

## 7 Mitigation Measures

### 7.1 Introduction

7.1.1 The transport strategy considered within this TA focuses on making best possible use of existing transport infrastructure, with the intention of mitigating the impact of the proposed development, in order of preference, through:

- Demand management;
- Improvements to the local public transport network, and walking and cycling facilities;
- Minor physical improvements to existing roads; and
- Provision of new or expanded roads.

7.1.2 The sustainable transport strategy for the site is set out within **Section 4** of this TA and includes:

#### Travel Planning

- A commitment to develop a Travel Plan, to include measures aimed at encouraging the use of sustainable modes of travel.

#### Walking and Cycling Strategy

- The provision of cycle parking in accordance with local standards;
- The provision of changing facilities including lockers and showers in each proposed unit;
- The provision of up-to-date and relevant information on walking and cycling to and from the site with route maps;
- The provision of access to suitable safety training for employees walking and cycling to the site, via events organised as part of the Travel Plan; and
- The provision on site of a network of footways and crossings delivering a safe permeable network of routes throughout the development.

#### Public Transport Strategy

- The provision of suitable financial contribution to supporting an increase in the operating hours of bus service 2C/2D, delivering an hourly connection off-peak and in the evenings on weekdays, in addition to the current 15-minute service operating within the peak hours; and
- The provision of a new bus stop on the northbound side of The Boulevard to a similar standard to the existing stop on the southbound side of The Boulevard.

#### Vehicle Access Strategy

- Provision of a new access onto Langford Lane serving the entire development, based on a priority junction with right turn bay, and footways on both sides.

### Vehicle Parking Strategy

- Provision of vehicle parking in accordance with current local standards and designed to ensure that on-street parking is not encouraged; and
- Provision of car share spaces to support car sharing at the development.

7.1.3 This demonstrates the developer's commitment to the principles of sustainable development. The proposed localised improvements to transport infrastructure focusing on bus accessibility to the site and the provision of a Travel Plan serve to promote sustainable travel behaviour.

## 7.2 Proposed Highway Mitigation Schemes

7.2.1 **Section 6** identifies that the proposed development would have an impact on the operation of the A44/A4095 Roundabout in the 2021 Phase 1 and 2025 Phase 2 cases. It is proposed that the impact identified be mitigated and a suitable mitigation scheme has been identified. This section provides a summary of the proposed mitigation scheme for the A44/A4095 junction.

7.2.2 The capacity analysis undertaken in Section 6 for the A44/A4095 Roundabout junction shows that in 2015 in the base case, the junction is already predicted to operate over capacity in the PM peak, with a maximum predicted RFC of 0.96. The situation at the junction is predicted to worsen in the 2021 and 2025 base case scenarios simply by the addition of background growth traffic that would be predicted irrespective of the proposed development going ahead. The maximum RFC values increase to:

- in 2021, 0.97 in the AM peak and 1.08 in the PM peak; and
- in 2025, 1.07 in the AM peak and 1.16 in the PM peak.

7.2.3 This situation shows that even without development the junction would become an issue on the local road network, and the County Council would have to identify remedial work to accommodate current levels of traffic and future background growth.

7.2.4 The addition of any development traffic, however small, worsens the situation, as is demonstrated in the case of the proposed Oxford Technology Park development. **Table 6.2** in this report demonstrates that the proposed development would have only a minimal impact on the traffic flows through the junction. In the worst case, 2025, the increases predicted are 2.4% in the AM peak and 1.7% in the PM peak, less than the typically expected day-to-day variation in traffic flows on the road network. However, this small additional traffic would have an additional impact on the operation of the junction with predicted RFCs increasing in the 2025 with development scenario to 1.1 in the AM peak and 1.2 in the PM peak.

7.2.5 On the basis of the relatively small impact on traffic flows but acknowledging the congestion predicted at the junction, a mitigation scheme has been identified that:

- Achieves nil detriment i.e. brings the operation of the junction with development traffic in 2025 in line with the predicted operation of the junction in the 2025 without development case; and
- Is based on localised improvements to the existing roundabout junctions.

7.2.6 The following paragraphs provide details of the analysis carried out and the outcome reached.

7.2.7 The existing roundabout layout has been drawn up onto OS mapping from on-site measurements. The mitigation measures include a review of the following measures to provide additional capacity:

- Entry Width;
- Effective Flare Length; and
- Entry Radius.

#### *A44 Oxford Road*

- 7.2.8 The review has shown that the existing A44 Oxford Road arm of the roundabout has an existing deflection of over 100m which is sub-standard in accordance with DMRB TD 16/07. Therefore to provide additional capacity the nearside kerb (entry radius) will be maintained. The review has shown widening of the entry width into the central island and the effective flare length can be provided to achieve improved capacity while maintaining the existing deflection.

#### *A4095 Upper Campsfield Road*

- 7.2.9 The review has shown that the existing A4095 Upper Campsfield Road arm of the roundabout provides an existing deflection of well under 100m which is in accordance with DMRB TD 16/07. The review has shown widening of the entry width into the nearside verge and the effective flare length can be provided to achieve improved capacity while providing deflection in accordance with DMRB TD 16/07.

#### *A44 Woodstock Road*

- 7.2.10 The review has shown that the existing on-site measurements for the A44 Woodstock Road, has an approach half-width of 7.3m however the entry width was measured as 7.0m. The original base modelling therefore modelled the approach half width and entry width as 7.0m to provide a robust assessment. For the purposes of the modelling the approach half width is assumed to be 7.3m as the on-site measurements.
- 7.2.11 The review has shown that the existing A44 Woodstock Road arm of the roundabout has an existing deflection of over 100m which is sub-standard in accordance with DMRB TD 16/07. If the on-site measurements are correct the entry width will be widened to 7.3m into the central reserve to maintain the existing deflection.

#### *A4095 Bladon Road*

- 7.2.12 The review has shown that the existing A4095 Bladon Road arm of the roundabout provides an existing deflection of less than 100m which is with standards in accordance with DMRB TD 16/07. The review has shown widening of the entry width into the nearside verge and the effective flare length can be provided to achieve improved capacity.
- 7.2.13 **Table 7.1** provides the geometry changes to the roundabout as shown on PBA **Drawing 23588/001/SK005**.

Table 7.1: A44/A4095 – Suggested Changes to Geometry

	A44 Oxford Road		A4095 Upper Campsfield Road		A44 Woodstock Road		A4095 Bladon Road	
	Existing	Mitigation	Existing	Mitigation	Existing	Mitigation	Existing	Mitigation
V – Approach half width	3.60m	-	2.80m	-	7.00m	7.30m	3.60m	-
E – Entry Width	7.00m	7.30	5.30m	6.20m	7.00m	7.30m	6.60m	7.10m
L – Effective Flare Length	18.99m	55.0m	17.74m	26.10m	0.00m	-	13.19m	24.70m

	A44 Oxford Road		A4095 Upper Campsfield Road		A44 Woodstock Road		A4095 Bladon Road	
	Existing	Mitigation	Existing	Mitigation	Existing	Mitigation	Existing	Mitigation
R – Entry radius	29.47m	28.9m	20.98m	20.0m	21.06m	-	20.63m	20.0m
D – ICD	79.26m	-	79.26m	-	79.26m	-	79.26m	-
PHI – Conflict Angle	19.00m	-	41.00m	-	17.00m	-	19.00m	-

7.2.14 The entry widths provided are within 1.0-1.2 times the circulatory carriageway width in accordance with DMRB TD 16/07.

7.2.15 **Table 7.2** below provides the predicted level of capacity and operation at the A44.A4095 junction achieved with these proposed changes. These results need to be compared with the results of the tests shown in **Table 6.40**.

Table 7.2: 2025 – A44 / A4095 'With Development' Scenario With Mitigation

A44 / A4095						
2025 Base With Development WITH MITIGATION	AM Peak (07:45 – 08:45)			PM Peak (16:30 – 17:30)		
Lane	Max RFC	MMQ	Delay (Secs)	Max RFC	MMQ	Delay (Secs)
A4095 Upper Campsfield	0.95	10.37	61.04	0.67	2.02	10.79
A44 Woodstock Road	0.56	1.24	4.56	1.14	144.68	229.36
A4095 Bladon Road	0.85	5.33	16.98	0.56	1.26	6.64
A44 Oxford Road	0.91	8.38	28.15	0.46	0.86	4.36

RFC = Ratio of Flow to Capacity, MMQ = Maximum Mean Queue

7.2.16 The mitigation scheme identified would achieve nil detriment and even a small betterment in terms of operation of the junction with predicted RFCs on 0.95 in the AM peak (compared to 1.07 in the 2025 base case) and 1.14 in the PM peak (compared to 1.16 in the 2025 base case).

7.2.17 Mitigation and Modelling outputs are provided in **Appendix E**.

## 7.3 Summary

7.3.1 The proposed development would have an impact on local transport network, impact that would be mitigated through the various measures and improvement schemes identified in this section.

7.3.2 The package of mitigation measures and scheme proposed would contribute to the delivery of a sustainable development in transport terms and address any residual impacts. The proposed development can therefore be considered sustainable in transport terms and its residual transport impact are not considered severe.

## 8 Conclusions

### 8.1 Introduction

- 8.1.1 This Transport Assessment (TA) has been prepared by Peter Brett Associates LLP on behalf of Hill Street Holdings Ltd and presents a comprehensive assessment of the transport issues arising from the proposed development of the Oxford Technology Park, on Langford Lane in Kiddlington. The proposed development is to deliver up to 413,270 sqft of B-uses employment space.
- 8.1.2 The TA has been prepared in accordance with advice set out within the National Planning Policy Guidance and PBA has consulted with Oxfordshire County Council, the local highway authority, while preparing this assessment.

### 8.2 Development Proposals

- 8.2.1 The proposed Oxford Technology Park development is anticipated to deliver a total of 413,270 sqft of employment uses. The development will be made of several units ranging in size from 17,700 sqft to 42,900 sqft. The development will be accessed off a proposed new junction on Langford Lane, planned to be a priority junction with the site access road the minor arm and with a right turn bay on Langford Lane, the major road.

