Darlington Local Plan **13/01/2021**

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STRATEGIC TRANSPORT MODELLING REPORT

SYSTRA

DARLINGTON LOCAL PLAN

STRATEGIC TRANSPORT MODELLING REPORT

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1. BACKGROUND

1.1 Introduction

1.1.1 SYSTRA have been commissioned by Darlington Borough Council (DBC) to undertake strategic traffic modelling of the proposals emerging from the Darlington Local Plan.

1.1.2 The project has made use of the regional CUBE model developed by the Tees Valley Combined Authority (TVCA). The model covers the area illustrated in Figure 1 below, though it has external zones covering the UK at a coarser level.

Figure 1. TVCA Model Extent

1.1.3 The model has been developed to aid the region in formulating business cases, with a focus on major scheme business cases submitted to the Department for Transport (DfT).

1.1.4 The model has been calibrated and validation, reported through a model development report (TVU Tees Valley Multi Modal Model – Local Model Validation Report).

1.1.5 The model has been developed with a set of "standard" forecasts for five year increments from 2020 through to 2040. These make use of the prevailing development database from each of the five authorities listed below:

- Darlington;
- Hartlepool;
- Middlesbrough;
- Redcar and Cleveland; and
- Stockton-on-Tees.

1.1.6 Growth for other authorities, such as Durham, is based on standard TEMPro factoring within the TVCA model.

1.1.7 The model then uses standard trip generation, distribution processes followed by a constraining process to generate demand forecasts for each travel mode and journey purpose in the model.

1.1.8 This constraining process is to ensure that the overall level of demand within the model is consistent with DfT forecasts. However, this study is required to test the impact of the local plan which is a constantly changing set of developments. Therefore a revised forecasting process was adopted and is discussed in Chapter 2.

1.1.9 For consistency, SYSTRA have made use of the regional forecasts for adjacent local authority areas and hence the forecast years in this report mirror those of the regional model.

1.1.10 This report will cover the following:

- Chapter 2 focuses on the processes to undertake the strategic modelling;
- Chapter 3 reports the result of the strategic modelling;
- Chapter 4 discusses the process to link to the microsimulation models; and
- Chapter 5 provides the conclusions to the strategic modelling analysis.

2. STRATEGIC MODEL

2.1 Introduction

2.1.1 This chapter documents the following aspects of the strategic modelling:

- Development Database;
- Trip Generation;
- Trip Distribution;
- Growth from other Local Authorities;
- Vehicle Assignment; and
- Scenarios Tested.

2.1.2 The results of the tests are reported in Chapter 3.

2.2 Development Database

2.2.1 A database of developments within the local plan was supplied by DBC on 25/01/2018. This database was reviewed by officers at TVCA and has been used in the regional model and has been supplied to Highways England for their modelling processes investigating options for the Darlington Northern Link Road.

2.2.2 While for scheme assessment, the development database is required to be constrained to TEMPro, the assessment in this study is the impact of the local plan at the expected build out for each forecast year. The quantum of developments to be considered as part of the local plan is shown below.

PLAN PERIOD	2020	2025	2030	2035
Dwellings	2,728	6,116	9,214	11,810
Jobs	5,119	7,465	8,763	9,950

Table 1. Development Database Summary

2.2.3 Each development site within the database was geocoded to an easting and a northing and from these coordinates was allocated to a zone within the regional transport model.

2.2.4 The spatial pattern of the build out of the local plan for the four forecast years is illustrated in the following figures:

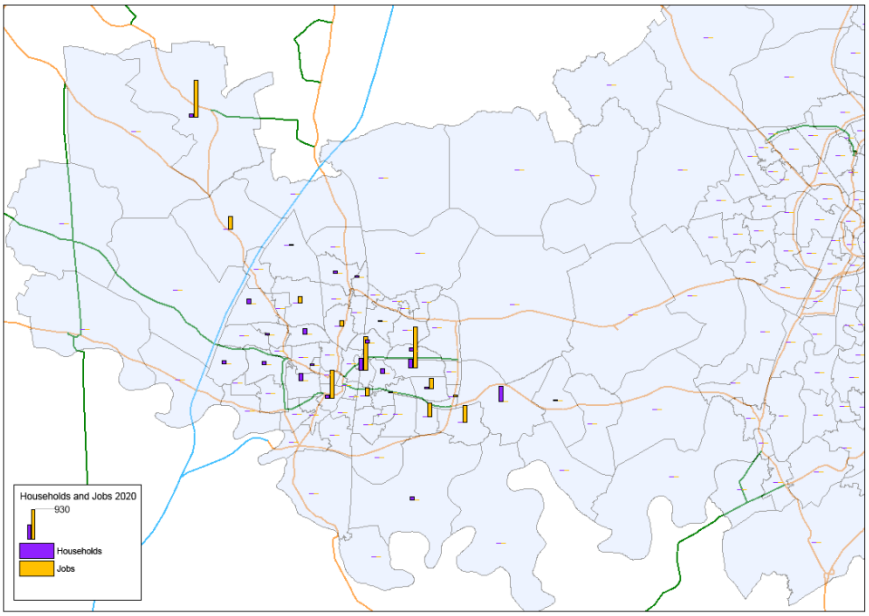


Figure 2. Local Plan – Build out to 2020

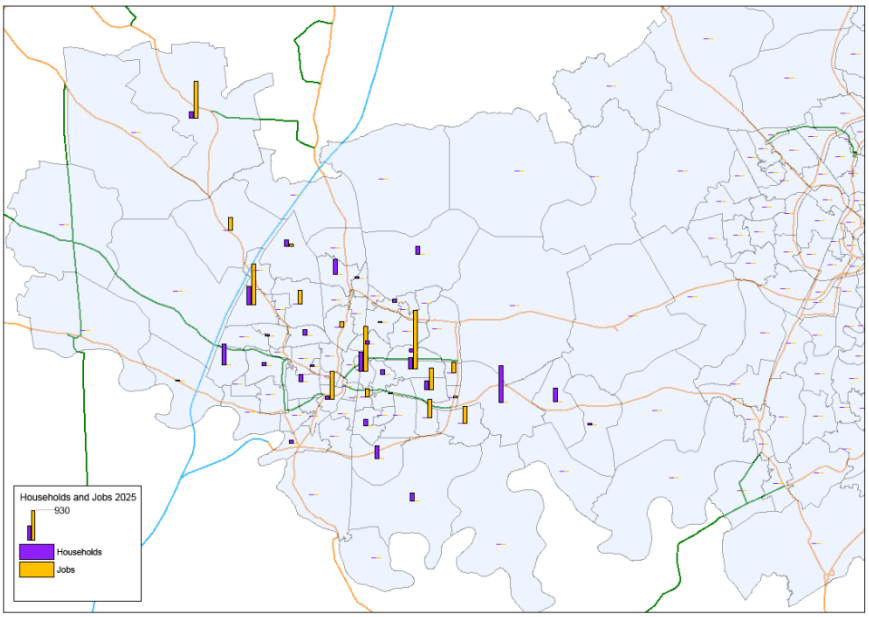


Figure 3. Local Plan – Build out to 2025

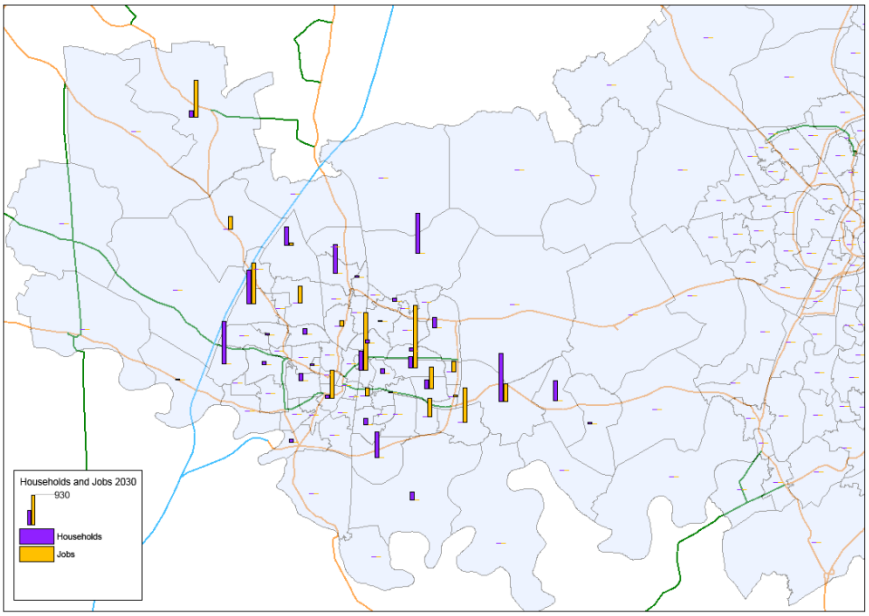


Figure 4. Local Plan – Build out to 2030

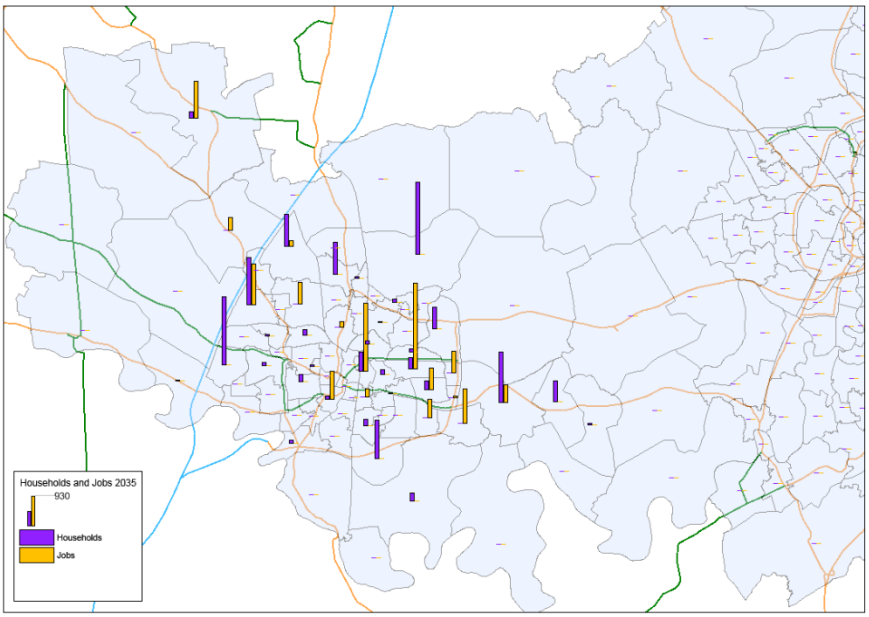


Figure 5. Local Plan – Build out to 2035

2.2.5 These figures illustrate that in the first ten years of the plan development, in particular economic growth developments, is planned for the eastern part of Darlington, with housing broadly spread across the borough.

2.2.6 In later years, beyond 2025 the pattern remains the same for economic development, but housing developments are more concentrated on key sites as their build out increases.

2.2.7 A printout of the development database, together with applied buildouts is provided in **Appendix A.**

2.3 Trip Generation

2.3.1 Trip rates have been used to convert the development quantum within the plan to vehicle trips for the morning and evening peak hours.

2.3.2 Trip rates have been sourced from the TRICS database, and sense checked with those included within Highways England's GRAHAM tool.

2.3.3 The table below summarises the trip rates used for each development class, with source material available on request.

LAND USE	METRIC	AM IN	AM OUT	PM IN	PM OUT
Industrial (B1/B2/B8)	Job	0.13	0.04	0.03	0.12
Office (B1/A2)	Job	0.15	0.02	0.02	0.13
Hotel (C1)	Job	0.15	0.02	0.02	0.13
Restaurant (A3)	Job	0.15	0.02	0.02	0.13
Nursery (D1)	Job	0.15	0.02	0.02	0.13
Mixed Housing (C3)	Dwelling	0.09	0.26	0.25	0.14
House (C3)	Dwelling	0.14	0.36	0.31	0.17
Non-Food (A1)	Job	0.15	0.02	0.02	0.13
School Primary (D1)	Job	0.15	0.02	0.02	0.13
Leisure (D2)	Job	0.15	0.02	0.02	0.13
Flat (C3)	Dwelling	0.05	0.17	0.17	0.09
Pub/Club (A4)	Job	0.15	0.02	0.02	0.13
Cinema (D2)	Job	0.15	0.02	0.02	0.13
Agriculture (Sui-Generis)	Job	0.15	0.02	0.02	0.13
Cattle Market (Sui-Generis)	Job	0.15	0.02	0.02	0.13
Mixed Housing (C3)	Dwelling	0.09	0.26	0.25	0.14
Scrap Yard (Sui-Generis)	Job	0.15	0.02	0.02	0.13

LAND USE	METRIC	AM IN	AM OUT	PM IN	PM OUT
Food (A1)	Job	0.15	0.02	0.02	0.13
Industrial (B1/B2/B8)	Job	0.13	0.04	0.03	0.12

Table 2. Trip Rates used in assessment

2.3.4 The application of the above trip rates to the development database produces the following total number of trips for each year, modelled hour and trip direction.

TIME PERIOD	2020	2025	2030	2035
AM Trips In	971	1,659	2,121	2,522
AM Trips Out	953	1,978	2,789	3,462
PM Trips In	834	1,776	2,546	3,187
PM Trips Out	988	1,772	2,338	2,824
AM Trips	1,924	3,638	4,910	5,984
PM Trips	1,822	3,548	4,884	6,011

Table 3. Summary Trip Totals

2.4 Trip Distribution

2.4.1 Travel patterns and trip ends from the regional Voyager model have been used to distribute the trip ends to provide vehicle trip matrices.

2.4.2 The methodology uses the distribution pattern for trips with at least one end within Darlington from the Voyager model and furnesses the totals up to match the new trip origins and new trip destinations separately. The matrices are then combined and adjusted for double counting (i.e. where a resident from new housing developments to be employees at new employment sites).

2.5 Growth from other local authorities

2.5.1 The assessment includes growth identified within the TVCA model for the local authorities of Stockton, Middlesbrough, Hartlepool and Redcar & Cleveland albeit constrained to TEMPro levels.

2.5.2 Matrices for the morning peak were calculated by removing the trips associated with new developments within Darlington from the TVCA matrices. This was done by calculating

the proportion of base year houses to forecast year houses and applying that percentage to the trips from the Darlington zone.

2.5.3 For example, if the base year had 100 homes and the forecast year 200 homes then the proportion was 50% and half of the trips from this zone were removed from the TVCA matrices to form the background matrices.

2.5.4 A similar process was performed from the evening peak matrices, in these instances the proportion was applied to the destination end of the trip rather than the origin end.

2.5.5 The proportions for non-Darlington zones were set to 1 to ensure that the model retained the information from the donor TVCA model.

2.5.6 The LGV and HGV matrices in all scenarios as are sourced from the TVCA model.

2.6 Vehicle Assignment

2.6.1 The development trips, together with the background, are loaded onto the road network using the same processes and parameters as for the regional transport model.

2.6.2 This uses an iterative path building process to enable vehicles to reroute as journey costs, represented through a combination of travel times and monetary costs, change.

2.6.3 The assignment of only the local plan development trips are provided by time period and forecast year in the following eight figures:

Figure 6. Local Plan Development Flows – Morning Peak 2020

Figure 7. Local Plan Development Flows – Morning Peak 2025

Figure 8. Local Plan Development Flows – Morning Peak 2030

Figure 9. Local Plan Development Flows – Morning Peak 2035

Figure 10. Local Plan Development Flows – Evening Peak 2020

Figure 11. Local Plan Development Flows – Evening Peak 2025

Figure 12. Local Plan Development Flows – Evening Peak 2030

Figure 13. Local Plan Development Flows – Evening Peak 2035

2.6.4 As a check, comparisons have been made between the output of trip distribution and development database. As expected from the local plan development database, the local plan trips mirror the locations of developments and the magnitude of trip making is consistent with the proposed build out rates.

2.6.5 The above plots are reproduced with numeric annotations in **Appendix B**.

2.7 Scenarios Tested

2.7.1 In order to test the local plan, a series of scenarios have been evaluated and analysis of the differences undertaken to reveal emerging issues on the road network that will need to be addressed.

2.7.2 Four scenarios have been formulated for each year these are defined as:

- Natural Growth: Growth calculated from assumed TEMPro growth factors as per standard Transport Application methodology;
- Do Nothing: No additional homes or jobs are created and no schemes are delivered;
- Development Only: The impact of the developments included within the local plan, with no mitigation schemes; and
- The Local Plan: The impact of the development and the associated infrastructure based mitigation schemes that are included in the local plan.

2.7.3 The 'Natural Growth' scenario was calculated direct from TEMPro sourced growth rates for car driver trips for Darlington. These are provided in the table below:

Table 4. TEMPro Growth Factors

YEAR	AM	PM
2015-2020	1.0720	1.0672
2015-2025	1.1079	1.1001
2015-2030	1.1512	1.1419
2015-2030	1.2005	1.18219

2.7.4 These have been applied to the car commute, car employers business and car other trips in the Natural Growth scenario. The demand for goods vehicles is as per the standard TVCA model forecast.

2.7.5 For the 'Do Nothing' scenario only demand from the methods outlined in section 2.5 have been loaded onto the road network.

2.7.6 The 'Development Only' scenario is formed by adding the trips from the trip distribution stage into the trip loading process.

2.7.7 The 'Local Plan' scenario has the same demand as the 'Development Only' scenario, changes have been made to the network. These changes represent the schemes that would address the issues that emerge from the 'Development Only' scenario where the impact could be broadly attributed to the planned development.

2.7.8 The coding adopted for the mitigation measures is documented within **Appendix C**.

3. RESULTS OF ASSESSMENT

3.1 Introduction

3.1.1 This chapter documents the results of the strategic modelling assessment through the following metrics:

- Volume over Capacity plots;
- Link Volume plots; and
- Corridor Journey Times.

3.1.2 The final section of this chapter provides a comparison of the 'Local Plan' scenario with the 'Natural Growth' scenario to provide evidence of the robustness of the local plan scenario.

3.1.3 Volume over Capacity plots are a representation of the stress that the road network is subject to. It is calculated as the ratio of the volume of vehicle flow divided by the coded capacity of the road in the model. It should be noted that this represents the capacity of the link which is often higher than the effective capacity of the junctions at the end of the link.

3.1.4 Link volume plots have been provided to illustrate the level of vehicle flows from development trips for the chosen scenario. These are the hourly flows for either the morning or evening peak hour.

3.1.5 Finally, a set of corridor journey time analyses has been provided. These provide summaries over 26 corridors of the outputs of the various scenarios together with a comparison with journey time information sourced from Google during March 2018.

3.1.6 The plots all use the same legend, as illustrated below.

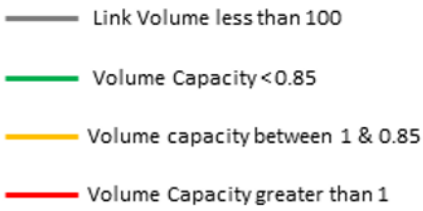


Figure 14. Network Stress Image Legend

3.1.7 As a rule of thumb, the scale can be interpreted as:

- <85% - represents broadly free flowing conditions
- >85% and <100% - represents emerging problems
- >100% - represents congested conditions

3.1.8 All of the Volume over Capacity plots are illustrated in larger format in Appendix D. An overview of the impact of the various growth scenarios is shown in Figures 15 to 37.

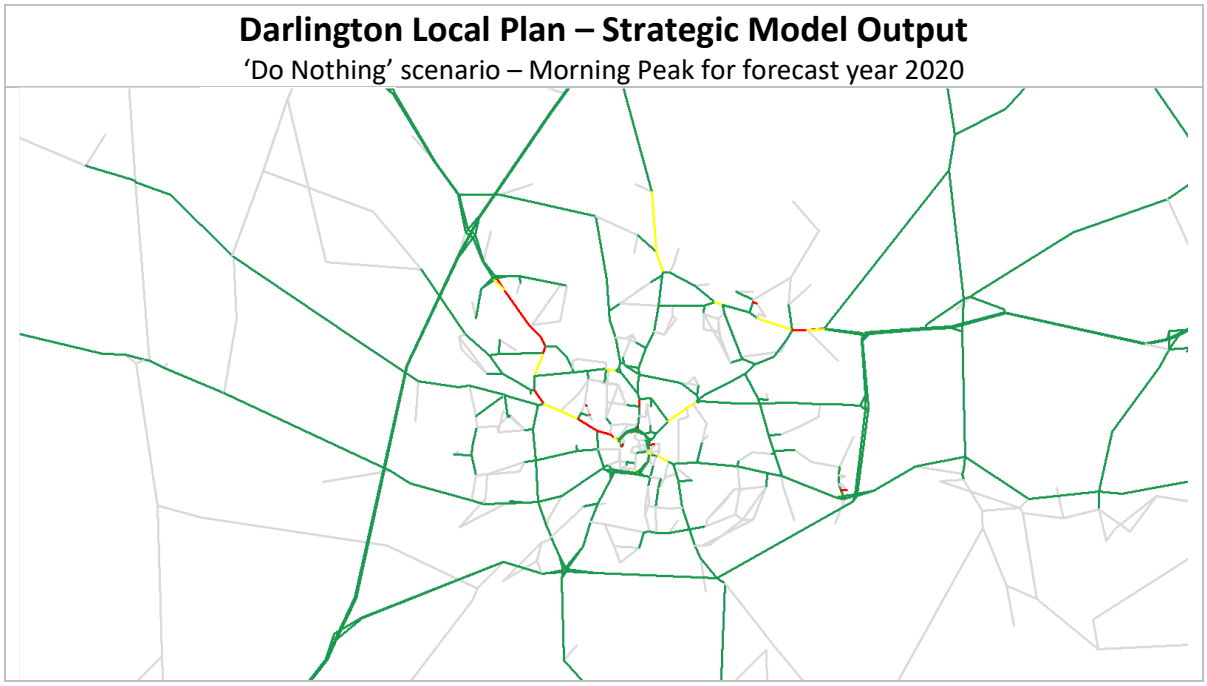


Figure 15. 'Do Nothing' Scenario - Morning Peak - 2020

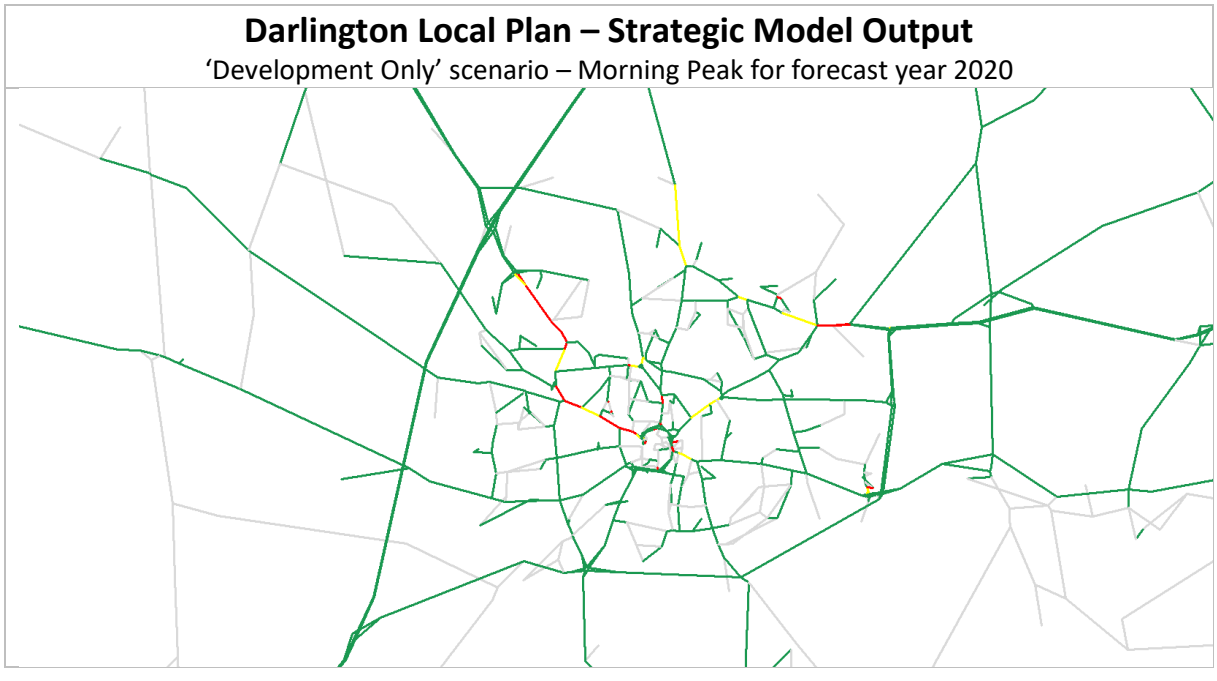


Figure 16. 'Development Only' Scenario - Morning Peak - 2020

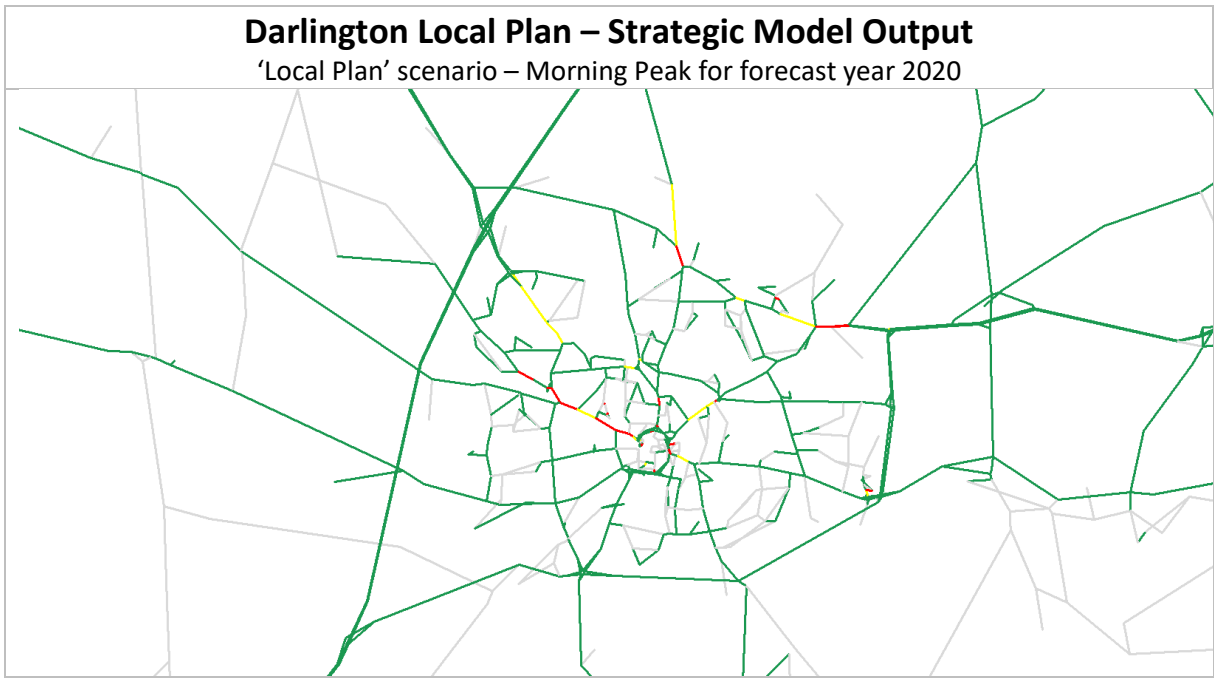


Figure 17. 'Local Plan' Scenario - Morning Peak - 2020

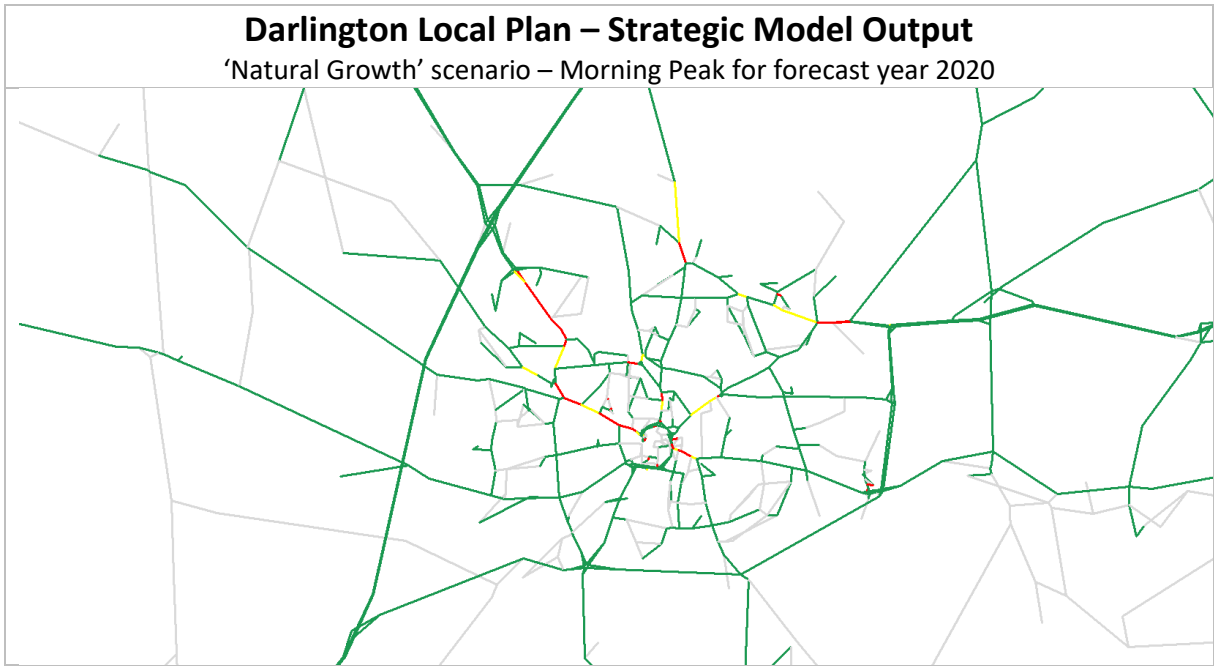


Figure 18. 'Natural Growth' Scenario - Morning Peak – 2020

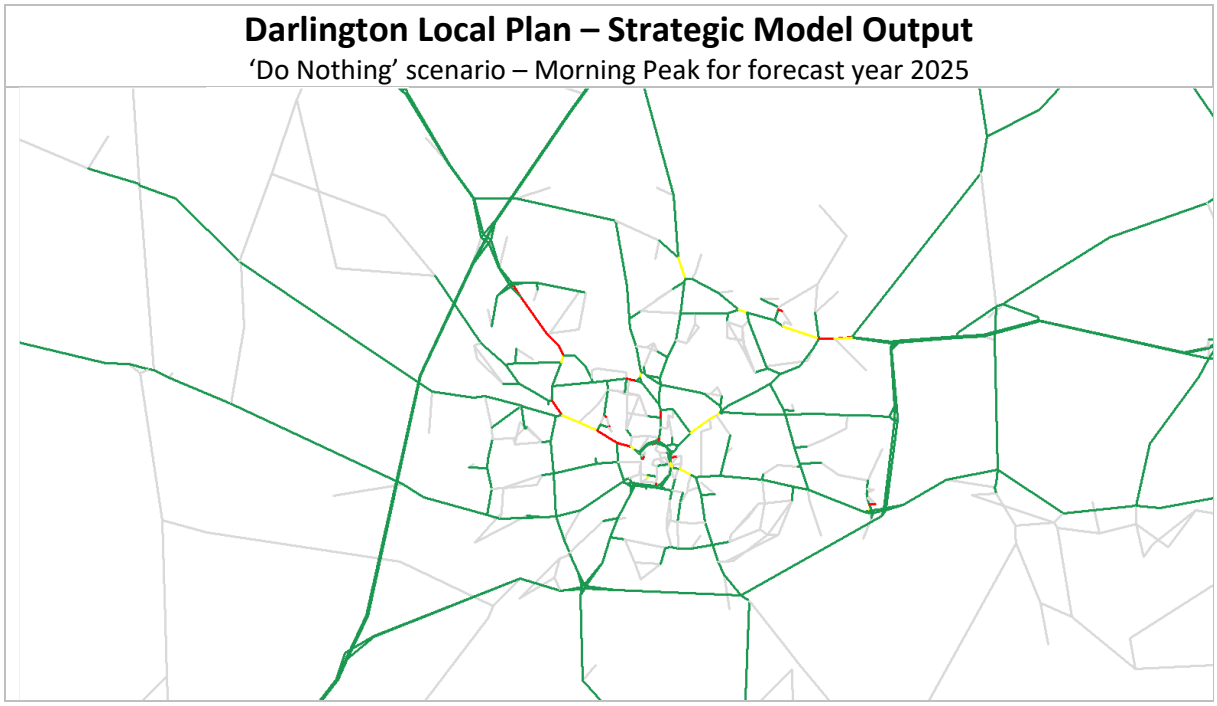


Figure 19. 'Do Nothing' Scenario - Morning Peak - 2025

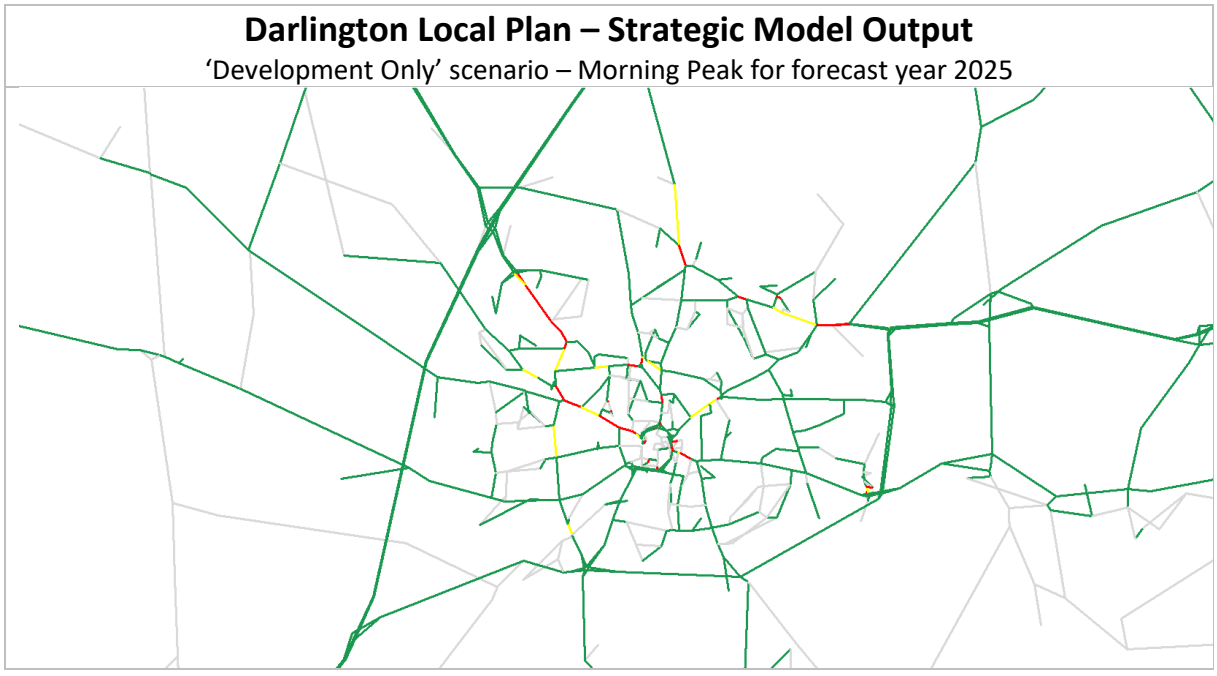


Figure 20. 'Development Only' Scenario - Morning Peak – 2025

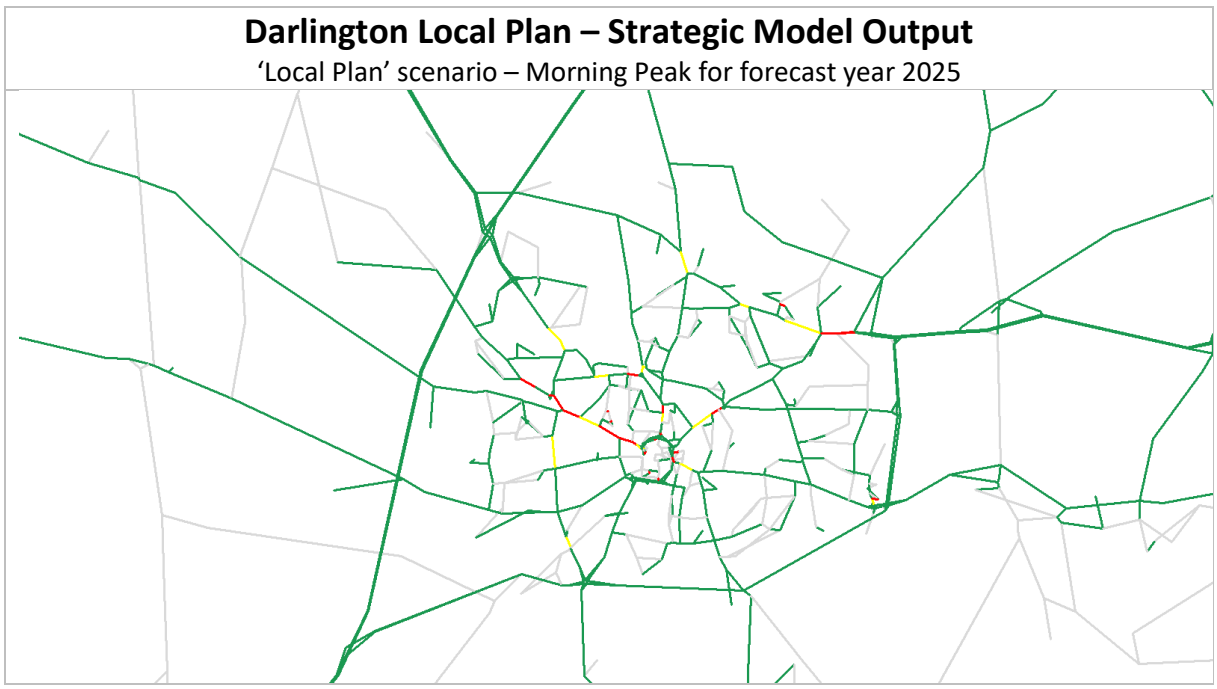
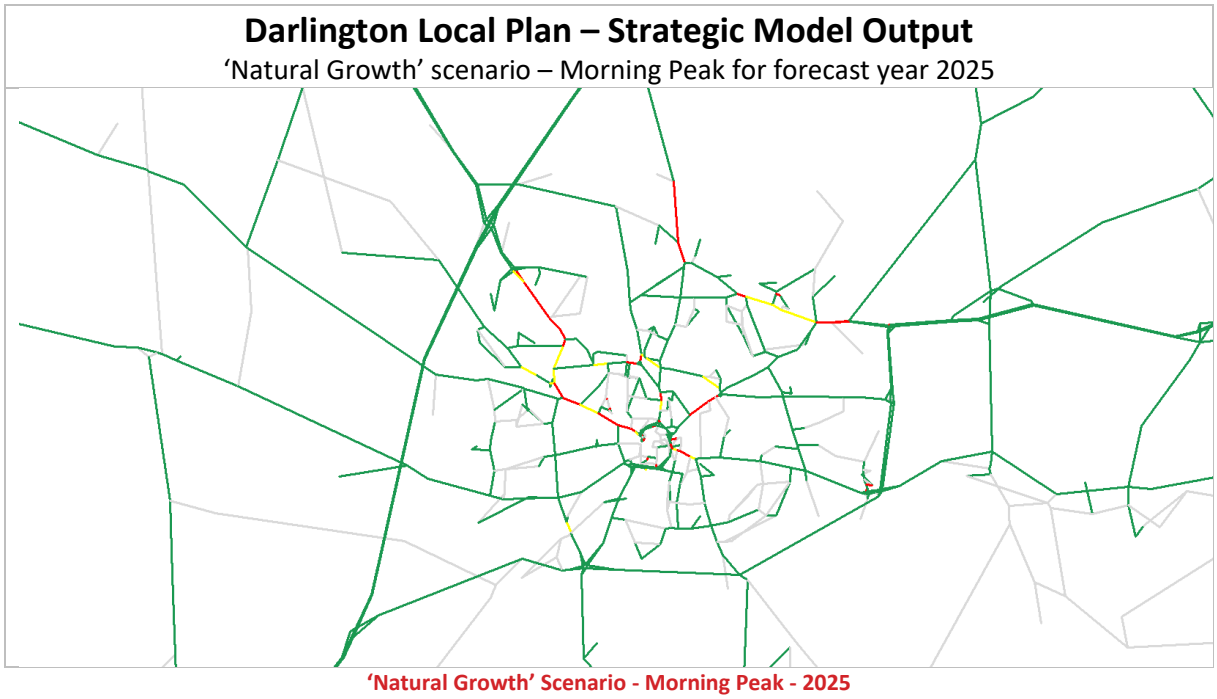


