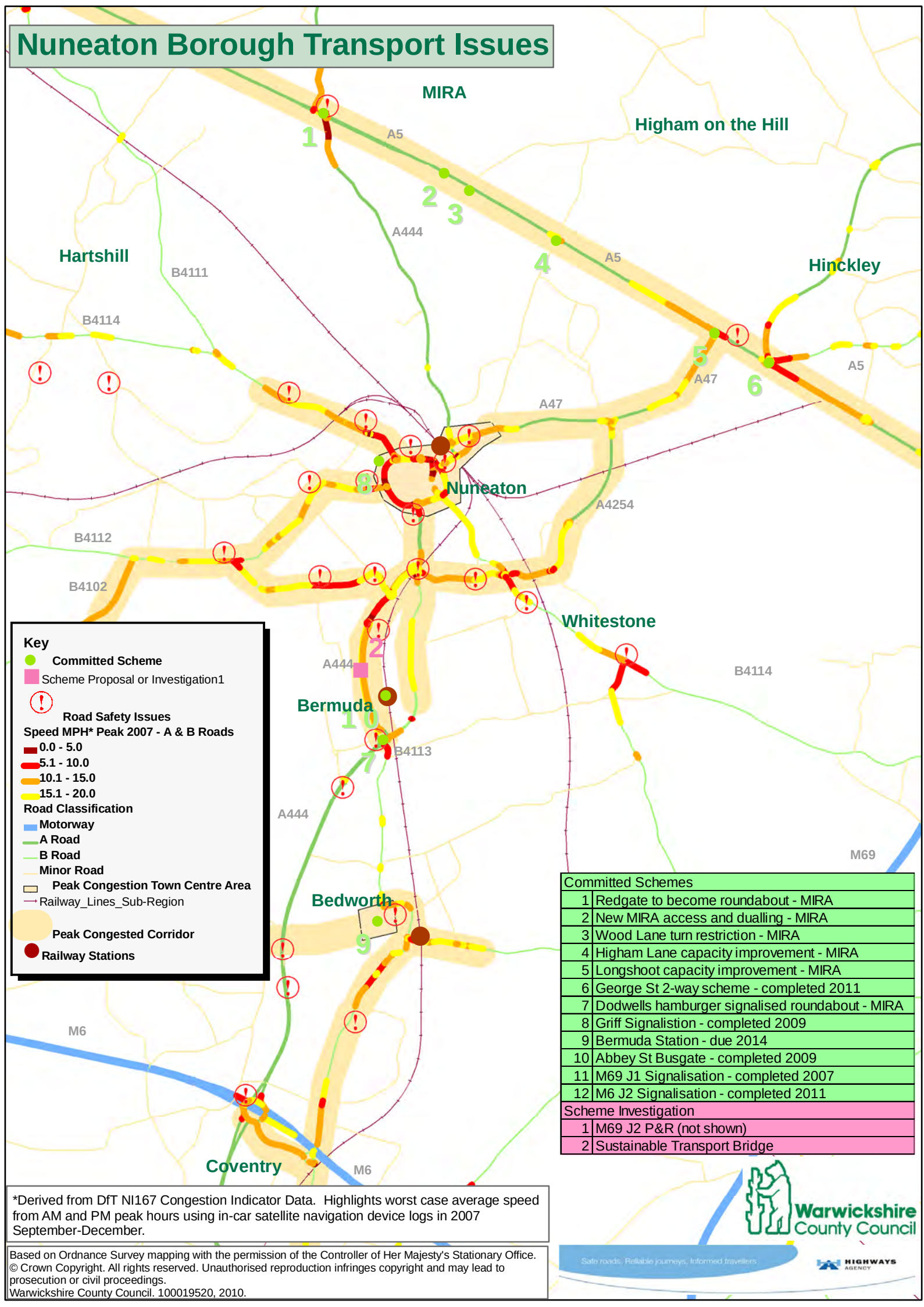
Appendix A

Nuneaton Borough Transport Issues



Key

- Committed Scheme
- Scheme Proposal or Investigation1
- Road Safety Issues

Speed MPH* Peak 2007 - A & B Roads

- 0.0 - 5.0
- 5.1 - 10.0
- 10.1 - 15.0
- 15.1 - 20.0

Road Classification

- Motorway
- A Road
- B Road
- Minor Road
- Peak Congestion Town Centre Area
- Railway_Lines_Sub-Region
- Peak Congested Corridor
- Railway Stations

Committed Schemes	
1	Redgate to become roundabout - MIRA
2	New MIRA access and dualling - MIRA
3	Wood Lane turn restriction - MIRA
4	Higham Lane capacity improvement - MIRA
5	Longshoot capacity improvement - MIRA
6	George St 2-way scheme - completed 2011
7	Dodwells hamburger signalised roundabout - MIRA
8	Griff Signalistion - completed 2009
9	Bermuda Station - due 2014
10	Abbey St Busgate - completed 2009
11	M69 J1 Signalisation - completed 2007
12	M6 J2 Signalisation - completed 2011
Scheme Investigation	
1	M69 J2 P&R (not shown)
2	Sustainable Transport Bridge

*Derived from DfT NI167 Congestion Indicator Data. Highlights worst case average speed from AM and PM peak hours using in-car satellite navigation device logs in 2007 September-December.

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Warwickshire County Council. 100019520, 2010.

Warwickshire County Council

Safe roads, Reliable journeys, Informed travellers

HIGHWAYS AGENCY

Appendix B

JMP CITEware Explanation

Introduction

The conceptual basis of the strategic modelling technique used in CITEware was developed by JMP for Warwickshire County Council and the Highways Agency in order to provide a robust strategic modelling tool to allow WCC to measure the impact of planned developments on the strategic road network.

The concept of a model utilising journey time and distance to predict strategic journey routing has been evolved over time to incorporate a number of routing behaviour rules, and a finer grade of initial distribution has been achieved, however the basis remains the same; A distribution of likely trips to and from a destination using census data, and route choice determined by a combination of travel time and distance to the destination.

The current model is based in Microsoft Access, and runs using data taken from GIS and other sources. For displaying the results it is best to use a GIS to match up the output results (in spreadsheet format) with a GIS representation of the road network.

The GIS network used is based on the Ordnance Survey's StrateGI layer, licensed under the opendata system. The network does have a significant difference from a truly geographically accurate map, due to it's focus on clarity and legibility as a schematic mapping layer. However, the most important factors for our modelling is the length and accurate joining points for the modelling links and the marginal differences from a more accurate layer are outweighed by the benefits of it's consistency and accurate bridging data, and goes down to a minor road level which is more than sufficient for a strategic model.

The model uses Tempro growth factors to estimate background traffic growth in future years, and road capacities are calculated on the basis of DMRB formulae where volume over capacity calculations are done.

Modelling

Trip distribution

Trip distribution is based on 2001 census journey-to-work information. A given site has its trip generation allocated to wards in the proportions found in census data, and this is then allocated across the road network, so that all roads where it is feasible that trips may load onto are given a 'packet' of trips which will then be routed to their destination (in the case of inbound trips – for outbound trips the packet travels in the opposite direction).

Any other planning assumptions (other potential sites which will produce trips to/from a modelled development) are compared on a distance and size basis to the existing travel patterns and inserted as equivalent gravity-draws to the existing wards. In effect this estimates what the travel pattern would be if the planning assumptions were in place by treating them as being in competition with the wards already present for a proportion of trips.

The potential pitfall using this methodology is that when a planning assumption is both large and very close to a modelled development, it could potentially be estimated to have an even larger proportion of trips than in reality. Although the large size and proximity of a planning assumption might well make journeys between it and a modelled development desirable, clearly in reality the number of jobs available and other considerations would not allow an overwhelming proportion of trips to travel a very short distance to another site, even if it were very large. There is also a facility to cap the maximum draw to an individual planning assumption to avoid this.

Large sites in proximity to one another can also be treated as part of a single development (from a modelling point of view), or not used as planning assumptions for each other so as not to distort the

travel patterns. For the purposes of the model any sites that are closer than 1km to one another will sometimes model better if treated as a single development unless the draw is capped.

Decision-making at junctions

Once a development location has been determined, the destinations are taken as the wards that the census data indicates people will travel from/to. The model splits the population travelling to/from the development in the proportions taken from the census data, modified by any planning assumptions that are present in the modelled scenario.

Each destination is given a proportional draw, and the population is loaded onto a simplified version of the road network:

Junctions are simplified to a t-junction or crossroads. This enables every junction to have a calculated probability of journeys heading down the possible routes leading from it.

The probability is based on distance and time values calculated using Accessions car modelling, and both distance and time are taken into account:

Originally, the probability of using a link was determined by the ratio between the values of:

$$\frac{1}{D^2}$$ With D being the distance to the destination ward.

However, after consideration and testing another factor was tried:

$$\frac{1}{V^2}$$ With V being the average speed a vehicle has taking a particular route

This has some advantages, as it considered other factors than the shortest route, but we were unconvinced that this was a satisfactory methodology, as sometimes it would favour a faster route that nonetheless was longer and unlikely to be favoured in reality.

Having time be a factor was, however, something that was a sound idea that made the model reflect reality more closely, so after trying various factors, we arrived at:

$$\frac{1}{TD}$$ With T being the time to the destination and D being the distance to the destination ward

This is an effective predictor of travel as it factors in both the time taken for a given route as well as the distance involved, as it was considered that both the speed of a given route, as well as the perceived distance of travel would be factors in choosing a particular route.

At every possible junction, available routes are evaluated. Routes that are “time-negative” I.E they take you further away from the destination, are discounted. All other routes are compared and trips are allocated proportionately. Dead ends are treated as only useful if a destination is located on them – otherwise the routing simply avoids them.

Development

Datasets used

The basic datasets that were used in the model development are as follows:

- Strategi road network (Ordance survey)
- Journey-to-Work dataset from 2001 census
- Ward boundaries
- DfT Congestion Indicator data to inform road speed
- WCC Centre Line Flow project to inform on base traffic flows across county network.

JMP DirectRoute Explanation

Development of 'DirectRoute'

Using a system similar to Accession's general data organisation, DirectRoute was developed in-house by JMP to address the needs of its' public transport team. As the calculation methodology was refined and different approaches were used, the system was developed to allow calculation of travel times to any destination from all available services.

As the number of possible routings is considerably reduced from the multitude of options in Accession, it is possible to refine the valid time periods and days somewhat more flexibly than in Accession. The time periods are not predefined, and multiple days can be selected if desired. It would, for example, be possible to calculate travel times between 0700 and 0843 for Mondays and Tuesdays only

Output features include the ability to quickly produce a report of bus route numbers that can be used to reach the destination, and the ability to generate a detailed demographic report. For use in mapping software, isochrones are generated to display travel times.

DirectRoute was originally set up using data from Local authorities' public transport records. However, for ease of use, the ability to import data from an Accession repository has now been built in as well as being able to import CIF data.

DirectRoute features:

- Capable of processing large numbers of sites quickly
- Limited interchange makes results more easily interpretable than accession results
- Because the model illustrates a 'worst case' scenario, it reflects the experience of newcomers to public transport more accurately than a multi interchange model
- Metadata provides auditable results
- GIS illustration of results can give flexibility in display of results

Methodology used for this project

Each of the identified sites was modelled to examine available public transport using DirectRoute. The outputs are Isochrones for each proposed development site, illustrating existing public transport provision. The following travel destinations as required by WDC and WCC were included on the mapping to give context: Healthcare, fresh food retailers and employment centres

Data used

- Network information provided by Warwickshire CC that will be the likely level of future transport provision
- Travel destinations extracted from LTP accessibility assessment work. These were data checked and sorted into separate files for hospitals, GPs, jobs and fresh food retailers

Examples of DirectRoute usage

North West Regional DaSTS Study: Accessibility and deprivation (2009 – 2010):

This regional study examined the relationship between accessibility, deprivation and regeneration. It involved research and literature review, stakeholder interviews, market research, accessibility and data analyses, together with 8 case studies. With regard to access to employment for people who were unemployed.

It found that access to transport was not a key barrier, as other factors played a much greater part. Also, it highlighted that travel horizons for unemployed people were constrained; people saw a maximum travel time to work to be 40 minutes, with a maximum cost of £15 per week. Transport access considerations were of secondary importance, with the main issue being travel time and cost.

This enabled us to study localised problems with getting people to the studied sites.

West Midlands Standard for Access to Healthy Food (2009)

We worked with a multi-agency steering group led by the Department of Health for the West Midlands to develop a new standard for measuring access to healthy food for the region. As part of wider strategies to embed health outcomes within local planning policies, the project was commissioned to develop a standard that moved the focus away from measuring access to 'fresh' food (as had been done during LTP2) towards measuring access to 'healthy' food.

The research was conducted by undertaking a literature review, a data review, on-street market research in ten towns in the West Midlands, conducting eight focus groups with people from hard to reach demographics, and stakeholder discussions. An accessibility mapping exercise was conducted using DirectRoute to define the process for measuring access against the new standard.

The research programme was managed by JMP, with Quality Fieldwork Service Services assisting with the on-street market research. One of the key outcomes of the study was the need for sustainable travel and physical activity to be facilitated and encouraged by all sectors to achieve shared priorities.

Right Care Right Here: Development of Travel & Access Strategy (2010)

JMP undertook a study utilising both Accession and DirectRoute to provide a best and worst case scenario for future access to major healthcare sites within two PCT areas within the west midlands.

From the mapping we were able to provide demographic analysis of projected changes, and comparison of potential futures sites.

By providing a number of time staggered models changing access over the course of the day and week were assessed.

Appendix C

		AM 0800-0900		AM 1700-1800	
Type	**Land Use**	**Inbound**	**Outbound**	**Inbound**	**Outbound**
Housing (01)	All type strategic use	0.12	0.48	0.48	0.12
Employment (02)	B1 Business Park (B)	1.428	0.191	0.155	1.143
Employment (02)	Industrial estate (D)	0.378	0.172	0.107	0.316
Employment (02)	B8 Warehousing (commercial) (F)	0.191	0.103	0.111	0.325

The above trip rates were used in both the the calculation of demand for committed developments and for the various scenarios tested within this report.

Housing trip rates were based on a WCC strategic trip rate. This trip rate is identical to that used in all other strategic transport assessments that WCC has undertaken on behalf of other Districts and Boroughs within Warwickshire.

Employment trip rates are exported from CITEware. CITEware uses trip rates specifically for Warwickshire taken from JMP's TRICs trip rate software.

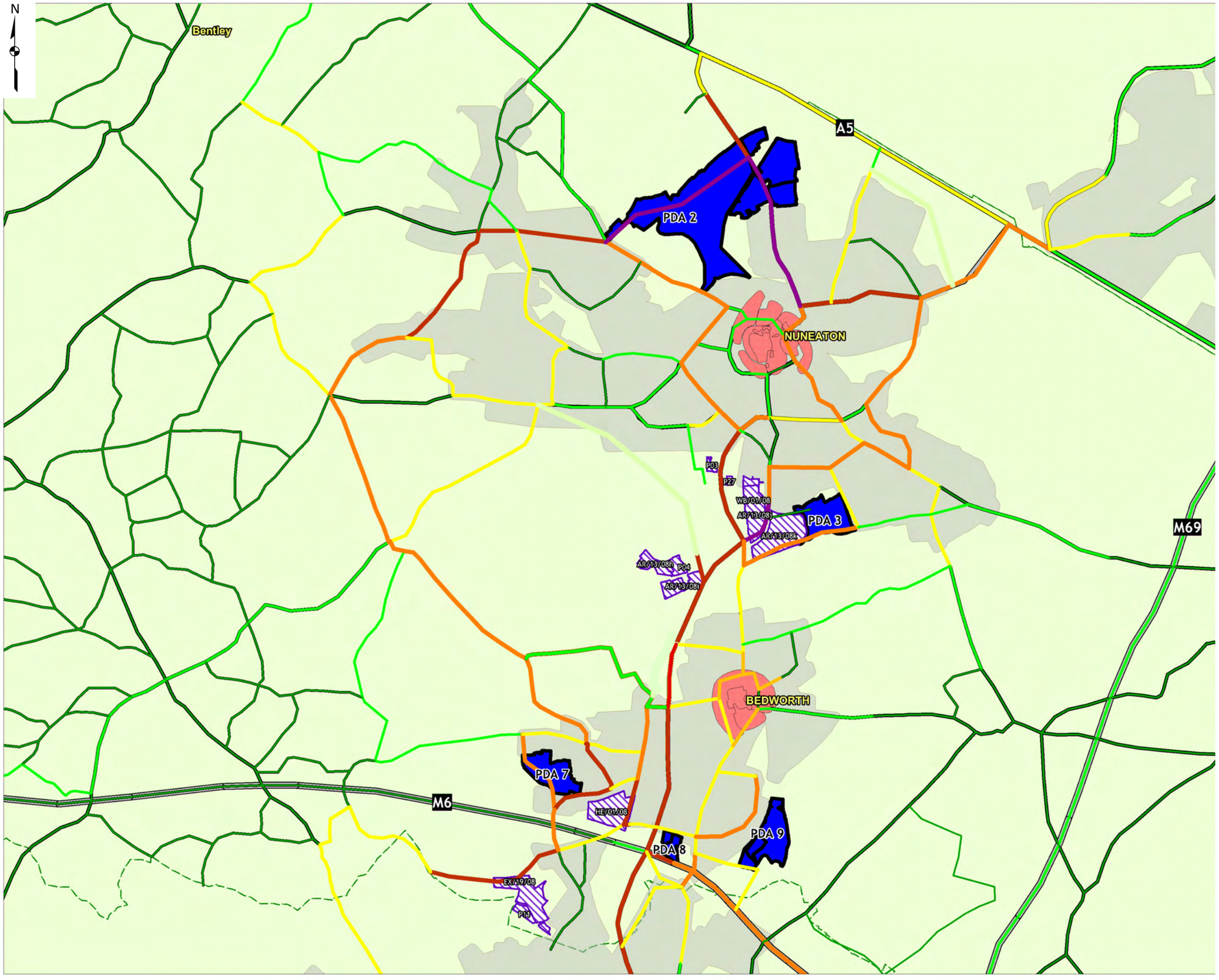
Appendix D

	Urban				All Urban	Rural				All	All Roads
Region West Midlands	Urban Mway	Urban Trunk	Urban Principal	Urban Minor	Roads	Rural Mway	Rural Trunk	Rural Principal	Rural Minor	Rural Roads	All Roads
2003	1	1	1	1	1	1	1	1	1	1	1
2004	1.00565	1.00407	1.00327	1.00407	1.00407	1.00565	1.00487	1.00407	1.00487	1.00487	1.00487
2005	1.01134	1.00816	1.00656	1.00816	1.00816	1.01134	1.00976	1.00816	1.00976	1.00976	1.00976
2006	1.01706	1.01227	1.00985	1.01227	1.01227	1.01706	1.01467	1.01227	1.01467	1.01467	1.01467
2007	1.02281	1.01640	1.01316	1.01640	1.01640	1.02281	1.01961	1.01640	1.01961	1.01961	1.01961
2008	1.02859	1.02054	1.01648	1.02054	1.02054	1.02859	1.02458	1.02054	1.02458	1.02458	1.02458
2009	1.03441	1.02470	1.01980	1.02470	1.02470	1.03441	1.02956	1.02470	1.02956	1.02956	1.02956
2010	1.04026	1.02887	1.02314	1.02887	1.02887	1.04026	1.03457	1.02887	1.03457	1.03457	1.03457
2011	1.04614	1.03306	1.02649	1.03306	1.03306	1.04614	1.03961	1.03306	1.03961	1.03961	1.03961
2012	1.05205	1.03727	1.02985	1.03727	1.03727	1.05205	1.04467	1.03727	1.04467	1.04467	1.04467
2013	1.05800	1.04150	1.03322	1.04150	1.04150	1.05800	1.04976	1.04150	1.04976	1.04976	1.04976
2014	1.06398	1.04574	1.03661	1.04574	1.04574	1.06398	1.05487	1.04574	1.05487	1.05487	1.05487
2015	1.07000	1.05000	1.04000	1.05000	1.05000	1.07000	1.06000	1.05000	1.06000	1.06000	1.06000
2016	1.09020	1.06322	1.05499	1.06500	1.06588	1.08849	1.07501	1.06233	1.07323	1.07501	1.07501
2017	1.11077	1.07662	1.07019	1.08021	1.08199	1.10731	1.09023	1.07480	1.08663	1.09023	1.09023
2018	1.13174	1.09018	1.08562	1.09564	1.09835	1.12644	1.10566	1.08742	1.10019	1.10566	1.10566
2019	1.15310	1.10391	1.10127	1.11129	1.11496	1.14591	1.12131	1.10019	1.11393	1.12131	1.12131
2020	1.17486	1.11781	1.11714	1.12716	1.13181	1.16572	1.13719	1.11310	1.12783	1.13719	1.13719
2021	1.19704	1.13189	1.13324	1.14327	1.14892	1.18587	1.15329	1.12617	1.14191	1.15329	1.15329
2022	1.21963	1.14615	1.14957	1.15960	1.16630	1.20636	1.16962	1.13939	1.15616	1.16962	1.16962
2023	1.24265	1.16058	1.16614	1.17616	1.18393	1.22721	1.18618	1.15277	1.17059	1.18618	1.18618
2024	1.26610	1.17520	1.18295	1.19296	1.20183	1.24842	1.20297	1.16631	1.18521	1.20297	1.20297
2025	1.29000	1.19000	1.20000	1.21000	1.22000	1.27000	1.22000	1.18000	1.20000	1.22000	1.22000
2026	1.30785	1.20511	1.21422	1.22601	1.23513	1.28695	1.23513	1.19510	1.21600	1.23602	1.23602
2027	1.32594	1.22041	1.22860	1.24224	1.25044	1.30412	1.25044	1.21039	1.23222	1.25225	1.25225
2028	1.34428	1.23590	1.24316	1.25867	1.26595	1.32152	1.26595	1.22588	1.24866	1.26869	1.26869
2029	1.36288	1.25159	1.25789	1.27533	1.28164	1.33915	1.28164	1.24157	1.26531	1.28535	1.28535
2030	1.38174	1.26748	1.27279	1.29221	1.29754	1.35702	1.29754	1.25746	1.28219	1.30223	1.30223
2031	1.40085	1.28357	1.28787	1.30931	1.31362	1.37513	1.31362	1.27355	1.29929	1.31933	1.31933
2032	1.42023	1.29986	1.30313	1.32663	1.32991	1.39347	1.32991	1.28985	1.31661	1.33665	1.33665
2033	1.43988	1.31637	1.31857	1.34419	1.34640	1.41207	1.34640	1.30635	1.33417	1.35420	1.35420
2034	1.45980	1.33308	1.33419	1.36198	1.36310	1.43091	1.36310	1.32307	1.35197	1.37198	1.37198
2035	1.48000	1.35000	1.35000	1.38000	1.38000	1.45000	1.38000	1.34000	1.37000	1.39000	1.39000

Table showing DfT NTM Growth Forecasts for the West Midlands updated 2010

Appendix E

Scenario 1- AM peak 0800-0900 Flow



Project Title:
Nuneaton and Bedworth STA

Key:

Additional two-way vehicle trips:

- 1000+
- 500 - 1000
- 250 - 500
- 100 - 250
- 50 - 100
- 0 -50

Town centres

Development sites - Housing

Development sites - Employment

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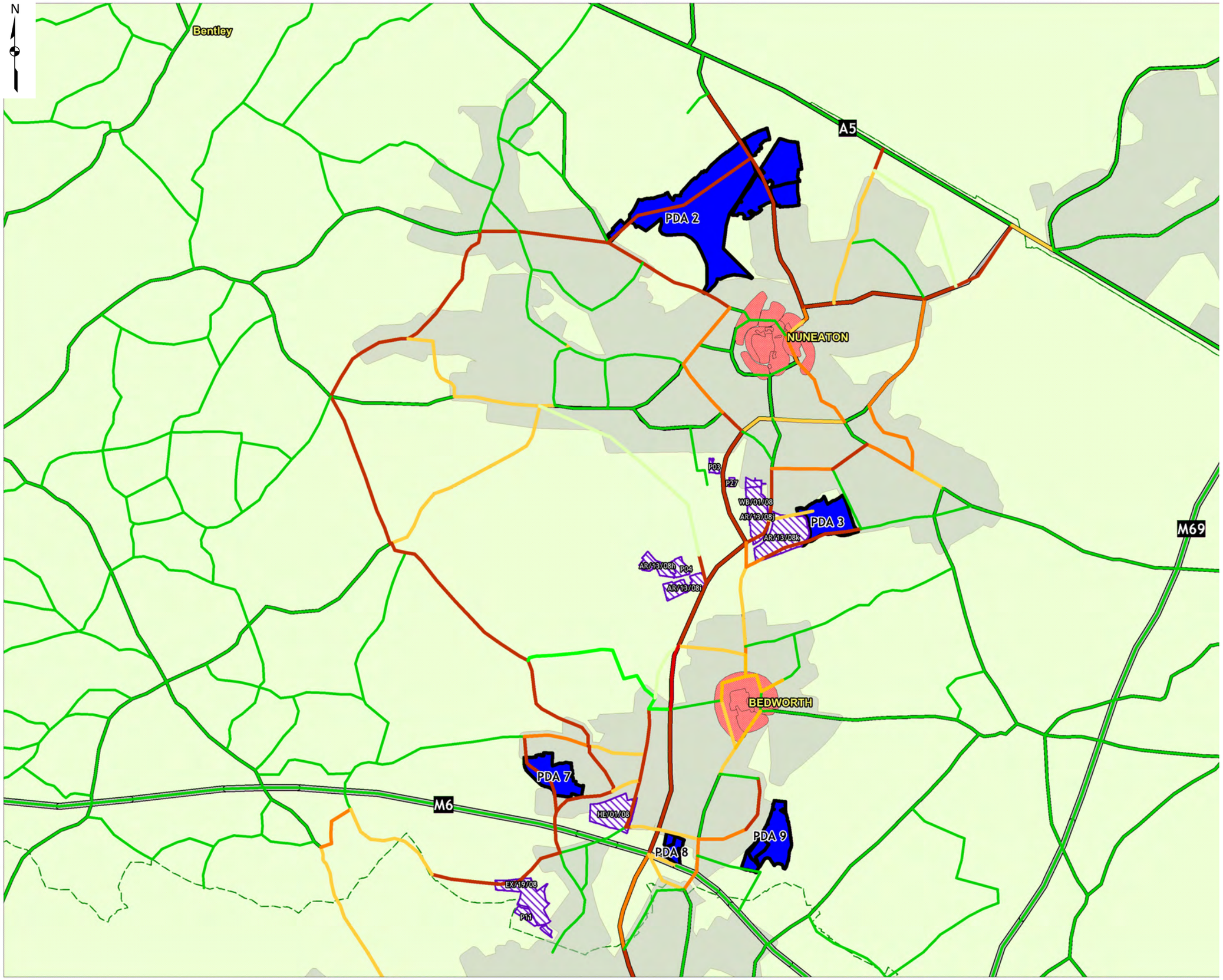
Scenario 1 - AM peak 0800-0900 GEH