### 8.3 Transport Proposals

- 8.3.1 The transport strategy considered within this TA focuses on making best possible use of existing transport infrastructure, with the intention of mitigating the impact of the proposed development, in order of preference, through:
- Demand management;
  - Improvements to the local public transport network, and walking and cycling facilities;
  - Minor physical improvements to existing roads; and
  - Provision of new or expanded roads.
- 8.3.2 The sustainable transport strategy for the site is set out within **Section 4** of this TA and includes:

#### Travel Planning

- A commitment to a Framework Travel Plan, to include measures aimed at encouraging the use of sustainable modes of travel.

#### Walking and Cycling Strategy

- The provision of cycle parking in accordance with local standards;
- The provision of changing facilities including lockers and showers in each proposed unit;
- The provision of up-to-date and relevant information on walking and cycling to and from the site with route maps;
- The provision of access to suitable safety training for employees walking and cycling to the site, via events organised as part of the Travel Plan; and

- The provision on site of a network of footways and crossings delivering a safe permeable network of routes throughout the development.

#### **Public Transport Strategy**

- The provision of suitable financial contribution to supporting the delivery of an hourly connection to Oxford city centre off-peak and in the evenings on weekdays, to complement service 2C/2D; and
- The provision of a new bus stop on the northbound side of The Boulevard to a similar standard to the existing stop on the southbound side of The Boulevard.

#### **Vehicle Access Strategy**

- Provision of a new access onto Langford Lane serving the entire development, based on a priority junction with right turn bay, and footways on both sides.

#### **Vehicle Parking Strategy**

- Provision of vehicle parking in accordance with current local standards and designed to ensure that on-street parking is not encouraged; and
- Provision of car share spaces to support car sharing at the development.

- 8.3.3 This demonstrates the developer's commitment to the principles of sustainable development. The proposed localised improvements to transport infrastructure focusing on bus accessibility to the site and the provision of a Travel Plan serve to promote sustainable travel behaviour.

### **8.4 Highway Impact Mitigation**

- 8.4.1 The traffic impact of the proposed development has been identified and mitigation schemes are being proposed. The proposed development would lead to an increase in traffic at the A44/A4095 roundabout, a junction already under traffic pressure. The resulting increase in traffic, albeit small, would further exacerbate congestion at the junction. As a result, mitigation is proposed and a scheme has been identified and is presented in **Drawing 23588/001/SK005**.

### **8.5 Overall Conclusion**

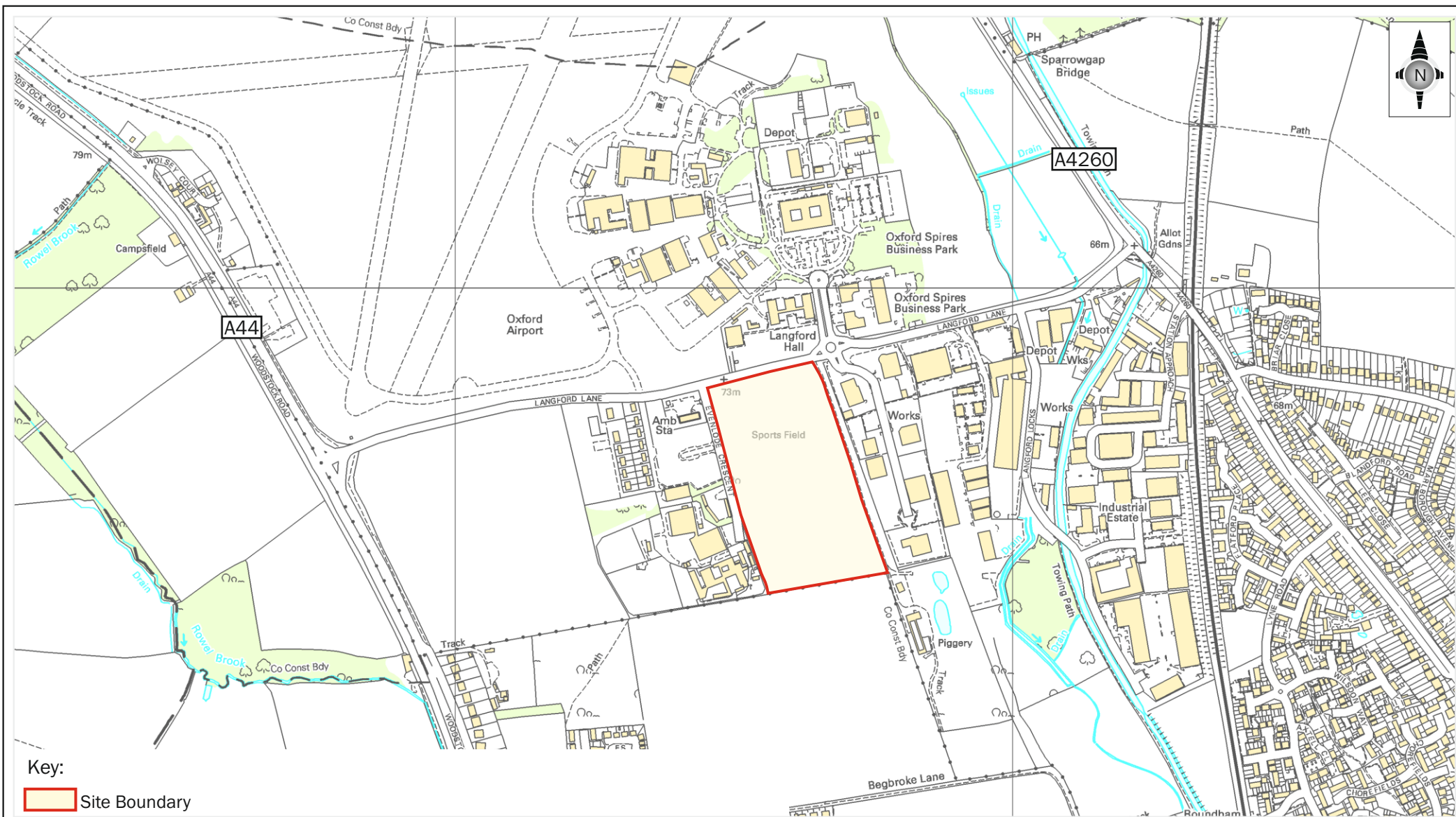
- 8.5.1 This report demonstrates that the transport impact of the proposed development could be mitigated and accommodated within the local transport networks. Furthermore, the proposed development would include a set of measures that would encourage sustainable travel patterns. It is therefore considered that the proposed development would be sustainable in transport terms and that its residual transport impact will not be severe.
- 8.5.2 In conclusion and based on the findings of this report, it is considered that there are no valid highway or transportation reasons that should prevent the development proposals from being awarded planning consent.



## Figures







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OXFORD TECHNOLOGY PARK, KIDLINGTON