Figure 21. 'Local Plan' Scenario - Morning Peak - 2025



'Natural Growth' Scenario - Morning Peak - 2025

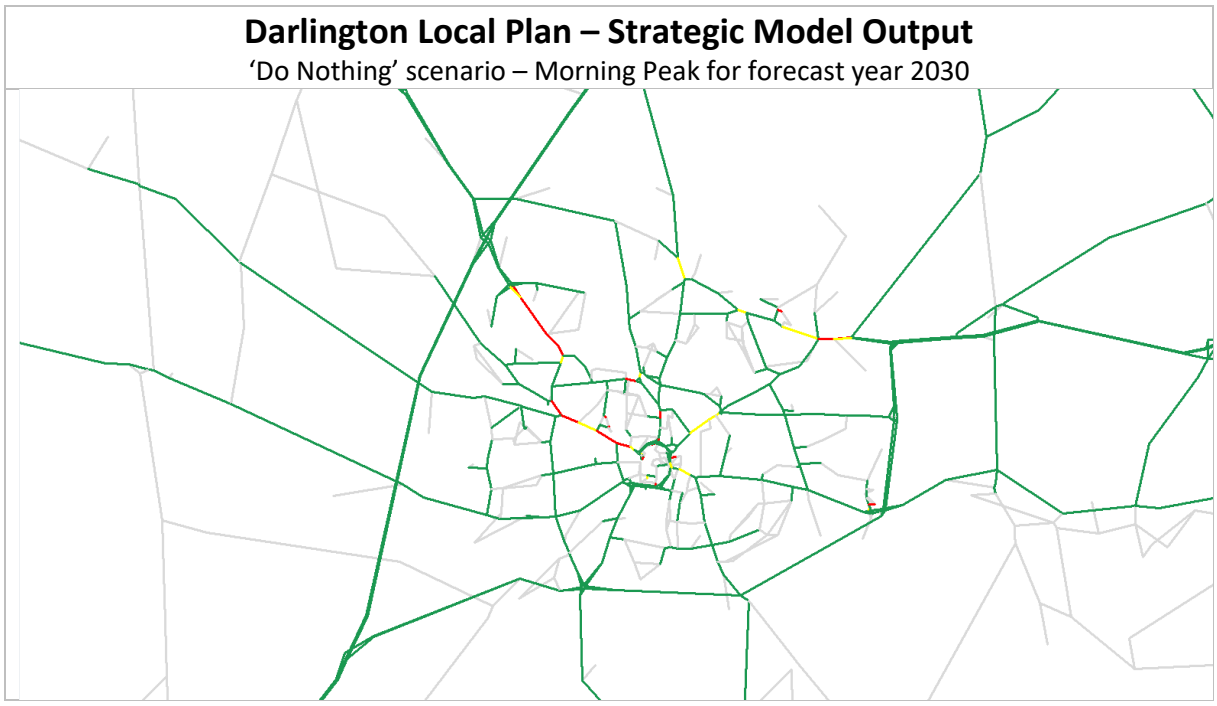


Figure 22. 'Do Nothing' Scenario - Morning Peak - 2030

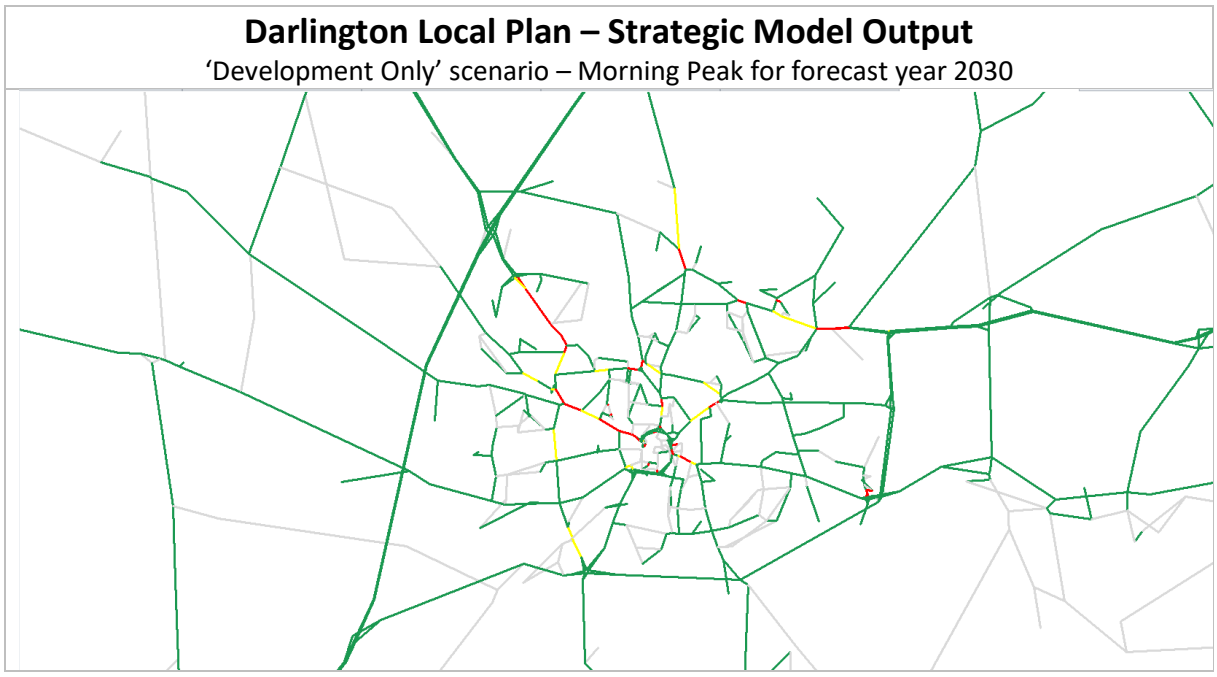


Figure 23. 'Development Only' Scenario - Morning Peak – 2030

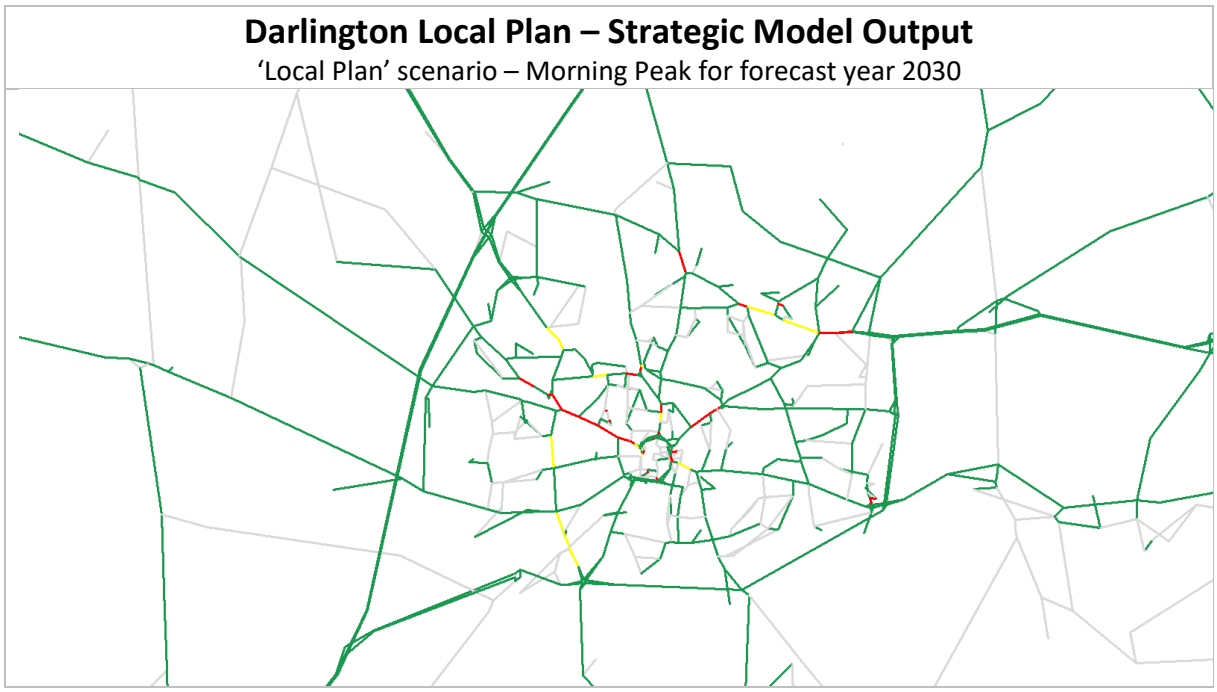


Figure 24. 'Local Plan' Scenario - Morning Peak - 2030

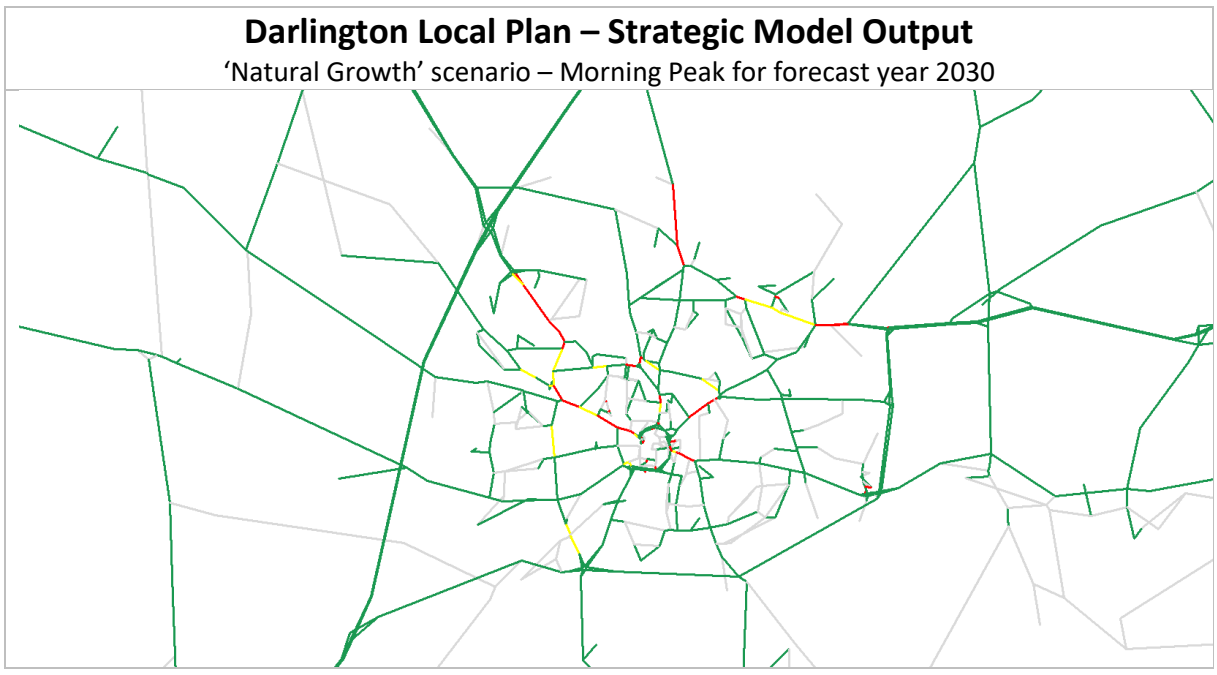


Figure 25. 'Natural Growth' Scenario - Morning Peak - 2030

Figure 26. 'Do Nothing' Scenario - Morning Peak - 2035

Figure 27. 'Development Only' Scenario - Morning Peak – 2035

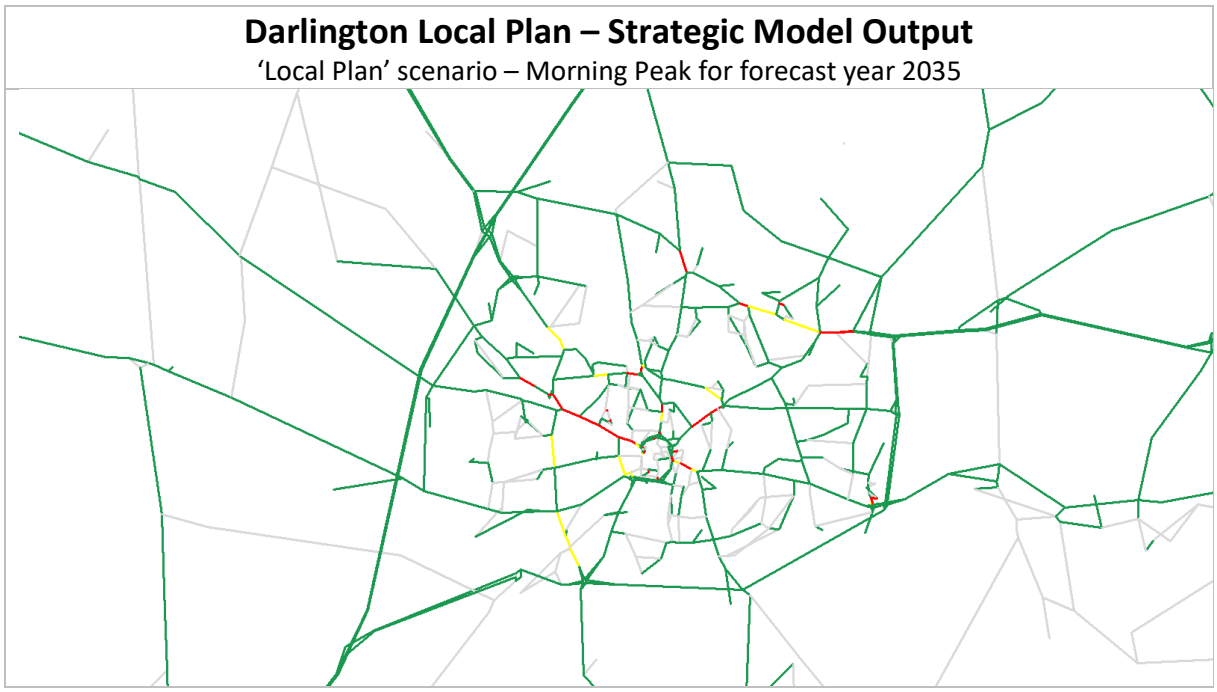


Figure 28. 'Local Plan' Scenario - Morning Peak - 2035

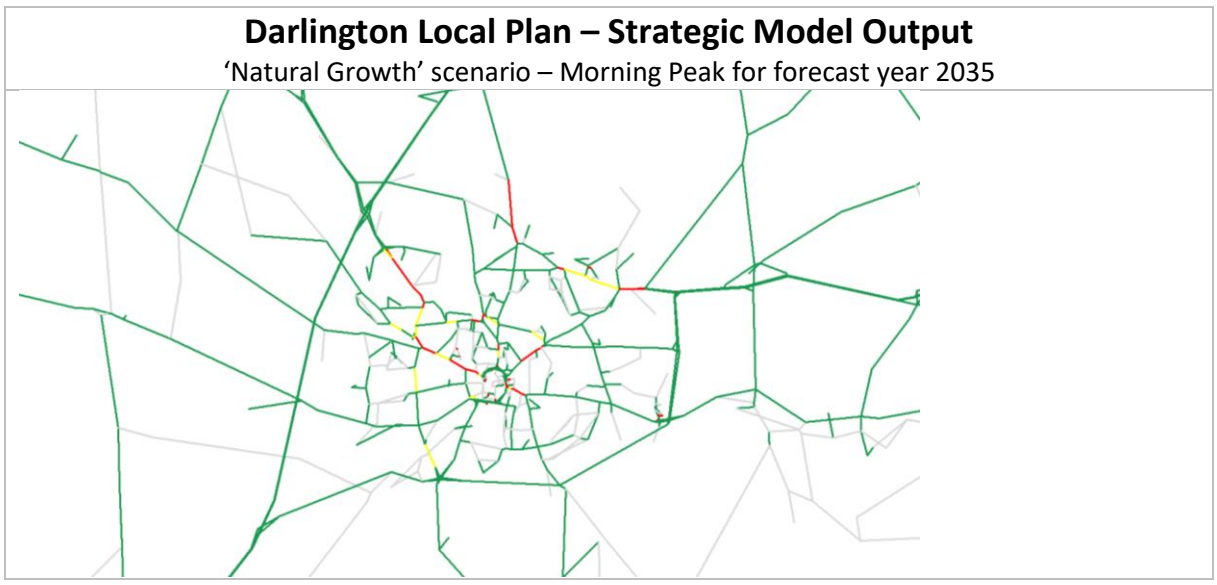


Figure 29. 'Natural Growth' Scenario - Morning Peak - 2035

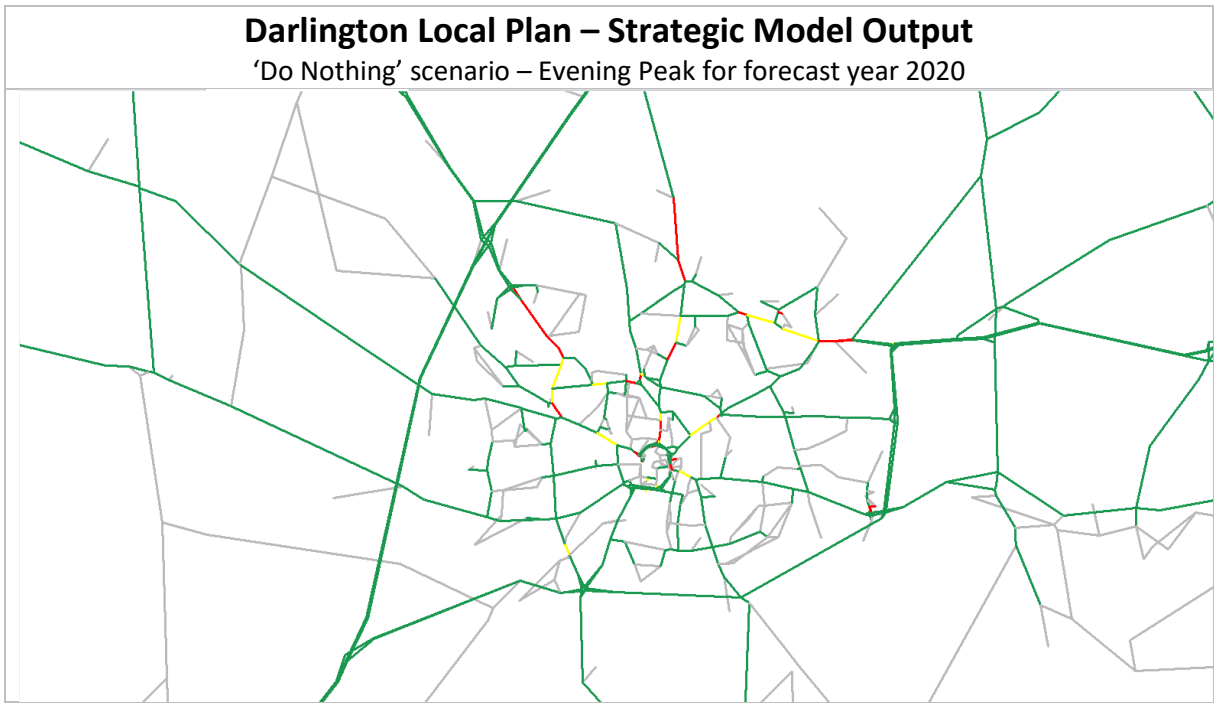


Figure 30. 'Do Nothing' Scenario - Evening Peak – 2020

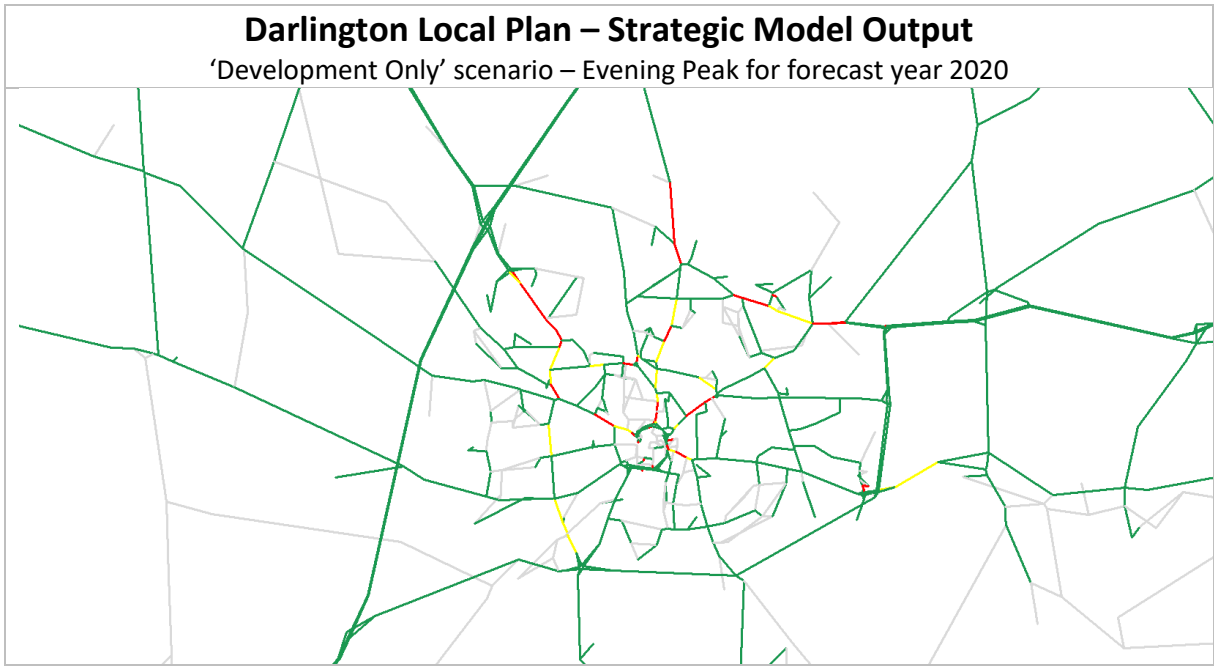


Figure 31. 'Development Only' Scenario - Evening Peak - 2020

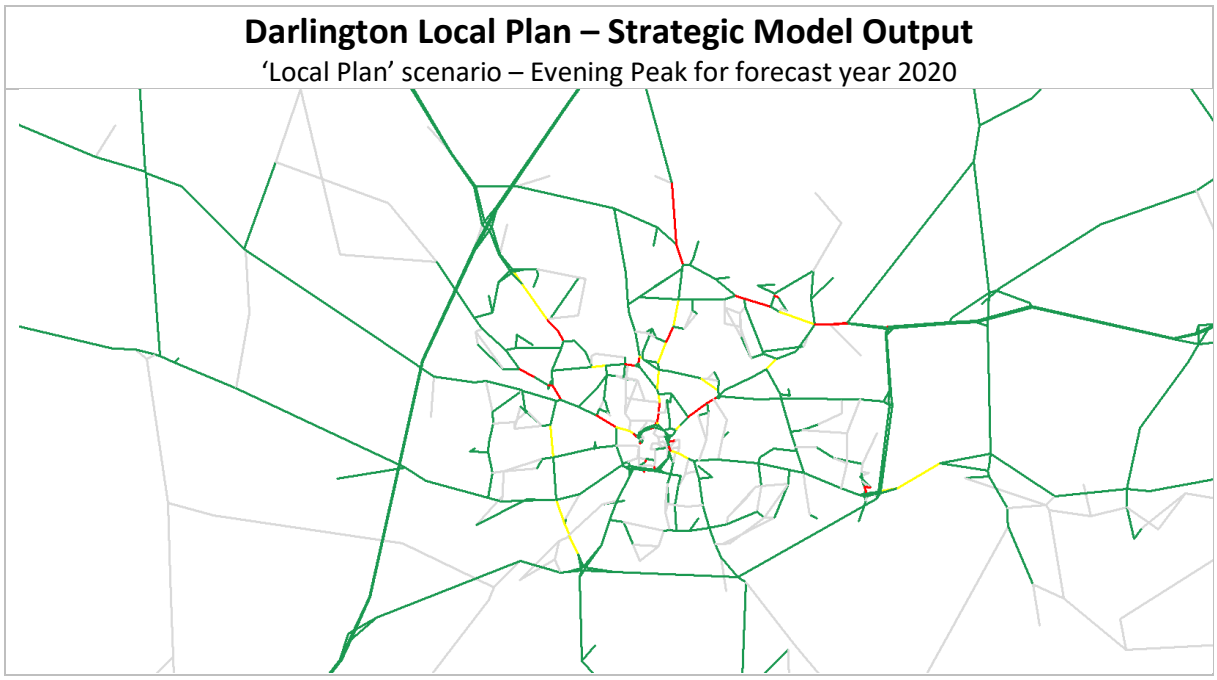


Figure 32. 'Local Plan' Scenario - Evening Peak - 2020

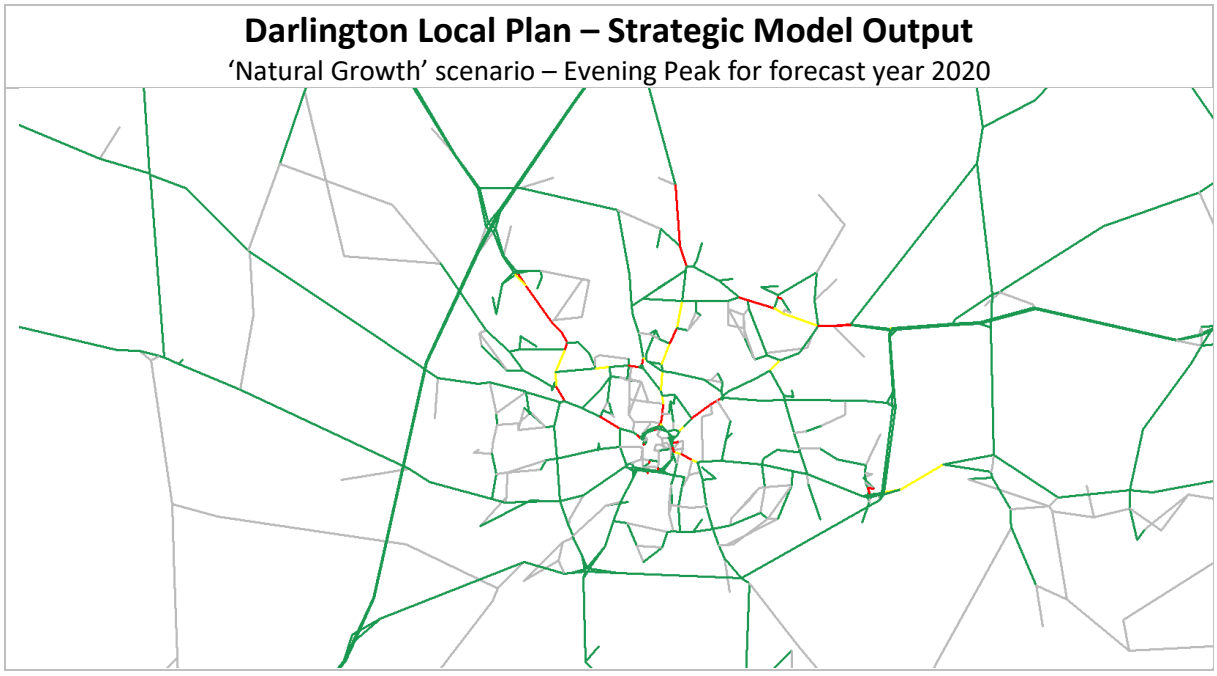


Figure 33. 'Natural Growth' Scenario - Evening Peak - 2020

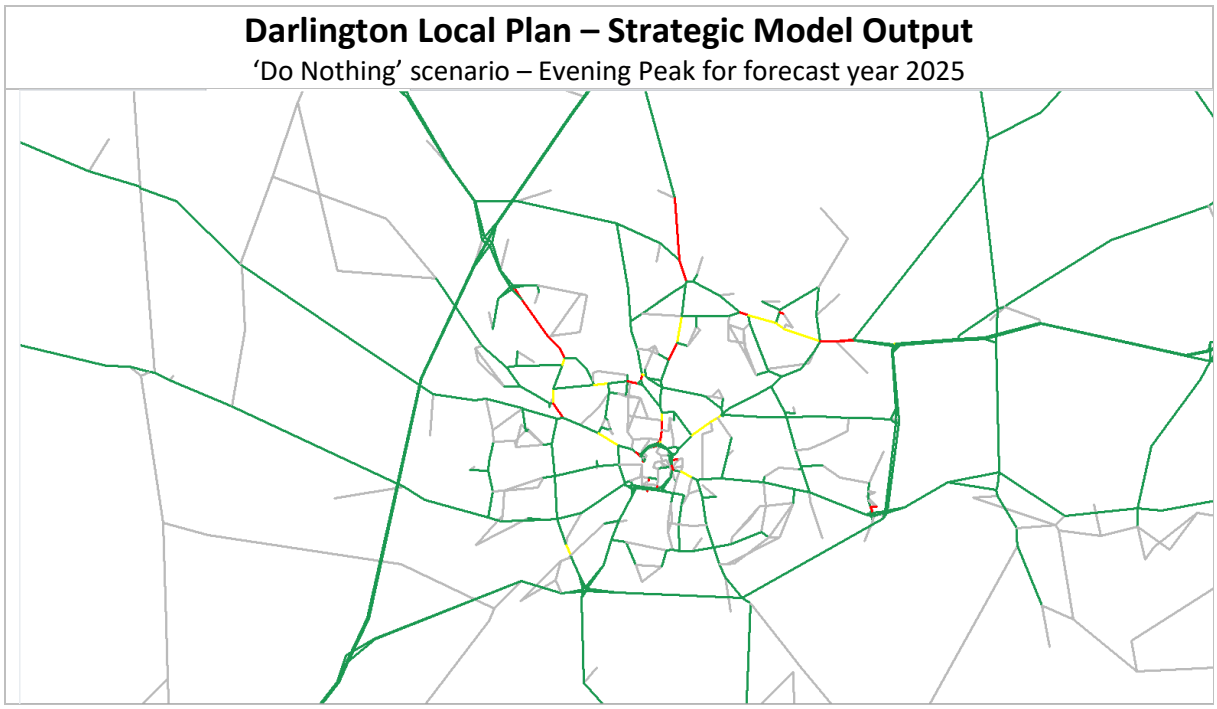


Figure 34. 'Do Nothing' Scenario - Evening Peak – 2025

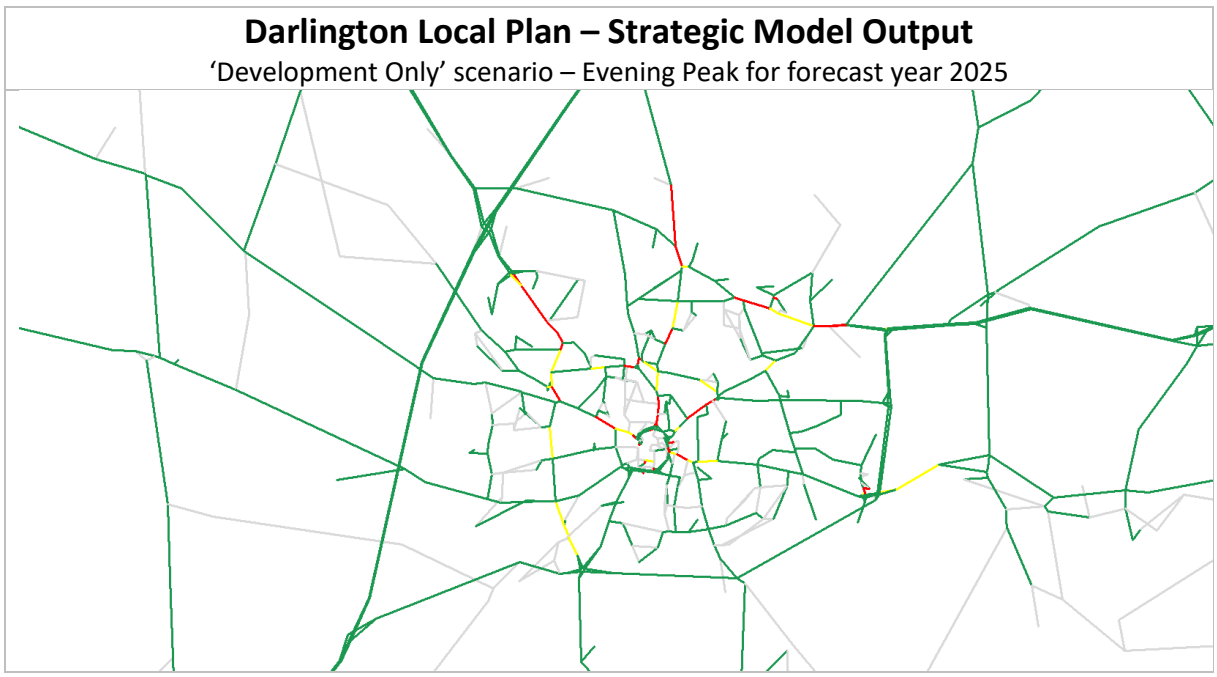


Figure 35. 'Development Only' Scenario - Evening Peak – 2025

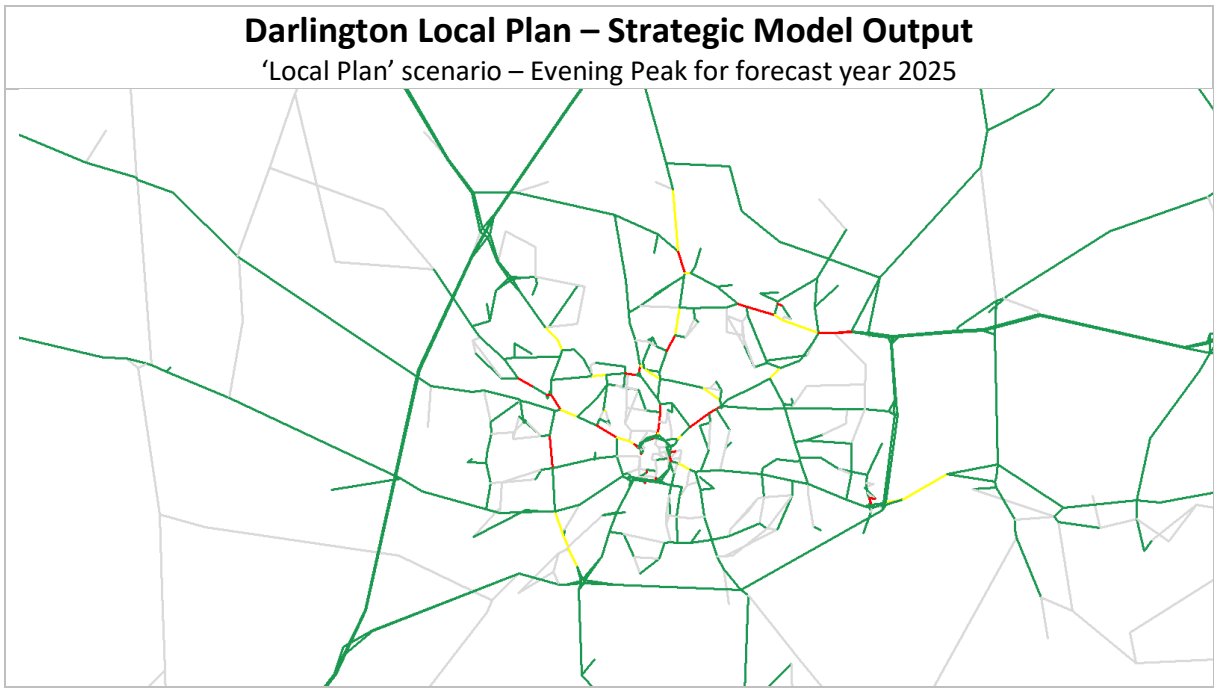


Figure 36. 'Local Plan' Scenario - Evening Peak – 2025

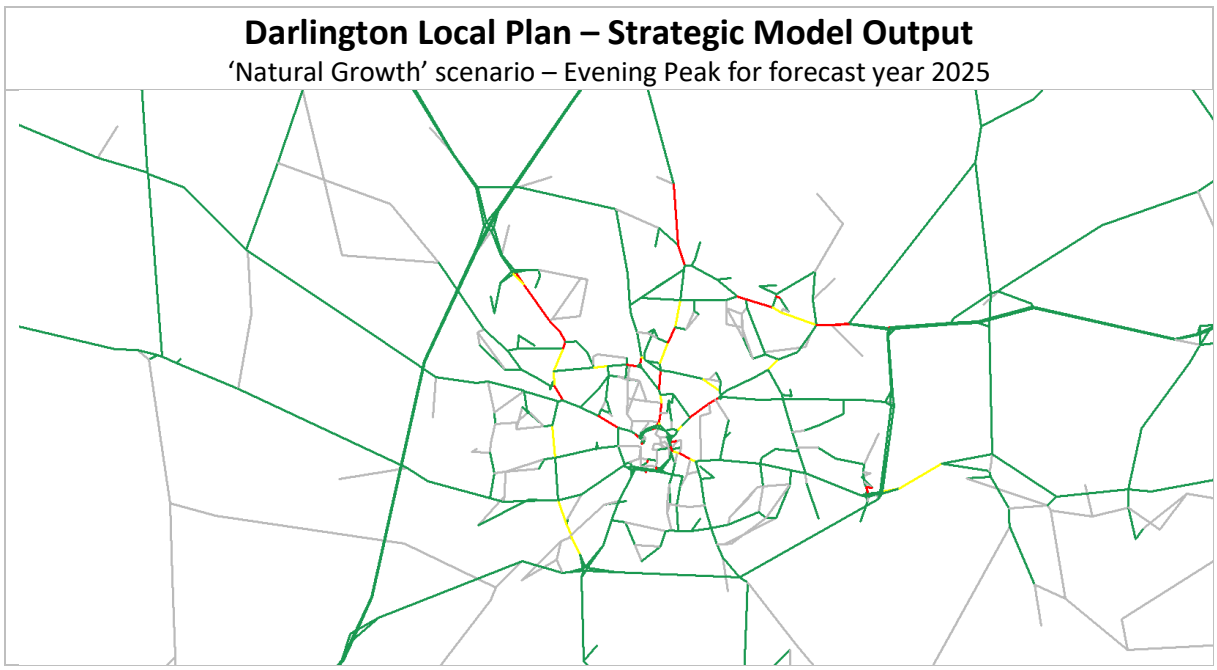


Figure 37. 'Natural Growth' Scenario - Evening Peak – 2025

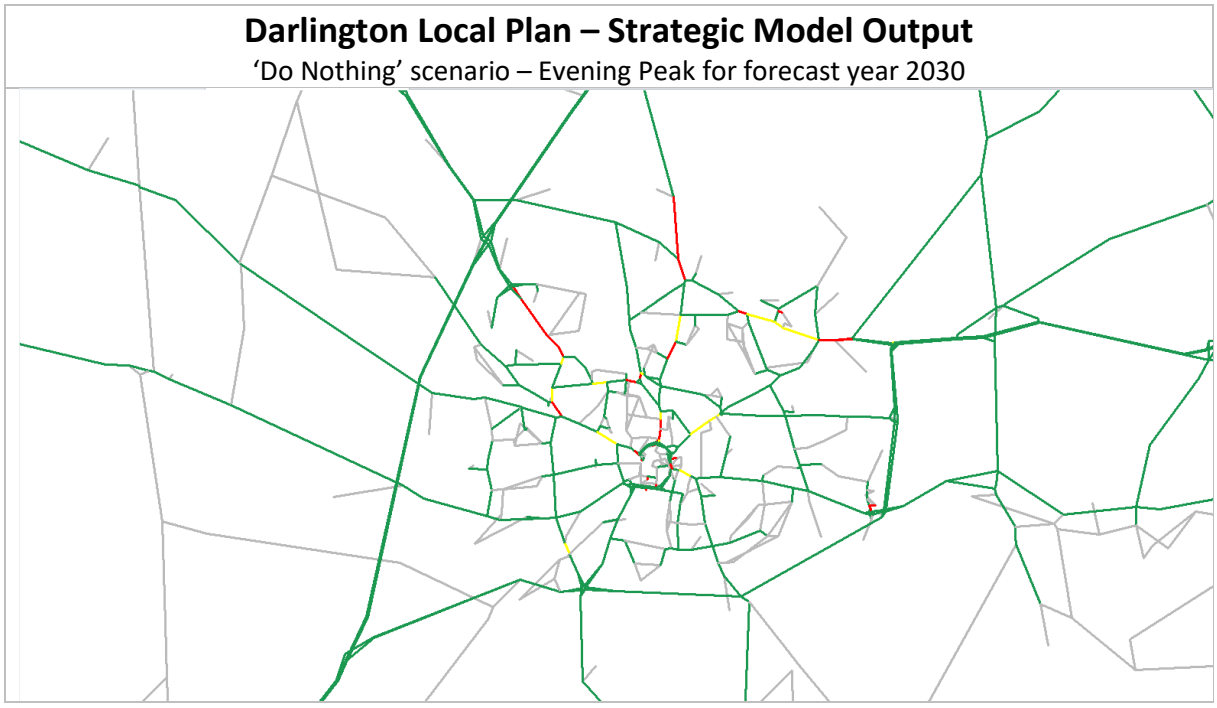


Figure 38. 'Nothing Happens' Scenario - Evening Peak - 2030

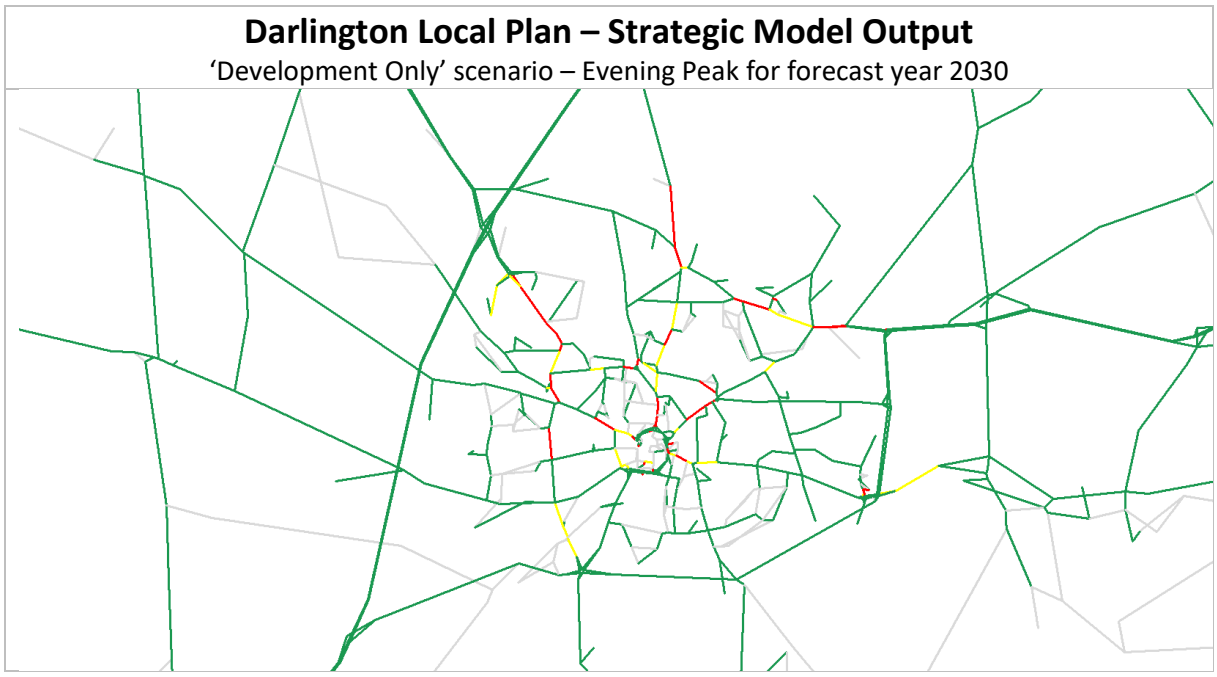


Figure 39. 'Development Only' Scenario - Evening Peak - 2030

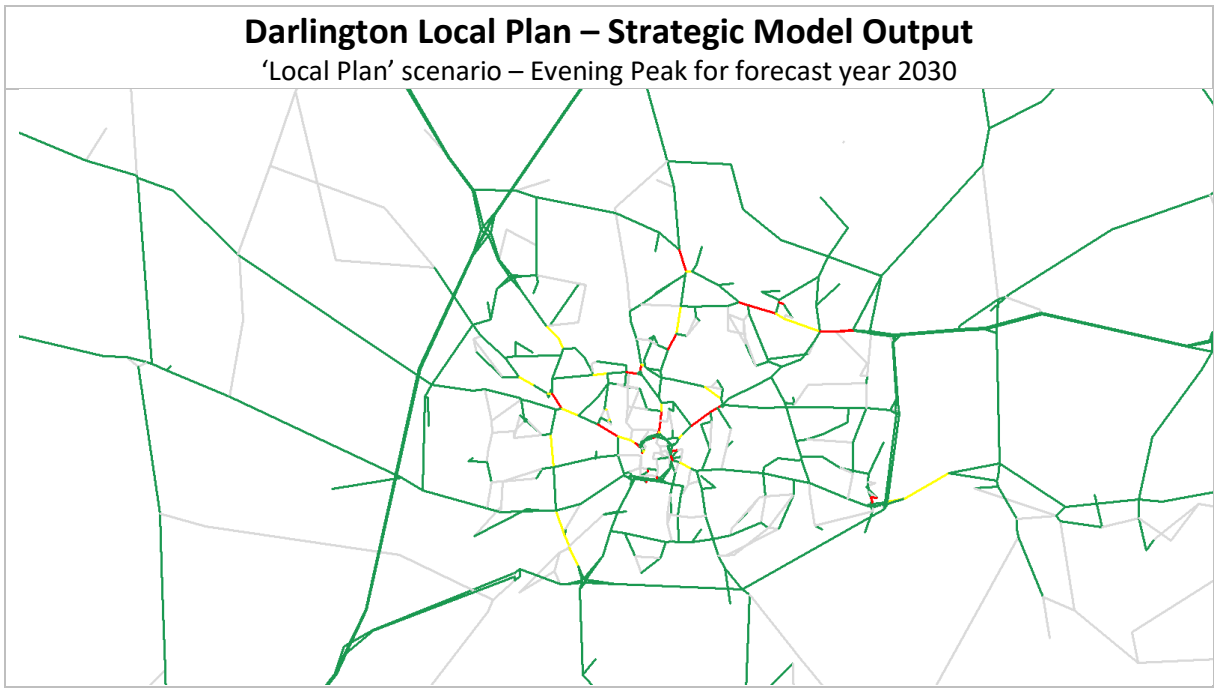


Figure 40. 'Local Plan' Scenario - Evening Peak - 2030

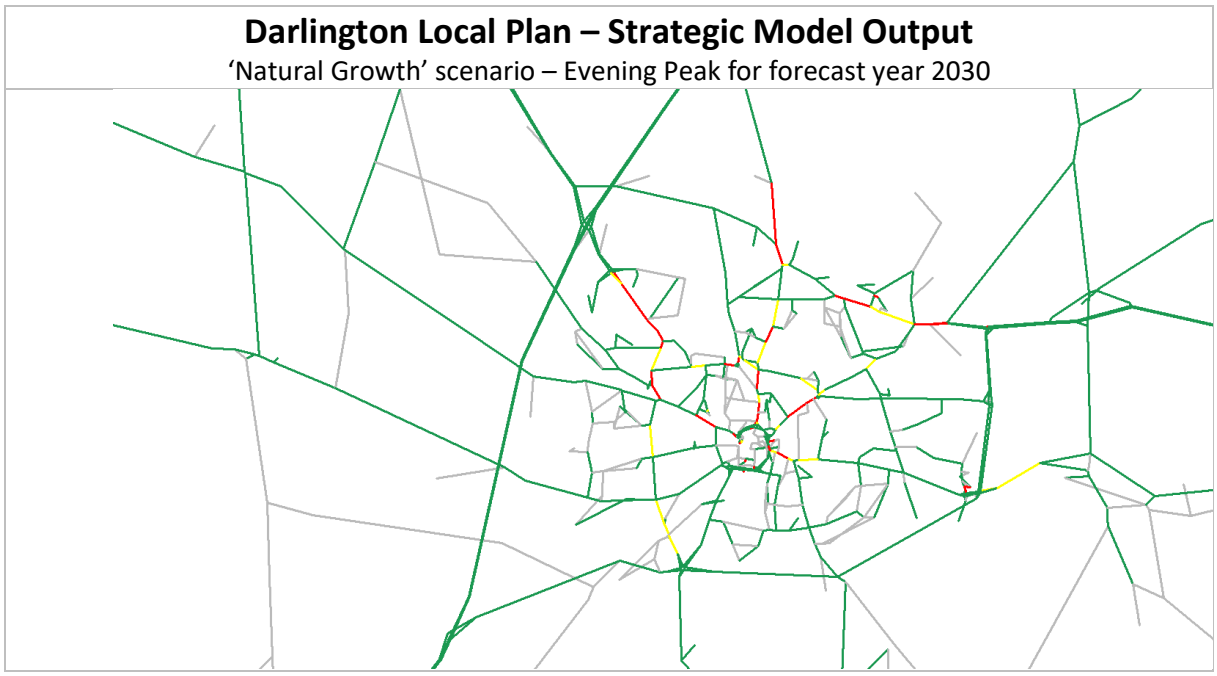


Figure 41. 'Natural Growth' Scenario - Evening Peak - 2030

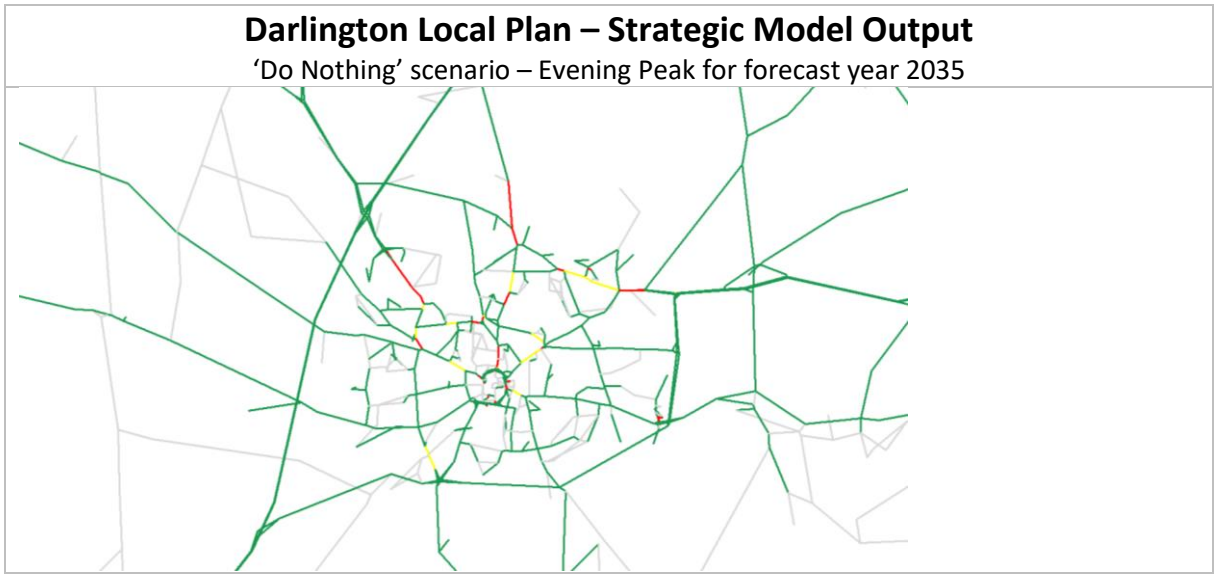


Figure 42. 'Nothing Happens' Scenario - Evening Peak - 2035

Figure 43. 'Development Only' Scenario - Evening Peak - 2035

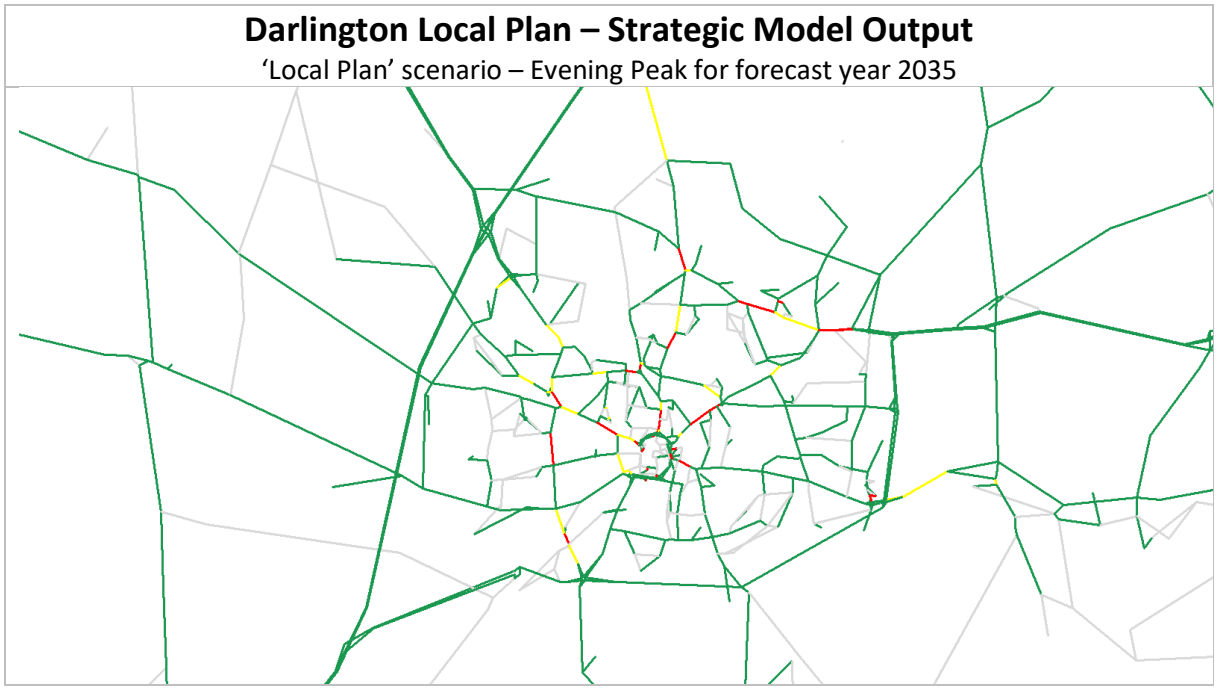


Figure 44. 'Local Plan' Scenario - Evening Peak -

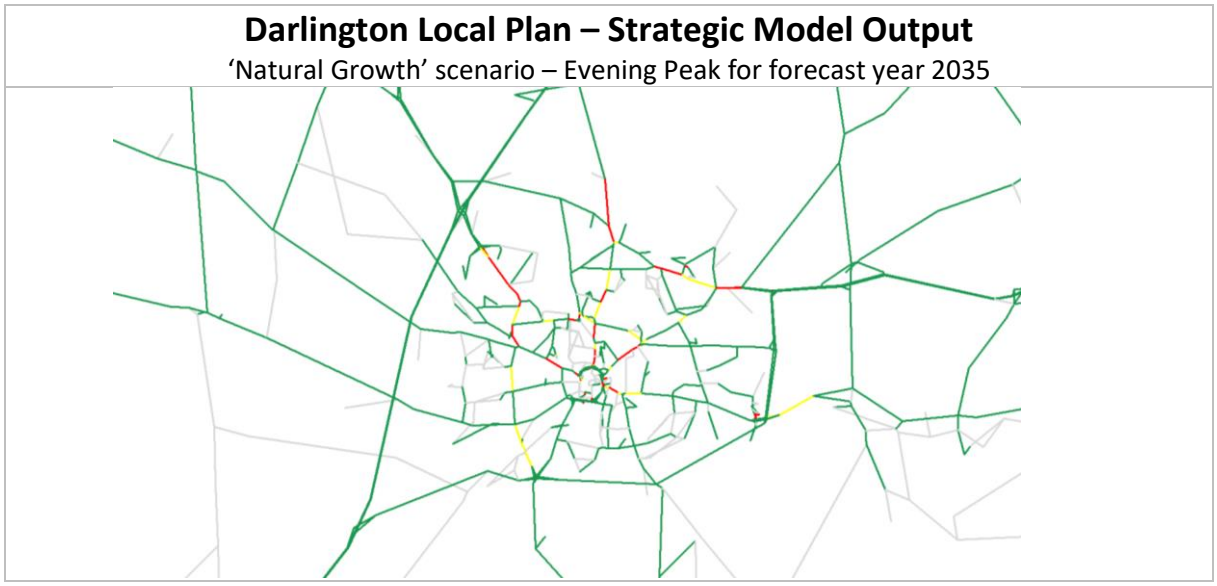


Figure 45. 'Natural Growth' Scenario - Evening Peak - 2035

3.2 Do Nothing scenario

3.2.1 The Do Nothing scenario illustrates the situation where there is no additional development within Darlington. This is a "what if" scenario and serves as a counter-factual.

3.2.2 It should be noted that this does not imply that the town remains the same as today, the average household occupancy would continue to reduce as per trend implying that the population of Darlington would be smaller.

3.2.3 The results are broadly the same for each year as the key driver of future year growth is the developments of the local plan.

3.2.4 In the absence of any further development in Darlington there would still be issues in the evening peak on the road network at the following locations:

- A1150 corridor on approach to Great Burdon;
- A68 West Auckland Road between Cockerton Green and Woodland Road in both directions;
- A68 West Auckland Road corridor at Faverdale (both directions);
- A167 North Road corridor northbound; and
- Links used to access the inner ring road, which would manifest as junction issues.

3.2.5 The A66, while not under stress regarding link capacity, could still have issues at individual junctions.

Key Message: In the 'Do Nothing' scenario there would still be network stress on sections of the A68 West Auckland Road corridor, the A167 Corridor and the A1150 corridor. Mitigations will be required on these corridors to enable development to progress.

3.3 Development Only scenario

3.3.1 The local development flows documented in Chapter 2 have been added into the assignment to provide a Development Only scenario.

3.3.2 Appendix B contains 32 plots illustrating the local plan flows for each of the four forecast years for morning and evening peak hours.

3.3.3 This scenario has been evaluated to provide the evidence of the issues that emerge on the wider road network as a result of the cumulative impact of the development within the local plan.

3.3.4 During the morning peak the inclusion of development trips results in additional network stress problems emerging at the following locations:

- B6279 Haughton Road corridor inbound; and
- B6280 Yarm Road corridor on approach to the town centre.

3.3.5 The issues identified in the 'Do Nothing' scenario remain and in the case of the A1150 and A68 at Faverdale increase in length and magnitude. There is also an increase in severity on the A167 North corridor in the morning peak.

3.3.6 In the evening peak the addition of development trips results in additional network stress problems emerging at the following locations:

- A1150 east-west corridor; and
- A68 West Auckland Road corridor on egress from town centre.

3.3.7 By 2030, issues begin to manifest on the B6280 Carmel Road corridor connecting West Auckland Road to Coniscliffe Road. The issues identified in the 'Do Nothing' scenario remain and in the case of the A1150 increase in length and magnitude.

Key Message: The addition of trips related to the local plan development sites has evidenced the need for mitigation measures on the A68, A1150 and A167 corridors. There is further evidence of issues related to access to the town centre and indications that while there may not be an issue with link capacity on the A66 by 2030, during the longer term issues may begin to emerge

3.4 Local Plan Scenario

3.4.1 This scenario represents the local plan, including both developments and the identified mitigations. The mitigations are as discussed in Appendix C.

3.4.2 The local plan addresses many of the issues, with the new infrastructure to the north of the town provided by Skerningham link road (2025) addressing the issues on the A1150 / A167 by providing alternate routes.

3.4.3 The measures along the A68 corridor reduce the extent of the issues though there are still 'pockets' of concern at key junctions. This has been addressed through detailed microsimulation modelling as part of the next stage of the transport modelling.

3.4.4 The outcomes of the infrastructure provided by the local plan in the evening peak mirror that of the morning peak.

Key Message: The introduction of the mitigation measures associated with the Local Plan provide significant relief to the A1150 / A167 and A68 corridors. There remain issues related to key junctions on the A68 corridor and the A66 strategic road network that will be addressed through detailed microsimulation modelling that allows the performance of junctions to be assessed.

3.4.5 An additional scenario has been tested that represents the local plan with the inclusion of the Darlington Northern Link Road, retaining the Skerningham Link Road as a through route (albeit at lower standard and lower speed limit).

3.4.6 This is to test the sensitivity of the plan to the introduction of the Darlington Northern Link Road, should it come forward during the plan period. However, it should be noted the Plan is not reliant upon the Darlington Northern Link Road. For the purposes of modelling the Darlington Northern Relief Road was assumed to open in 2030, only the 2030 results are presented below.

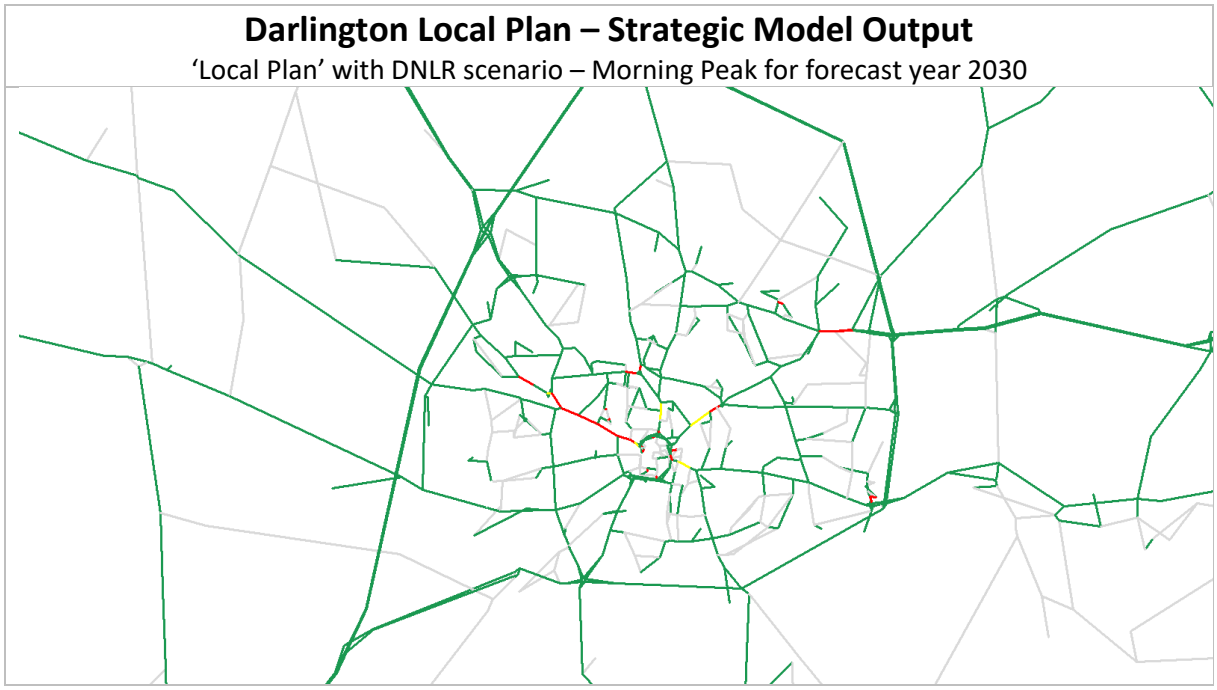


Figure 46. 'Local Plan' with DNRR Scenario - Morning Peak - 2030

3.4.7 When compared to Figure 24, the morning peak modelling illustrates that the Darlington Northern Link Road provides further relief to the A167 between Burtree Lane and Salters Road.

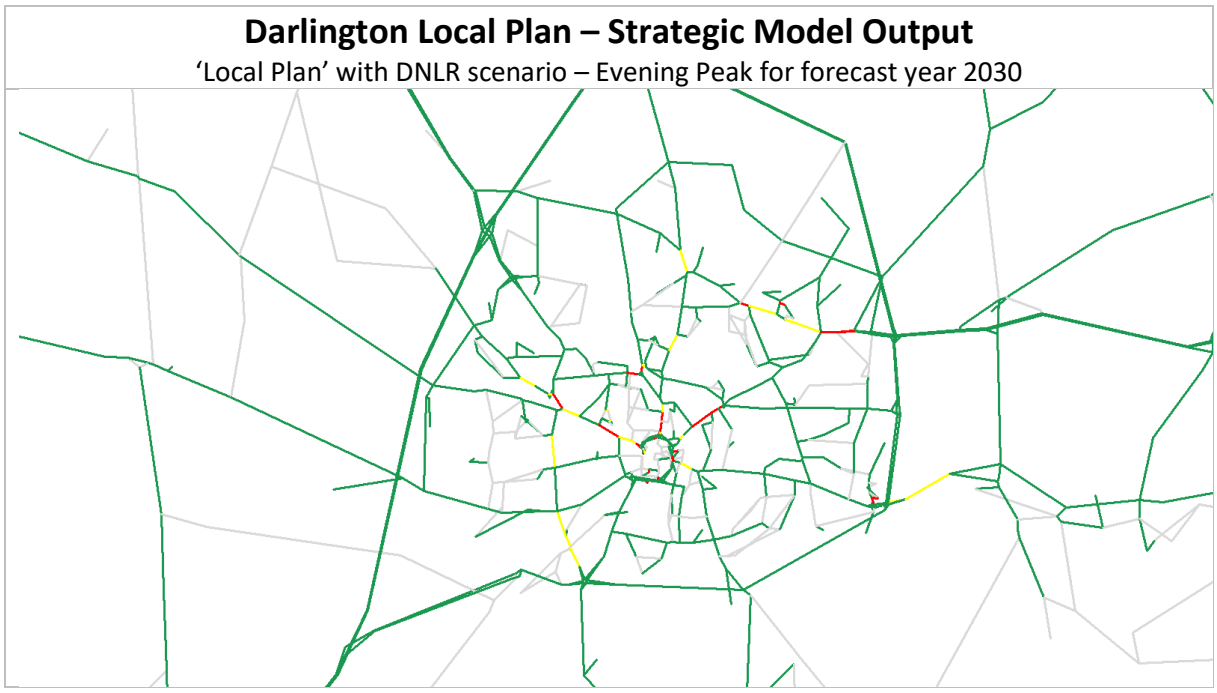


Figure 47. 'Local Plan' with DNRR Scenario - Evening Peak - 2030

3.4.8 When compared to Figure 40, the evening peak modelling illustrates that the inclusion of the Darlington Northern Link Road improves conditions around Little Burdon and there are slight improvements on the corridors accessing Darlington from the west.

Key Message: With the inclusion of the Darlington Northern Link Road, there are only isolated issues on the local road network crossing the north of Darlington. These are related to zone loading points for the eastern area developments and it is anticipated that local mitigations could be developed as the developments come forward.

3.4.9 Following the network stress analysis, a series of corridor specific journey time analysis was produced from the strategic model.

3.5 Corridor Analysis

3.5.1 Appendix E contains the summary sheets providing journey time analysis for each of the 26 corridors listed below:

- Route 1 / 2 – A167 North Road
- Route 3 / 4 – A68 Auckland Road
- Route 5 / 6 – B6279 Woodland Road
- Route 7 / 8 – A67 Coniscliffe Road
- Route 9 / 10 – A167 Grange Road
- Route 11 / 12 – Neasham Road
- Route 13 / 14 – Yarm Road

- Route 15 / 16 – DETC
- Route 17 / 18 – Haughton Road
- Route 19 / 20 – East / West Route
- Route 21 / 22 – Carmel Road
- Route 23 / 24 – A66 Corridor
- Route 25 / 26 – North to East

3.5.2 The strategic model is primarily focused on link capacity and does not have the same level of detail on junctions that a microsimulation based approach has. Consequently it is acknowledged that the strategic model results in less change in road journey times than would be expected from a microsimulation model, the analysis nevertheless reveals that journey times are forecast to worsen primarily on the following corridors in the 'Development Only' scenario:

- A167 North Road corridor, both directions;
- A68 West Auckand Road corridor, both directions;
- B6279 Haughton Road, both directions;
- B6280 Yarm Road, both directions; and
- A1150 East West corridor, both directions.

3.5.3 These corridors are consistent with the network stress analysis. They have had mitigations identified as indicated in the table below:

Table 5. Corridor Mitigations

CORRIDOR	CODE	MITIGATION
A167 North Road	N1	A167 / Burtree Liane Junction Improvements
A68 West Auckland Road	NW1	A68 / Rotary Way Roundabout Improvements
	NW3	Cockerton Roundabout Improvements
	NW4	Woodland Road Roundabout Improvements
B6279 Haughton Road	E1	Haughton Road Through-about Improvement
	C1	Central Park Link Road
B6280 Yarm Road	E4	McMullan Road / Yarm Road Roundabout
	C1	Central Park Link Road
A1150 East-West corridor	E10	A66 / Little Burdon Improvements
	N3	Skerningham Link Road
	E14	A66 Northern Link Road

3.5.5 The corridor analysis reveals that the identified mitigations result in improvements to the journey times on these key corridors.

3.6 Comparison with 'Natural Growth'

3.6.1 A comparison with the TEMPro derived 'Natural Growth' scenario has been undertaken to check of the volume over capacity results against the Local Plan Scenario.

3.6.2 It indicates that the outcomes are broadly consistent. While the magnitude of the issue may vary the location is the same with identified issues by 2030 for the development only assessment.

3.6.3 the 'Natural Growth' scenario are in the same locations, providing confidence in the strategic outcomes of the local plan modelling.

3.6.4 As for the morning peak, the evening peak illustrates similar locations of issues.

Key Message: The location of issues does not substantially change between the 'Development Only' and 'Natural Growth' scenarios. While the magnitude of the issue does change due to the localised concentration of development within the local plan, the corridors that require mitigation measures are those with issues identified today.

3.7 Outcome of Assessment

3.7.1 The strategic modelling assessment confirmed that the areas of key change would be:

- The eastern area and associated A1150 East-West corridor where the short term economic development sites are located;
- The A68 West Auckland Road corridor;
- The A167 North Road corridor and associated A1150 East-West corridor;
- Radial corridors such as Haughton Road and Yarm Road for access to the town centre; and
- Longer term issues related to developments to the north of the town and the background traffic growth on the A1150 and A66 corridors.

3.7.2 This led to the decision to investigate these areas further through the use of more detailed microsimulation modelling.

4. FURTHER ASSESSMENT IN MICROSIMULATION MODELS

4.1 Introduction

4.1.1 The figure below illustrates the extents of the microsimulation models used for the assessment of the Darlington local plan.

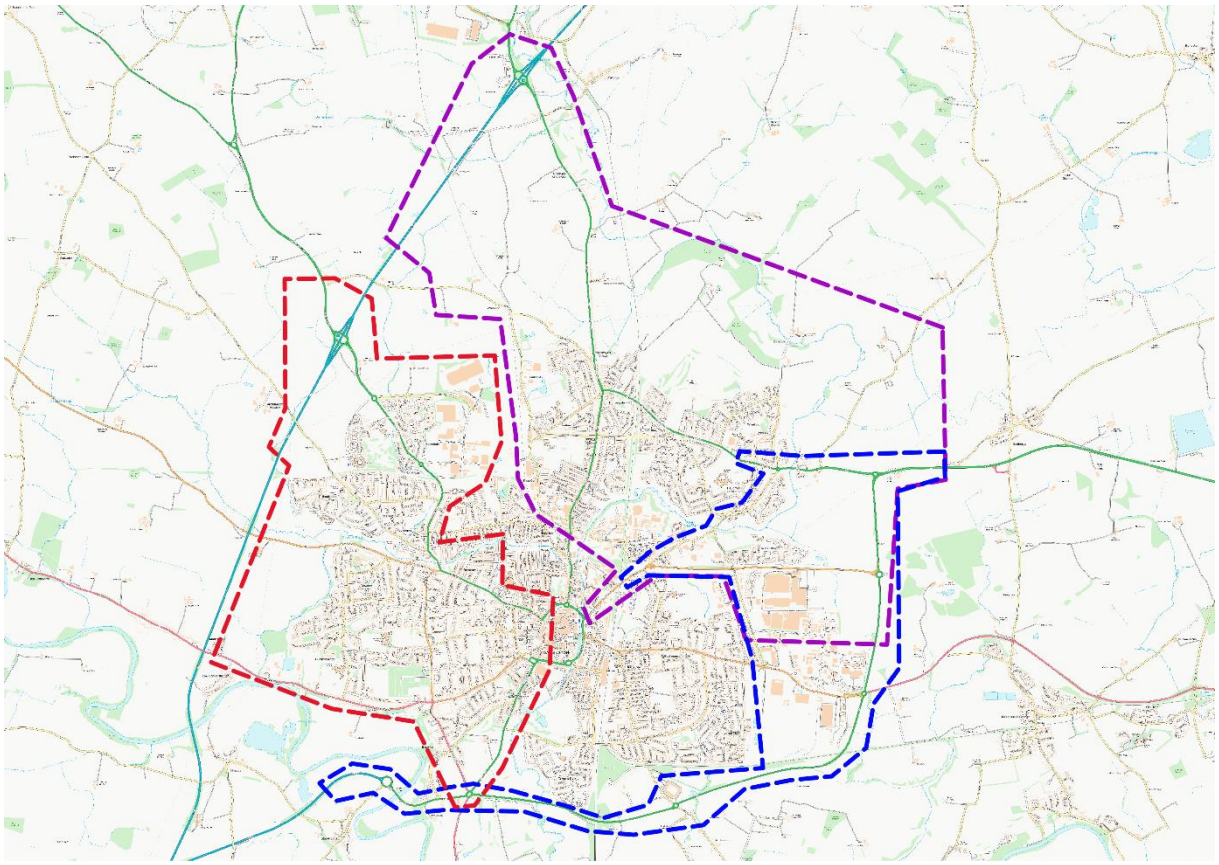


Figure 48. Microsimulation Models

4.1.2 The three models are named as below:

- A66 VISSIM Model – Blue outline;
- Coniscliffe AIMSUN Model – Red outline; and
- Skerningham Model – Purple outline.

4.1.3 Sub-area matrices were generated from the 'Local Plan' scenario to provide the model holder with changes in demand forecast from the strategic model.

4.1.4 These changes were then pro-rated to the specific model's time period through the application of the peak profiles in the appropriate models.

5. CONCLUSIONS

5.1.1 Four scenarios have been formulated for each year these are defined as:

- Natural Growth: Growth calculated from assumed TEMPro growth factors as per standard Transport Application methodology;
- Do Nothing: No additional homes or jobs are created and no schemes are delivered. This represents a declining town population as the average household size reduces;
- Development Only: The impact of the developments included within the local plan, with no mitigation schemes; and
- The Local Plan: The impact of the development and the associated mitigation schemes that are included in the local plan.

5.1.2 The Local Plan scenario has had additional sub-scenario's tested as what-if scenarios for with and without the introduction of the Darlington Northern Relief Road.

5.1.3 The outcomes are that there is broad agreement between the 'Natural Growth' and 'Development Only' growth network stress analysis. This provides confidence that the strategic modelling outcomes are robust and that the local plan development proposals themselves, while undoubtedly creating local access issues, are not presenting new strategic problems to address.

5.1.4 A set of mitigation measures have been identified that address the strategic issues, while also containing some mitigations that address more local issues whose requirement has emerged from historic and current microsimulation studies.

5.1.5 For the town centre access, travel planning and smarter travel initiatives will be put in place to reduce the vehicle trip rate and thus reduce the impact on these corridors.

5.1.6 This is an established approach and has not been modelled as the modelling would require assumptions on effectiveness to be made. Real-world effectiveness will rely and vary on the measure adopted and the site location.

