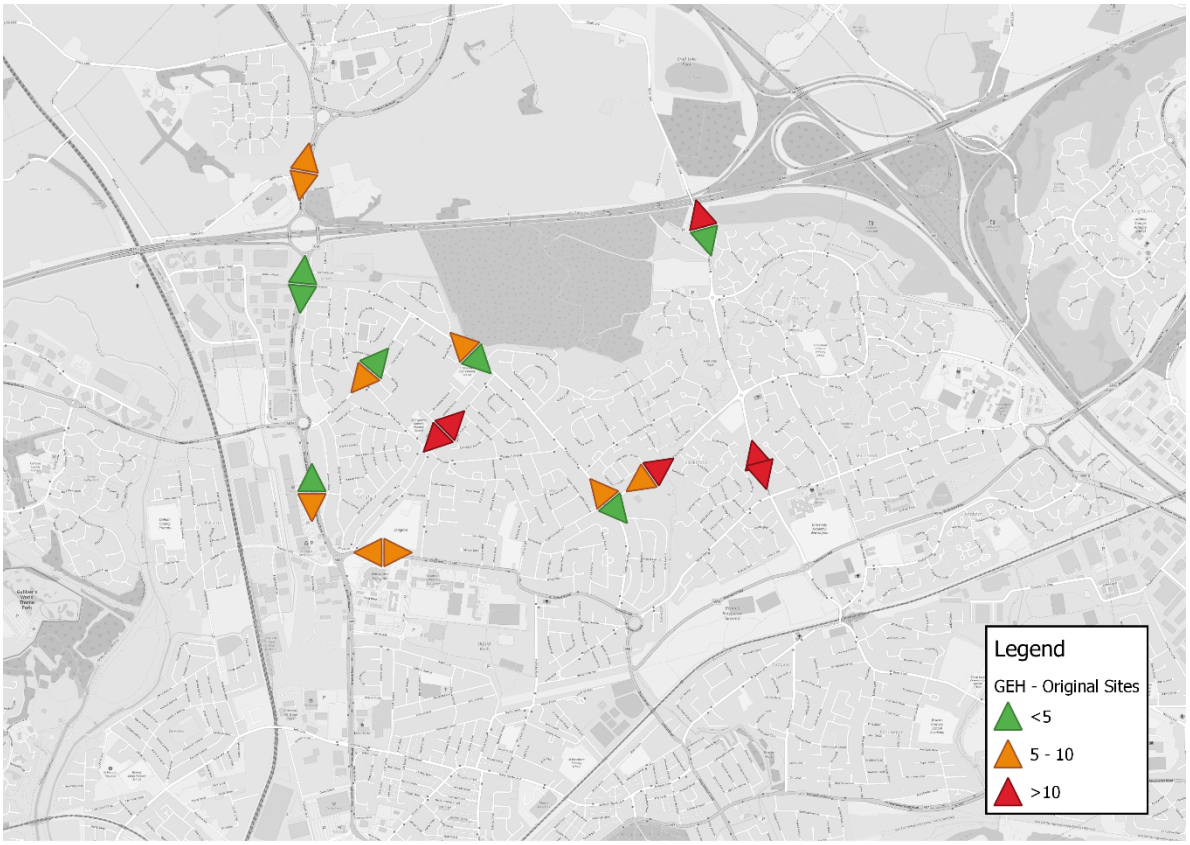


Table 9 Link Flow Data – Highgate Sites (2019 counts)

Site	Type		AM Peak			PM Peak		
		Dir	Obs	Mod	GEH	Obs	Mod	GEH
Mill Lane at M62	ATC	NB	351	439	4.4	480	267	11.0
		SB	500	475	1.1	358	297	3.4
Blackbrook Ave N of Hilden Road	MCC	NB	391	180	12.5	330	171	10.0
		SB	341	254	5.1	400	178	13.0
Poplars Av at Capesthorne Road	MCC	NB	302	412	5.8	477	620	6.1
		SB	392	467	3.6	360	339	1.1
Capesthorne Road E of Poplars Av	MCC	EB	169	578	21.2	148	430	16.6
		WB	281	487	10.5	268	459	10.0
Howson Rd	MCC	NB	108	23	10.5	193	23	16.4
		SB	214	21	17.8	133	14	13.8
Cleveland Road	MCC	NB	222	116	8.2	185	239	3.7
		SB	150	102	4.2	193	81	9.6
A49 N of Delph Lane	MCC	NB	1,361	1,236	3.5	1,956	1,719	5.5
		SB	1,778	1,665	2.7	1,402	1,172	6.4
Poplars Ave	ATC	EB	330	211	7.2	303	243	3.6
		WB	171	103	5.8	244	170	5.1
A50	ATC	EB	594	337	11.9	644	512	5.5
		WB	712	359	15.3	697	523	7.1

NB *- Site type ATC = One week automatic traffic count; MCC = One day manual turning count.*

It is noted that in the majority of cases, around 70% in each peak, the observed count exceeds the model value. It is possible therefore that growth in traffic between 2016 and 2019 may be a factor.

Table 10 Extra Sites – Winwick Road for Highgate 2017 and 2018 Count Data

Site	Year	Dir	AM Peak			PM Peak		
			Obs	Mod	GEH	Obs	Mod	GEH
A49 Winwick Road between Hawleys Lane and Cromwell Ave	2018	NB	1,124	1,157	1.0	1,815	1,638	4.3
		SB	1,689	1,773	2.0	1,328	1,573	6.4
A49 Winwick Road between Cromwell Ave and M62 J9	2017	NB	1,096	1,256	4.7	1,652	1,821	4.0
		SB	1,718	1,695	0.6	1,357	1,292	1.8

Table 11 Proportion of Sites achieving GEH less than 5 (once Extra Winwick Sites Added)

Period	All Sites	GEH <=5	Proportion <=5
AM	22	10	45%
PM	22	7	32%

When compared to **Table 8**, adding the extra Winwick Road sites improves the overall performance of the additional sites, albeit still under the WebTAG guidance threshold.

Junction Turning Counts

The majority of extra counts have been carried out on the local road network in the study area. Several represent junctions that are not fully represented in the WMMTM16 base model; they are modelled as 'stubs', representing locations whereby local traffic enters the network via the model zones and are therefore, not fully represented in the WMMTM. These junctions have not been assessed. However, turning movements at eight junctions have been compared with the WMMTM16 base model flows.

The results show that the GEH criteria are met for very few turns although the proportion achieving the flow criteria is much higher. This is to some extent because the junctions are characterised by a number of small volumes on turns for which relatively small absolute errors lead to high values for the GEH statistic, skewing the overall result.

Table 12 Summary of Junction Turning Comparison

Period	Proportion GEH` <=5	Proportion achieving flow criteria
AM Peak	26.9%	66.7%
PM Peak	32.1%	74.4%

Table 13 Junction Turning Count Summary- Proportion of Turns at a Junction that meet criteria

Count No	Junction Name	Percentage of turns passing GEH criteria		Percentage of turns passing flow criteria	
		AM Peak	PM Peak	AM Peak	PM Peak
1	A573 / Myddleton Lane	33%	0%	33%	17%
2	A49 / Golborne Road	33%	33%	33%	33%
4	Blackbrook Ave / Insall Lane / Hilden Road	25%	25%	75%	92%
10	Sandy Lane / Cotswold Road / Cleveland Road	33%	25%	83%	92%
11	Sandy Lane / Howson Road	17%	33%	92%	83%
13	Poplars Avenue / Capesthorpe Road	25%	33%	75%	83%
14	A49 / Delph lane	33%	50%	50%	83%
16	A49 / A50 Hawleys Lane	25%	50%	50%	67%