Project Title:
Nuneaton and Bedworth STA

Key:

GEH

- >10
- 7.5 to 10
- 5 to 7.5
- 0 to 5

- Town centres
- Development sites - Housing
- Development sites - Employment

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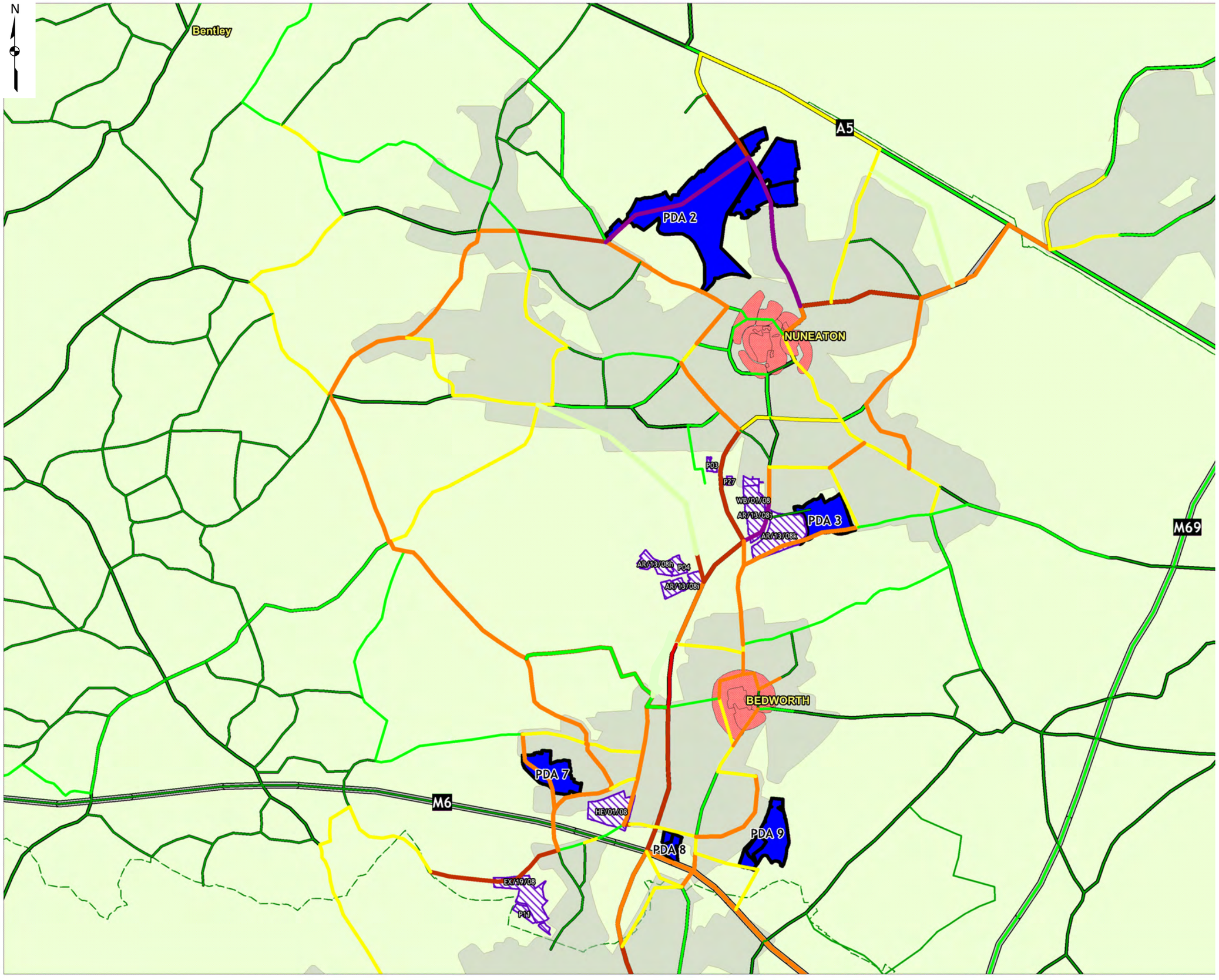
Scenario 1- PM peak 1700-1800 Flow



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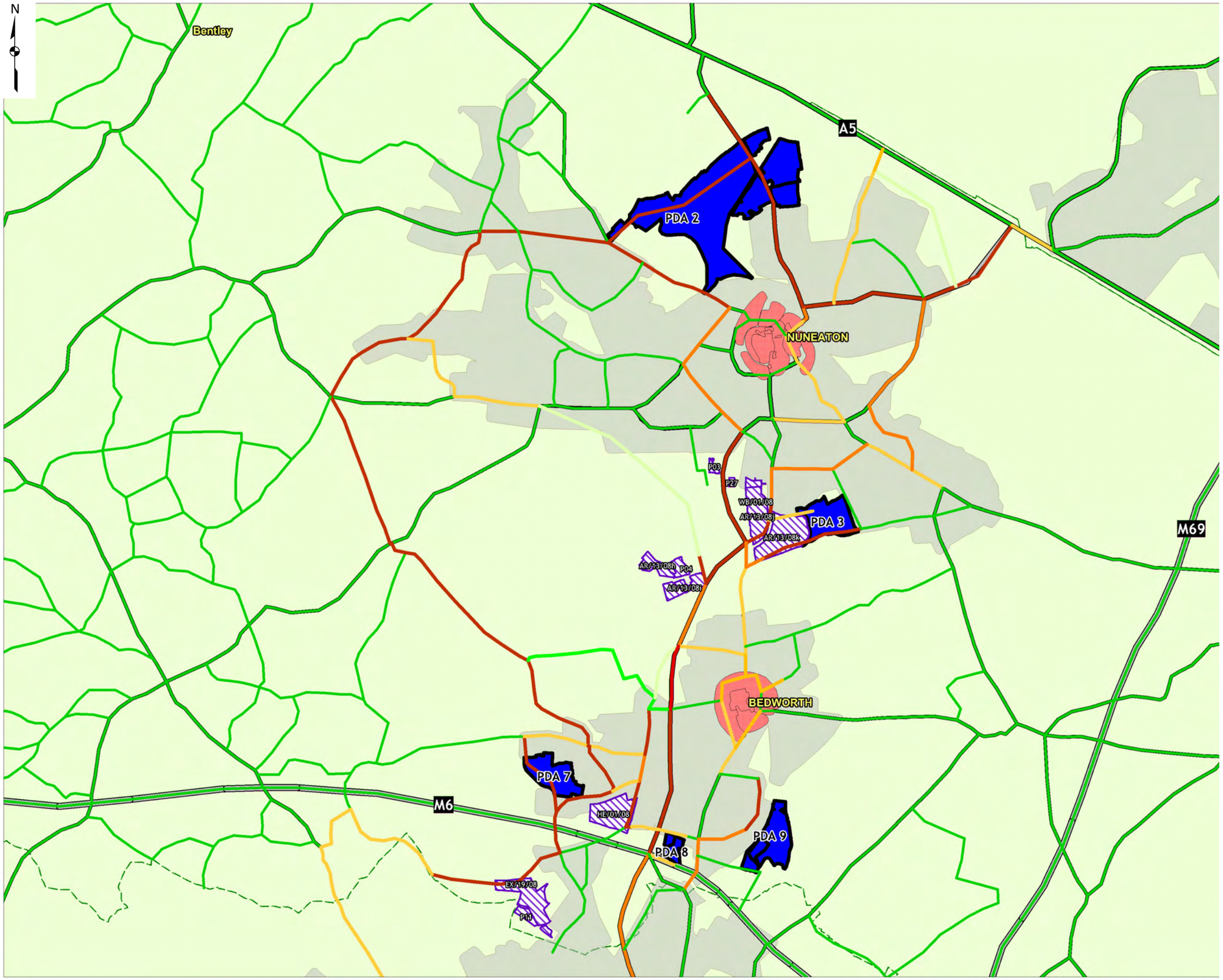

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GEH

- >10
- 7.5 to 10
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- 0 to 5

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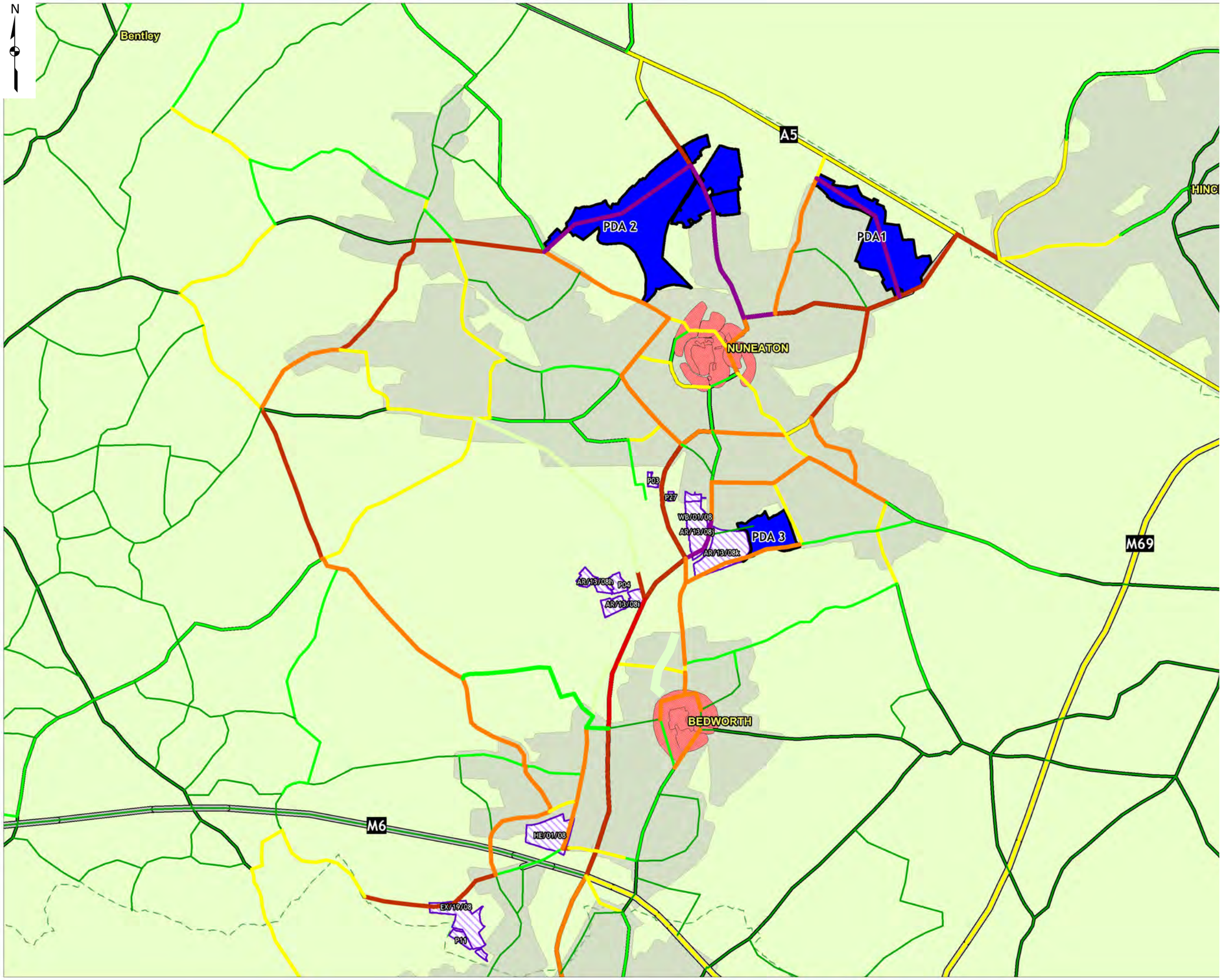
Scenario 2- AM peak 0800-0900 Flow



Project Title:
Nuneaton and Bedworth STA

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- 1000+
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- 250 - 500
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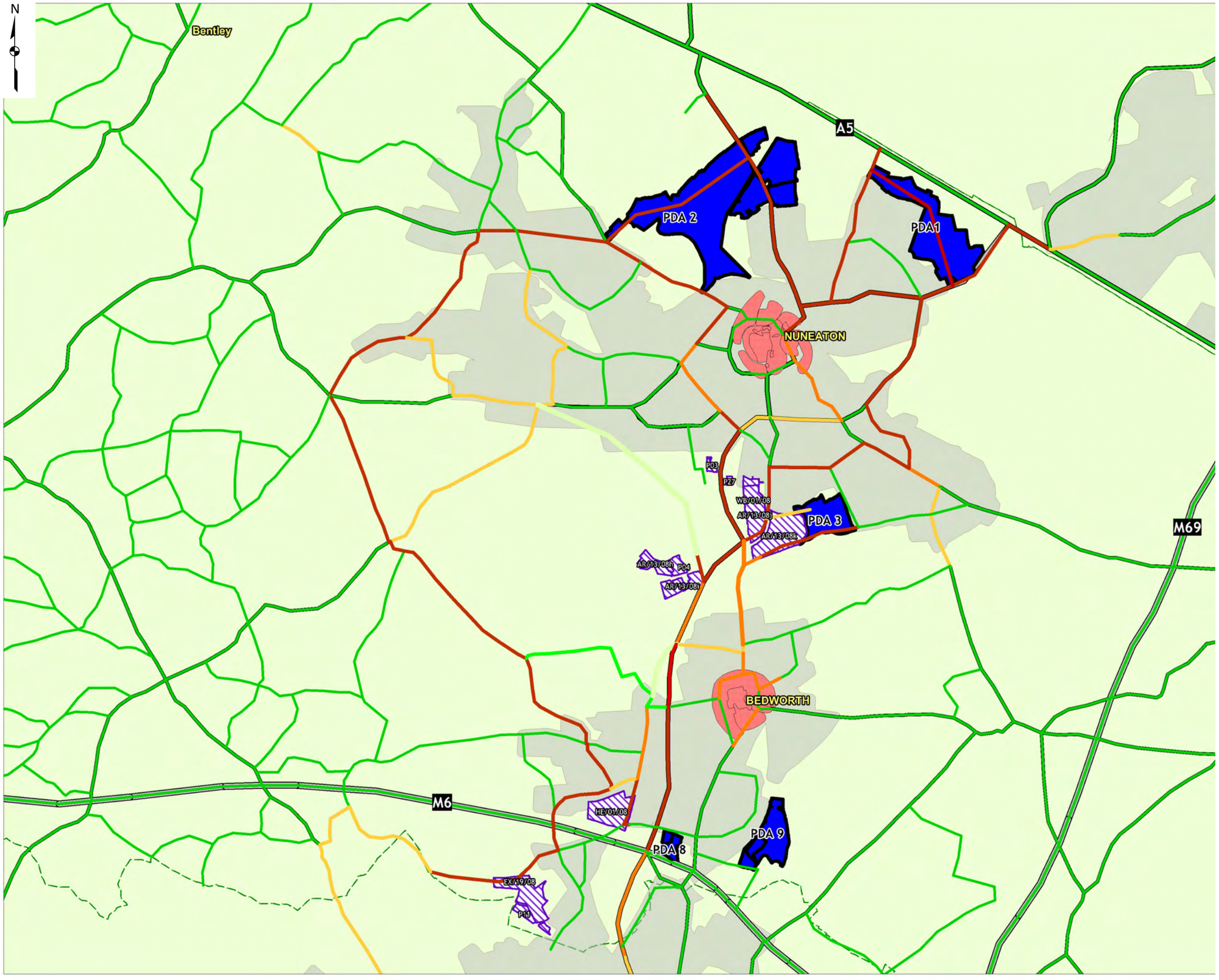
Scenario 2 - AM peak 0800-0900 GEH



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Nuneaton and Bedworth STA

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GEH
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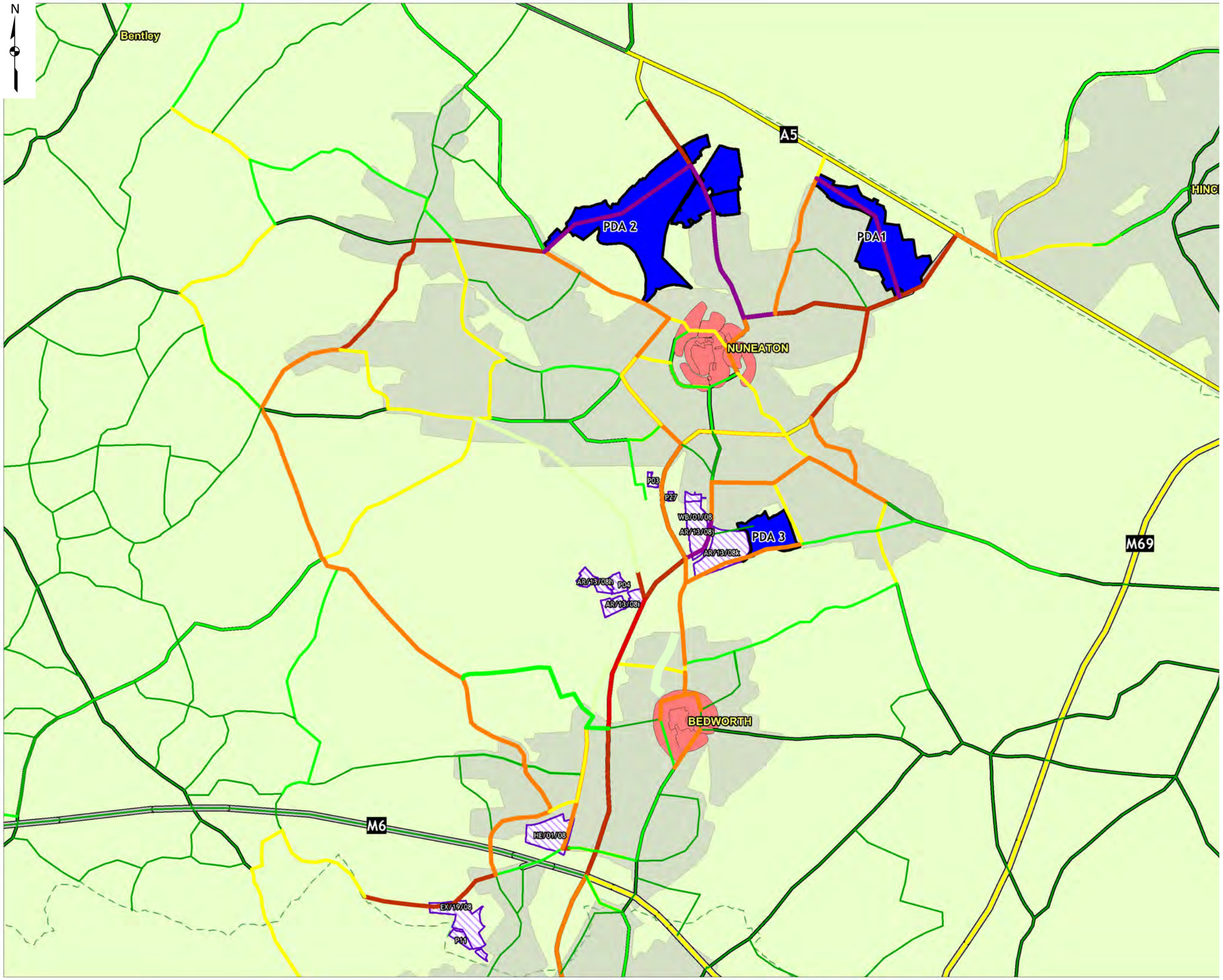
Scenario 2- PM peak 1700-1800 Flow



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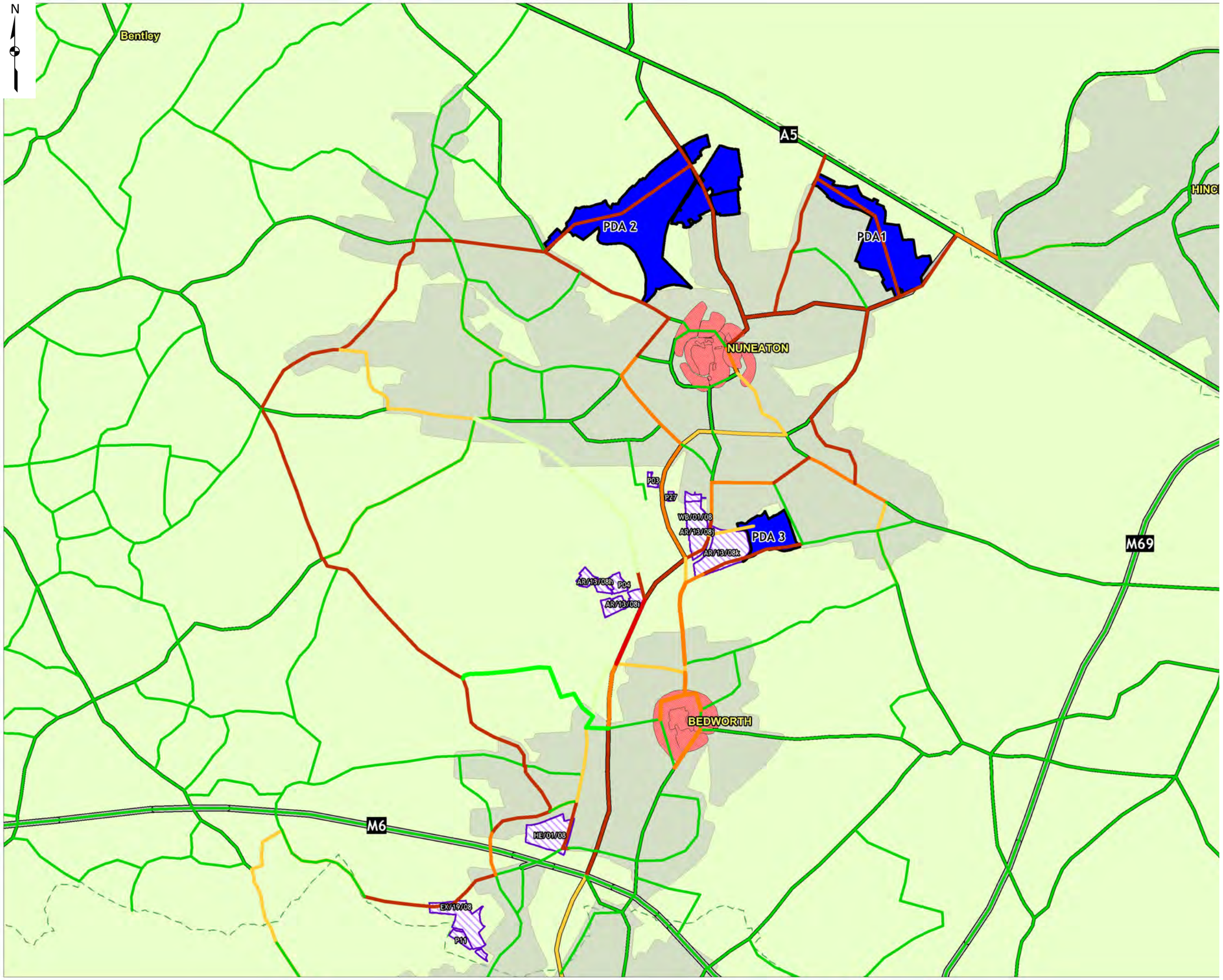

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Nuneaton and Bedworth STA

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- 5 to 7.5
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- Development sites - Employment

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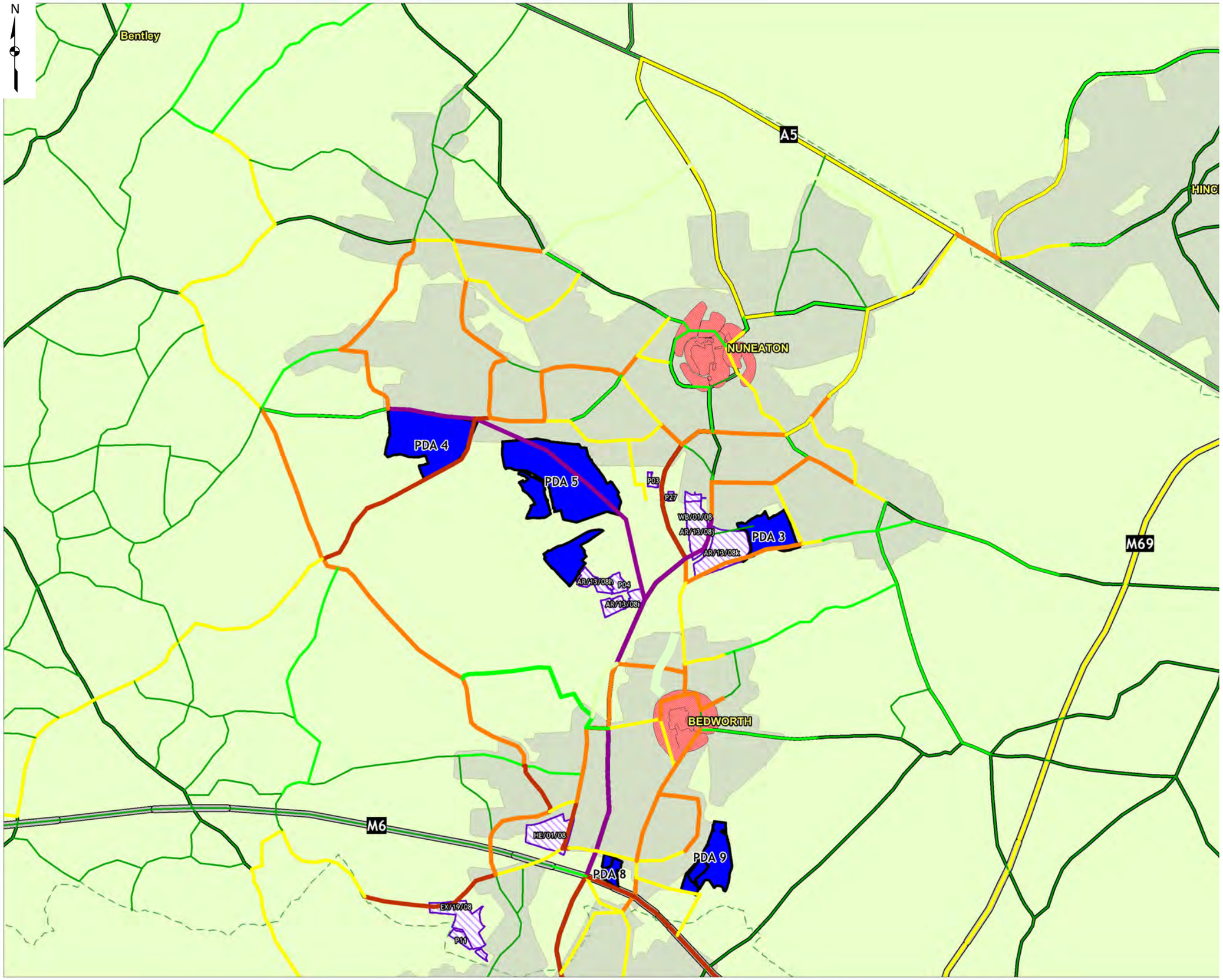
Scenario 3- AM peak 0800-0900 Flow