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Darlington Local Plan **13/01/2021**

Reference number GB01T17L81

STRATEGIC TRANSPORT MODELLING REPORT

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DARLINGTON LOCAL PLAN

STRATEGIC TRANSPORT MODELLING REPORT

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2-5	Author	Paul Gray	Associate Director	18/03/2019	Various internal reviews
	Checked by	Steve Pickard	Director	18/03/2019	
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7	Author	Paul Gray	Associate Director	13/01/2021	Final Local Plan document
	Checked by	Steve Pickard	Director	13/01/2021	
	Approved by	Steve Pickard	Director	13/01/2021	

Appendix A

DEVELOPMENT DATABASE

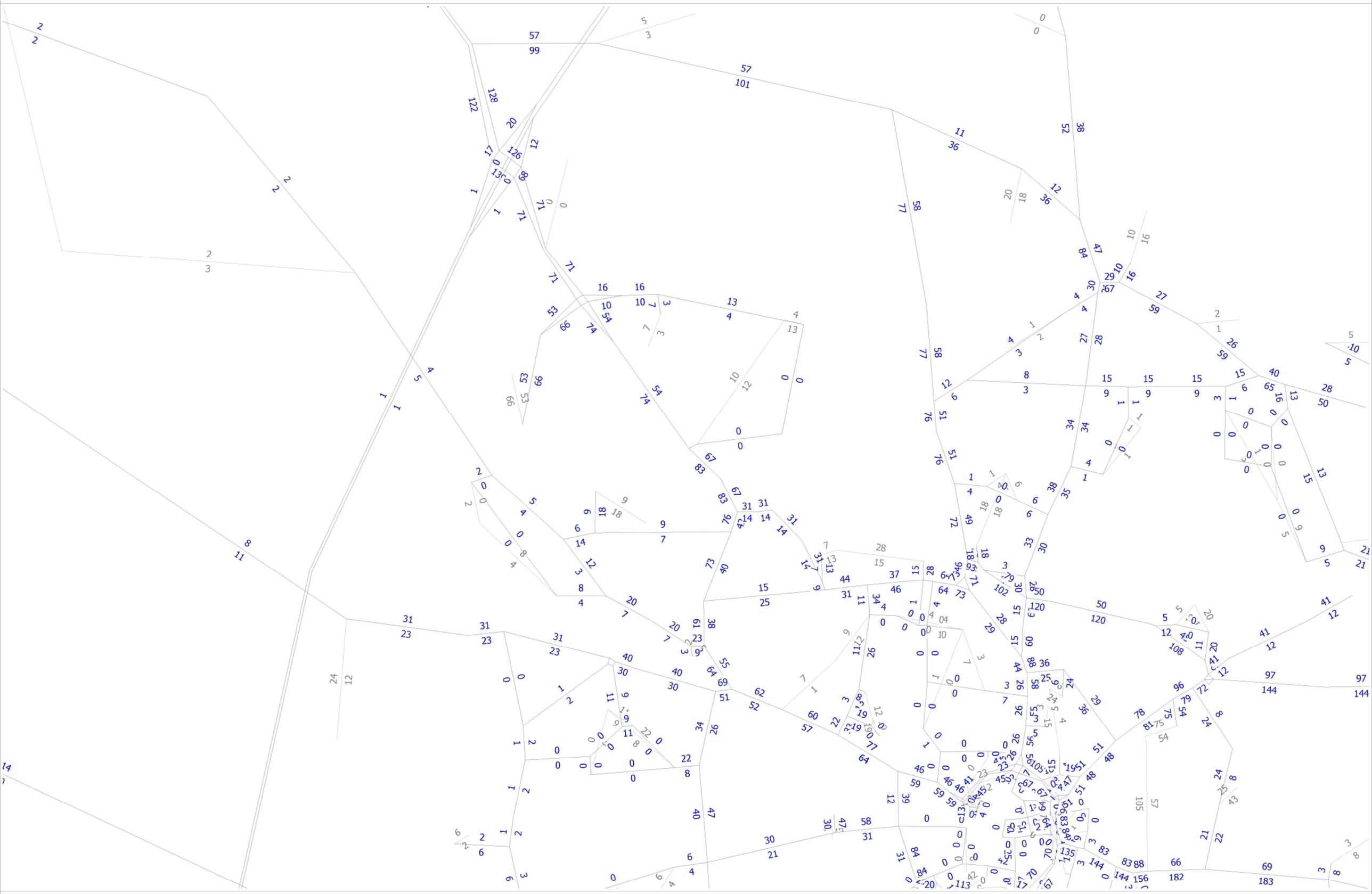
HA Cat	Site_Ref	LA_Housing_Ref	LA_Ref_Other	Site Name	Developer	Application Ref	Development Status	Approval Date	First Completion	LA Officer	X	Y	Site Type	Land Use	Site_Area	Gross_Floor_Area	Retail_Floor_Area	Number_Pupils/Employee	Dwellings/Rooms	2005	2010	Developments Darlington.2015	2020	2025	2030	2035	2040	2045	Likelihood of Development
	D050ii		TC2	Feethams / Beaumont Street			Complete			Emma Williams	428866	514271	New Use	PARKING (Permanent)	0.87	0	0	0	600			100	100	100	100	100	100		Green
	D052a			Town Centre Fringe (Evens Halshaw Site)			Complete	0		Emma Williams	429300	514500	Old Use	Car Park (Temporary)	1.02				80			100	100	0	0	0	0		N/A
	D053			The Oval Commercial and Kendrew Street Car Parks and Regent House)		None	Shelved	0		Emma Williams	428859	514776	New Use	PARKING (Permanent)	0	0	0	0	850			0	0	0	0	0	0		Amber
	D103			Woodburn Nursery		AGIO	NONE (LDF/SHLAA)			Valerie Adams	427231	513839	Old Use	Agriculture (Sui-Generis)	1.83				0			0	0	0	0	0	0		N/A
	D109			Paddock, Albert Road		AGIO	Shelved			Valerie Adams	429161	515638	Vacant Site (Brownfield)	NONE (Open Space)	1.38	0	0	0	0										Red
	D234b	Linked to 247		Middleton St George, New School			NONE (LDF/SHLAA)				434928	513365	Vacant Site (Greenfield)	Industrial (B1/B2/B8)				420	0	0	0	0	0	0	100	100	100		Amber
--	D052bi			Town Centre Fringe - Haughton Road / Bannatyne			Shelved	0		Emma Williams	429522	514904	New Use	Mixed Use (DON'T USE)			0	0	0			0	100	100	100	100	100		Red
--	D052c			Town Centre Fringe (remainder)			Shelved	0		Emma Williams	429500	514500	Old Use	Mixed Use (DON'T USE)	0	0	0	0	0			0	0	0	0	0	0		Red
--	D052d			Town Centre Fringe (remainder), part			Shelved	0		Emma Williams	429293	514616	New Use	Mixed Use (DON'T USE)	0		0	0	0			0	100	100	100	100	100		Red
Economic Development	D001		En4	Heighington Lane North		10/00526/FUL	On Hold	06/10/2010		Emma Williams	426464	522445	Vacant Site (Greenfield)	Industrial (B1/B2/B8)	4.54	26970	0	856	0			0	100	100	100	100	100		Amber
Economic Development	D002		KEL1	Faverdale Reserve Site	N/A		NONE (LDF/SHLAA)			Emma Williams	427318	518008	Vacant Site (Greenfield)	Industrial (B1/B2/B8)	60	36000	0	360	0			0	10	20	20	40	40		Amber
Economic Development	D003i		ENB1	Morton Palms (Alderman Best Way)	N/A		NONE (LDF/SHLAA)			Emma Williams	432282	513463	New Use	Office (B1/A2)	8.18	50400	0	2000	0			14	20	20	40	40	60		Green
Economic Development	D004i		EN1	Faverdale East Business Park (St Modwens)	St Modwen		NONE (LDF/SHLAA)			Emma Williams	428060	517347	Vacant Site (Mixed)	Industrial (B1/B2/B8)	32.38	100000	0	1000	0			33	10	25	25	35	35		Green
Economic Development	D005i		EN8	Faverdale Industrial Area (Argon)	Not Known	10/00487/FUL	Granted	09/02/2012		Emma Williams	427448	516721	Vacant Site (Greenfield)	Industrial (B1/B2/B8)	5	6305	0	65	0			0	100	100	100	100	100		Green
Economic Development	D005ii		EN8	Faverdale Industrial Area (Remainder)	N/A		NONE (LDF/SHLAA)			Emma Williams	427486	516576	Vacant Site (Greenfield)	Industrial (B1/B2/B8)	6.41	25968	0	250	0			0	0	0	33	33	33		Amber
Economic Development	D006ii		ENP2	Yarm Road Industrial Area		10/00836/FUL	Granted	01/12/2011		Emma Williams	431902	514355	Vacant Site (Greenfield)	Industrial (B1/B2/B8)	9.78	59295		500	0			40	50	100	100	100	100		Green
Economic Development	D007		EN2	Yarm Road South Extension	N/A		NONE (LDF/SHLAA)			Emma Williams	431639	513329	Vacant Site (Greenfield)	Industrial (B1/B2/B8)	32.64	132192	0	1320	0			0	25	33	33	33	33		Green
Economic Development	D008		EEP1	Yarm Road South			Shelved			Emma Williams	431786	513705	Vacant Site (Greenfield)	Industrial (B1/B2/B8)	12.07	175015	0	5559	0			0	10	20	40	60	60		Red
Economic Development	D009i		ENP1	Yarm Road North (Dean and Chapter)		07/00041/OUT	Outline			Emma Williams	432417	514839	Vacant Site (Greenfield)	Industrial (B1/B2/B8)	29.2	127000	0	1270	0			0	0	20	20	40	40		Amber
Economic Development	D011		EN3	McMullen Road West	N/A		NONE (LDF/SHLAA)			Emma Williams	430662	515204	Vacant Site (Greenfield)	Industrial (B1/B2/B8)	6.62	40600	0	200	0			0	25	50	100	100	100		Amber
Economic Development	D012			McMullen Road East			Shelved			Emma Williams	431185	515001	Vacant Site (Greenfield)	Industrial (B1/B2/B8)	6.73	28602	0	1145	0			33	67	100	100	100	100		Red
Economic Development	D014			McMullen Road Open Space			Shelved			Emma Williams	431126	515232	Vacant Site (Greenfield)	Office (B1/A2)	1.55	6180	0	343	0			0	33	67	100	100	100		Red
Economic Development	D014i			McMullen Road Open Space			Shelved			Emma Williams	431126	515232	Vacant Site (Greenfield)	Industrial (B1/B2/B8)	1.55	6952	0	182	0			67	100	100	100	100	100		Red
Economic Development	D015b			Central Park (vacant land only)	N/A		NONE (LDF/SHLAA)			Emma Williams	429810	514838	Vacant Site (Brownfield)	Office (B1/A2)	0	28000	0	1555	0			33	50	66	85	100	100		Green
Economic Development	D015d			Central Park South (Business Startup Center)		12/00391/RM1	Complete	08/05/2013		Emma Williams	429596	514358	Vacant Site (Brownfield)	Office (B1/A2)	0.59	3199	0	200	0			100	100	100	100	100	100		Green
Economic Development	D017i		MGP7	Durham Tees Valley Airport			NONE (LDF/SHLAA)			Valerie Adams	436740	513100	Vacant Site (Greenfield)	Industrial (B1/B2/B8)	25	101250	0	2935	0			0	33	66	100	100	100		Red
Economic Development	D018i			Durham Tees Valley Airport			Shelved			Valerie Adams	436740	513100	Vacant Site (Brownfield)	Office (B1/A2)	0	18600	0		0			0	50	100	100	100	100		Red
Economic Development	D019iii		MGP4	Lingfield Point	Clearbell	08/00638/OUT	Outline	18/08/2010		Dave McGaughey	431715	515017	New Use	Office (B1/A2)	0.29	13666	0	1759	0			20	50	70	70	100	100		Green
Economic Development	D028			Ward Bros, Albert Hill		AGIO	NONE			Valerie Adams	429551	515474	Old Use	Industrial (B1/B2/B8)	6.59	0	0	0	0			0	0	0	0	0	0		N/A
Economic Development	D030			Amec, Haughton Road			Shelved			Valerie Adams	430644	515489	Old Use	Industrial (B1/B2/B8)	7.68	8414	0	0	0			100	100	100	100	100	100		Red
Economic Development	D046			Neasham Road			Shelved			Valerie Adams	429613	514059	Old Use	Industrial (B1/B2/B8)	1.08	4853	0	128	0			0	0	0	0	0	0		N/A
Economic Development	D050		TC2	Feethams / Beaumont Street		09/00471/FUL	Shelved	24/09/2009		Emma Williams	428866	514271	Vacant Site (Car Park)	Office (B1/A2)	0	6000	0	0	0			0	0	0	100	100	100		Red
Economic Development	D050i		TC2	Feethams / Beaumont Street			NONE (LDF/SHLAA)			Emma Williams	428866	514271	New Use	Office (B1/A2)	0.46	3000	0	400	0			0	100	100	100	100	100		Green
Economic Development	D101			630 Whessoe Road		10/00182/FUL	Shelved	07/07/2010		Emma Williams	428504	517571	Old Use	Industrial (B1/B2/B8)	2.5	1858	0	60	0			0	0	0	0	0	0		N/A
Economic Development	D108			Ward Bros (recycling)		AGIO	Shelved			Valerie Adams	429599	515518	Old Use	Industrial (B1/B2/B8)	6.59				0			100	0	0	0	0	0		N/A
Economic Development	D112i		TCF1	PO sorting offce/Mag Courts, Police and fire stations	N/A	None	Shelved	0		Valerie Adams	429160	514180	Old Use	Industrial (B1/B2/B8)	2.9							100	100	0	0	0	0		Amber
Economic Development	D116		M60	TCF - MKM builders merchants	N/A		Shelved	0		Tim Crawshaw	429156	515446	Old Use	Industrial (B1/B2/B8)	1.21				0			100	100	0	0	0	0		N/A
Economic Development	D116i		M61	TCF - Jewsons Bulders merchants	N/A		Shelved	0		Tim Crawshaw	429209	515240	Old Use	Industrial (B1/B2/B8)	1.45				0			100	100	0	0	0	0		N/A
Economic Development	D132			Humbleton Farm	Not Known	13/00100/FUL	Granted	19/03/2010		Lisa Hutchinson	425958	519218	Vacant Site (Greenfield)	Cattle Market (Sui-Generis)	53.4	39862	0	300	1			0	100	100	100	100	100		Amber
Economic Development	D162		TCF1	TCF Area 1 - St. Cuthberts Way South	N/A	None	Shelved	N/A		Valerie Adams	429215	514674	New Use	Office (B1/A2)		6000		500				0	20	90	100	100	100		Red
Economic Development	D162i		TCF1	TCF Area 1 - St. Cuthberts Way South	N/A	None	Shelved	N/A		Valerie Adams	429215	514674	New Use	Industrial (B1/B2/B8)		6000		128				0	20	90	100	100	100		Red
Economic Development	D163		TCF2	TCF Area 2 - Bank Top Station West	N/A	None	Shelved	N/A		Valerie Adams	429376	514159	New Use	Office (B1/A2)		1000		83				0	20	50	80	100	100		Red
Economic Development	D163ii		TCF2	TCF Area 2 - Bank Top Station West	N/A	None	Shelved	N/A		Valerie Adams	429376	514159	New Use	Industrial (B1/B2/B8)		1000		21				0	20	90	100	100	100		Red
Economic Development	D164		TCF3	TCF Area 3 - Borough Road	N/A	None	Shelved	N/A		Valerie Adams	429386	514642	New Use	Office (B1/A2)		3000		250				0	50	100	100	100	100		Red
Economic Development	D164ii		TCF3	TCF Area 3 - Borough Road	N/A	None	Shelved	N/A		Valerie Adams	429386	514642	New Use	Industrial (B1/B2/B8)		3000		64				0	50	100	100	100	100		Red
Economic Development	D165		TCF4	TCF Area 4 - Valley Street South	N/A	None	Shelved	N/A		Valerie Adams	429219	514917	New Use	Office (B1/A2)		3000		250				0	0	100	100	100	100		Red
Economic Development	D165ii		TCF4	TCF Area 4 - Valley Street South	N/A	None	Shelved	N/A		Valerie Adams	429219	514917	New Use	Industrial (B1/B2/B8)		3000		64				0	0	100	100	100	100		Red
Economic Development	D170			Albert Road Retail Park	N/A	14/00503/FUL	Complete	11/02/2015		Emma Williams	429125	515676	Old Use	Scrap Yard (Sui-Generis)	0.31	0	0		0			100	0	0	0	0	0		Green
Education	D013i			Morton Park			NONE			Bryan Huntley	432308	513956	Vacant Site (Greenfield)	Nursery (D1)	0.36		0	100	0			25	100	100	100	100	100		Red
Education	D042i		Hs5 (M15)	North West Urban Fringe (Core Strategy)			NONE (LDF/SHLAA)			Valerie Adams	426240	517131	Vacant Site (Greenfield)	School Primary (D1)				900				0	0	100	100	100	100		Amber
Housing	D015bi	235	Hs2	Central Park	Keepmoat	12/00391/FUL	Granted (Construction)			Valerie Adams	429816	514727	Vacant Site (Brownfield)	Mixed Housing (C3)	22.97	0	0	0	359			16	54	100	100	100	100		Green
Housing	D019i	48	Hs1a	Lingfield Point Phase 1	Taylor Wimpey	08/00638/RM1	Granted (Construction)			Valerie Adams	431131	514771	New Use	House (C3)	8.19	0	0	0	273			16	78	100	100	100	100		Green
Housing	D019ii	244	Hs1b	Lingfield Point (ex Phase 1)		08/00638/OUT	Outline			Valerie Adams	431715	515017	New Use	Mixed Housing (C3)	0	0	0	0	331			0	0	45	90	100	100		Red
Housing	D021			DFAM land, Neasham Road			Shelved			Valerie Adams	429927	512810	Vacant Site (Brownfield)	Mixed Housing (C3)	0	0	0	0	160			0	0	100	100	100	100		Amber
Housing	D023i		Hc3	Yiewsley Drive	Bellway	01/00056/FUL	Complete			Valerie Adams	426193	514830	New Use	Mixed Housing (C3)	4.01	0	0	0	67			46	100	100	100	100	100		Green
Housing	D024i			Darlington Tech College			Shelved			Valerie Adams	427882	514641	New Use	Mixed Housing (C3)	0	0	0	0	114			100	100	100	100	100	100		Green
Housing	D025ii	207	Ha7	Sugar Hill Grove, Fmr Alderman Leach School Field	Keepmoat		NONE (LDF/SHLAA)			Valerie Adams	427206	515909	New Use	House (C3)	0.94	0	0	0	34			0	100	100	100	100	100		Green
Housing	D026			Geneva Lane/Geneva Bakery			Complete			Valerie Adams	429565	513278	Vacant Site (Brownfield)	Mixed Housing (C3)	0	0	0	0	216			100	100	100	100	100	100		N/A
Housing	D027i	26	Hc1	Former Corus site, Whessoe Road	St Modwen	09/00731/OUT	NONE (LDF/SHLAA)			Valerie Adams	428545	516693	New Use	Mixed Housing (C3)	7.26	0	0	0	250			0	0	40	100	100	100		Red
Housing	D028i			Ward Bros, Albert Hill		AGIO	NONE (LDF/SHLAA)			Valerie Adams	429551	515474	New Use	Mixed Housing (C3)	6.59	0	0	0	88			0	0	0	0	0	0		Red
Housing	D029i	51	RHa14	Mowden Hall	DTZ		NONE (LDF/SHLAA)			Valerie Adams	426596	515357	New Use	Mixed Housing (C3)	1.98	0	0	0	35			0	100	100	100	100	100		Green
Housing	D030i			Amec, Haughton Road			Shelved			Valerie Adams	430644	515489	New Use	Mixed Housing (C3)	7.68	0	0	0	300			0	0	0	0	0	0		Red
Housing	D031		Ha2	North of With Horse Pub/Hotel			Shelved			Valerie Adams	429179	518007	Vacant Site (Greenfield)	Mixed Housing (C3)	5.2	0	0	0	80			0	100	100	100	100	100		Red
Housing	D032i		RHc12	Fmr Eastbourne School	Esh/Livin/Thirteen		Complete			Valerie Adams	430434	514639	New Use	Mixed Housing (C3)	4.17	0	0	0	76			79	100	100	100	100	100		Green
Housing	D034	2		Land Adjoining Alexander Street	Keepmoat	RHa7 RPO	Granted (Construction)			Valerie Adams	430353	515452	Vacant (Brownfield)	House (C3)	2.65	0	0	0	66			0	100	100	100	100	100		Green
Housing	D035			Darlington Memorial Hospital			Shelved			Valerie Adams	428284	515291	Old Use	Mixed Housing (C3)	1.03	0	0	0	56			0	0	0	0	0	0		N/A
Housing	D035i		Ha3	Darlington Memorial Hospital (South)		RHa6	Shelved			Valerie Adams	428284	515291	New Use	Mixed Housing (C3)	1.05	0	0	0	60			100	100	100	100	100	100		Green
Housing	D042ii	68	Hs5	North West Urban Fringe (West Park Garden Village)	Bussey and Armstrong plus Unknown		NONE (LDF/SHLAA)			Valerie Adams	426240	517131	New Use	Mixed Housing (C3)	79.32	0	0	0	1200			0	5	23	48	73	98		Green
Housing	D043	20	Hs6	Eastern Urban Fringe, Great Burdon	Storey and Bellway	Hs6 RPO	NONE (LDF/SHLAA)			Valerie Adams	432223	515914	New Use	Mixed Housing (C3)	120.74	0	0	0	1250			0	0	0	20	40	60		Amber
Housing	D046i			Neasham Road			Shelved			Valerie Adams	429613	514059	New Use	Mixed Housing (C3)	0	0	0	0	89			100	100	100	100	100	100		Red
Housing	D048i		Hc4	Hopetown Park	Taylor Wimpey	13/00347/FUL	Complete			Valerie Adams	428603	515861	New Use	Mixed Housing (C3)	1.41	0	0	0	110			100	100	100	100	100	100		Green
Housing	D049	11		Cattle Mart and Car Park, Clifton Road	DFAM		NONE (LDF/SHLAA)			Valerie Adams	429316	513957	Vacant Site (Car Park)	Mixed Housing (C3)	2.16	0	0	0	76			0	0	100	100	100	100		Red
Housing	D051	73	Hs3	West Park	Bussey and Armstrong		Granted (Construction)			Valerie Adams	426690	516860	Vacant Site (Greenfield)	House (C3)	7.55	0	0	0	213			24?	28	75	100	100	100		Green
Housing	D053iiii			The Oval Commercial and Kendrew Street Car Parks and Regent House)		None	Shelved	0		Emma Williams	428859	514776	New Use	Flat (C3)	0	0	0	0	26			0	100	100	100	100	100		Amber
Housing	D055i	168	Hc2	Feethams Football Ground	Charles Church/Persimmon	09/00706/FUL	Granted (Construction)			Valerie Adams	428856	513902	New Use	House (C3)	2.18	0	0	0	82			50	100	100	100	100	100		Green
Housing	D103i	74	Ha8	Woodburn Nursery	Esh group	RPO RHa13	Granted (Construction)			Valerie Adams	427231	513839	New Use	House (C3)	1.83	0	0	0	25			0	50	100	100	100	100		Green
Housing	D106			Former XTR route reservation		AGIO	Shelved			Valerie Adams	429264	515604	Vacant Site (Brownfield)	House (C3)	9.31	0	0	0	160			0	0	0	0	0	0		Red
Housing	D110	42	Ha6	South of Bowes Court/ Haughton Road	Railway Housing Association	RPO	Granted (Construction)			Valerie Adams	429697	515276	Vacant Site (Brownfield)	House (C3)	2.02	0	0	0	73			0	100	100	100	100	100		Green
Housing	D117	59	RHc4	L/A rear of Cockerton Club		RPO	NONE (Future Allocate)	0		Valerie Adams	427501	515444	Vacant Site (Brownfield)	House (C3)	0.39	0	0	0	14			0	100	100	100	100	100		Red
Housing	D118	60	RHc3	L/A Rear of Heron Drive	Land Resources Ltd	RPO	Granted (Construction)			Valerie Adams	430823	514450	Vacant Site (Brownfield)	House (C3)	1.34				35			0	100	100	100	100	100		Green
Housing	D133	28	Ha4	L/A former Springfield School	Esh	RHa4	NONE (LDF/SHLAA)	N/A		Valerie Adams	430462	516390	Vacant Site (Brownfield)	Mixed Housing (C3)	1.2				37			0	100	100	100	100	100		Green
Housing	D135	4	M66	L/A Mc Mullen Road/South of Allington Way	DBC		Granted (Construction)			Valerie Adams	431307	514446	Vacant Site (Greenfield)	House (C3)	1.89				62			0	100	100	100	100	100		Green
Housing	D138		Hc9	North Farm, Summerhouse		09/00917/FUL	Complete	16/03/2010		Valerie Adams	429454	521065	Vacant Site (Brownfield)	House (C3)	0.6				14			0	100	100	100	100	100		Green
Housing	D139		Hc10	1 Blackwell Lane		11/00361/FUL	Shelved	05/08/2011		Valerie Adams	428316	513668	Vacant Site (Brownfield)	House (C3)	0.12				9			0	100	100	100	100	100		Red
Housing	D143		RHc10	136 Lowson Street		10/00302/FUL	Shelved	N/A		Valerie Adams	429027	516904	Vacant Site (Brownfield)	Mixed Housing (C3)	0.05				7			0	100	100	100	100	100		Amber
Housing	D144		RHc11	Rise Carr Club	N/A	None	Shelved	N/A		Valerie Adams	428867	516367	Vacant Site (Brownfield)	Mixed Housing (C3)	0.06				18			0	100	100	100	100	100		Red
Housing	D146		Ha5	South of 22 - 24 Burtree Lane		None	NONE (Future Allocate)	N/A		Valerie Adams	428818	517964	Vacant Site (Greenfield)	Mixed Housing (C3)	2.34				50			0	0	0	0	0	0		Red
Housing	D147	7	RHa10	Hartington Way/Bellburn Lane	Keepmoat	None	Granted (Construction)	N/A		Valerie Adams	428141	516052	Vacant Site (Greenfield)	Mixed Housing (C3)	1.43				40			0	100	100	100	100	100		Green
Housing	D148		Ha12	Glebe Road south		None	Shelved	N/A		Valerie Adams	429699	517544	Vacant Site (Greenfield)	Mixed Housing (C3)	0.71				28			0	0	0	0	0	0		Red
Housing	D149		Ha13	Land at Carmel School		None	Shelved	N/A		Valerie Adams	427111	514467	Vacant Site (Greenfield)	Mixed Housing (C3)	1.21				24			0	0	0	0	0	0		Red
Housing	D150		RHa15	Glebe Road North		14/00091/FUL	Complete	N/A		Valerie Adams	429807	517729	Vacant Site (Greenfield)	Mixed Housing (C3)	0.75				34			0	100	100	100	100	100		Green
Housing	D151		Ha15	Hammond Drive		None	Complete	N/A		Valerie Adams	428775	512789	Vacant Site (Greenfield)	Mixed Housing (C3)	1.17				22			0	100	100	100	100	100		Green
Housing	D152		Ha16	East of A167, opposite White Horse		None	Shelved	N/A		Valerie Adams	429369	517780	Vacant Site (Greenfield)	Mixed Housing (C3)	0.5				15			0	0	100	100	100	100		Red
Housing	D155		Ha19	Alverton Drive		13/00989/FUL	Complete	N/A		Valerie Adams	427124	516846	Vacant Site (Greenfield)	House (C3)	0.37				10			100	100	100	100	100	100		Green
Housing	D156	23	RHa23	Rear of Scargill Shops/Fenby Avenue	DBC	RPO	Complete	N/A		Valerie Adams	430205	513564	Vacant Site (Brownfield)	Flat (C3)	0.65				28			0	100	100	100	100	100		Green
Housing	D157		RHa17	Eggleston View		None	Shelved	N/A		Valerie Adams	426505	515739	Vacant Site (Greenfield)	House (C3)	0.45				8			0	0	0	0	0	0		Red
Housing	D160	56	RHa8	Red Hall Riding Stables and Evirons	Keepmoat	17/00552/FUL	Granted	N/A		Valerie Adams	431053	515585	New Use	Mixed Housing (C3)	2.24				81			0	100	100	100	100	100		Green
Housing	D163i		TCF2	TCF Area 2 - Bank Top Station West	N/A	None	Shelved	N/A		Valerie Adams	429376	514159	New Use	Mixed Housing (C3)					40			0	0	0	0	50	100		Red
Housing	D164i		TCF3	TCF Area 3 - Borough Road	N/A	None	Shelved	N/A		Valerie Adams	429386	514642	New Use	Mixed Housing (C3)					15			0	0	100	100	100	100		Red
Housing	D165i		TCF4	TCF Area 4 - Valley Street South	N/A	None	Shelved	N/A		Valerie Adams	429219	514917	New Use	Mixed Housing (C3)					65			0	0	10	100	100	100		Red
Housing	D166		TCF5	TCF Area 5 - Valley Street North	N/A	None	Shelved	N/A		Valerie Adams	429238	515167	New Use	Mixed Housing (C3)					150			0	50	100	100	100	100		Red
Housing	D167		TCF6	TCF Area 6 - John St./Eastmount Rd.	N/A	None	Shelved	N/A		Valerie Adams	429314	515324	New Use	Mixed Housing (C3)					150			0	50	100	100	100	100		Red
Housing	D171	3	RHa1ii	Land to the South of Burtree Lane		Revised Preffered Option Rhaii	NONE (LDF/SHLAA)			Valerie Adams	428603	518037	Vacant Site (Greenfield)	Mixed Housing (C3)	17.05	0	0	0	380			0	0	39	78	100	100		Amber
Housing	D172	61		Land off Sadberge Road, Middleton St George, Darlington	Story Homes/Miller	13/00940/OUT	Granted (Construction)	12/01/2015		Valerie Adams	434469	514151	Vacant Site (Greenfield)	House (C3)	10.3	0	0	0	234			0	65	100	100	100	100		Green
Housing	D173		RHa3	Muscar House Farm			Shelved				431805	517263	Vacant Site (Greenfield)	Mixed Housing (C3)	0	0	0	0	125	0	0	0	0	0	50	100	100		Red
Housing	D174	21		Elm Tree Farm	Bellway		NONE (LDF/SHLAA)				430480	517084	Vacant Site (Greenfield)	Mixed Housing (C3)	8.47	0	0	0	80	0	0	0	38	100	100	100	100		Amber
Housing	D175	9	He1, He3, He3	Blackwell Housing (East)			NONE (LDF/SHLAA)				427999	513175	Vacant Site (Greenfield)	Mixed Housing (C3)	0	0	0	0	43	0	0	0	0	100	100	100	100		Amber
Housing	D176	10	He4	Blackwell Housing (West)			NONE (Pending decision)				427638	512792	Vacant Site (Greenfield)	Mixed Housing (C3)	9.75	0	0	0	59	0	0	0	50	100	100	100	100		Green
Housing	D177	318		Allington Way			COMMENT (FOR INFO)				431272	514480	Vacant Site (Greenfield)	Mixed Housing (C3)	0	0	0	0	81	0	0	0	0	100	100	100	100		Green
Housing	D178	45		High Stell/Gendon Gardens, Middleton St.George		15/00976/OUT	Granted (subject to s106)				434106	513628	Vacant Site (Greenfield)	Mixed Housing (C3)	8.49	0	0	0	200	0	0	0	10	85	100	100	100		Green
Housing	D179	41		Land north of Coniscliffe Road (Southern Coniscliffe Park)	Taylor Wimpey		NONE (Pending decision)				425472	514970	Vacant Site (Greenfield)	Mixed Housing (C3)	28.32	0	0	0	535	0	0	0	11	39	67	100	100		Amber
Housing	D180			Durham Tees Valley Airport North (South Oaktree Farm)	DTVA Ltd	16/00578/OUT	Granted (subject to s106)				436428	513100	Vacant Site (Greenfield)	Mixed Housing (C3)	24.26	0	0	0	350	0	0	0	9	51	94	100	100		Amber
Housing	D208	89		Yarm Road, Middleton st George (South of Railway Line)			NONE (LDF/SHLAA)				436146	513599	Vacant Site (Greenfield)	House (C3)	2.66	0	0	0	63	0	0	0	0	100	100	100	100		Amber
Housing	D210	64		Sherbourne Close	DBC		Granted (Construction)				425860	515862	Vacant Site (Greenfield)	House (C3)	0.69	0	0	0	18	0	0	0	100	100	100	100	100		Green
Housing	D214	65		Land off Middleton Lane, Land to South of West Acres, MSG	Heritage North		Granted				434477	513019	Vacant Site (Greenfield)	House (C3)	2.49	0	0	0	27	0	0	0	50	100	100	100	100		Green
Housing	D215	103		Land to East of Roundhill Road, Hurworth			Granted				430566	510791	Vacant Site (Greenfield)	House (C3)	5.41	0	0	0	100	0	0	0	50	100	100	100	100		Green
Housing	D218	16		Land at Lancaster House Durham Tees Valley Airport			Granted				436566	513647	Vacant Site (Greenfield)	House (C3)	1.88	0	0	0	55	0	0	0	0	100	100	100	100		Green
Housing	D220	25		Former Arts Centre, Vane Terrace	Moor Galloway		Granted (Construction)				428215	514664	Vacant Site (Brownfield)	Mixed Housing (C3)	0.76	0	0	0	38	0	0	0	100	100	100	100	100		Green
Housing	D220i	204		The Blanche Pease Annex, Darlington Arts Centre		15/00196/FUL	Granted				428182	514685	Vacant Site (Brownfield)	Flat (C3)	0.28	0	0	0	32	0	0	0	100	100	100	100	100		Green
Housing	D221	340		East of Gate Lane, Low Coniscliffe			Granted				425124	514093	Vacant Site (Greenfield)	House (C3)	3.38	0	0	0	37	0	0	0	40	100	100	100	100		Green
Housing	D222	27		Former Eastbourne School Playing Field - Phase 2	Esh		Granted (Construction)				430353	514603	Vacant Site (Brownfield)	House (C3)	2.11	0	0	0	60	0	0	0	100	100	100	100	100		Green
Housing	D223	46		Lime Avenue - Lemon Grove	Coast & Country		Complete				429473	517734	Vacant Site (Grenfield)	House (C3)	0.48	0	0	0	16	0	0	0	100	100	100	100	100		Green
Housing	D224	63		School Aycliffe West			Granted (subject to s106)				425840	523342	Vacant Site (Greenfield)	House (C3)	3.97	0	0	0	101	0	0	0	43	100	100	100	100		Green
Housing	D226	8	RHai	Land at Berrymead Farm / Land North of White Horse Pub	Persimmon		NONE (Pending decision)				429102	518165	Vacant Site (Greenfield)	Mixed Housing (C3)	16.49	0	0	0	370	0	0	0	19	59	100	100	100		Amber
Housing	D227	243		Land South of Neasham Road	Barratt		NONE (LDF/SHLAA)				429920	512631	Vacant Site (Greenfield)	Mixed Housing (C3)	18.92	0	0	0	882	0	0	0	0	34	68	100	100		Amber
Housing	D229	34		Beech Crescent, Heighington	Kew Land Ltd.		Granted				425166	522600	Vacant Site (Greenfield)	Mixed Housing (C3)	1.99	0	0	0	43			0	100	100	100	100	100		Amber
Housing	D230	80		Land to the East of Lingfield Point			NONE (Pending decision)				432093	515036	Vacant Site (Greenfield)	Mixed Housing (C3)	9.88	0	0	0	250	0	0	0	0	60	100	100	100		Red
Housing	D231	91		Walworth Road, Heighington	Bellway		NONE (LDF/SHLAA)				435304	513602	Vacant Site (Greenfield)	House (C3)	3.34	0	0	0	76	0	0	0	0	100	100	100	100		Amber
Housing	D232	99		Maxgate Farm, Station Road, Middlton st George	Story Homes		NONE (LDF/SHLAA)				434020	514041	Vacant Site (Greenfield)	Mixed Housing (C3)	13.71	0	0	0	226			0	0	28	75	100	100		Amber
Housing	D233	228		Northgate House		14/00725/OHP	NONE (LDF/SHLAA)				428981	514897	Conversion	Flat (C3)			0		69	0	0	0	0	100	100	100	100		Red
Housing	D234		146	Land Off Yarm Road South of Railway Line, MSG (High Scrogg Farm)			NONE (LDF/SHLAA)				434928	513365	Vacant Site (Greenfield)	Mixed Housing (C3)	14.8	0	0	0	322	0	0	0	46	93	100	100	100		Amber
Housing	D235		249	Land at Coniscliffe Grange South, Staindrop Road		17/00636/OUT	NONE (Pending decision)				425576	514991	Vacant Site (Greenfield)	Mixed Housing (C3)	103.71	0	0	0	985	0	0	0	3	28	54	79	100		Amber
Housing	D236	318		Land North of Allington Way	DBC/Hepke		NONE (LDF/SHLAA)				431226	514658	Vacant Site (Greenfield)	Mixed Housing (C3)	3.26	0	0	0	81	0	0	0	0	100	100	100	100		Amber
Housing	D239	95		Land to the North of Heighington Lane			NONE (LDF/SHLAA)				425253	522590	Vacant Site (Greenfield)	Mixed Housing (C3)	1.53	0	0	0	20	0	0	0	0	100	100	100	100		Amber
Housing	D240	90		Field at Morton Palms			NONE (LDF/SHLAA)				433718	514343	Vacant Site (Greenfield)	Mixed Housing (C3)	3.34	0	0	0	110	0	0	0	0	82	100	100	100		Red
Housing	D241	108		Oak Tree Farm, Middleton St George			NONE (LDF/SHLAA)				436147	513600	Vacant Site (Greenfield)	Mixed Housing (C3)	2.46	0	0	0	69	0	0	0	0	87	100	100	100		Red
Housing	D242	230		Land between Yarm Road and Railway line, MSG		15/01006/OUT	Granted				434813	513507	Vacant Site (Greenfield)	Mixed Housing (C3)	1.27	0	0	0	44	0	0	0	50	100	100	100	100		Green
Housing	D501	251		Skerningham Masterplan	Theakston/Banks		NONE (LDF/SHLAA)				430940	517925	Vacant Site (Greenfield)	Mixed Housing (C3)	490.99	0	0	0	4000	0	0	0	0	5	23	41	60	79	Amber
Housing	D511	185		Greater Faverdale Masterplan	Hellens		NONE (LDF/SHLAA)				427317	518006	Vacant Site (Greenfield)	Mixed Housing (C3)	178.48	0	0	0	2000	0	0	0	0	8	22	37	52	67	Amber
Housing		1		Alderman Leach School Site	Bussey Armstrong		NONE (LDF/SHLAA)				427243	516035	Vacant Site	Mixed Housing (C3)	0.2				12			0	100	100	100	100	100	100	Amber
Housing		54		Neasham Nursery		16/01020/OUT	Granted				432579	510399	New Use	House (C3)	0.63				10			0	100	100	100	100	100	100	Green
Housing		78		Land to the East of Middleton Road / Sadberge		17/00358/FUL	Granted				434247	516712	Vacant Site	House (C3)	0.75				25			0	100	100	100	100	100	100	Green
Housing		229		Alviston House		15/00465/FUL	Granted				429889	515232	New Use	Flat (C3)	0.08				13			0	100	100	100	100	100	100	Green
Housing		232		Coachman Hotel		16/00727/FUL	Granted				429350	514094	New Use	Flat (C3)	0.12				18			0	100	100	100	100	100	100	Green
Housing		240		St James Court, Darlington	R Bland Limited	16/00426/FUL	Granted				429875	515324	New Use	Flat (C3)	0.1				12			0	100	100	100	100	100	100	Green
Housing		332		Site of Former Nestfield Unionist Club	Bright Ideas Limited	13/00495/FUL	Granted				429713	515456	New Use	Flat (C3)	0.08				15			0	100	100	100	100	100	100	Green
Housing		333		Land East of Roundhill Road (phase 2)	Banks		NONE (LDF/SHLAA)				430576	510878	Vacant Site	House (C3)	5.17				95			0	32	100	100	100	100	100	Amber
Housing		338		Land Off Montrose Street	Private - Francis Ward	17/00220/OUT	Granted				429609	515102	New Use	Flat (C3)	0.08				10			0	100	100	100	100	100	100	Green
Housing		375		Land South of High Stell MSG			NONE (LDF/SHLAA)				434101	513444	Vacant Site	House (C3)	6.6				100			0	0	0	90	100	100	100	Amber
Housing		386		Land between Yarm Road and railway line East, MSG		17/00911/FUL	NONE (Pending decision)				435014	513548	Vacant Site	House (C3)	0.63				10			0	100	100	100	100	100	100	Amber
Leisure	D009ii		ENP1	Yarm Road North (Dean and Chapter)		07/00041/OUT	Outline			Emma Williams	432417	514839	Vacant Site (Greenfield)	Hotel (C1)	0.2	2500	0		0			0	100	100	100	100	100		Amber
Leisure	D009iii		ENP1	Yarm Road North (Dean and Chapter)		07/00041/OUT	Outline			Emma Williams	432417	514839	Vacant Site (Greenfield)	Restaurant (A3)	0.2	2500	0		0			0	100	100	100	100	100		Amber
Leisure	D018ii			Durham Tees Valley Airport			Shelved			Valerie Adams	436740	513100	Vacant Site (Brownfield)	Hotel (C1)	0	4200	0		100			0	50	100	100	100	100		Red
Leisure	D018iii			Durham Tees Valley Airport			Shelved			Valerie Adams	436740	513100	Vacant Site (Brownfield)	Restaurant (A3)	0	560	0		0			0	50	100	100	100	100		Red
Leisure	D053iii			The Oval Commercial and Kendrew Street Car Parks and Regent House)		None	Shelved	0		Emma Williams	428859	514776	New Use	Leisure (D2)	0	6000	0	0	0			0	100	100	100	100	100		Amber

Leisure	D054iii	TC2	Feethams East (former bus depot)	Terrace Hill	13/00750/FUL	Complete	0	Emma Williams	429045	514255	New Use	Hotel (C1)	0.97	3050		45	80			100	100	100	100	100	100	Green
Leisure	D054iv	TC2	Feethams East (former bus depot)	Terrace Hill	13/00750/FUL	Complete	0	Emma Williams	429045	514255	New Use	Pub/Club (A4)	0.97	3135		149				100	100	100	100	100	100	Green
Leisure	D054v	TC2	Feethams East (former bus depot)	Terrace Hill	13/00750/FUL	Complete	0	Emma Williams	429045	514255	New Use	Cinema (D2)	0.97	3526		51				100	100	100	100	100	100	Green
Retail	D015e		Central Park (Local Centre)			Granted			429880	515075	Vacant Site (Brownfield)	Non-Food (A1)		1700	1700		0			0	0	100	100	100	100	Amber
Retail	D019iv		Lingfield Point			Outline		Dave McGaughey	431715	515017	New Use	Non-Food (A1)	0.27	2700	2700	0	0			0	100	100	100	100	100	Amber
Retail	D052ai		Town Centre Fringe (Evans Halshaw Site)			Shelved	0	Emma Williams	429300	514500	Old Use	Car Showroom (Sui-Generis)	0.98							0	0	0	0			N/A
Retail	D052aiv		Town Centre Fringe (Evans Halshaw Site)			Shelved	0	Emma Williams	429300	514500	New Use	Non-Food (A1)	0.49	3675	0	0	0			100	100	100	100	100	100	Red
Retail	D052bii		Town Centre Fringe - Haughton Road / Bannatyne			Shelved	0	Emma Williams	429522	514904	New Use	Non-Food (A1)	1.05	7875	0	0	0			100	100	100	100	100	100	Red
Retail	D053i		The Oval Commercial and Kendrew Street Car Parks and Regent House)		None	Shelved	0	Emma Williams	428859	514776	New Use	Non-Food (A1)	0	0	21000	0	0			0	100	100	100	100	100	Amber
Retail	D105	RHa16	D'ton Timber Supplies	N/A	RPO	NONE (LDF/SHLAA)		Valerie Adams	430027	515470	New Use	Non-Food (A1)	0.63	1000	0	0	0			100	100	100	0	0	0	Red
Retail	D107		Green Street Motors		AGIO	Shelved		Valerie Adams	429264	515604	Old Use	Car Showroom (Sui-Generis)	1.34	1000			0			100	0	0	0	0	0	N/A
Retail	D115	TCF	TCF - Magnet showroom			Shelved	0	Valerie Adams	429090	515432	Old Use	Non-Food (A1)	0.87	1000			0			100	100	0	0	0	0	N/A
Retail	D115v	TCF5	TCF 5 - Sherwoods car dealership			Shelved	0	Tim Crawshaw	429350	515118	Old Use	Car Showroom (Sui-Generis)	4.5	3000			0			100	100	0	0	0	0	N/A
Retail	D170i		Albert Road Retail Park	Opus North	14/00503/FUL	Complete	11/02/2015	Emma Williams	429125	515676	New Use	Non-Food (A1)	0.65	1737	1737	50	0			0	100	100	100	100	100	Green
Retail	D170ii		Albert Road Retail Park	Opus North	14/00503/FUL	Complete	11/02/2015	Emma Williams	429125	515676	New Use	Food (A1)	0.65	2177	2177	100	0			0	100	100	100	100	100	Green
Retail	D237		John Fowler Way, West Park	Bussey & Armstrong	16/01041/FUL	Granted (Construction)			426793	517085	Vacant Site (Greenfield)	Food (A1)	1.21	1820	1820	30	0	0	0	0	100	100	100	100	100	Green
Retail	D238		Land to the South of Woodlands Hospital (Dunelm)		16/00108/FUL	Granted (Construction)			432140	513889	Vacant Site (Greenfield)	Non-Food (A1)	0.72	3670	3670	50	0	0	0	0	100	100	100	100	100	Green

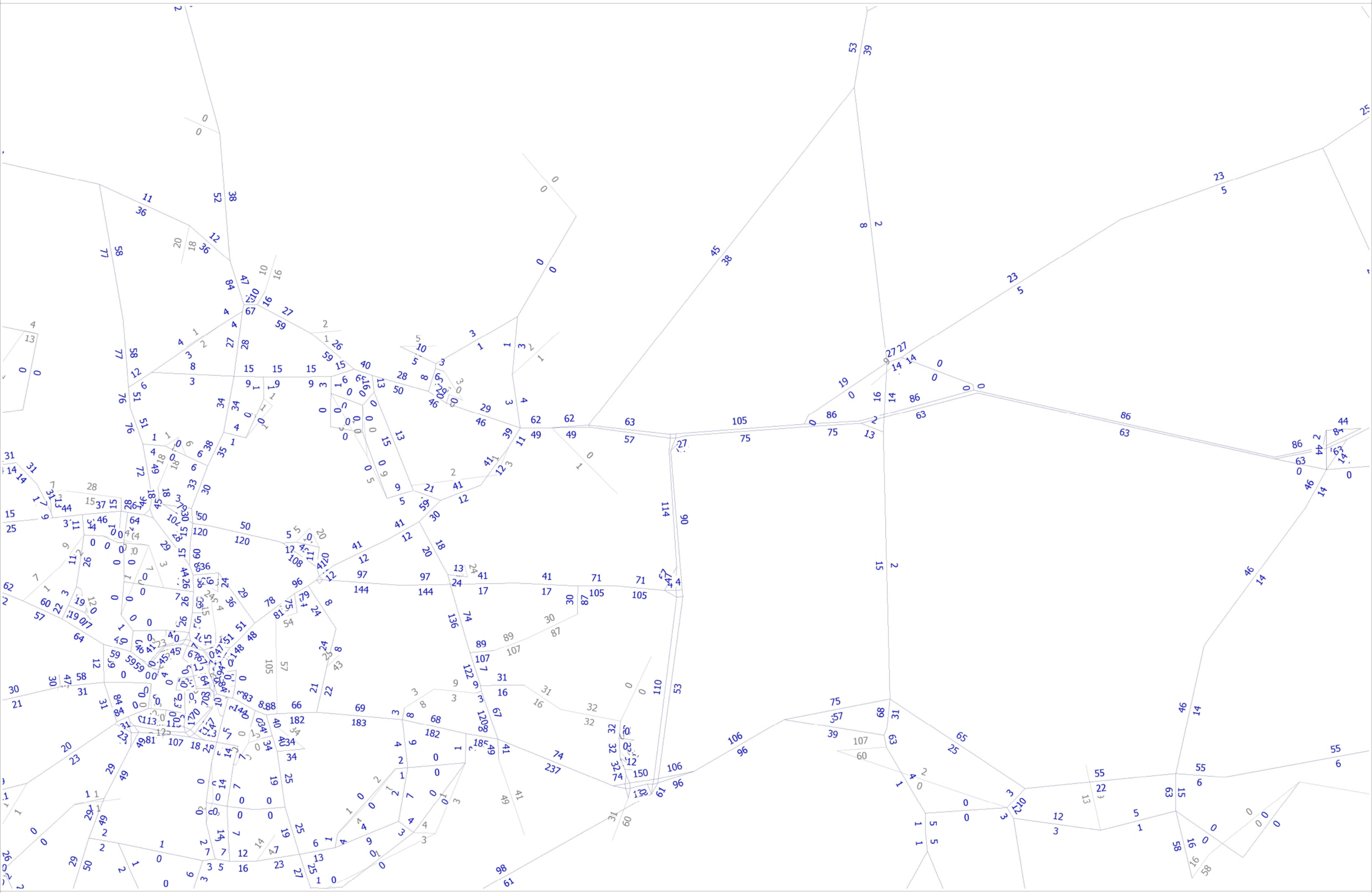
Appendix B

DEVELOPMENT TRIP LOADING

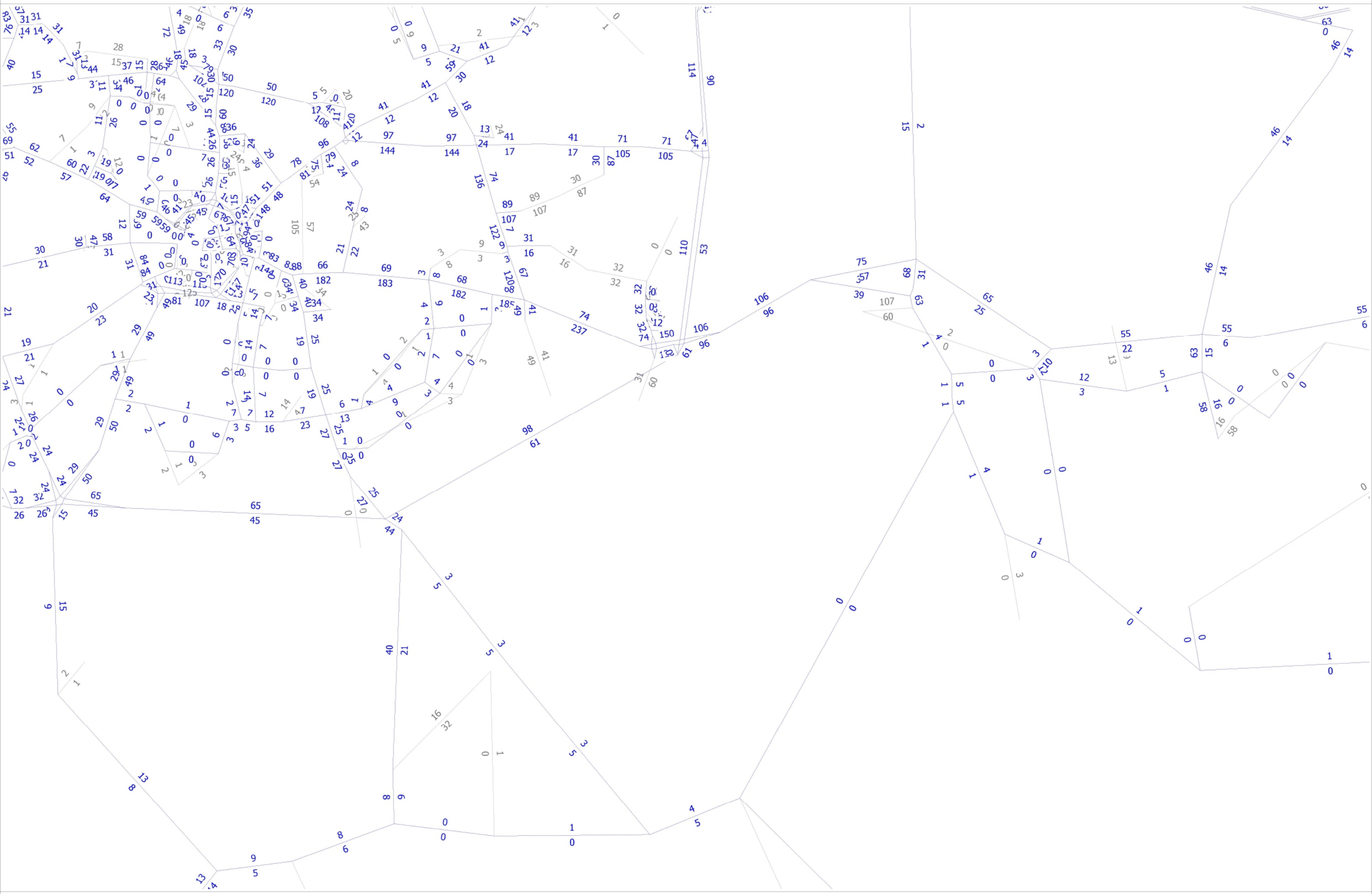
Darlington Local Plan Development Flows
2020 AM
North West



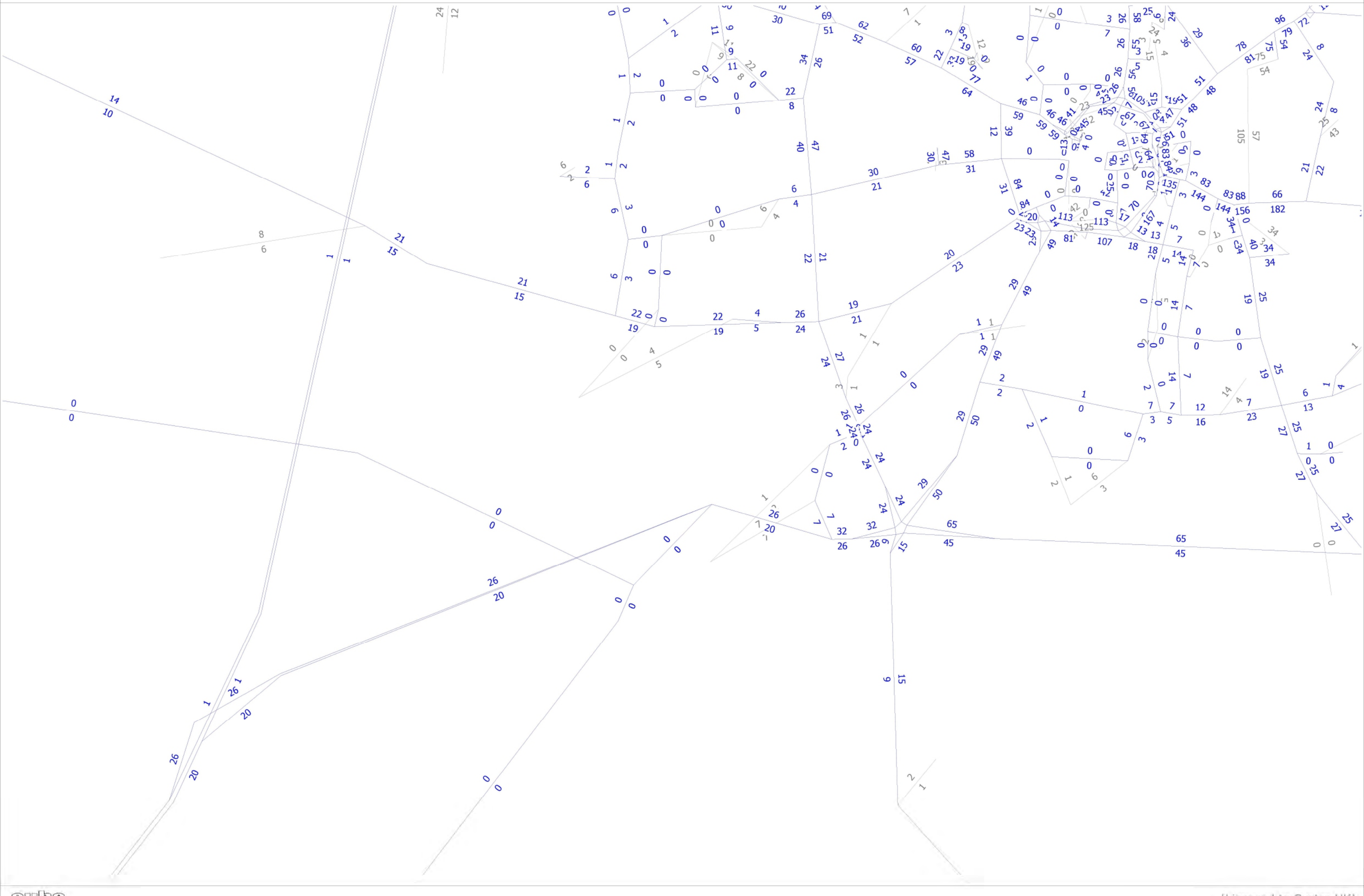
Darlington Local Plan Development Flows
2020 AM
North East



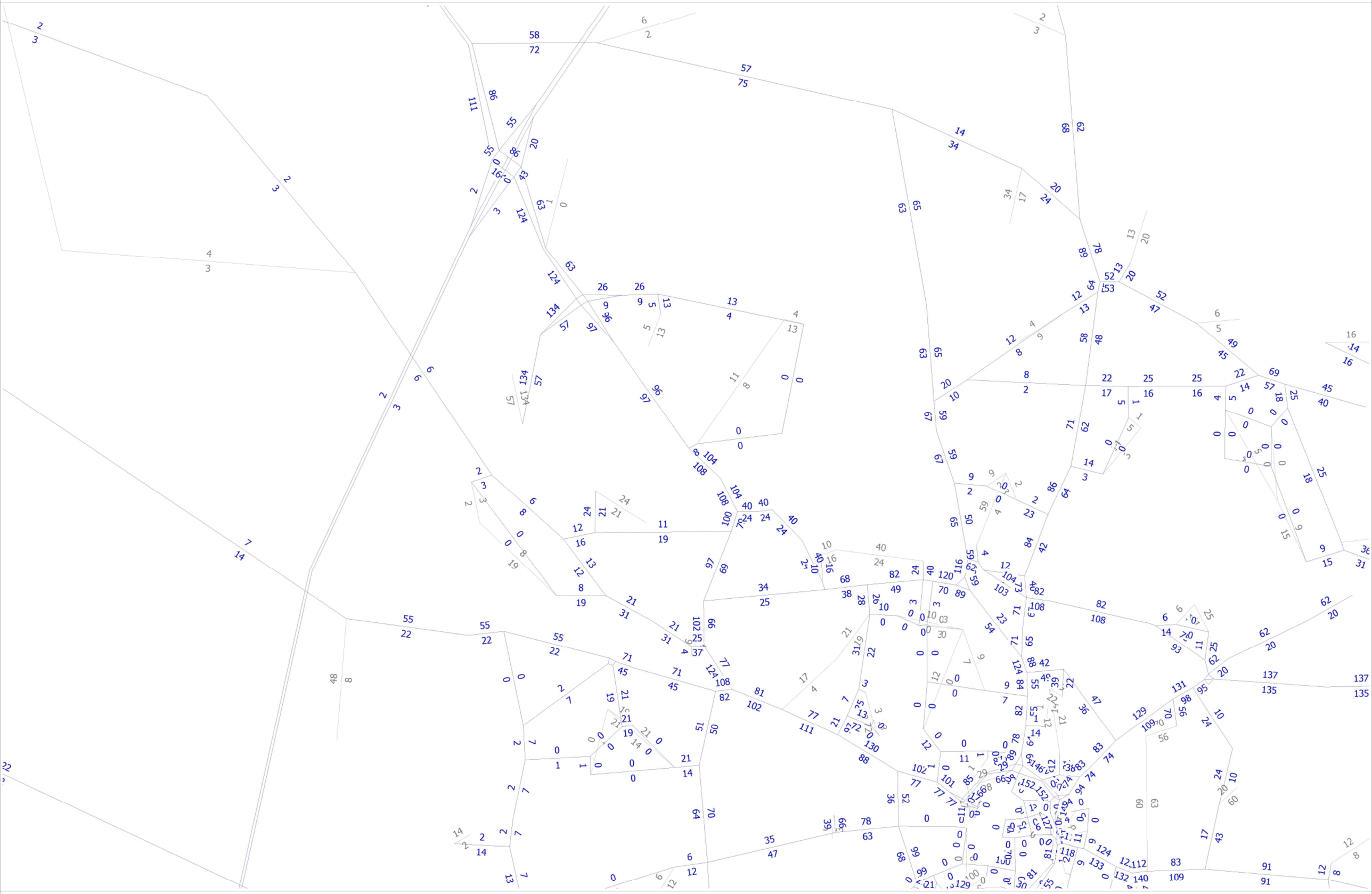
Darlington Local Plan Development Flows
2020 AM
South East



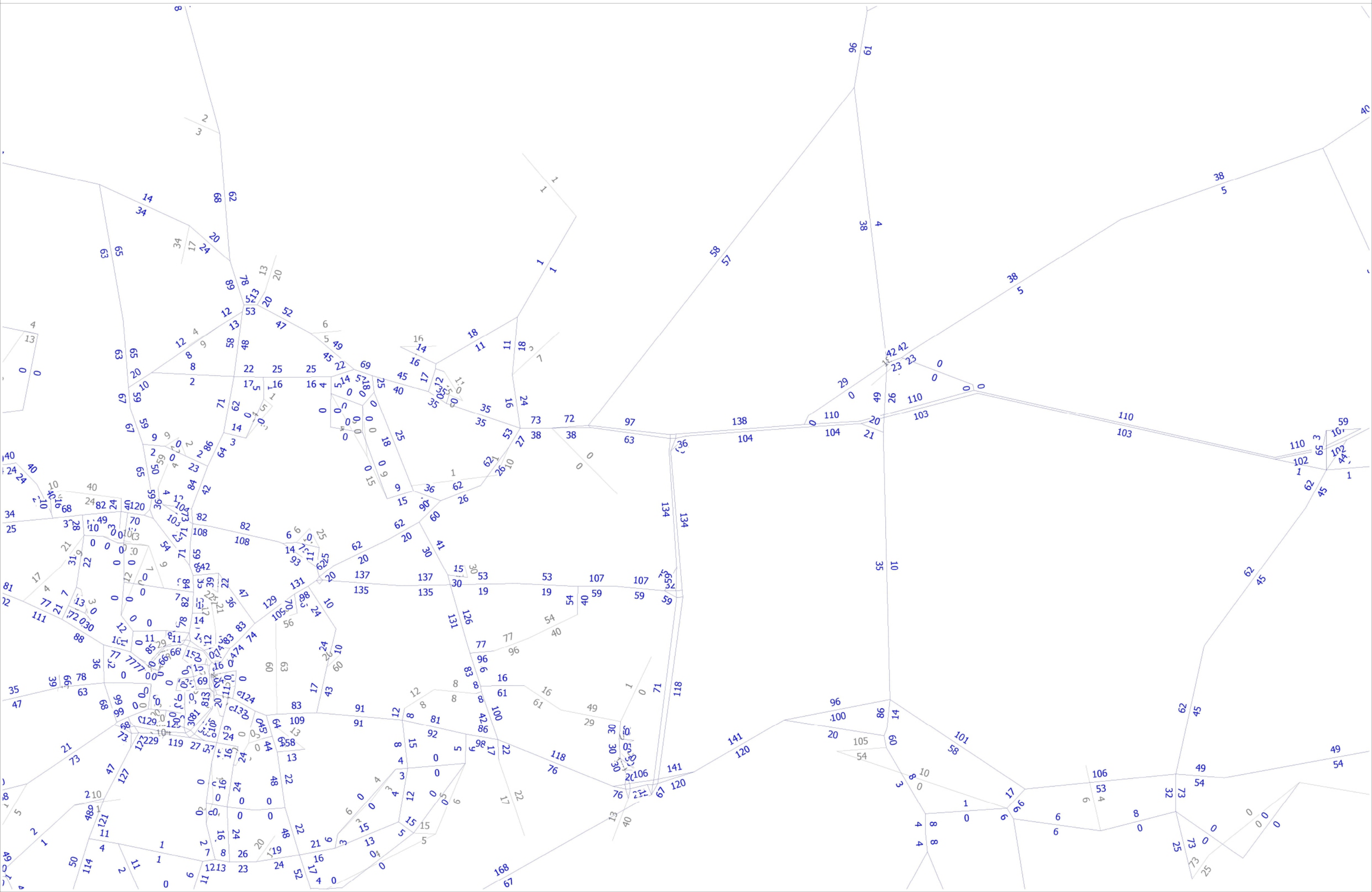
Darlington Local Plan Development Flows
2020 AM
South West



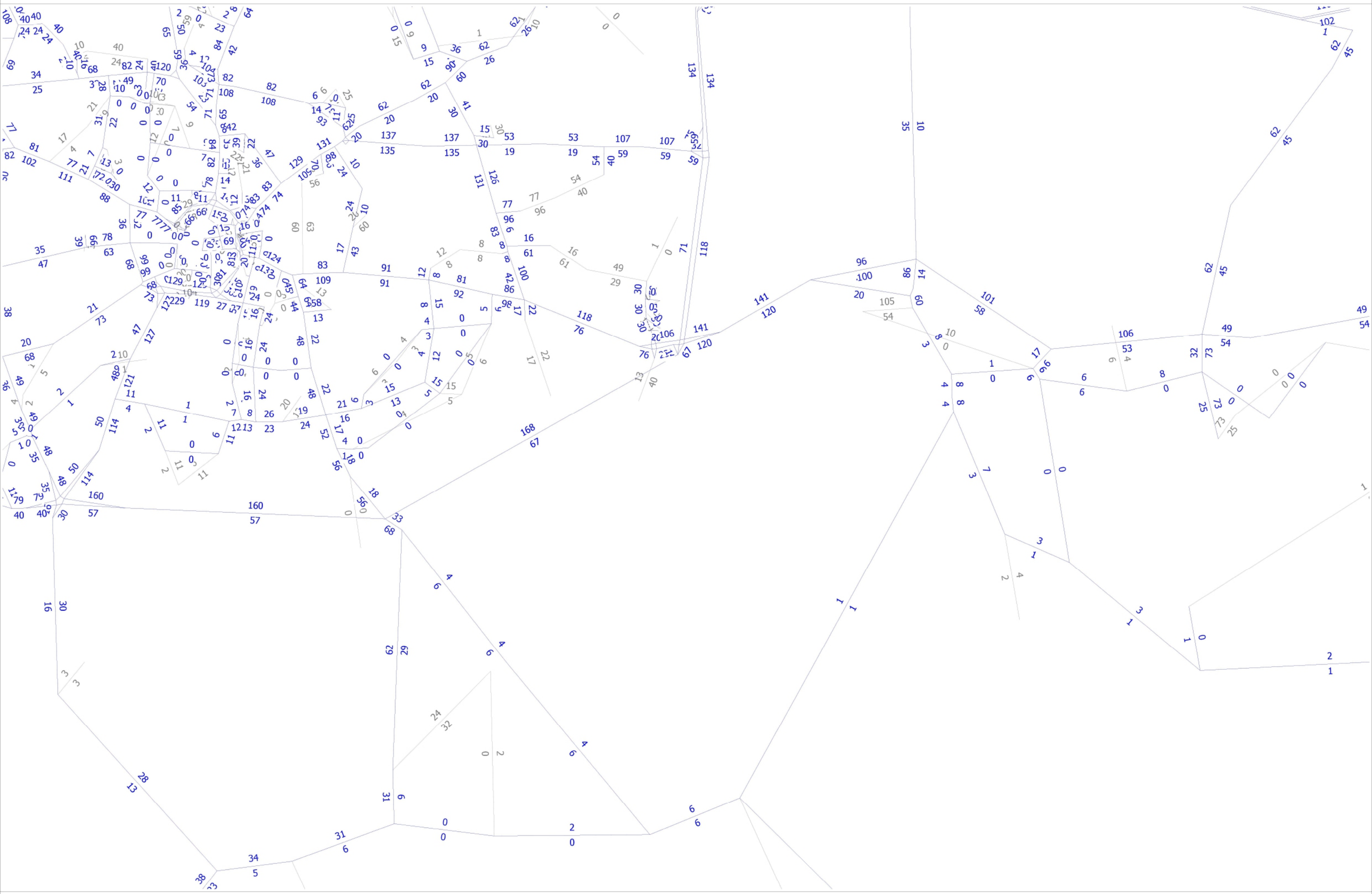
Darlington Local Plan Development Flows
2020 PM
North West