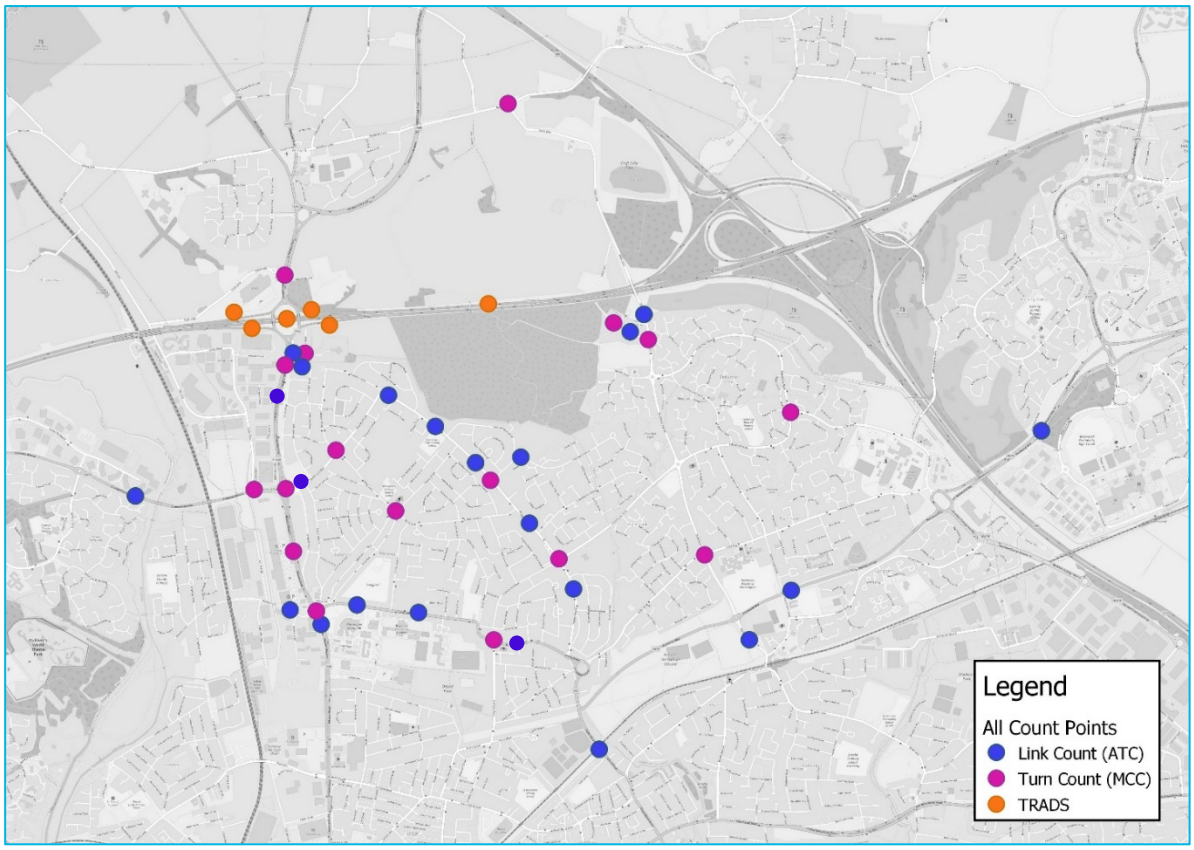
8. Overall Calibration Performance – Pre Adjustment

The cordon model has been reviewed against data from the original model development and against new data for the local area provided by Highgate.

Using the original data, it was shown that the model gave a good representation of flows and travel times in the cordon area to a level acceptable at WebTAG standards.

Additional data from Highgate has been provided in terms of manual classified turning counts (single day) and automatic traffic counts (one week). The majority of the count data relates to April 2019 and are collected across the cordoned area. A summary of all the count site locations is shown in **Figure 11**.

Figure 11 Total Count Site Coverage Within Cordon Area



Overall GEH performance by site and time period is shown in **Figures Figure** 12**,** Error! Reference source not found. and **Figure** 13.

Figure 12 AM GEH Summary - All Sites

Figure 13 PM GEH Summary - All Sites

The results show some significant differences between modelled flows and count data, particularly on some of the minor roads to the east of the A49. It should not be surprising that the strategic model does not more accurately represent traffic flows in this local residential area. The differences are a result of an absence of count data in the area used during the original model development, the scale of the model and its network and the level of zone configuration and disaggregation in the area.

The important differences appear to be an issue with routing along the parallel Capesthorne Avenue and A50 / Hilden Road and flow differences along Myddleton Lane and Golborne Road. However, in this area, the Highgate count data appears inconsistent along this section and Matrix Estimation would not work. An example of this is shown in **Figure 14**. This figure shows two Highgate counts along Myddleton Lane with vastly different flows (one 2016 and one 2019). There is no significant network between the two locations which would explain the difference in flow. If both these counts were included in the Matrix Estimation process, one count would have to take priority over the other meaning the secondary count would never be matched (as the differences are too great).

Agreed Methodology/Approach:

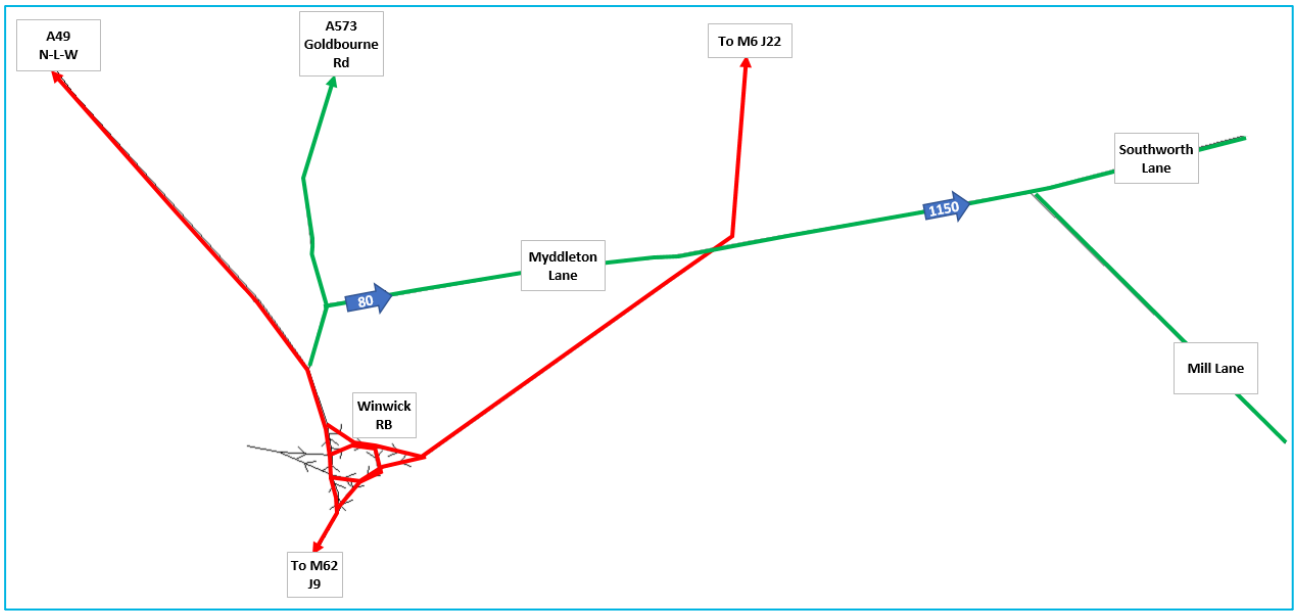
Highgate have undertaken an MCC survey at the A573 Goldbourne Road junction with Myddleton Lane and the Mill Lane / Myddleton Lane on Wednesday 17th July to help improve understanding on what traffic demand patterns are like in this area, particularly with respect to turning proportions.

Caveats have been agreed with respect to this dataset, namely:

- Data is being collected outside of a ‘neutral’ month; and
- Risk of data being unrepresentative and unable for further use in this piece of work.

AECOM will review the data against the model flows when available and provide feedback on its suitability for use.

Figure 14 Count Inconsistency Example



Agreed Methodology/Approach:

For the purposes of using the cordon model to assess the Peel Hall Farm development it appears that there may be value in some model refinement. This work should be commensurate with the requirements of the study and limited to better representing flows on the main distributors through the area.

To obtain a WebTAG acceptable fit to all the available counts, it is likely that a significant amount of zone disaggregation would be required and a refinement to the zone loading points. It was agreed that this not considered to be a useful exercise at this time.

It was agreed that the following would be undertaken, where possible:

- Adjust all of the available count data to a common base, taking account of seasonality and year, in line with source model;
- Review the performance of the model against these 'corrected' counts and identify areas for improvement;
- Investigate network speeds on the routes between the A49 and Blackbrook Avenue to improve routing in the area and also review zone connectors;
- On Golborne Road and Myddleton lane we would review routing in the strategic model, it appears that some degree of 'rat running' may be being picked up by the counts which is not evident in the model;
- If still considered necessary then undertake limited matrix estimation recognising that it is unlikely to be possible to achieve full calibration on the more minor links within the model areas.

9. Overall Calibration Performance – Post Adjustment

Following a review of both the WMMTM16 and Highgate counts in the study area, a number of areas were identified that could be targeted for improvement in network calibration performance. This section presents the results of these changes.