SITE LOCATION PLAN

Date 15/07/2014

Scale NTS

Drawn by JHo

Checked by FC

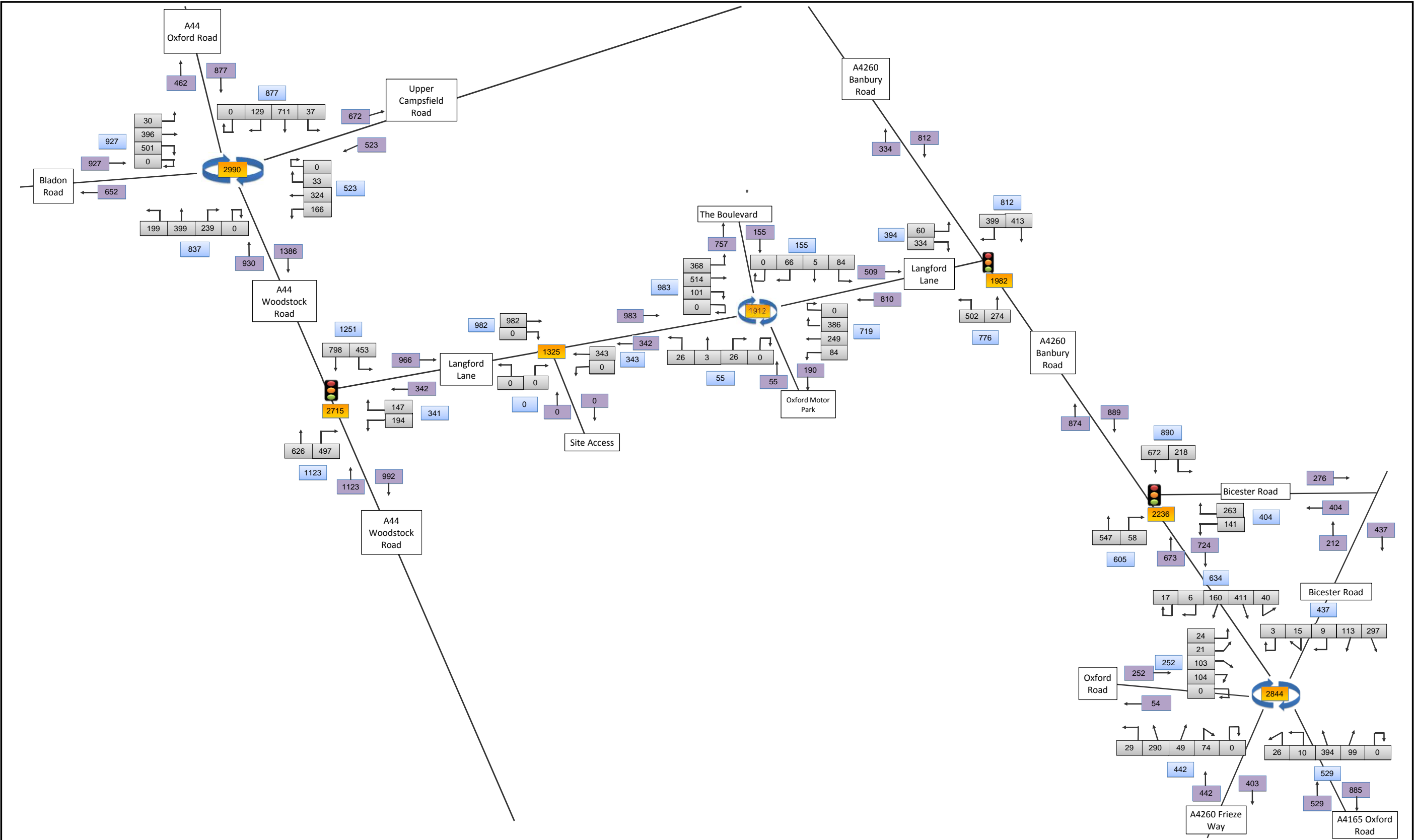
Revision A


FIGURE 1-1





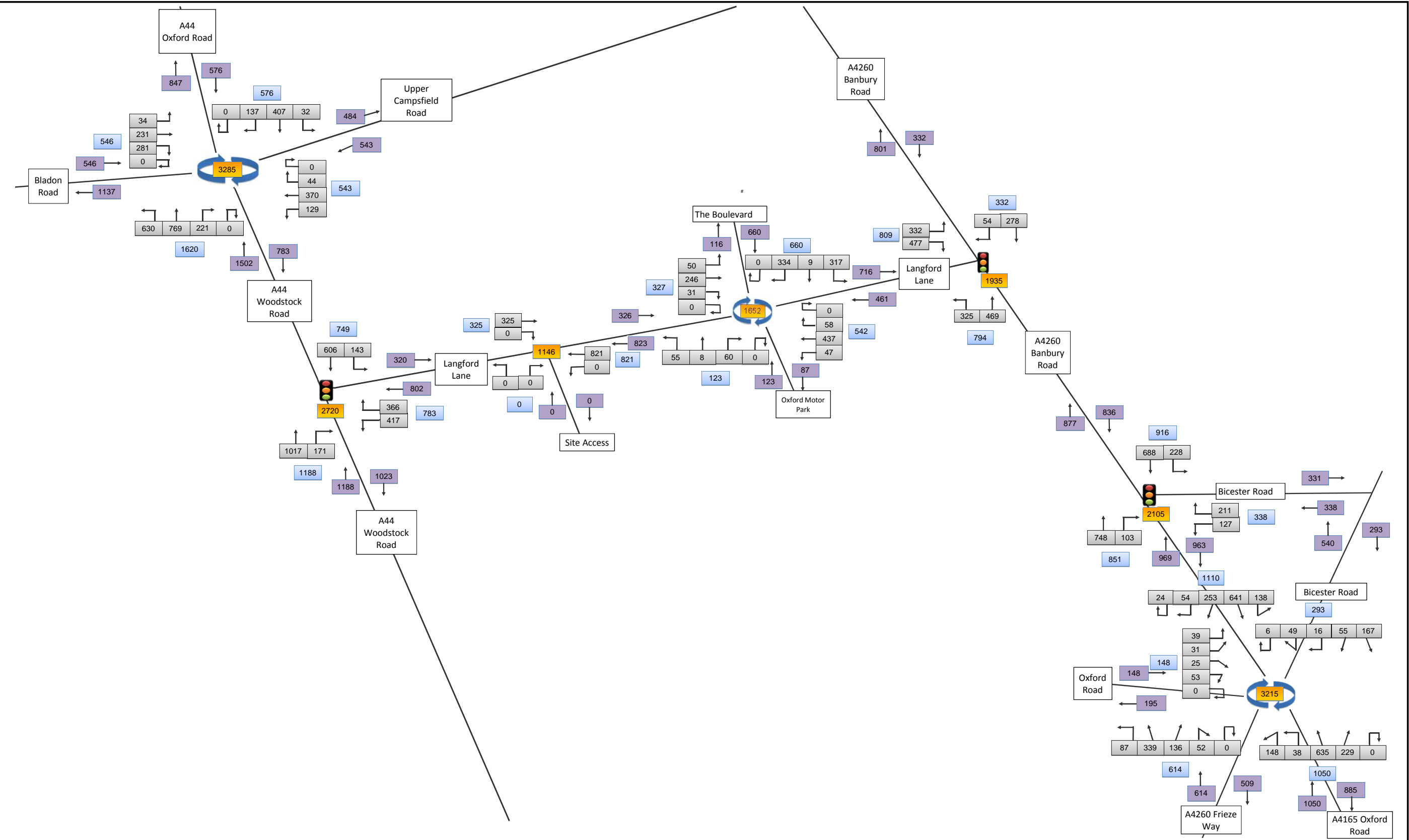





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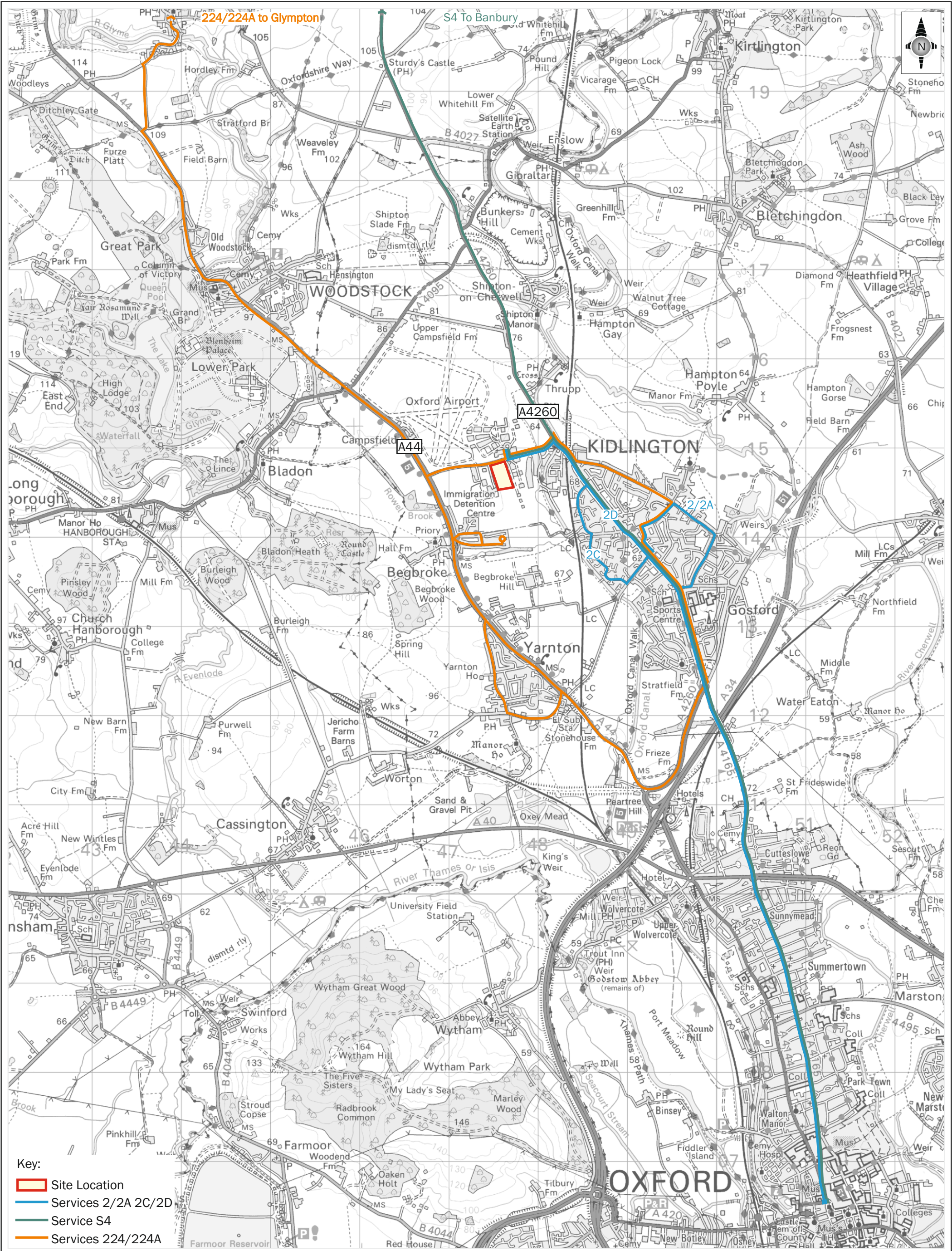


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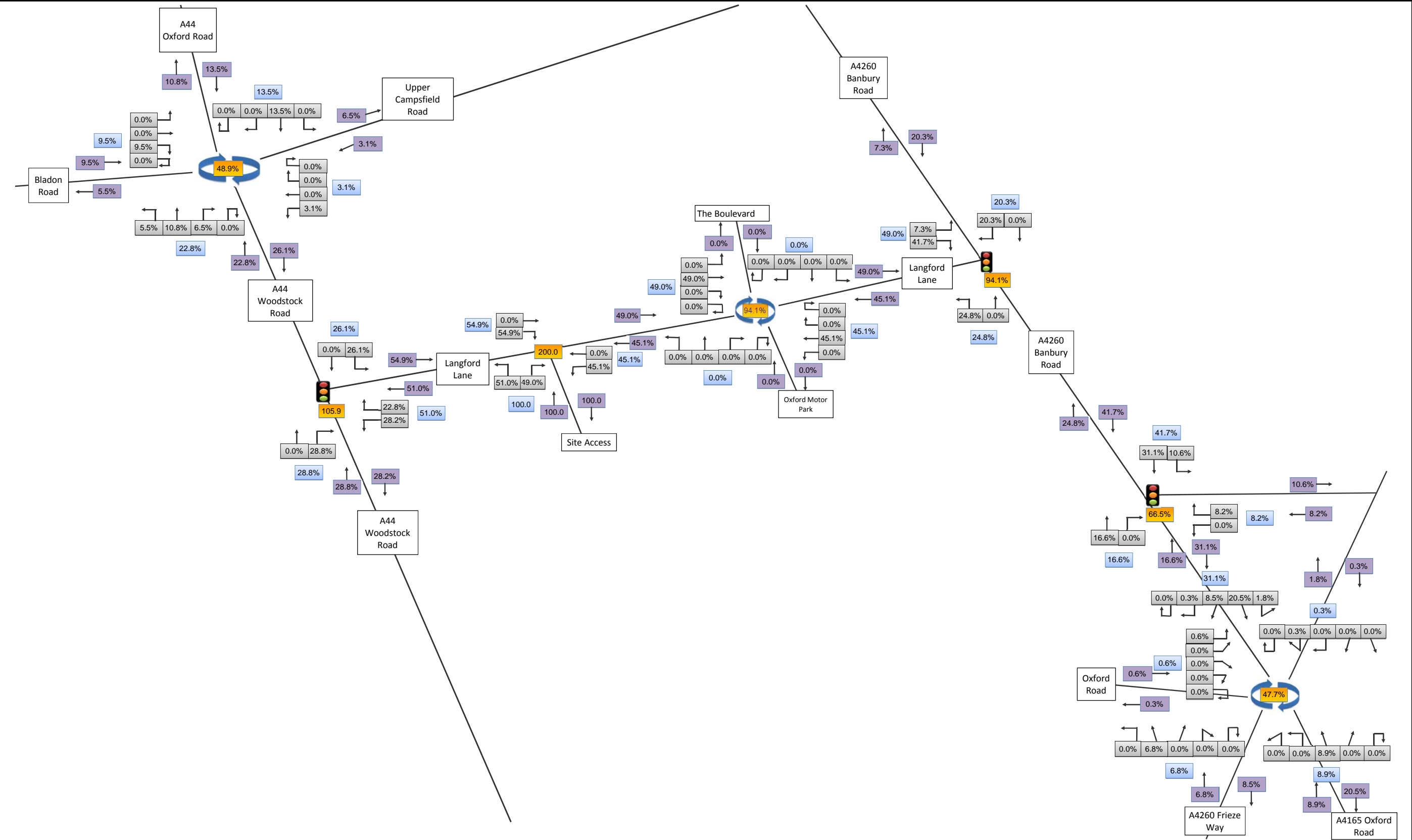