Project Title:
Nuneaton and Bedworth STA

Key:

Additional two-way vehicle trips:

- 1000+
- 500 - 1000
- 250 - 500
- 100 - 250
- 50 - 100
- 0 -50

- Town centres
- Development sites - Housing
- Development sites - Employment

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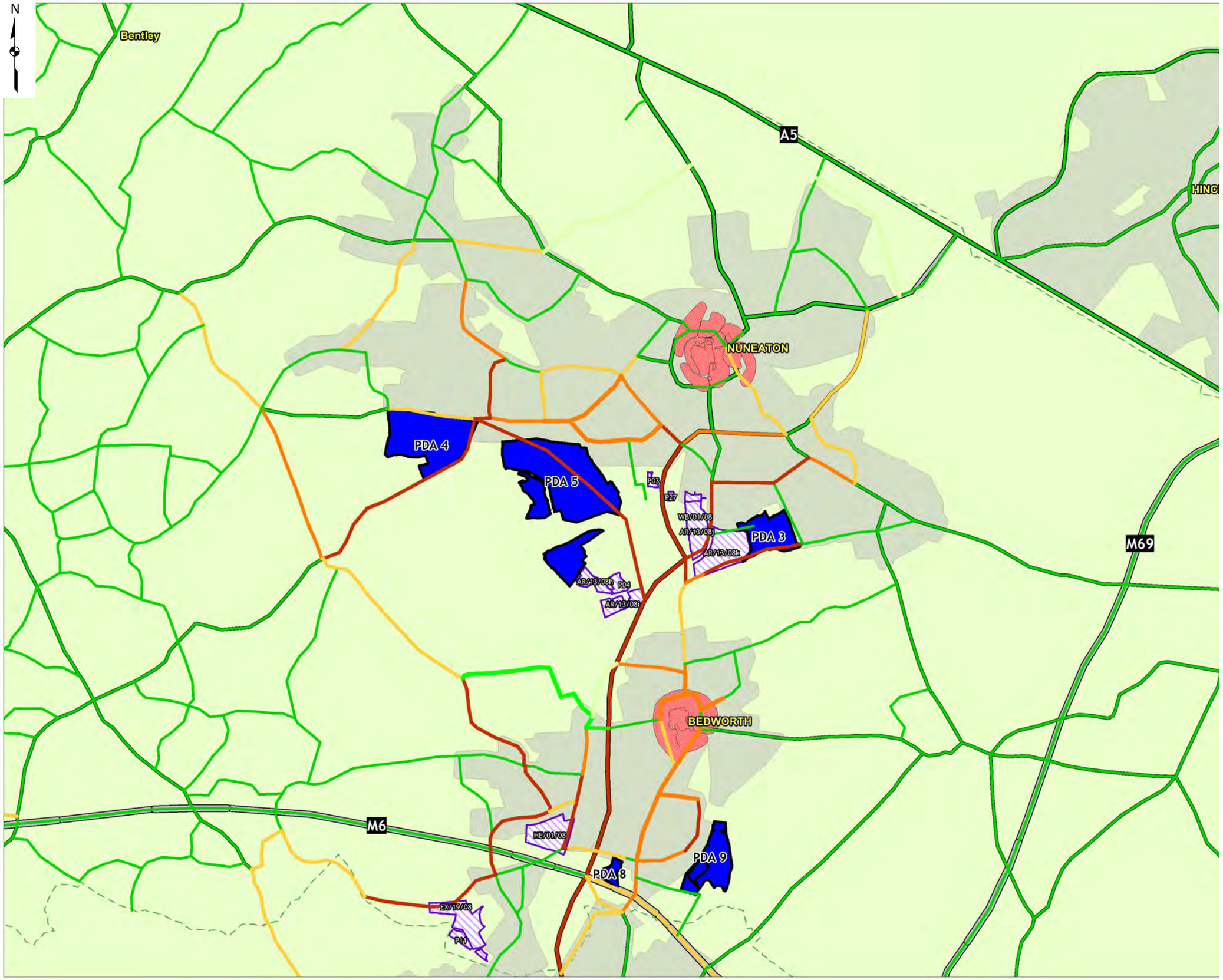
Scenario 3 - AM peak 0800-0900 GEH



Project Title:
Nuneaton and Bedworth STA

Key:

GEH

- >10
- 7.5 to 10
- 5 to 7.5
- 0 to 5

- Town centres
- Development sites - Housing
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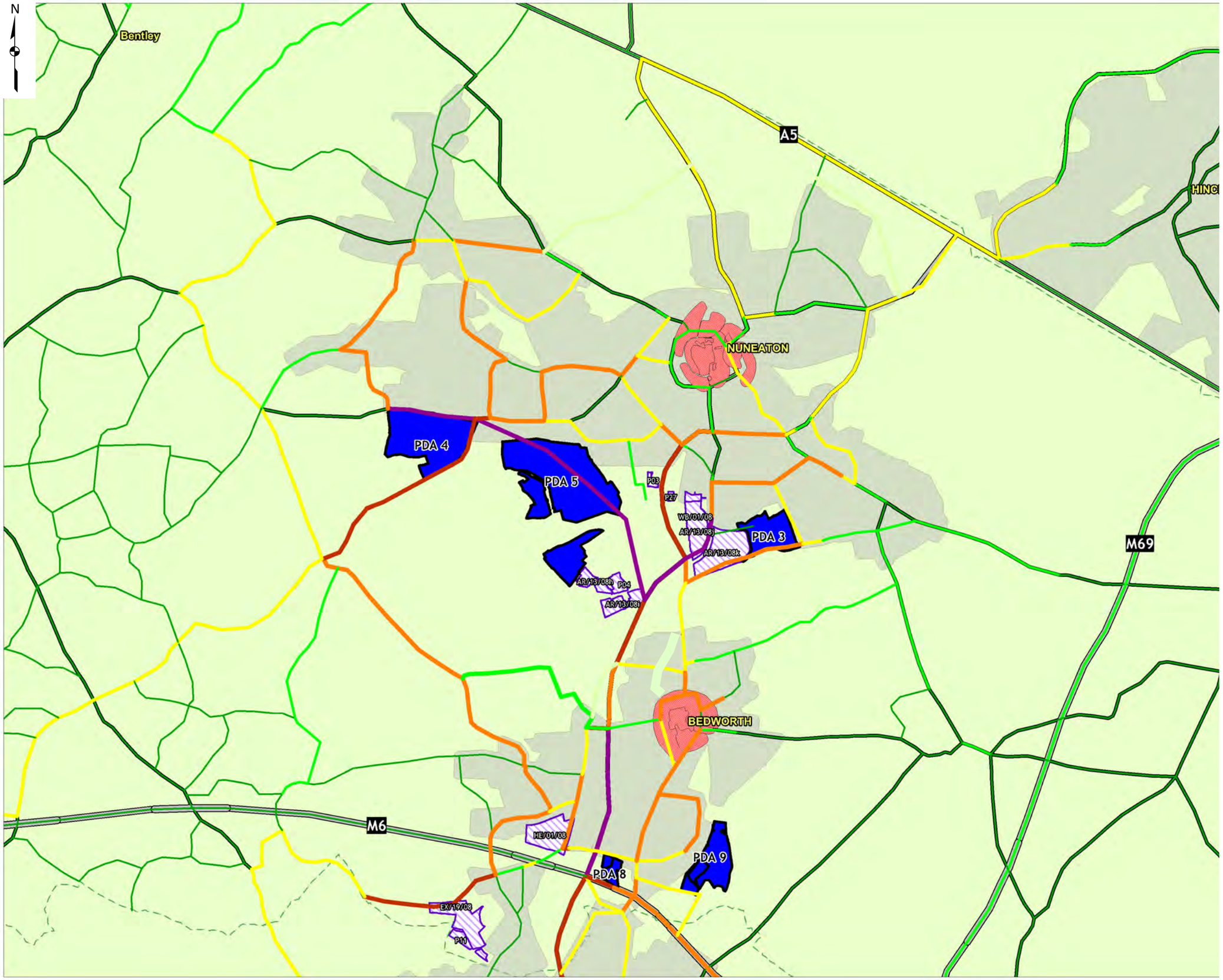
Scenario 3- PM peak 1700-1800 Flow



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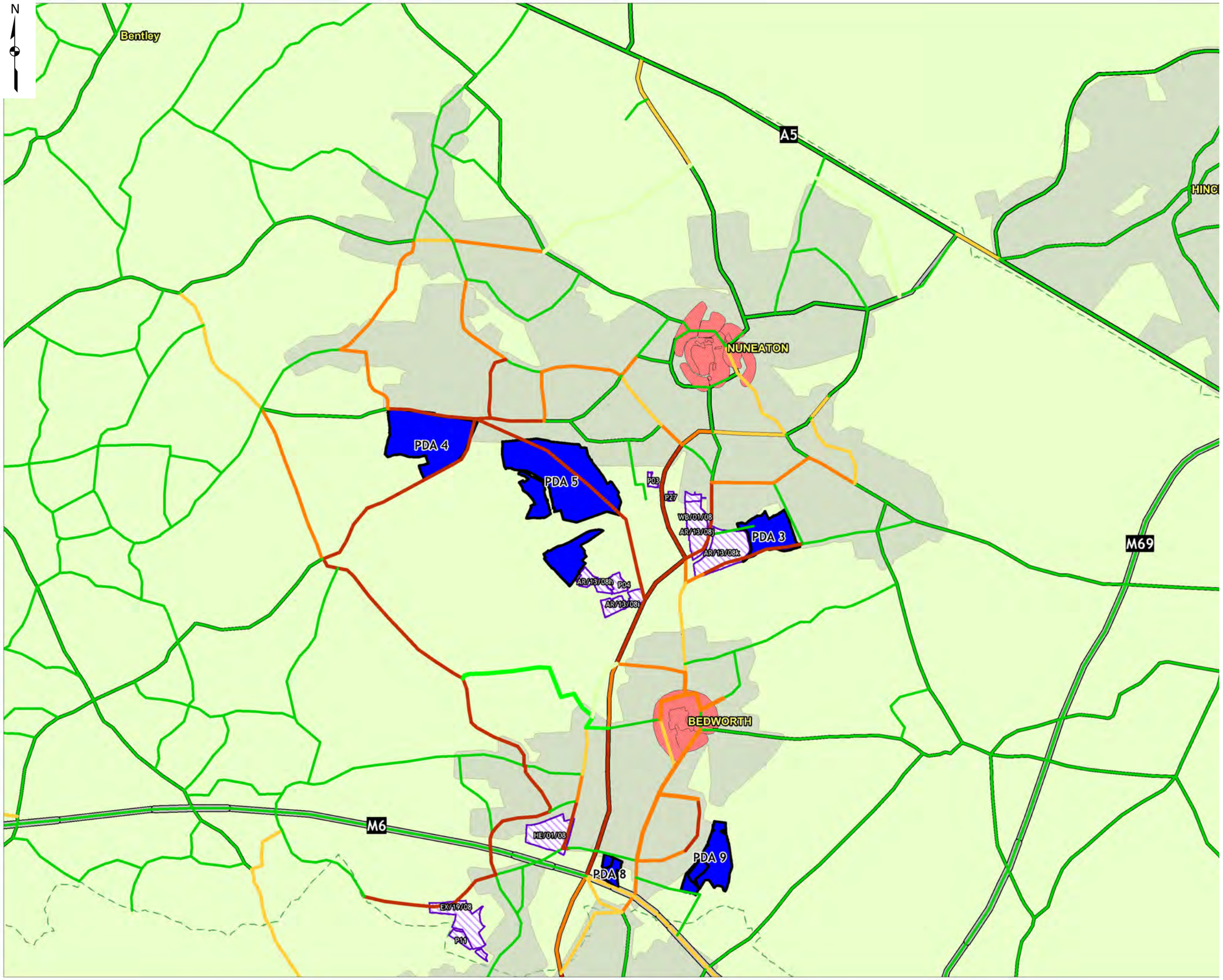
Scenario 3 - PM peak 1700-1800 GEH



Project Title:
Nuneaton and Bedworth STA

Key:

GEH

- >10
- 7.5 to 10
- 5 to 7.5
- 0 to 5

- Town centres
- Development sites - Housing
- Development sites - Employment

W: www.jmp.co.uk
E: Birmingham@jmp.co.uk

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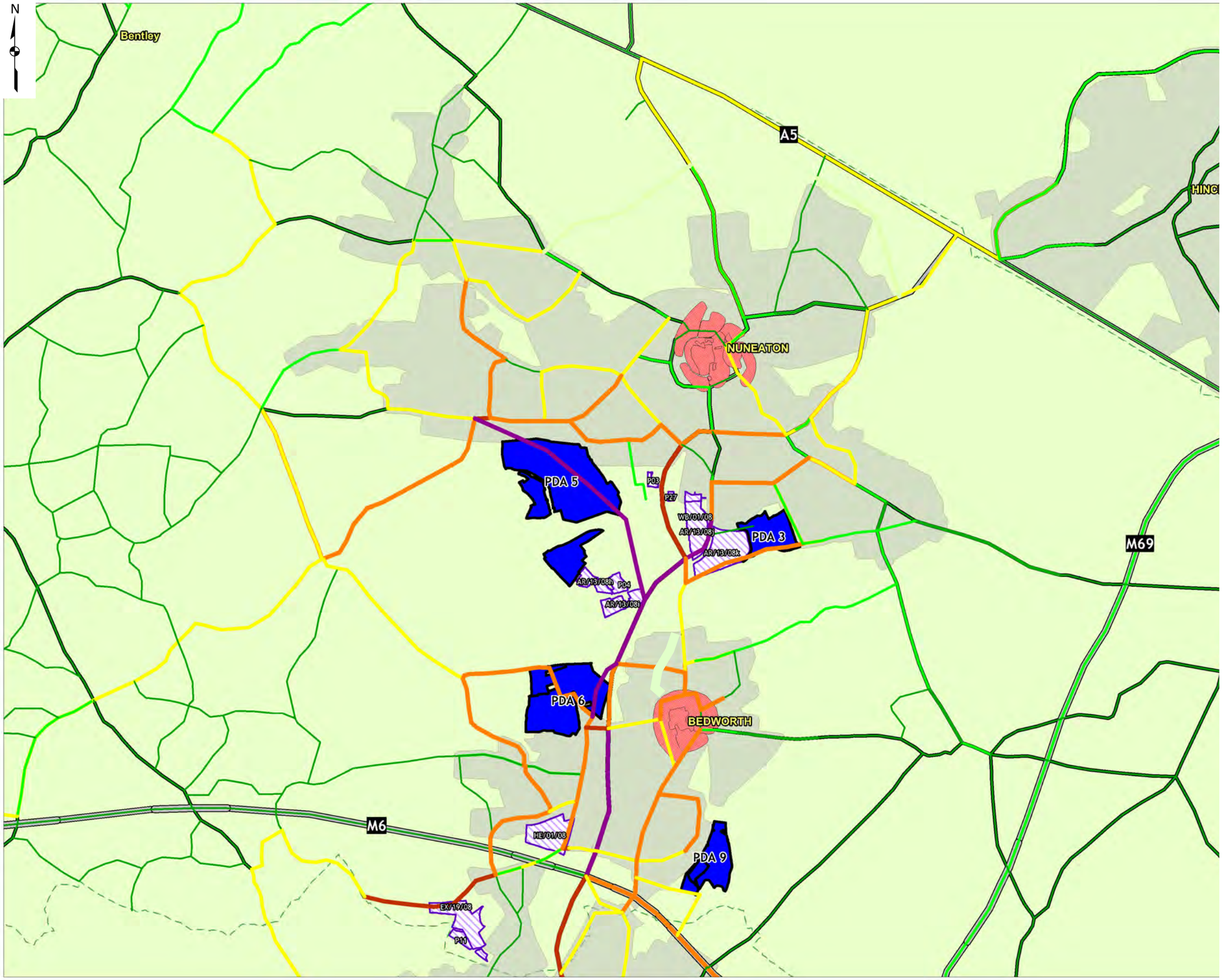
Scenario 4- AM peak 0800-0900 Flow



Project Title:
Nuneaton and Bedworth STA

Key:

Additional two-way vehicle trips:

- 1000+
- 500 - 1000
- 250 - 500
- 100 - 250
- 50 - 100
- 0 -50

Town centres

Development sites - Housing

Development sites - Employment

W: www.jmp.co.uk
E: Birmingham@jmp.co.uk

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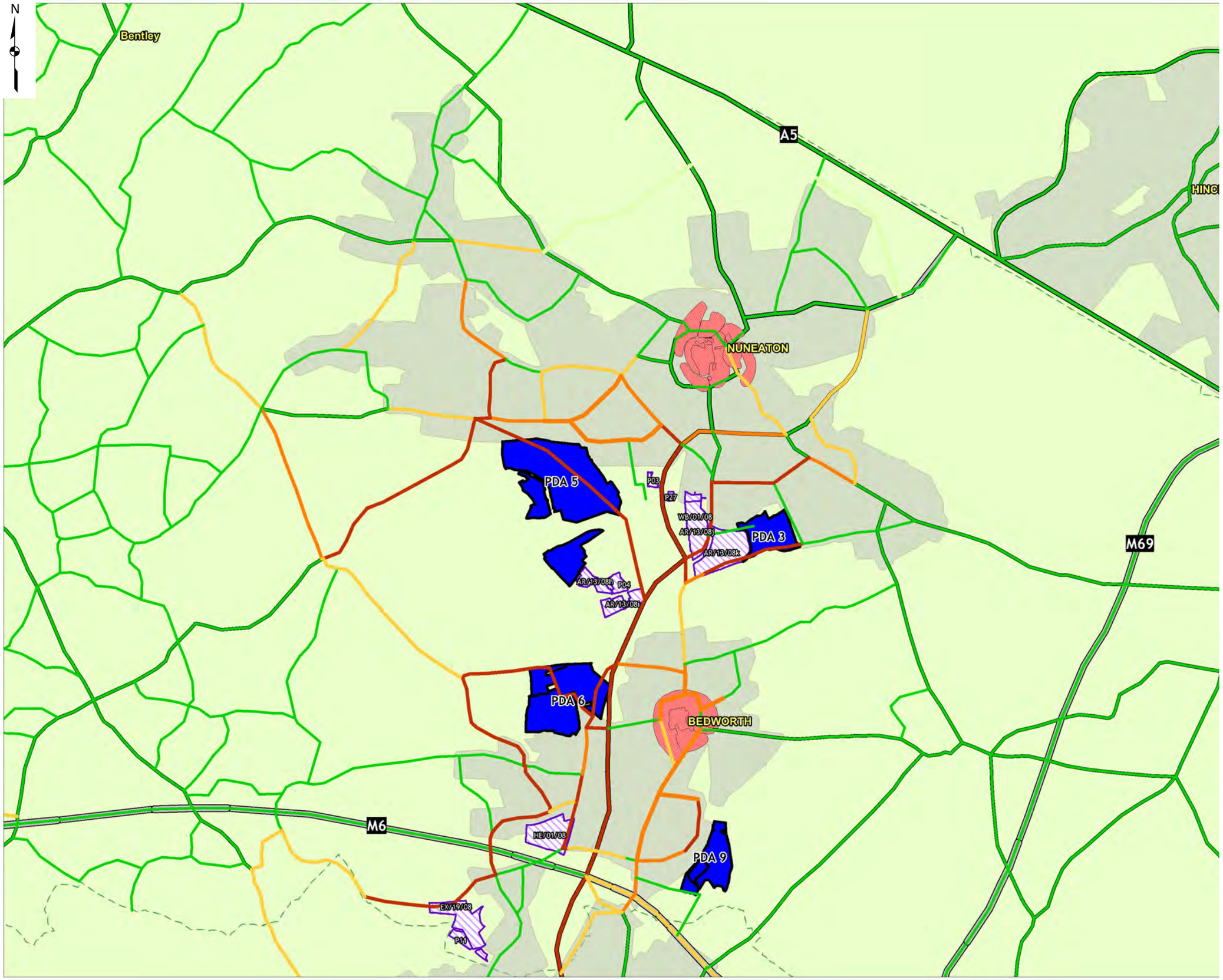
Scenario 4 - AM peak 0800-0900 GEH



Project Title:
Nuneaton and Bedworth STA

Key:

GEH

- >10
- 7.5 to 10
- 5 to 7.5
- 0 to 5

- Town centres
- Development sites - Housing
- Development sites - Employment

W: www.jmp.co.uk
E: Birmingham@jmp.co.uk

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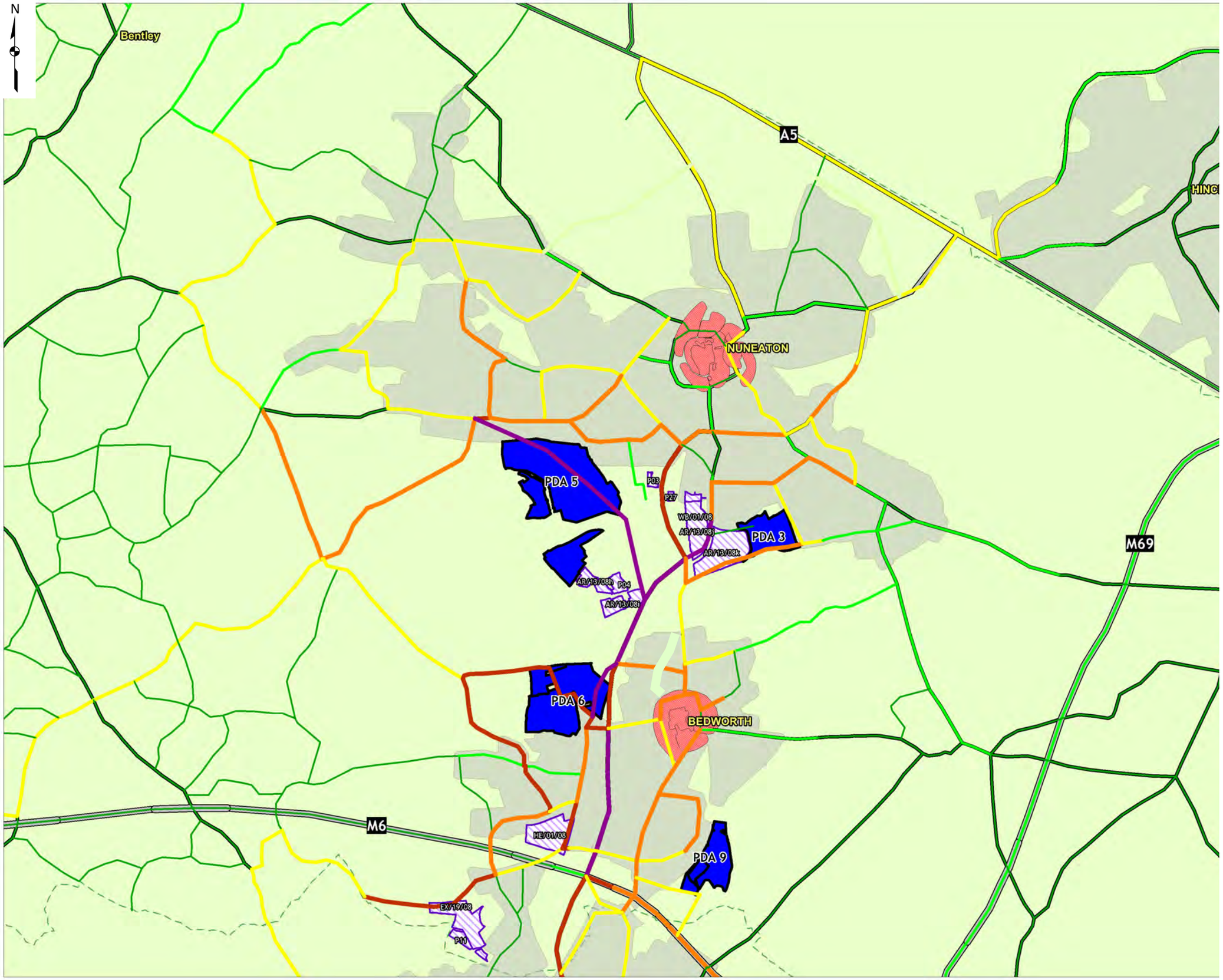
Scenario 4- PM peak 1700-1800 Flow



Project Title:
Nuneaton and Bedworth STA

Key:

Additional two-way vehicle trips:

- 1000+
- 500 - 1000
- 250 - 500
- 100 - 250
- 50 - 100
- 0 -50

- Town centres
- Development sites - Housing
- Development sites - Employment

W: www.jmp.co.uk
E: Birmingham@jmp.co.uk

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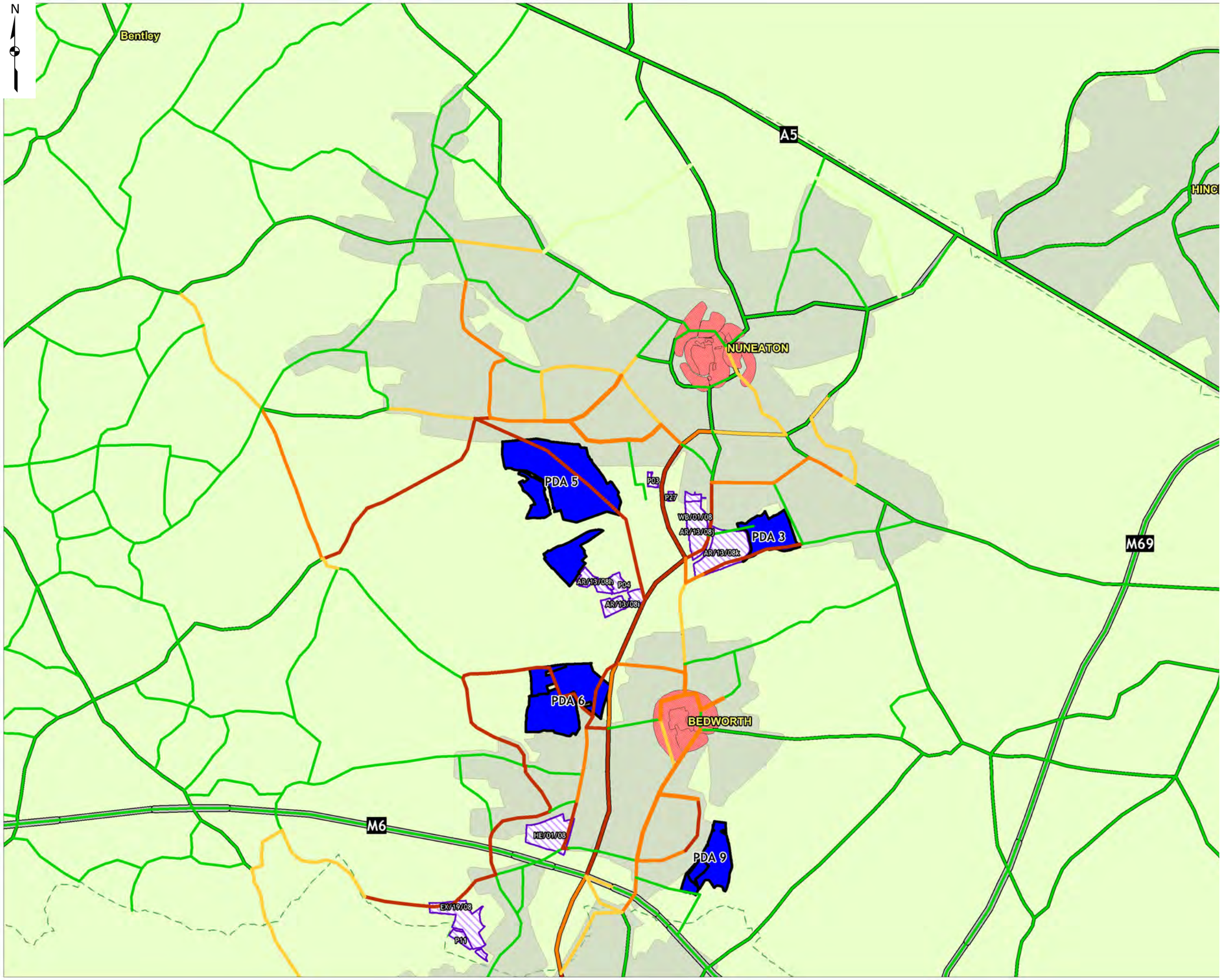
Scenario 4 - PM peak 1700-1800 GEH