Speeds Review

Speeds have been reviewed and updated along a number of local roads in the study area where calibration against the 2019 Highgate counts is currently poor. Sections of Capesthorne Road, Poplars Avenue, and Blackbrook Avenue have had their link speeds reduced from 48kph (30mph) to 32kph (20mph).

This adjustment has been applied to reflect the fact that the capacity and travel speeds along these routes are impacted by high levels of on-street parking, narrow roads, and a number of traffic calming measures present (including priority give-way areas, and speed bumps).

The effects of this change has been to improve calibration due to reassignment of demand on the altered network at:

- Capesthorne Road (east of Poplars Ave);
- Poplars Ave; and
- Blackbrook Ave.

Table 14 Change in GEH for Highgate Sites

Site	Type	Dir	Original		NEW	
			AM GEH	PM GEH	AM GEH	PM GEH
Blackbrook Ave N of Hilden Road	MCC	NB	12.5	10.0	2.3	0.5
		SB	5.1	13.0	5.1	9.3
Capesthorne Road E of Poplars Av	MCC	EB	21.2	16.6	2.5	9.6
		WB	10.5	10.0	3.1	3.8
Poplars Ave	ATC	EB	7.2	3.6	4.5	2.7
		WB	5.8	5.1	0.5	1.8

Overall, the impact on the total GEH proportion is as follows:

Table 15 Change in Overall GEH Performance for Highgate Sites

Time Period	No. of Sites Assessed	No. of Sites with a GEH < 5		No. of Sites with a GEH > 10	
		Original	New	Original	New
AM	18	6 (33%)	10 (55%)	7 (39%)	4 (22%)
PM	18	4 (22%)	7 (39%)	7 (39%)	3 (17%)

Whilst an improvement at these sites, the overall performance of the Highgate dataset still fall short of WebTAG acceptability criteria.

Zone Connectors Review

The final network check was along the A50 and a review of the zone connections to the network. The following changes have been made:

- Changes to the zone loading points for zone 8297 which is representing land to the south of the A50 and east of the A49; and
- Speed reductions along Gough Avenue (from 32kph to 20kph) to reduce the amount of parallel routing and 'rat running'.

Table 16 Change in GEH for Highgate Sites along the A50

Site	Type	Dir	Original		NEW	
			AM GEH	PM GEH	AM GEH	PM GEH
At A50 / A49 Long Lane Jcn (Turning Count)	WMMTM	EB	16.2	2.5	9.2	2.1
		WB	2.6	7.4	8.9	4.1
Northway to Fisher Ave	Highgate	EB	13.1	5.5	12.8	6.7
		WB	10.7	7.1	12.6	5.2
Fisher Ave to Beatty Ave	WMMTM	EB	0.6	0.5	0.1	2.1
		WB	3.0	0.4	1.4	0.3
Orford Green	WMMTM	EB	0.5	0.4	0.5	2.1
		WB	0.9	0.5	0.1	0.5

The Northway to Fisher Avenue site is a 2019 Highgate ATC site. Whilst the flow from this count is consistent with the other WMMTM counts along the A50, the survey location is straddled by the zone connectors for the college. This means that unlike the count, any traffic to and from the college will not be picked up in the modelled flow on this one link, hence suggesting in the GEH comparison that modelled flows are lower than the observed. **Figure 15** and **Figure 16** shows this issue before and after the locations of the zone connectors on the A50 are adjusted. The 2019 Highgate count is shown in orange.

Figure 15 Original Zone Connectors

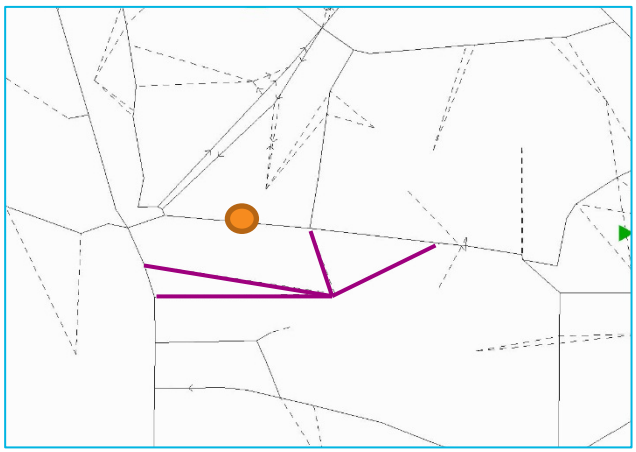
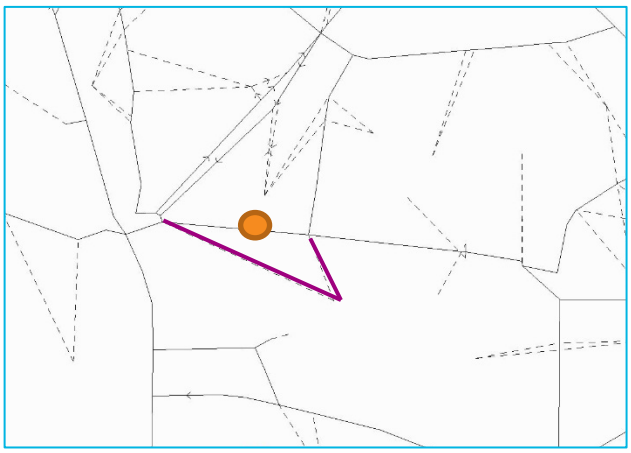


Figure 16 Revised Zone Connectors



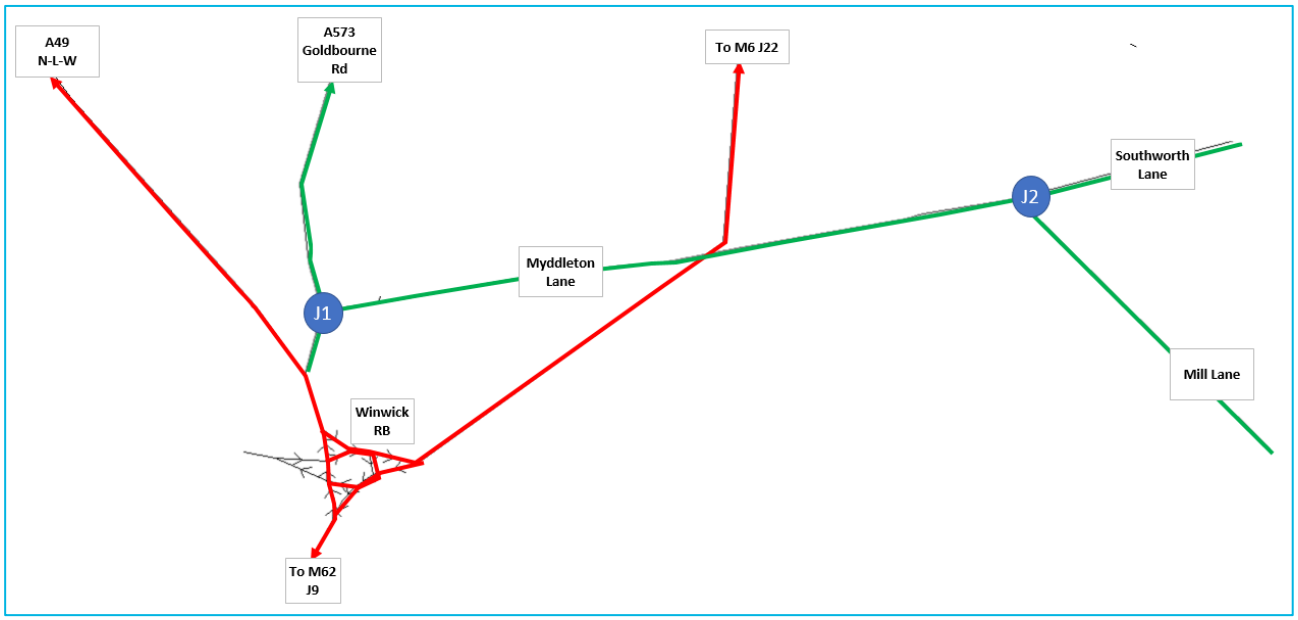
Myddleton Lane Counts Update

A one-day, manual classified turning count survey was undertaken on 17th July 2019 at two junctions:

- **Junction 1** - Golborne Road / Mydleton Lane
- **Junction 2** - Delph Lane / Myddleton Lane

The locations are shown in **Figure 17**.

Figure 17 Location of Additional Surveys



Comparisons have been made between link flows and turning flows from the new counts and the flows from the 2016 base model.