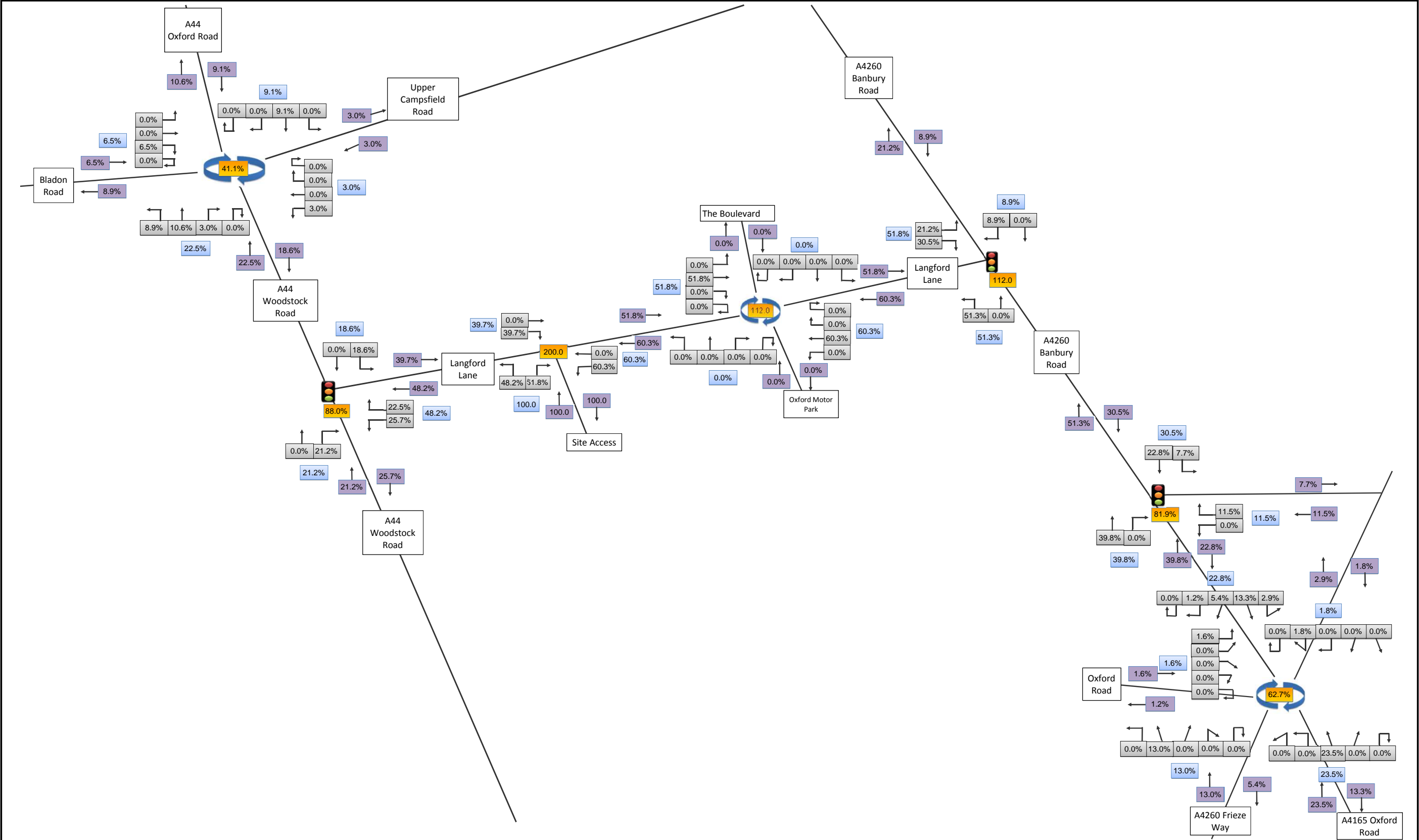







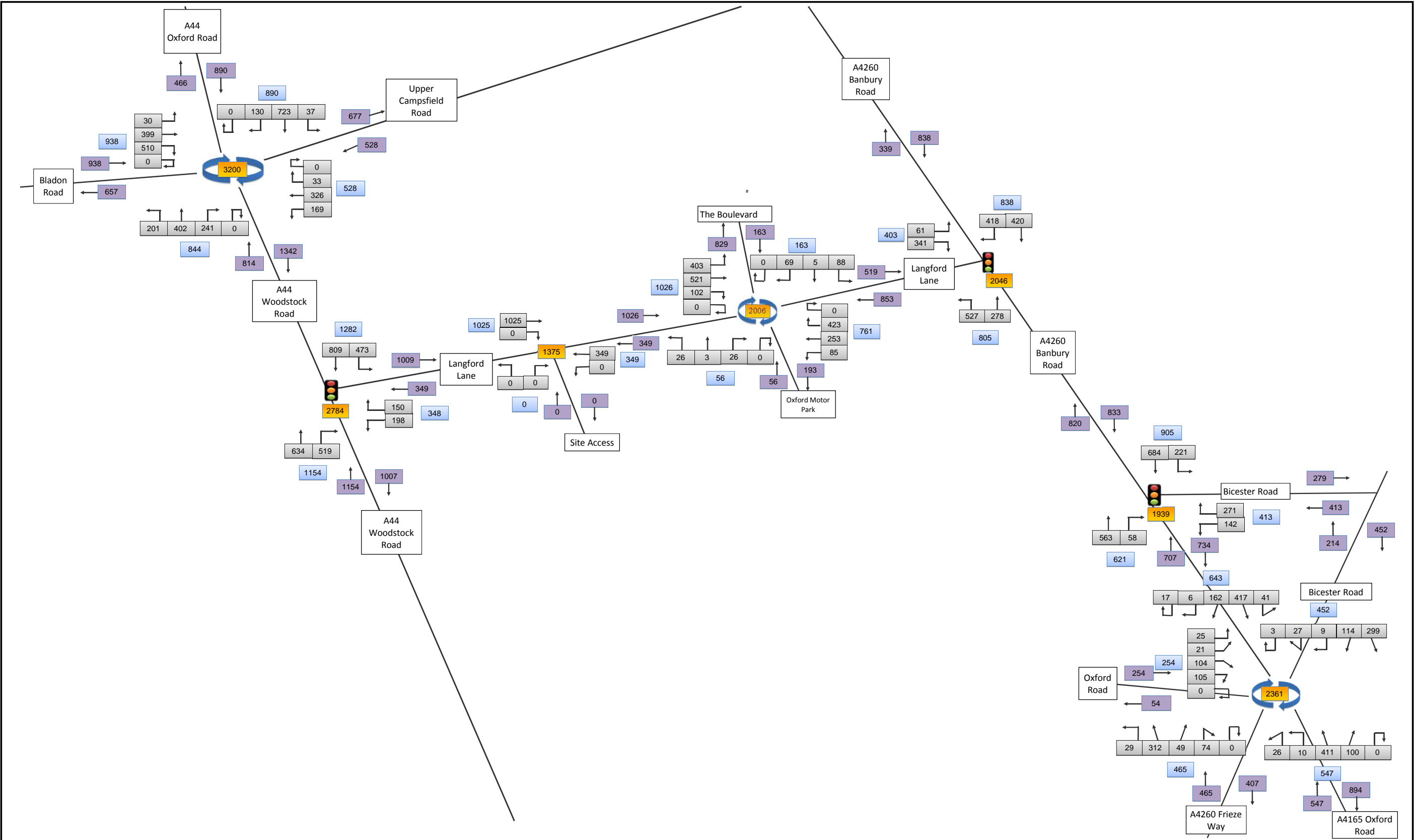
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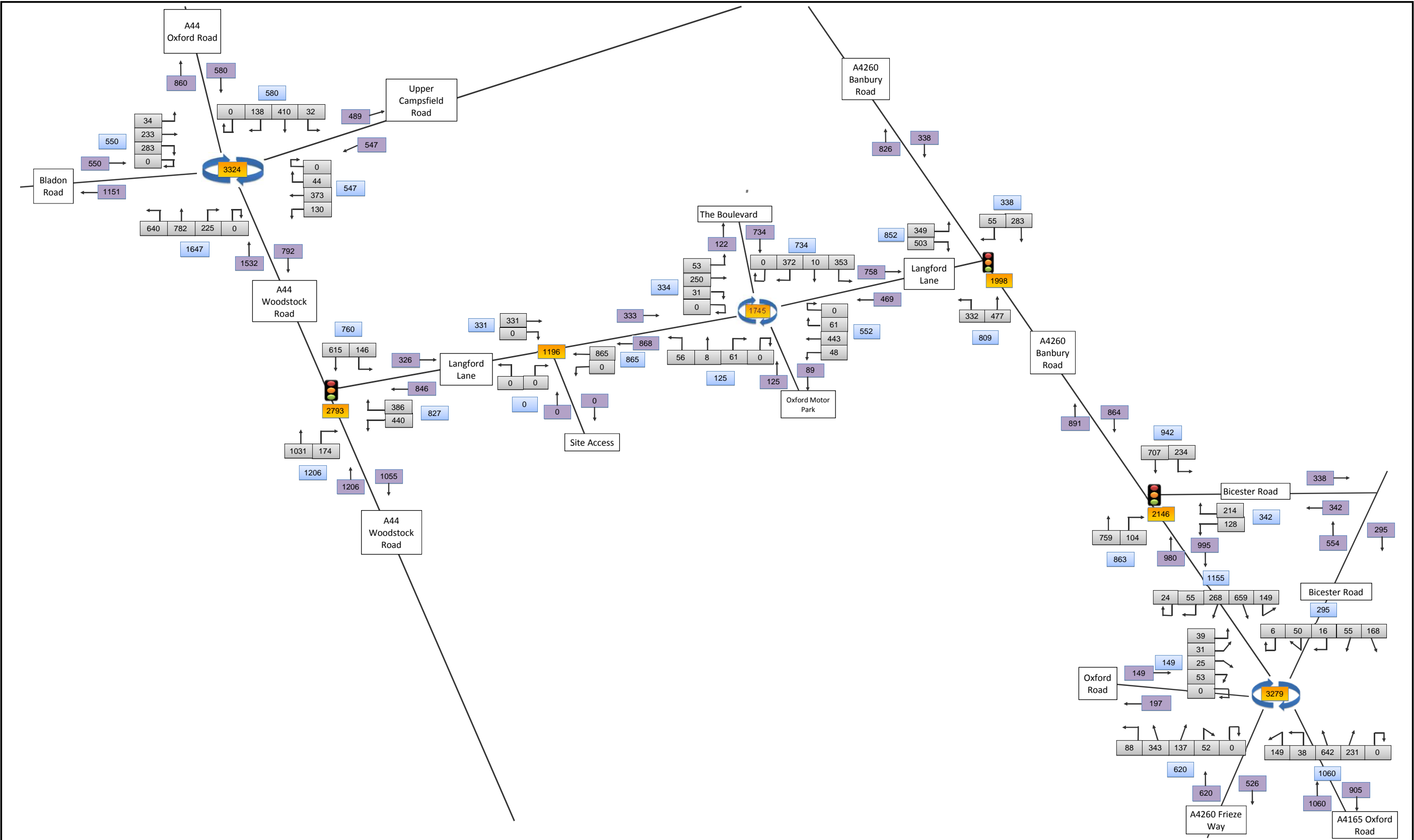