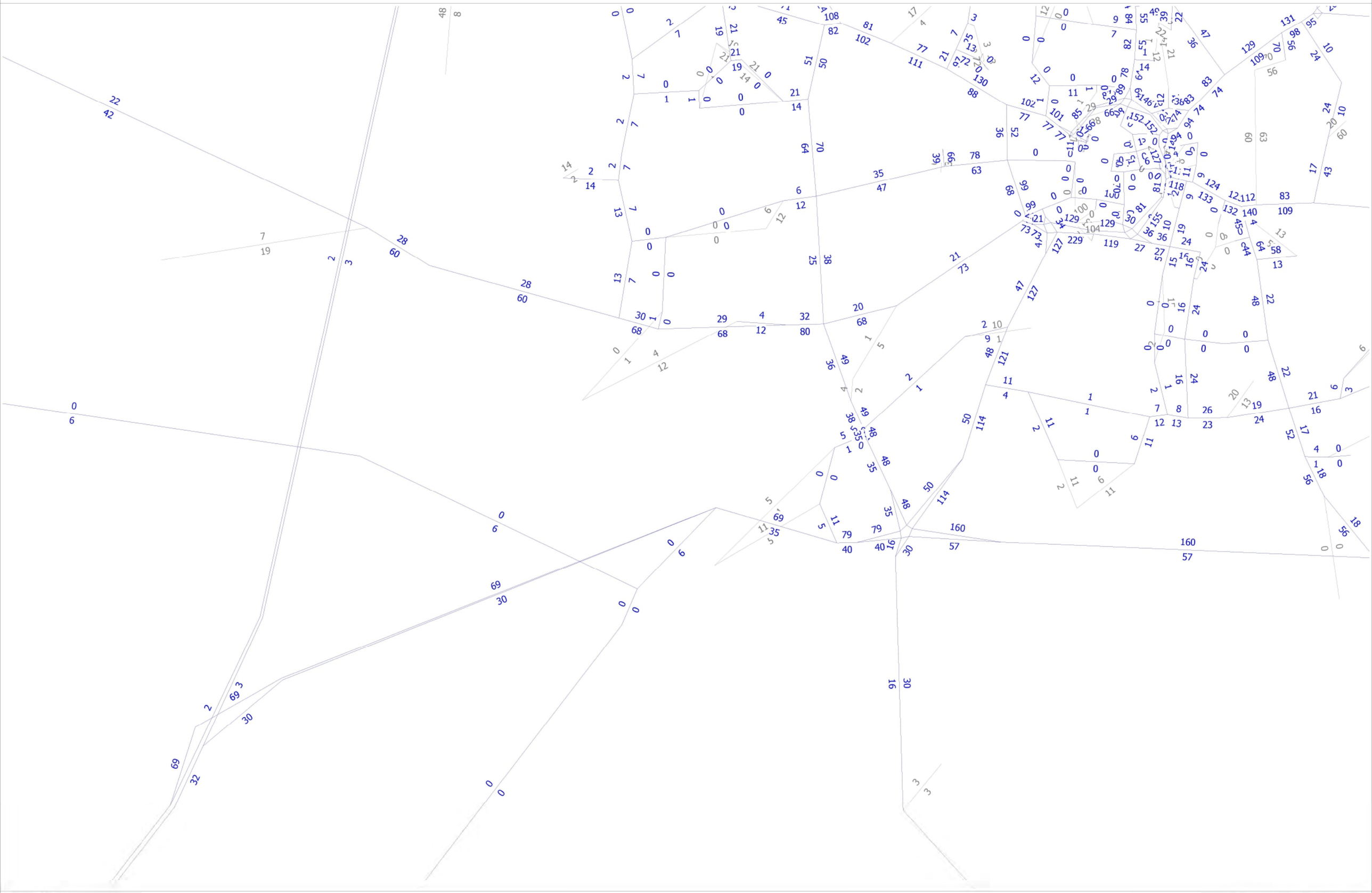
Darlington Local Plan Development Flows
2020 PM
North East



Darlington Local Plan Development Flows
2020 PM
South East

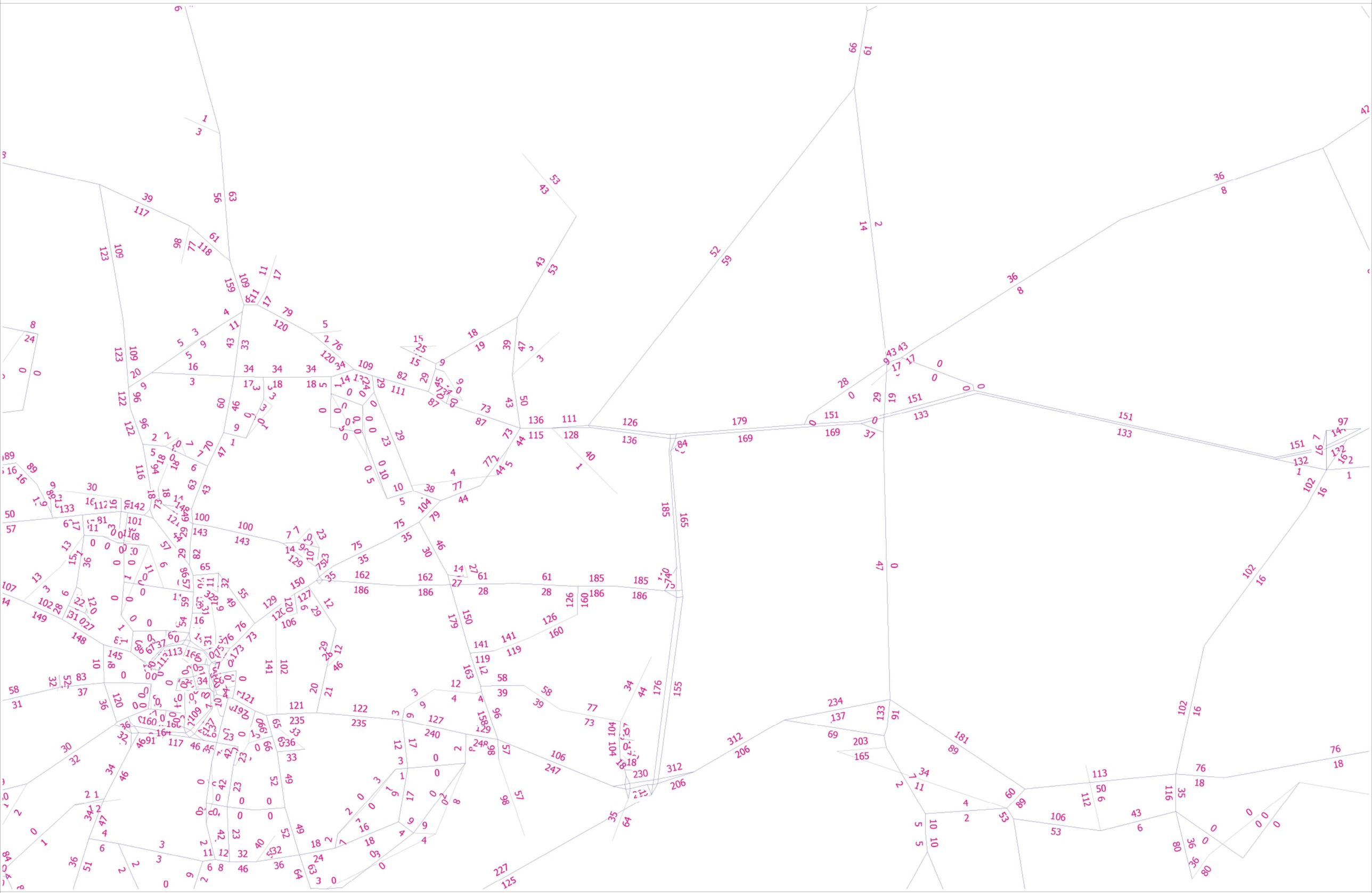


Darlington Local Plan Development Flows
2020 PM
South West

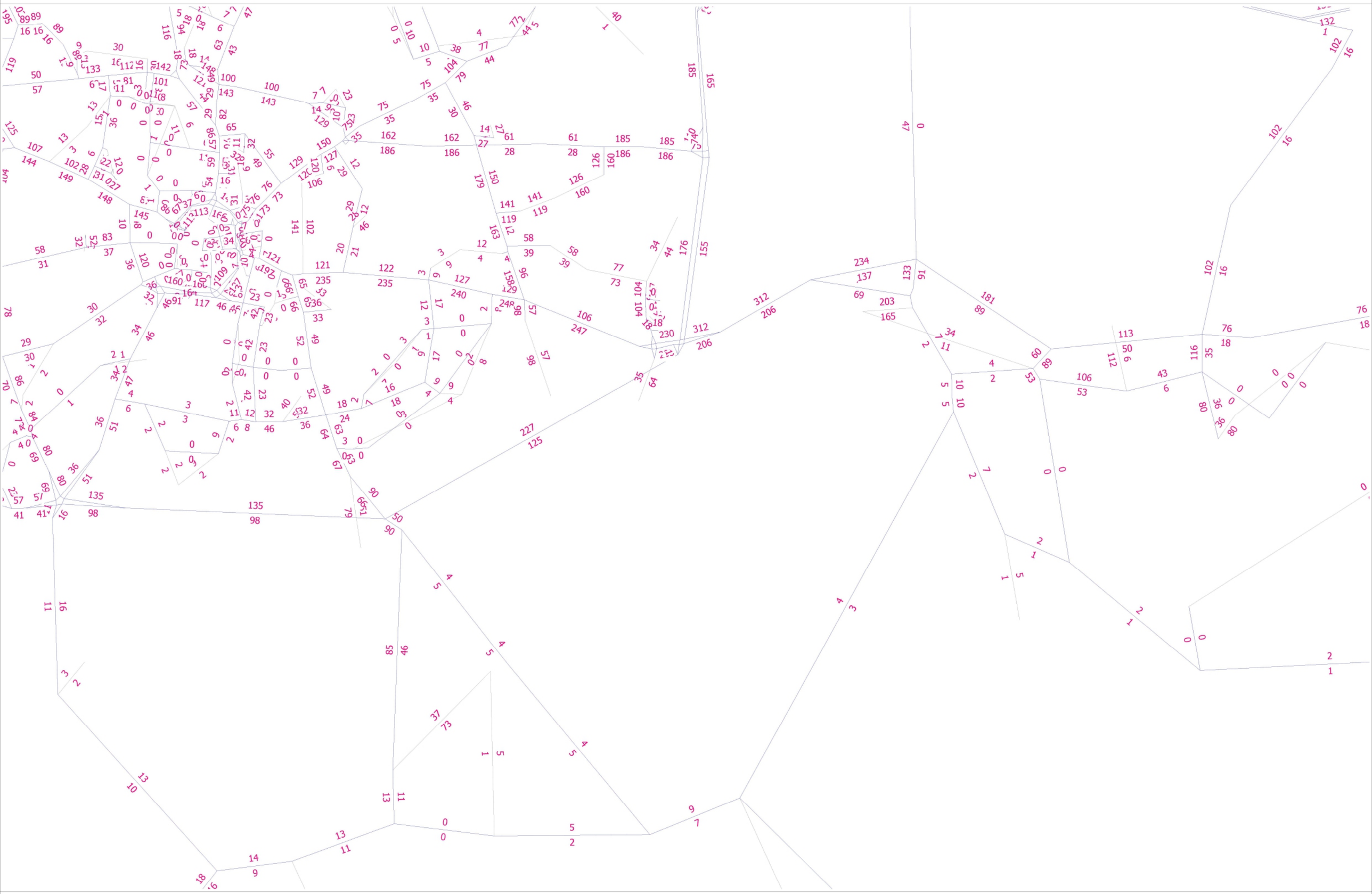


Darlington Local Plan Development Flows
2025 AM
North West

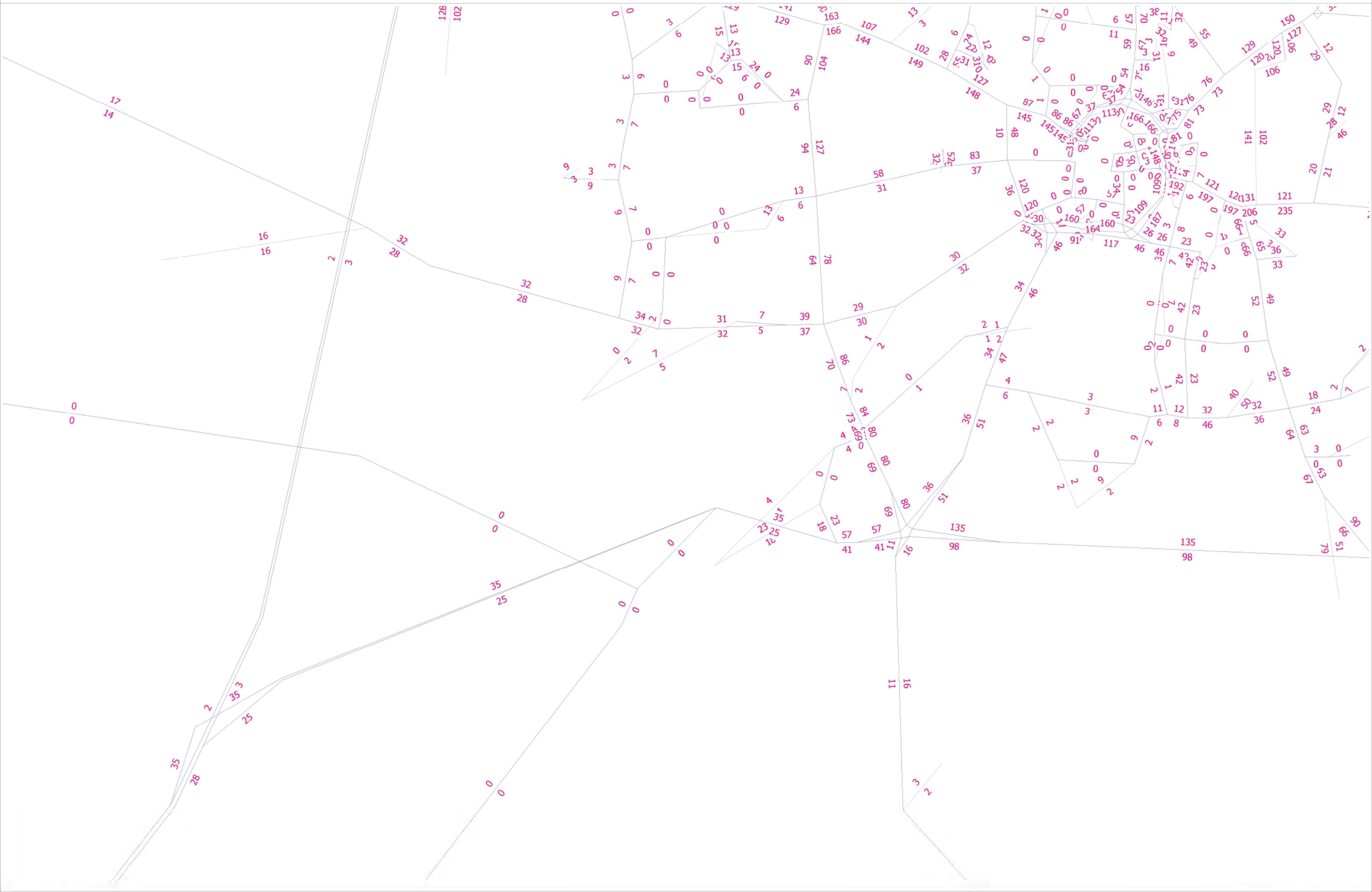
Darlington Local Plan Development Flows
2025 AM
North East



Darlington Local Plan Development Flows
2025 AM
South East

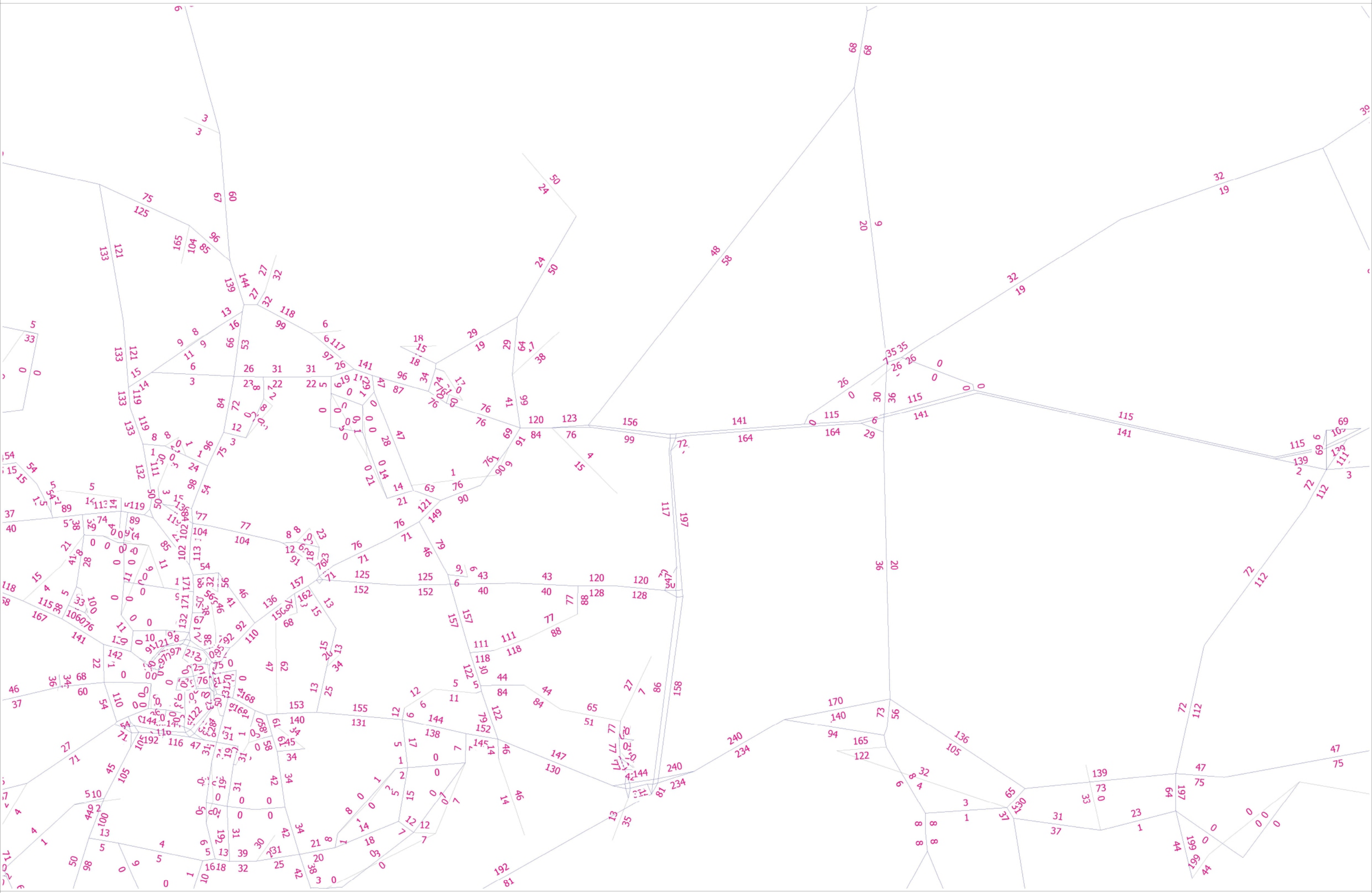


Darlington Local Plan Development Flows
2025 AM
South West

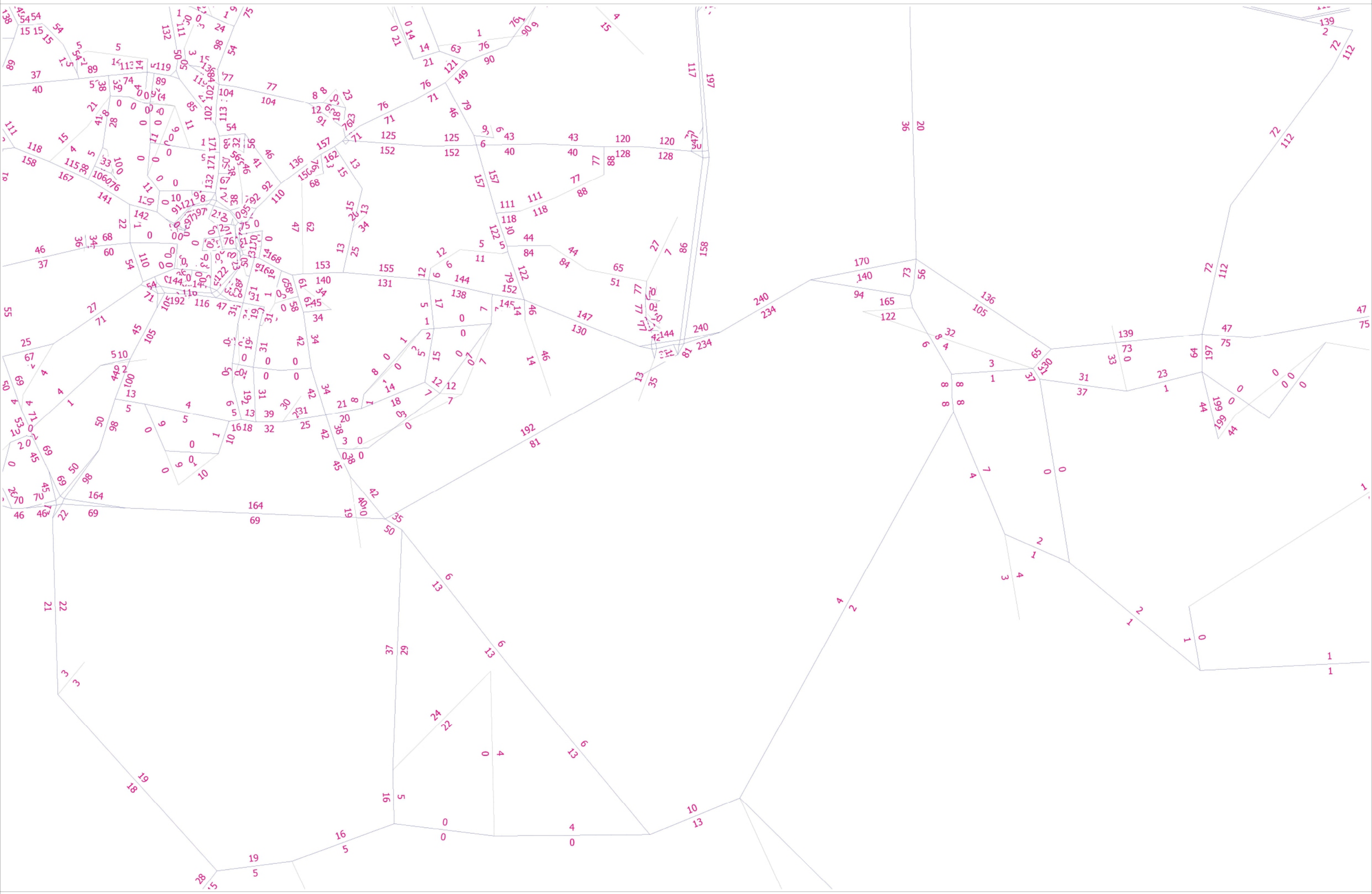


Darlington Local Plan Development Flows
2025 PM
North West

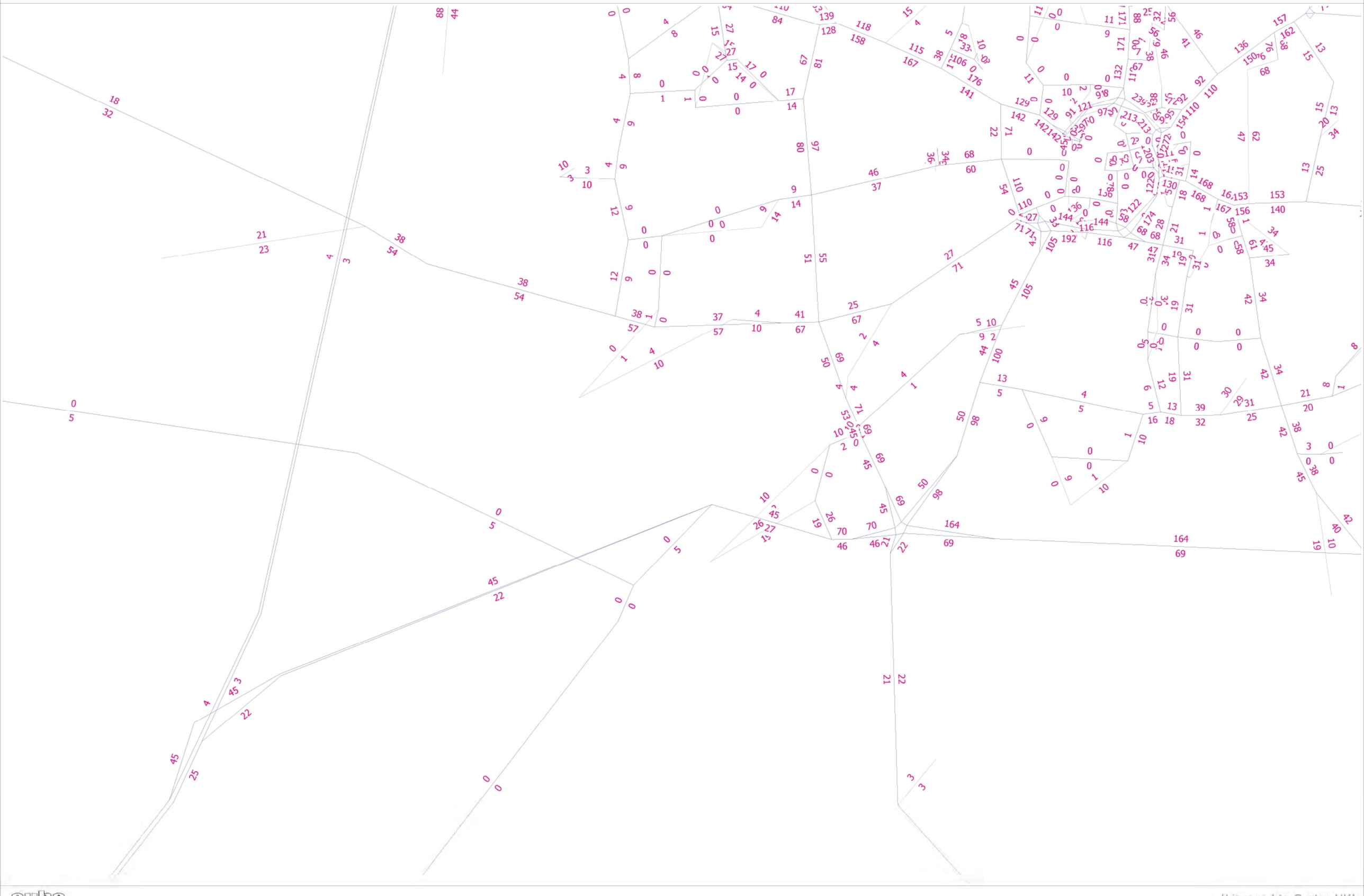
Darlington Local Plan Development Flows
2025 PM
North East



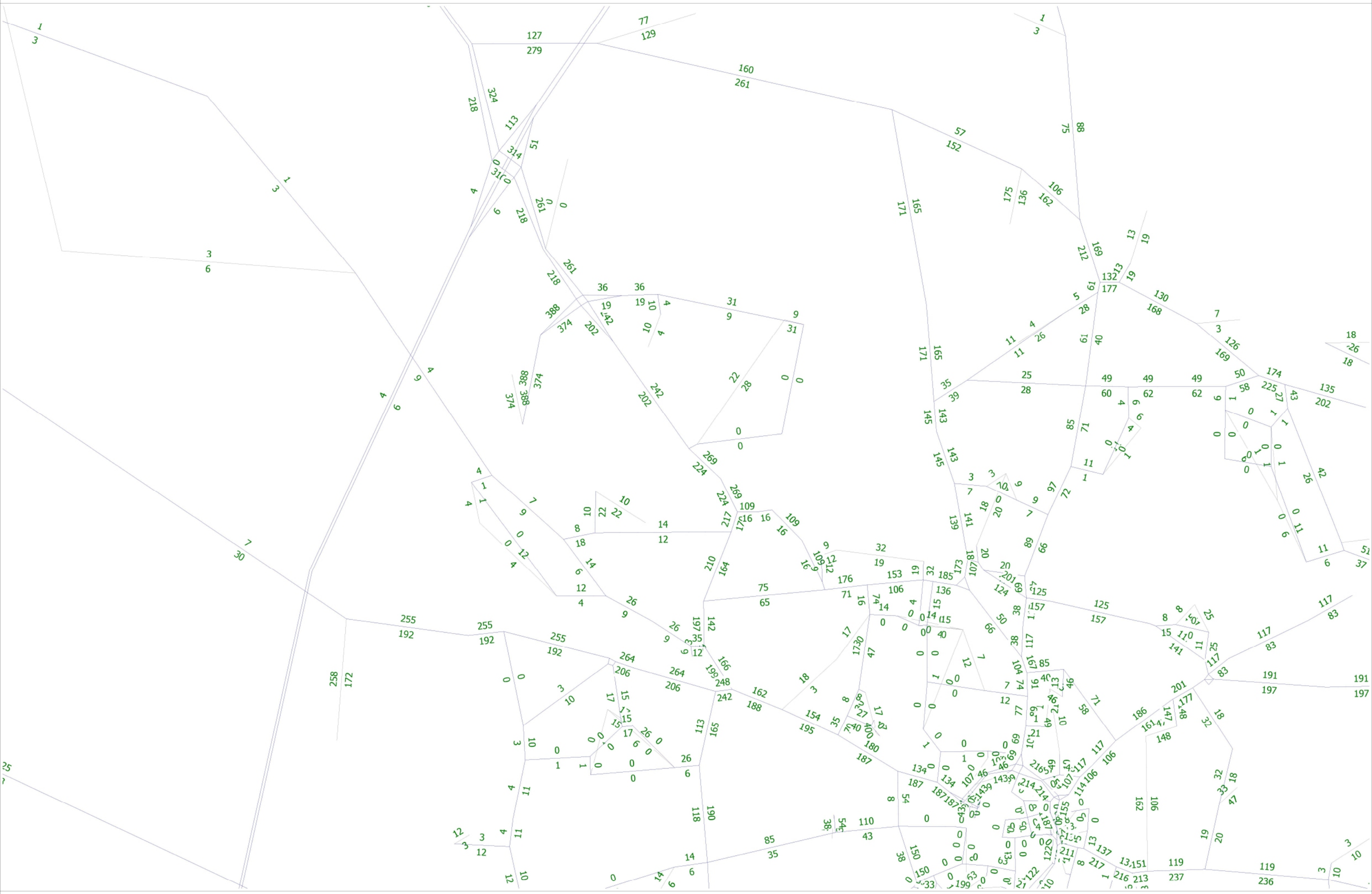
Darlington Local Plan Development Flows
2025 PM
South East



Darlington Local Plan Development Flows
2025 PM
South West



Darlington Local Plan Development Flows
2030 AM
North West



Darlington Local Plan Development Flows
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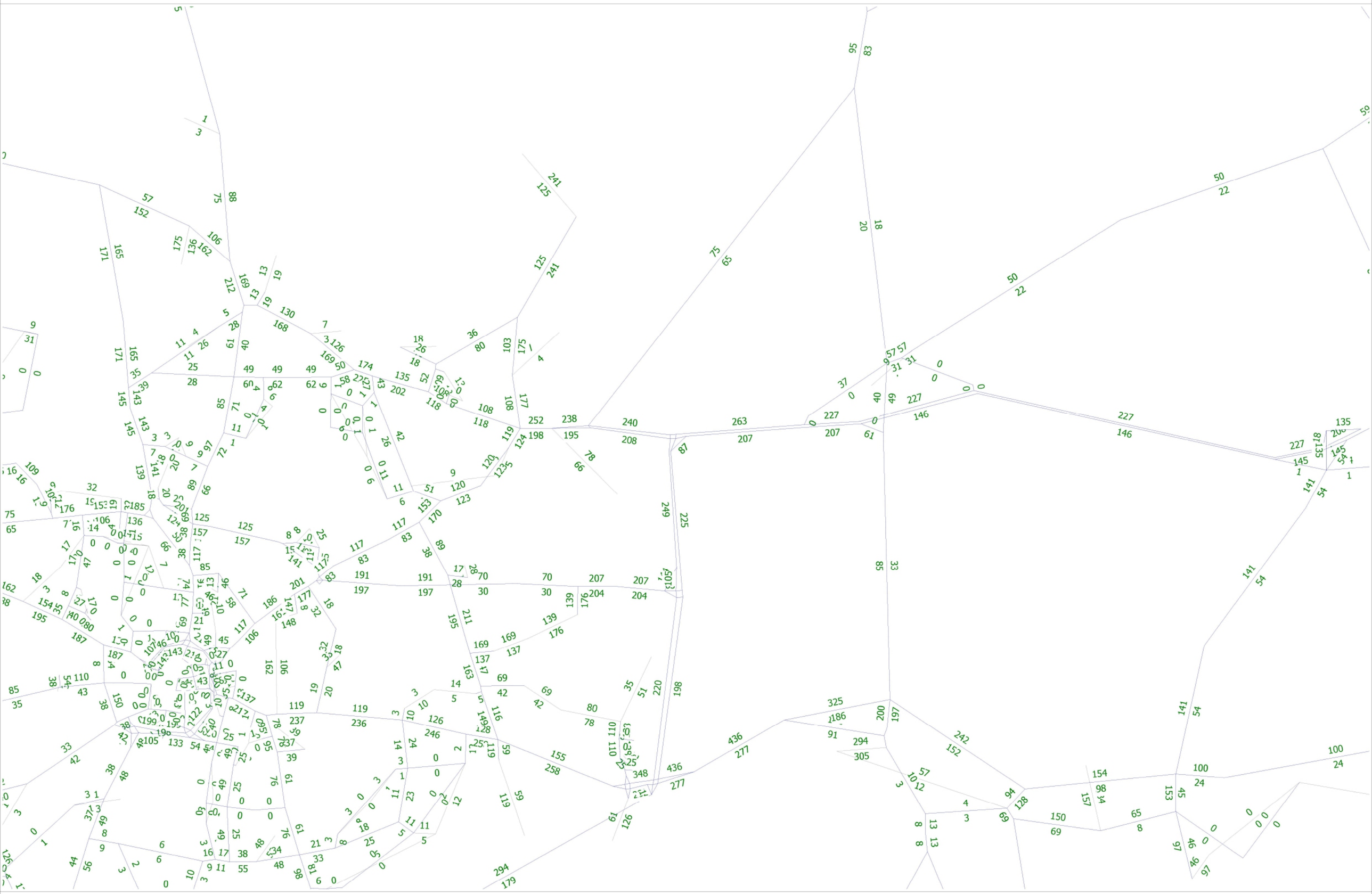
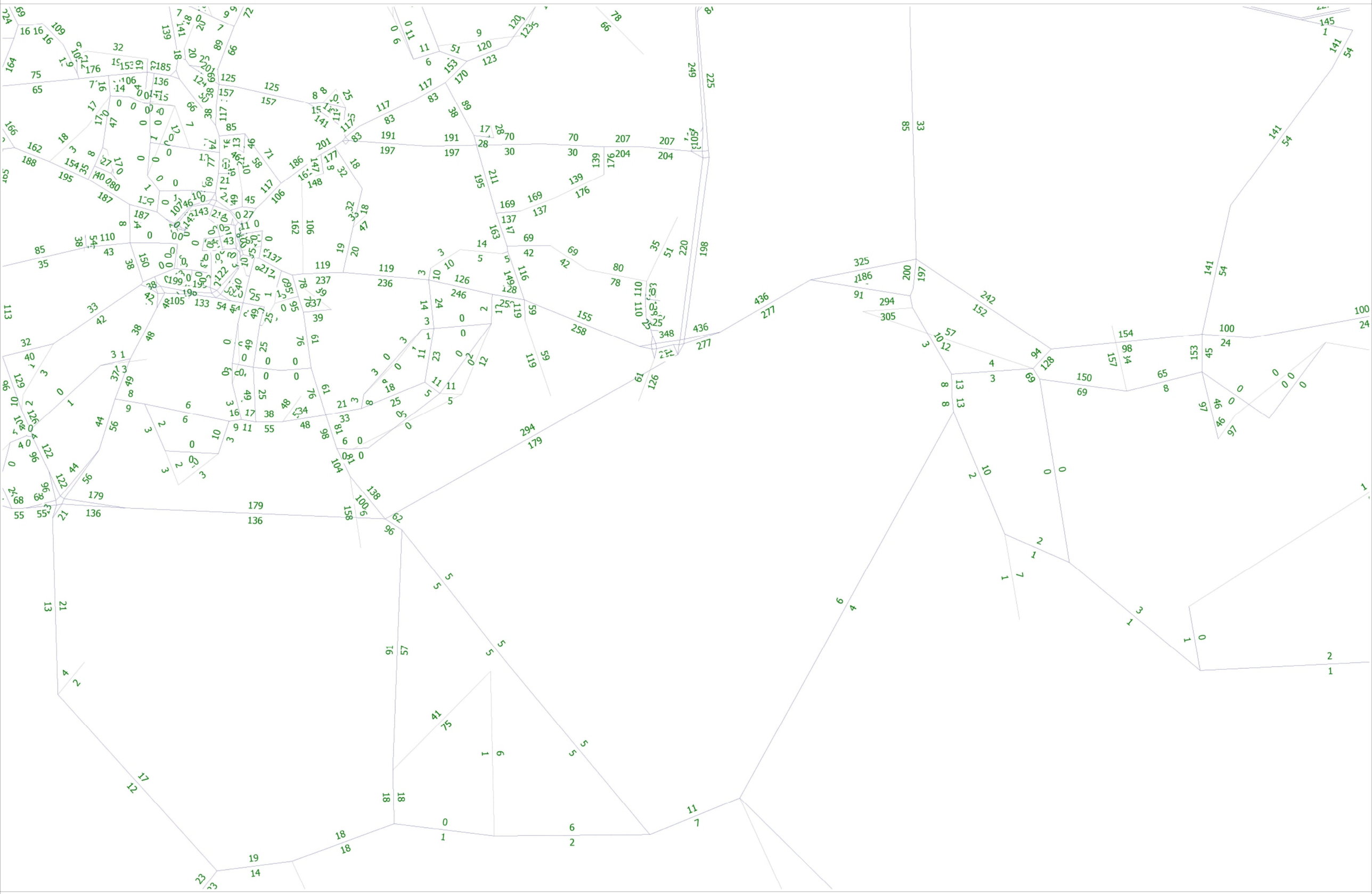
North East



Darlington Local Plan Development Flows
2030 AM
South East



Darlington Local Plan Development Flows
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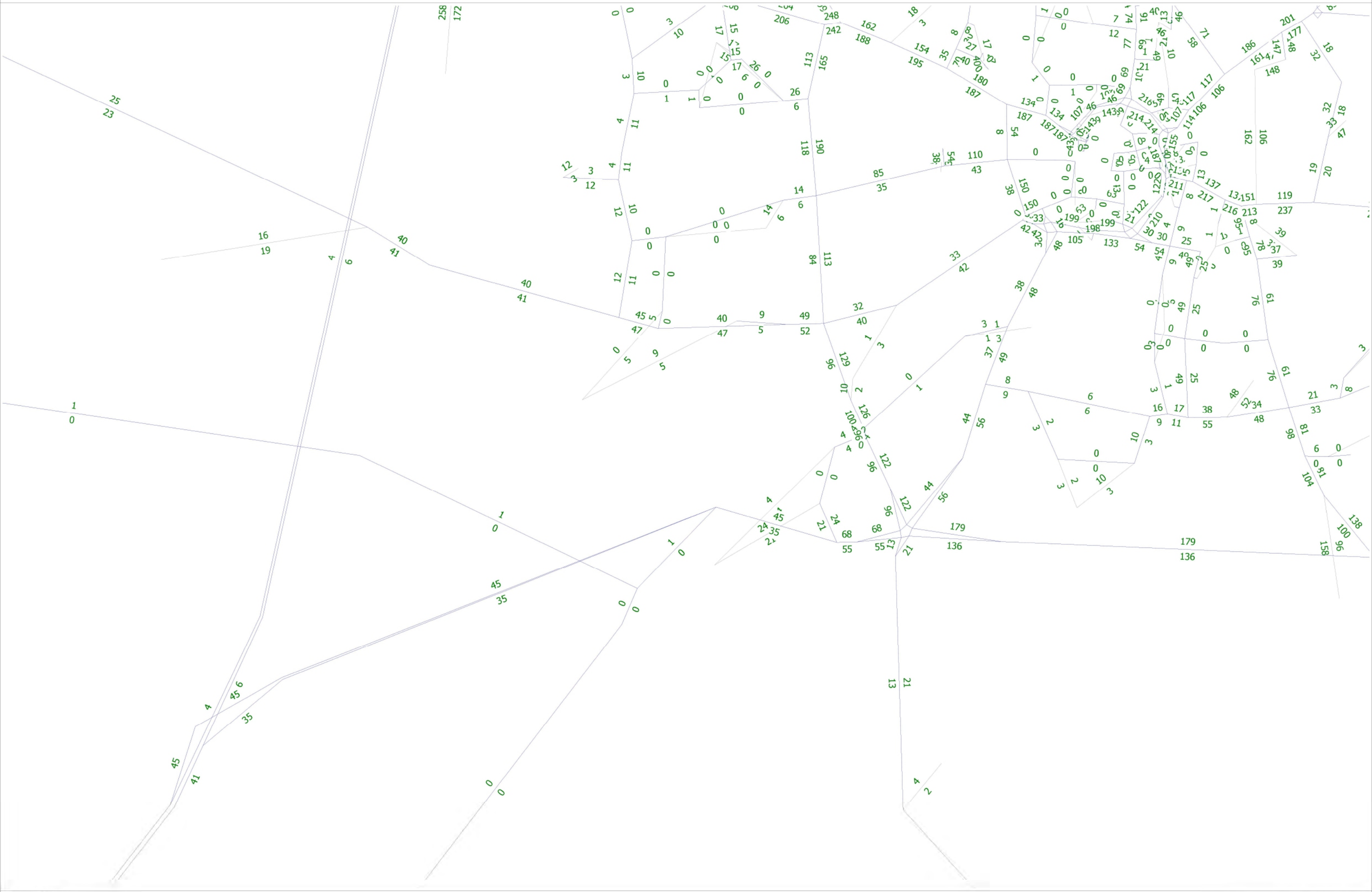
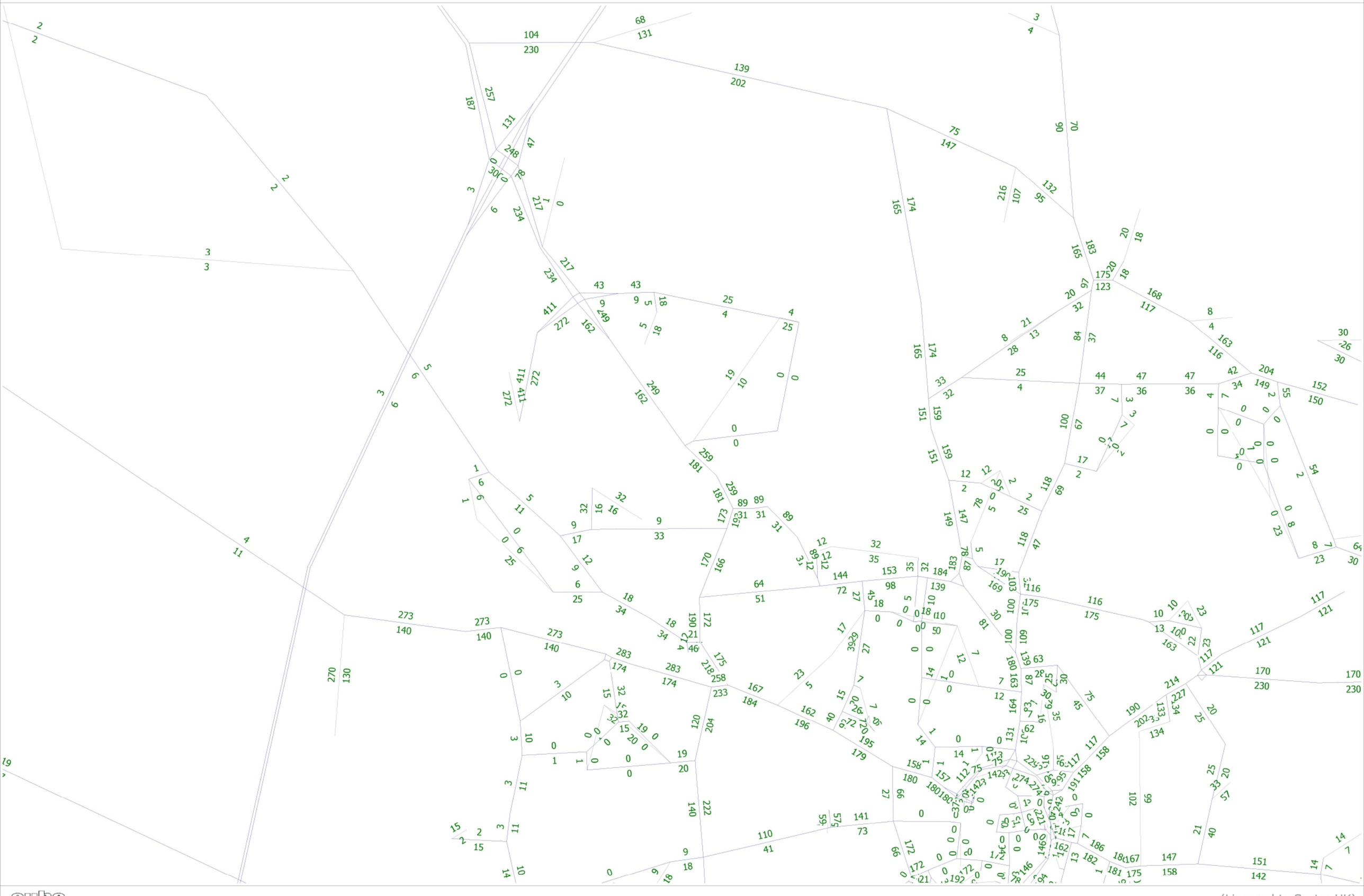
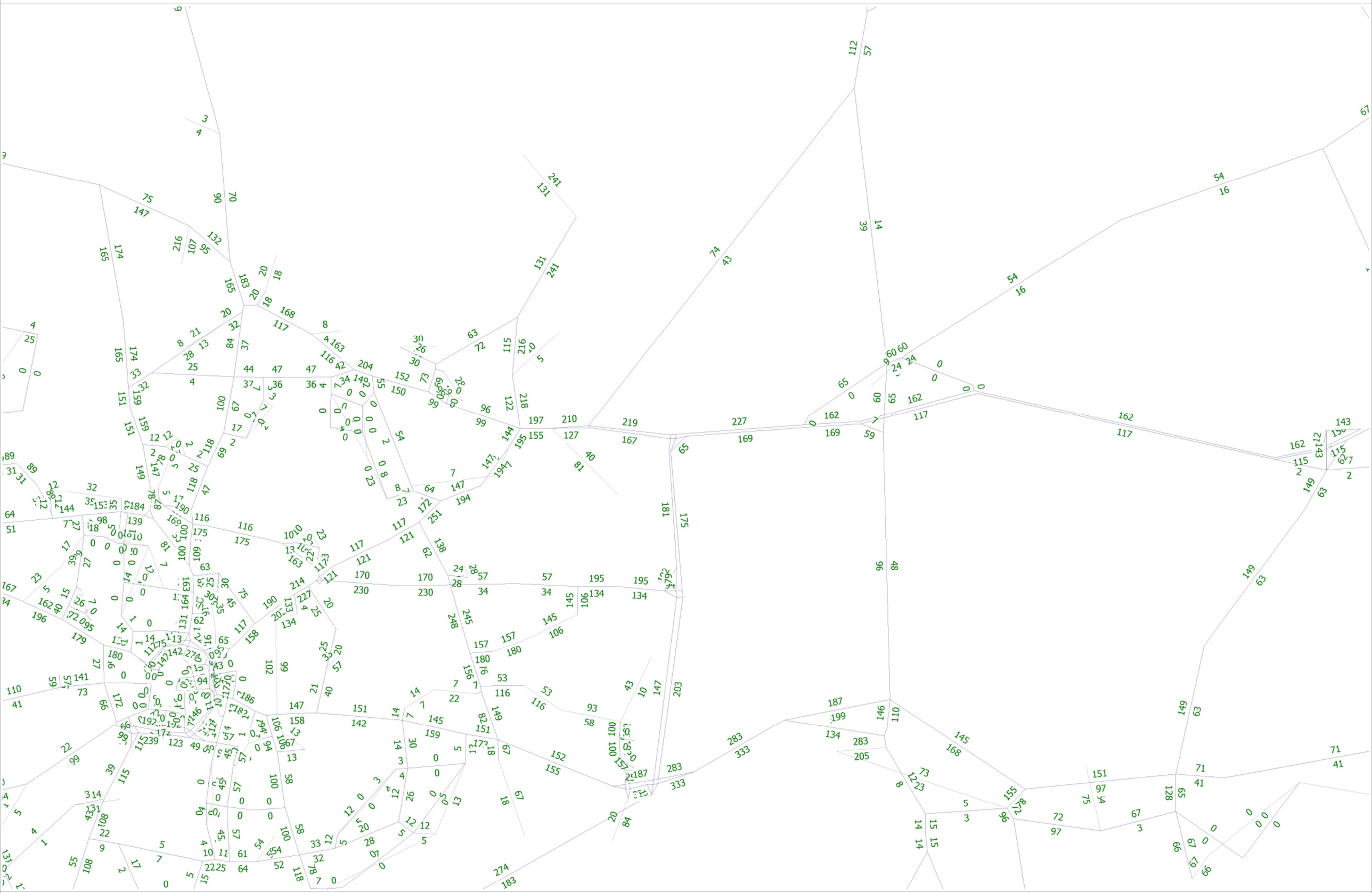


Darlington Local Plan Development Flows
2030 PM
North West



Darlington Local Plan Development Flows
2030 PM
North East



Darlington Local Plan Development Flows
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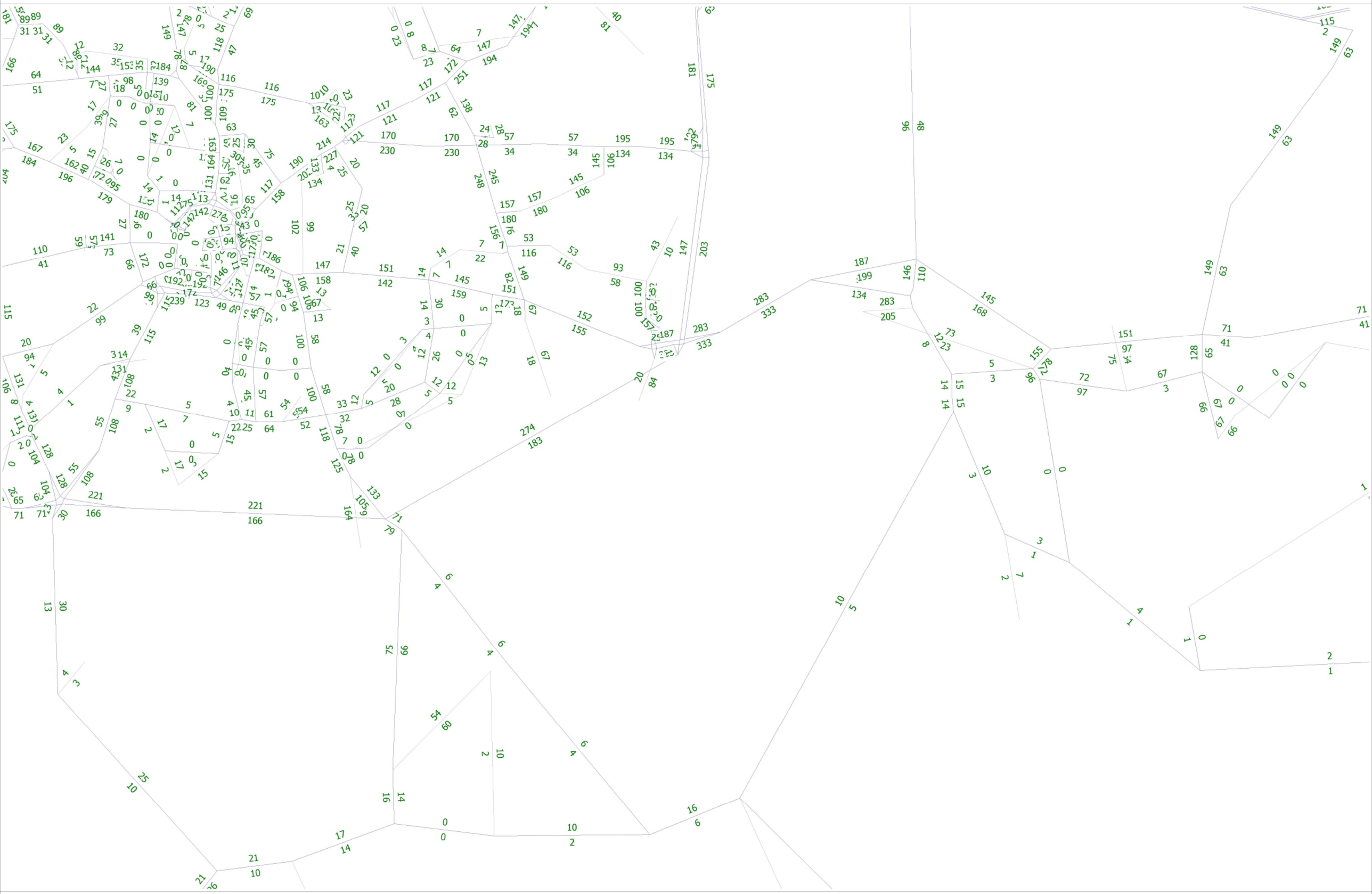
South East



Darlington Local Plan Development Flows
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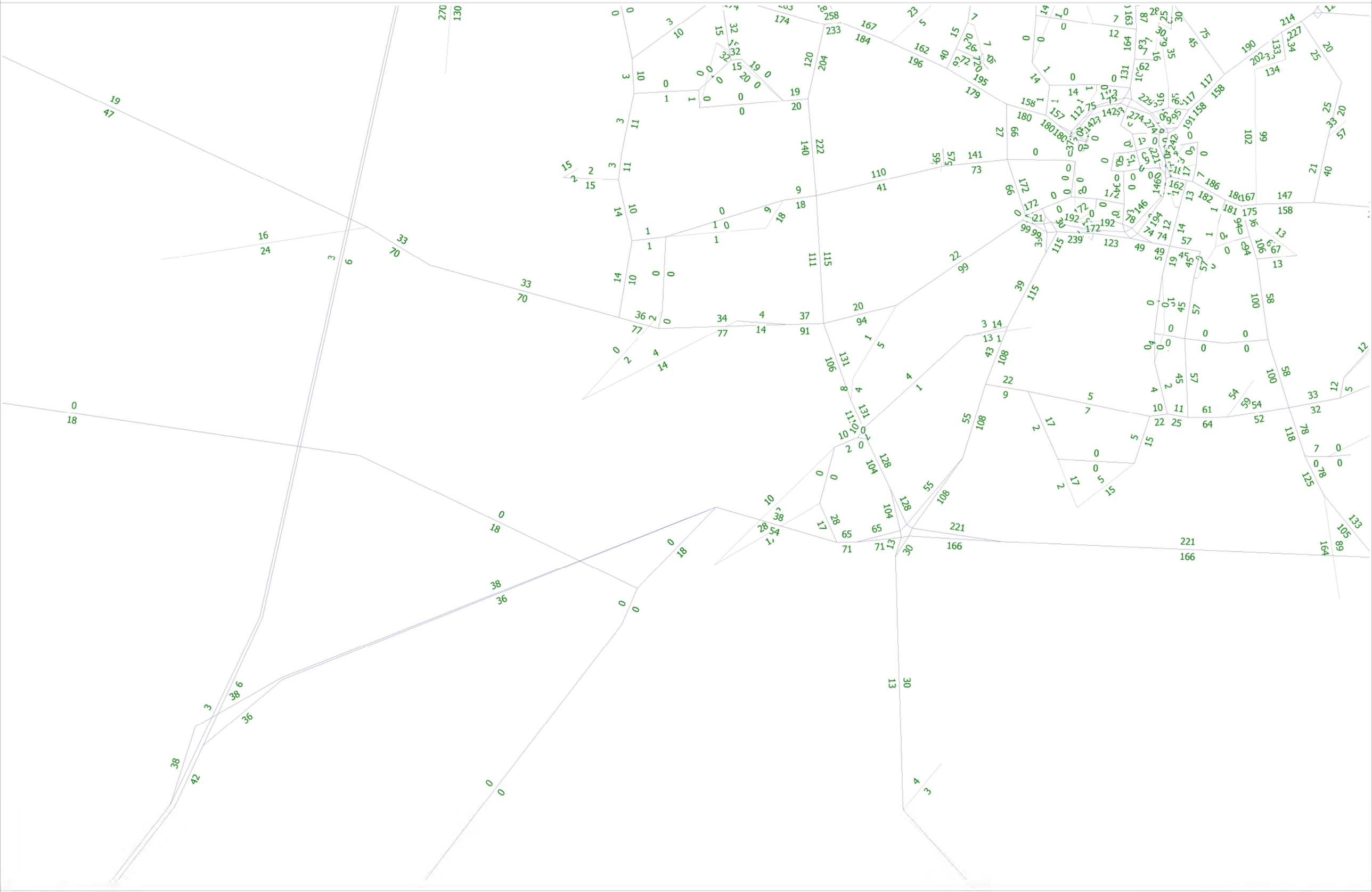
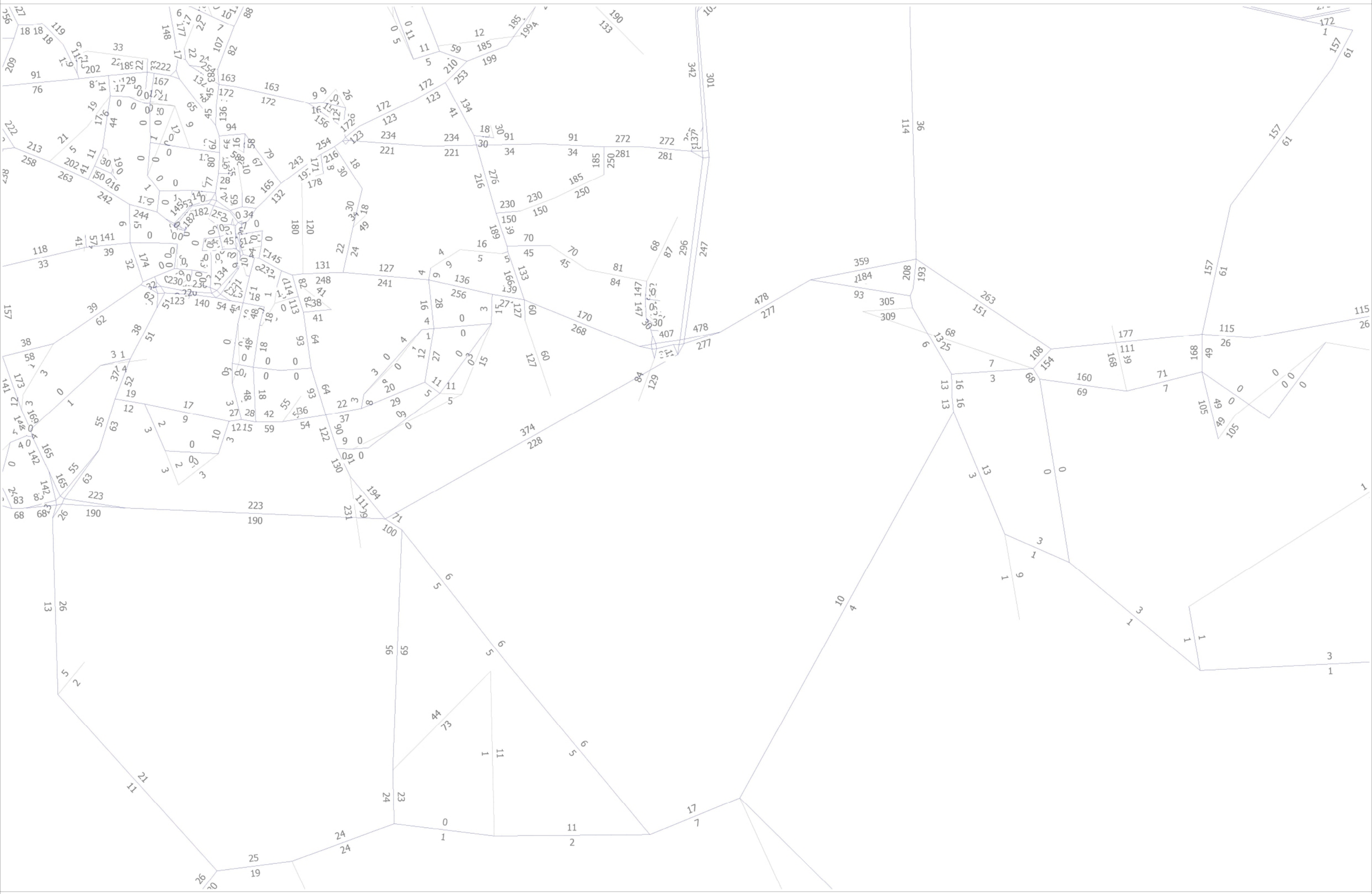
South West



Darlington Local Plan Development Flows
2035 AM
North West

Darlington Local Plan Development Flows
2035 AM
North East

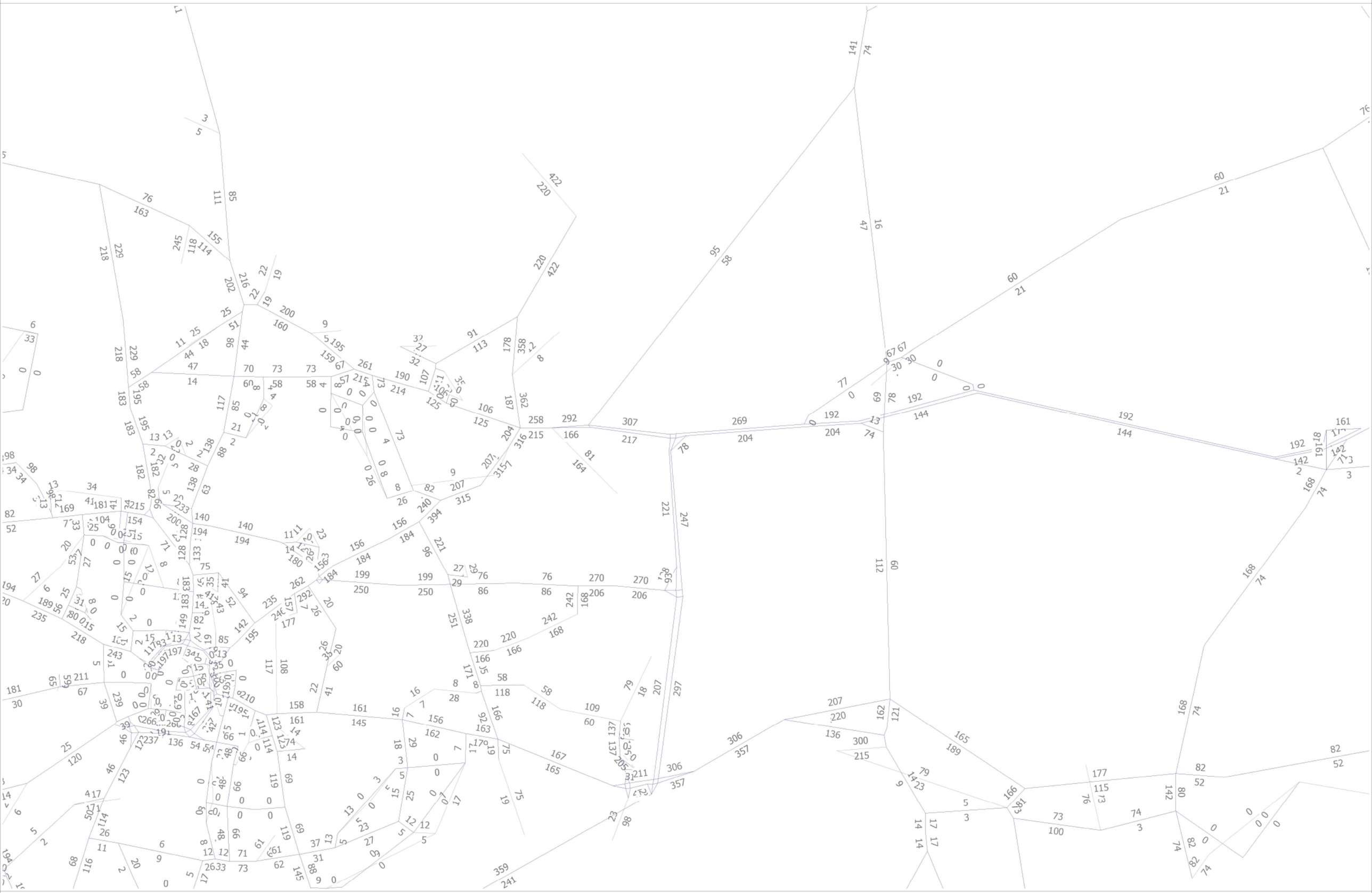
Darlington Local Plan Development Flows
2035 AM
South East



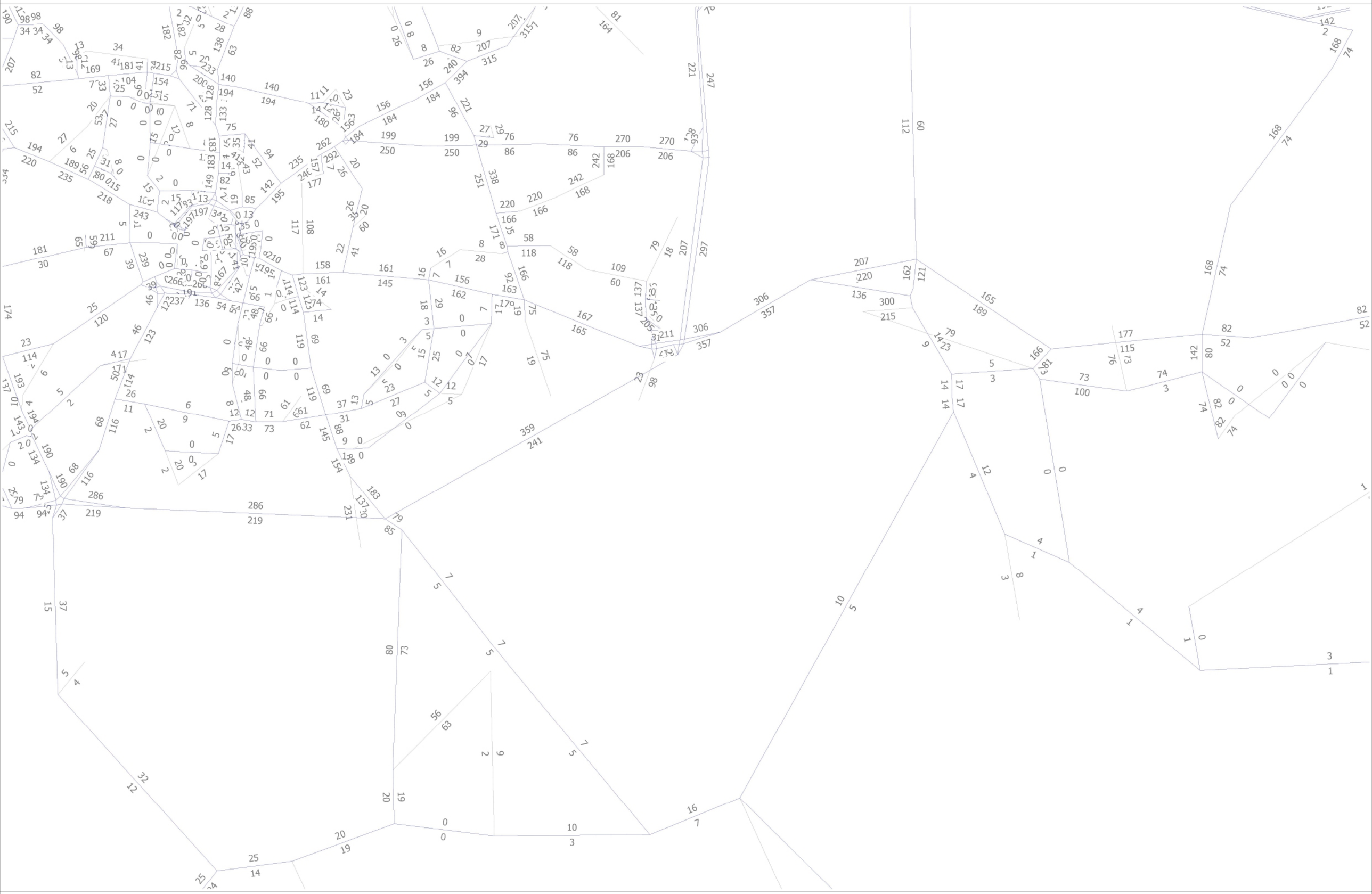
Darlington Local Plan Development Flows
2035 AM
South West

Darlington Local Plan Development Flows
2035 PM
North West

Darlington Local Plan Development Flows
2035 PM
North East



Darlington Local Plan Development Flows
2035 PM
South East



Darlington Local Plan Development Flows
2035 PM
South West

Appendix C

MITIGATION CODING NOTE

TECHNICAL NOTE

DARLINGTON LOCAL PLAN - SCHEME MITIGATION

FINAL NOTE

IDENTIFICATION TABLE	
Client/Project owner	Darlington Borough Council
Project	Darlington Local Plan - Scheme Mitigation
Title of Document	Final note
Type of Document	Technical Note
Date	18/03/2019
Reference number	104876/01/001
Number of pages	14

TABLE OF CONTENTS

1. SCHEME MITIGATION

1.1 2020 Do Something

1.1.1 This section provides an overview of the scheme mitigation packages modelled in the 2020 Do Something forecast year. The following scheme have been included:

- E1 Haughton Road Through-about Improvements;
- E2 McMullen Road DETC Junction Improvements;
- E3 Lingfield Way to DETC Link Road;
- E4 McMullen Road / Yarm Road Roundabout;
- E5 Lingfield Way Traffic Signal Control Junction;
- E6 A66 Morton Palms Roundabout Improvements;
- E7 Ingenium Parc Phase 1;
- NW1 A68 / Rotary Way Roundabout Improvements;
- NW2 West Park / Newton Lane Link Road;
- NW3 Cockerton Roundabout Improvements;
- NW4 Woodland Road Roundabout Improvements; and
- C1 Central Park Link Road.