The link flow comparison is shown in **Table 17** and **Table 18**. For Junction 1, both peak periods demonstrate that 50% of link observations have a GEH value of 5 or less, while for Junction 2, no observations in the PM peak have a GEH of 5 or less. For both Junctions, the AM peak provides a better fit than the PM peak.

Table 19 shows the number of turning flows within the two junctions meeting the WebTAG criteria of either GEH less than or equal to 5, or an error of less than 100 vehicles. For the AM peak 50% of movements meet the criteria, for the PM peak 42% of flows meet the criteria.

The observed counts show a significant increase in flow on Myddleton Lane between Golborne Road and Delph Lane. This is such that flows at the Delph Lane end are greater than flows at the Golborne Road end in both directions and in both peaks. This is most apparent in the PM peak westbound where the flow is 83% higher at Delph Lane and eastbound in the AM peak where the flow is 31% higher. This may be attributable to rat running on Highfield Lane or Waterworks Lane as has been suggested.

Such a scale of difference is not reflected in the model, and the minor 'rat-running' routes are not present in the coding and, since no count data in this area was available for the original WMMTM base model development it would appear that this route choice is not reflected by the model (it is also worth noting that this area of network is on the periphery of the borough where levels of network detail begin to decrease).

It is therefore suggested that some limited matrix estimation may be reasonable to infill this missing movement.

Table 17 Junction 1 - Golborne Road Junction Link Flow Comparison

		AM Peak			PM Peak		
Site	Dir	Observed	Modelled	GEH	Observed	Modelled	GEH
Golborne Rd North of Junction	NB	402	622	9.7	397	725	13.9
	SB	346	768	17.9	298	282	1.0
Myddleton Lane	EB	622	695	2.8	499	379	5.7
	WB	359	410	2.6	425	411	0.7
Golborne Rd South of Junction	NB	621	647	1.0	392	760	15.3
	SB	609	486	5.3	352	327	1.3

Table 18 Junction 2 - Delph Lane Junction Link Flow Comparison

		AM Peak			PM Peak		
Site	Dir	Observed	Modelled	GEH	Observed	Modelled	GEH
Myddleton Lane West of Junction	EB	816	713	3.7	586	355	10.6
	WB	439	354	4.2	781	471	12.4
Delph Lane	NB	359	467	5.3	465	291	8.9
	SB	468	568	4.4	414	296	6.3
Southworth Lane East of Junction	EB	533	408	5.7	291	160	8.7
	WB	265	160	7.2	435	281	8.1

Table 19 Turn Flow 'Goodness of Fit' Statistics

	AM Peak		PM Peak	
	No of turn flows	%	No of turn flows	%

	meeting criteria		meeting criteria	
Junction 1 Golborne Road	4	67%	3	50%
Junction 2 Delph Lane	2	33%	2	33%
Total	6	50%	5	42%

Figure 18 AM GEH Summary - NEW Surveys

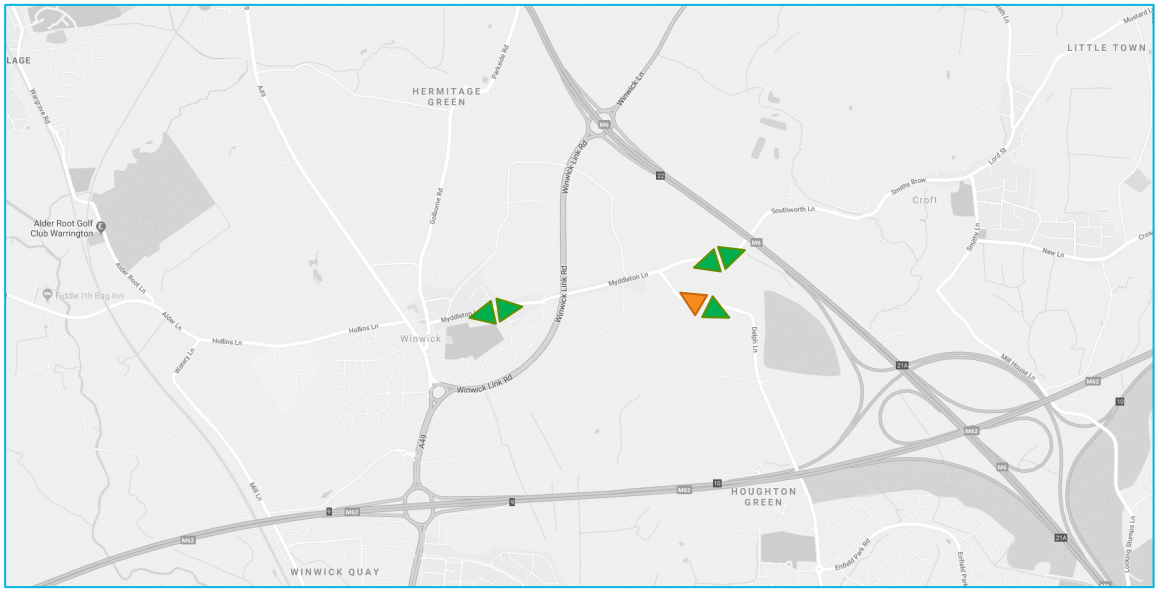
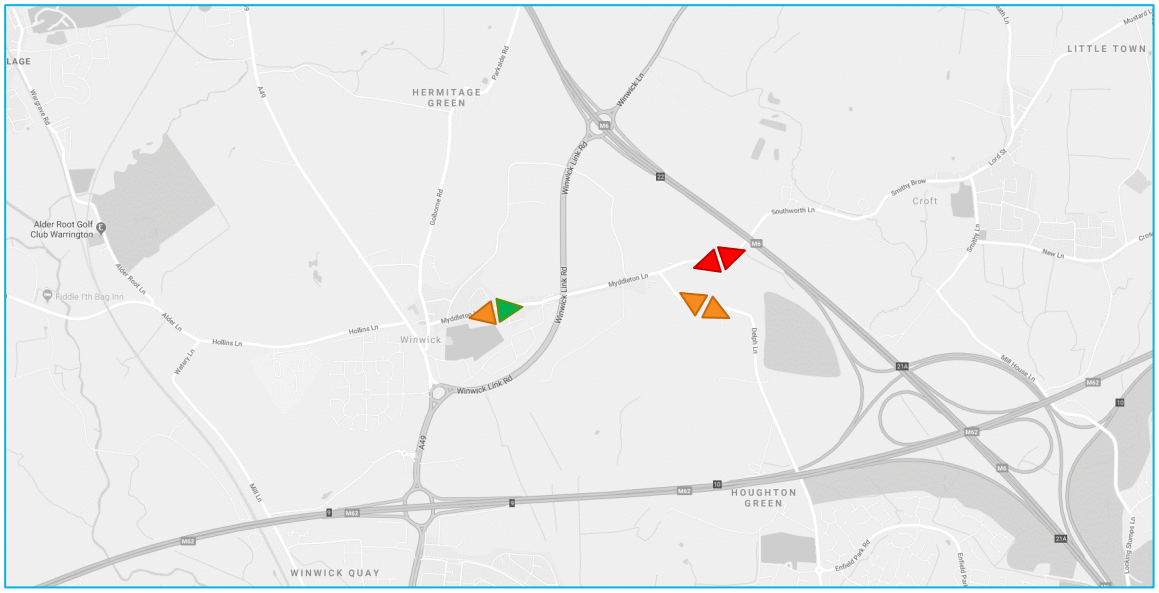


Figure 19 PM GEH Summary - NEW Surveys



Agreed Methodology/Approach:

For the purposes of using the cordon model to assess the Peel Hall Farm development it appears that there is some value in undertaking some matrix estimation. This exercise will be commensurate with the requirements of the study and limited to better representing flows on the main distributors through the area.

The agreed approach was to undertake the following:

- Undertake limited matrix estimation recognising that it is unlikely to be possible to achieve full calibration on the more minor links within the model areas.

The two areas to be targeted are:

- A50 corridor – at the southern end of the cordon model area
- Myddleton lane / Mill Lane corridor – at the northern end of the cordon model area focusing on improving the latest count data, particularly in PM Peak

By targeting these two corridors specifically, the intention is to ensure that the volume of traffic entering and exiting the cordon model network is of the right quantum meaning, that if demand on the internal network is different to observed patterns, this then becomes a routing question rather than one of demand.