Project Title:
Nuneaton and Bedworth STA

Key:

GEH

- >10
- 7.5 to 10
- 5 to 7.5
- 0 to 5

- Town centres
- Development sites - Housing
- Development sites - Employment

W: www.jmp.co.uk
E: Birmingham@jmp.co.uk

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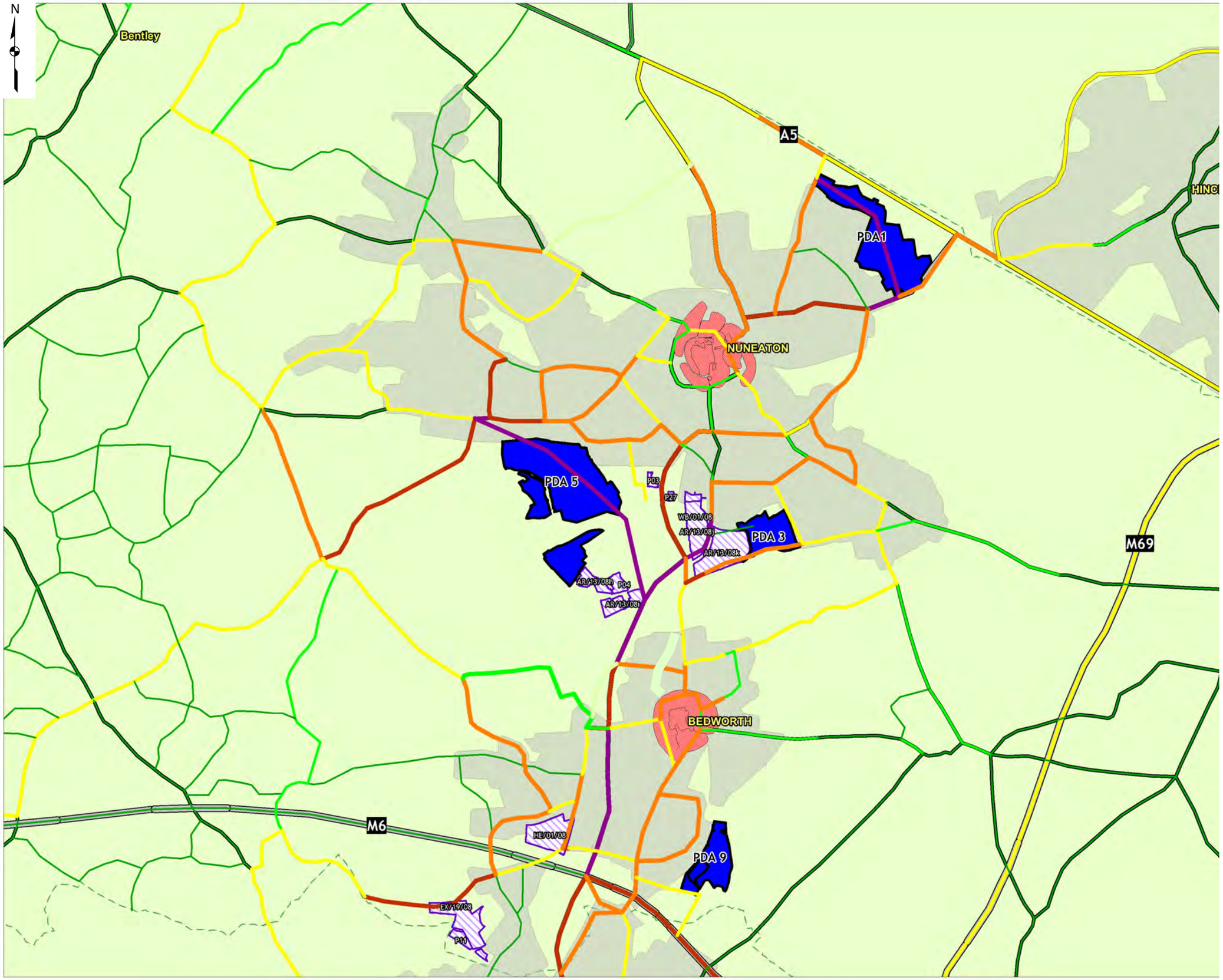
Scenario 5- AM peak 0800-0900 Flow



Project Title:
Nuneaton and Bedworth STA

Key:

Additional two-way vehicle trips:

- 1000+
- 500 - 1000
- 250 - 500
- 100 - 250
- 50 - 100
- 0 -50

Town centres

Development sites - Housing

Development sites - Employment

W: www.jmp.co.uk
E: Birmingham@jmp.co.uk

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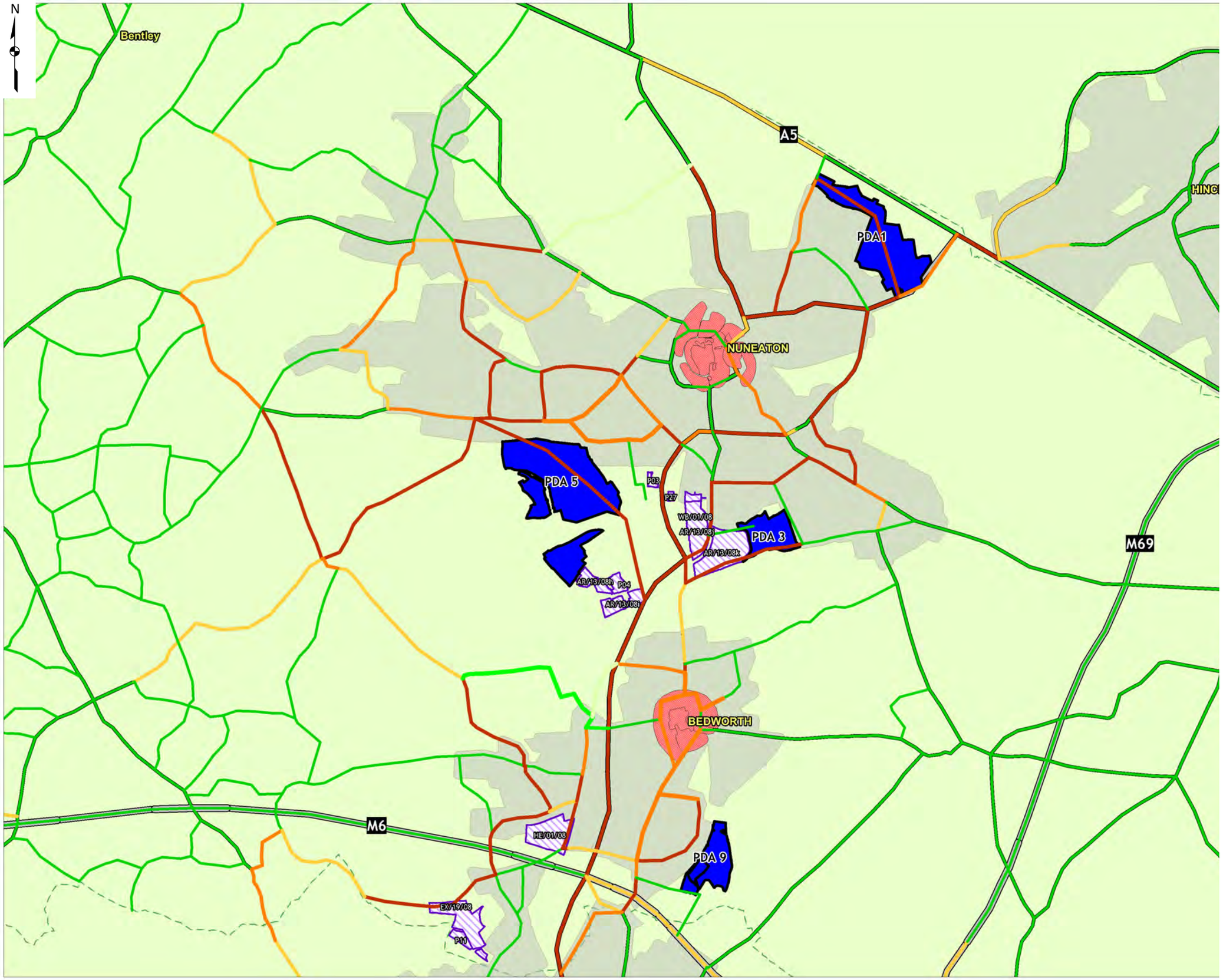
Scenario 5 - AM peak 0800-0900 GEH



Project Title:
Nuneaton and Bedworth STA

Key:

GEH

- >10
- 7.5 to 10
- 5 to 7.5
- 0 to 5

- Town centres
- Development sites - Housing
- Development sites - Employment

W: www.jmp.co.uk
E: Birmingham@jmp.co.uk

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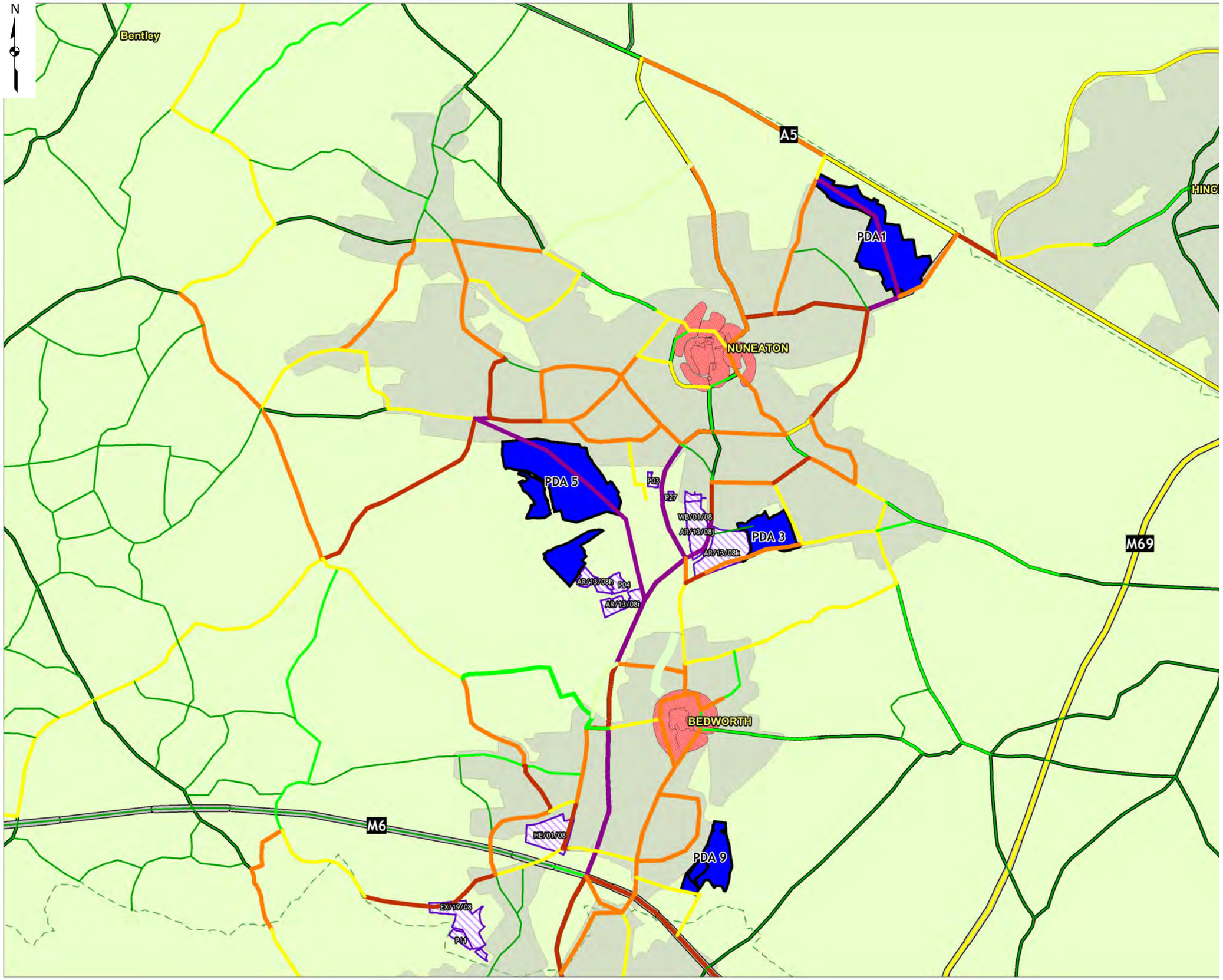
Scenario 5- PM peak 1700-1800 Flow



Project Title:
Nuneaton and Bedworth STA

Key:

Additional two-way vehicle trips:

- 1000+
- 500 - 1000
- 250 - 500
- 100 - 250
- 50 - 100
- 0 -50

Town centres

Development sites - Housing

Development sites - Employment

W: www.jmp.co.uk
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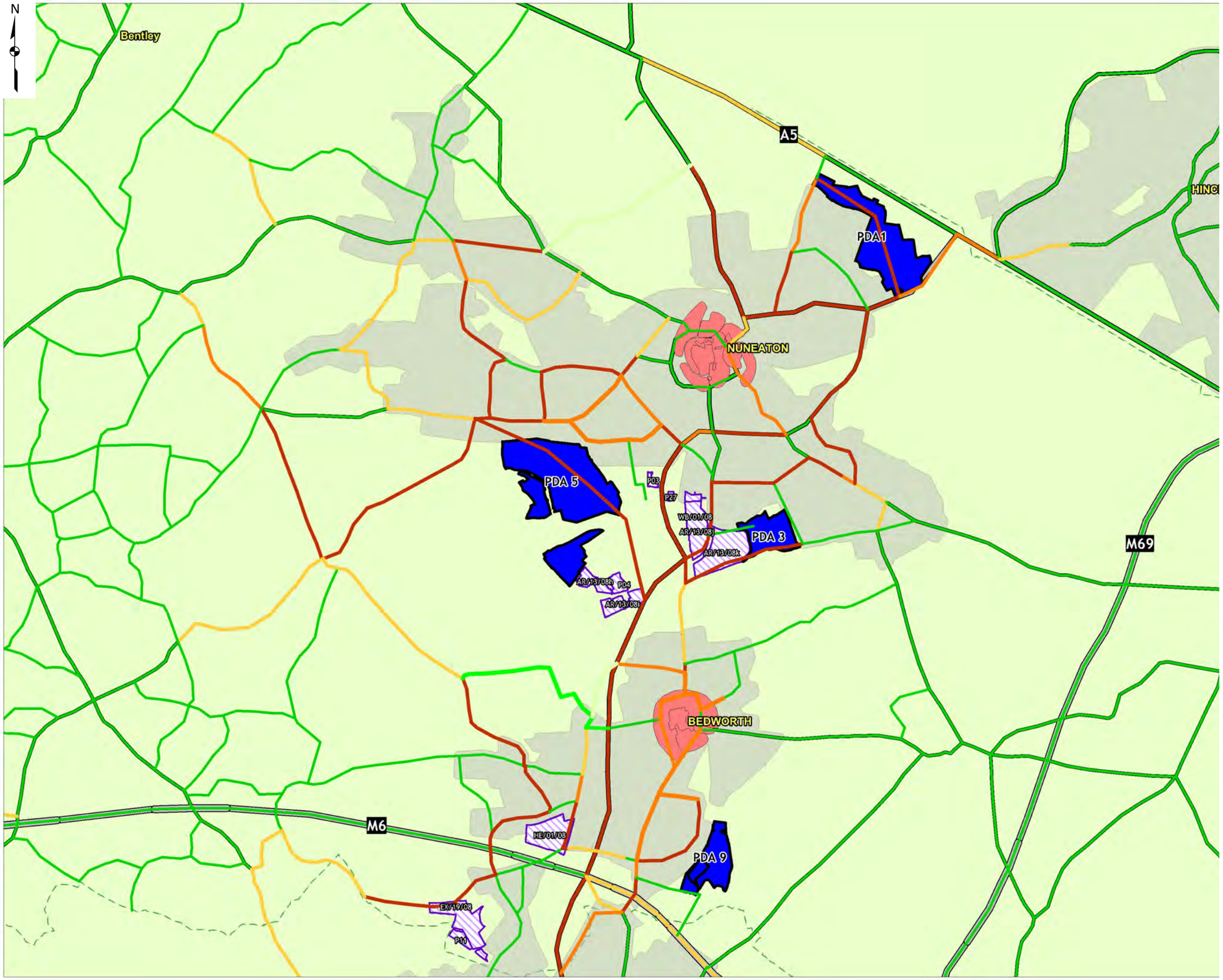
Scenario 5 - PM peak 1700-1800 GEH



Project Title:
Nuneaton and Bedworth STA

Key:

GEH

- >10
- 7.5 to 10
- 5 to 7.5
- 0 to 5

- Town centres
- Development sites - Housing
- Development sites - Employment

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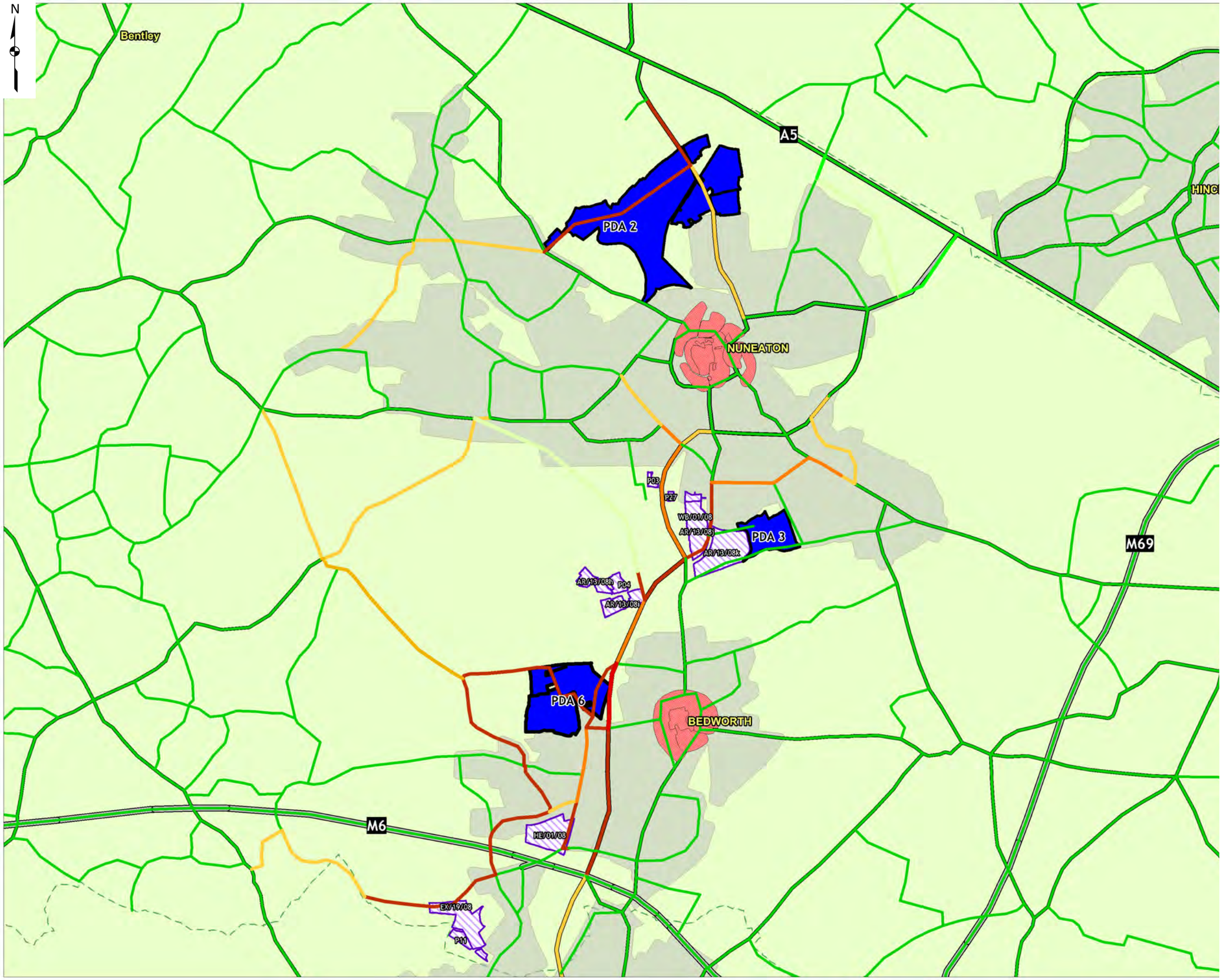
Scenario 6 - AM peak 0800-0900 GEH



Project Title:
Nuneaton and Bedworth STA

Key:

GEH

- >10
- 7.5 to 10
- 5 to 7.5
- 0 to 5

- Town centres
- Development sites - Housing
- Development sites - Employment

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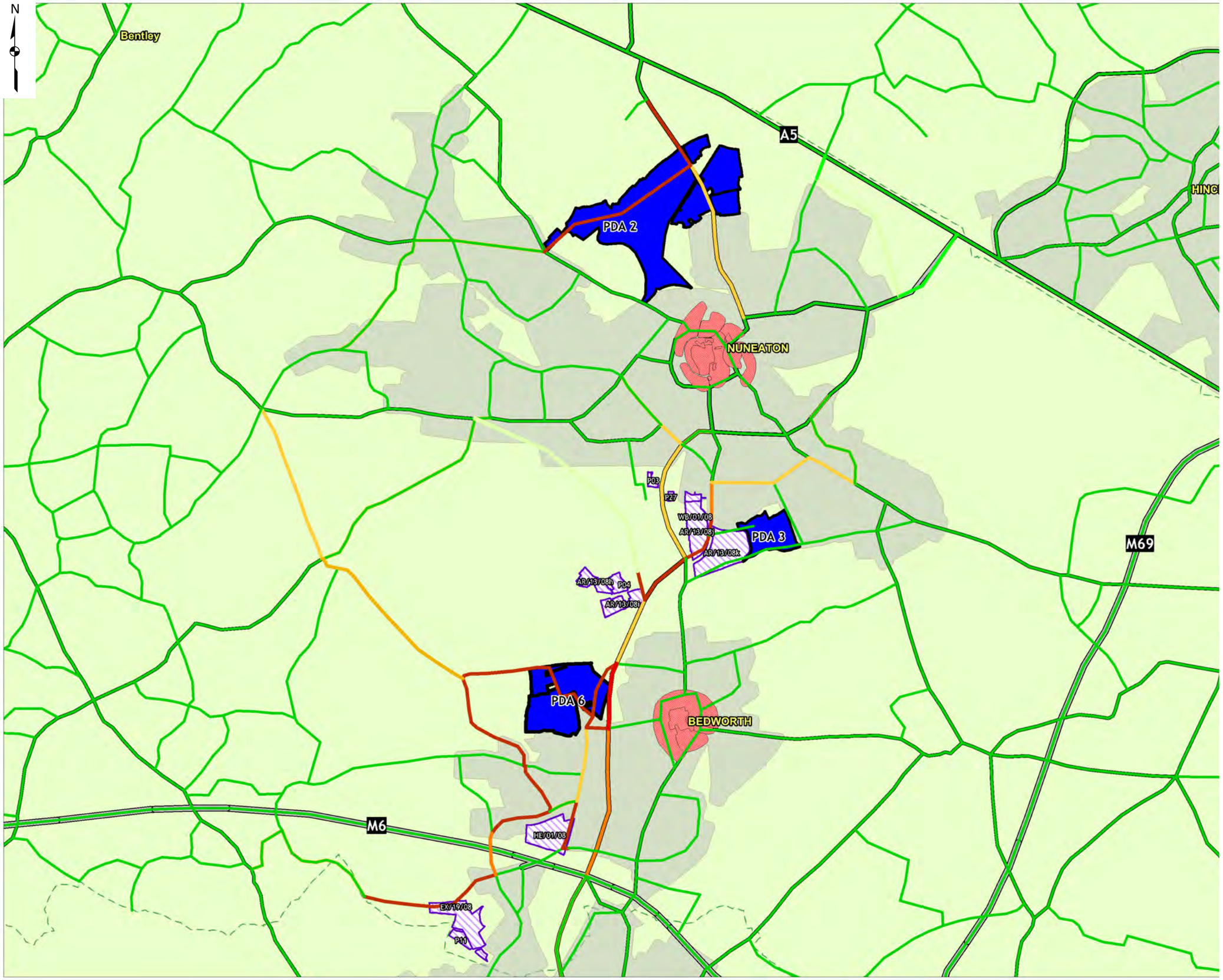
Scenario 6 - PM peak 1700-1800 GEH



Project Title:
Nuneaton and Bedworth STA

Key:

GEH

- >10
- 7.5 to 10
- 5 to 7.5
- 0 to 5

- Town centres
- Development sites - Housing
- Development sites - Employment

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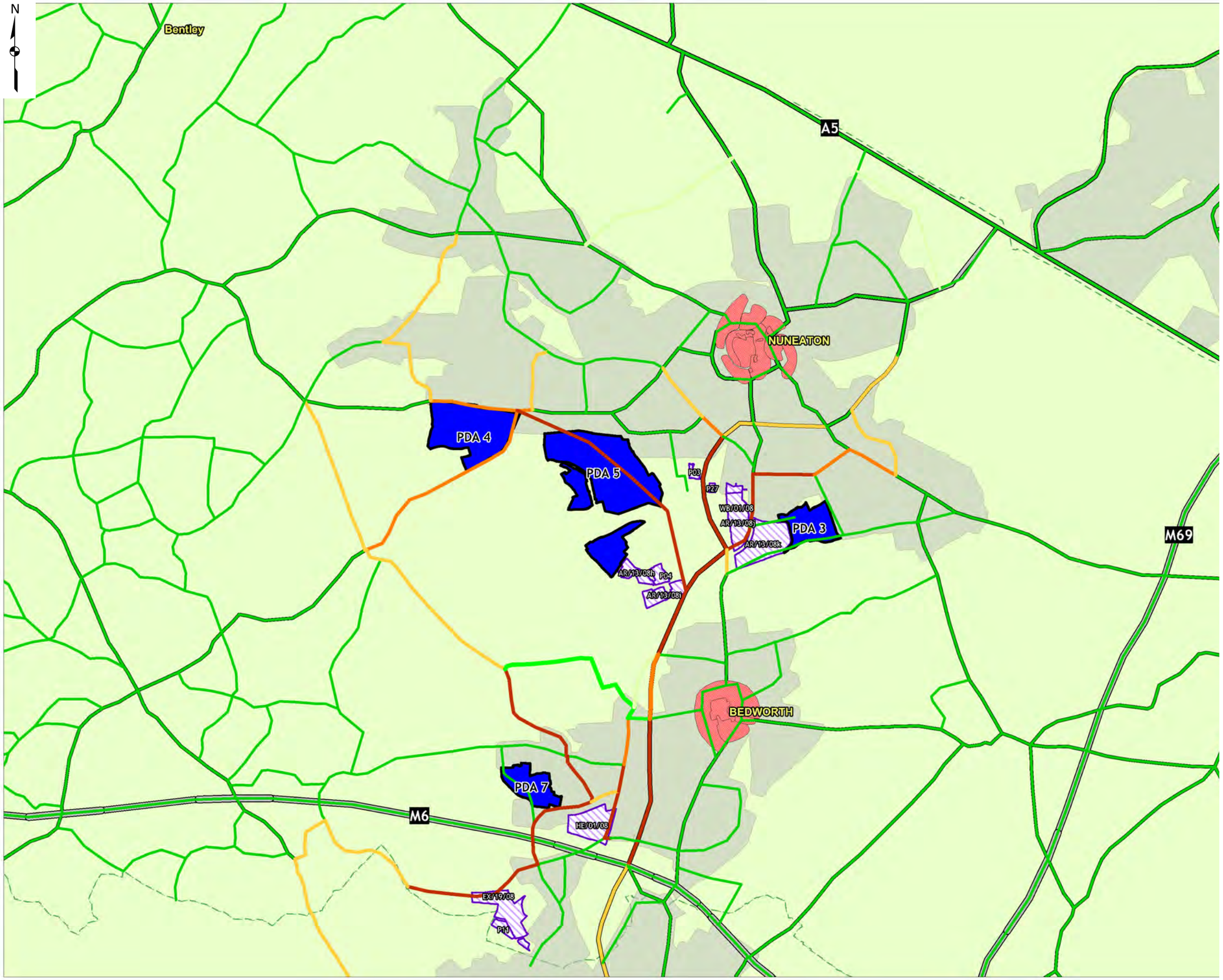
Scenario 7 - AM peak 0800-0900 GEH



Project Title:
Nuneaton and Bedworth STA

Key:

GEH

- >10
- 7.5 to 10
- 5 to 7.5
- 0 to 5

- Town centres
- Development sites - Housing
- Development sites - Employment

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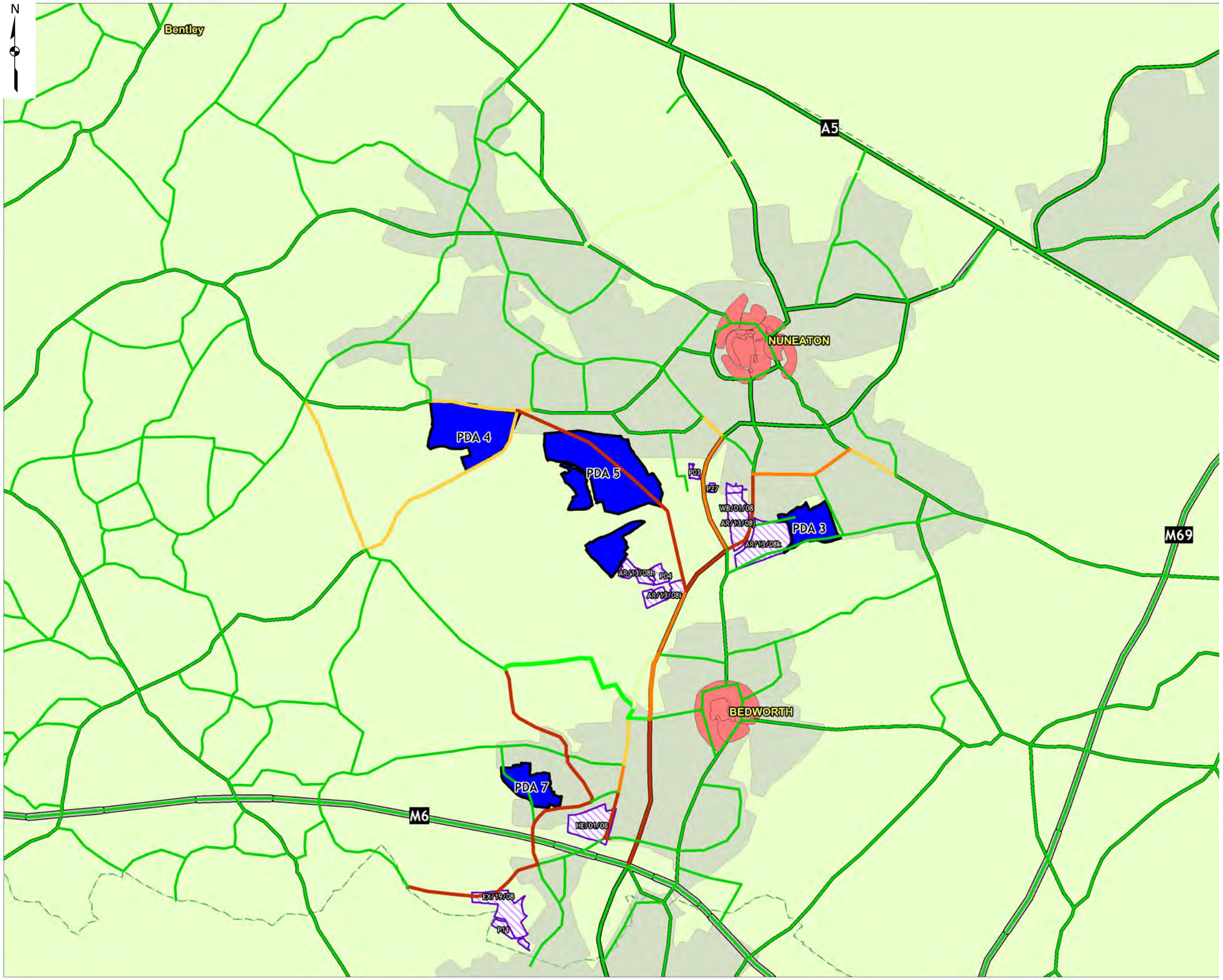
Scenario 7 - PM peak 1700-1800 GEH



Project Title:
Nuneaton and Bedworth STA

Key:

GEH

- >10
- 7.5 to 10
- 5 to 7.5
- 0 to 5

Town centres

Development sites - Housing

Development sites - Employment

W: www.jmp.co.uk
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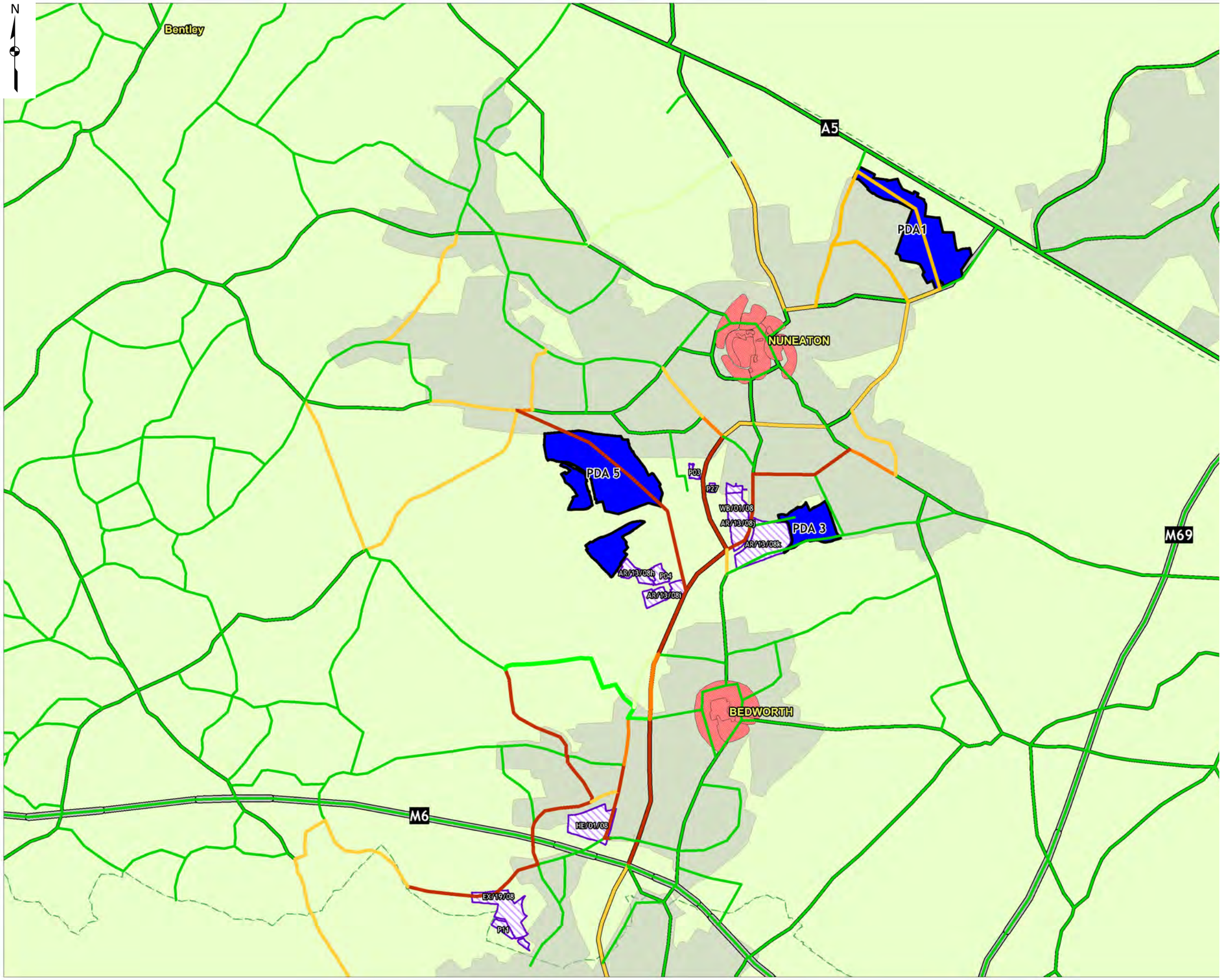
Scenario 8 - AM peak 0800-0900 GEH



Project Title:
Nuneaton and Bedworth STA

Key:

GEH

- >10
- 7.5 to 10
- 5 to 7.5
- 0 to 5

- Town centres
- Development sites - Housing
- Development sites - Employment

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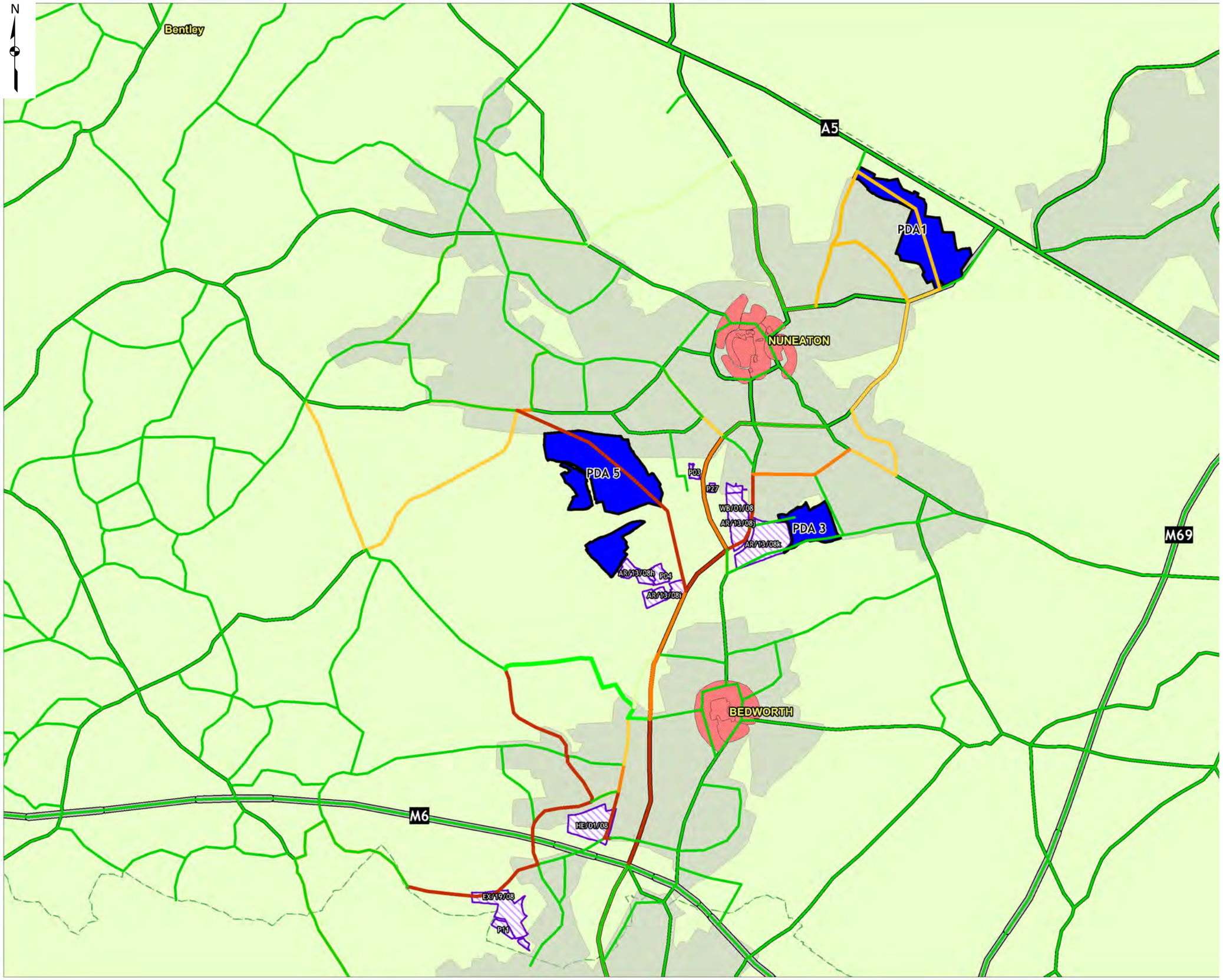
Scenario 8 - PM peak 1700-1800 GEH



Project Title:
Nuneaton and Bedworth STA

Key:

GEH

- >10
- 7.5 to 10
- 5 to 7.5
- 0 to 5

- Town centres
- Development sites - Housing
- Development sites - Employment

W: www.jmp.co.uk
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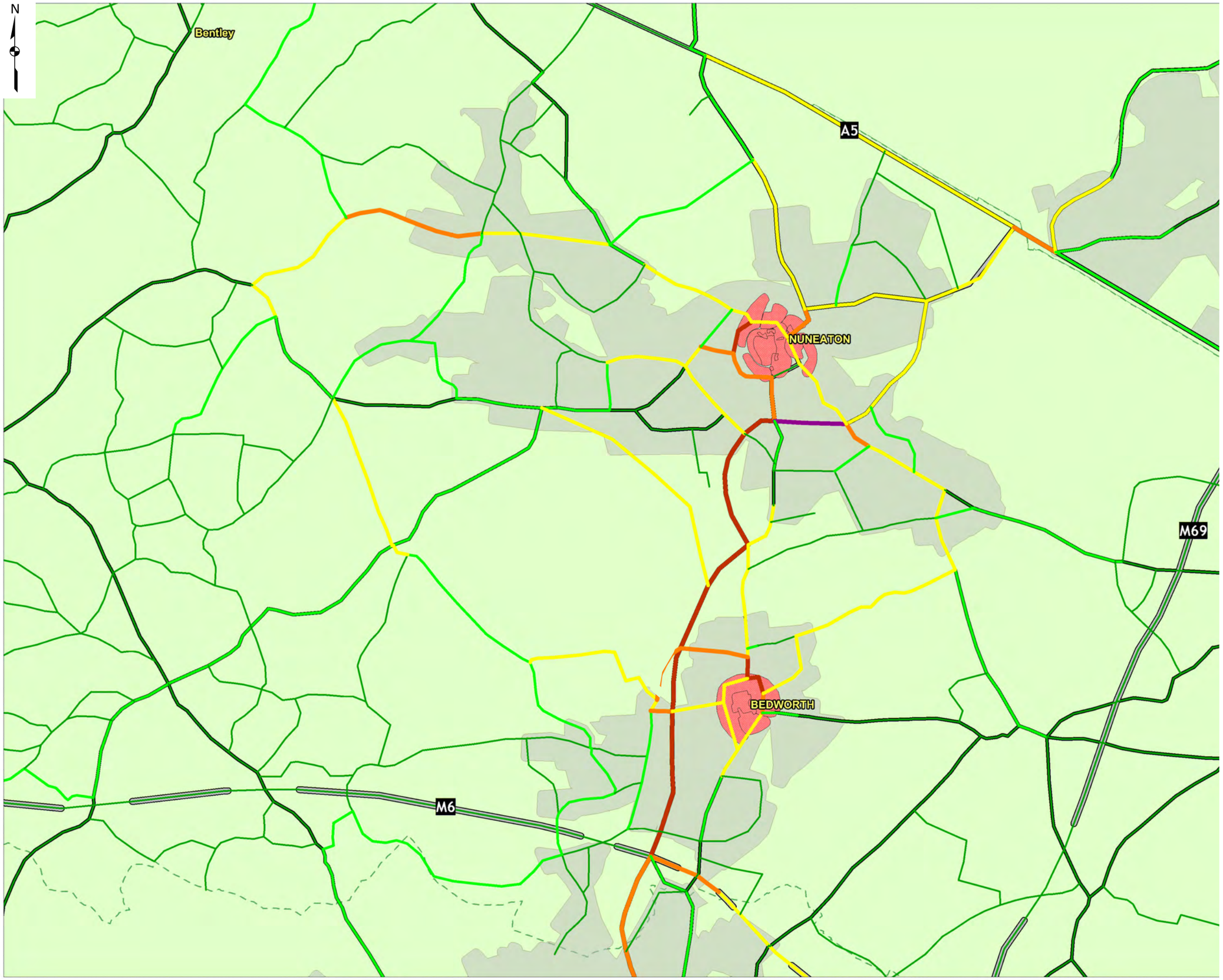
Appendix F

Committed development traffic - AM Flow



Project Title:
Nuneaton and Bedworth STA

Key:

Additional two-way vehicle trips:

- 1000+
- 500 - 1000
- 250 - 500
- 100 - 250
- 50 - 100
- 0 -50

Town centres

W: www.jmp.co.uk
E: Birmingham@jmp.co.uk

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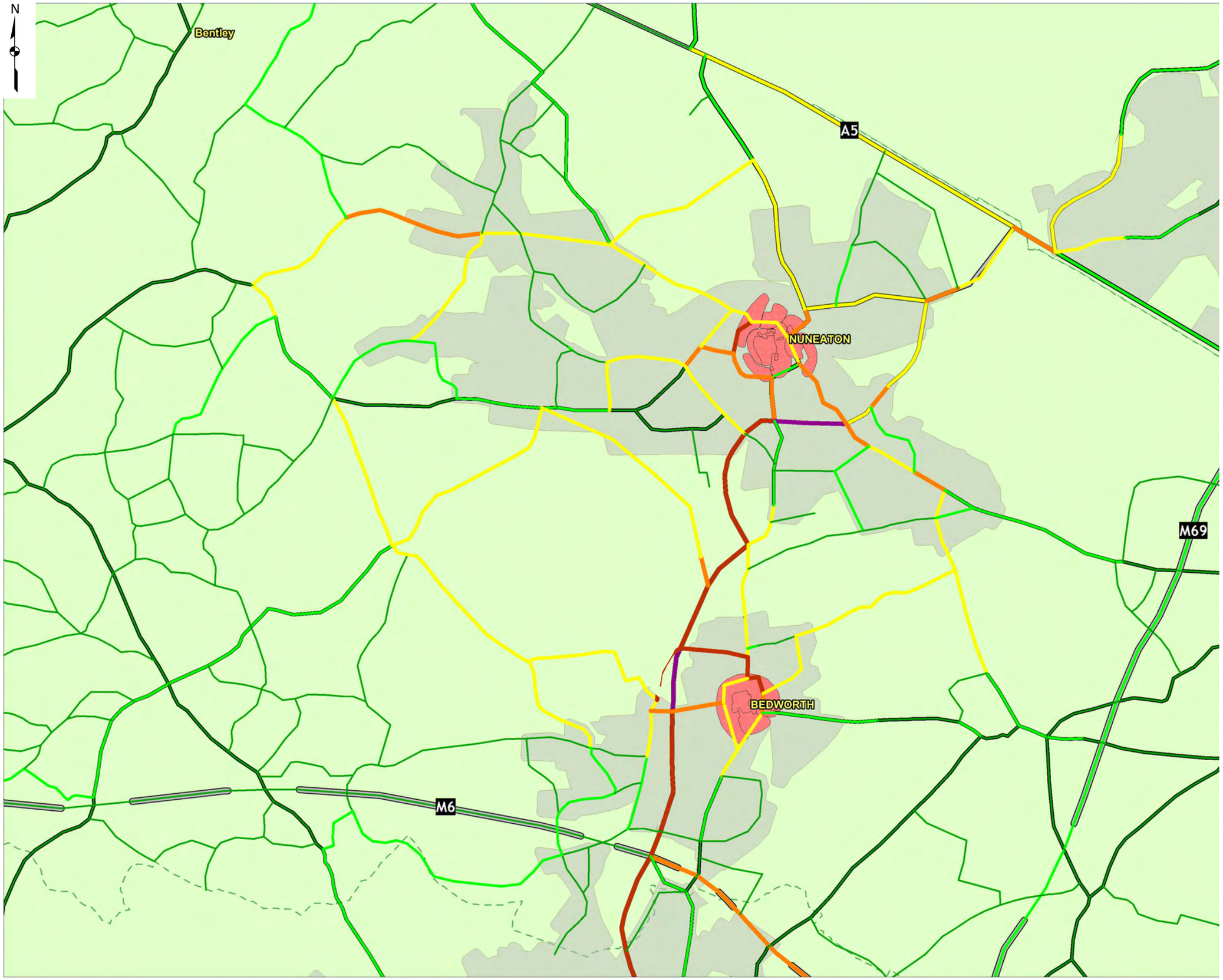
Committed development traffic - PM Flow



Project Title:
Nuneaton and Bedworth STA

Key:

Additional two-way vehicle trips:

- 1000+
- 500 - 1000
- 250 - 500
- 100 - 250
- 50 - 100
- 0 -50

Town centres

W: www.jmp.co.uk
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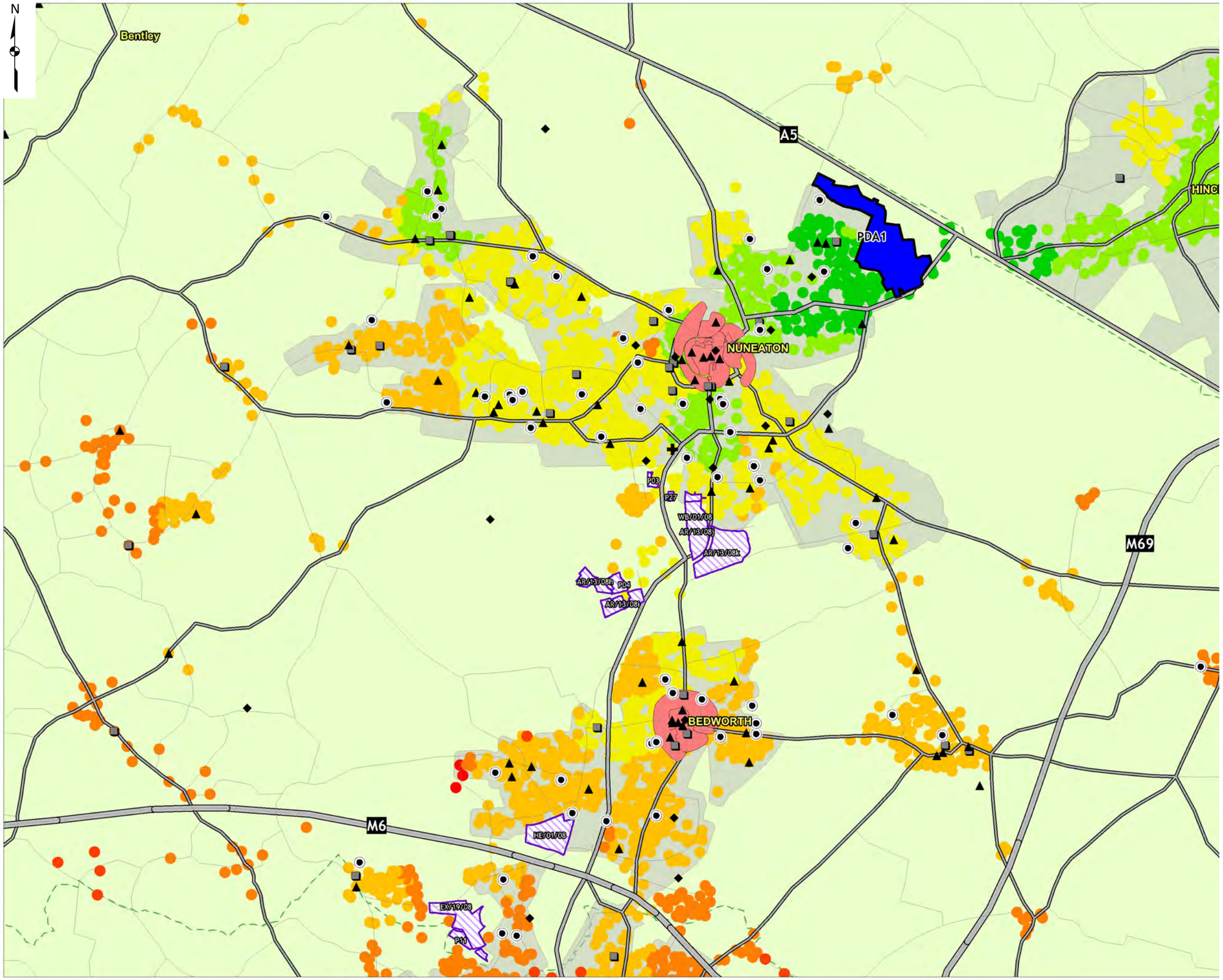
Appendix G