E1 Haughton Road Through-about Improvements

1.1.2 Amendments include the removal of through-about section of the existing roundabout; and a dedicated entry/exit link node for Haughton Road North.

1.1.3 As per the image provided of the new scheme, signalised junctions have been removed from the roundabout and replaced with roundabout specific coding. Figure 1 below illustrates one of approach parameters modelled. Measurements have been taken from imagery provided. No changes have been made to the link parameters associated with the circulatory carriageway.

```
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  GAPACCEPTANCE = 0,
  APPROACH = 1589,
    CAPACITYINTERCE = 9000.00,
    CAPACITYSLOPE = 1.00,
    RANDOMNESS = 1.00,
  APPROACH = 1598,
    RANDOMNESS = 1.00,
    APPROACHWIDTH = 3.30,
    ENTRYWIDTH = 7.90,
    FLARELENGTH = 12.00,
    INSCRIBEDDIAMET = 68.00,
  APPROACH = 1592,
    EXITONLY = 1
```

Figure 1. Example of Roundabout Parameters

E2 McMullen Road DETC Junction Improvements

1.1.4 An additional lane for through movements on the DETC approaches has been modelled as part of the node junction coding.

E3 Lingfield Way to DETC Link Road

1.1.5 Amendments include the provision of a new link road that allows Lingfield Close to join with B6279. A new signalised is modelled, timings have been duplicated from the signalised junction further to the west, signal settings are illustrated below in figure_.

1.1.6 The new link road has the following attributes:

- Link Type = 6;
- Cap Index = 18; and
- Capacity = 2,500.

```
JUNCTION,
  NODE = 1692,
  TYPE = FixedTimeSignal,
  APPROACH1 = 1715,
  LANEADJUST = 0,
  CYCLETIME = 90.00,
  PHASE = 1,
    ACTUALGREEN = 35.00,
  PHASE = 2,
    ACTUALGREEN = 8.00,
  PHASE = 3,
    ACTUALGREEN = 11.00,
  PHASE = 4,
    ACTUALGREEN =  8.00,
  APPROACH = 1715,
    RANDOMNESS = 1.00,
    MOVEMENT = Left,
      PHASES = 1,
    MOVEMENT = Through,
      CANSHARELEFT = 1
      CANSHARERIGHT = 1
      PHASES = 1,
    MOVEMENT = Right,
      PHASES = 12,
  APPROACH = 4606,
    RANDOMNESS = 1.00,
    MOVEMENT = Left,
      PHASES = 3,
    MOVEMENT = Through,
      CANSHARELEFT = 1
      CANSHARERIGHT = 1
      PHASES = 3,
    MOVEMENT = Right,
      PHASES = 34,
  APPROACH = 1688,
    RANDOMNESS = 1.00,
    MOVEMENT = Left,
      PHASES = 1,
    MOVEMENT = Through,
      PHASES = 1,
      CANSHARELEFT = 1
      CANSHARERIGHT = 1
    MOVEMENT = Right,
      PHASES = 12,
  APPROACH = 4607,
    RANDOMNESS = 1.00,
    MOVEMENT = Left,
      PHASES = 3,
    MOVEMENT = Through,
      CANSHARELEFT = 1
      CANSHARERIGHT = 1
      PHASES = 3,
    MOVEMENT = Right,
      PHASES = 34,
```

Figure 2. Lingfield Way to DETC Link Road

E4 McMullen Road / Yam Road Roundabout

1.1.7 The existing roundabout has been expanded with the following changes modelled for all approaches:

- APPROACHWIDTH = 7.20, was 3.60
- ENTRYWIDTH = 9.60, was 3.60
- FLARELENGTH = 10.00, was 32.00
- INSCRIBEDDIAMET = 70.00, was 65.00

E5 Lingfield Way Traffic Signal Control Junction

1.1.8 A new fixed time signalised junction has been modelled with a new approach representing Lingfield Way. Signal timings from a VISSIM model have been incorporated into the modelling. A centroid connector has been modelled to zone 313 (representing ___), this is based on coding from other Zone 313 centroids.

1.1.9 The new link road has the following attributes:

- Link Type = 16;
- Cap Index = 27; and
- Capacity = 1,000.

E6 A66 Morton Palms Roundabout Improvements

1.1.10 The circulating capacity of the roundabout has been increased from 2,720 to 4,800, no other changes have been made to the node parameters.

E7 Ingenium Parc Phase 1

1.1.11 A new link has been modelled extending to the south. Due to the zone connectivity and network coverage in the immediate area, there will be little change in modelled flows until the scheme mitigation measures present in 2025 and 2030 are included.

1.1.12 The new link road has the following attributes:

- Link Type = 6;
- Cap Index = 27; and
- Capacity = 1,000.

NW1 A68 / Rotary Way Roundabout Improvements

1.1.13 The circulating capacity of the roundabout has been increased from 2,720 to 4,800, no other changes have been made to the node parameters

NW2 West Park / Newton Lane Link Road

1.1.14 A new link road has been modelled between West Park and Newton Lane. Based on existing link parameters Edward Pease Way, connectivity has been extended via a new roundabout on Newton Lane. Figure _ below illustrates the roundabout coding.

```
JUNCTION,
  NODE = 4625,
  TYPE = Roundabout,
  APPROACH1 = 1199,
  GAPACCEPTANCE = 0,
  APPROACH = 1199,
    RANDOMNESS = 1.00,
    APPROACHWIDTH = 6.00,
    ENTRYWIDTH = 9.50,
    FLARELENGTH = 15.00,
    INSCRIBEDDIAMET = 50.00,
  APPROACH = 1231,
    RANDOMNESS = 1.00,
    APPROACHWIDTH = 6.00,
    ENTRYWIDTH = 9.50,
    FLARELENGTH = 15.00,
    INSCRIBEDDIAMET = 50.00,
  APPROACH = 1220,
    RANDOMNESS = 1.00,
    APPROACHWIDTH = 6.00,
    ENTRYWIDTH = 9.50,
    FLARELENGTH = 15.00,
    INSCRIBEDDIAMET = 50.00
```

Figure 3. West Park / Newton Lane Link Road Roundabout

1.1.15 The new link road has the following attributes:

- Link Type = 16;
- Cap Index = 27; and
- Capacity = 1,000.

NW3 Cockerton Roundabout Improvements

1.1.16 The existing roundabout has been expanded with the following changes modelled for all approaches:

- APPROACHWIDTH = 5.00, was 3.60
- ENTRYWIDTH = 6.50, was 3.60
- FLARELENGTH = 15.00, was 5.00
- INSCRIBEDDIAMET = 25.00, was 15.00

NW4 Woodland Road Roundabout Improvements

1.1.17 The existing roundabout has been expanded with the following changes modelled for all approaches:

- APPROACHWIDTH = 5.00, was 3.60
- ENTRYWIDTH = 7.50, was 6.50
- FLARELENGTH = 15.00, was 5.00
- INSCRIBEDDIAMET = 25.00, was 15.00

C1 Central Park Link Road

1.1.18 A new link road has been modelled between the Darlington College/University and the B6280. Link parameters are based on the existing connection from Darlington College/University, to the B6279. No changes have been made to the northern junction with the B6279, however the southern junction connects into an adaptive signal on the B6280. Junction parameters for the new signalised junction are illustrated in the figure _ below.

```
JUNCTION,
  NODE = 4502,
  TYPE = AdaptiveSignal,
  APPROACH1 = 1568,
  LANEADJUST = 0,
  CYCLETIME = 68.00,
  MINIMUM = 33.00,
  MAXIMUM = 100.00,
  PHASE = 1,
    ACTUALGREEN = 17.00,
    MINIMUM = 5.00,
    MAXIMUM = 66.00,
  PHASE = 2,
    ACTUALGREEN = 17.00,
    MINIMUM = 5.00,
    MAXIMUM = 66.00,
  PHASE = 3,
    ACTUALGREEN = 17.00,
    MINIMUM = 5.00,
    MAXIMUM = 66.00,
  APPROACH = 1568,
    RANDOMNESS = 1.00,
    MOVEMENT = Left,
      PHASES = 1,
      EXCLUSIVELANES = 1,
    MOVEMENT = Through,
      PHASES = 1,
      EXCLUSIVELANES = 1,
  APPROACH = 9002,
    RANDOMNESS = 1.00,
    MOVEMENT = Left,
      PHASES = 23,
      EXCLUSIVELANES = 1,
    MOVEMENT = Right,
      PHASES = 3,
      EXCLUSIVELANES = 1,
  APPROACH = 1588,
    RANDOMNESS = 1.00,
    MOVEMENT = Through,
      PHASES = 12,
      EXCLUSIVELANES = 1,
    MOVEMENT = Right,
      PHASES = 2,
      EXCLUSIVELANES = 1
```

Figure 4. Central Park Link Road /B6280 junction

1.1.19 The new link road has the following attributes:

- Link Type = 6;
- Cap Index = 27; and
- Capacity = 1,000.

1.2 2025 Do Something

1.2.1 Those scheme included in the 2020 Do Something scenario have been modelled in the 2025 Do Something scenario in addition to the following:

- E8 Redhall Hall/ Burdon Hill Link Road;
- E9 Burdon Hill Northern Access;
- E10 A66 / Little Burdon Improvements;
- E11 DETC Junction Improvements;
- E12 Ingenium Parc Phase 2;
- N1 A167 / Burtree Lane Junction Improvements;
- N2 A1150 / Thompson Street East Roundabout Improvements;
- N3 Skerningham Link Road; and
- NW5 Faverdale Link Road Phase 1.

E8 Redhall Hall / Burdon Hill Link Road

1.2.2 A new link road has been modelled from the Red Hall primary school to link up with the B6279. The junction on the B6279 has previously been amended as part of the Lingfield Way to DETC Link Road mitigation measures in 2020. As a result, a further enhancement has been modelled to allow Red Hall connectivity. This junction setup is illustrated in figure _ below.

```
JUNCTION,
  NODE = 1692,
  TYPE = FixedTimeSignal,
  APPROACH1 = 1715,
  LANEADJUST = 0,
  CYCLETIME = 90.00,
  PHASE = 1,
    ACTUALGREEN = 35.00,
  PHASE = 2,
    ACTUALGREEN = 8.00,
  PHASE = 3,
    ACTUALGREEN = 11.00,
  PHASE = 4,
    ACTUALGREEN =  8.00,
  APPROACH = 1715,
    RANDOMNESS = 1.00,
    MOVEMENT = Left,
      PHASES = 1,
    MOVEMENT = Through,
      CANSHARELEFT = 1
      CANSHARERIGHT = 1
      PHASES = 1,
    MOVEMENT = Right,
      PHASES = 12,
  APPROACH = 4606,
    RANDOMNESS = 1.00,
    MOVEMENT = Left,
      PHASES = 3,
    MOVEMENT = Through,
      CANSHARELEFT = 1
      CANSHARERIGHT = 1
      PHASES = 3,
    MOVEMENT = Right,
      PHASES = 34,
  APPROACH = 1688,
    RANDOMNESS = 1.00,
    MOVEMENT = Left,
      PHASES = 1,
    MOVEMENT = Through,
      PHASES = 1,
      CANSHARELEFT = 1
      CANSHARERIGHT = 1
    MOVEMENT = Right,
      PHASES = 12,
  APPROACH = 4607,
    RANDOMNESS = 1.00,
    MOVEMENT = Left,
      PHASES = 3,
    MOVEMENT = Through,
      CANSHARELEFT = 1
      CANSHARERIGHT = 1
      PHASES = 3,
    MOVEMENT = Right,
      PHASES = 34,
```

Figure 5. Redhall Hall / Burdon Hill Link Road / B6279 Junction

1.2.3 The new link road has the following attributes:

- Link Type = 6;
- Cap Index = 27; and
- Capacity = 1,000.

E9 Burdon Hill Northern Access

1.2.4 A new roundabout has been modelled on the A1150 to the provide access to Burdon Hill. The access is not included within the 2025 scheme mitigation but comes on stream in 2030. The roundabout also acts as a junction for the Skerningham Link Road, further commentary on this later in this chapter. Figure _ below illustrates the roundabout parameters modelled for all give way nodes, the roundabout has been coded as an 'exploded' roundabout in keeping with similar roundabout modelled in the network.

```
JUNCTION,
  NODE = 4611,
  TYPE = Roundabout,
  APPROACH1 = 4610,
  GAPACCEPTANCE = 0,
  APPROACH = 4610,
    CAPACITYINTERCE = 9000.00,
    CAPACITYSLOPE = 1.00,
    RANDOMNESS = 1.00,
  APPROACH = 1689,
    RANDOMNESS = 1.00,
    APPROACHWIDTH = 6.00,
    ENTRYWIDTH = 9.50,
    FLARELENGTH = 15.00,
    INSCRIBEDDIAMET = 100.00,
  APPROACH = 4614,
    EXITONLY = 1,
  APPROACH = 4612,
    EXITONLY = 1
```

Figure 6. Burdon Hill Northern Access Roundabout Parameters.

E10 A66 / Little Burdon Improvements

1.2.5 Based on VISSIM Modelling, enhancements have been made to the circulating capacity to___. A new filter lane has been modelled for traffic turning left from the A66 onto the A1150, this link joins the A1150 views means of a priority junction, the attributed for the priority junction are illustrated in figure _ below.

```
JUNCTION,
  NODE = 9009,
  TYPE = Priority,
  APPROACH1 = 1718,
  GEOMETRIC = 0,
  APPROACH = 1718,
    RANDOMNESS = 1.00,
    MOVEMENT = Through,
      SATFLOWPERLANE = 1800.00,
      EXCLUSIVELANES = 2,
  APPROACH = 1716,
    RANDOMNESS = 1.00,
    SINGLELANE = 1,
    MINIMUMCAPACITY = 30.00,
    MOVEMENT = Left,
      SATFLOWPERLANE = 745.00,
  APPROACH = 4613,
    EXITONLY = 1
```

Figure 7. A66 / Little Burdon Slip Road Priority Junction

1.2.6 Further improvements to the circulating capacity have been modelled by increasing the capacity from 2,720 to 4,800.

E11 DETC Junction Improvements

1.2.7 The circulating capacity of the roundabout has been increased from 2,720 to 4,800, no other changes have been made to the node parameters.

E12 Ingenium Parc Phase 2

1.2.8 Phase 2 has not been included within the 2025 the scheme mitigation modelling as it will have no direct consequence due to the network coverage and zone loading location.

N1 A167 / Burtree Lane Junction Improvements

1.2.9 Given the existing junction's footprint, there are physical limitation to expand the junction. This has resulted in minor lane sharing enhancements for the northern and southern approaches. Figure _ below contains the amended junction node attributes.

```
JUNCTION,
  NODE = 1542,
  TYPE = AdaptiveSignal,
  APPROACH1 = 1554,
  LANEADJUST = 0,
  CYCLETIME = 59.00,
  MINIMUM = 0.00,
  MAXIMUM = 100.00,
  PHASE = 1,
    ACTUALGREEN = 15.00,
    MINIMUM = 5.00,
    MAXIMUM = 94.00,
  PHASE = 2,
    ACTUALGREEN = 5.00,
    MINIMUM = 5.00,
    MAXIMUM = 5.00,
  PHASE = 3,
    ACTUALGREEN = 20.00,
    MINIMUM = 5.00,
    MAXIMUM = 94.00,
  RINGPHASE = 1,
    YELLOW = 3.00,
    ALLRED = 3.00,
  RINGPHASE = 2,
    YELLOW = 3.00,
    ALLRED = 3.00,
  RINGPHASE = 3,
    YELLOW = 3.00,
    ALLRED = 3.00,
  APPROACH = 1554,
    RANDOMNESS = 1.00,
    MOVEMENT = Left,
      EXCLUSIVELANES = 1,
      CANSHARELEFT = 1,
      PHASES = 13,
    MOVEMENT = Through,
      EXCLUSIVELANES = 1,
      PHASES = 1,
  APPROACH = 1479,
    RANDOMNESS = 1.00,
    SINGLELANE = 1,
    MOVEMENT = Left,
      PHASES = 3,
    MOVEMENT = Right,
      PHASES = 3,
  APPROACH = 1531,
    RANDOMNESS = 1.00,
    MOVEMENT = Through,
      EXCLUSIVELANES = 2,
      PHASES = 1,
    MOVEMENT = Right,
      EXCLUSIVELANES = 1,
      PHASES = 12
```

Figure 8. A167 / Burtree Lane Junction Improvements

N2 A1150 / Thompson Street East Roundabout Improvements

1.2.10 This junction serves as an access point for the Skerningham Link Road, as a result, the existing roundabout has been expanded with the following changes modelled for all approaches:

- APPROACHWIDTH = 7.30, was 3.60
- ENTRYWIDTH = 9.00, was 3.60
- FLARELENGTH = 10.00, was 5.00
- INSCRIBEDDIAMET = 20.00, was 13.50

N3 Skerningham Link Road

1.2.11 The link road joins at the A1150, details of the model set up is covered in "E9 Burdon Hill Northern Access". A new roundabout has been modelled at the junction of Bishopton Lane. Mid way along the corridor, a new roundabout has been modelled to allow connectivity with the A1150 / Thompson Street East, this is covered in section 2.2.14. To the north, the link road joins with the A167 via a new roundabout. Each of the three new roundabouts has the following attributes for their approaches:

- APPROACHWIDTH = 6.00
- ENTRYWIDTH = 9.50
- FLARELENGTH = 15.00
- INSCRIBEDDIAMET = 50.00

1.2.12 The new link road has the following attributes:

- Link Type = 5;
- Cap Index = 1; and
- Capacity = 1,800.

NW5 Faverdale Link Road Phase 1

1.2.13 A new link road has been modelled to link into Zone 333. Phase 2 is brought online in 2030 which will provide further connectivity to the north at Burtree Lane. Access to the south at Rotary Way is modelled by a new roundabout which is not included within the existing network. The attributes for the roundabout are listed for each approach below.

- APPROACHWIDTH = 6.00
- ENTRYWIDTH = 9.50
- FLARELENGTH = 15.00
- INSCRIBEDDIAMET = 50.00

1.2.14 The new link road has the following attributes:

- Link Type =6;
- Cap Index = 27; and
- Capacity = 1,000.

1.3 2030 Do Something

1.3.1 This section provides an overview of the scheme mitigation packages modelled in the 2030 Do Something forecast year. The following scheme have been included:

- E13 A66 Morton Palms to Little Burdon Dualling;
- E14 A66 Northern Route;
- E15 A66 Blands Corner to A66 (M) Junction 57;
- E16 Ingenium Parc Phase 3;
- NW6 Newton Lane to Staindrop Road Link Road;
- NW7 Staindrop Road to A67 Coniscliffe Link Road;
- NW8 Faverdale Link Road Phase 2;
- NW9 A68 Burtree Lane Roundabout; and
- N4 A167 / Burtree Lane Link Road.

1.3.2 The Do Something scenario also includes the 2020 and 2025 schemes

E13 A66 Morton Palms to Little Burdon Dualling;

1.3.3 Extra capacity has been modelled on the A66 between the A67/B6280 junction and A1150. The existing capacity of 2,750 has been uplifted to 4,220 in line with other dual carriageways.

E14 A66 Northern Route

1.3.4 The A66 has been modelled with a northern extension. The extension routes from the A1150, links to the Skerningham Link Road, connects with the Brafferton Lane and the A167 close to the A1(M) junction.

1.3.5 The new link road has the following attributes:

- Link Type = 1;
- Cap Index = 4; and
- Capacity = 4,200.

1.3.6 Connectivity with Skerningham Link Road is modelled via an 'exploded' roundabout . Each of the three junction nodes have the following attributes for their approaches:

- APPROACHWIDTH = 6.00
- ENTRYWIDTH = 9.50
- FLARELENGTH = 15.00
- INSCRIBEDDIAMET = 100.00

1.3.7 Connectivity with Brafferton Lane is modelled via an 'exploded' roundabout . Each of the four junction nodes have the following attributes for their approaches:

- APPROACHWIDTH = 6.00
- ENTRYWIDTH = 9.50
- FLARELENGTH = 15.00
- INSCRIBEDDIAMET = 100.00

1.3.8 Given the close proximity of the A167 and A1(M) junction, it was assumed that traffic routing from the A1(M) to the A167 would use the Brafferton Lane junction rather that providing an additional junction on the A66. Traffic routing in the reverse direction from A167 to A1(M) would merge with traffic on the A66. Figure _ below illustrates the setup assumed.

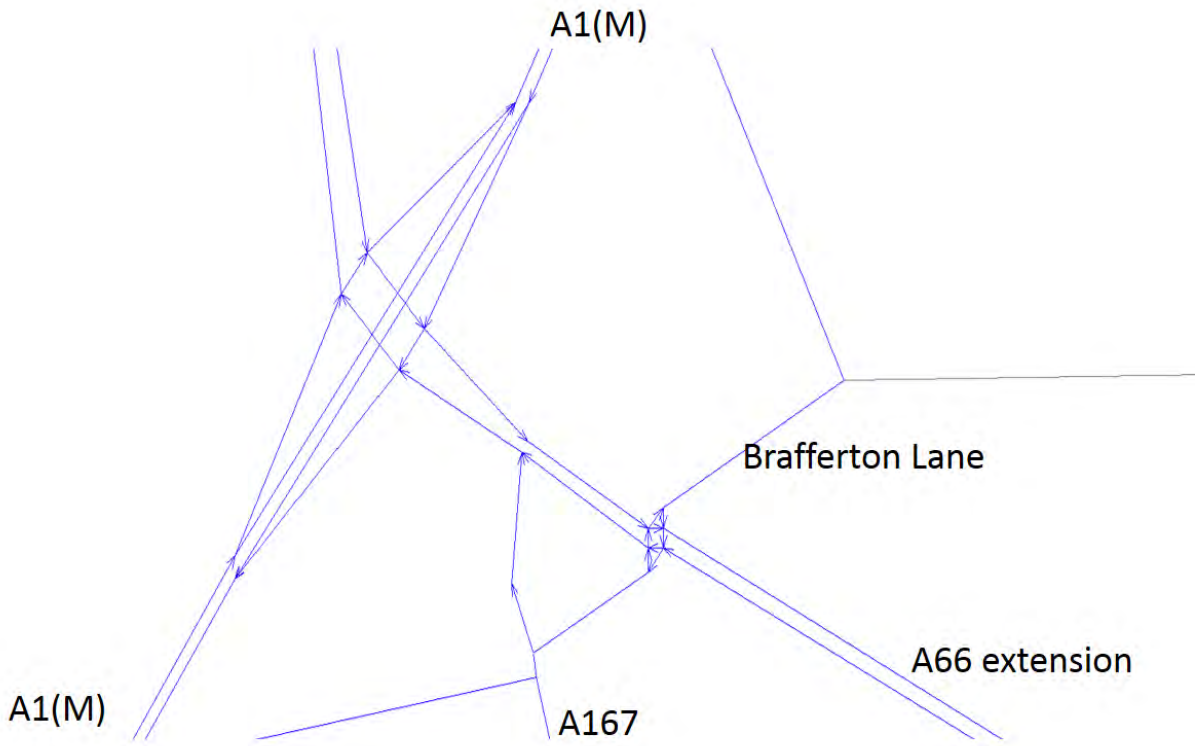


Figure 9. A66 Northern Extension

E15 A66 Blands Corner to A66 (M) Junction 57

1.3.9 A new bypass route has been modelled from the roundabout of A66(M)/Stapleton Bank to the east of the A66/A167 roundabout, essentially a bypass of Bridge Road. The new link road has the following attributes:

- Link Type = 1;
- Cap Index = 4; and
- Capacity = 4,200.

1.3.10 The existing roundabout at Stapleton Bank has been amended to include the new connectivity, the following attributes have been modelled for all approaches:

- APPROACHWIDTH = 6.00
- ENTRYWIDTH = 9.50
- FLARELENGTH = 15.00
- INSCRIBEDDIAMET = 100.00

1.3.11 A new roundabout is modelled on the A66, it uses the same attributes as noted above.

E16 Ingenium Parc Phase 3

1.3.12 The final phase of the scheme has been modelled which allows full connectivity with access to the roundabout located at junction of B6280/Alderman Best Road.

NW6 Newton Lane to Staindrop Road Link Road

1.3.13 A new route has been modelled from the B6279 to Newton Lane. The new link road has the following attributes:

- Link Type = 16;
- Cap Index = 27; and
- Capacity = 1,000.

1.3.14 At both extents of the new link road, two roundabouts have been modelled using the following attributes have been modelled for all approaches:

- APPROACHWIDTH = 6.00
- ENTRYWIDTH = 9.50
- FLARELENGTH = 15.00
- INSCRIBEDDIAMET = 50.00

NW7 Staindrop Road to A67 Coniscliffe Link Road

1.3.15 A new route has been modelled from the B6279 to Newton Lane. The new link road has the following attributes:

- Link Type = 16;
- Cap Index = 27; and
- Capacity = 1,000.

1.3.16 At both extents of the new link road, two roundabouts have been modelled using the following attributes have been modelled for all approaches:

- APPROACHWIDTH = 6.00
- ENTRYWIDTH = 9.50
- FLARELENGTH = 15.00
- INSCRIBEDDIAMET = 50.00

NW8 Faverdale Link Road Phase 2;

1.3.17 A new route has been modelled connecting the Phase 1 of this route to Burtree Lane. The new link road has the following attributes:

- Link Type = 16;
- Cap Index = 27; and
- Capacity = 1,000.

1.3.18 A small roundabout have been modelled on Burtree Lane, with the following attributes have been modelled for all approaches:

- APPROACHWIDTH = 5.00
- ENTRYWIDTH = 6.50
- FLARELENGTH = 15.00
- INSCRIBEDDIAMET = 25.00

NW9 A68 Burtree Lane Roundabout

1.3.19 An 'exploded' roundabout has been modelled at the junction of Burtree Lane and the A68, replacing the existing left-in left-out priority junction. The roundabout has been modelled, with the following attributes modelled for all approaches:

- APPROACHWIDTH = 6.00
- ENTRYWIDTH = 6.50
- FLARELENGTH = 15.00
- INSCRIBEDDIAMET = 100.00

N4 A167 / Burtree Lane Link Road.

1.3.20 A new route has been modelled connecting the A167 and Burtree Lane. The new link road has the following attributes:

- Link Type = 5;
- Cap Index = 1; and
- Capacity = 1,800.

1.3.21 Two roundabouts have been modelled at both extents, with the following attributes modelled for all approaches:

- APPROACHWIDTH = 6.00
- ENTRYWIDTH = 9.50
- FLARELENGTH = 15.00
- INSCRIBEDDIAMET = 50.00

APPROVAL

Version	Name		Position	Date	Modifications
1	Author	Grant Paterson	Principal Consultant	13/12/2017	First draft
	Checked by	Paul Gray	Associate Director	15/01/2018	
	Approved by			DD/MM/YY	
2	Author	Grant Paterson / Paul Gray	Principal Consultant Associate Director	15/03/2019	Updated for formatting / naming conventions
	Checked by	Steve Pickard	Director	18/03/2019	
	Approved by			DD/MM/YY	

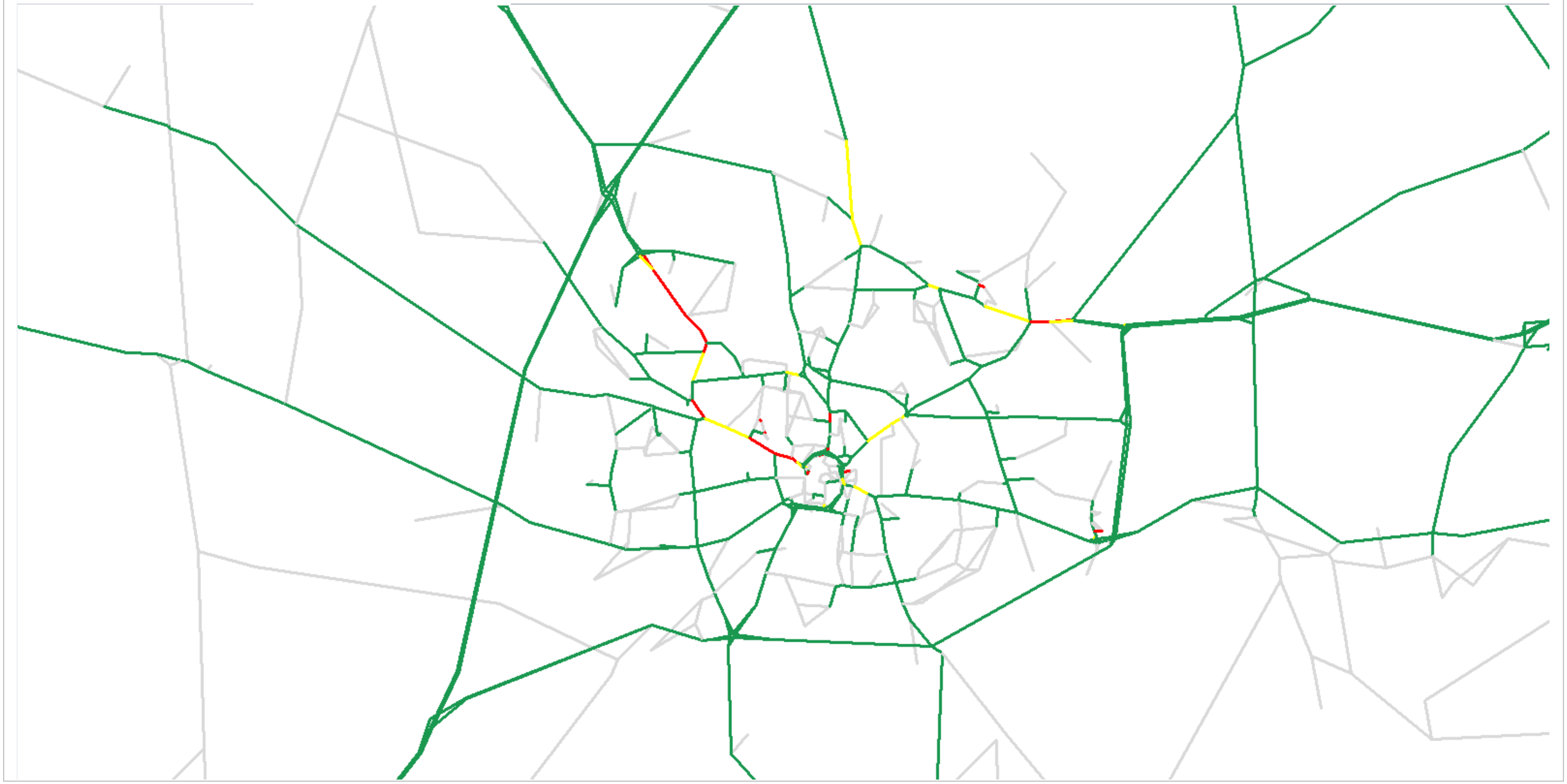
Appendix D

NETWORK STRESS ANALYSIS

‘Do Nothing’ Scenario - Morning Peak – 2020
‘Do Nothing’ Scenario - Morning Peak – 2025
‘Do Nothing’ Scenario - Morning Peak – 2030
‘Do Nothing’ Scenario - Morning Peak – 2035
‘Do Nothing’ Scenario - Evening Peak – 2020
‘Do Nothing’ Scenario - Evening Peak – 2025
‘Do Nothing’ Scenario - Evening Peak – 2030
‘Do Nothing’ Scenario - Evening Peak – 2035
‘Development Only’ Scenario - Morning Peak – 2020
‘Development Only’ Scenario - Morning Peak – 2025
‘Development Only’ Scenario - Morning Peak – 2030
‘Development Only’ Scenario - Morning Peak – 2035
‘Development Only’ Scenario - Evening Peak – 2020
‘Development Only’ Scenario - Evening Peak – 2025
‘Development Only’ Scenario - Evening Peak – 2030
‘Development Only’ Scenario - Evening Peak – 2035
‘Local Plan’ Scenario - Morning Peak – 2020
‘Local Plan’ Scenario - Morning Peak – 2025
‘Local Plan’ Scenario - Morning Peak – 2030
‘Local Plan’ Scenario - Morning Peak – 2035
‘Local Plan’ Scenario - Evening Peak - 2020
‘Local Plan’ Scenario - Evening Peak - 2025
‘Local Plan’ Scenario - Evening Peak – 2030
‘Local Plan’ Scenario - Evening Peak – 2035
‘Local Plan’ with DNRR Scenario - Morning Peak – 2030
‘Local Plan’ with DNRR Scenario - Evening Peak – 2030
‘Natural Growth’ Scenario - Morning Peak – 2020
‘Natural Growth’ Scenario - Morning Peak – 2025
‘Natural Growth’ Scenario - Morning Peak – 2030
‘Natural Growth’ Scenario - Morning Peak – 2035
‘Natural Growth’ Scenario - Evening Peak – 2020
‘Natural Growth’ Scenario - Evening Peak – 2025
‘Natural Growth’ Scenario - Evening Peak – 2030
‘Natural Growth’ Scenario - Evening Peak – 2035

Darlington Local Plan – Strategic Model Output

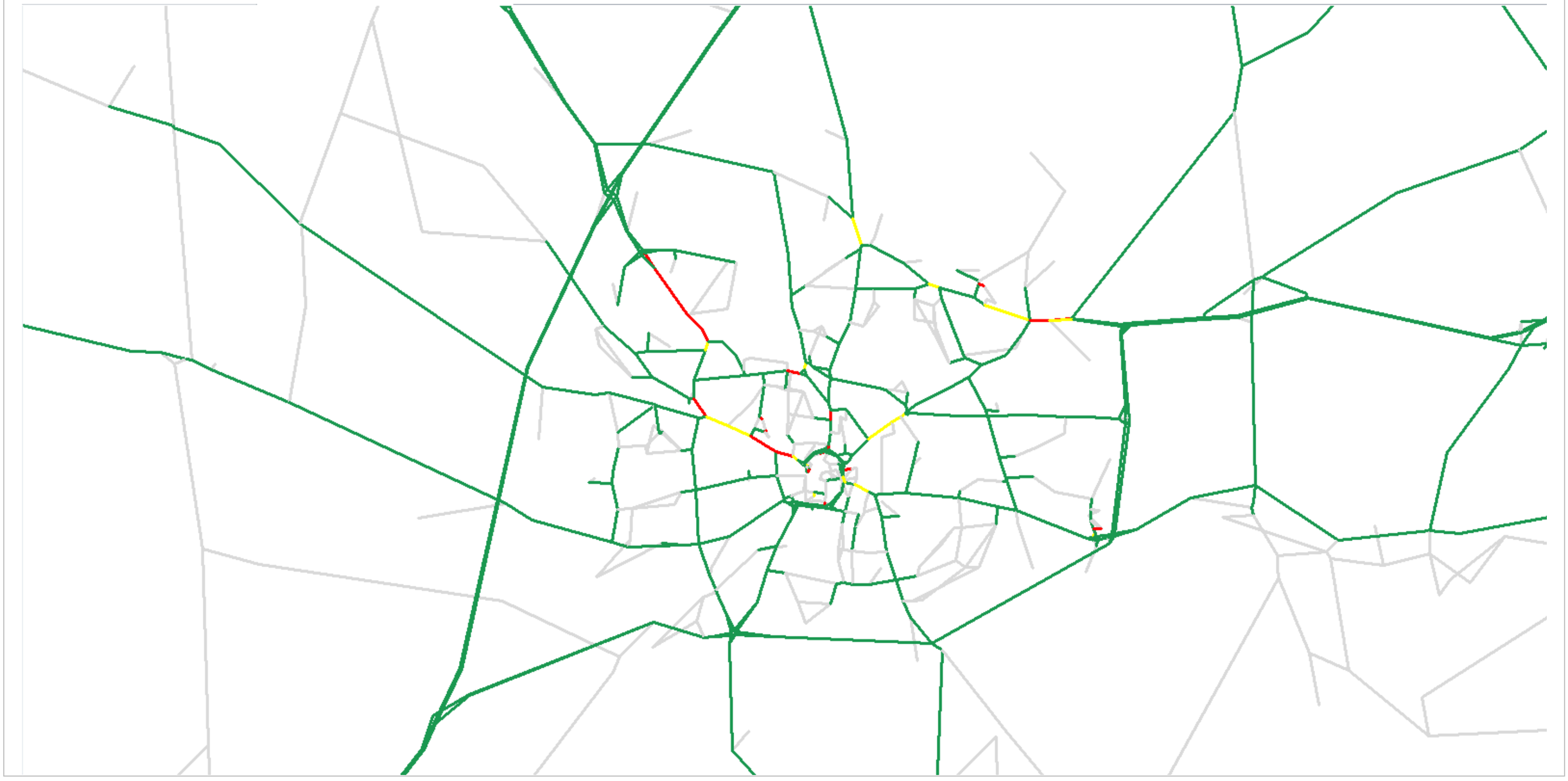
'Do Nothing' scenario – Morning Peak for forecast year 2020



SYSTRA

Darlington Local Plan – Strategic Model Output

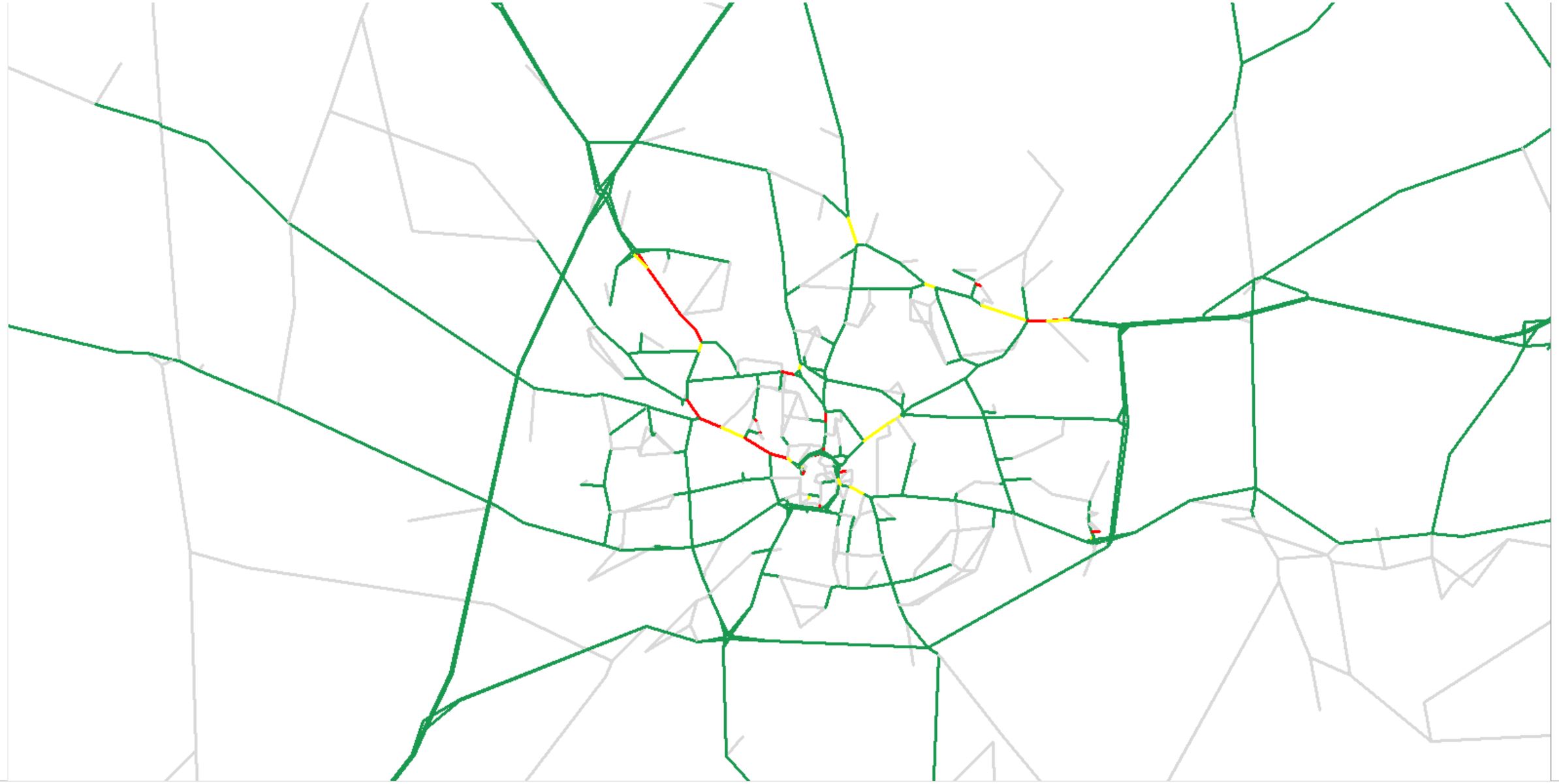
'Do Nothing' scenario – Morning Peak for forecast year 2025



SYSTRA

Darlington Local Plan – Strategic Model Output

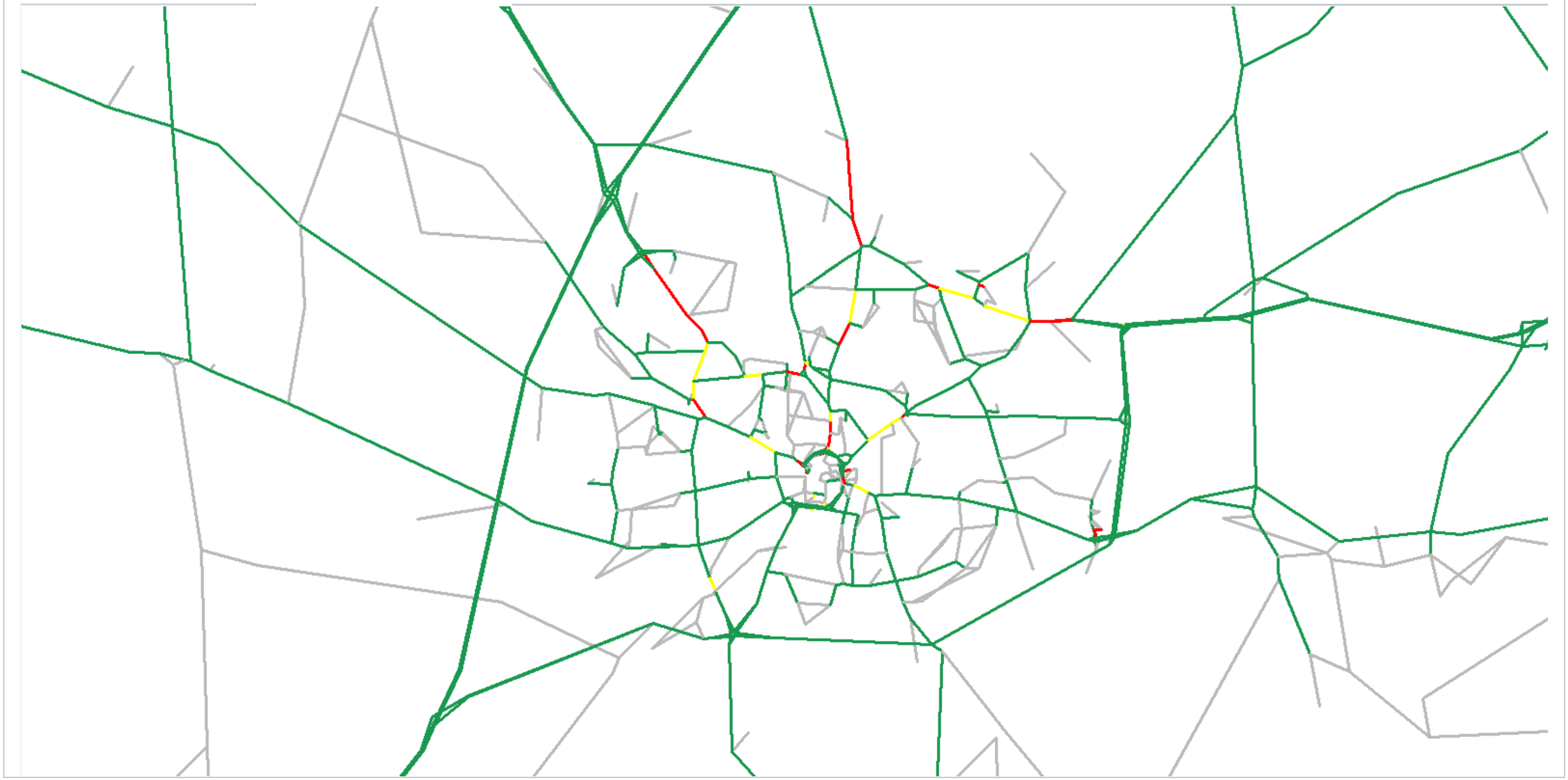
'Do Nothing' scenario – Morning Peak for forecast year 2030



SYSTRA

Darlington Local Plan – Strategic Model Output

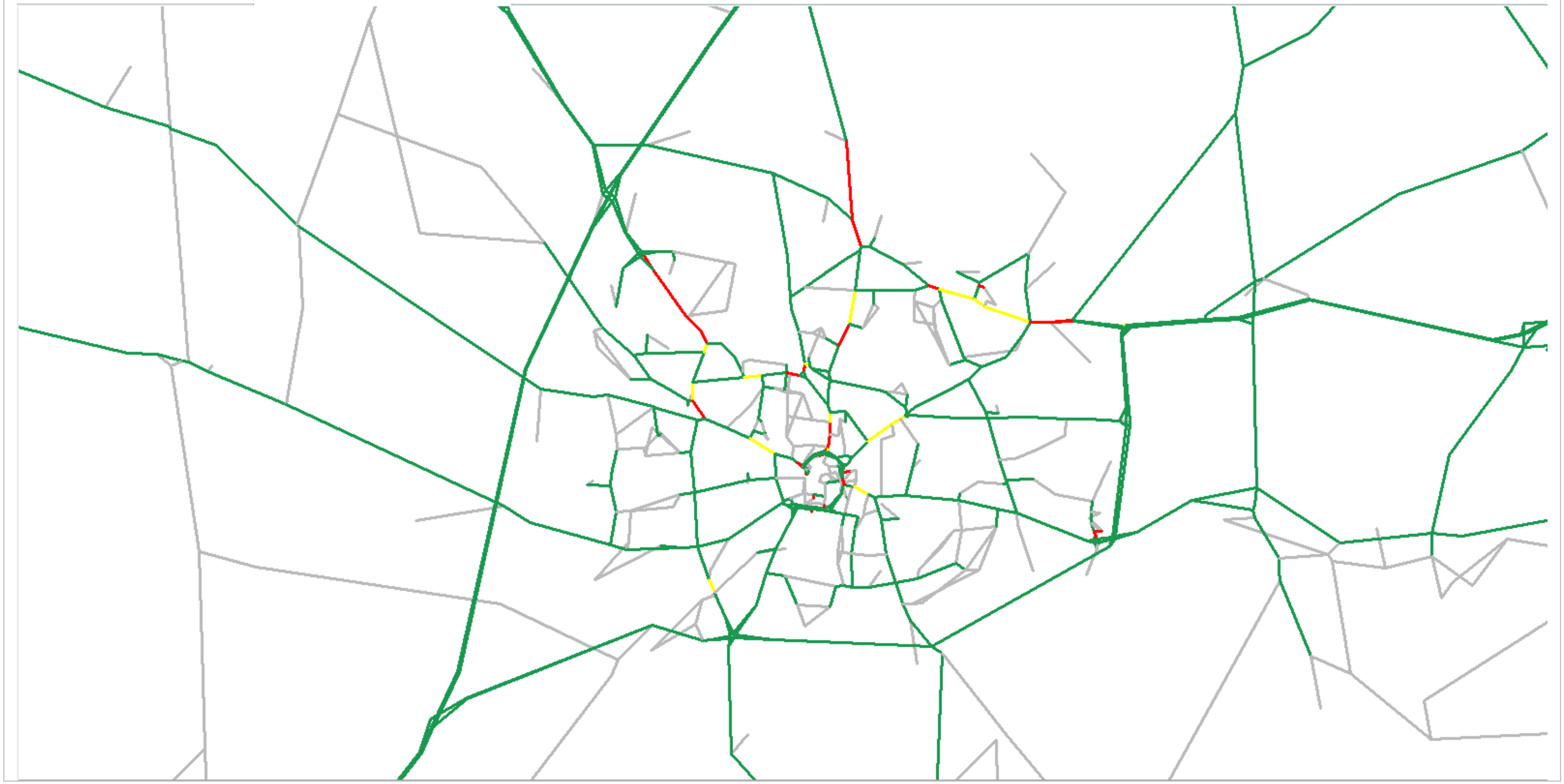
'Do Nothing' scenario – Evening Peak for forecast year 2020



SYSTRA

Darlington Local Plan – Strategic Model Output

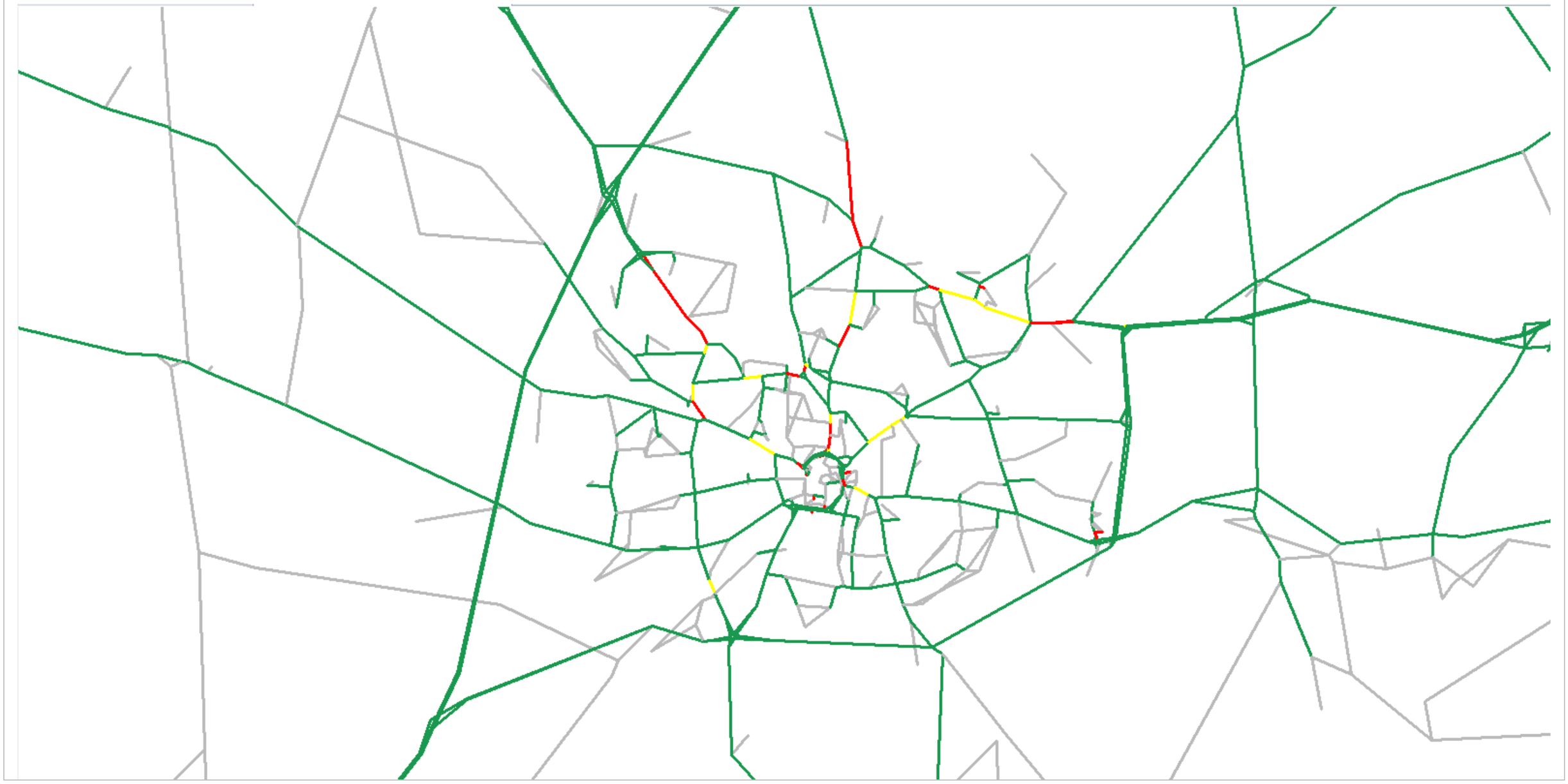
'Do Nothing' scenario – Evening Peak for forecast year 2025