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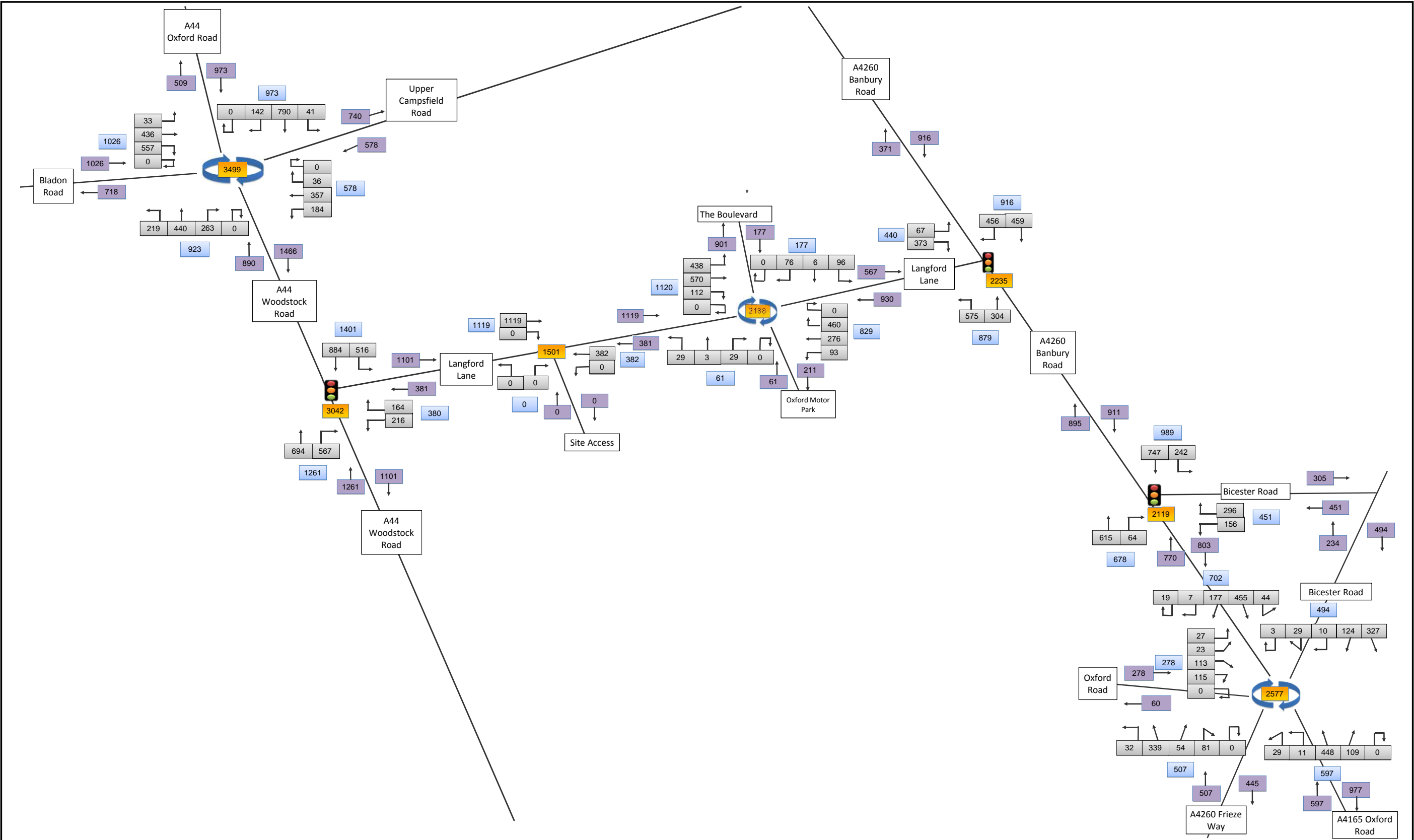