PDA 1 - Public transport accessibility



Project Title:
Nuneaton and Bedworth STA

Key:

Public transport travel time

- over 60 minutes
- 50 to 60 minutes
- 40 to 50 minutes
- 30 to 40 minutes
- 20 to 30 minutes
- 10 to 20 minutes
- 0 to 10 minutes

Town centres

Development sites - Housing

Development sites - Employment

jobs

hospitals

GPs

fruit & veg

schools

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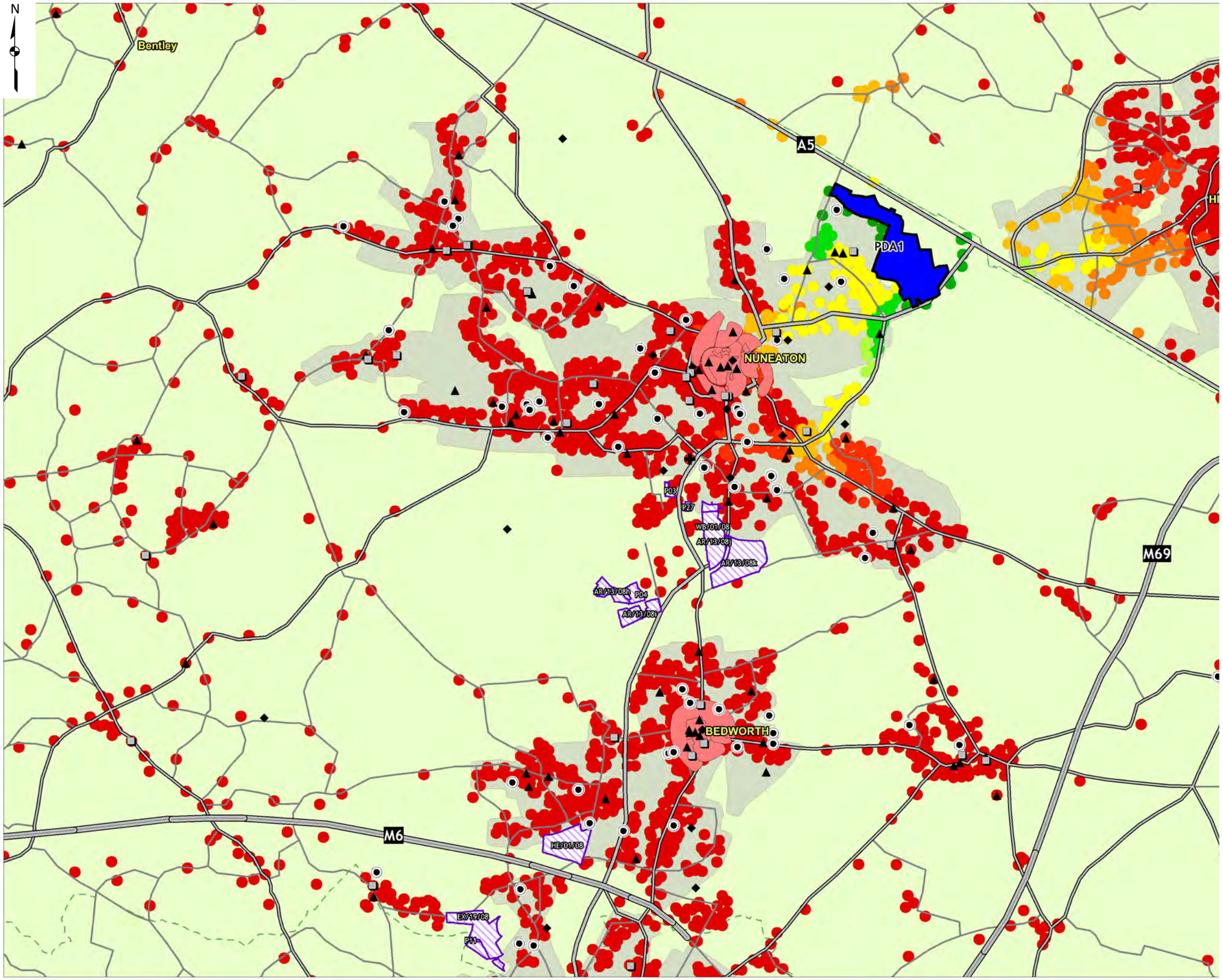
PDA 1 - Walking accessibility



Project Title:
Nuneaton and Bedworth STA

Key:

Walking access time

- Over 70 minutes
- 60 to 70 minutes
- 50 to 60 minutes
- 40 to 50 minutes
- 30 to 40 minutes
- 20 to 30 minutes
- 10 to 20 minutes
- 0 to 10 minutes

Town centres

Development sites - Housing

Development sites - Employment

jobs

hospitals

GPs

fruit & veg

schools

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E: Birmingham@jmp.co.uk

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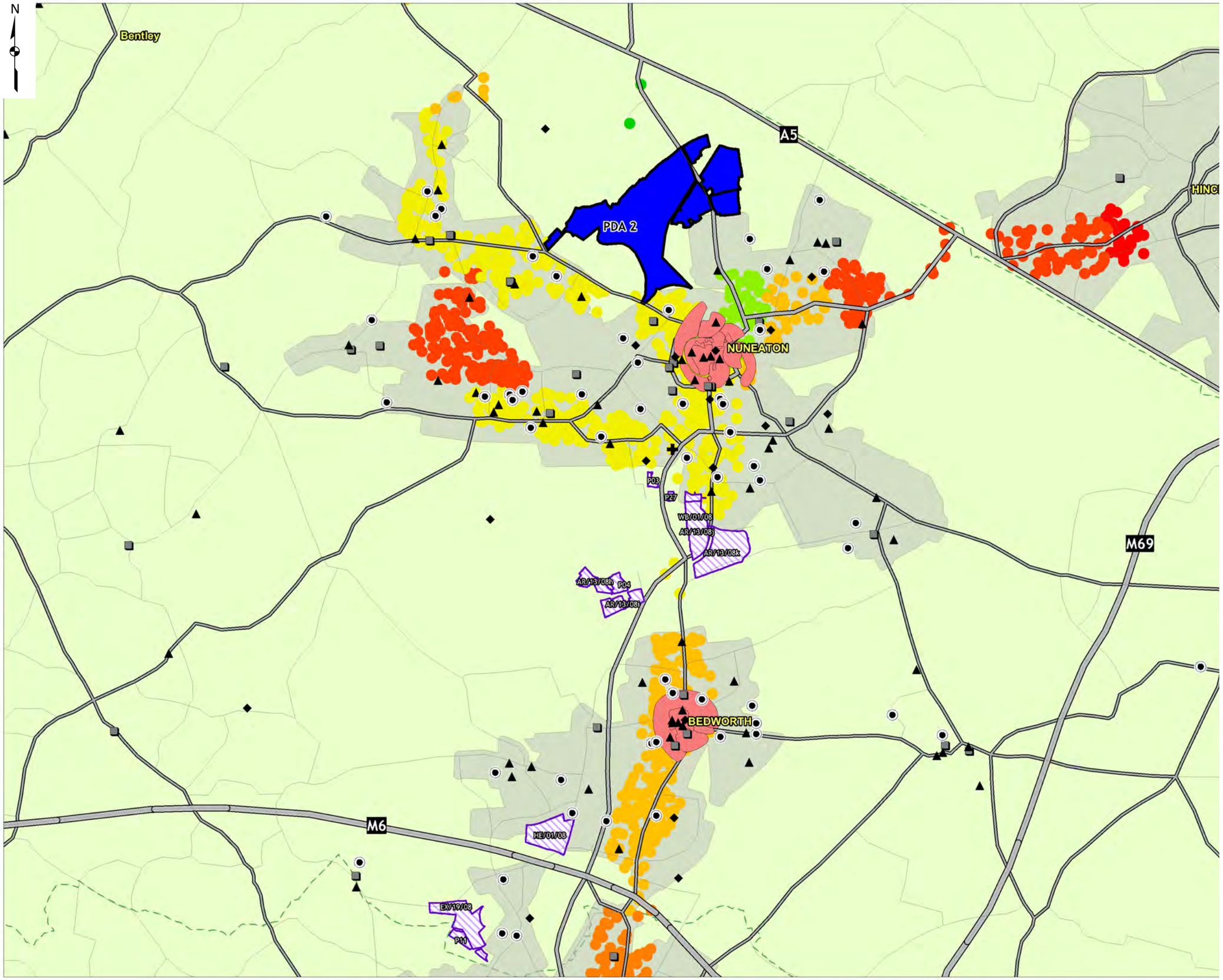
PDA 2 - Public transport accessibility



Project Title:
Nuneaton and Bedworth STA

Key:

Public transport travel time
- over 60 minutes
- 50 to 60 minutes
- 40 to 50 minutes
- 30 to 40 minutes
- 20 to 30 minutes
- 10 to 20 minutes
- 0 to 10 minutes

Town centres

Development sites - Housing

Development sites - Employment

jobs

hospitals

GPs

fruit & veg

schools

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E: Birmingham@jmp.co.uk

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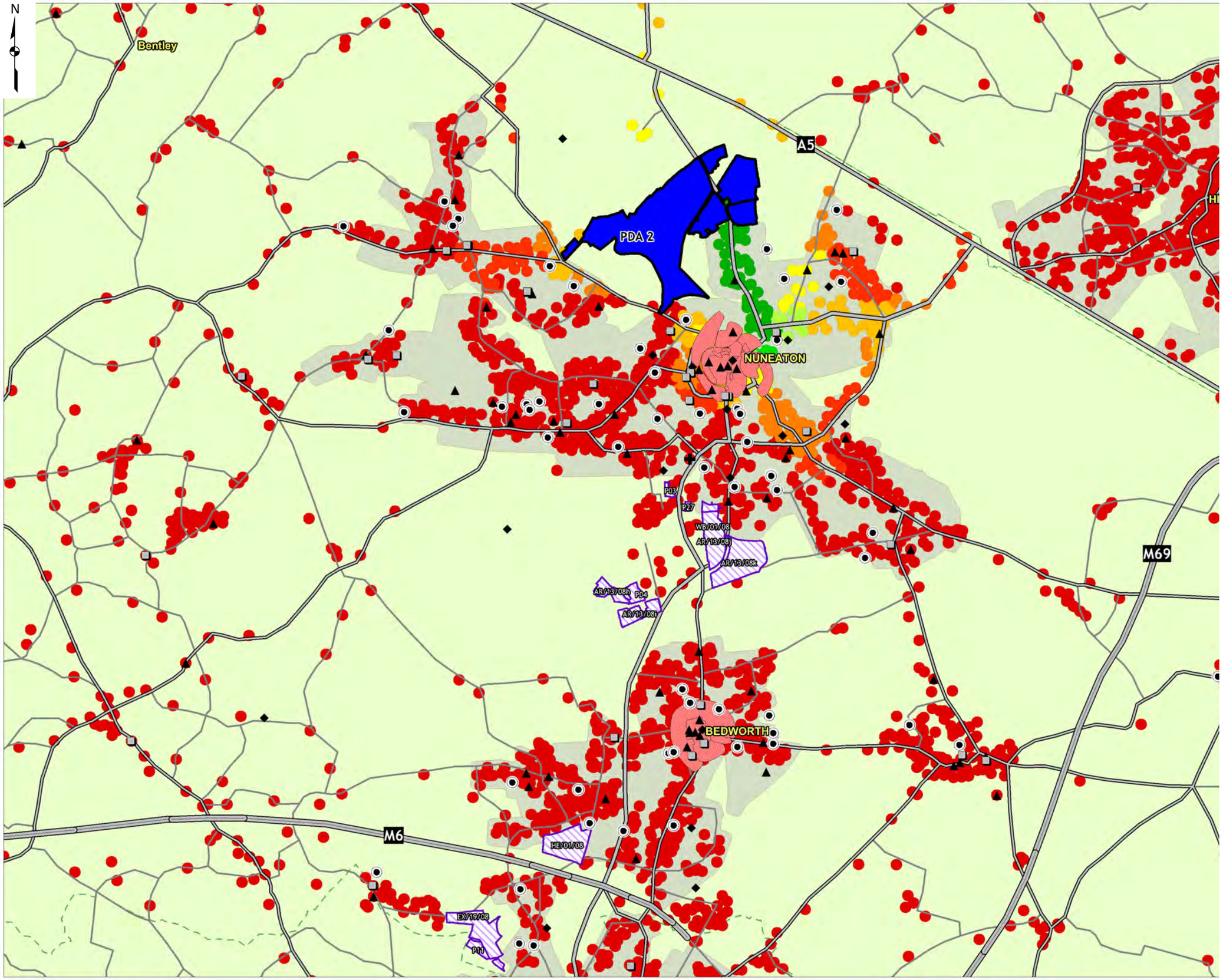
PDA 2 - Walking accessibility



Project Title:
Nuneaton and Bedworth STA

Key:

Walking access time
- Over 70 minutes
- 60 to 70 minutes
- 50 to 60 minutes
- 40 to 50 minutes
- 30 to 40 minutes
- 20 to 30 minutes
- 10 to 20 minutes
- 0 to 10 minutes

Town centres

Development sites - Housing

Development sites - Employment

jobs

hospitals

GPs

fruit & veg

schools

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E: Birmingham@jmp.co.uk

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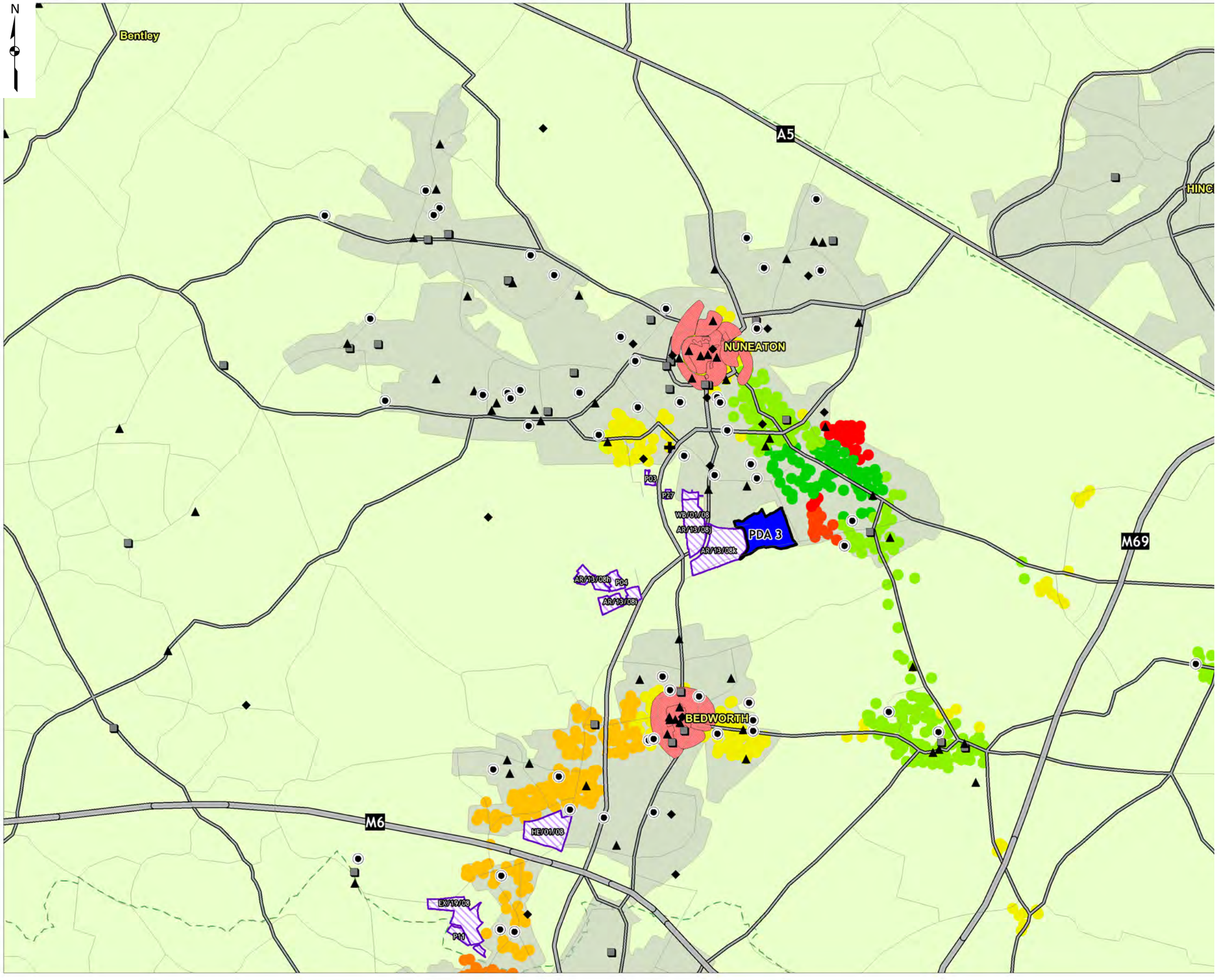
PDA 3 - Public transport accessibility



Project Title:
Nuneaton and Bedworth STA

Key:

Public transport travel time
- over 60 minutes
- 50 to 60 minutes
- 40 to 50 minutes
- 30 to 40 minutes
- 20 to 30 minutes
- 10 to 20 minutes
- 0 to 10 minutes

Town centres

Development sites - Housing

Development sites - Employment

jobs

hospitals

GPs

fruit & veg

schools

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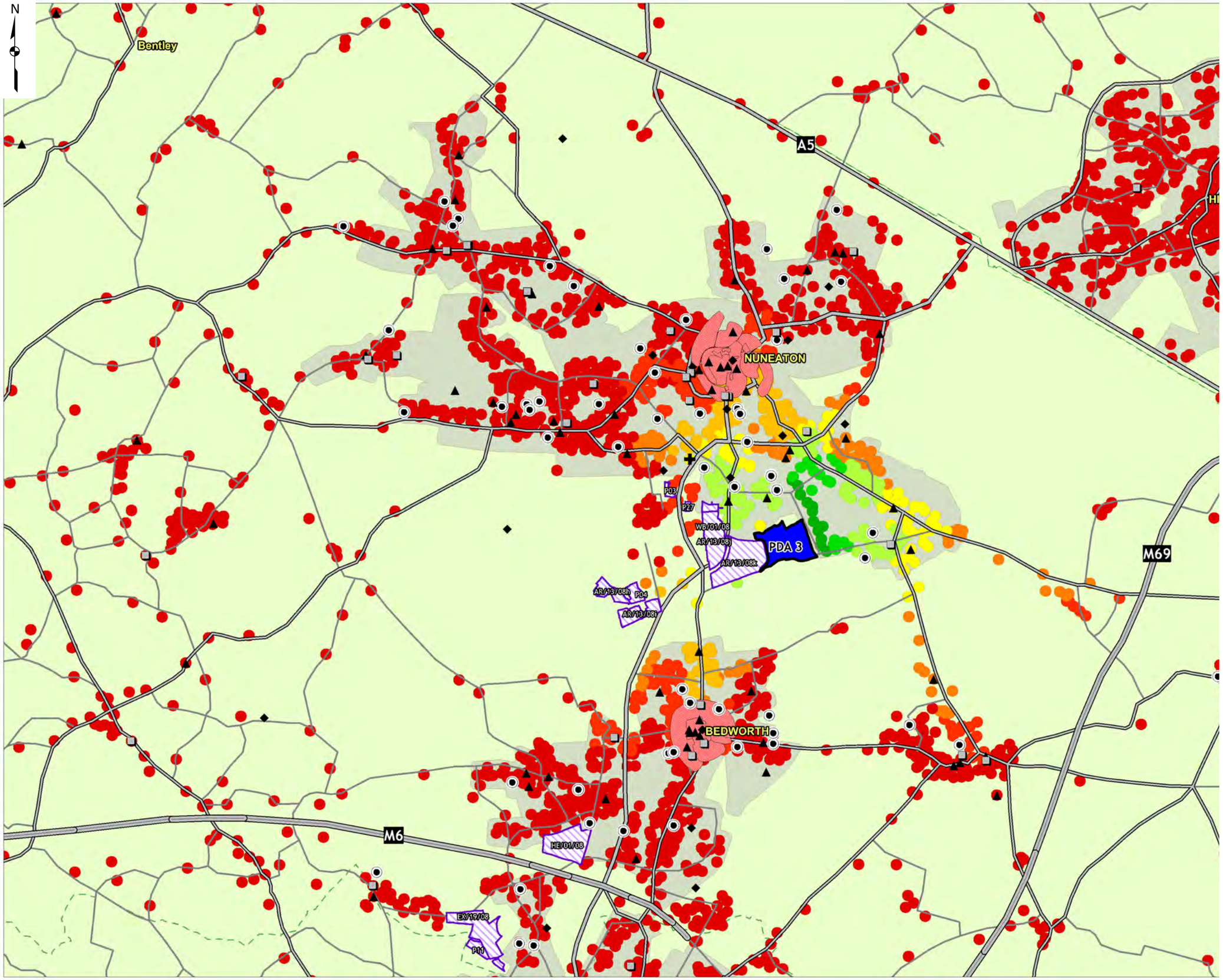
PDA 3 - Walking accessibility



Project Title:
Nuneaton and Bedworth STA

Key:

Walking access time

- Over 70 minutes
- 60 to 70 minutes
- 50 to 60 minutes
- 40 to 50 minutes
- 30 to 40 minutes
- 20 to 30 minutes
- 10 to 20 minutes
- 0 to 10 minutes

Town centres

Development sites - Housing

Development sites - Employment

jobs

hospitals

GPs

fruit & veg

schools

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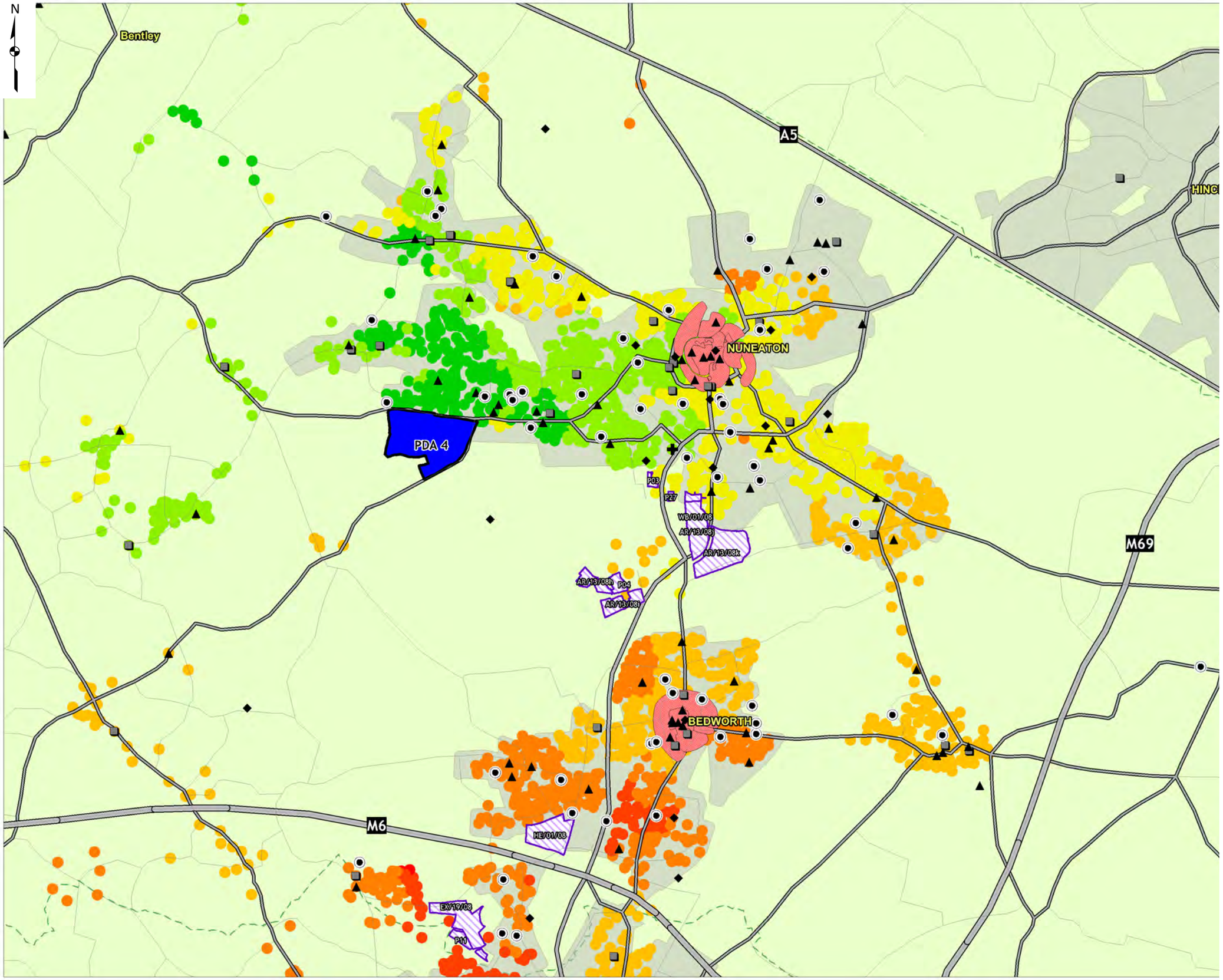
PDA 4 - Public transport accessibility



Project Title:
Nuneaton and Bedworth STA

Key:

Public transport travel time

- over 60 minutes
- 50 to 60 minutes
- 40 to 50 minutes
- 30 to 40 minutes
- 20 to 30 minutes
- 10 to 20 minutes
- 0 to 10 minutes