SYSTRA

Darlington Local Plan – Strategic Model Output

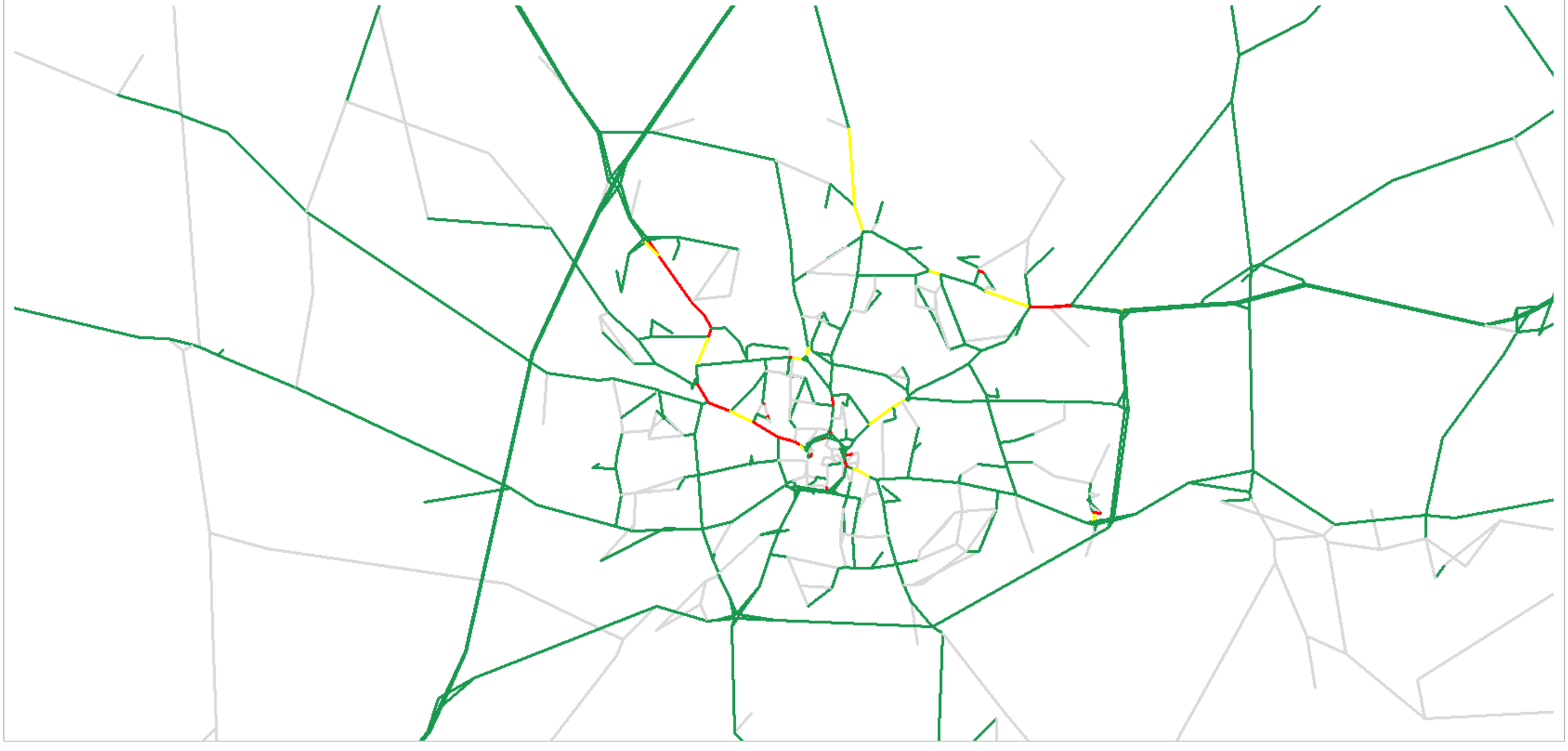
'Do Nothing' scenario – Evening Peak for forecast year 2030



SYSTRA

Darlington Local Plan – Strategic Model Output

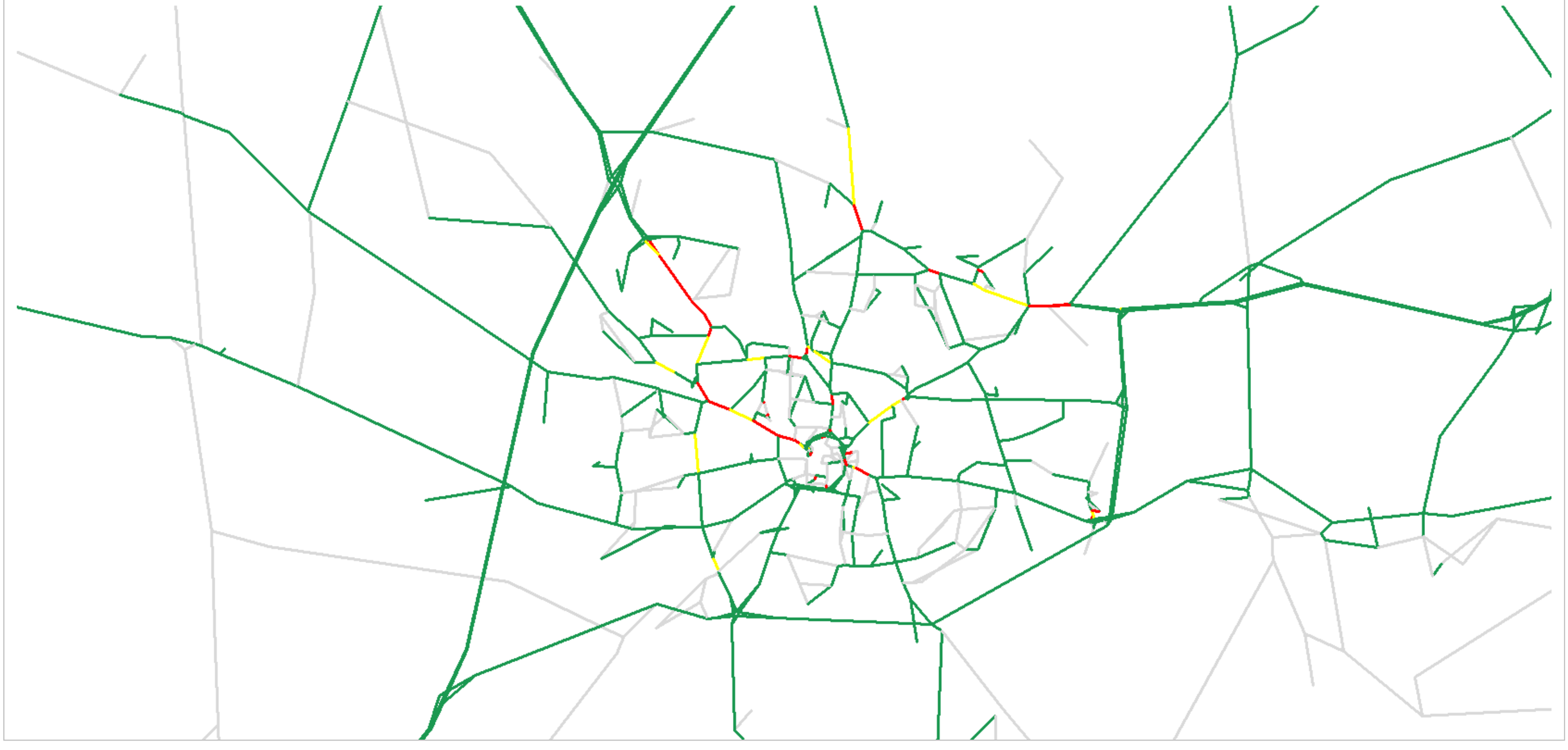
'Development Only' scenario – Morning Peak for forecast year 2020



SYSTRA

Darlington Local Plan – Strategic Model Output

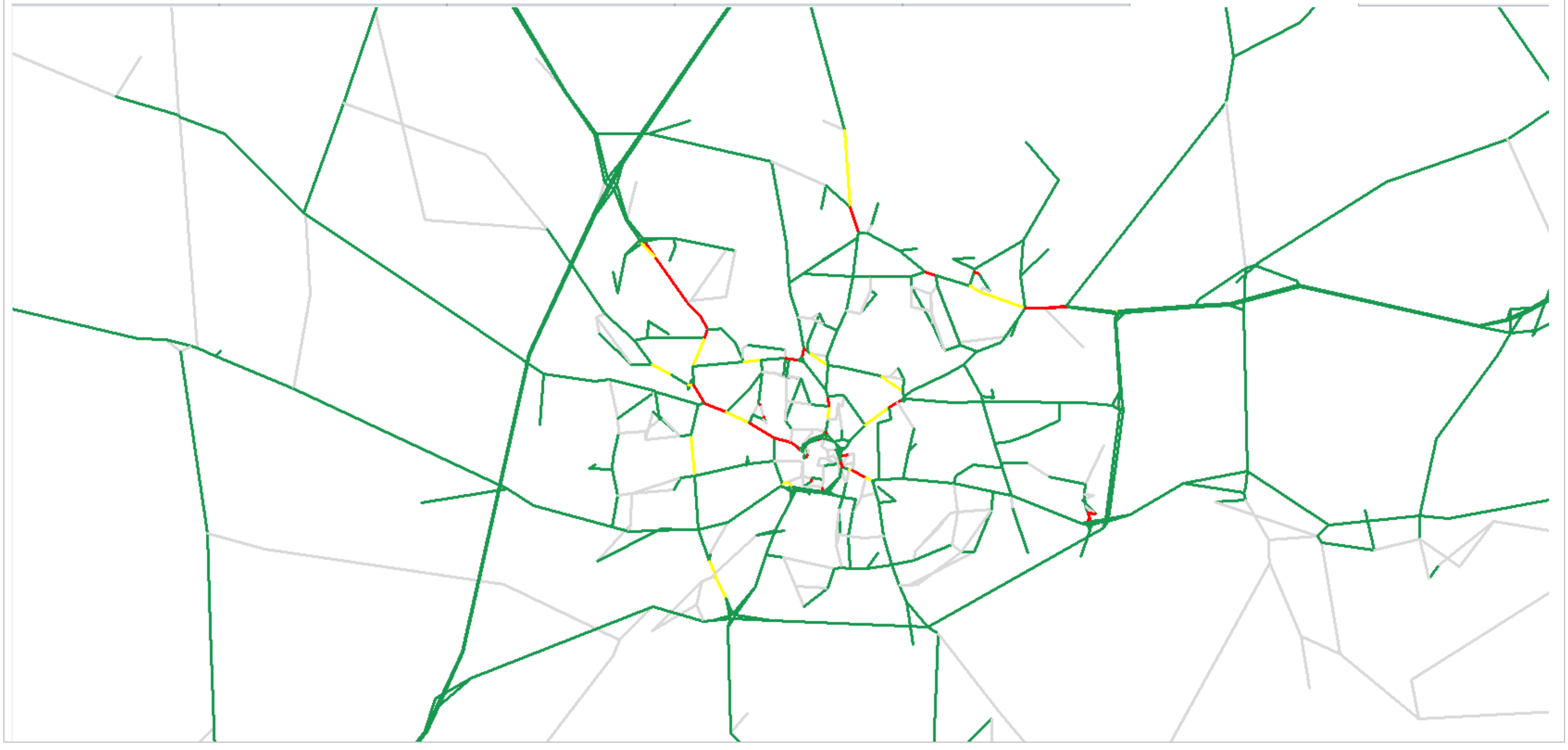
'Development Only' scenario – Morning Peak for forecast year 2025



SYSTRA

Darlington Local Plan – Strategic Model Output

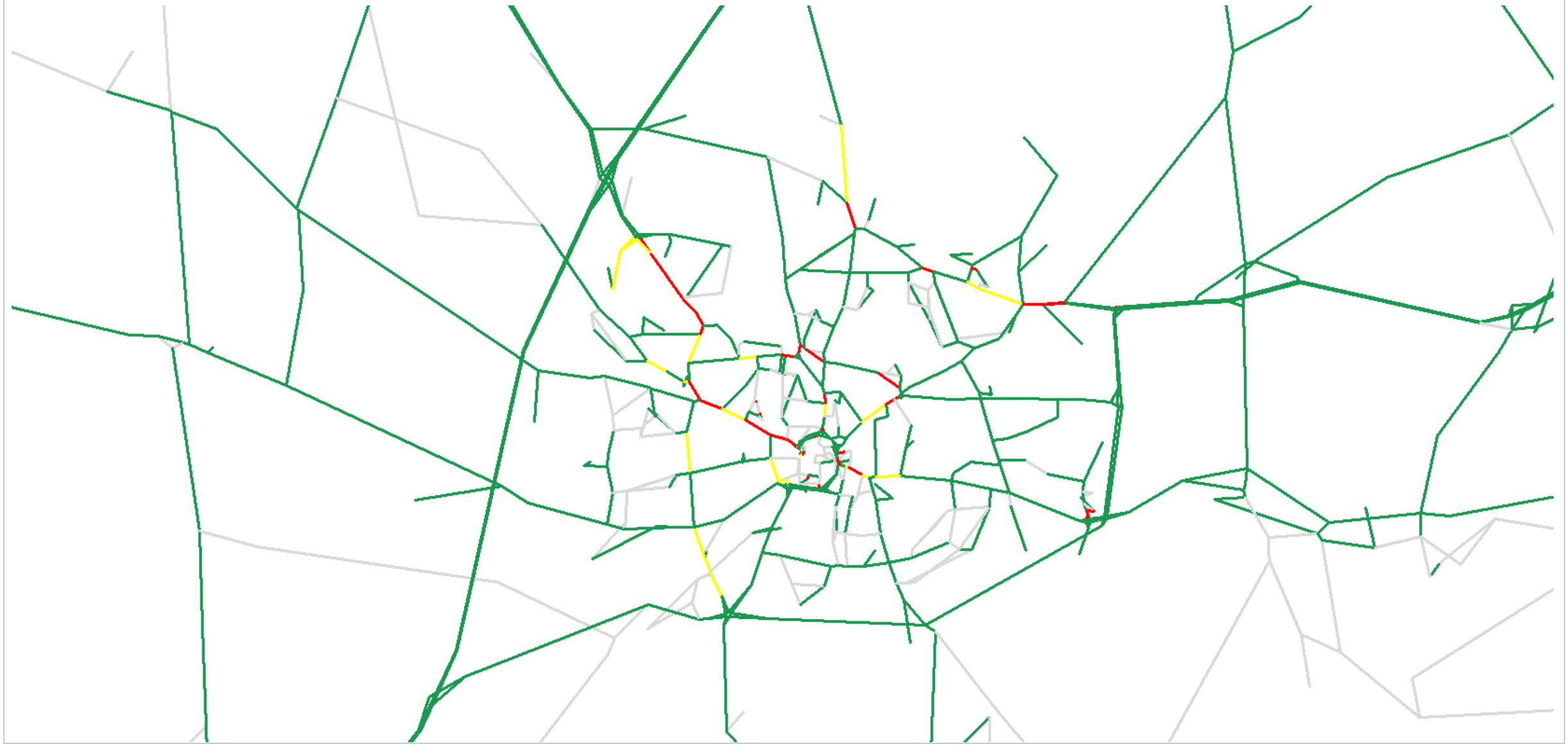
'Development Only' scenario – Morning Peak for forecast year 2030



SYSTRA

Darlington Local Plan – Strategic Model Output

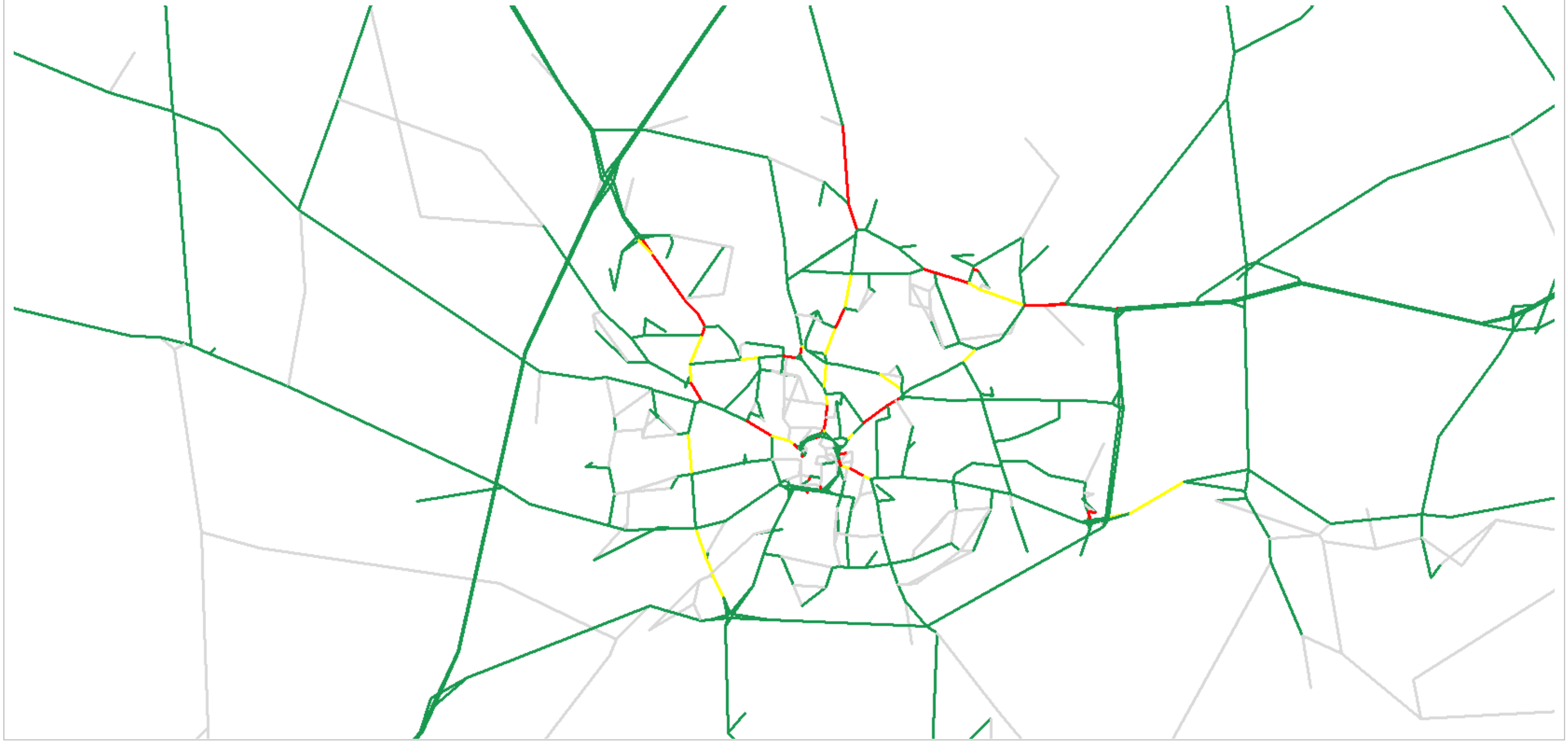
‘Development Only’ scenario – Morning Peak for forecast year 2035



SYSTRA

Darlington Local Plan – Strategic Model Output

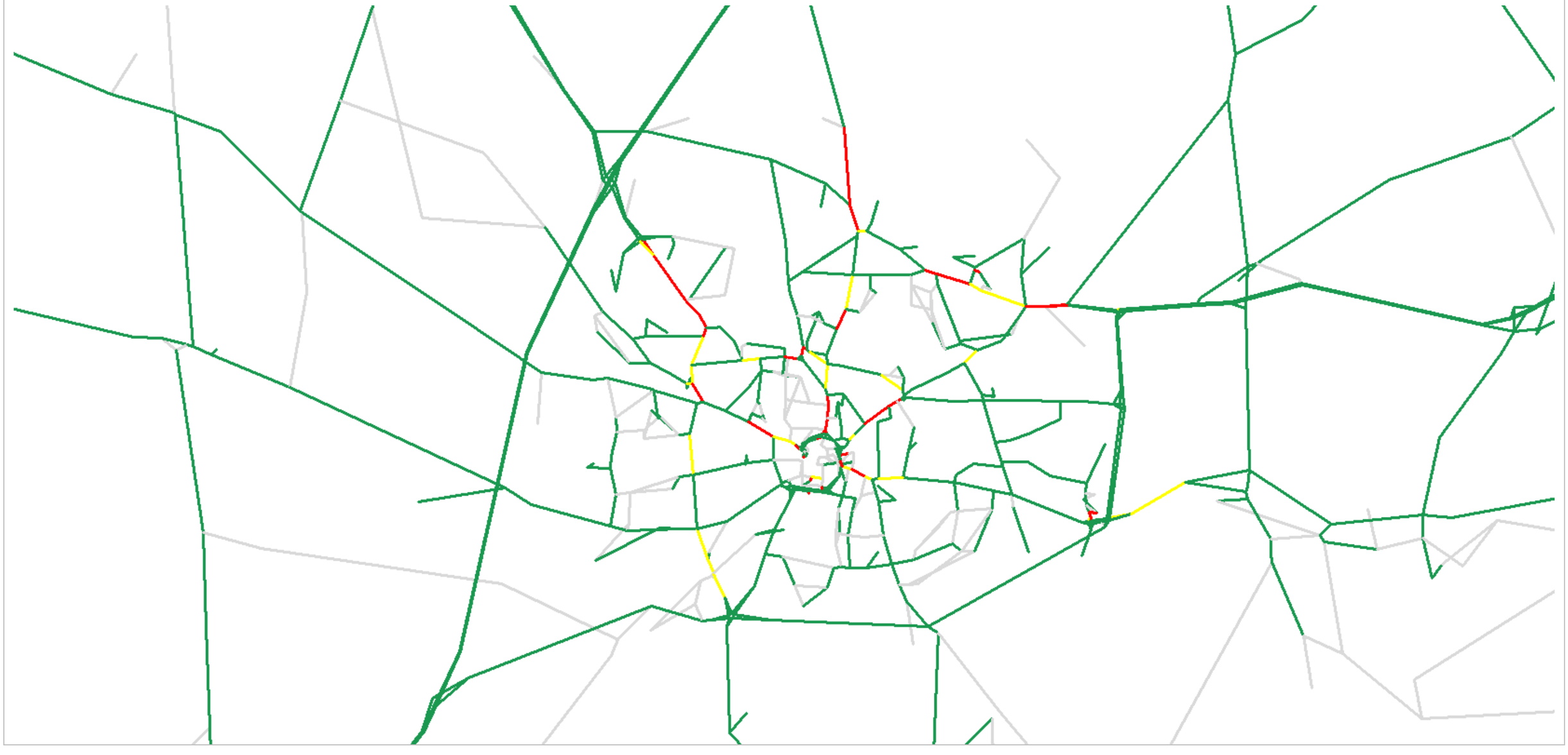
'Development Only' scenario – Evening Peak for forecast year 2020



SYSTRA

Darlington Local Plan – Strategic Model Output

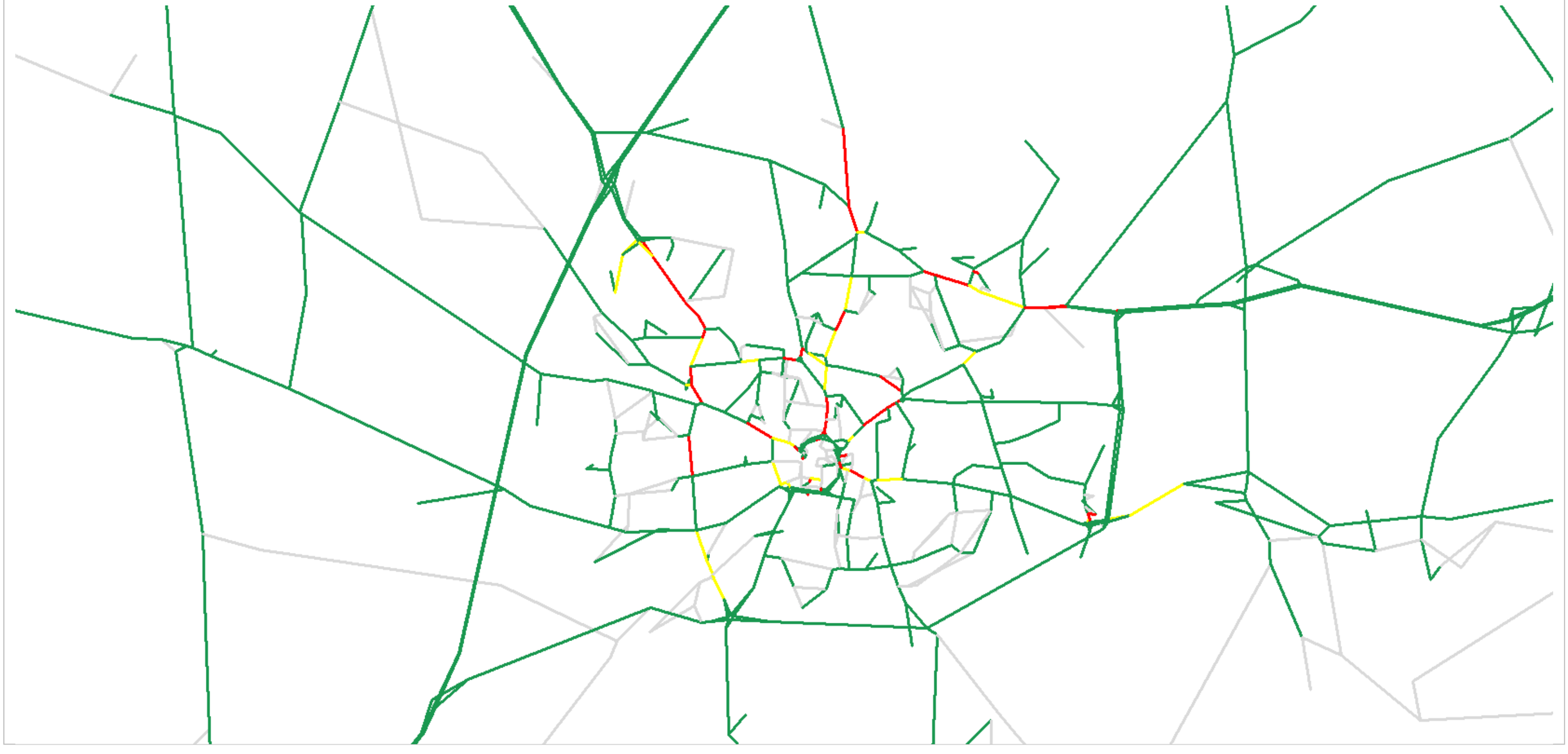
‘Development Only’ scenario – Evening Peak for forecast year 2025



SYSTRA

Darlington Local Plan – Strategic Model Output

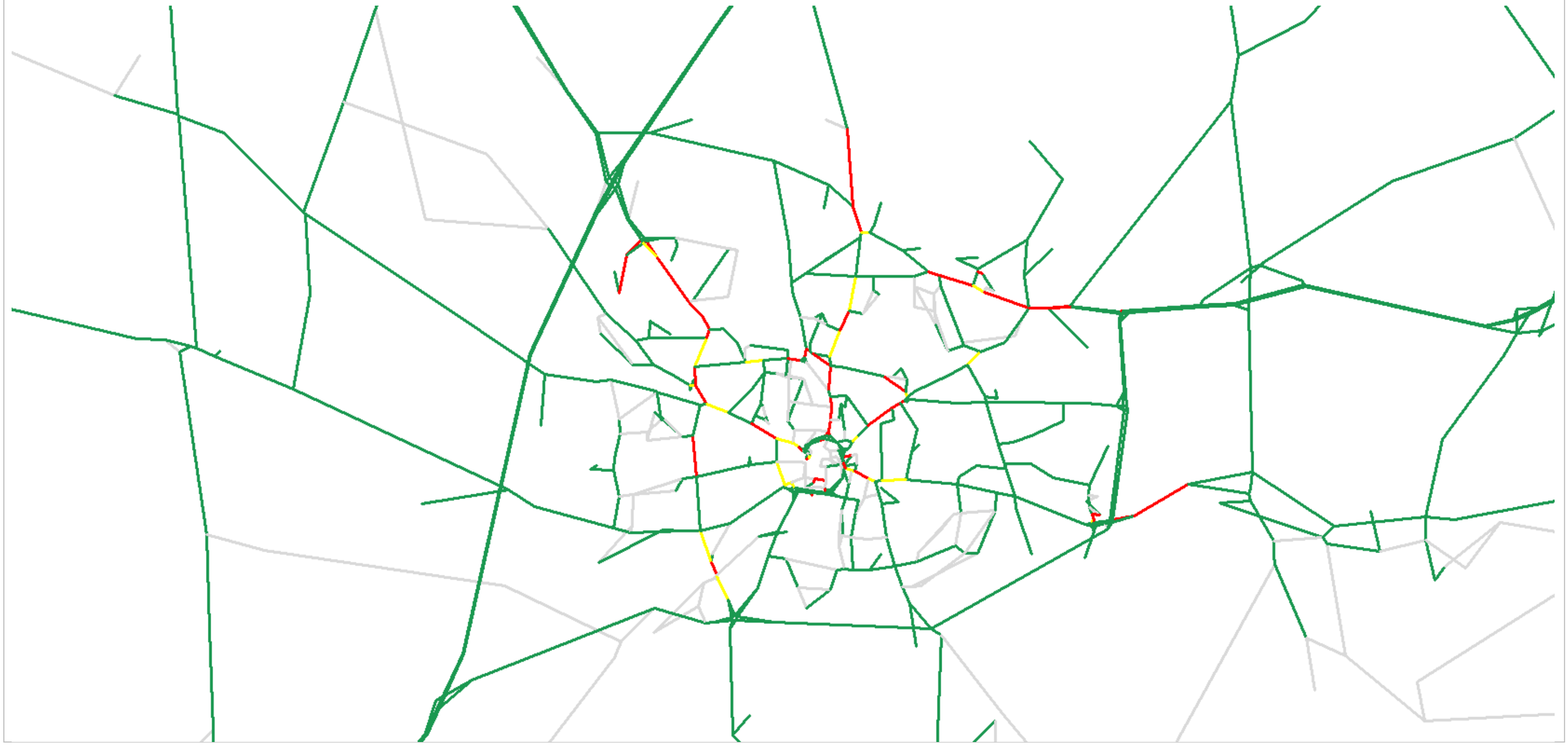
'Development Only' scenario – Evening Peak for forecast year 2030



SYSTRA

Darlington Local Plan – Strategic Model Output

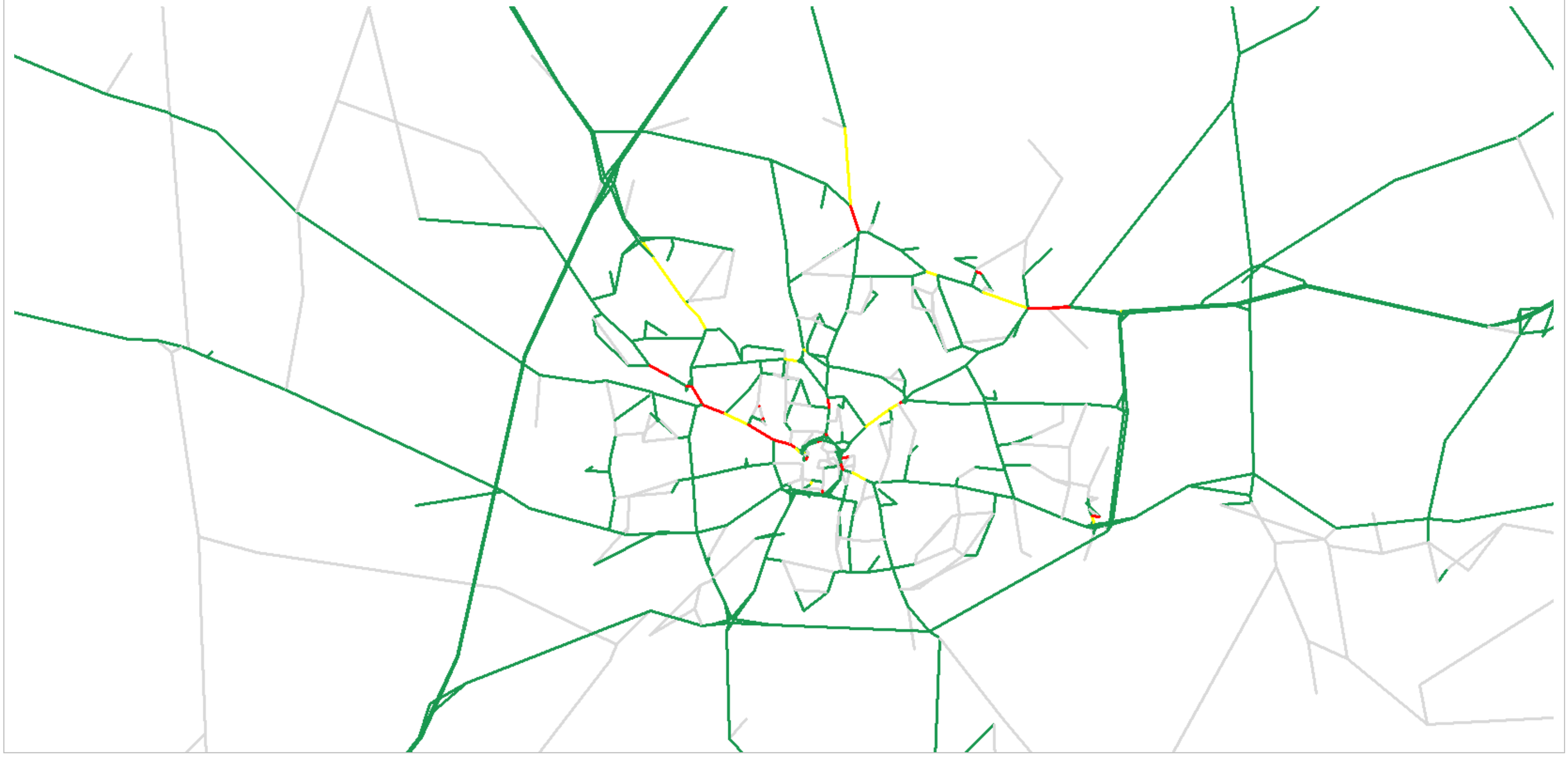
'Development Only' scenario – Evening Peak for forecast year 2035



SYSTRA

Darlington Local Plan – Strategic Model Output

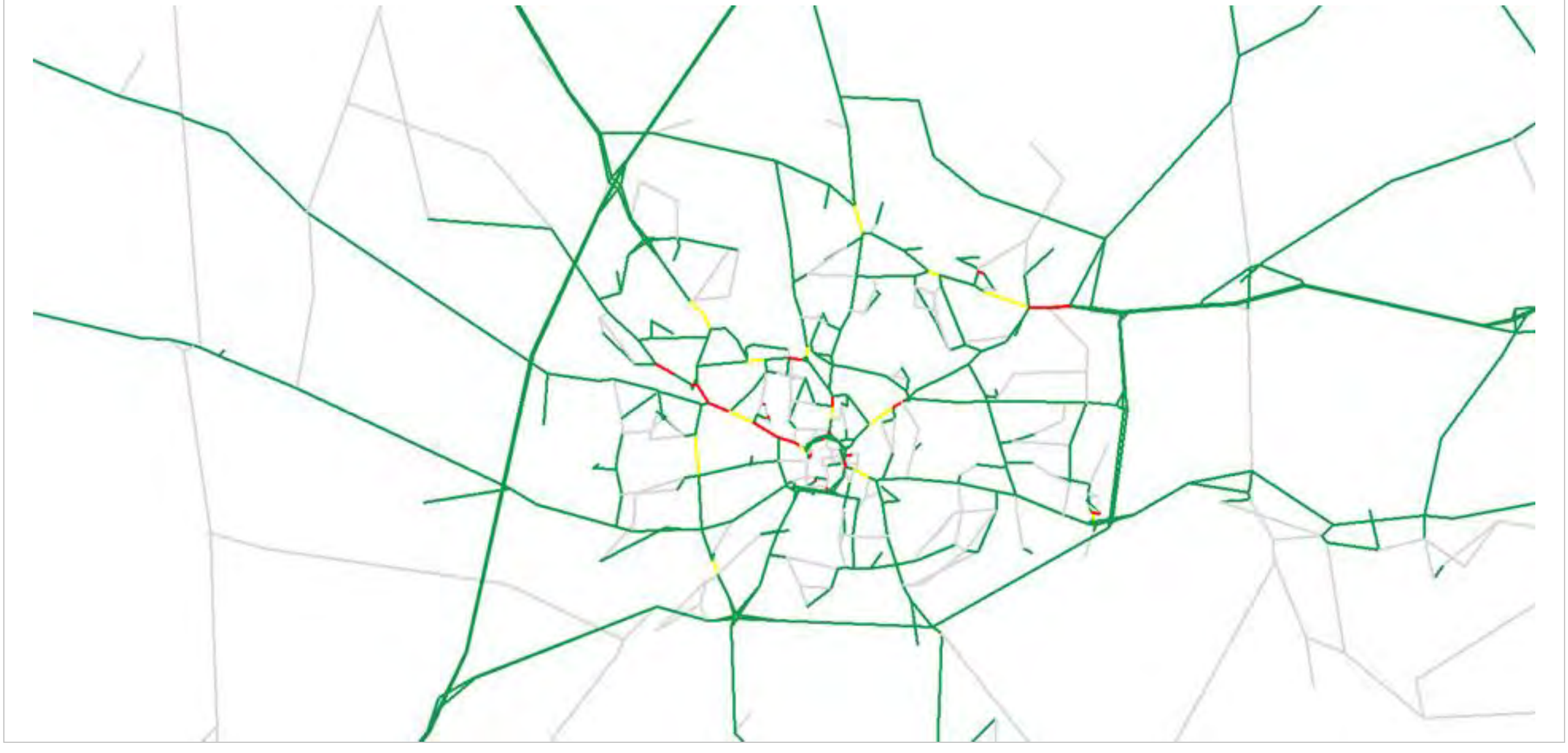
'Local Plan' scenario – Morning Peak for forecast year 2020



SYSTRA

Darlington Local Plan – Strategic Model Output

'Local Plan' scenario – Morning Peak for forecast year 2025



SYSTRA

Darlington Local Plan – Strategic Model Output

'Local Plan' scenario – Morning Peak for forecast year 2030

SYSTRA

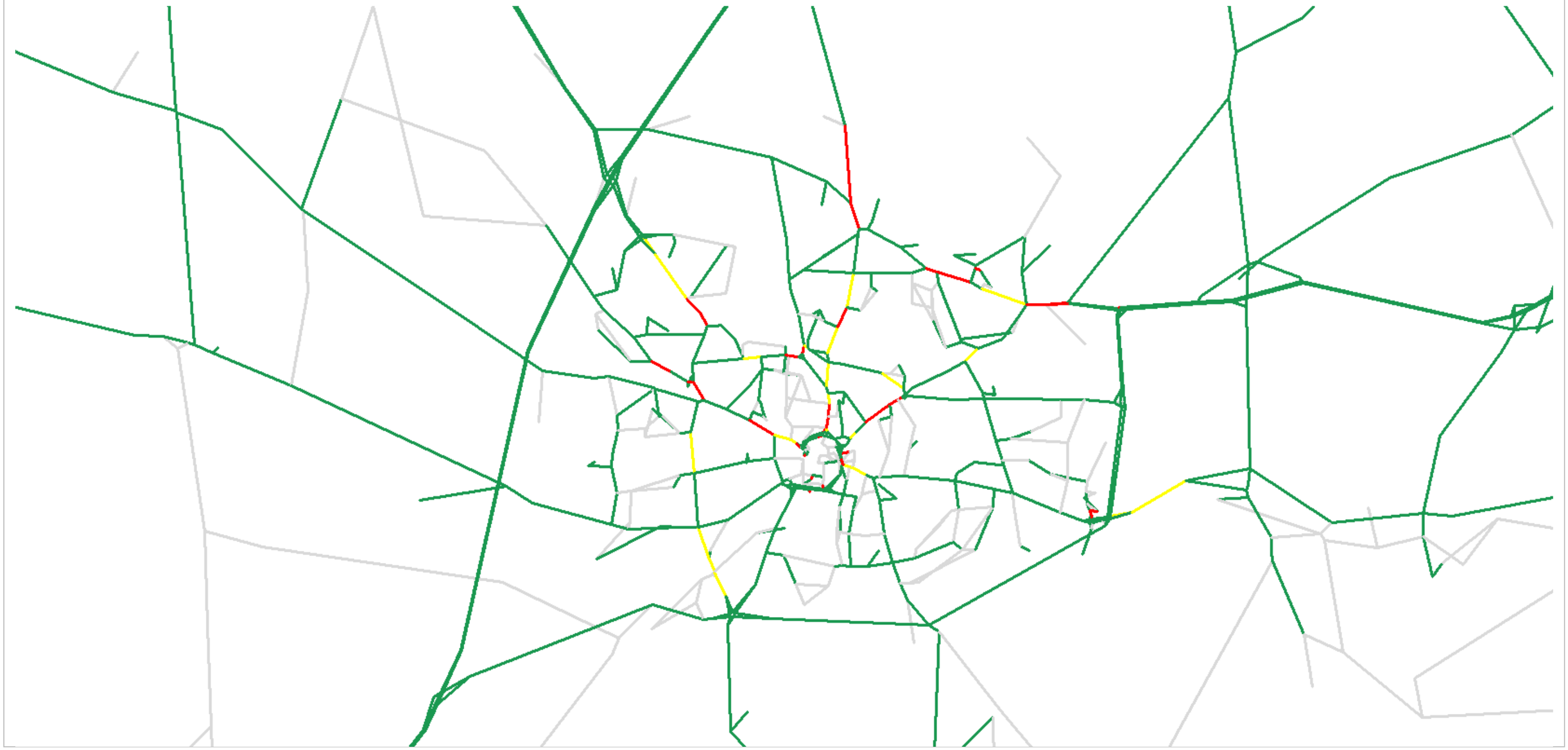
Darlington Local Plan – Strategic Model Output

'Local Plan' scenario – Morning Peak for forecast year 2035

SYSTRA

Darlington Local Plan – Strategic Model Output

‘Local Plan’ scenario – Evening Peak for forecast year 2020



SYSTRA

Darlington Local Plan – Strategic Model Output

‘Local Plan’ scenario – Evening Peak for forecast year 2025

SYSTRA

Darlington Local Plan – Strategic Model Output

'Local Plan' scenario – Evening Peak for forecast year 2030

SYSTRA

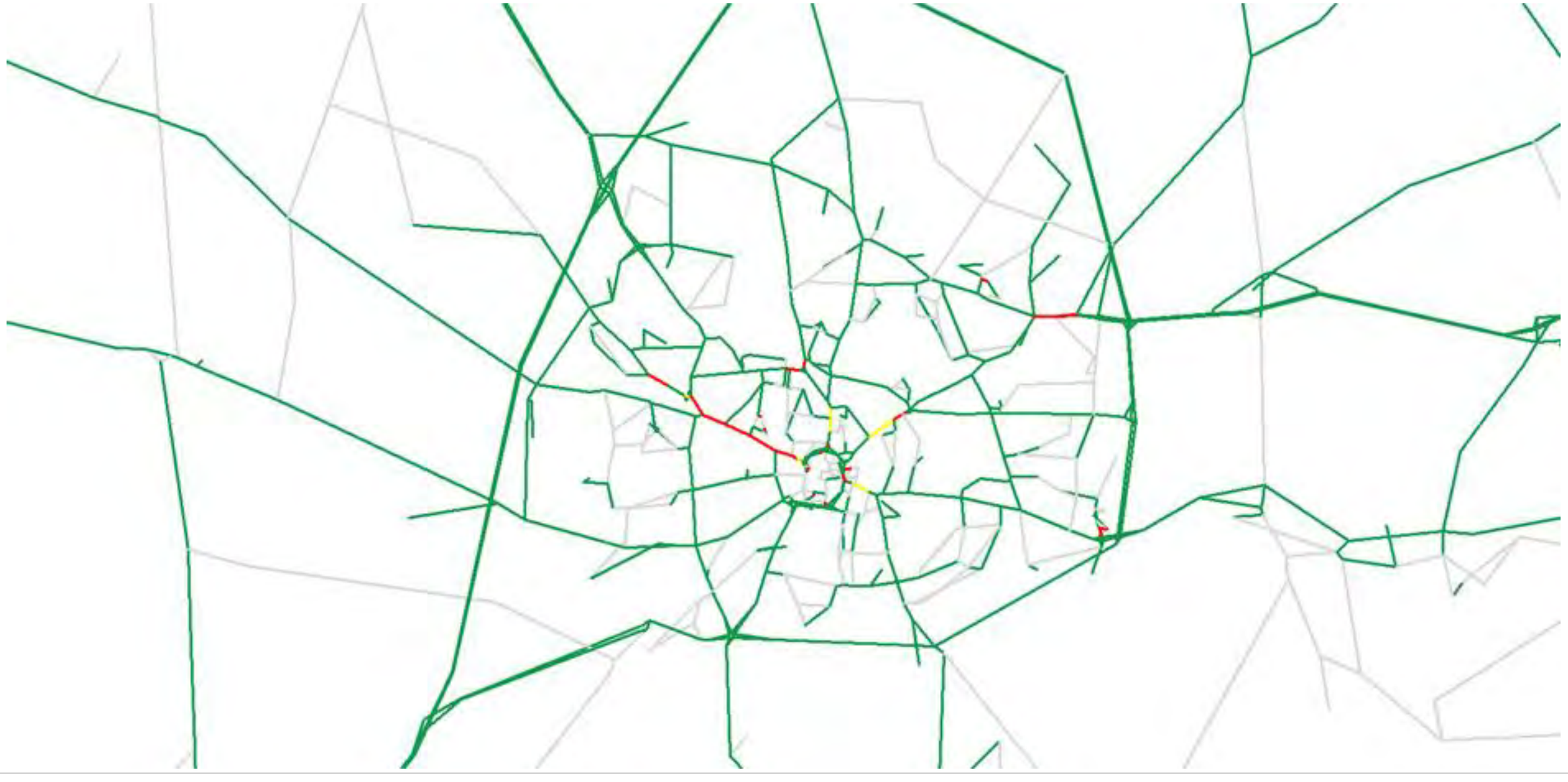
Darlington Local Plan – Strategic Model Output

'Local Plan' scenario – Evening Peak for forecast year 2035

SYSTRA

Darlington Local Plan – Strategic Model Output

‘Local Plan’ with DNRR scenario – Morning Peak for forecast year 2030



SYSTRA

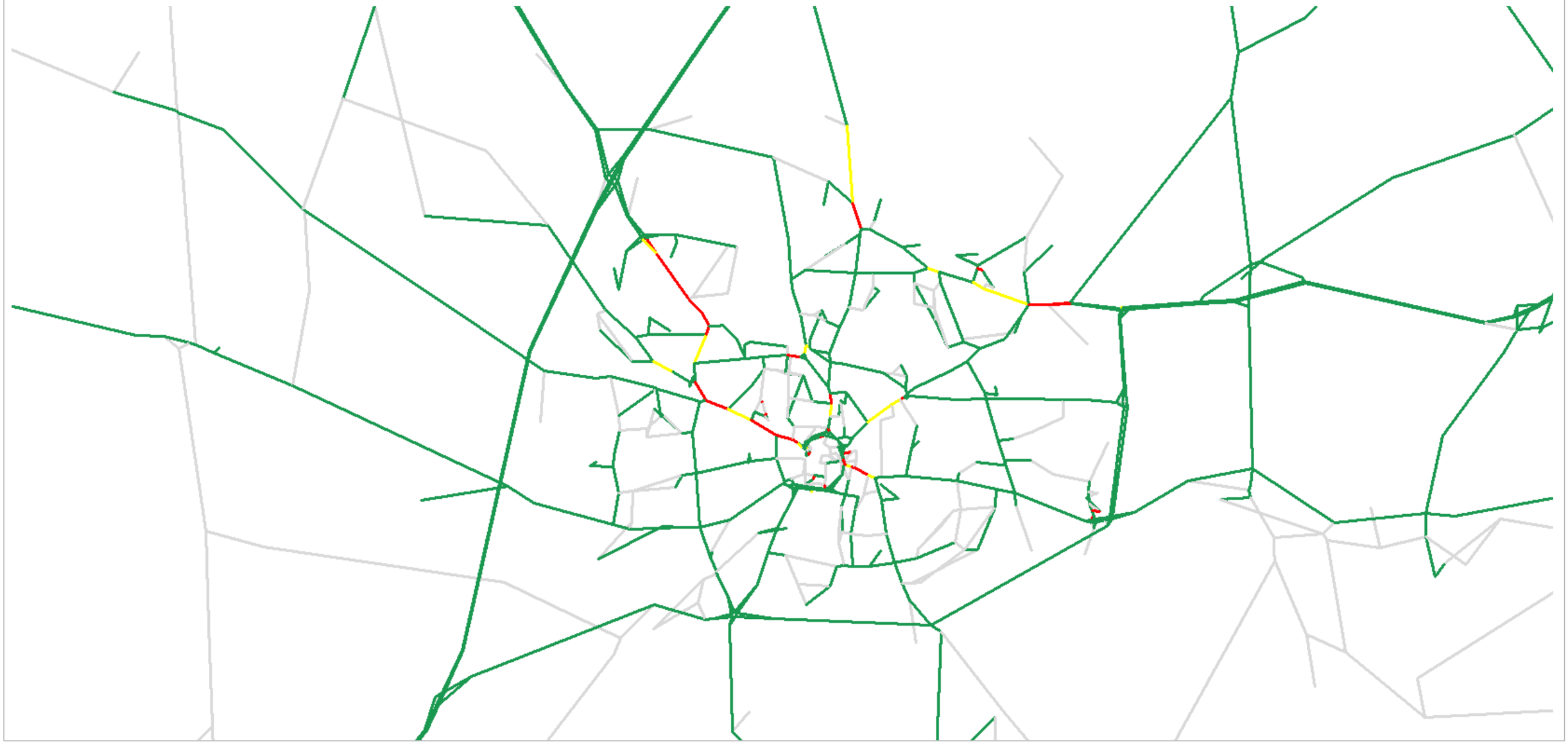
Darlington Local Plan – Strategic Model Output

'Local Plan' with DNRR scenario – Evening Peak for forecast year 2030

SYSTRA

Darlington Local Plan – Strategic Model Output

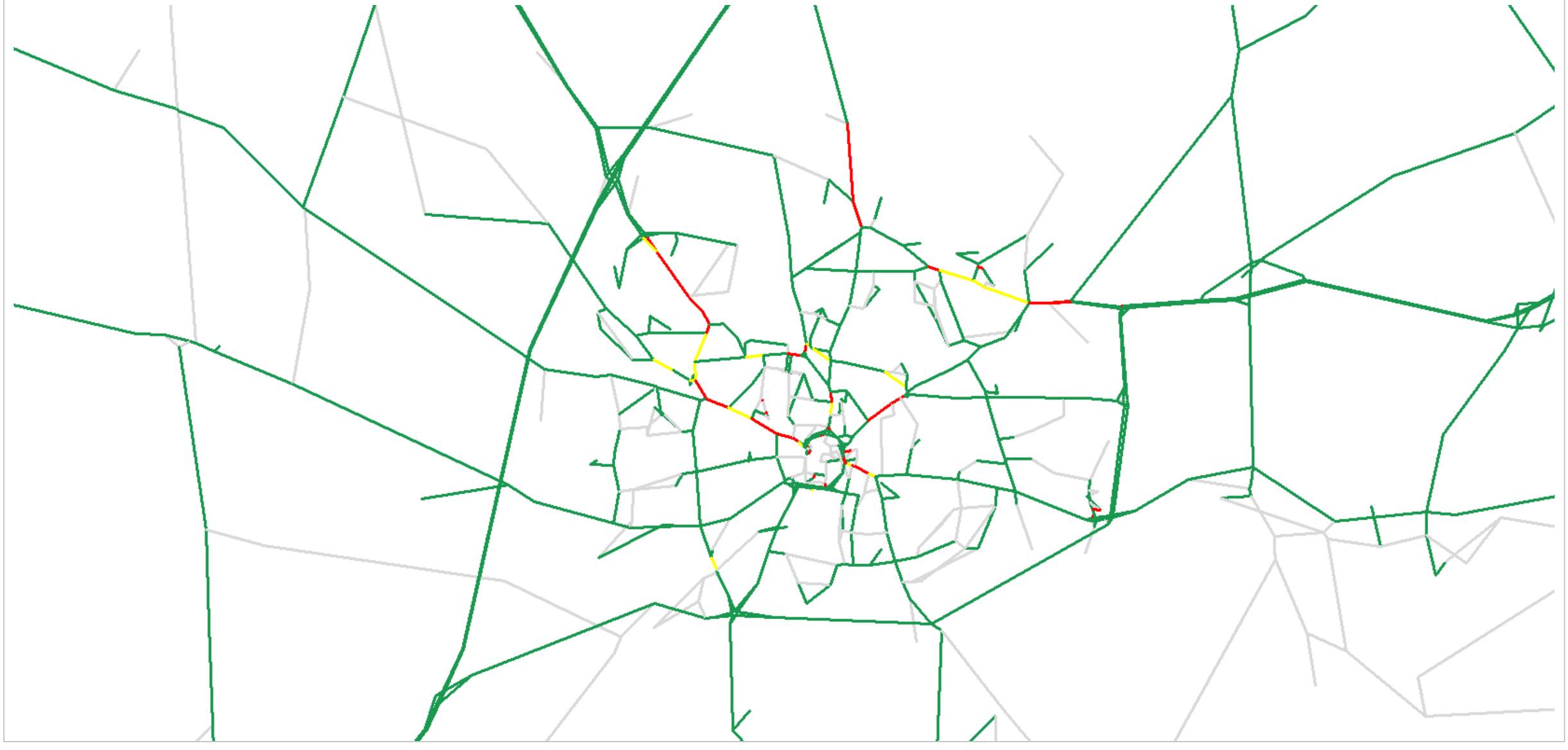
'Natural Growth' scenario – Morning Peak for forecast year 2020



SYSTRA

Darlington Local Plan – Strategic Model Output

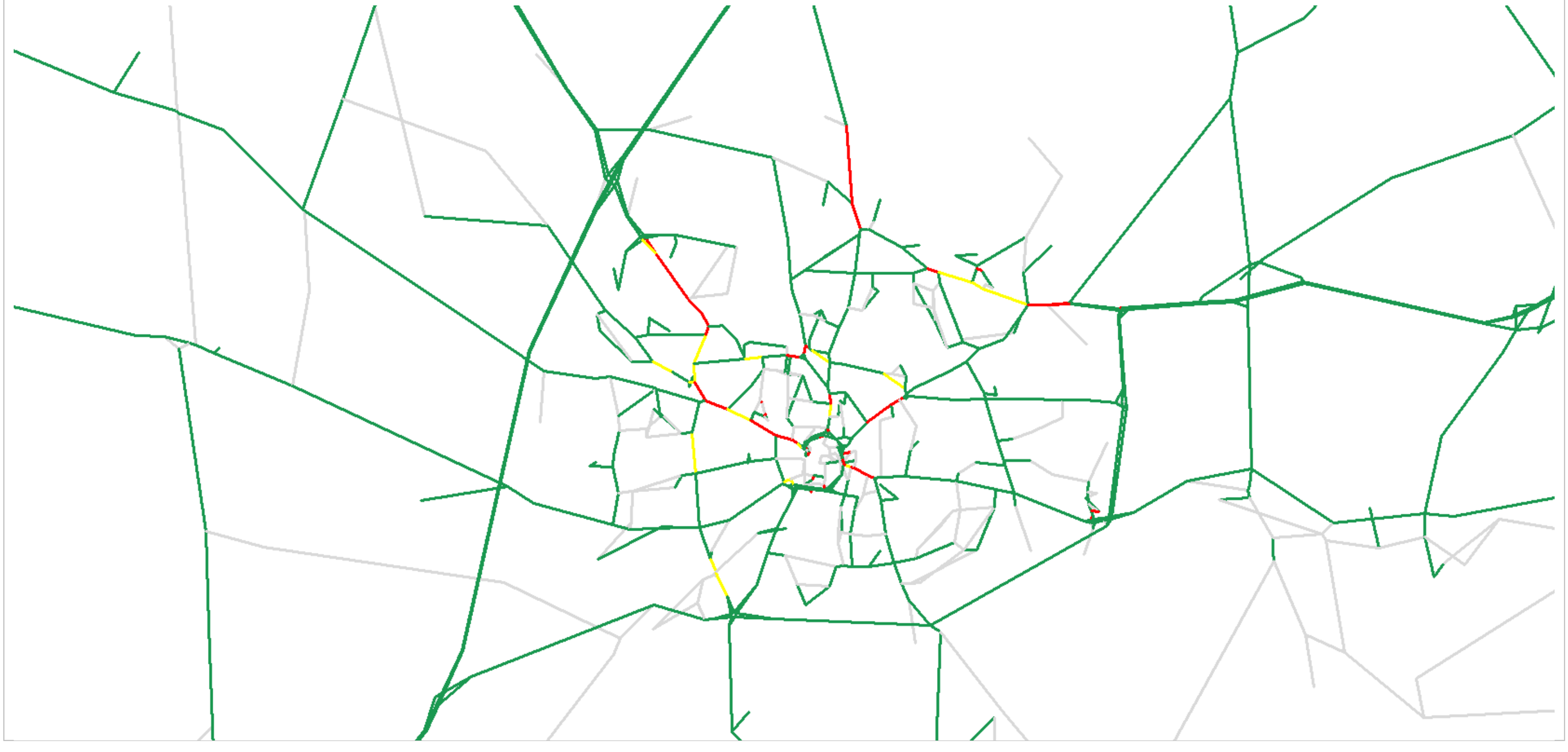
‘Natural Growth’ scenario – Morning Peak for forecast year 2025



SYSTRA

Darlington Local Plan – Strategic Model Output

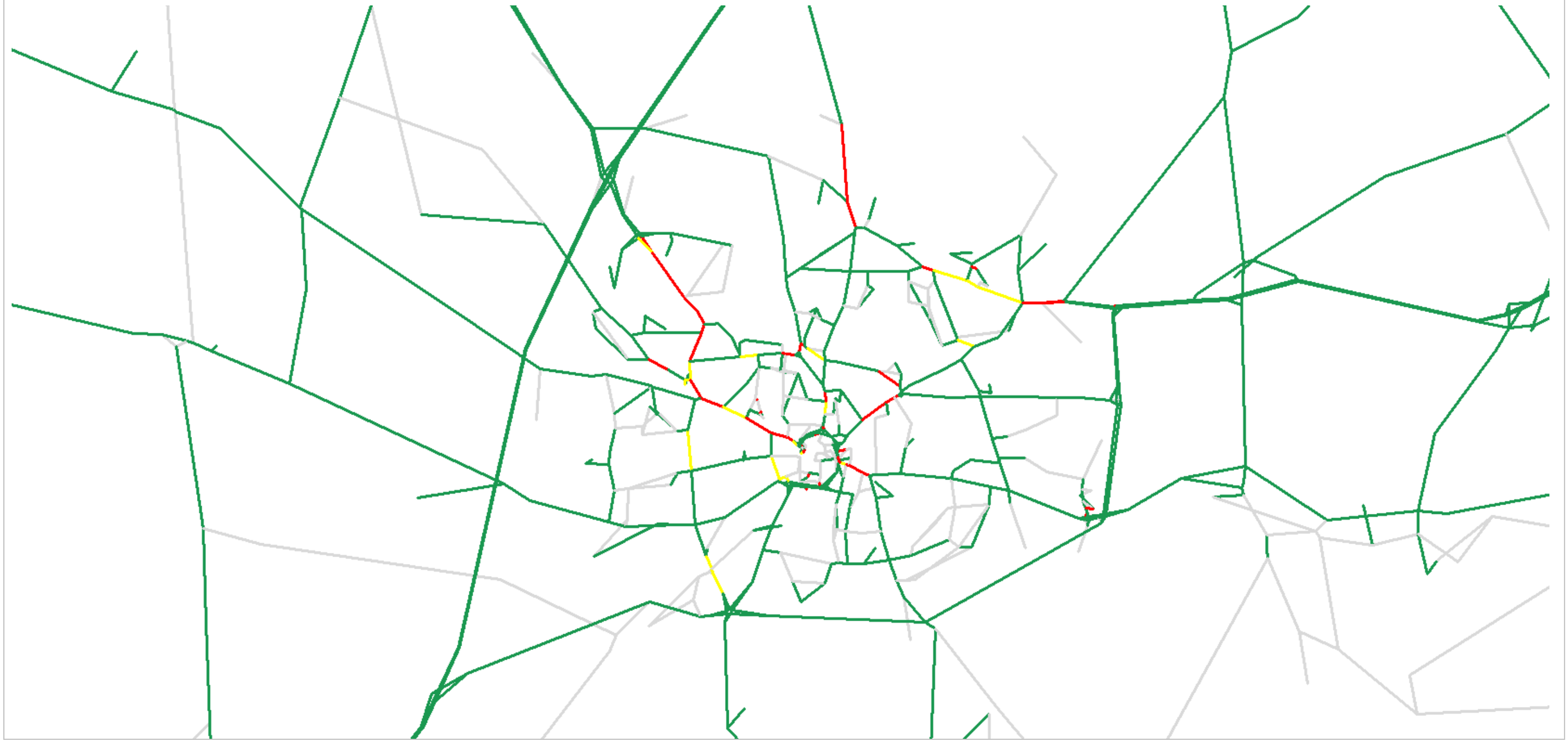
'Natural Growth' scenario – Morning Peak for forecast year 2030