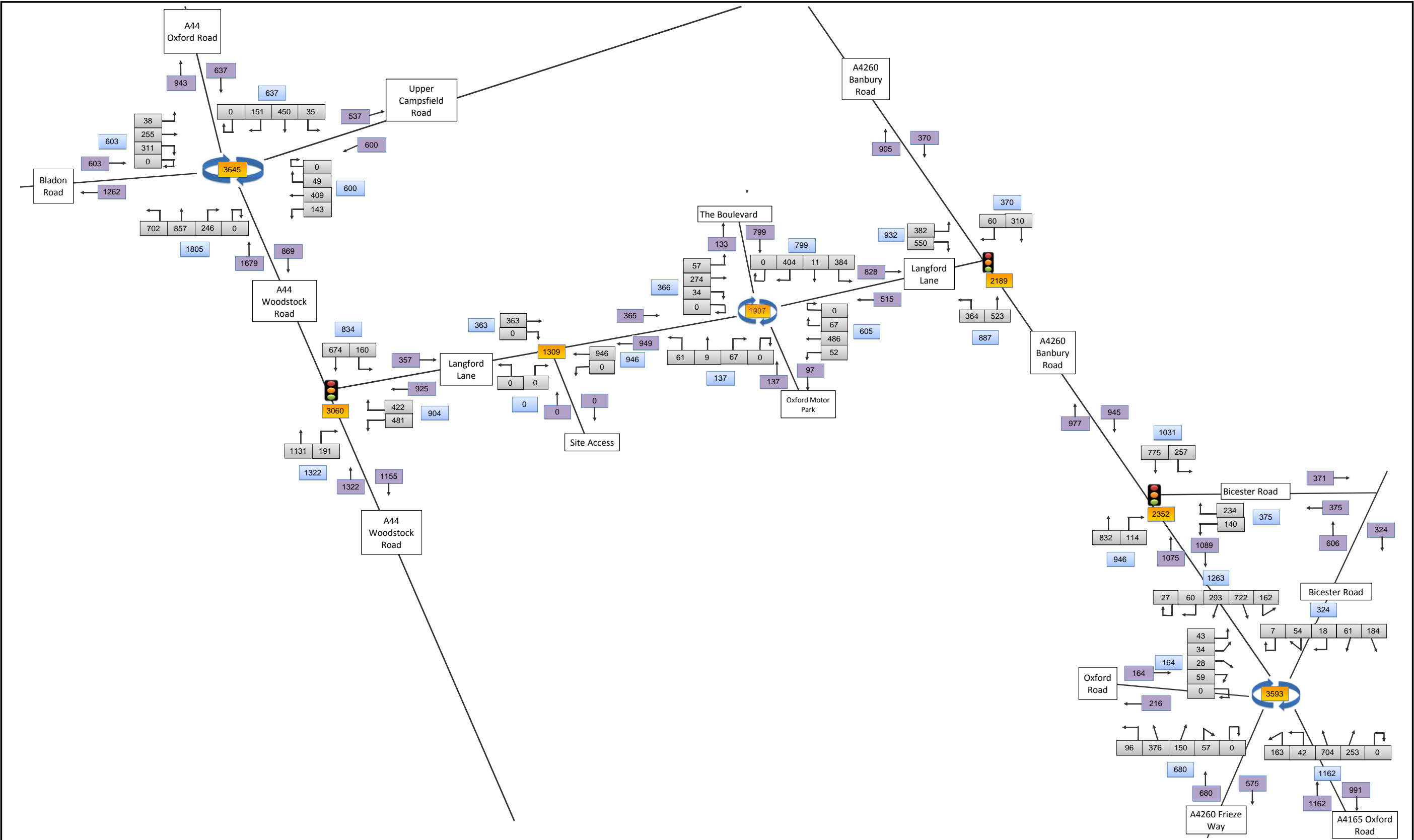
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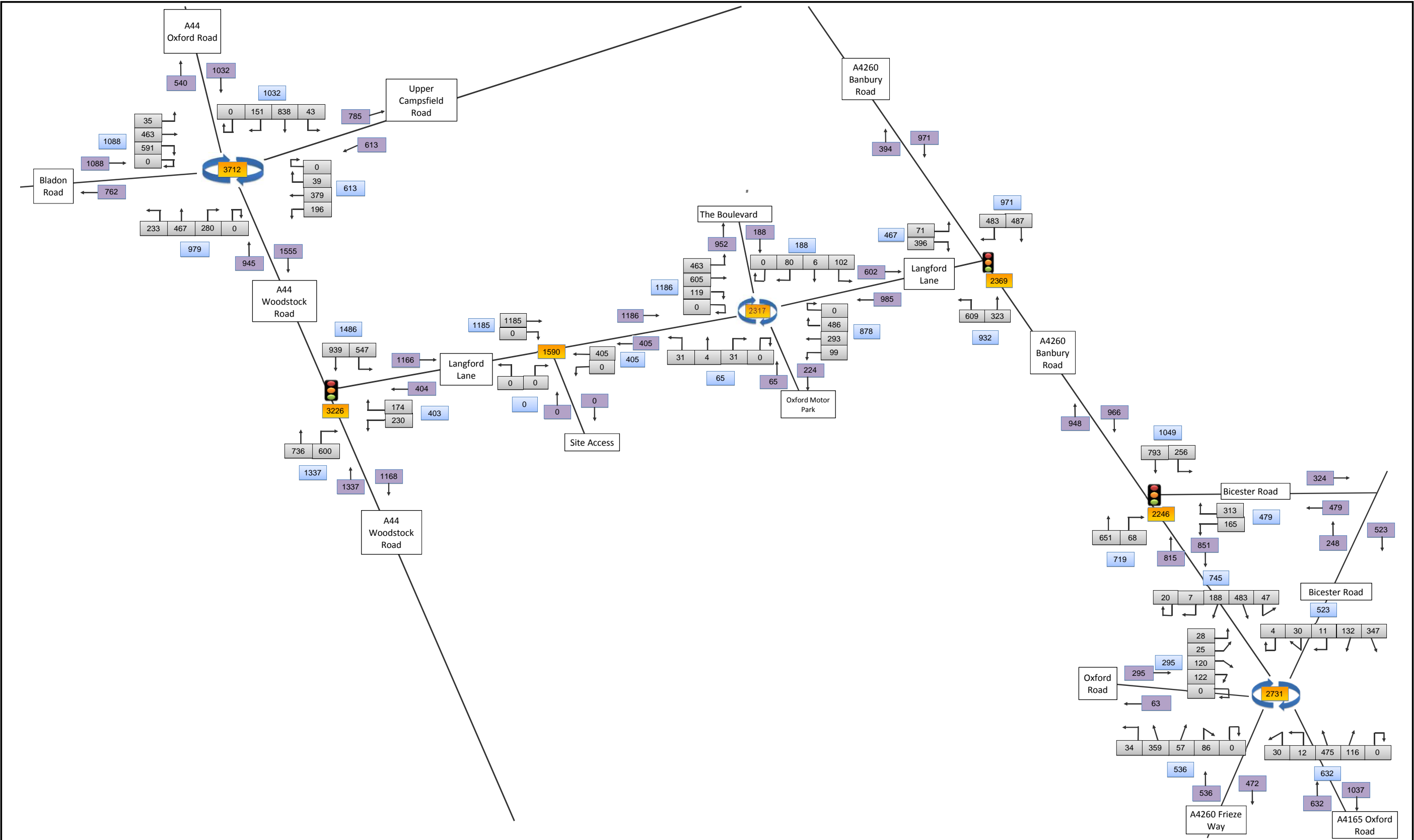
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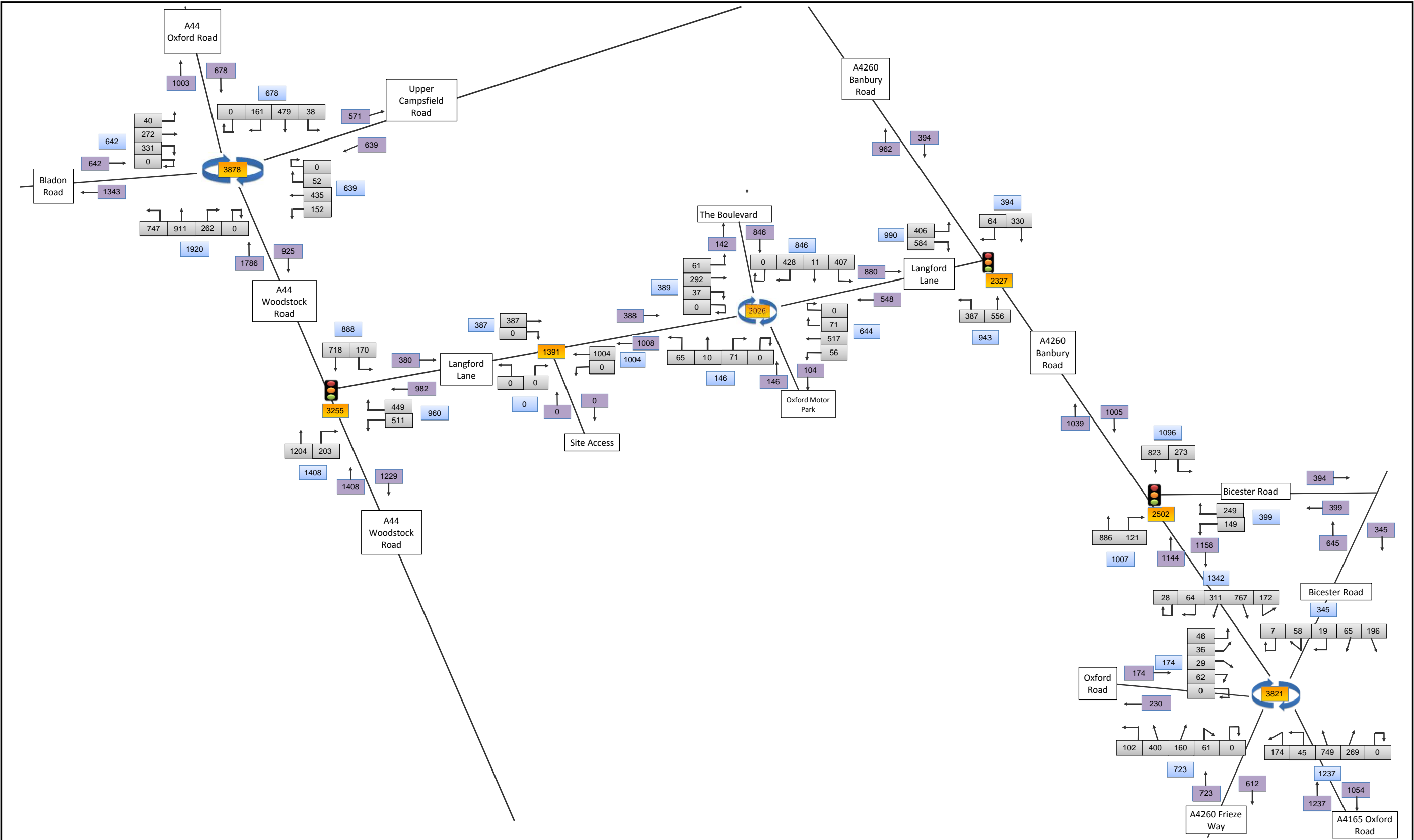





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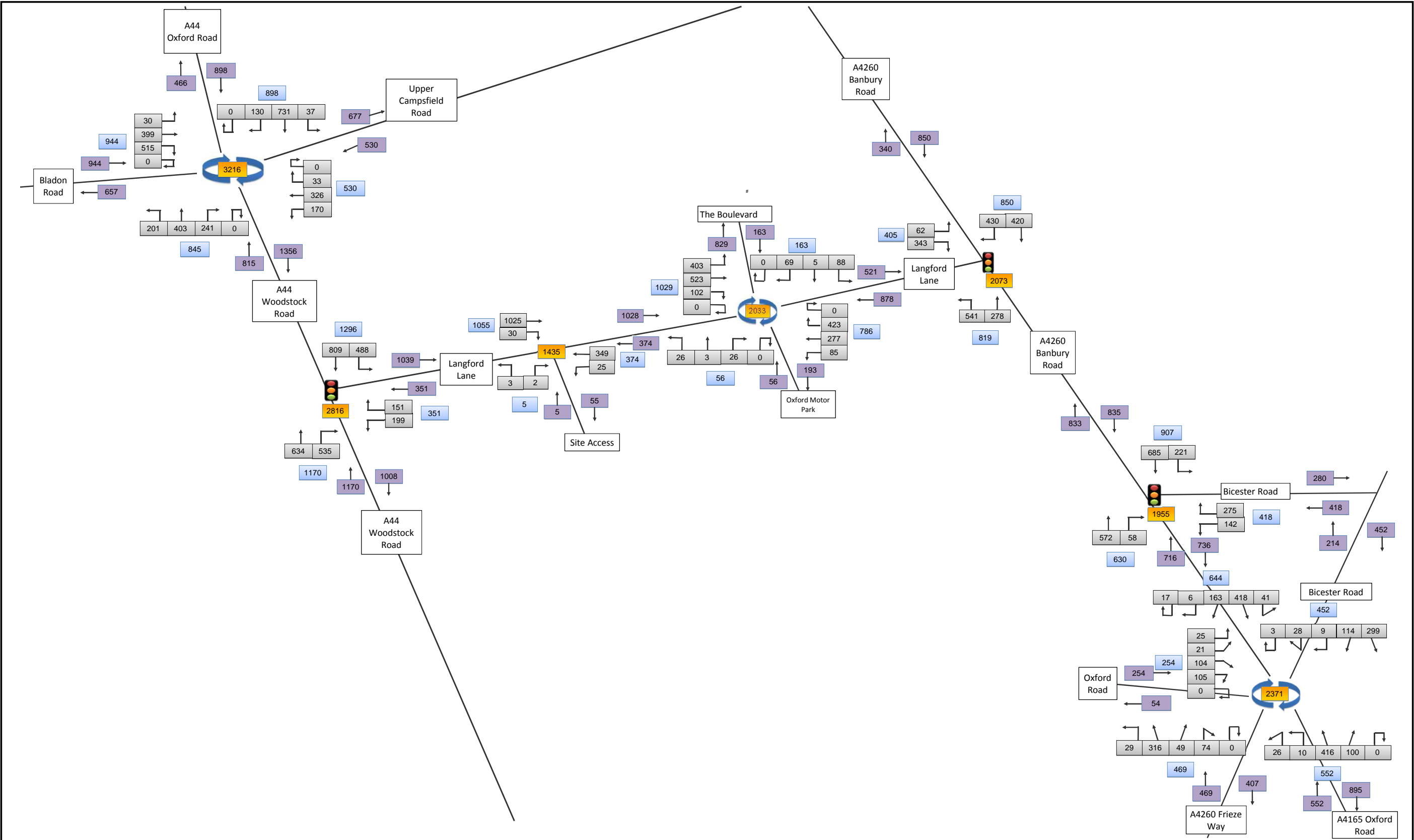