Town centres

Development sites - Housing

Development sites - Employment

jobs

hospitals

GPs

fruit & veg

schools

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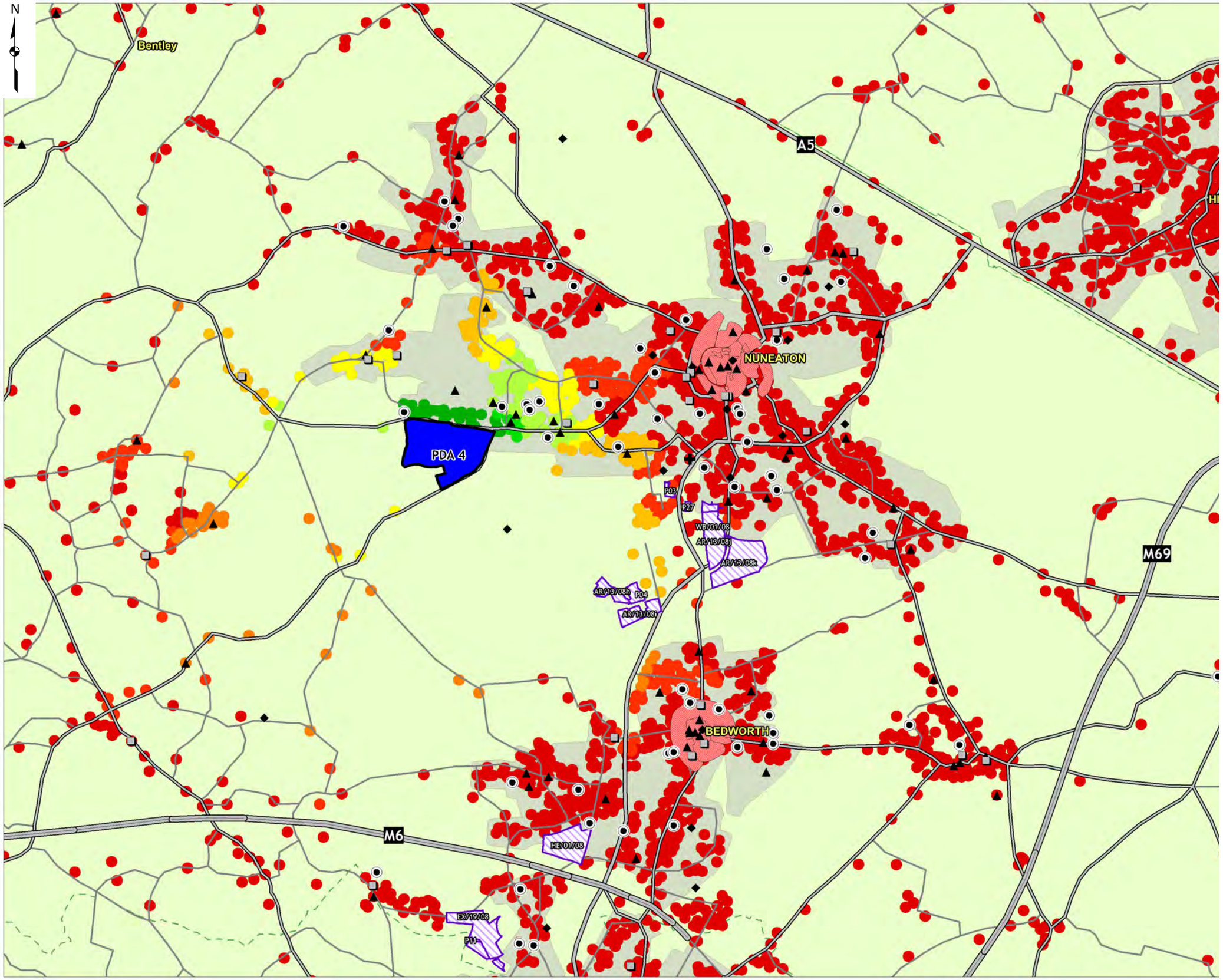
PDA 4 - Walking accessibility



Project Title:
Nuneaton and Bedworth STA

Key:

Walking access time

- Over 70 minutes
- 60 to 70 minutes
- 50 to 60 minutes
- 40 to 50 minutes
- 30 to 40 minutes
- 20 to 30 minutes
- 10 to 20 minutes
- 0 to 10 minutes

Town centres

Development sites - Housing

Development sites - Employment

jobs

hospitals

GPs

fruit & veg

schools

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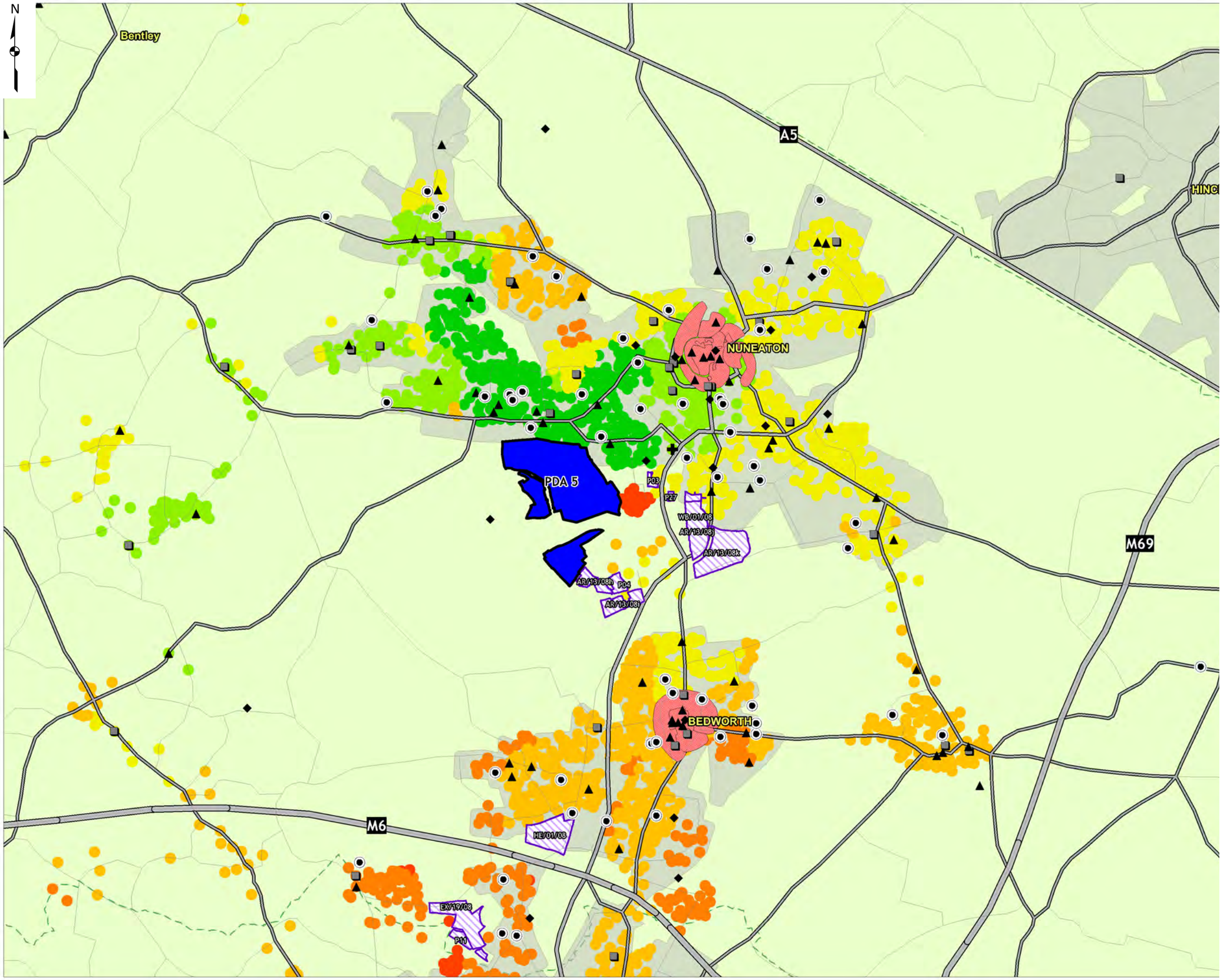
PDA 5 - Public transport accessibility



Project Title:
Nuneaton and Bedworth STA

Key:

Public transport travel time

- over 60 minutes
- 50 to 60 minutes
- 40 to 50 minutes
- 30 to 40 minutes
- 20 to 30 minutes
- 10 to 20 minutes
- 0 to 10 minutes

Town centres

Development sites - Housing

Development sites - Employment

jobs

hospitals

GPs

fruit & veg

schools

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E: Birmingham@jmp.co.uk

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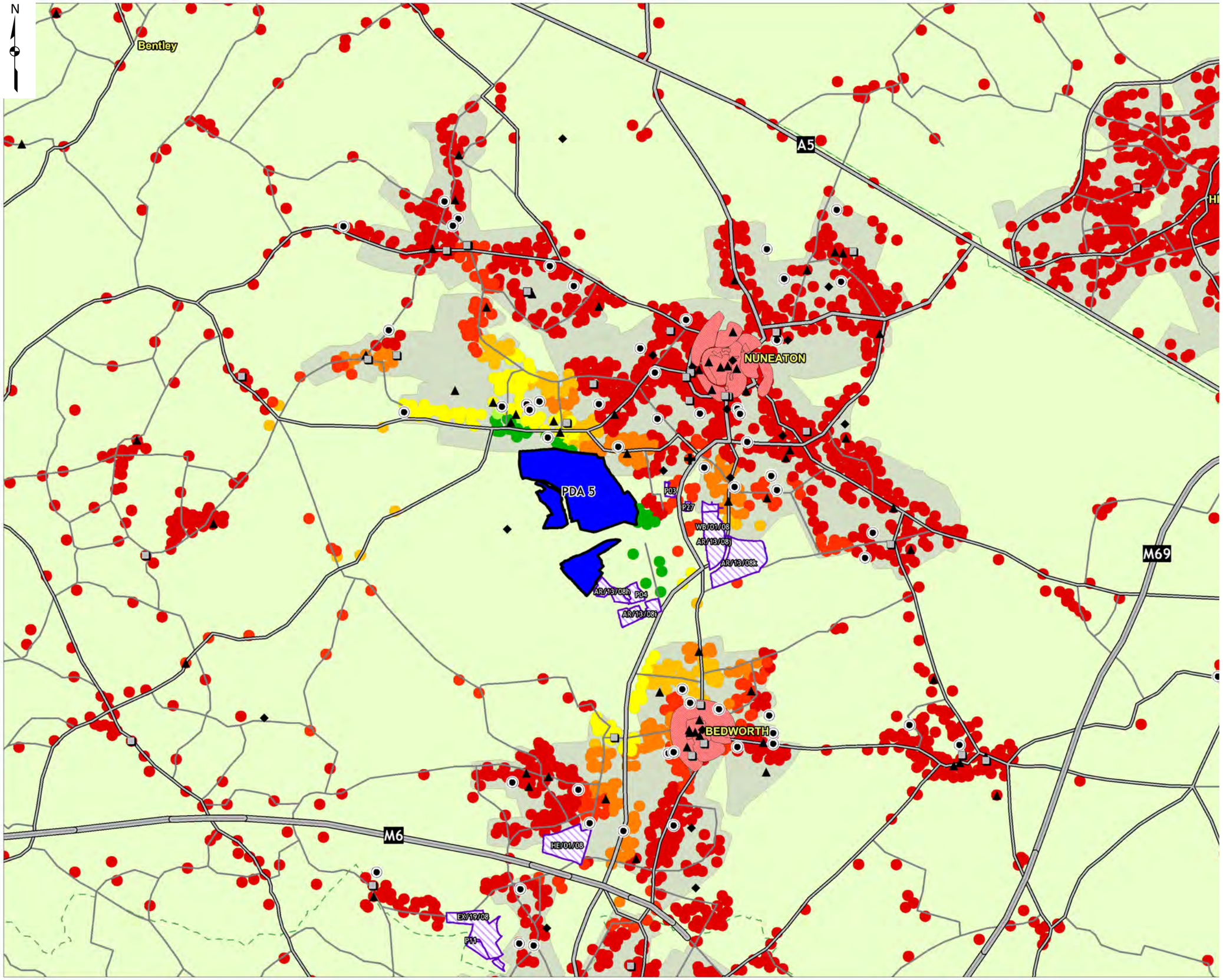
PDA 5 - Walking accessibility



Project Title:
Nuneaton and Bedworth STA

Key:

Walking access time

- Over 70 minutes
- 60 to 70 minutes
- 50 to 60 minutes
- 40 to 50 minutes
- 30 to 40 minutes
- 20 to 30 minutes
- 10 to 20 minutes
- 0 to 10 minutes

Town centres

Development sites - Housing

Development sites - Employment

jobs

hospitals

GPs

fruit & veg

schools

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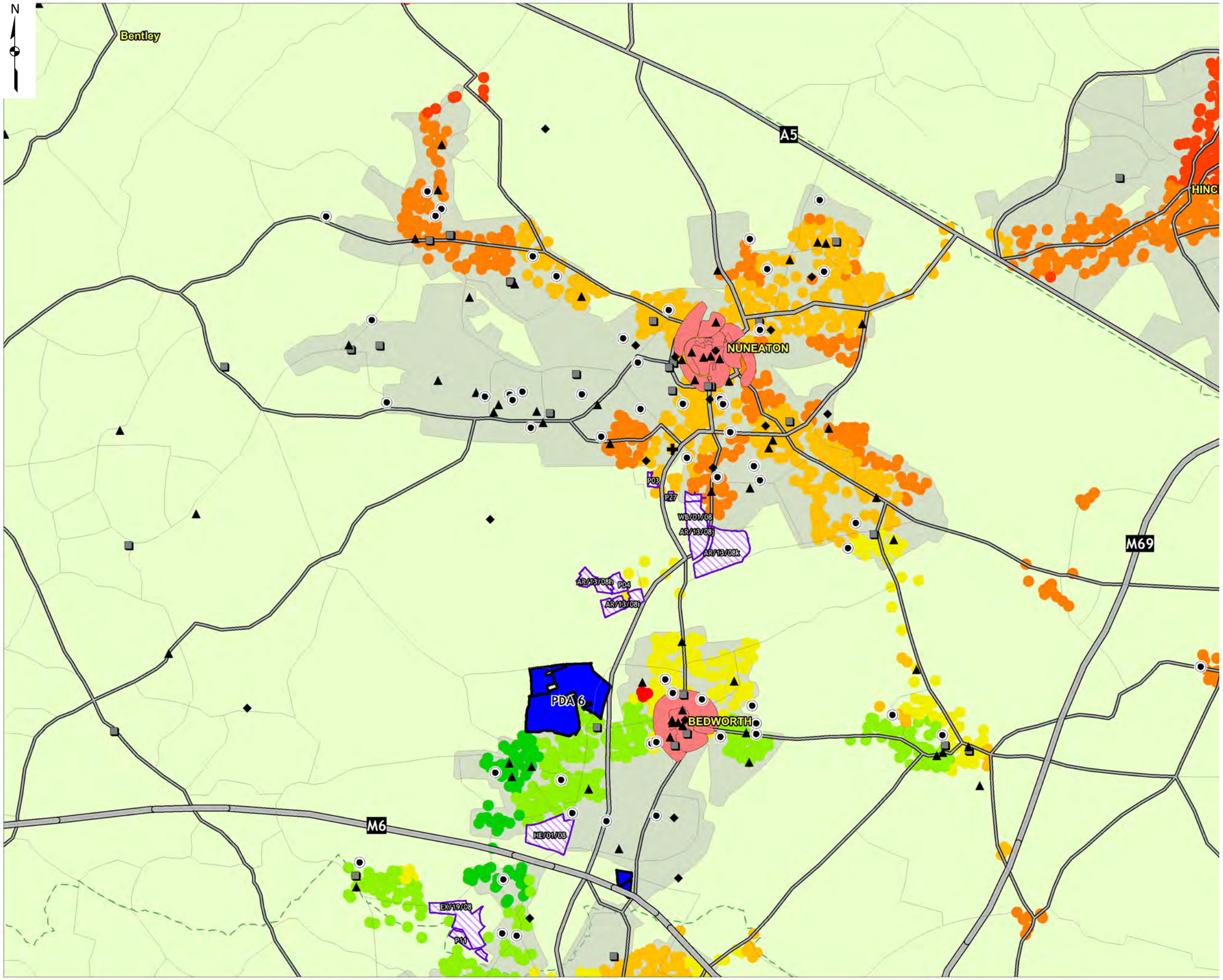
PDA 6 - Public transport accessibility



Project Title:
Nuneaton and Bedworth STA

Key:

Public transport travel time

- over 60 minutes
- 50 to 60 minutes
- 40 to 50 minutes
- 30 to 40 minutes
- 20 to 30 minutes
- 10 to 20 minutes
- 0 to 10 minutes

Town centres

Development sites - Housing

Development sites - Employment

jobs

hospitals

GPs

fruit & veg

schools

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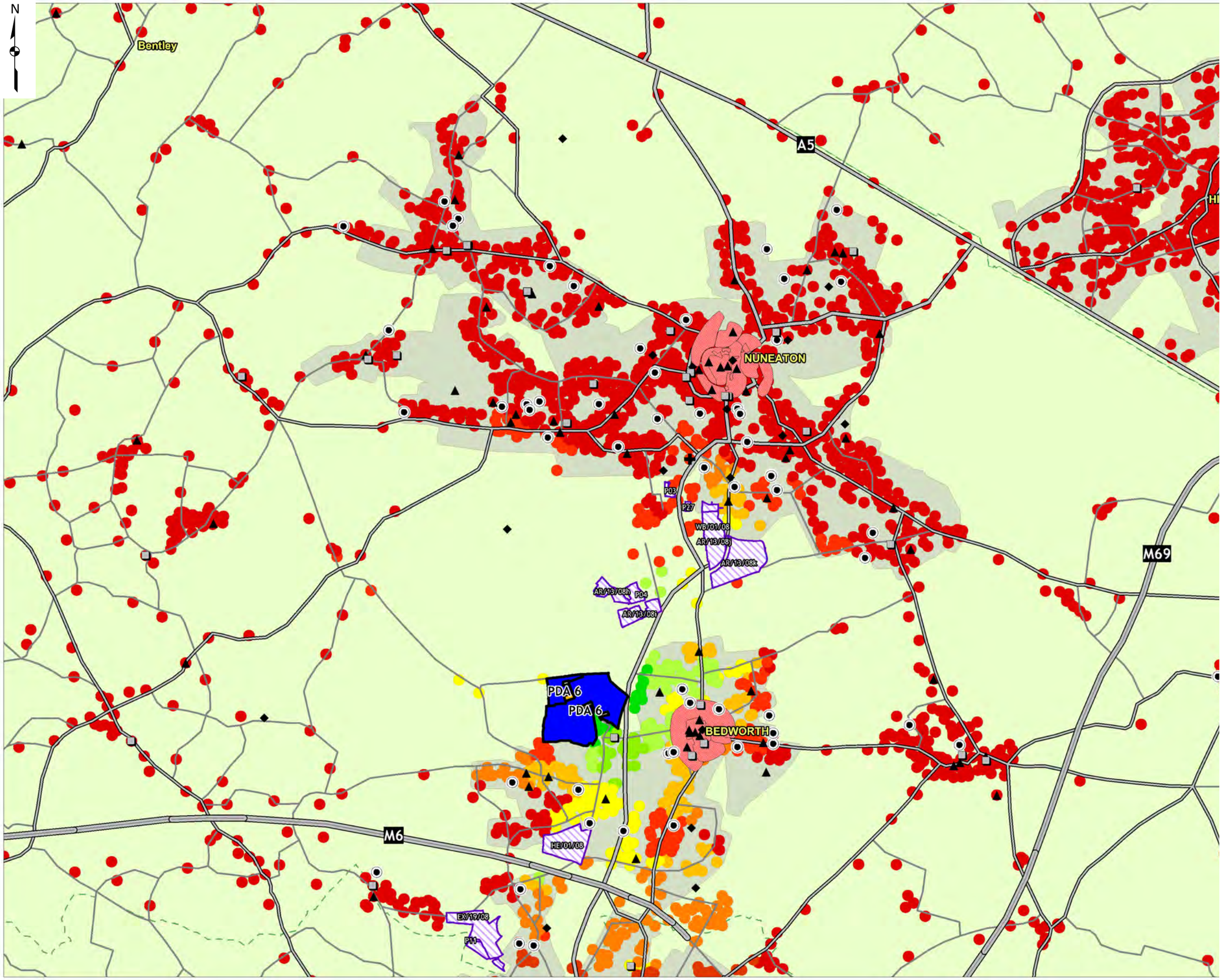
PDA 6 - Walking accessibility



Project Title:
Nuneaton and Bedworth STA

Key:

Walking access time

- Over 70 minutes
- 60 to 70 minutes
- 50 to 60 minutes
- 40 to 50 minutes
- 30 to 40 minutes
- 20 to 30 minutes
- 10 to 20 minutes
- 0 to 10 minutes

Town centres

Development sites - Housing

Development sites - Employment

jobs

hospitals

GPs

fruit & veg

schools

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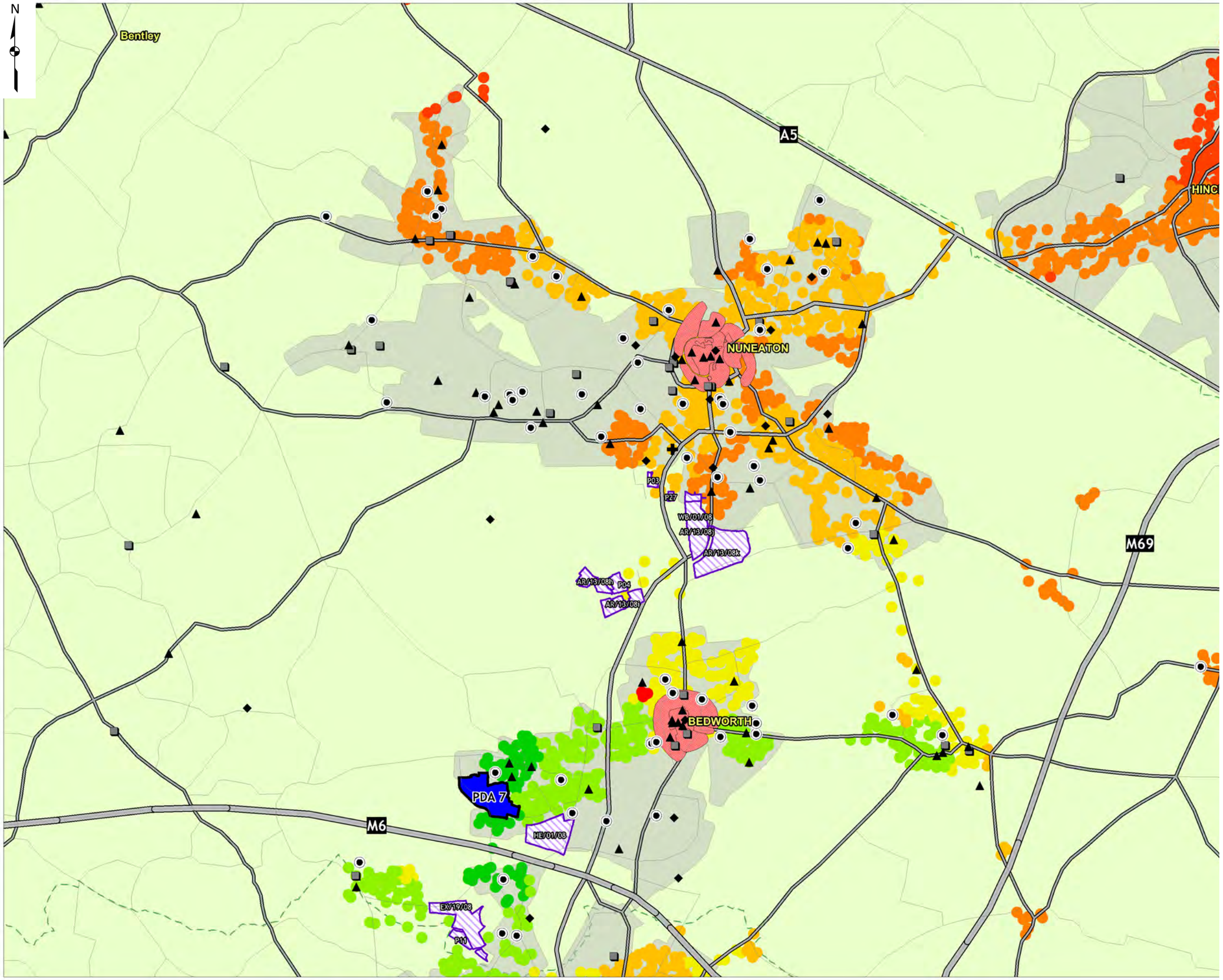
PDA 7 - Public transport accessibility



Project Title:
Nuneaton and Bedworth STA

Key:

Public transport travel time

- over 60 minutes
- 50 to 60 minutes
- 40 to 50 minutes
- 30 to 40 minutes
- 20 to 30 minutes
- 10 to 20 minutes
- 0 to 10 minutes

Town centres

Development sites - Housing

Development sites - Employment

jobs

hospitals

GPs

fruit & veg

schools

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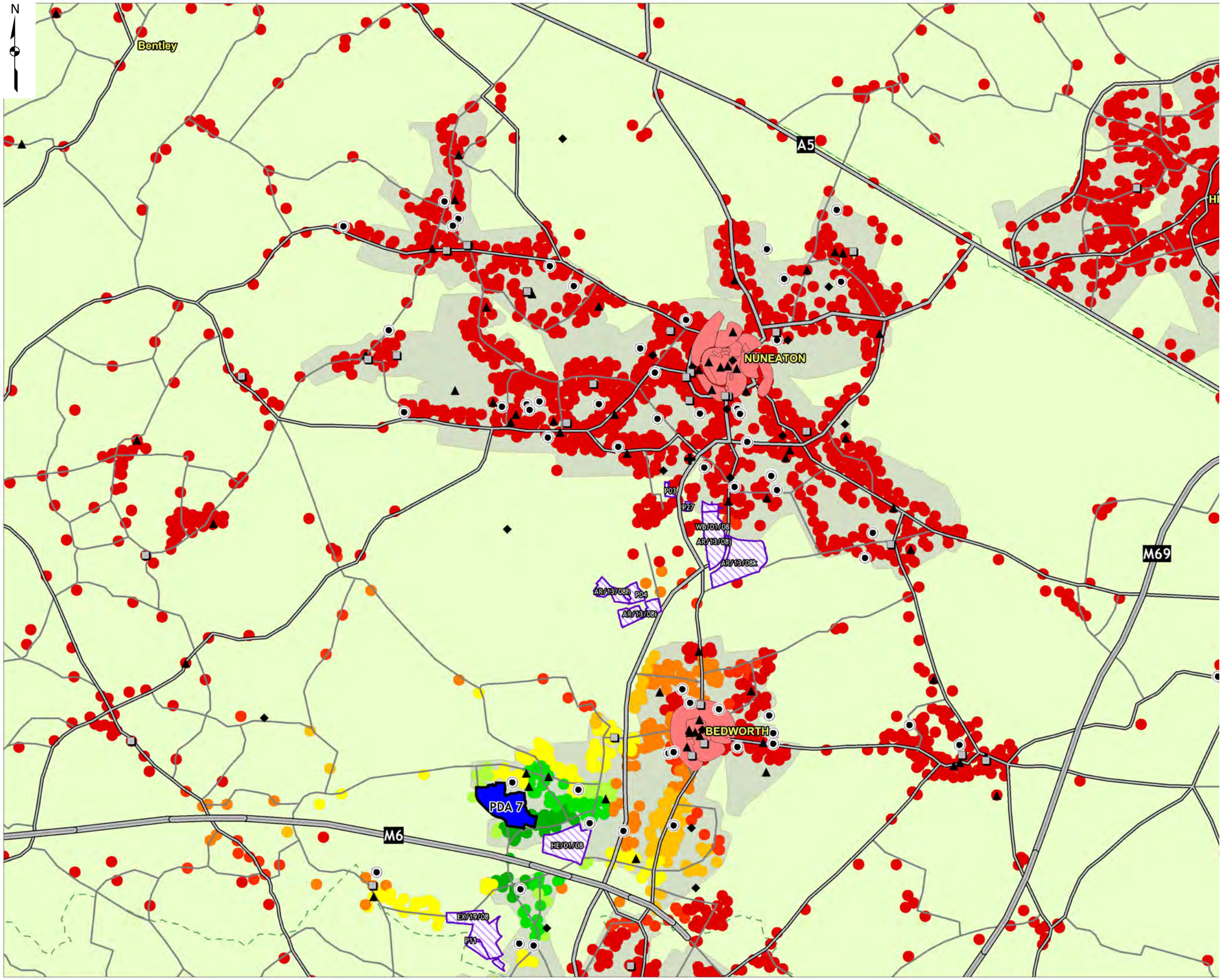
PDA 7 - Walking accessibility