SYSTRA

Darlington Local Plan – Strategic Model Output

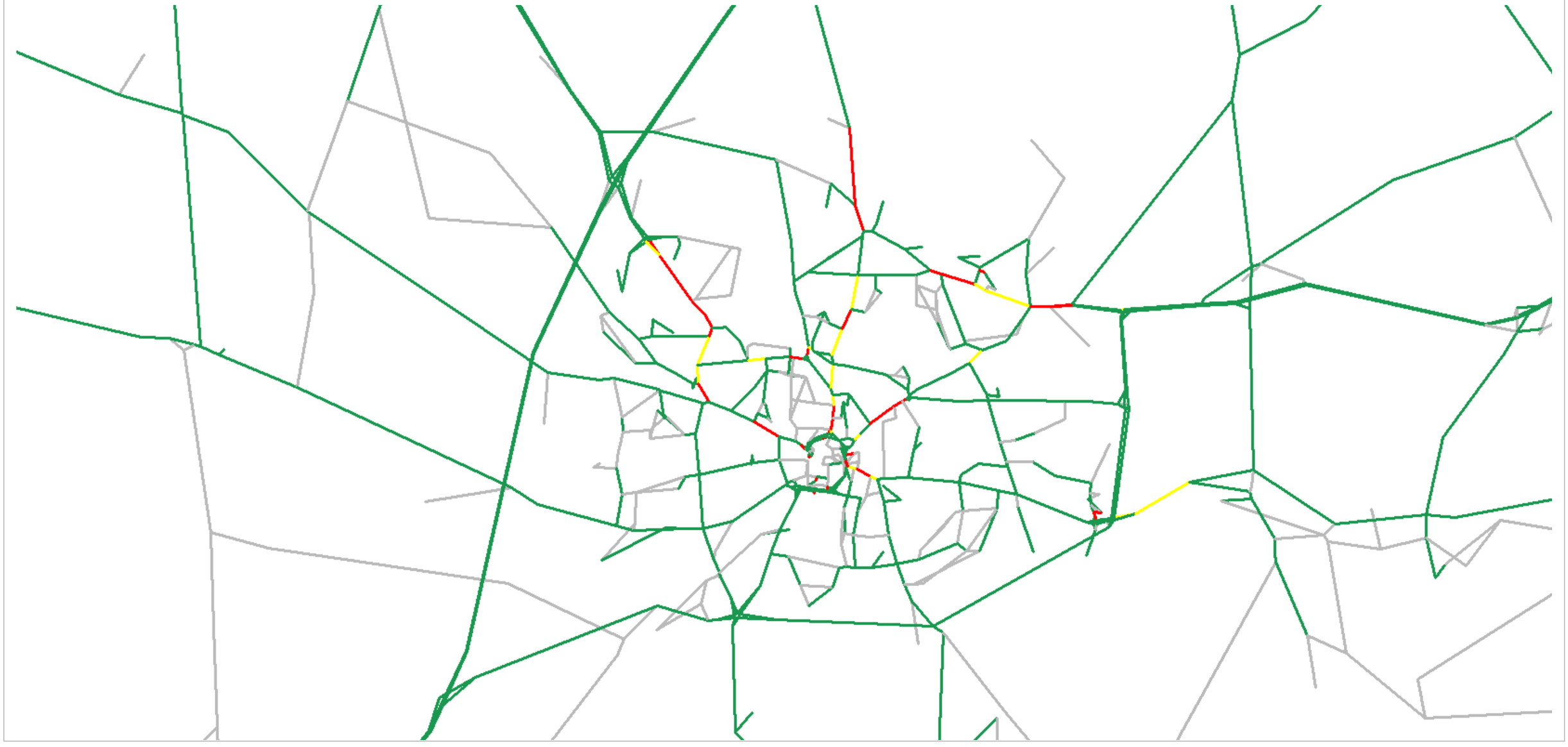
‘Natural Growth’ scenario – Morning Peak for forecast year 2035



SYSTRA

Darlington Local Plan – Strategic Model Output

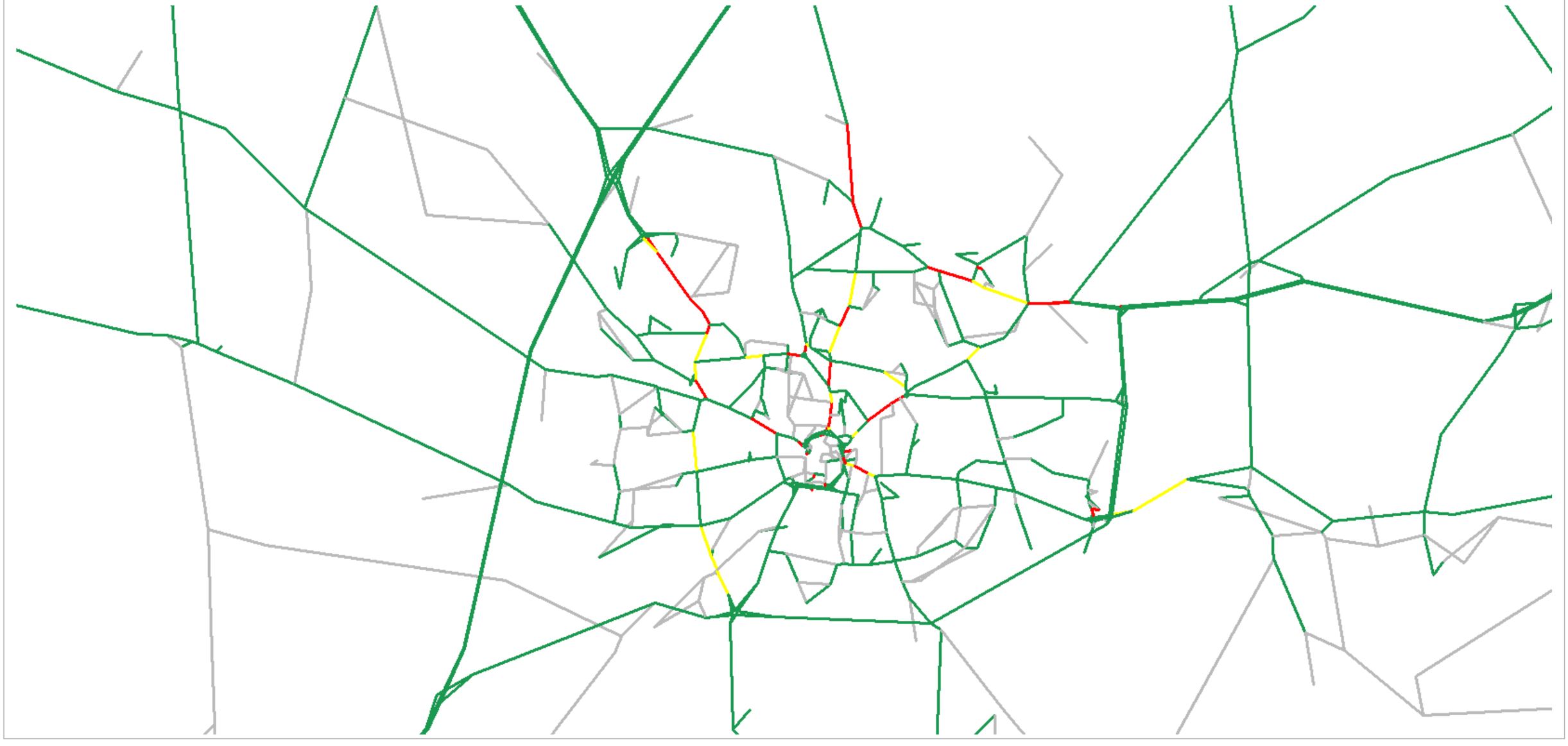
'Natural Growth' scenario – Evening Peak for forecast year 2020



SYSTRA

Darlington Local Plan – Strategic Model Output

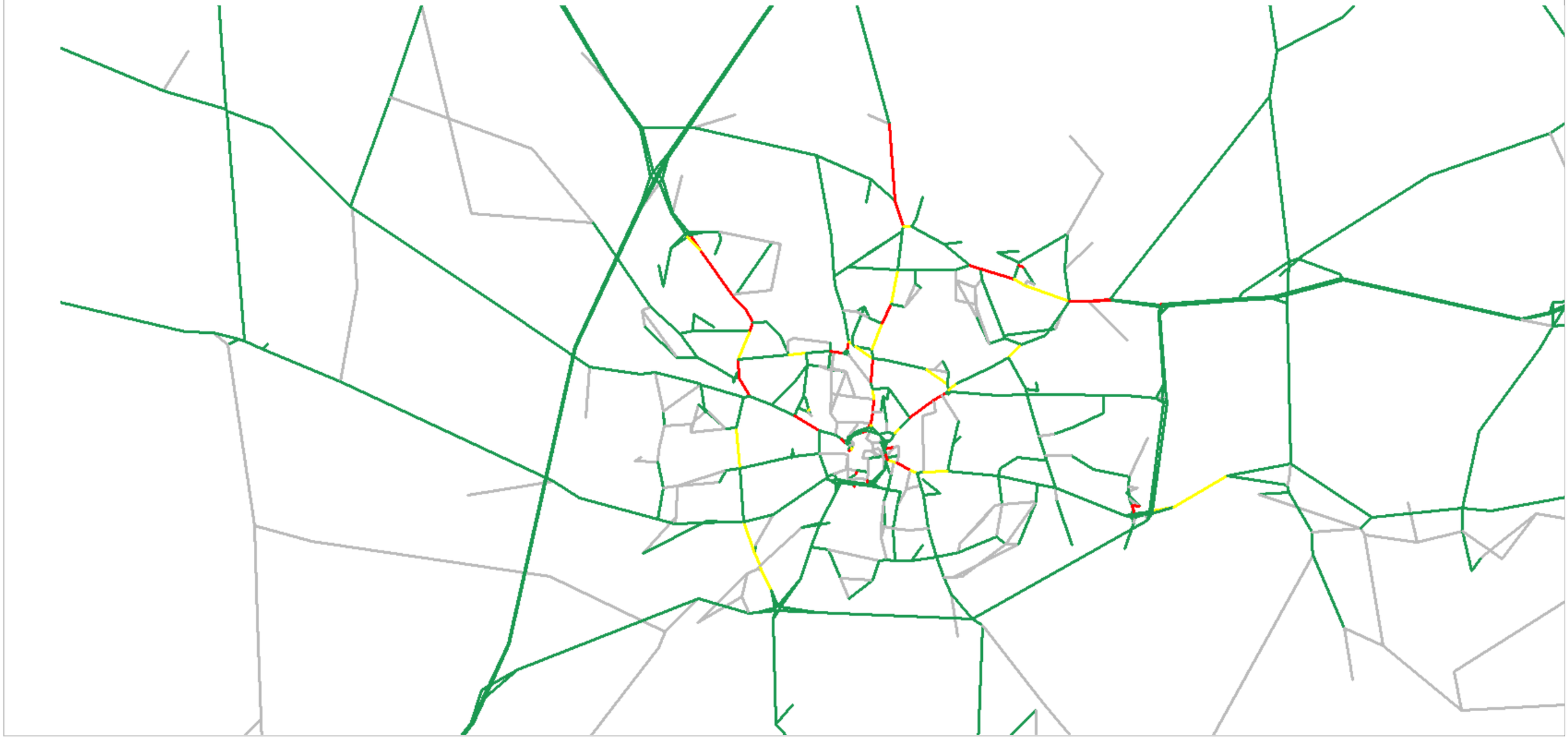
'Natural Growth' scenario – Evening Peak for forecast year 2025



SYSTRA

Darlington Local Plan – Strategic Model Output

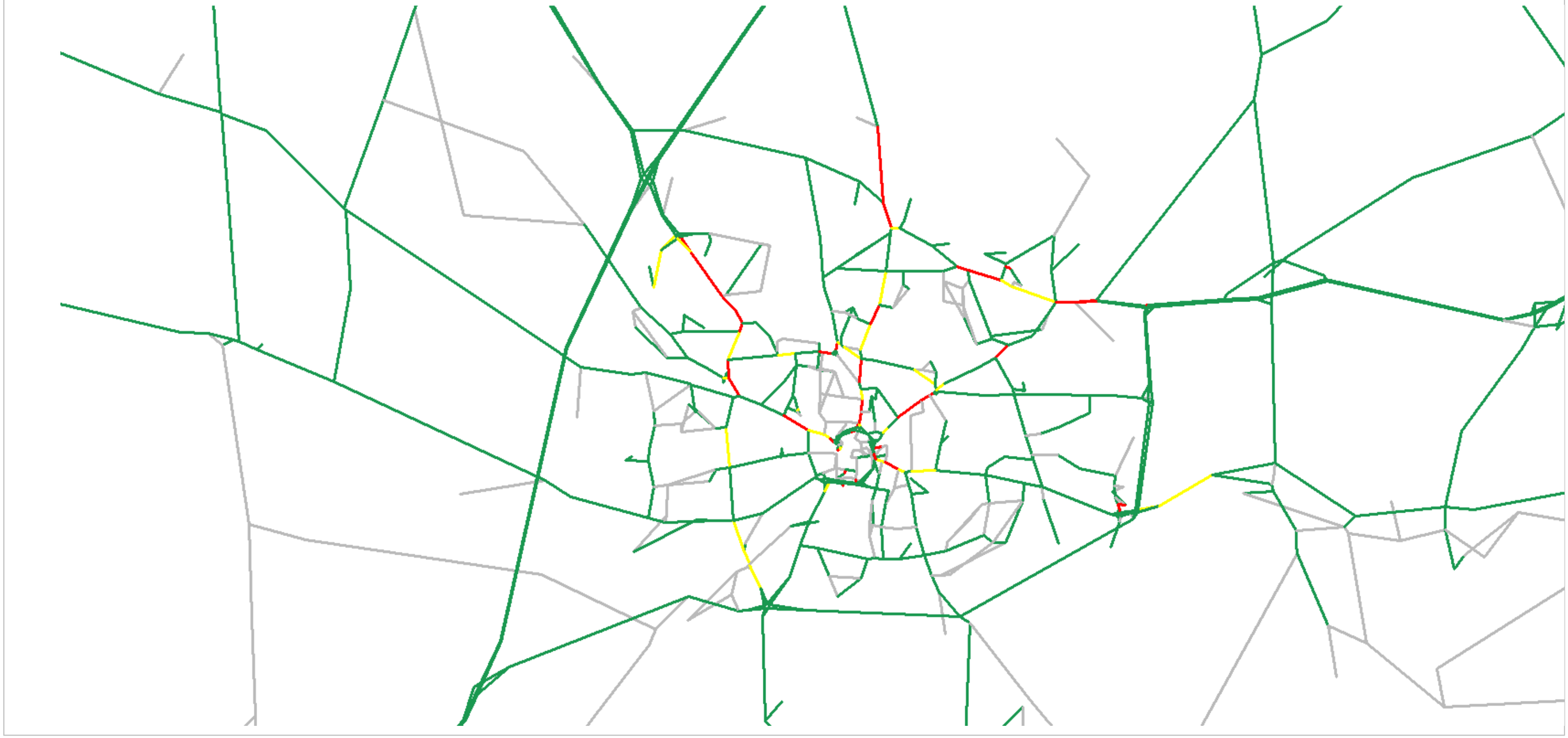
'Natural Growth' scenario – Evening Peak for forecast year 2030



SYSTRA

Darlington Local Plan – Strategic Model Output

'Natural Growth' scenario – Evening Peak for forecast year 2035



SYSTRA

Appendix E

CORRIDOR ANALYSIS

- Route 1 – A167 North Road - Inbound
- Route 2 – A167 North Road - Outbound
- Route 3 – A68 Auckland Road - Inbound
- Route 4 – A68 Auckland Road - Outbound
- Route 5 – B6279 Woodland Road - Inbound
- Route 6 – B6279 Woodland Road - Outbound
- Route 7 – A67 Coniscliffe Road - Inbound
- Route 8 – A67 Coniscliffe Road - Outbound
- Route 9 – A167 Grange Road - Outbound
- Route 10 –A167 Grange Road - Inbound
- Route 11 – Neasham Road - Outbound
- Route 12 – Neasham Road - Inbound
- Route 13 – Yarm Road - Outbound
- Route 14 – Yarm Road - Inbound
- Route 15 – DETC - Outbound
- Route 16 – DETC - Inbound
- Route 17 – Haughton Road - Outbound
- Route 18 – Haughton Road - Inbound
- Route 19 – East / West Route - Eastbound
- Route 20 – East / West Route - Westbound
- Route 21 – Carmel Road - Southbound
- Route 22 – Carmel Road - Northbound
- Route 23 – A66 Corridor - Eastbound
- Route 24 – A66 Corridor - Westbound
- Route 25 – North to East - Eastbound
- Route 26 – North to East - Westbound

Route 1 – A167 North Road - Inbound

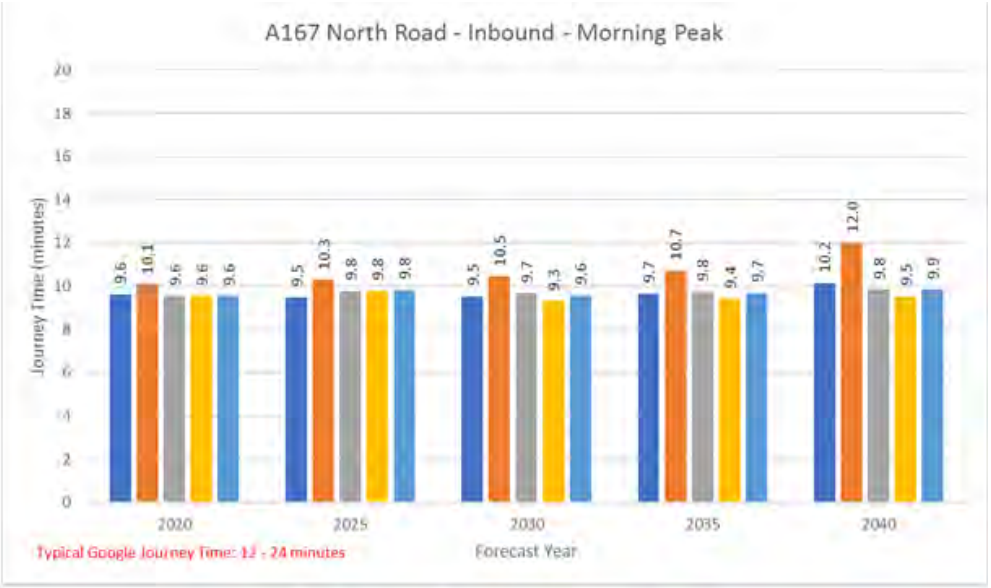
Mitigations

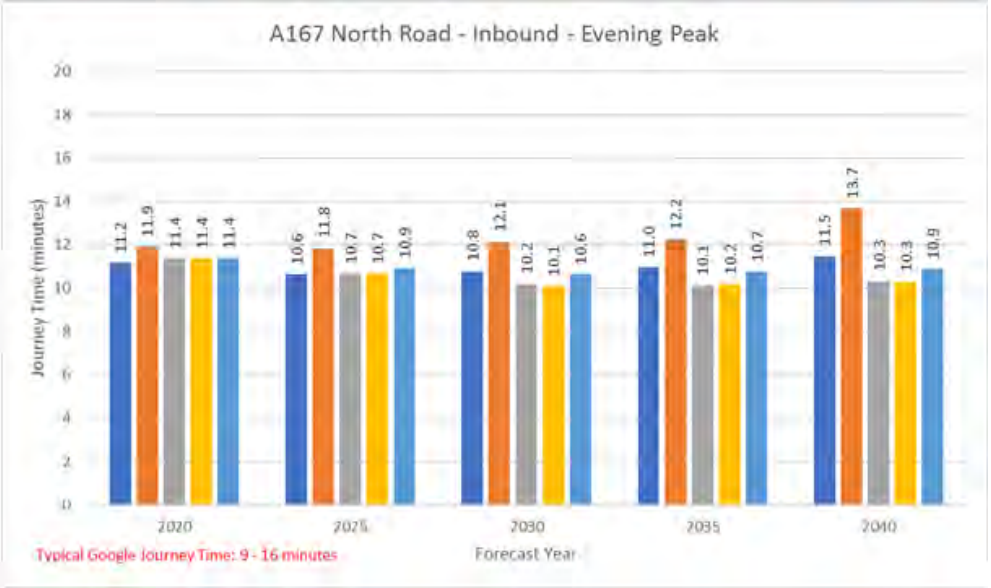
Observations

Increased delays on A167 inbound in both peaks.
Morning peak, increase in delays between Burtree Lane and Salters Lane, and around the junction of North Road and Cleveland Street

In evening peak, delays increase on approach to junction of North Road and Cleveland Street

Mitigation measure N1 provides relief at junction of Burtree Lane and North Road





- Without Local Plan Reference Case
- With Local Plan Reference Case
- With Local Plan and Mitigations
- With Local Plan and Mitigations (No Bypass)
- With Local Plan and Mitigations (No Bypass not ECML Link)

Model Journey Times – Average Hour, Google Drive time to arrive by 08:30 for Morning Peak, 17:30 for Evening Peak

SYSTRA

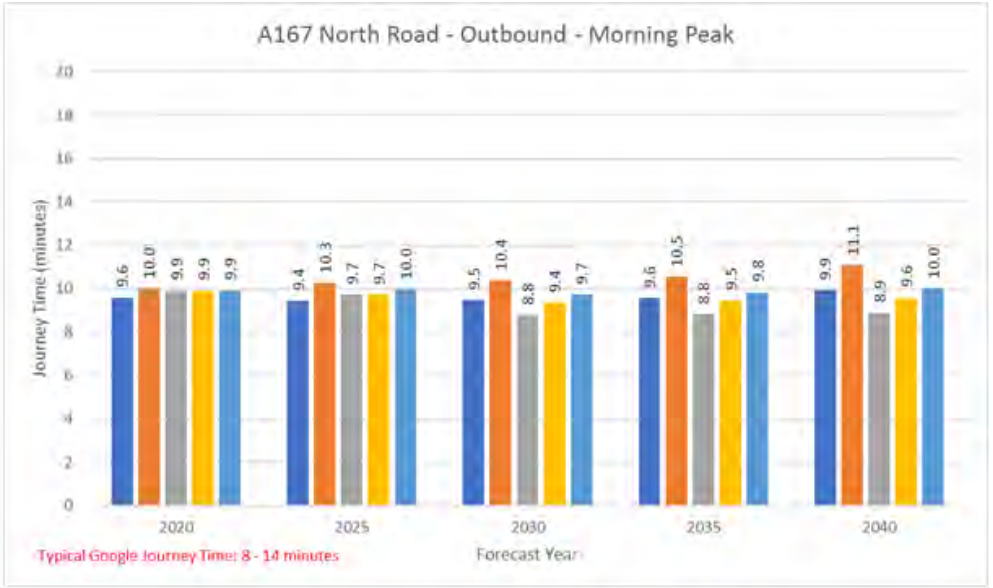
Route 2 – A167 North Road - Outbound

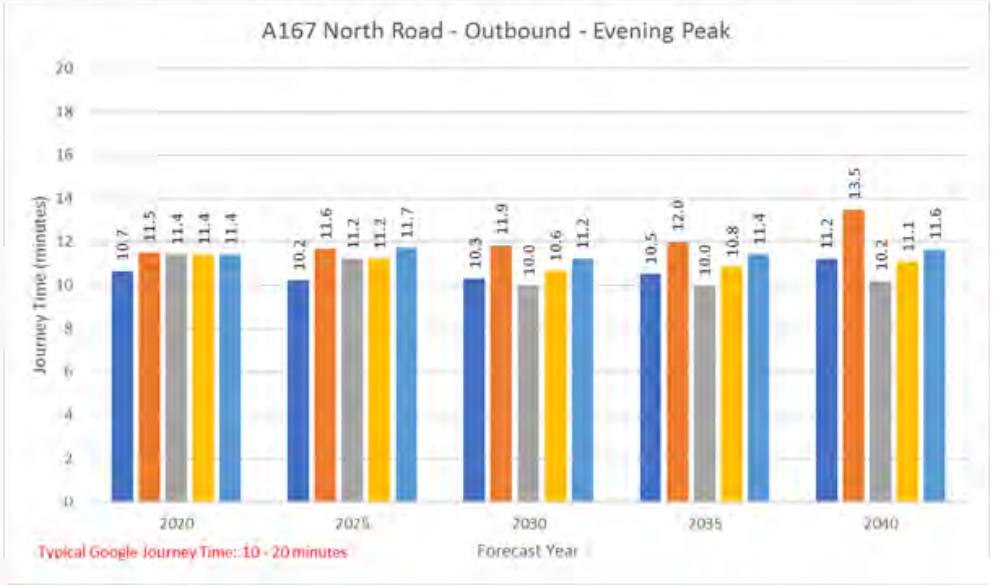
Mitigations

Observations

Delays generally increase along the corridor, particularly in the evening peak, with additional localised delays on approach to junction of North Road and Cleveland Street

Mitigation measure N1 provides relief at junction of Burtree Lane and North Road





- Without Local Plan Reference Case
- With Local Plan Reference Case
- With Local Plan and Mitigations
- With Local Plan and Mitigations (No Bypass)
- With Local Plan and Mitigations (No Bypass not ECML Link)

Model Journey Times – Average Hour, Google Drive time to arrive by 08:30 for Morning Peak, 17:30 for Evening Peak

SYSTRA

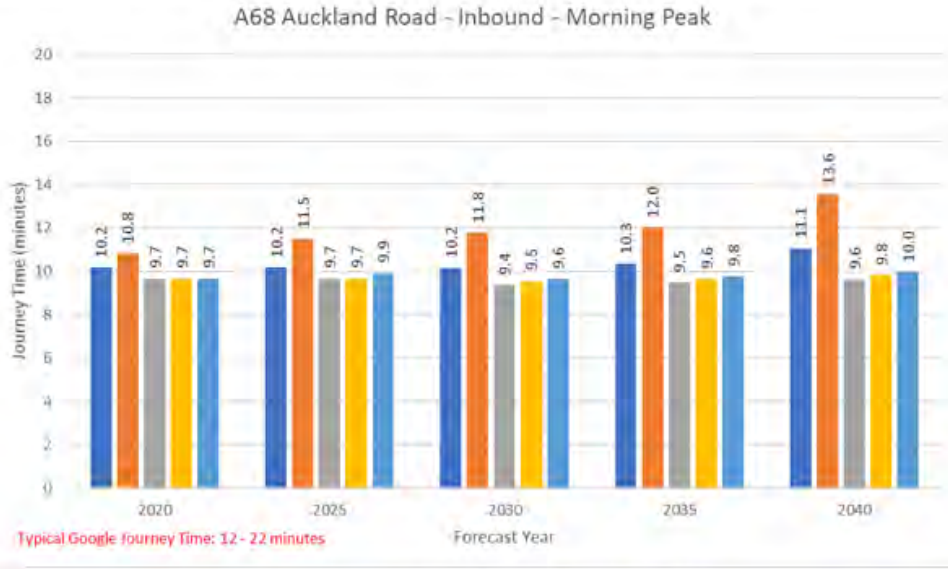
Route 3 – A68 Auckland Road - Inbound

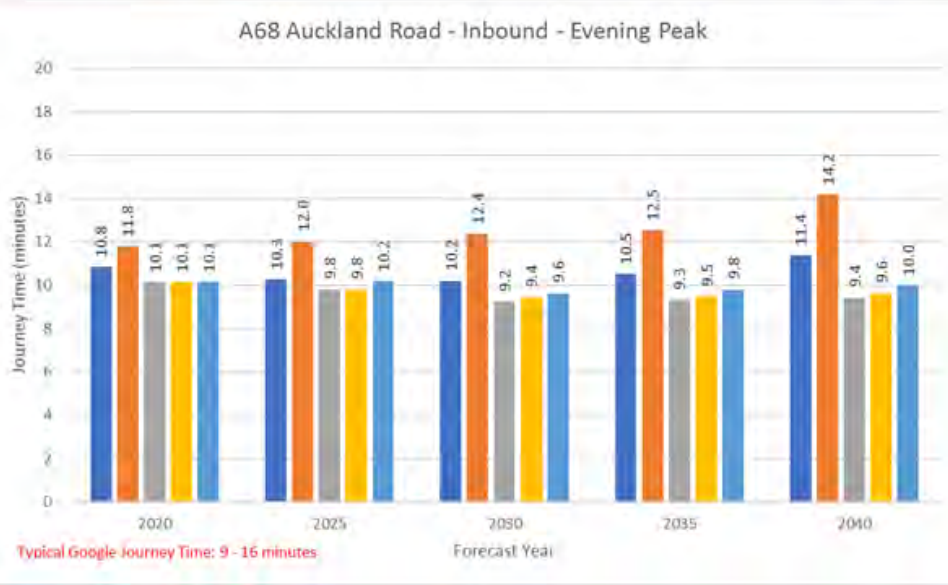
Mitigations

Observations

Significant additional delays at junctions of Woodland Road and Staindrop Road and Woodland Road and Stanhope Road

Mitigation measures NW3 and NW4 provide relief on this corridor





Without Local Plan Reference Case
With Local Plan Reference Case
With Local Plan and Mitigations
With Local Plan and Mitigations (No Bypass)
With Local Plan and Mitigations (No Bypass not ECML Link)

Model Journey Times – Average Hour, Google Drive time to arrive by 08:30 for Morning Peak, 17:30 for Evening Peak

SYSTRA

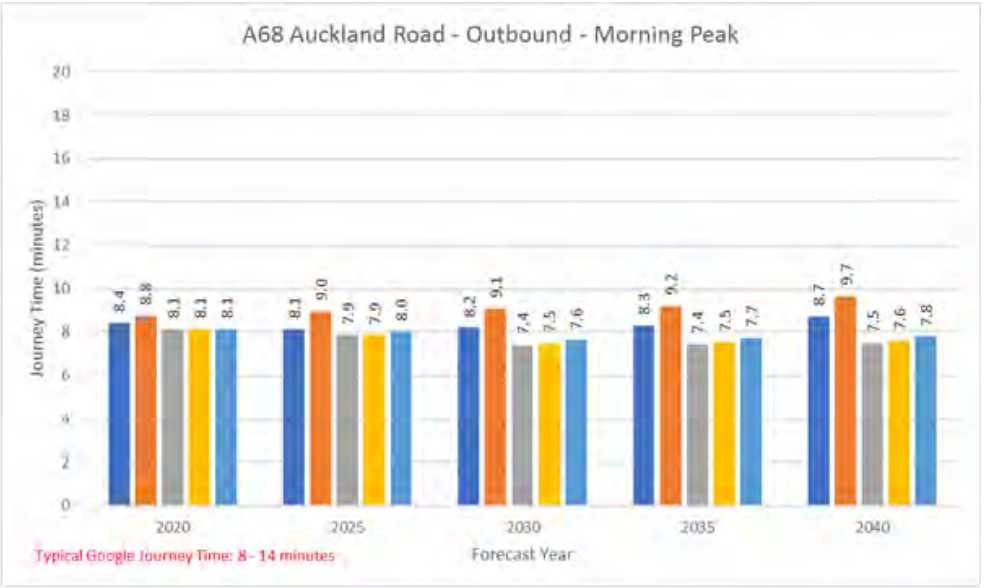
Route 4 – A68 Auckland Road - Outbound

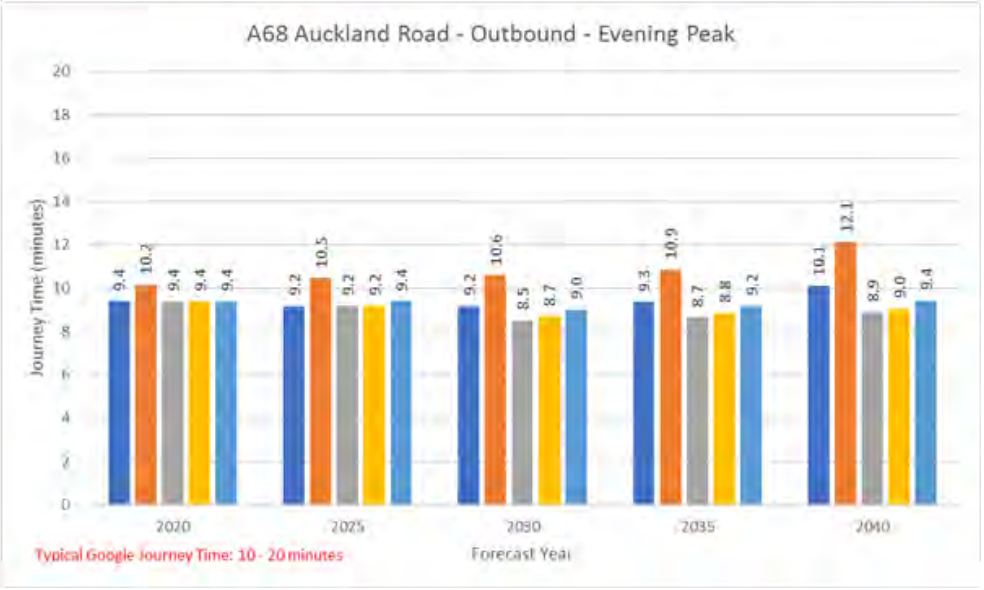
Mitigations

Observations

Significant additional delays at junctions of Woodland Road and Staindrop Road and Woodland Road and Stanhope Road

Mitigation measures NW3 and NW4 provide relief on this corridor





Without Local Plan Reference Case
With Local Plan Reference Case
With Local Plan and Mitigations
With Local Plan and Mitigations (No Bypass)
With Local Plan and Mitigations (No Bypass not ECML Link)

Model Journey Times – Average Hour, Google Drive time to arrive by 08:30 for Morning Peak, 17:30 for Evening Peak

SYSTRA

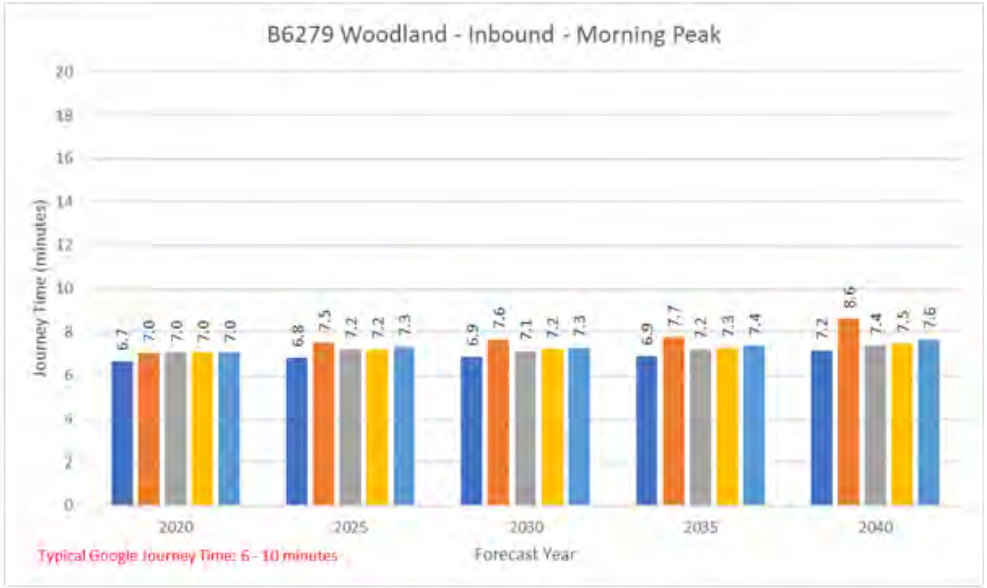
Route 5 – B6279 Woodland Road - Inbound

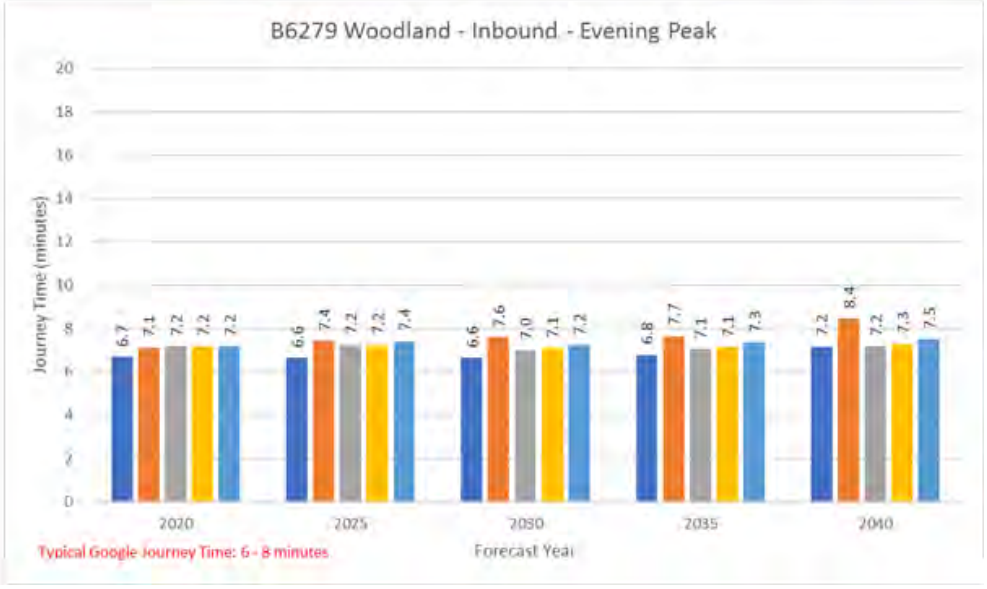
Mitigations

Observations

Additional delays at junction of Woodland Road and Stanhope Road

Mitigation measure NW4 provide relief on this corridor





Without Local Plan Reference Case
With Local Plan Reference Case
With Local Plan and Mitigations
With Local Plan and Mitigations (No Bypass)
With Local Plan and Mitigations (No Bypass not ECML Link)

Model Journey Times – Average Hour, Google Drive time to arrive by 08:30 for Morning Peak, 17:30 for Evening Peak

SYSTRA

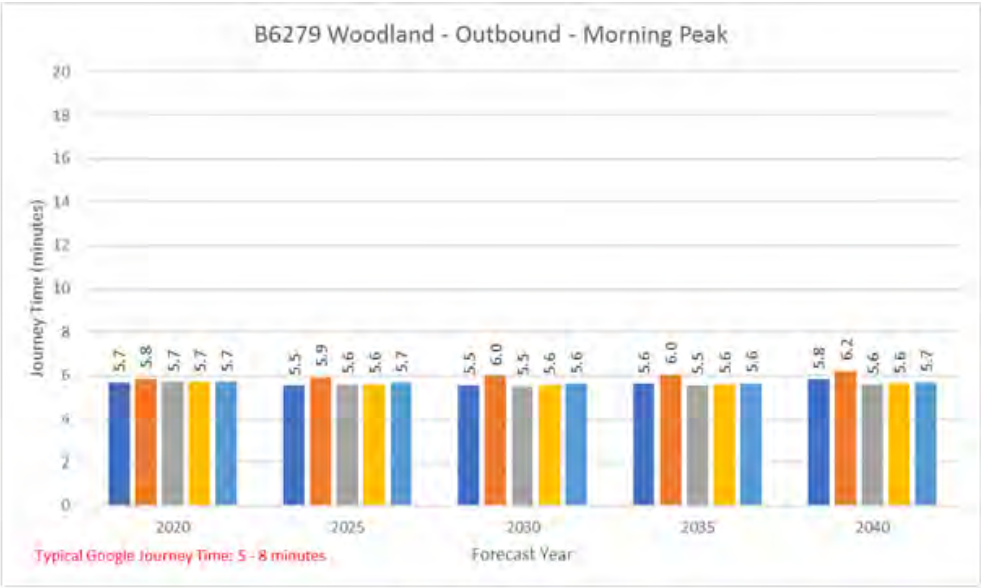
Route 6 – B6279 Woodland Road - Outbound

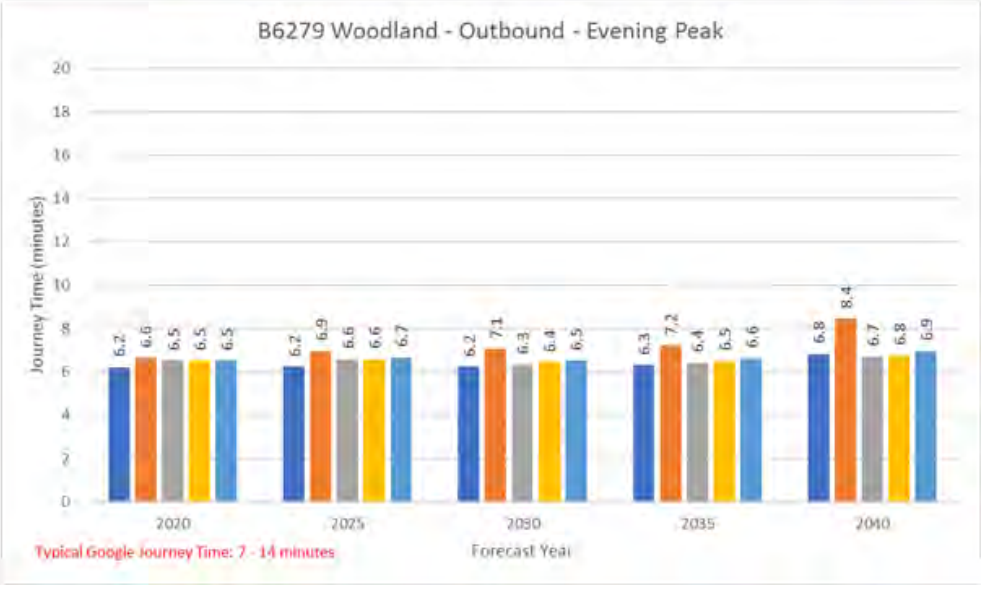
Mitigations

Observations

Additional delays during evening peak at junction of Woodland Road and Stanhope Road

Mitigation measure NW4 provide relief on this corridor





- Without Local Plan Reference Case
- With Local Plan Reference Case
- With Local Plan and Mitigations
- With Local Plan and Mitigations (No Bypass)
- With Local Plan and Mitigations (No Bypass not ECML Link)

Model Journey Times – Average Hour, Google Drive time to arrive by 08:30 for Morning Peak, 17:30 for Evening Peak

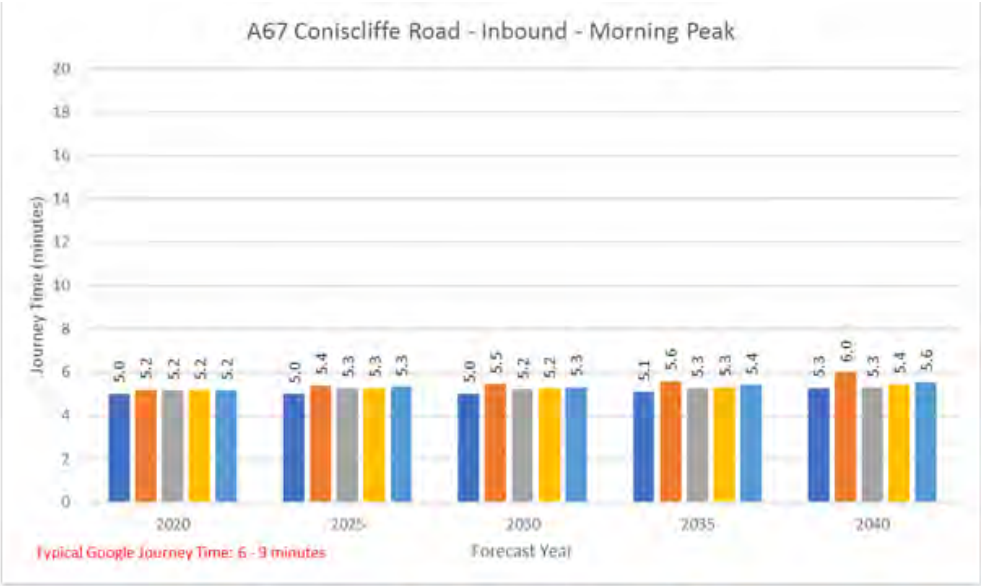
SYSTRA

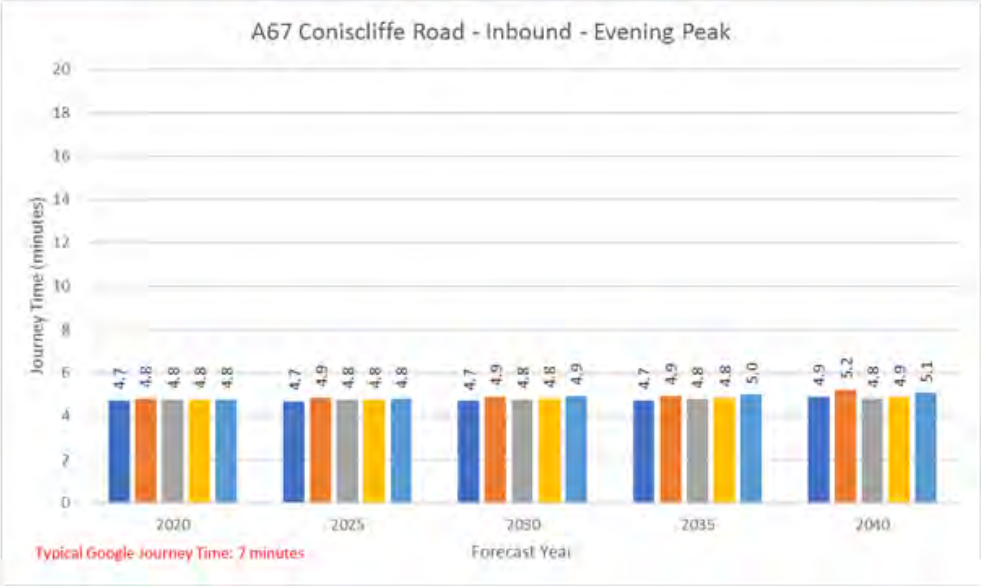
Route 7 – A67 Coniscliffe Road - Inbound

Mitigations

Observations

No significant delays along corridor





Without Local Plan Reference Case
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With Local Plan and Mitigations
With Local Plan and Mitigations (No Bypass)
With Local Plan and Mitigations (No Bypass not ECML Link)

Model Journey Times – Average Hour, Google Drive time to arrive by 08:30 for Morning Peak, 17:30 for Evening Peak

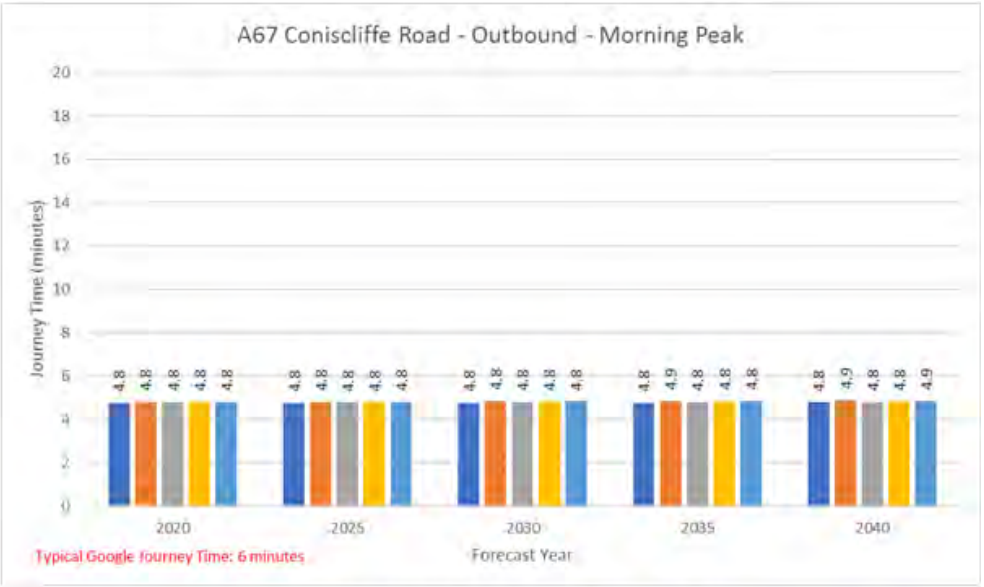
SYSTRA

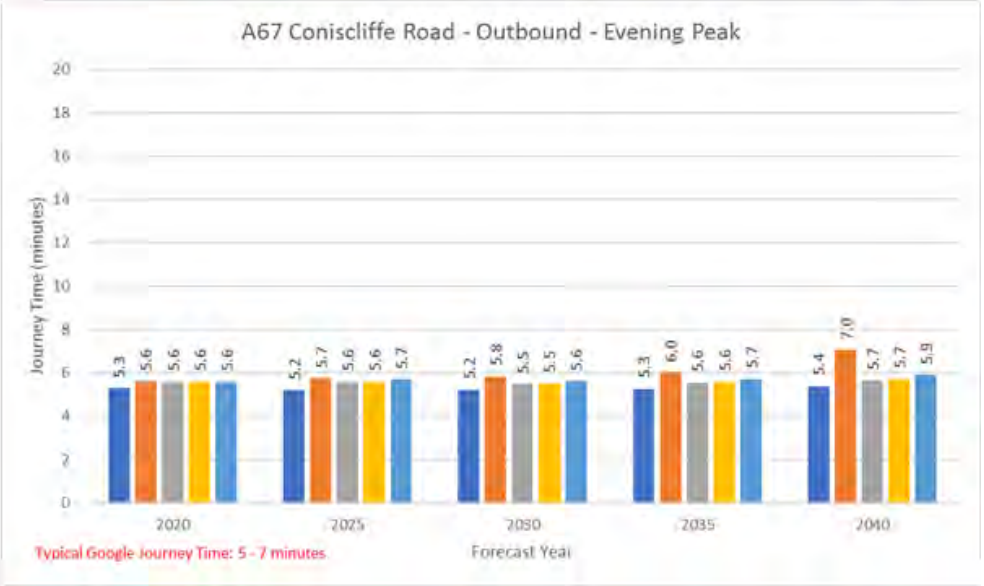
Route 8 – A67 Coniscliffe Road - Outbound

Mitigations

Observations

No significant delays along corridor





Without Local Plan Reference Case
With Local Plan Reference Case
With Local Plan and Mitigations
With Local Plan and Mitigations (No Bypass)
With Local Plan and Mitigations (No Bypass not ECML Link)

Model Journey Times – Average Hour, Google Drive time to arrive by 08:30 for Morning Peak, 17:30 for Evening Peak

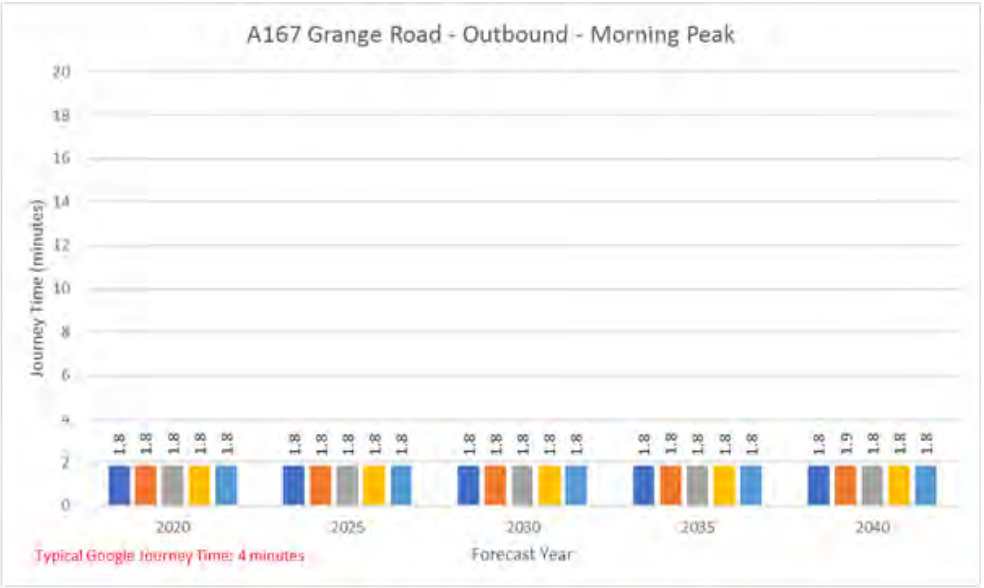
SYSTRA

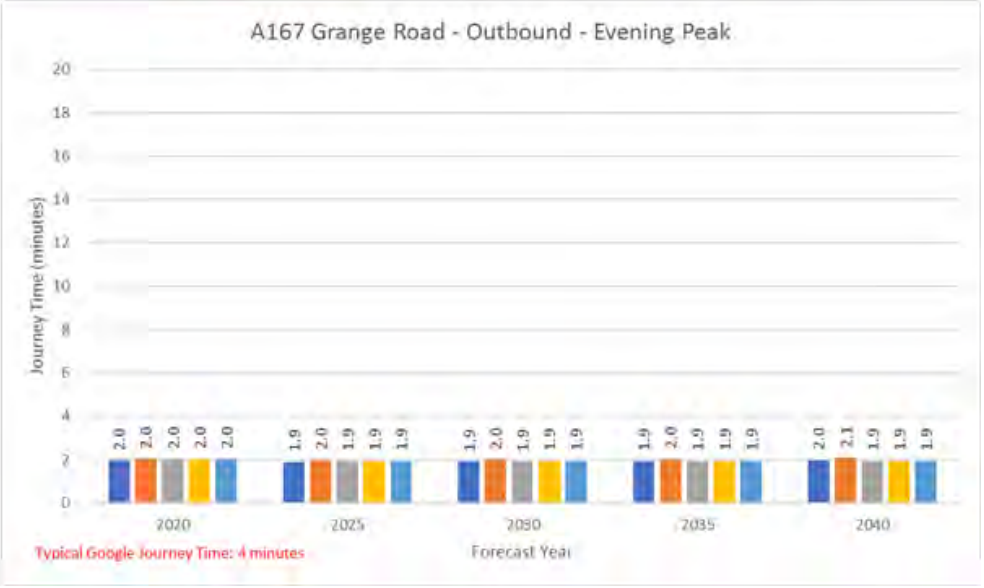
Route 9 – A167 Grange Road - Outbound

Mitigations

Observations

No significant delays along corridor – note corridor does not include A66 Blands' Corner





- Without Local Plan Reference Case
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- With Local Plan and Mitigations
- With Local Plan and Mitigations (No Bypass)
- With Local Plan and Mitigations (No Bypass not ECML Link)

Model Journey Times – Average Hour, Google Drive time to arrive by 08:30 for Morning Peak, 17:30 for Evening Peak

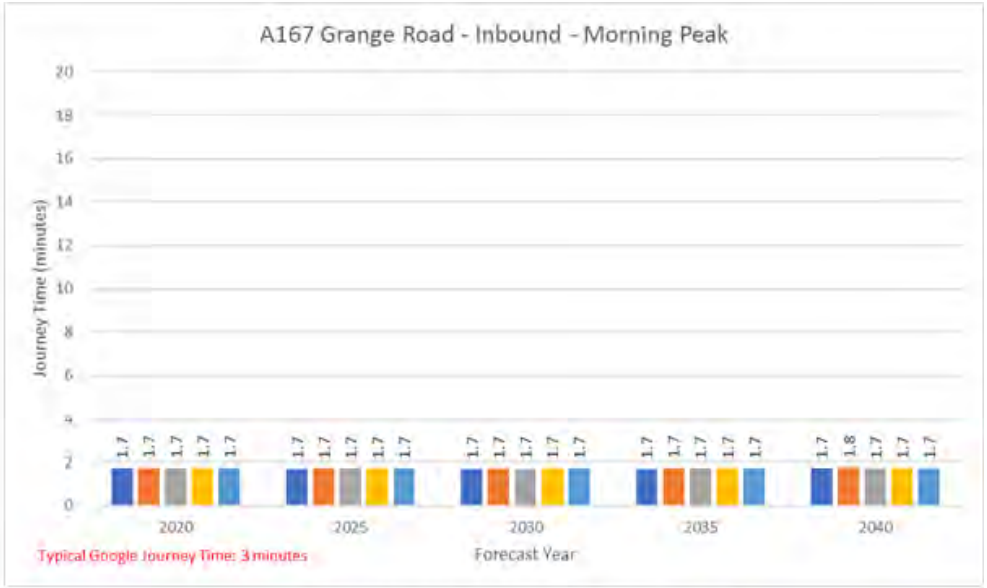
SYSTRA

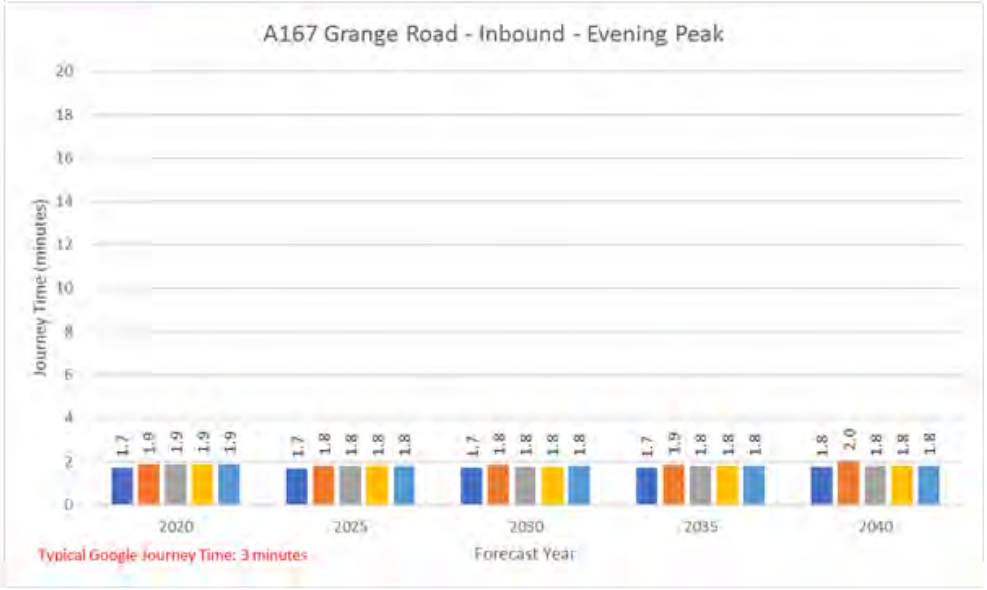
Route 10 – A167 Grange Road - Inbound

Mitigations

Observations

No significant delays along corridor – note corridor does not include A66 Blands' Corner





Without Local Plan Reference Case
With Local Plan Reference Case
With Local Plan and Mitigations
With Local Plan and Mitigations (No Bypass)
With Local Plan and Mitigations (No Bypass not ECML Link)

Model Journey Times – Average Hour, Google Drive time to arrive by 08:30 for Morning Peak, 17:30 for Evening Peak

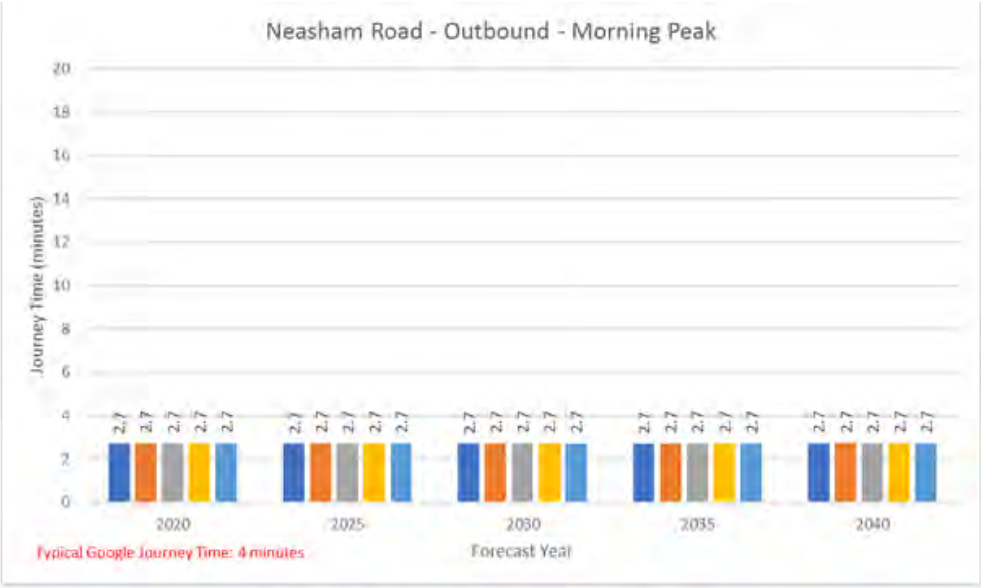
SYSTRA

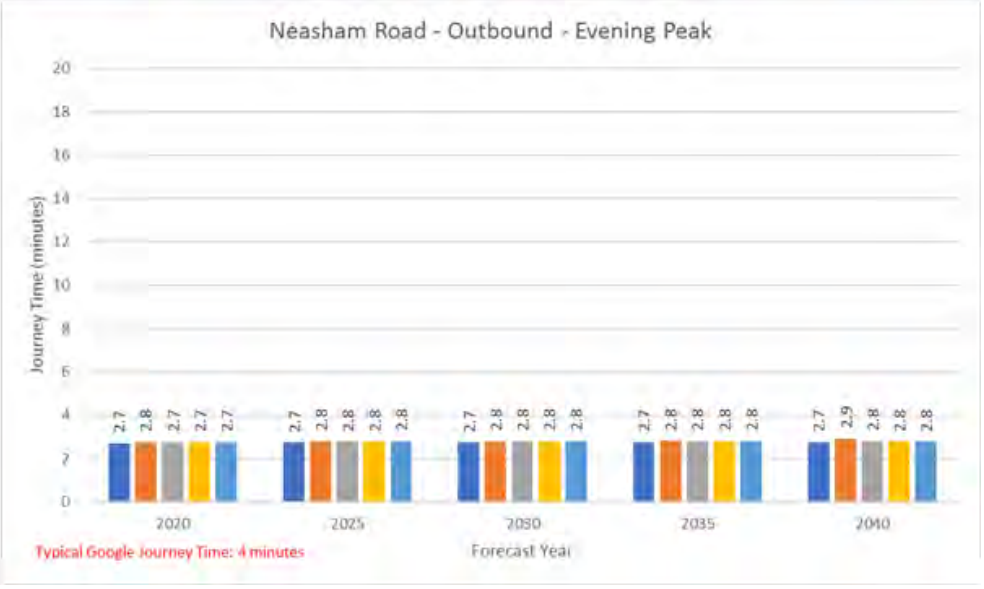
Route 11 – Neasham Road - Outbound

Mitigations

Observations

No significant delays along corridor





Without Local Plan Reference Case
With Local Plan Reference Case
With Local Plan and Mitigations
With Local Plan and Mitigations (No Bypass)
With Local Plan and Mitigations (No Bypass not ECML Link)

Model Journey Times – Average Hour, Google Drive time to arrive by 08:30 for Morning Peak, 17:30 for Evening Peak

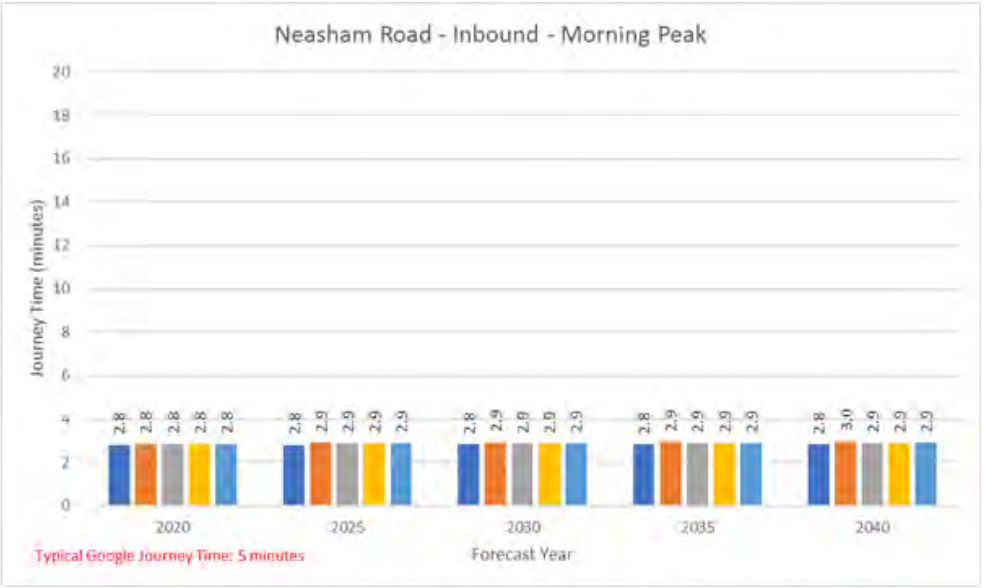
SYSTRA

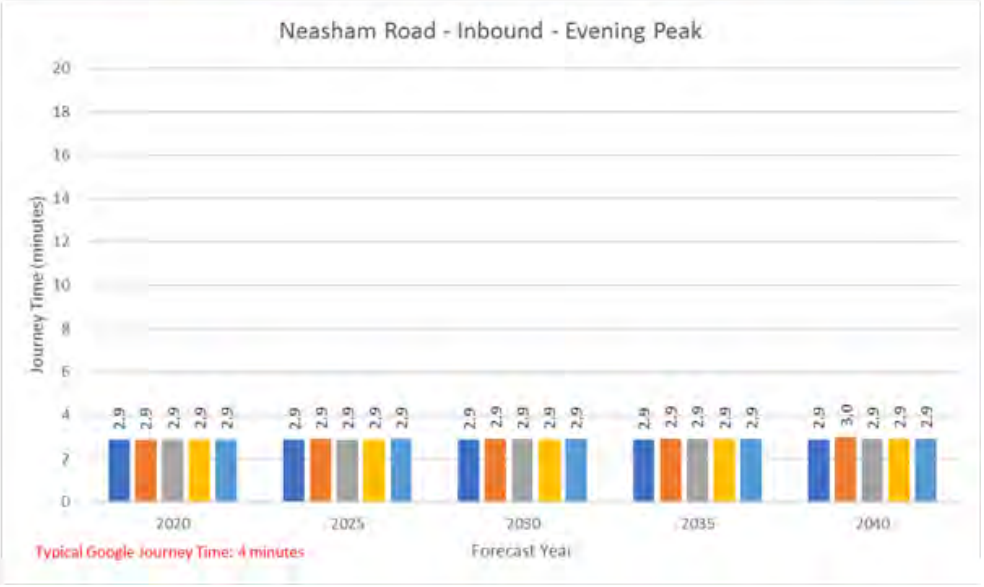
Route 12 – Neasham Road - Inbound

Mitigations

Observations

No significant delays along corridor





Without Local Plan Reference Case
With Local Plan Reference Case
With Local Plan and Mitigations
With Local Plan and Mitigations (No Bypass)
With Local Plan and Mitigations (No Bypass not ECML Link)

Model Journey Times – Average Hour, Google Drive time to arrive by 08:30 for Morning Peak, 17:30 for Evening Peak

SYSTRA

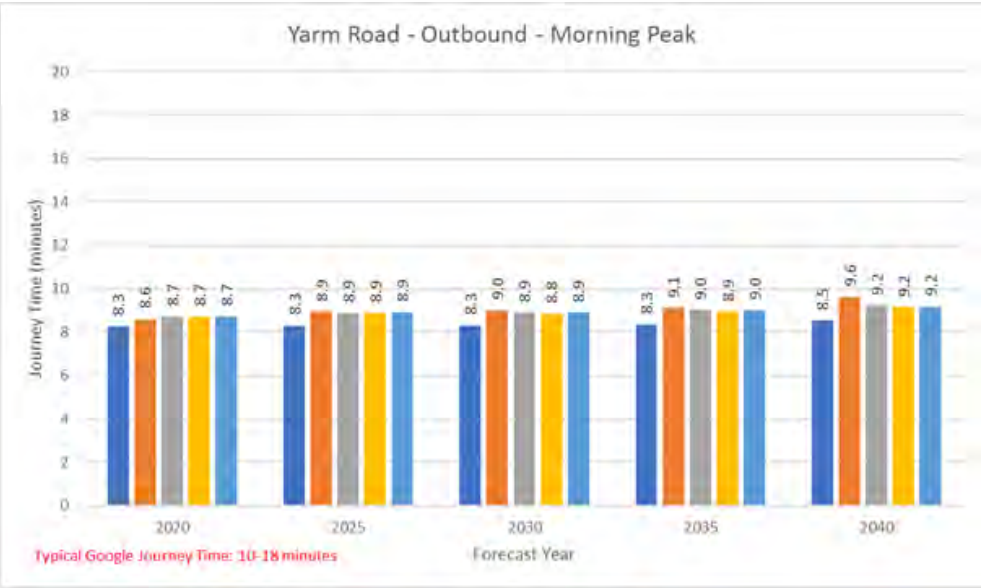
Route 13 – Yarm Road - Outbound

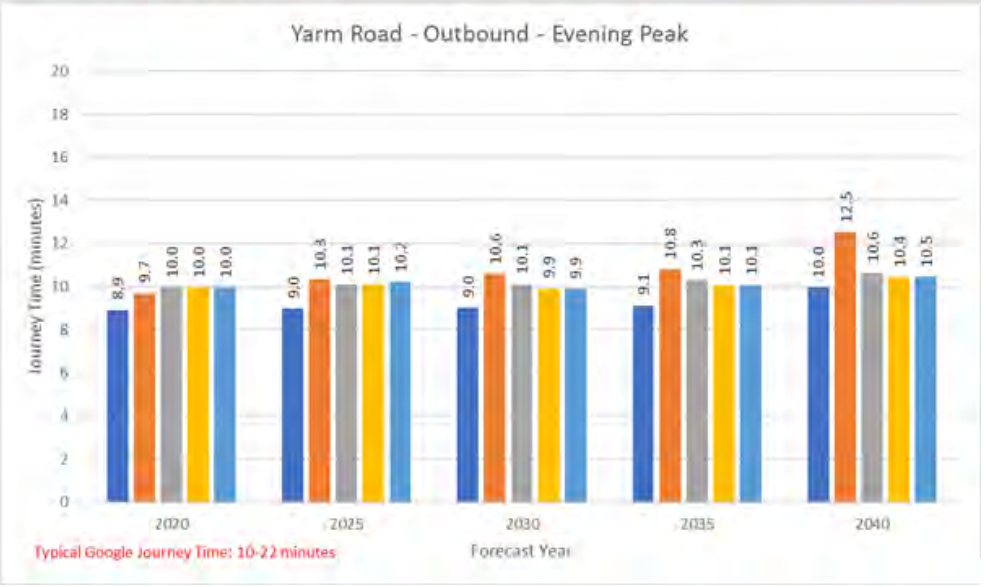
Mitigations

Observations

Additional delays at A66 Yarm Road and junction of Yarm Road and McMullen Road.