10. Matrix Estimation Results

Matrix estimation (ME) is a process of modifying the demand matrices such that assigned flows better match the observed flows. The counts used for ME have been the link counts from the two junctions surveyed by Highgate in July 2019 plus additional counts on the eastern side of the model (along the A50, Blackbrook Avenue area). The intention has been to modify flows through the new sites while trying to 'fix' the counts in the internal areas of the model.

Additionally new link flows on Cromwell Avenue and Sandy Lane West were used for matrix estimation to improve the model fit to observed flows on Sandy Lane West.

A key principle of ME is that it should not be used to infill movements missing from the model rather, it should be used to adjust the relative volumes of movements represented within the model to better fit the counts. In this case, ME is being used to increase volumes of demand around the extremities of the cordoned area. The purpose is not to introduce movements that might affect route choice in the test scenarios, but to ensure that existing demand at junctions is accurately reflected in the model (when compared against observed conditions) and hence any changes to demand as a result of the development coming forward would also be reflected.

A limited matrix estimation exercise has been carried out on the AM and PM peak cordon base models. The intention has been to improve the representation of flow on Myddleton Lane, Delph Lane and the A50 in the cordon area after earlier analysis has demonstrated that these sites are currently under-performing in replicating observed conditions. To ensure that the model reflects observed movements at the A49 junction with Cromwell Avenue and Sandy Lane West, this junction has also been considered at the request of WBC.

Link flows from the 2019 Highgate counts into, and out from, the following junctions were entered into the ME process:

- Golborne Avenue / Myddelton Lane;
- Myddleton Lane / Delph Lane;
- A49 / Cromwell Avenue / Sandy Lane West; and
- Hilden Road / Blackbrook Avenue.

Link flows on the A49 at the Sandy Lane West / Cromwell Avenue junction were not used in the ME process. They were deliberately held back from the process so they could be considered as an independent verification of the ME process.

To to limit the impacts on the rest of the network, link flows at the following locations were included in the ME process. The modelled flows at these locations were already close to the observed values so the intention was to 'fix' rather than to adjust these flows.

- Orford Road (cordon entry point);
- Birchwood Road (cordon entry point);
- A49 N Delph Lane;
- Capesthorne Road;
- Cleveland Road; and
- Poplars Avenue.

Impacts of the Matrix Estimation Process

Change in Matrix Totals

As a result of the ME process, the overall change in the matrix totals is relatively small (shown in **Table 20**). The number of car trips in the model increases by 1,078 vehicles (4.7%) in the AM peak and 1,029 vehicles (3.9%) in the PM peak. Overall demand changed by 682 vehicles (1.9%) in the AM peak and 741 vehicles (2.0%) in the PM peak.

Table 20 Matrix Totals Before and After Matrix Estimation

Vehicle Type	AM Peak			PM Peak		
	Prior to ME	Post ME	% Change	Prior to ME	Post ME	% Change
Car - Commute	10,040	10,510	4.7%	10,767	11,297	4.9%
Car - Business	3,647	3,720	2.0%	3,534	3,595	1.7%
Car - Other	9,426	9,962	5.7%	12,142	12,581	3.6%
All Car Trips	**23,114**	**24,192**	**4.7%**	**26,443**	**27,472**	**3.9%**
LGV	3,863	3,783	-2.1%	3,883	3,877	-0.2%
HGV	8,284	7,969	-3.8%	6,573	6,292	-4.3%
All Vehicles	**35,261**	**35,944**	**1.9%**	**36,899**	**37,640**	**2.0%**

Change in Calibration Statistics

The ME process changes the overall 'goodness of fit' for the traffic flows against observed counts from values of 66% to 83% in the AM peak and 58% to 91% in the PM peak.

The emphasis in the process has been to improve the match between modelled flows and the new Highgate counts bringing model flows closer without changing the areas of the model developed using the original count data. Thus, **Tables 21** and **22** show that the 'goodness of fit' measures for the original WMMTM sites are not significantly changed while the fit between modelled and observed flows at the new count locations is improved.

Overall, 28 of the 59 count sites were used as control values for ME, 47% of the available data.

Table 21 AM Peak Calibration Summary

	Before ME					After ME			
	No. of Sites	GEH <=5		GEH or Flow criteria met		GEH <=5		GEH or Flow criteria met	
Original WMMTM sites	29	21	72.4%	21	72.4%	21	72.4%	21	72.4%
Original Highgate sites	18	9	50.0%	12	66.7%	14	77.8%	16	88.9%
New Highgate sites	12	6	50.0%	6	50.0%	12	100.0%	12	100.0%
Total	59	36	61.0%	39	66.1%	47	79.7%	49	83.1%

Table 22 PM Peak Calibration Summary

	Before PM					After ME			
	Sites	GEH <=5		GEH or Flow criteria met		GEH <=5		GEH or Flow criteria met	
Original WMMTM sites	29	22	75.9%	22	75.9%	26	89.7%	26	89.7%
Original Highgate sites	18	8	44.4%	8	44.4%	15	83.3%	16	88.9%
New Highgate sites	12	6	50.0%	4	33.3%	12	100.0%	12	100.0%
Total	59	36	61.0%	34	57.6%	53	89.8%	54	91.5%

The following tables below are updated versions of the tables presented in Section 6 to show the changes in calibration at each individual site following ME.

Table 23 is an update of Table 2.

Some sites that previously had a GEH value less than 5 now have a value greater than 5 and vice versa. There is no material overall change to the level of validation at these sites.

Table 23 Observed and Modelled Counts for Cordon Area – Local Road Network

Ref	Site	Dir	AM Peak			PM Peak		
			Obs	Mod	GEH	Obs	Mod	GEH
1	Winwick Road (s of M62)	SB	1682	1509	4.3	1348	1407	1.6
	Winwick Road (s of M62)	NB	1205	1210	0.2	1823	1694	3.1
2	Winwick Rd (south of Long lane)	SB	1846	1491	8.7	1374	1513	3.6
	Winwick Rd (south of Long lane)	NB	1065	1129	1.9	1591	1563	0.7
3	Poplars Avenue	NB	212	231	1.3	350	342	0.5
	Poplars Avenue	SB	369	368	0.1	284	288	0.2
4	Birchwood Way (west of M6)	EB	1014	814	6.6	603	628	1.0
	Birchwood Way (west of M6)	WB	490	523	1.5	1003	1034	1.0
5	Long Lane	WB	644	601	1.7	602	546	2.3
	Long Lane	EB	433	416	0.8	526	506	0.9
6	Blackbrook Av (cordon entry point)	WB	830	745	3.0	559	670	4.5
	Blackbrook Av (cordon entry point)	EB	714	597	4.6	947	965	0.6
7	Cromwell Av (cordon entry point)	EB	637	932	10.5	908	1496	17.0
	Cromwell Av (cordon entry point)	WB	866	663	7.3	955	860	3.1
8	Birchwood Way (east of M6) (cordon entry point)	EB	2419	2100	6.7	1098	1161	1.9
	Birchwood Way (east of M6) (cordon entry point)	WB	971	1041	2.2	1855	1755	2.3
9	Orford Road (cordon entry point)	NB	703	703	0.0	686	670	0.6
	Orford Road (cordon entry point)	SB	564	534	1.3	599	539	2.5
10	Sandy Lane	EB	315	479	8.2	408	449	2.0
	Sandy Lane	WB	341	418	3.9	422	479	2.7
11	Orford Green	WB	496	481	0.7	547	550	0.1
	Orford Green	EB	451	449	0.1	476	481	0.2

Table 24 is an update of Table 3.

These sites were not used in the ME process and again, there is no material change in the level of validation at these sites.

Table 24 Observed and Modelled Counts for Cordon Area – Motorway Network

Site	AM Peak			PM Peak		
	Obs	Mod	GEH	Obs	Mod	GEH
M62 J9 EB on-slip	511	885	14.2	623	540	3.4
M62 J9 WB off-slip	701	607	3.7	785	464	12.8
M62 J9 WB on-slip	767	715	1.9	1039	867	5.6
M62 J9 EB off-slip	866	971	3.5	936	1002	2.1
M62 EB (J9-J10)	3767	4230	7.3	4645	4671	0.4
M62 through J9 WB	3681	3871	3.1	4596	4500	1.4
M62 through J9 EB	3143	3346	3.6	3879	4130	4.0

Table 25 is an update of Table 9.

This table includes Blackbrook Avenue and Poplars Avenue which were used for ME. Overall, there has been an increase in the number of sites in this table achieving good levels of calibration.