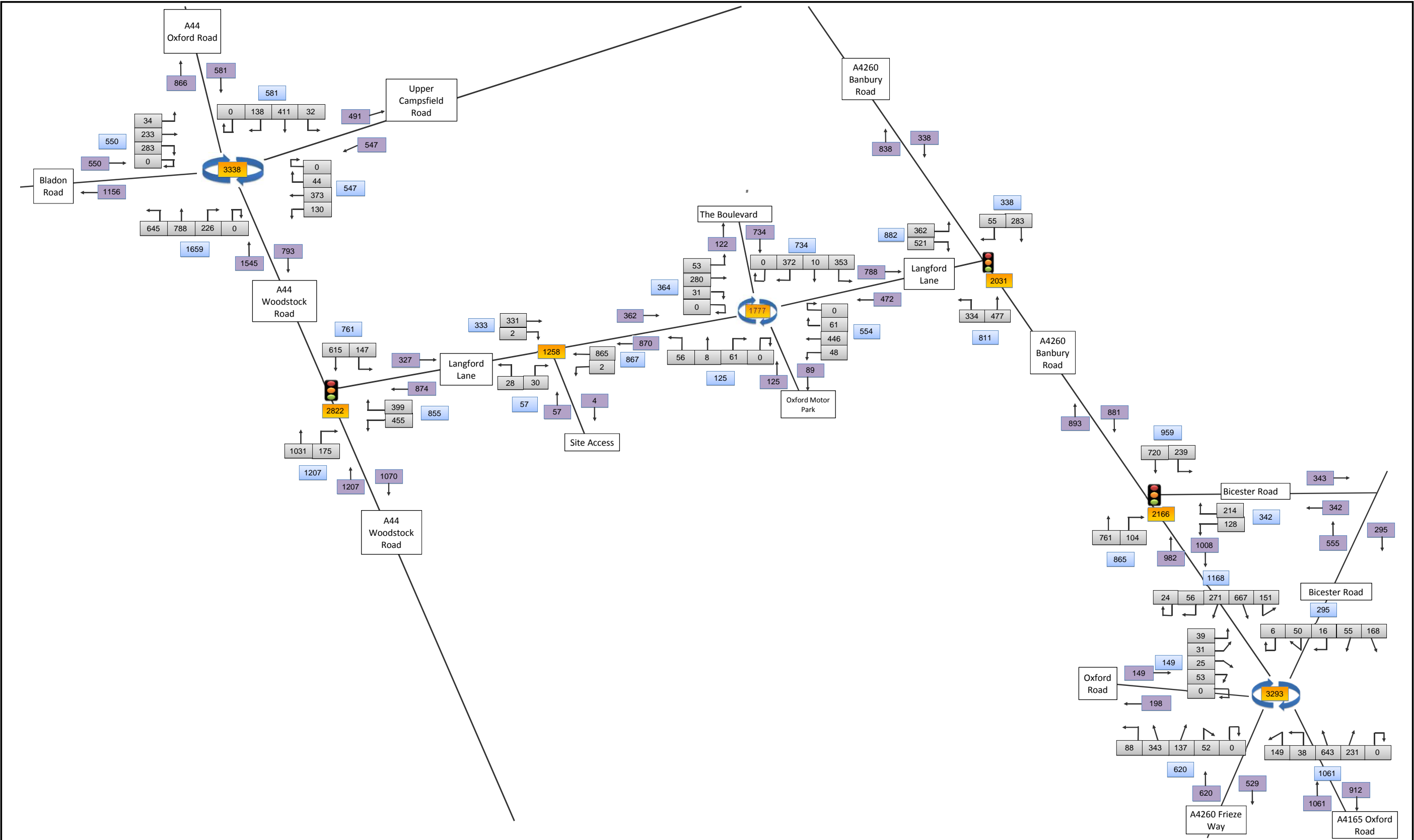
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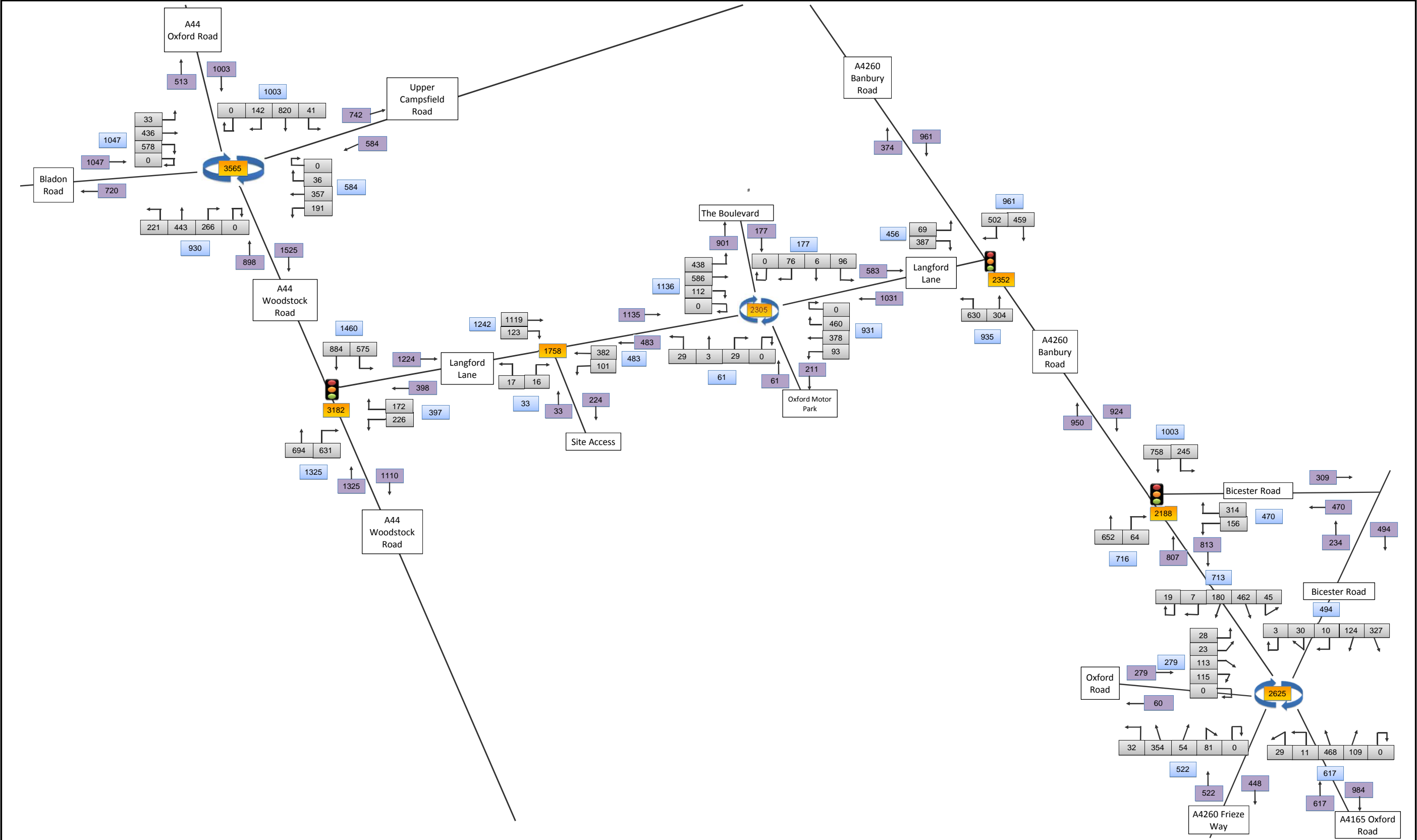
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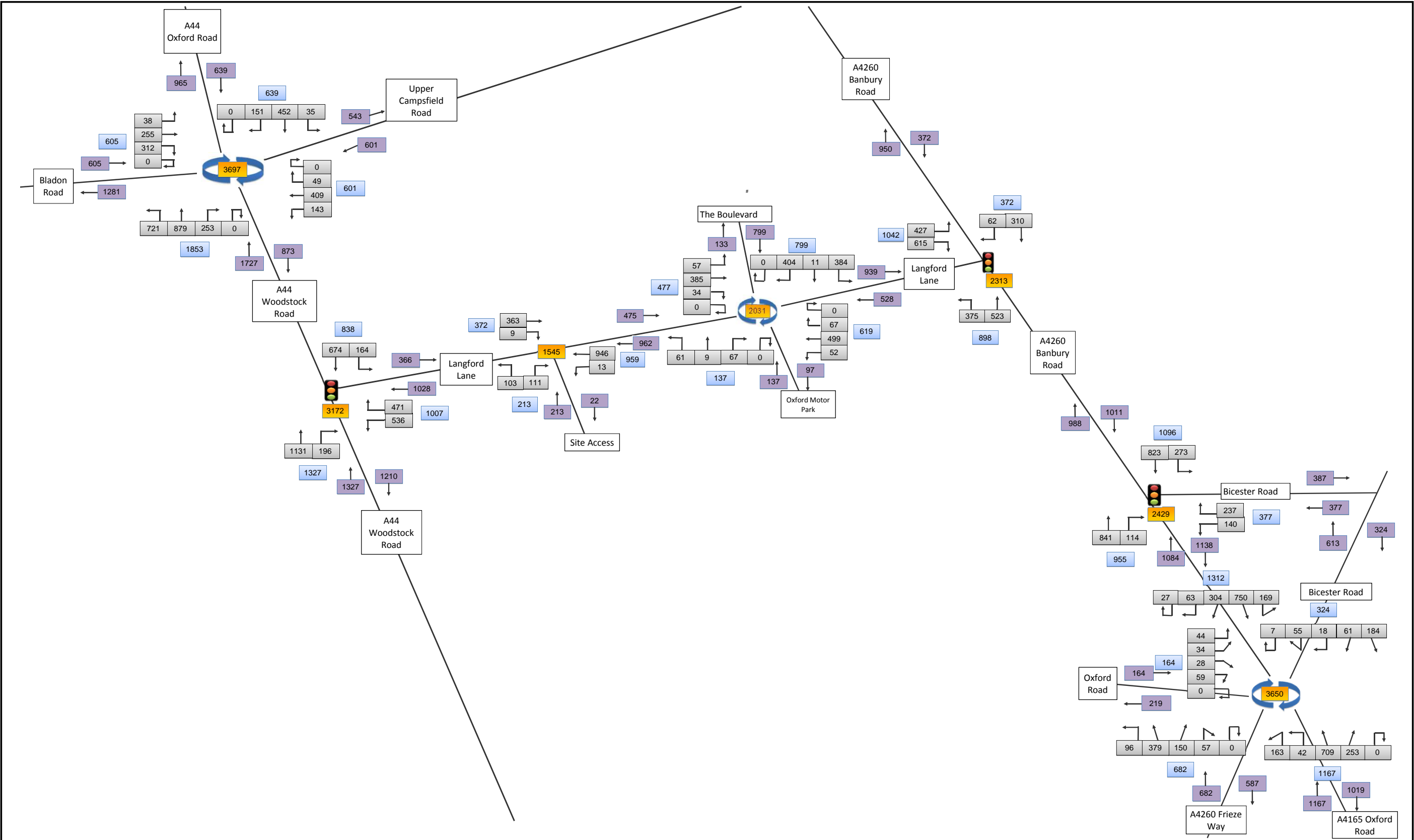