Mitigation measures E4, E5 and E6 provide relief along corridor





- Without Local Plan Reference Case
- With Local Plan Reference Case
- With Local Plan and Mitigations
- With Local Plan and Mitigations (No Bypass)
- With Local Plan and Mitigations (No Bypass not ECML Link)

Model Journey Times – Average Hour, Google Drive time to arrive by 08:30 for Morning Peak, 17:30 for Evening Peak

SYSTRA

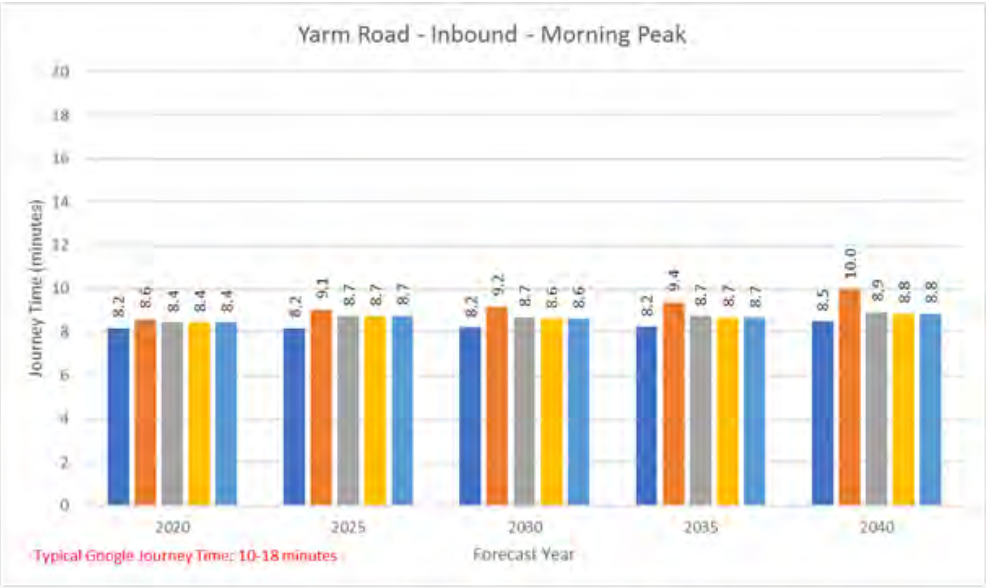
Route 14 – Yarm Road - Inbound

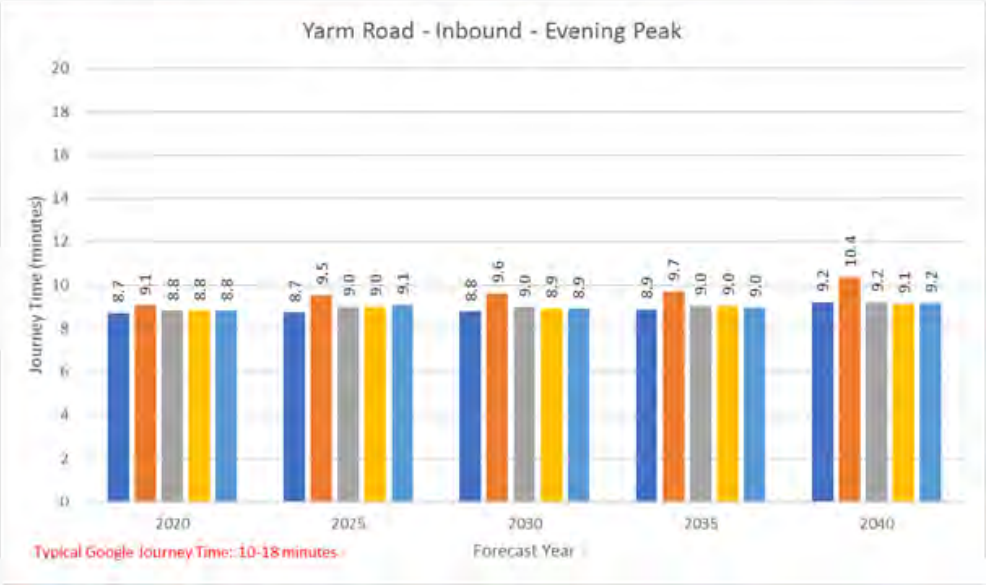
Mitigations

Observations

Additional delays at A66 Yarm Road and junction of Yarm Road and McMullen Road.

Mitigation measures E4, E5 and E6 provide relief along corridor





Without Local Plan Reference Case
With Local Plan Reference Case
With Local Plan and Mitigations
With Local Plan and Mitigations (No Bypass)
With Local Plan and Mitigations (No Bypass not ECML Link)

Model Journey Times – Average Hour, Google Drive time to arrive by 08:30 for Morning Peak, 17:30 for Evening Peak

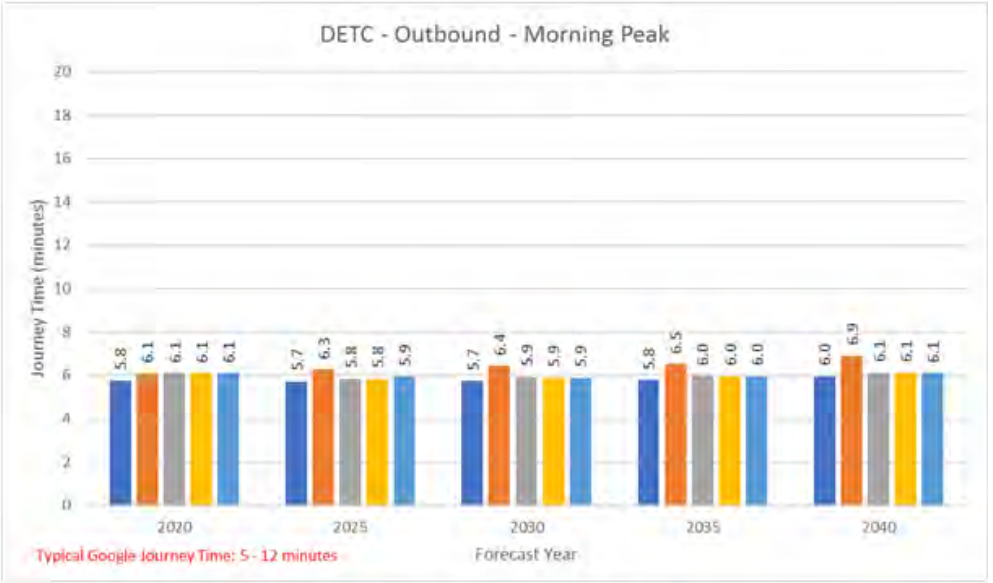
SYSTRA

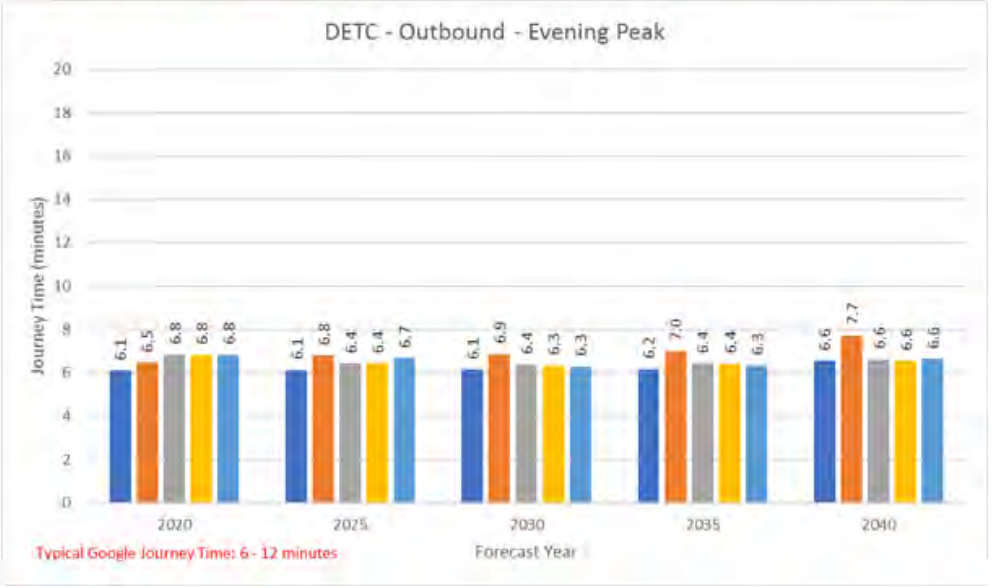
Route 15 – DETC - Outbound

Mitigations

Observations

No significant delays along corridor





Without Local Plan Reference Case
With Local Plan Reference Case
With Local Plan and Mitigations
With Local Plan and Mitigations (No Bypass)
With Local Plan and Mitigations (No Bypass not ECML Link)

Model Journey Times – Average Hour, Google Drive time to arrive by 08:30 for Morning Peak, 17:30 for Evening Peak

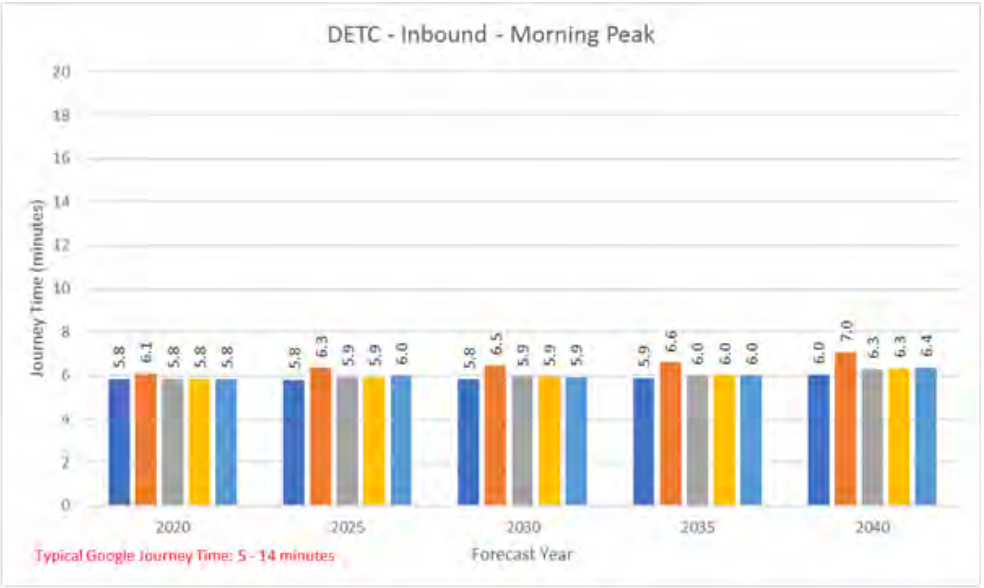
SYSTRA

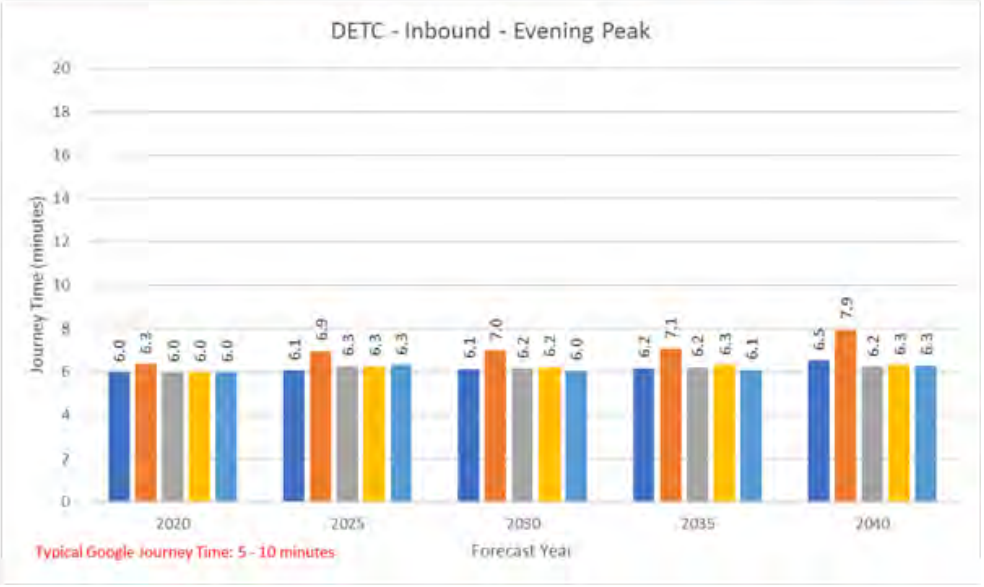
Route 16 – DETC - Inbound

Mitigations

Observations

No significant delays along corridor





- Without Local Plan Reference Case
- With Local Plan Reference Case
- With Local Plan and Mitigations
- With Local Plan and Mitigations (No Bypass)
- With Local Plan and Mitigations (No Bypass not ECML Link)

Model Journey Times – Average Hour, Google Drive time to arrive by 08:30 for Morning Peak, 17:30 for Evening Peak

SYSTRA

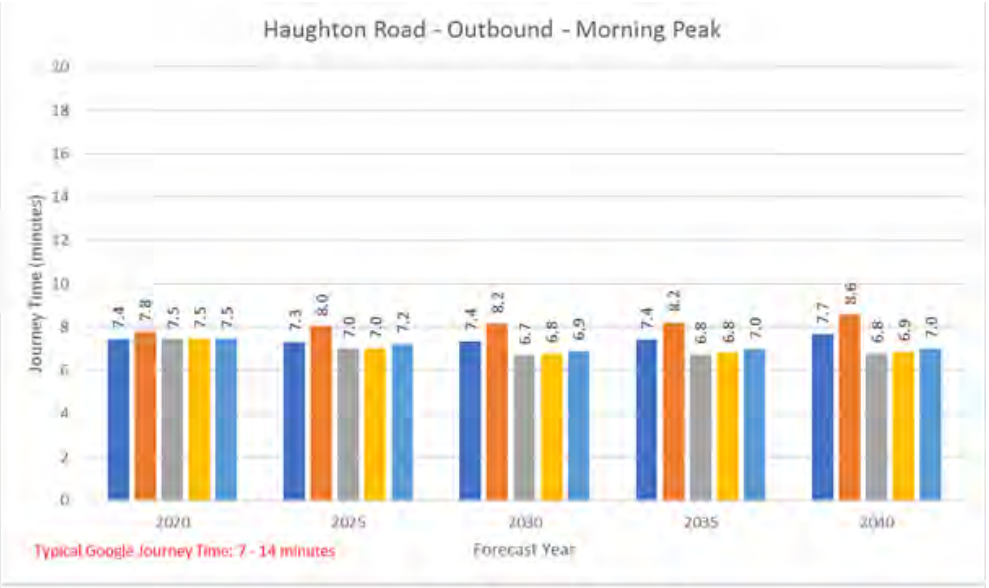
Route 17 – Haughton Road - Outbound

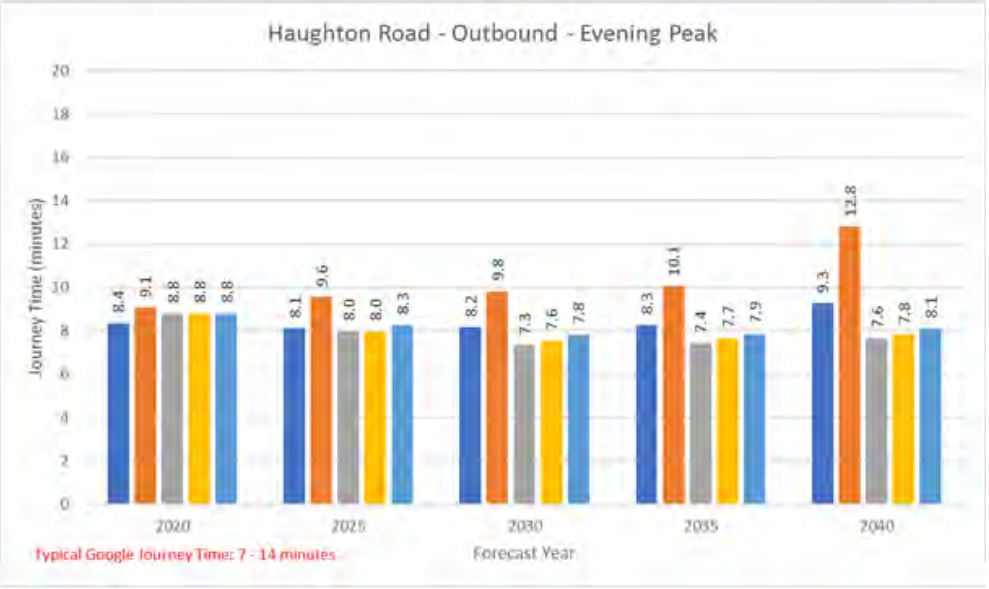
Mitigations

Observations

Significant additional delays on section of A1150 eastbound following junction of Stockton Road and Whinfield Road

Issues linked to increasing development traffic accessing from Skerningham development as distributor road network for site provides mitigation





- Without Local Plan Reference Case
- With Local Plan Reference Case
- With Local Plan and Mitigations
- With Local Plan and Mitigations (No Bypass)
- With Local Plan and Mitigations (No Bypass not ECML Link)

Model Journey Times – Average Hour, Google Drive time to arrive by 08:30 for Morning Peak, 17:30 for Evening Peak

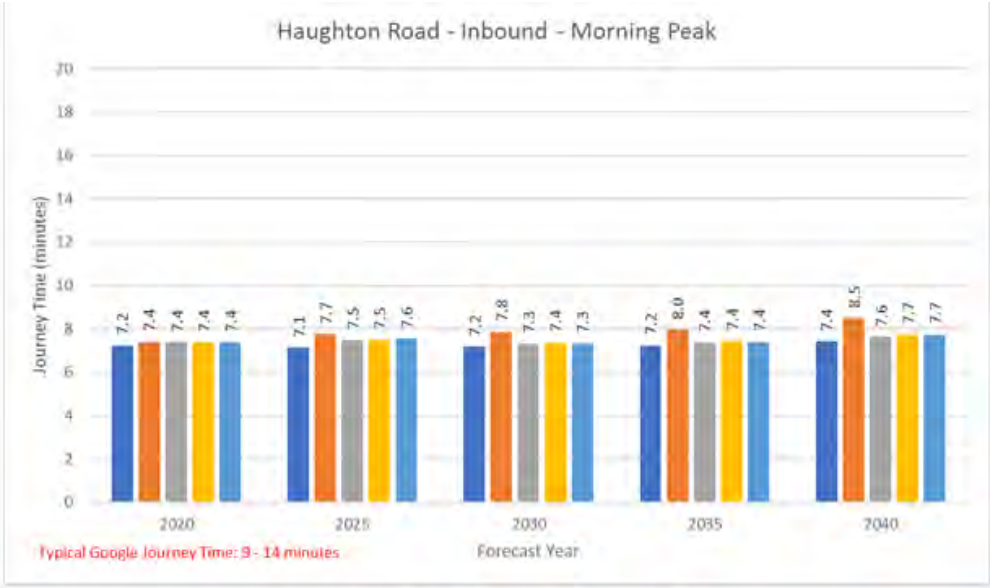
SYSTRA

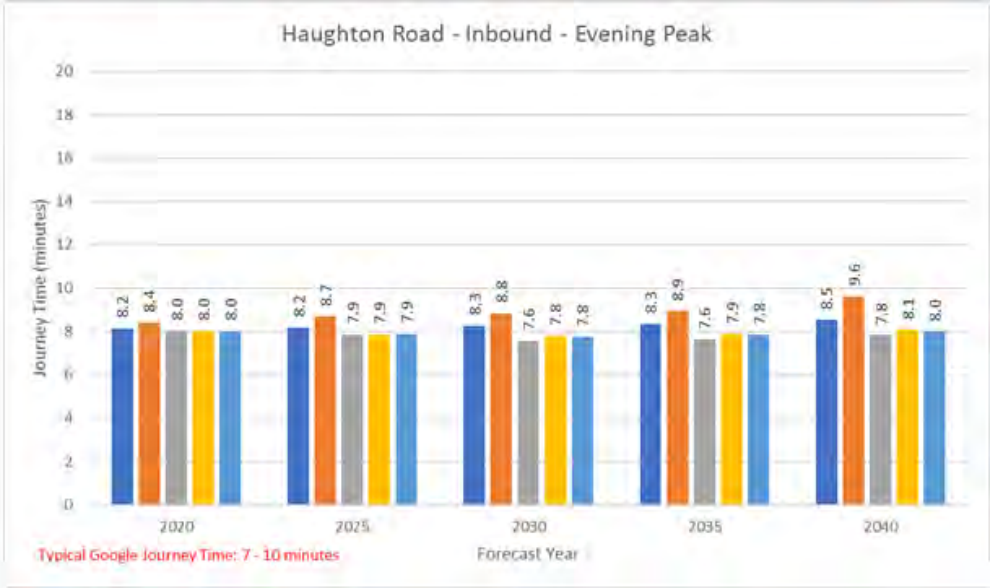
Route 18 – Haughton Road - Inbound

Mitigations

Observations

No significant additional delays on this coridor





Without Local Plan Reference Case
With Local Plan Reference Case
With Local Plan and Mitigations
With Local Plan and Mitigations (No Bypass)
With Local Plan and Mitigations (No Bypass not ECML Link)

Model Journey Times – Average Hour, Google Drive time to arrive by 08:30 for Morning Peak, 17:30 for Evening Peak

SYSTRA

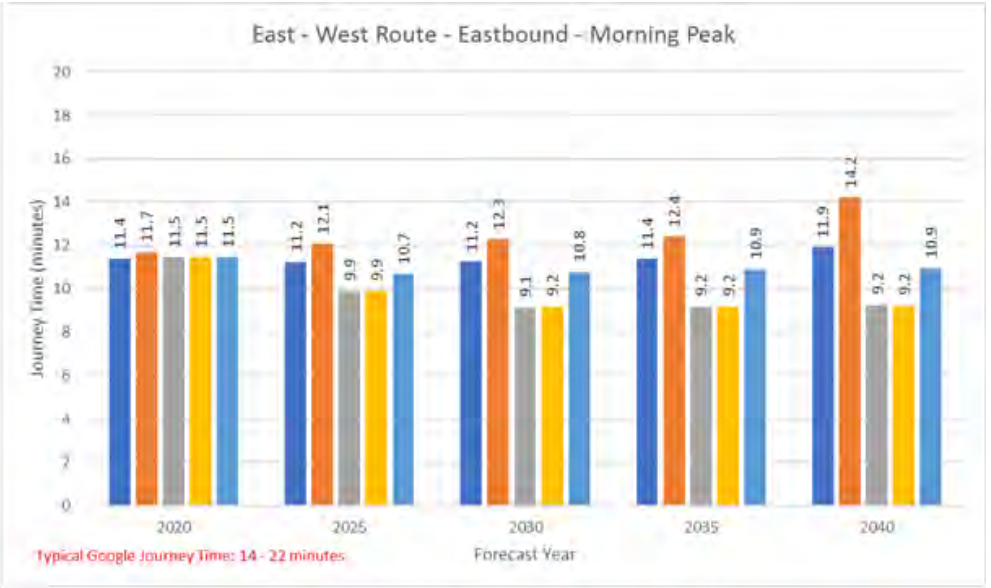
Route 19 – East / West Route - Eastbound

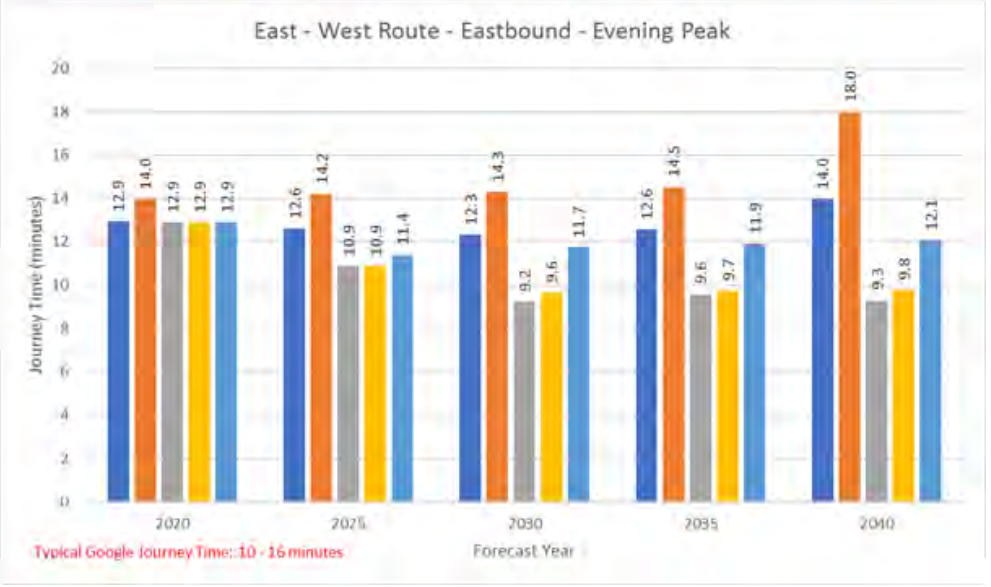
Mitigations

Observations

Significant additional delays on section of A1150 eastbound following junction of Stockton Road and Whinfield Road. This corridor is further impacted by additional delays on the Burtree Lane to Stockton Road section of North Road

Issues linked to increasing development traffic accessing from Skerningham development as distributor road network for site provides mitigation, together with mitigation measure N1 on the A167 North Road





Without Local Plan Reference Case

With Local Plan Reference Case

With Local Plan and Mitigations

With Local Plan and Mitigations (No Bypass)

With Local Plan and Mitigations (No Bypass not ECML Link)

Model Journey Times – Average Hour, Google Drive time to arrive by 08:30 for Morning Peak, 17:30 for Evening Peak

SYSTRA

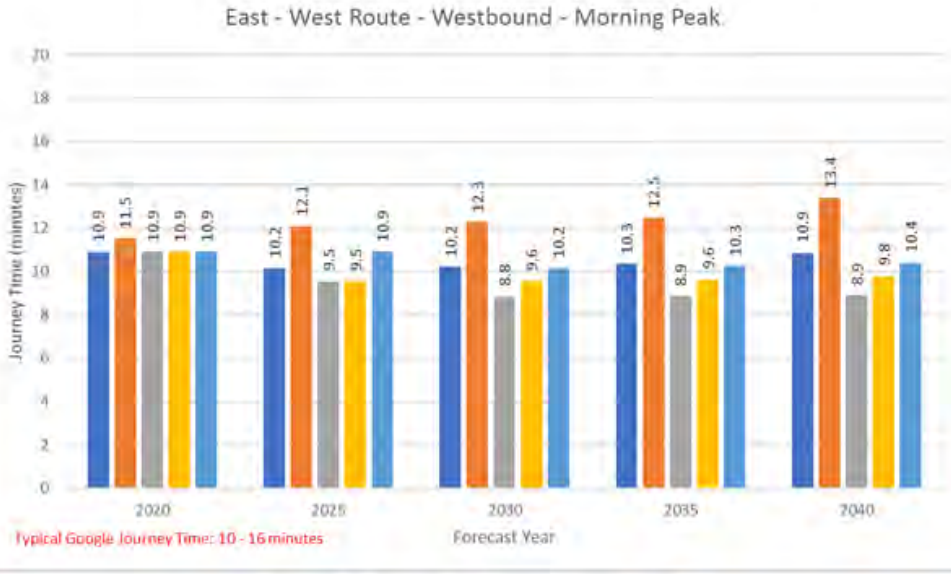
Route 20 – East / West Route - Westbound

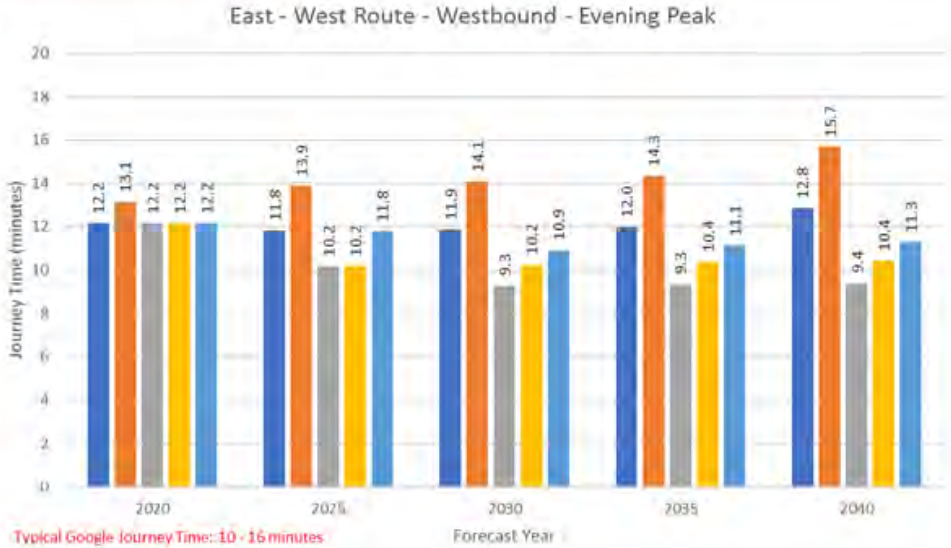
Mitigations

Observations

Significant additional delays on corridor from junction of Whinfield Road and Thompson Street through to junction of North Road and Burtree Lane.

The ECML link and northern bypass provide relief for this corridor, with the impacts of removing either the bypass, or removing both the bypass and ECML link shown in the graphs.





- Without Local Plan Reference Case
- With Local Plan Reference Case
- With Local Plan and Mitigations
- With Local Plan and Mitigations (No Bypass)
- With Local Plan and Mitigations (No Bypass not ECML Link)

Model Journey Times – Average Hour, Google Drive time to arrive by 08:30 for Morning Peak, 17:30 for Evening Peak

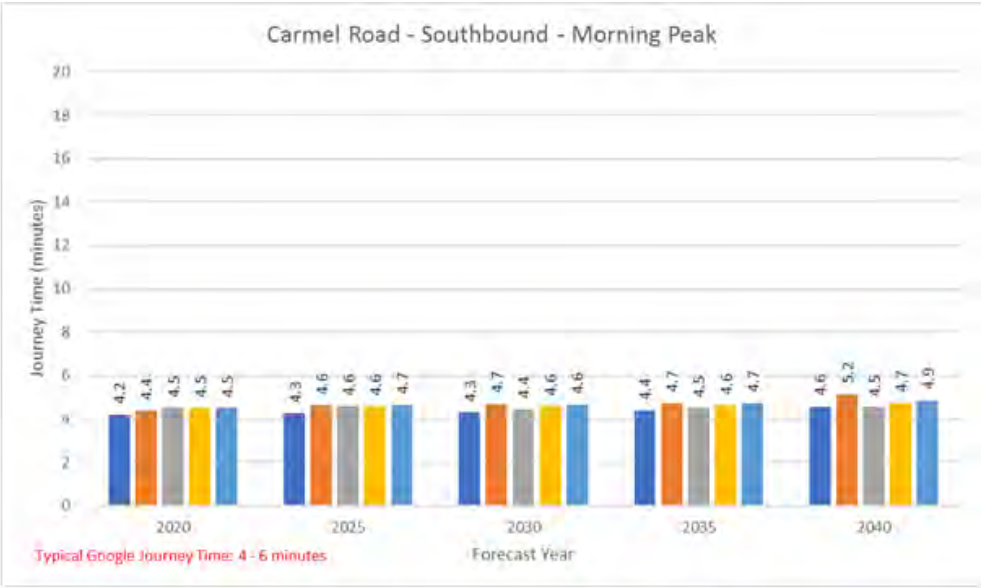
SYSTRA

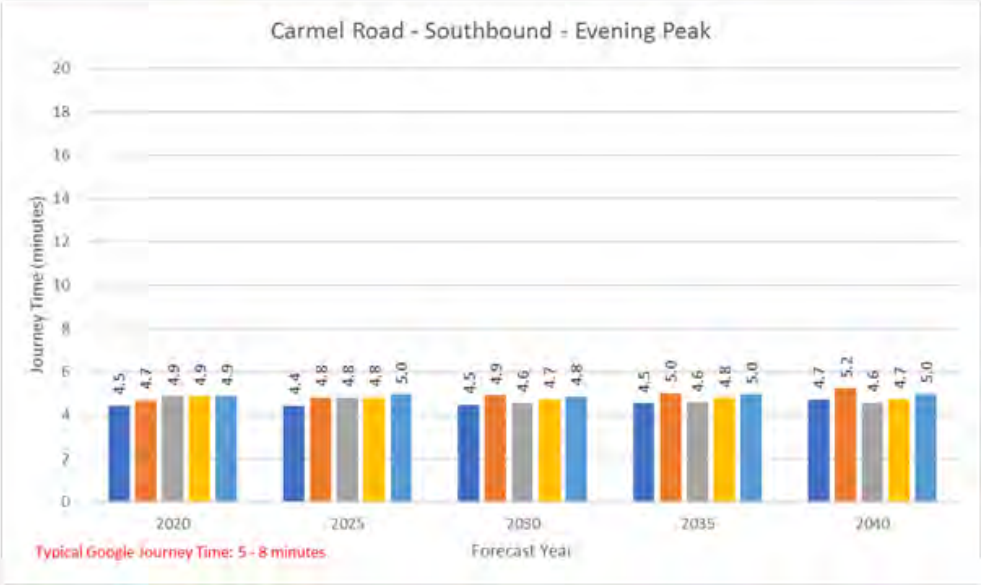
Route 21 – Carmel Road - Southbound

Mitigations

Observations

No significant delays along corridor





- Without Local Plan Reference Case
- With Local Plan Reference Case
- With Local Plan and Mitigations
- With Local Plan and Mitigations (No Bypass)
- With Local Plan and Mitigations (No Bypass not ECML Link)

Model Journey Times – Average Hour, Google Drive time to arrive by 08:30 for Morning Peak, 17:30 for Evening Peak

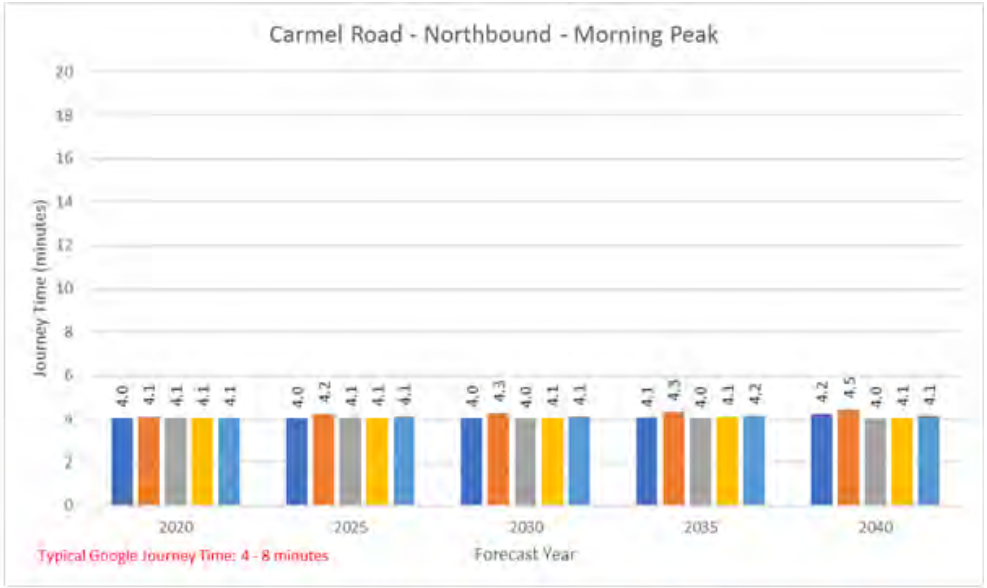
SYSTRA

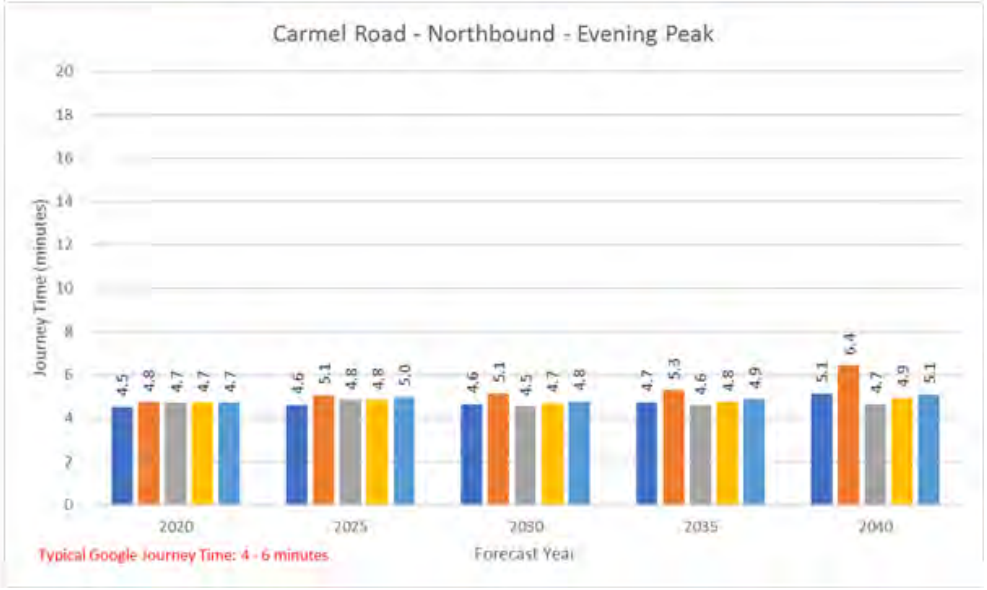
Route 22 – Carmel Road - Northbound

Mitigations

Observations

No significant delays along corridor





Without Local Plan Reference Case
With Local Plan Reference Case
With Local Plan and Mitigations
With Local Plan and Mitigations (No Bypass)
With Local Plan and Mitigations (No Bypass not ECML Link)

Model Journey Times – Average Hour, Google Drive time to arrive by 08:30 for Morning Peak, 17:30 for Evening Peak

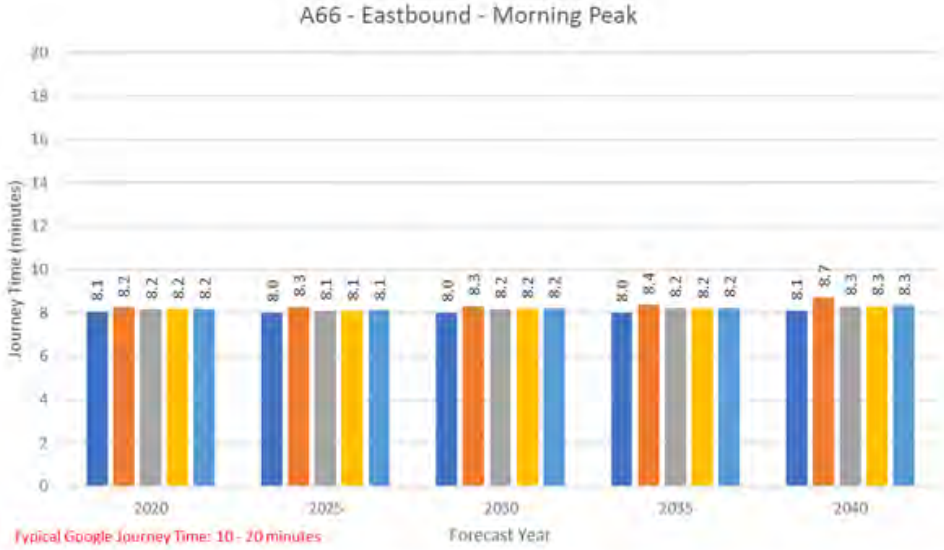
SYSTRA

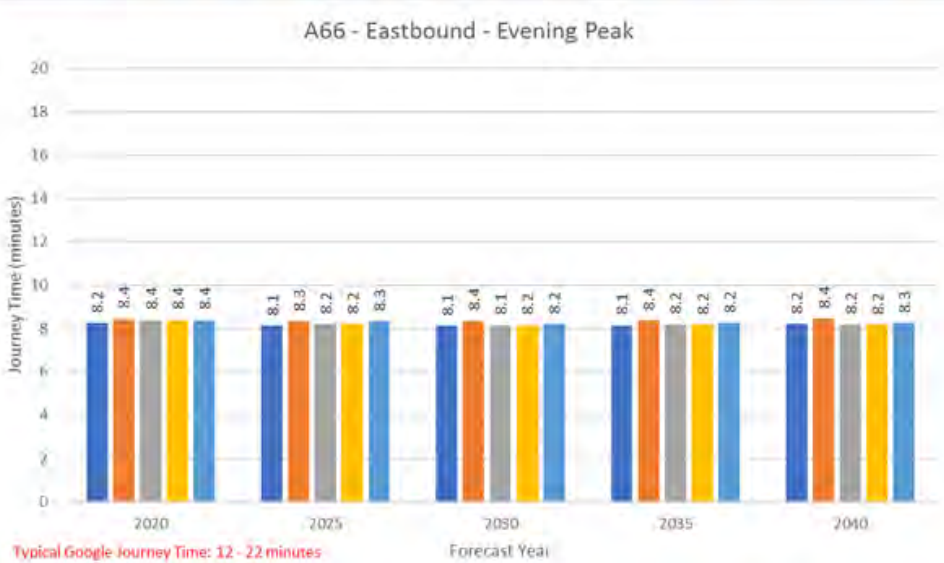
Route 23 – A66 Corridor - Eastbound

Mitigations

Observations

No significant delays along corridor in regional transport model as sufficient link capacity and limited junction modelling / delays on corridor





- Without Local Plan Reference Case
- With Local Plan Reference Case
- With Local Plan and Mitigations
- With Local Plan and Mitigations (No Bypass)
- With Local Plan and Mitigations (No Bypass not ECML Link)

Model Journey Times – Average Hour, Google Drive time to arrive by 08:30 for Morning Peak, 17:30 for Evening Peak

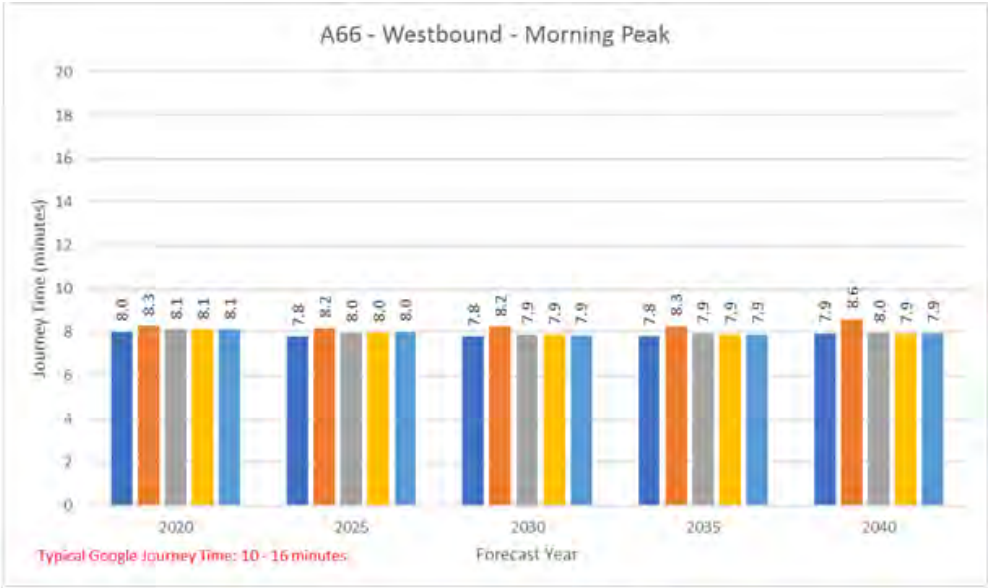
SYSTRA

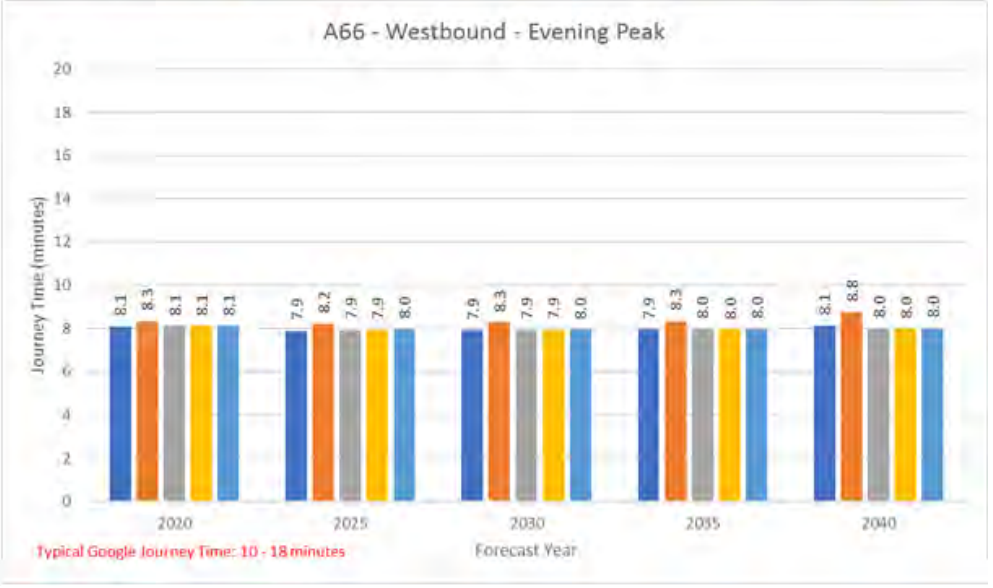
Route 24 – A66 Corridor - Westbound

Mitigations

Observations

No significant delays along corridor in regional transport model as sufficient link capacity and limited junction modelling / delays on corridor





- Without Local Plan Reference Case
- With Local Plan Reference Case
- With Local Plan and Mitigations
- With Local Plan and Mitigations (No Bypass)
- With Local Plan and Mitigations (No Bypass not ECML Link)

Model Journey Times – Average Hour, Google Drive time to arrive by 08:30 for Morning Peak, 17:30 for Evening Peak

SYSTRA

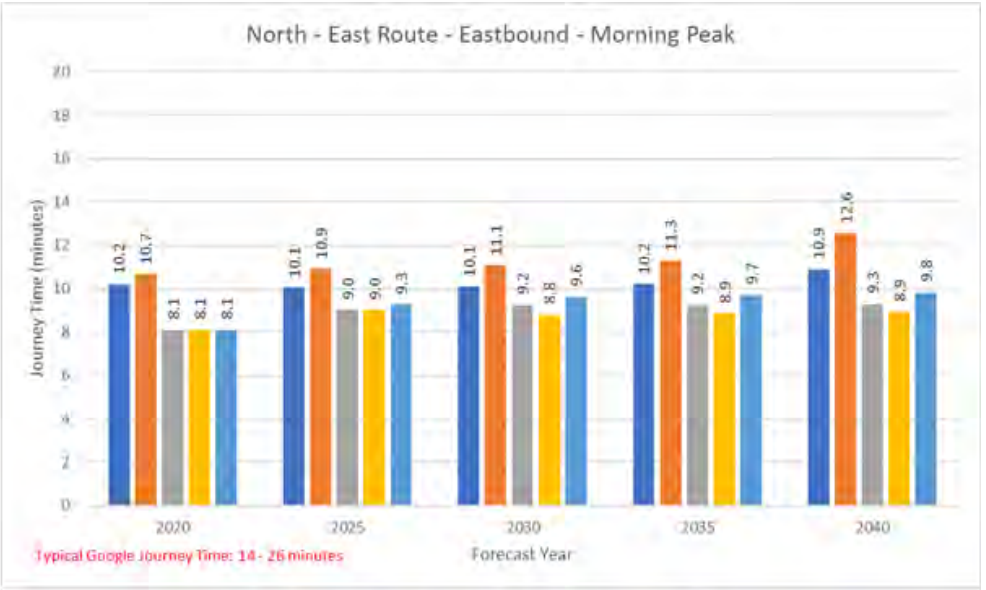
Route 25 – North to East - Eastbound

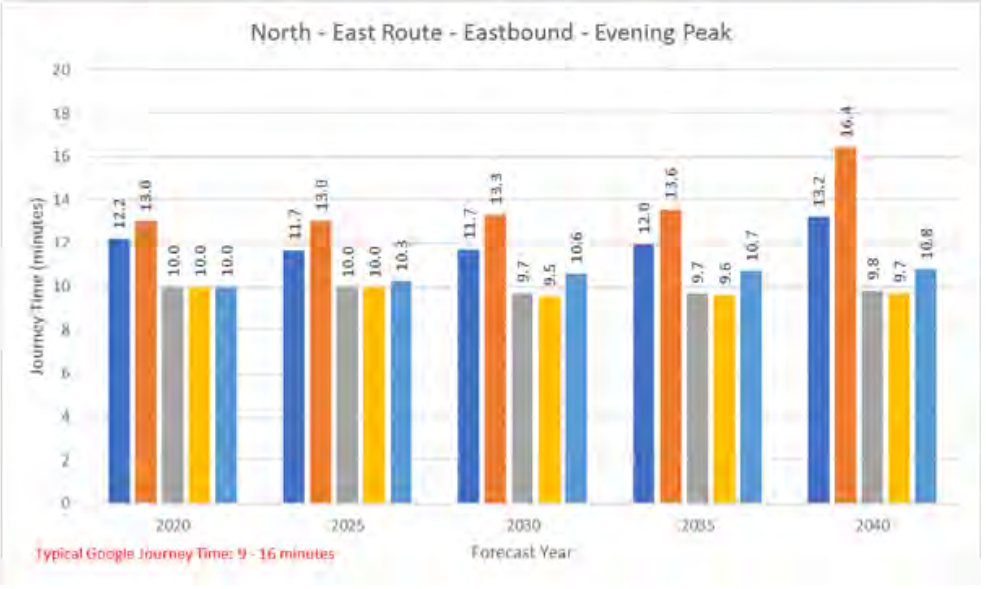
Mitigations

Observations

Significant additional delays on section of A1150 eastbound following junction of Stockton Road and Whinfield Road. This corridor is further impacted by additional delays on the Burtree Lane to Stockton Road section of North Road

Issues linked to increasing development traffic accessing from Skerningham development as distributor road network for site provides mitigation, together with mitigation measure N1 on the A167 North Road





- Without Local Plan Reference Case
- With Local Plan Reference Case
- With Local Plan and Mitigations
- With Local Plan and Mitigations (No Bypass)
- With Local Plan and Mitigations (No Bypass not ECML Link)

Model Journey Times – Average Hour, Google Drive time to arrive by 08:30 for Morning Peak, 17:30 for Evening Peak

SYSTRA

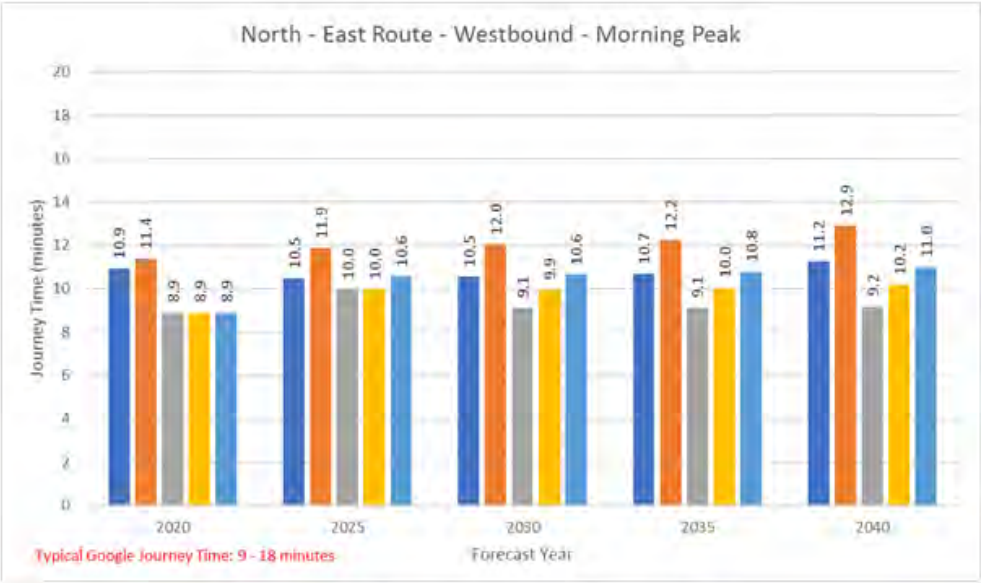
Route 26 – North to East - Westbound

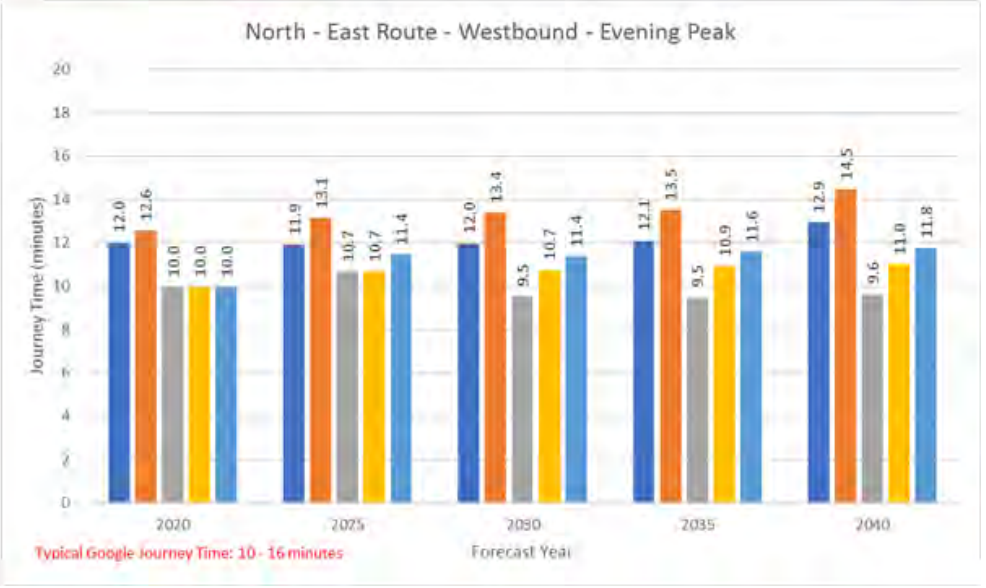
Mitigations

Observations

Significant additional delays on corridor from junction of Whinfield Road and Thompson Street through to junction of North Road and Burtree Lane.

The ECML link and northern bypass provide relief for this corridor, with the impacts of removing either the bypass, or removing both the bypass and ECML link shown in the graphs.





Without Local Plan Reference Case
With Local Plan Reference Case
With Local Plan and Mitigations
With Local Plan and Mitigations (No Bypass)
With Local Plan and Mitigations (No Bypass not ECML Link)

Model Journey Times – Average Hour, Google Drive time to arrive by 08:30 for Morning Peak, 17:30 for Evening Peak

SYSTRA

SYSTRA provides advice on transport, to central, regional and local government, agencies, developers, operators and financiers.

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