Table 25 Link Flow Data – Highgate Sites (2019 counts)

Site	Type		AM Peak			PM Peak		
		Dir	Obs	Mod	GEH	Obs	Mod	GEH
Mill Lane at M62	ATC	NB	351	367	0.9	480	413	3.2
		SB	500	432	3.1	358	406	2.5
Blackbrook Ave (North of Hilden Road)	MCC	NB	391	379	0.6	330	332	0.1
		SB	341	334	0.4	400	366	1.7
Poplars Av (at Capesthorne Road Jcn)	MCC	NB	302	294	0.5	477	563	3.8
		SB	392	392	0.0	360	361	0.0
Capesthorne Road (East of Poplars Ave)	MCC	EB	169	202	2.4	148	244	6.8
		WB	281	235	2.9	268	320	3.1
Howson Rd	MCC	NB	108	18	11.4	193	20	16.8
		SB	214	21	17.9	133	14	13.9
Cleveland Road	MCC	NB	222	138	6.2	185	249	4.3
		SB	150	175	2.0	193	139	4.2
A49 N of Delph Lane	MCC	NB	1361	1363	0.1	1956	1947	0.2
		SB	1778	1778	0.0	1402	1405	0.1
Poplars Ave	ATC	EB	330	229	6.0	303	250	3.2
		WB	171	165	0.4	244	208	2.4
A50	ATC	EB	594	333	12.1	644	382	11.6
		WB	712	356	11.4	697	566	5.2

NB *- Site type MCC = One day manual turning count*

Table 26 and Table 27 are updates to Table 26 and **Table 18.**

These are the sites for which ME was applied to and, as a result, all links now have GEH values of less than 5.

Table 26 Junction 1 - Golborne Road Junction Link Flow Comparison

Site	Dir	AM Peak			PM Peak		
		Obs	Mod	GEH	Obs	Mod	GEH
Golborne Rd (North of Junction)	NB	228	278	3.1	397	501	4.9
	SB	479	542	2.8	298	291	0.4
Myddleton Lane	EB	622	635	0.5	499	533	1.5
	WB	359	379	1.1	425	525	4.6
Golborne Rd (South of Junction)	NB	621	621	0.0	671	681	0.4
	SB	609	629	0.8	498	455	2.0

Table 27 Junction 2 - Delph Lane Junction Link Flow Comparison

Site	Dir	AM Peak			PM Peak		
		Obs	Mod	GEH	Obs	Mod	GEH
Myddleton Lane (West of Junction)	EB	816	753	2.3	586	555	1.3
	WB	439	354	4.3	781	701	2.9
Delph Lane	NB	359	367	0.4	465	413	2.5
	SB	468	432	1.7	414	406	0.4
Southworth Lane (East of Junction)	EB	533	572	1.7	291	289	0.1
	WB	265	239	1.7	435	429	0.3

Turning Flows

Table 28 is an update of **Table 5**

Table 28 Turning Count Validation (Junction of A50 / A49)

From Arm	To Arm	AM Peak Obs	AM Peak Mod	AM Peak GEH	PM Peak Obs	PM Peak Mod	PM Peak GEH
B	A	208	290	5.2	304	631	15.1
B	D	119	109	0.9	140	166	2.1
B	C	54	1	10.1	97	24	9.3
A	D	253	144	7.7	254	130	8.9
A	C	1,404	1,236	4.6	998	1,306	9.1
A	B	216	189	1.9	180	102	6.6
D	C	388	218	9.8	280	252	1.7
D	B	157	247	6.3	141	180	3.1
D	A	237	170	4.7	253	144	7.7
C	B	65	190	11.1	73	83	1.2
C	A	769	796	1.0	1,273	1,301	0.8
C	D	231	117	8.7	245	180	4.5

Arm	Approach
A	Winwick Road North
B	Hawleys Lane
C	Winwick Road South
D	Long Lane

Table 29 presents the turning counts at the A49 junction with Cromwell Avenue and Sandy Lane West.

Table 29 Turning Count Validation (A49 / Cromwell Av / Sandy Lane West

From Arm	To Arm	AM Peak Obs	AM Peak Mod	AM Peak GEH	PM Peak Obs	PM Peak Mod	PM Peak GEH
A	B	194	123	5.6	233	321	5.3
A	C	1,290	1,257	0.9	835	812	0.8
A	D	246	347	5.9	306	372	3.6
B	A	212	143	5.2	205	114	7.2
B	C	81	41	5.1	103	32	8.7
B	D	208	237	1.9	266	368	5.8
C	A	784	924	4.8	1,444	1,364	2.1
C	B	72	65	0.8	105	53	5.9
C	D	430	291	7.3	660	484	7.4
D	A	201	145	4.3	405	305	5.3
D	B	316	311	0.3	266	288	1.3
D	C	646	631	0.6	523	694	6.9

Arm	Approach
A	Winwick Road North
B	Sandy Lane West
C	Winwick Road South
D	Cromwell Avenue

Table 30 is an update of **Table 19.**

Table 30 Turn Flow 'Goodness of Fit' Statistics

	AM Peak		PM Peak	
	No of turn flows meeting criteria	%	No of turn flows meeting criteria	%
Junction 1 Golborne Road	2	33%	1	17%
Junction 2 Delph Lane	3	50%	4	67%
Total	5	42%	5	42%

Journey Time Changes

Table 31 and **Table 32** provide an update to **Table 6** and **Table 7** showing the modelled and observed journey times. The changes in demand lead to some changes in journey times through the network but overall, the level of fit between observed and modelled times remains within acceptable levels.

Table 31 Summary of Journey Time Runs

Period	Sections within ±15%	Percentage within ±15%
AM	5	100%
PM	6	83%
Total	**16**	89%

Table 32 Journey Time Comparisons (mins)

Route		AM			PM		
		Obs	Mod	% Error	Obs	Mod	% Error
Wton_2 - Woolston Grange Road to Winwick via Fearnhead Ln and Blackbrook Ave	NB	11.07	9.74	-12.0%	9.58	9.15	-4.5%
	SB	10.31	9.08	-11.9%	9.11	8.5	-6.7%
Wton_3- Cromwell Avenue to Birchwood Way via Long Lane	CW	9.86	9.15	-7.2%	8.46	10.01	18.3%
	ACW	7.06	7.37	4.4%	8.87	8.1	-8.7%
XT1 - A49 between Kerfoot St and B&Q Junction	NB	7.75	8.15	5.2%	10.89	10.36	-4.9%
	SB	10.76	10.83	0.7%	7.48	8.42	12.6%

Measures against WebTAG criteria

WebTAG guidance requires specific tests to be carried out to ensure that the ME process has not significantly distorted the matrices. The criteria and resulting boundary scores are shown in **Table 33**.

Table 33 WebTAG Guidelines from Unit M3.1 Table 5

Measure	Significance Criteria
Matrix zonal cell values	• Slope within 0.98 and 1.02 • Intercept near zero • R^2 in excess of 0.95
Matrix zonal trip ends	• Slope within 0.99 and 1.01 • Intercept near zero • R^2 in excess of 0.98
Trip length distributions	• Means within 5% • Standard deviations within 5%

Matrix Zonal Cell Values

The values for the three measures are shown for each vehicle type and modelled time period in **Table 34**. The results demonstrate that the WebTAG criteria are met for all vehicle classes.

Table 34 Matrix Zonal Cell Changes

Vehicle Type		AM Peak	PM Peak
Car	Slope	1.002	1.006
	Intercept	0.140	0.117
	R^2	0.994	0.995
LGV	Slope	0.95	1.000
	Intercept	-0.008	-0.001
	R^2	0.997	1.000
HGV	Slope	0.999	0.998
	Intercept	-0.041	-0.036
	R^2	0.999	0.999

Origin and Destination Trip Ends

The results for the three measures are shown in **Table 35** and

Table 36

For both origin and destination car trips the intercept value is relatively high. The primary cause for this is that some control sites are very close to the edges of the cordon and very few external zones are available for the process to make adjustments. Any change to external trip ends was thus focussed in a single external zone.

While this action would not normally be considered, in this case this is not deemed to have a significant effect on the cordon model results since the process is being used to pre-load these areas of the network with trips that would not have a route choice alternative in the cordon.

Table 35 Origin Trip Ends

Vehicle Type		AM Peak	PM Peak
Car	Slope	1.013	1.004
	Intercept	9.051	10.661
	R^2	0.993	0.994
LGV	Slope	0.991	0.999
	Intercept	-0.068	-0.010
	R^2	0.998	1.000
HGV	Slope	0.996	0.983
	Intercept	-2.272	-2.005
	R^2	0.999	0.999

Table 36 Destination Trip Ends

		AM Peak	PM Peak
Car	Slope	1.009	1.028
	Intercept	10.117	3.454
	R^2	0.993	0.993
LGV	Slope	0.996	0.999
	Intercept	-0.745	-0.022
	R^2	0.995	0.999
HGV	Slope	0.997	0.996
	Intercept	-3.338	-2.958
	R^2	0.999	0.998

Change in trip length distribution

The results of this comparison are shown in **Table 37**. They show that the WebTAG criteria are met for all demand segments.