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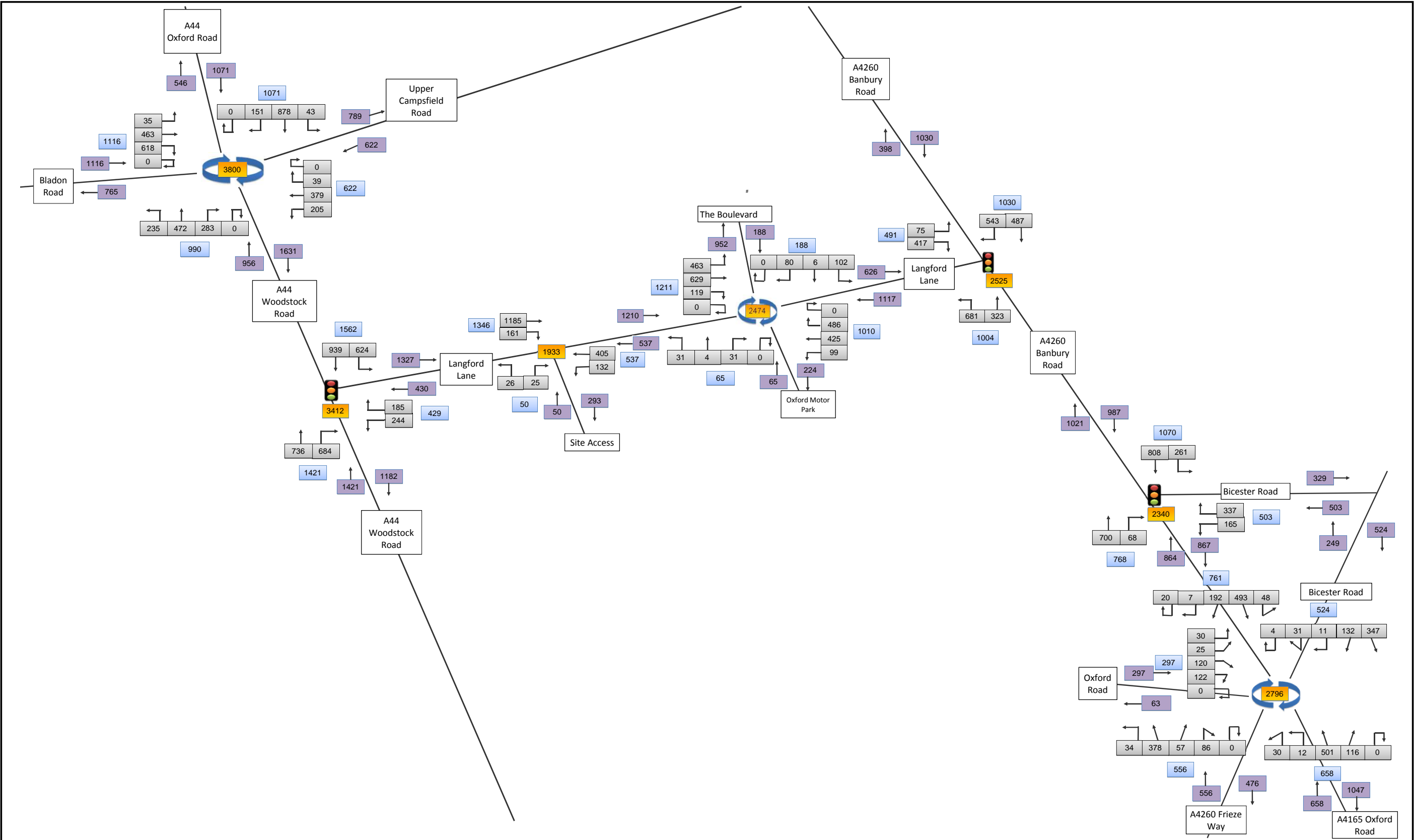






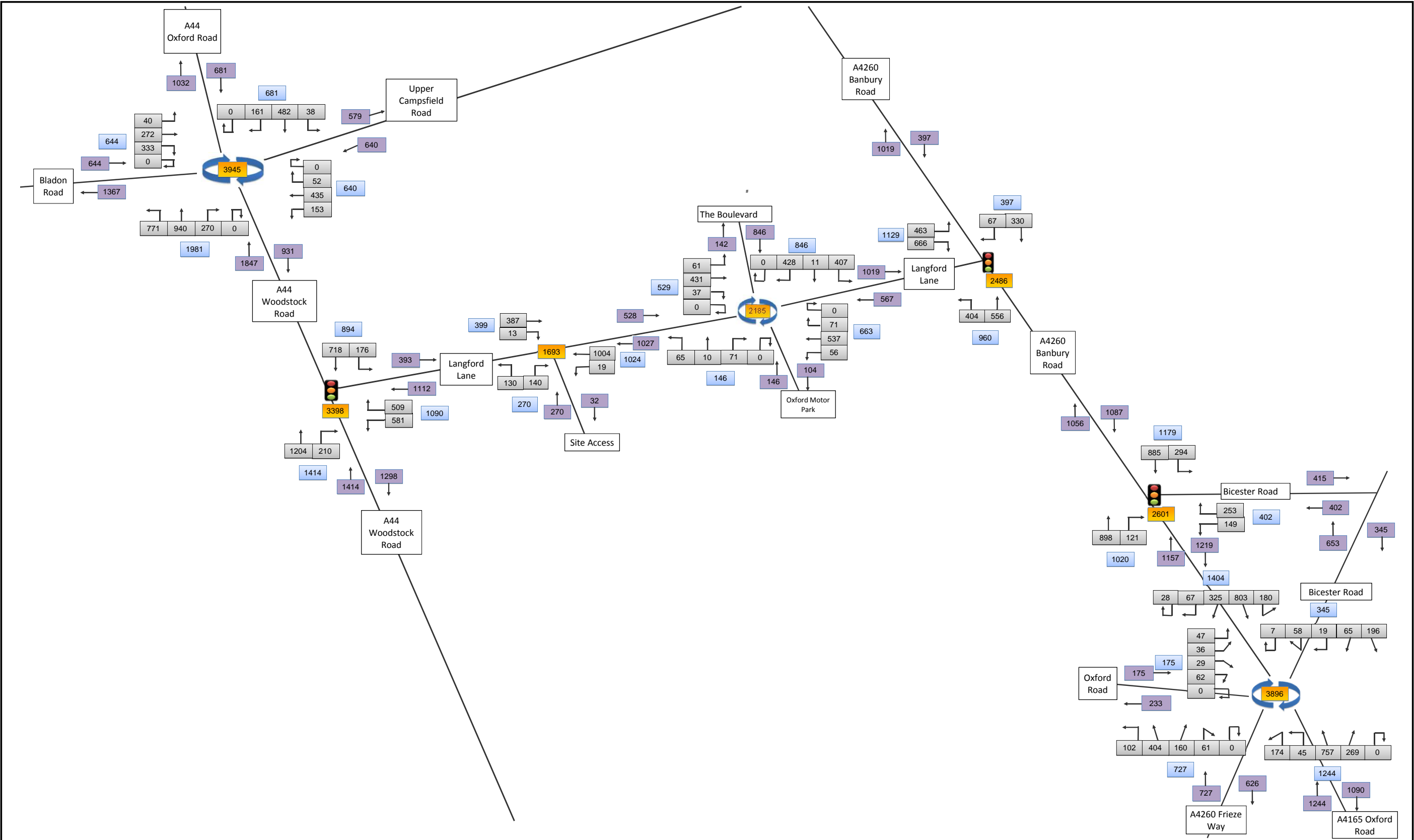
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