Table 37 Difference between Prior and Post ME trip lengths.

Vehicle Type	AM Peak		PM Peak	
	Mean	Standard Deviation	Mean	Standard Deviation
Car – commute	-1.29%	-1.55%	-0.98%	-1.48%
Car – business	-0.65%	-0.94%	-0.64%	-0.80%
Car – other	-1.16%	-2.42%	-0.98%	-1.41%
LGV	0.98%	0.97%	0.64%	0.09%
HGV	0.33%	1.90%	0.76%	2.13%

Summary

A comparison between count data collected during the original WMMTM16 base model development and modelled flows showed a good fit in terms of achieving WebTAG calibration criteria. When the WMMTM16 base model was cordoned for use in this assessment, the overall fit achieved was still robust but there were a number of areas where improvements could be made.

Some improvement in fit was obtained through network changes, specifically changes to link speeds and changes to zone loading points, these are reported in Section 9, not all sites could be improved. It was therefore agreed that a limited ME exercise would be required.

ME has been carried out on the AM and PM peak cordon base models. The intention has been to improve the representation of flow on a number of under-performing sites to improve their replication of observed conditions. To ensure that the model reflects observed movements, sites have been added to ME both to target improvement, but also to ensure that a number of sites that are currently performing well, do no deteriorate as part of the ME exercise.

The results presented in Section 10 demonstrate that ME has improved the level of calibration performance for both the AM and PM peak models. Pending sign-off of the ME approach and results, the next stage is to apply the models for use in the forecast scenarios outlined in Section 3.

11. Scenario Testing

Section 3 of this note and Paragraph 13 of 1901/TN/03 sets out the scenarios to be modelled. This section presents the details of the assessment methodology from the models. The results of each scenario test are provided as a separate outputs pack.

Forecasting

Forecasts have been prepared for four future years;

- 2018;
- 2022;
- 2027; and
- 2032.

Forecast models have been prepared on the basis of NTEM growth rates and the development traffic for the Peel Hall Site as defined by Highgate in their Model Specification Report.

The forecast models cover two access strategies for the loading of development demand within the development site area – **Strategy A** and **Strategy B** as defined in the Model Specification Report. These access options are also show in **Figure 3** and **Figure 4** of this report (See Section 5).

TEMPRO v7.2 has been used to extract NTEM growth for Warrington Borough and for the North West region. The Borough growth rates have been applied to all zones within the modelled area, with the exception of the M62 and M6 links which have had the wider regional growth rates applied.

Fuel price and income adjustment factors have been applied in each case for the appropriate years drawn from the *May 2019 version of the WebTAG databook*.

The growth rates applied are shown in **Table 38**.

Table 38 Car Trip Growth Rates

Sector	Year	Commute	Business	Other
Internal	2018	1.0161	1.0196	1.0204
	2022	1.0716	1.0820	1.0853
	2027	1.1216	1.1372	1.1490
	2032	1.1757	1.1972	1.2193
External	2018	1.0174	1.0189	1.0229
	2022	1.0769	1.0811	1.0923
	2027	1.1356	1.1423	1.1590
	2032	1.1982	1.2076	1.2315

Growth rates for freight trips have been taken from the *2018 Road Traffic Forecasts* produced from the National Transport Model. Growth rates for LGV and OGV have been extracted for each year from the forecasts for the North West region. Freight growth rates are shown in **Table 39**.

Table 39 Growth Rates for Freight Trips

Year	LGV	HGV
2018	1.0371	0.9966
2022	1.0960	0.9917
2027	1.1508	0.9906
2032	1.2192	0.9973

Development Traffic

Parkside

Traffic Impact Assessments have been provided by WBC for the Parkside development site in neighbouring St Helens. There are two aspects to the development:

- Residential and employment development; and
- Construction of a new link road.

The location of the site is outside the model cordon so it cannot be modelled explicitly in the Peel Hall Farm model for this scheme.

Agreed Methodology/Approach:

On the basis of the information provided it was agreed that:

- Only a proportion of development traffic would use the A49 from the north to access the M62 westbound at J9;
- In the Parkside SATURN Model a significant volume of development traffic was shown to route along the A49 Winwick Link Road and onto the Winwick Road roundabout towards the A49 Newton Road. However, this traffic was diverted as a result of the introduction of the Parkside Link Road Scheme. As the Peel Hall Farm cordon model assumes the link road is built, there is no significant volume of traffic making this movement in the Peel Hall Farm cordon model.

From this analysis it was concluded that the only impact of the Parkside development on the study area would be an additional volume of traffic between Winwick Road and the M62 west. A select link analysis on the Parkside SATURN Model suggested this would be 15% of the total Parkside development traffic.

Scheme Development Traffic

Development traffic has been provided in the Highgate Model Specification Report for two development scenarios. Six access points have been specified which have been coded as separate zones in the model:

- Zone 8801 - Poplars Avenue (central)
- Zone 8802 - Poplars Avenue (west)
- Zone 8803 - Mill Lane
- Zone 8804 - Mill Lane / Blackbrook Avenue
- Zone 8805 - Birch Avenue
- Zone 8806 - Grasmere Avenue

The locations of the new zone loading points are shown in **Figure 20** and **Figure 21**.

Figure 20 Development Zone Loading Points (Access Strategy A)

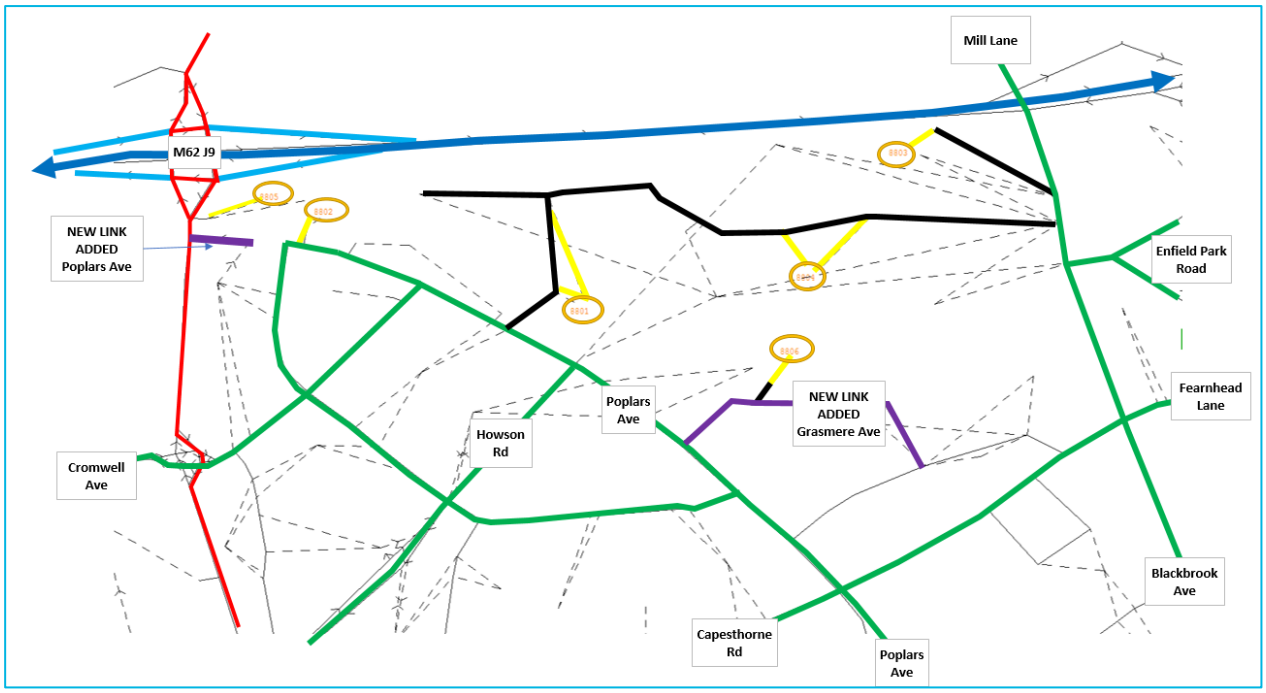
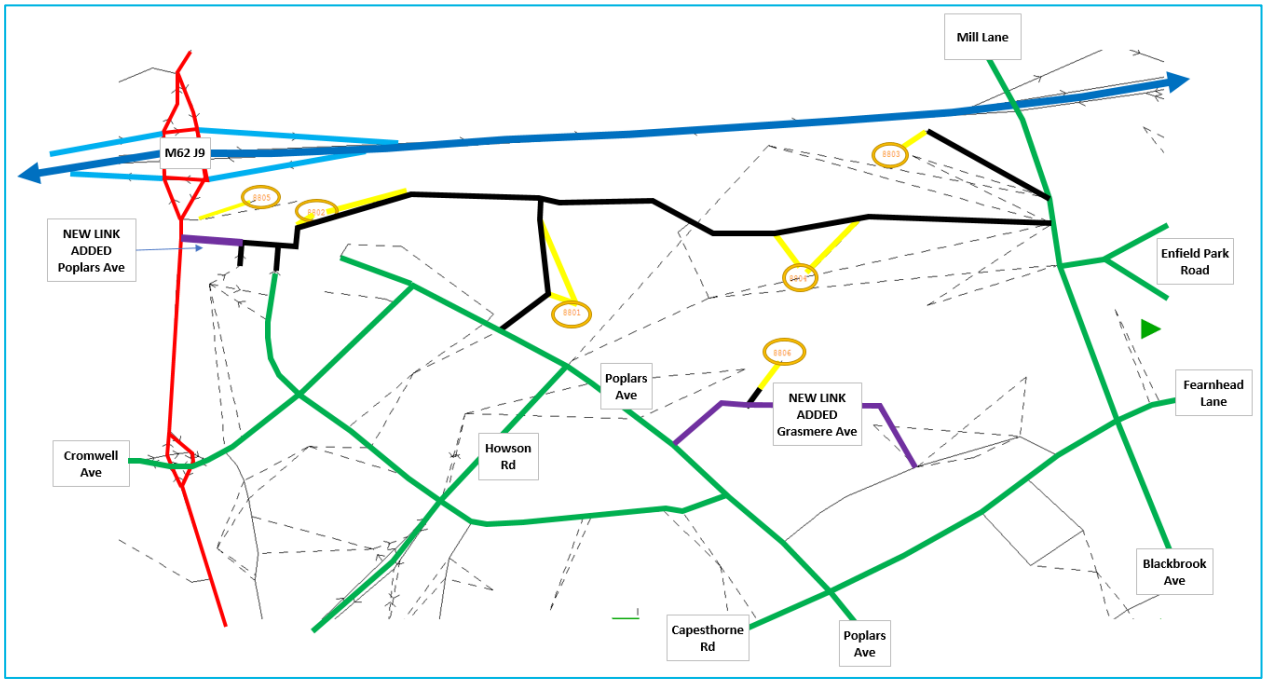


Figure 21 Development Zone Loading Points (Access Strategy B)



- The trips added in each scenario for each zone are shown in

Table 40 to **Table 42**. These trips were treated as being over and above the NTEM growth.

Table 40 2022 Development Traffic

Zone	Strategy A				Strategy B			
	AM In	AM Out	PM In	PM Out	AM In	AM Out	PM In	PM Out
8801	14	31	30	18	14	31	30	18
8802	0	0	0	0	0	0	0	0
8803	14	31	30	18	14	31	30	18
8804	0	0	0	0	0	0	0	0
8805	0	0	0	0	0	0	0	0
8806	0	0	0	0	0	0	0	0
Total	**28**	**62**	**60**	**36**	**28**	**62**	**60**	**36**

Table 41 2027 Development Traffic

Zone	Strategy A				Strategy B			
	AM In	AM Out	PM In	PM Out	AM In	AM Out	PM In	PM Out
8801	76	119	174	135	76	119	174	135
8802	34	79	74	46	34	79	74	46
8803	34	79	74	46	34	79	74	46
8804	0	0	0	0	0	0	0	0
8805	5	11	10	6	5	11	10	6
8806	10	5	7	8	10	5	7	8
Total	**159**	**293**	**339**	**241**	**159**	**293**	**339**	**241**

Table 42 2032 Development Traffic

Zone	Strategy A				Strategy B			
	AM In	AM Out	PM In	PM Out	AM In	AM Out	PM In	PM Out
8801	76	119	174	135	76	119	174	135
8802	68	158	148	92	248	485	431	275
8803	158	366	347	215	34	79	74	46
8804	57	40	10	14	0	0	0	0
8805	5	11	10	6	5	11	10	6
8806	10	5	7	8	10	5	7	8
Total	**374**	**699**	**696**	**470**	**373**	**699**	**696**	**470**

In 2032, a proportion of the traffic to zone 8803 is treated as 'pass by' traffic related to the local store. This is removed from the matrices as 'household production' and replaced with 'household to store' trips.

Matrix Growth

- The overall changes in the assignment matrices are shown in

Table 43 for the AM, and **Table 44** for the PM.

Table 43 AM Peak Matrix Totals

Year	Level of Development Applied	Matrix Total			Growth from Base		
		Car	LGV	HGV	Car	LGV	HGV
2016	None	23,759	3,741	7,967	-	-	-
2018	None	24,267	3,880	7,941	1.02	1.04	1.00
2022	None	25,838	4,100	7,901	1.09	1.10	0.99
	Part	25,965	4,100	7,901	1.09	1.10	0.99
	Full	26,920	4,100	7,901	1.13	1.10	0.99
2027	None	27,349	4,305	7,892	1.15	1.15	0.99
	Part	27,801	4,305	7,892	1.17	1.15	0.99
2032	None	28,974	4,561	7,946	1.22	1.22	1.00
	Full	30,019	4,561	7,946	1.26	1.22	1.00

Table 44 PM Peak Matrix Totals

Year	Level of Development Applied	Matrix Total			Growth from Base		
		Car	LGV	HGV	Car	LGV	HGV
2016	None	26,983	3,821	6,271	-	-	-
2018	None	27,501	3,963	6,250	1.02	1.04	1.00
2022	None	29,180	4,188	6,219	1.08	1.10	0.99
	Part	29,314	4,188	6,219	1.09	1.10	0.99
	Full	30,296	4,188	6,219	1.12	1.10	0.99
2027	None	30,826	4,398	6,212	1.14	1.15	0.99
	Part	31,406	4,398	6,212	1.16	1.15	0.99
2032	None	32,624	4,659	6,254	1.21	1.22	1.00
	Full	33,702	4,659	6,254	1.25	1.22	1.00

Flow Conversion Factors

Factors have been calculated using ATC data provided by Highgate to convert the model period flows to 24-hour AADT and 18-hour AAWT.

The model represents an average hour during the peak period. Standard factors have been calculated to convert modelled flows to three hour peak periods for the WMMTM model. These are;

- AM Peak – **2.60**
- PM Peak – **2.74**

Four ATC sites, as specified in the Highgate Model Specification Report, have been used to calculate average factors. These sites are:

- Poplars Avenue (ATC site C)
- A50 (ATC Site K)
- A49 (Highgate 2018 count)

- Mill Lane (ATC site A)

From this data, the following factors have been calculated.

- Sum of AM and PM (three hour) peaks to 24-hour (7-day week) - **2.261**
- 24-hour (all week) to 18-hour (weekday) - **1.047**

A further factor could be applied to convert these to full AADT and AAWT values. Given that the seasonality index for town centre flows would be expected to be close to 1.00 and the counts used represent neutral month counts it might be assumed that the further factors will be close to 1.00.

At present, the above factors have been applied in the results spreadsheet to derive an estimate of 'daily flows'.

Model Runs

Forecast assignment runs have been carried out for the following model scenarios:

- Existing 2016 Base Cordon Model;
- 2018 baseline model (assuming no development);
- Opening Year 2022;
  - Access Strategy A & B;
    - No development;
    - Partial development (120); and
    - Full development.
- 5 year after opening 2027;
  - Access Strategy A & B;
    - No development; and
    - Partial development (600).
- 10 year after opening 2032;
  - Access Strategy A & B;
    - No development; and
    - Full development.

The results of each of the model assignments have been analysed and the following outputs produced:

- Link flows (spreadsheet and plots);
- Turning flows (spreadsheet);
- Flow difference plots;
- Node delay plots;
- Node V/C plots;
- Development zone select link analysis plots; and
- Development traffic plots.

These results have been provided as a separate outputs pack. Ref: ***Peel Hall Farm_Outputs_180919***