Project Title:
Nuneaton and Bedworth STA

Key:

Walking access time

- Over 70 minutes
- 60 to 70 minutes
- 50 to 60 minutes
- 40 to 50 minutes
- 30 to 40 minutes
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- 10 to 20 minutes
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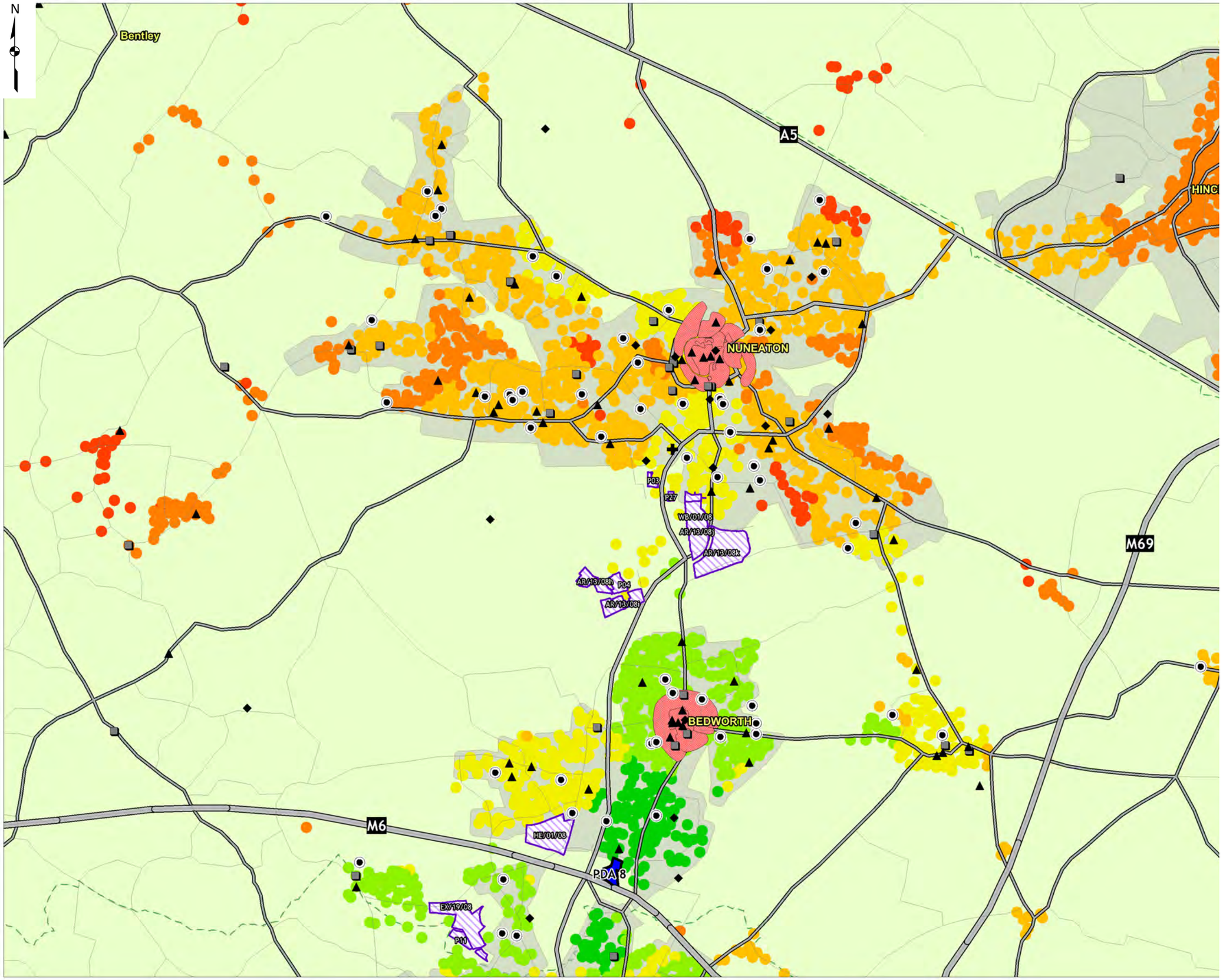
PDA 8 - Public transport accessibility



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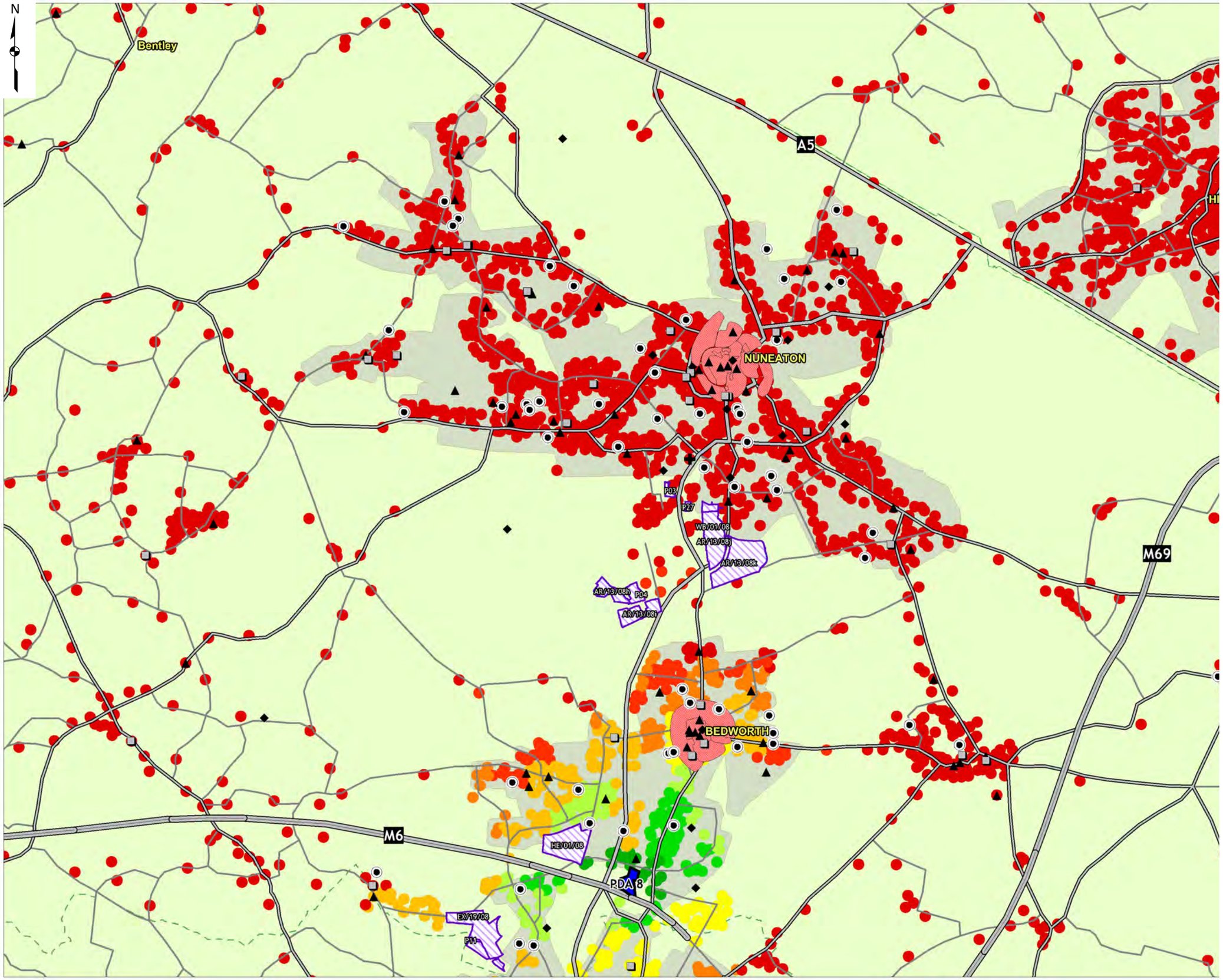

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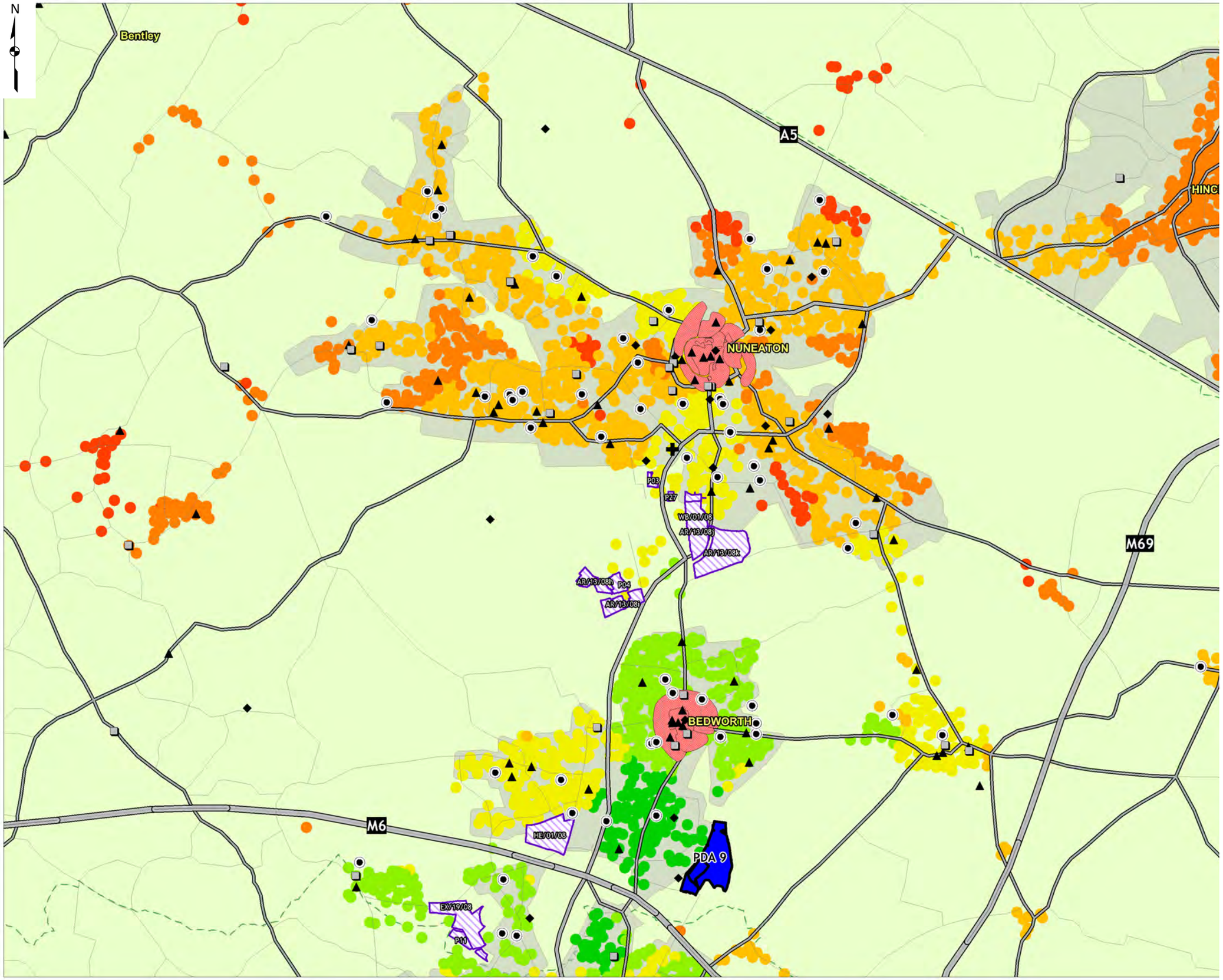
PDA 9 - Public transport accessibility



Project Title:
Nuneaton and Bedworth STA

Key:

Public transport travel time
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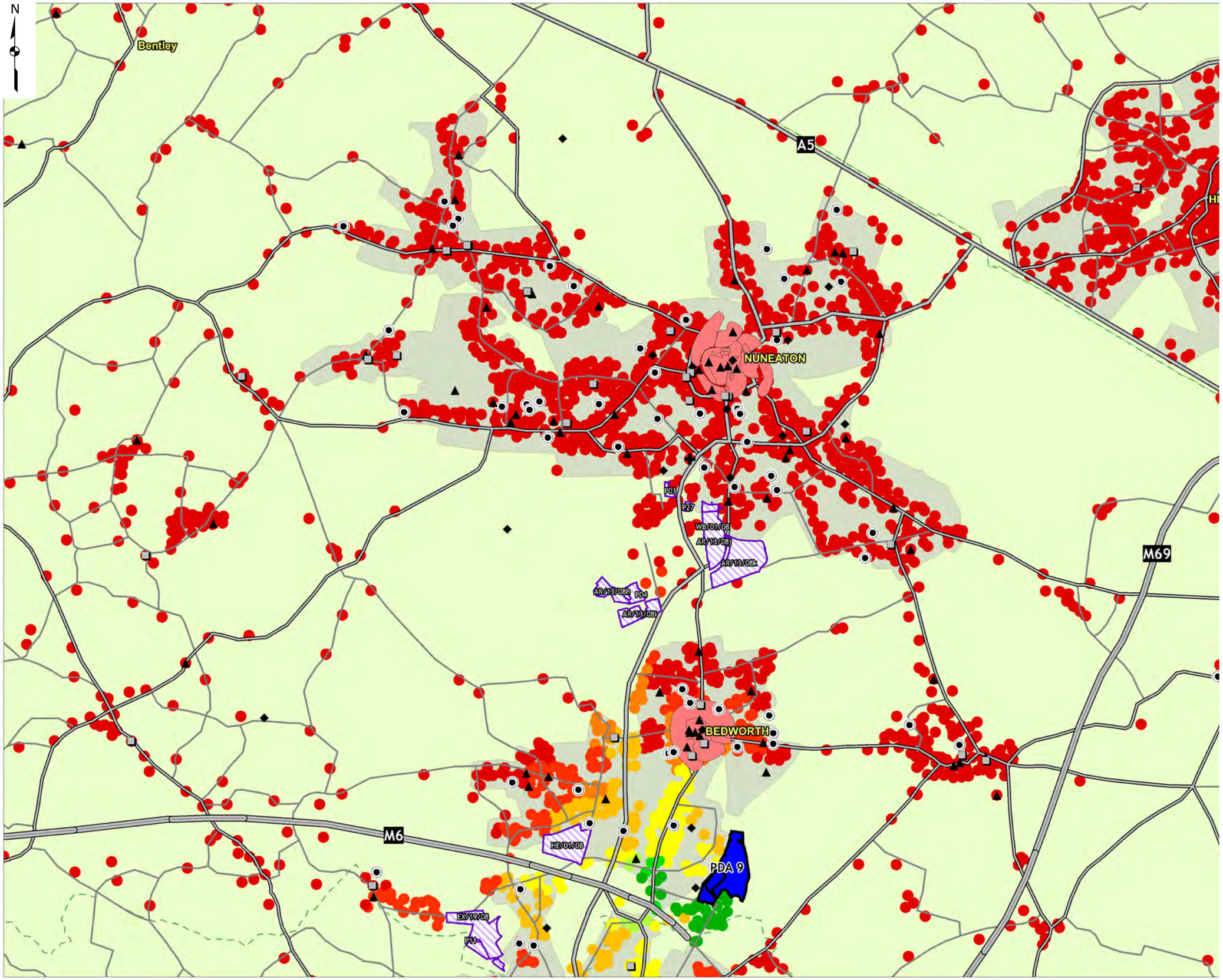

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Nuneaton and Bedworth STA

Key:

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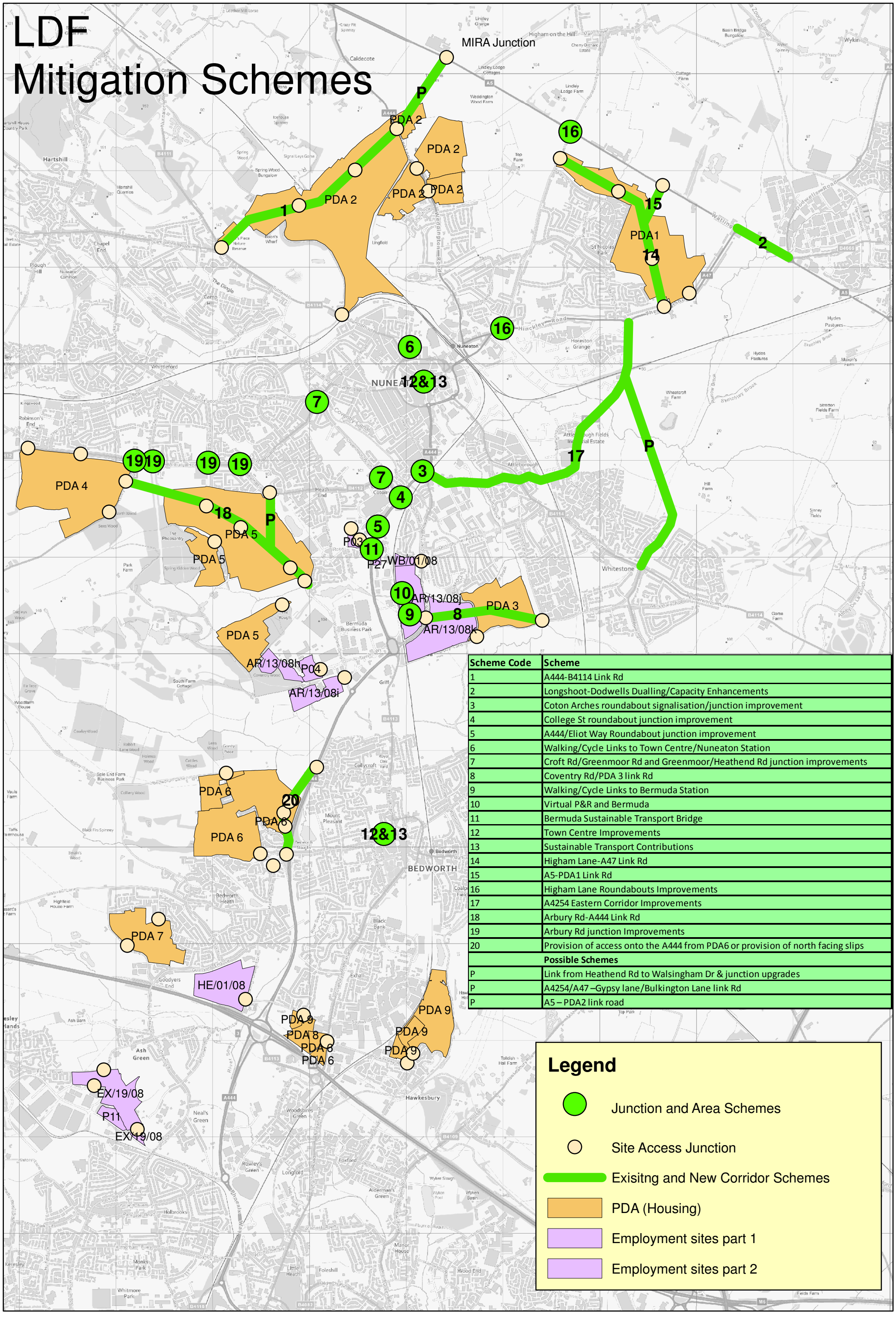
Appendix H

LDF
Mitigation Schemes


MIRA Junction
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PDA 4
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HE/01/08
EX/19/08
EX/19/08
AR/13/08h
AR/13/08i
AR/13/08j
AR/13/08k
P03
P04
P11
P27
WB/01/08
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Hartshill
Nuneaton
Bedworth
Whitestone
Hawkesbury
Attleborough
Caldecote
Higham on the Hill
Wykin
Chapel End
Whittleford
Robinson's End
Coton
Griff
Bermuda Business Park
Sole End Farm Business Park
Ash Green
Neal's Green
Rowley's Green
Longford
Foleshill
Little Heath
Monks Park
Whitmore Park
Collycroft
Mount Pleasant
Wheatcroft Farm
Hyde's Pastures
Horeston Grange
Lingfield
Weddington Wood Farm
Lindley Lodge Farm
Lindley Grange
Cottage Farm
Basin Bridge Bungalow
Wykin Spinney
Hill Farm
Sinney Fields
Gorse Farm
Ashley De La Zouch Canal
Coventry Canal
Anker Valley
Sketchley Brook
Penn Brook
Hinckley Road
Watling Street
Dodwells Road
Weddington Road
Nuneaton Common
Plough Hill
Camp Hill
The Dingle
Hartshill Quarries
Spring Wood
Spring Wood Bungalow
Signal Leys Gorse
Icehouse Spinney
Leather Mill Gorse
Crazy Pit Spinney
Lindley Lodge Cottages
Weddington Wood Farm
Top Farm
St Nicolas Park
Boon's Wharf
Piece's Piece Nature Reserve
Sees Wood
North Wood
The Pheasantry
Spring Kidden Wood
Park Farm
Dadleys Wood
Cowley Wood
Rabbit Lane Wood
Holmes Wood
Cattles Wood
Colliery Wood
Vauls Farm
Taffs Farmhouse
Black Firs Spinney
Swains Wood
Woodfarm House
Fir Tree Grove
South Farm Cottage
Highfield House Farm
Goodyers End
Ash Barn
Woodshires Green
Holbrooks
Monk's Park
Manor House
Wood End
Fields Farm
Tollgate Hall Farm
Top Park
Black Bank
Heath End
Bedworth Heath
Bedworth Slaughter
Exhall
Griff
Foxford
Alderman's Green
Wyken Slough
Wyken Pool
Wyken Basin
Hall Brook
Rhoenix Way
Jacobs Road
Whitmill Road
Furrers Road
Curton Road
Parrotts Grove
Hawkesbury Lane
Bedworth Lane
Bermuda Park
Bermuda Road
Coventry Road
Nuneaton Road
Heath Road
Hinckley Road
Watling Street
Dodwells Road
Weddington Road
Camp Hill Road
Tuttle Hill
Queen Elizabeth Road
Kingswood Road
Whittleford Road
Forrest Road
Queens Road

Appendix I

Glossary and Abbreviations

Annual Average Daily Traffic (AADT) - is the total volume of vehicle traffic of a highway or road for a year divided by 365 days

Accession - An alternative software for analysing accessibility to goods and services.

Air Quality Action Plan (AQAP) - A document which sets out the actions needed to address known air quality problems within an Air Quality Management Area.

Air Quality Management Area (AQMA) - A geographical area which is declared by a Local Authority where air quality has deteriorated below a set of defined National and European standards.

Borough Plan - Local planning authorities must prepare a local plan known as a Local Development Framework (LDF), which is made up of a number of Development Plan Documents (DPDs).

CITEware - see Appendix B

Committed Development - A development site that has been granted planning permission.

Community Infrastructure Levy (CIL) - A new levy that local authorities in England and Wales can choose to charge on new developments in their area. The money can be used to support development by funding infrastructure that the council, local community and neighbourhoods want - for example new or safer road schemes, park improvements or a new health centre. The system is very simple. It applies to most new buildings and charges are based on the size and type of the new development.

Congestion Reference Flow (CRF) - The CRF of a link is an estimate of the Annual Average Daily Traffic (AADT) flow at which the carriageway is likely to be congested at peak periods on an average day. For the purposes of calculating the CRF, 'congestion' is defined as a situation when the hourly traffic demand exceeds the maximum sustainable hourly throughput of the link. At this point the effect on traffic is likely to be one or more of the following: flow breaks down with speeds varying considerably, average speeds drop significantly, the sustainable throughput is reduced and queues are likely to form. This critical flow level can vary from day to day and from site to site and must be considered as an average. The CRF is a measure of the performance of a road link between junctions."
- Design Manual for Roads and Bridges, Volume 5, Section 1, Part 3 TA 46/97

Core Strategy - A key compulsory local development document which sets out the principles regarding the development and use of land in a Local Planning Authority's area.

Delivering a Sustainable Transport System (DaSTS) - The agreed approach by the previous Government to identifying transport needs from 2014 onwards. DaSTS

set out a coordinated national approach to providing sustainable solutions to identified transport issues.

Department for Transport (DfT) - An arm of National Government that sets policy for aviation, roads, rail and shipping. It is also responsible for a number of Executive Agencies including the Highways Agency.

DfT Design Manual for Roads and Bridges (DMRB) - A series of 15 volumes that provide official standards, advice notes and other documents relating to the design, assessment and operation of trunk roads, including motorways in the United Kingdom.

DfT National Transport Model (NTM) - The NTM is a disaggregated multi-modal model of land-based transport in Great Britain (GB). It comprises six modes - car driver, car passenger, rail, bus, walk and cycle. The NTM combines a wealth of information taken from a range of sources and produces forecasts of road traffic growth, vehicle tailpipe emissions , congestion and journey times.

DfT NI167 - DfT National indicator data for calculation of morning peak speeds and congestion. In its raw format, satellite navigation logs from in-car systems can be used to calculate speeds and journey times across any given time period and route.

Development Plan Documents (DPD) - Development Plan Documents outline the key development goals of the local development framework. Development plan documents taken together are broadly equivalent to the old-style local plans.

DirectRoute – See Appendix B

Enterprise Zone (EZ) - A specific geographical area that has been designated by Government, where businesses are entitled to receive various types of financial aid. These include tax benefits, special financing and other incentives designed to encourage businesses to establish and maintain a presence within the specified zone.

DoH - Department of Health

Examination in Public (EiP) - formal examination in the public arena by the planning inspectorate in relation to the the draft submission of the Borough Plan. This will take into account evidence from all interested parties and will cover all elements of the plan including roads, education, environment and utilities.

GEH - The GEH Statistic is a formula used in traffic engineering, traffic forecasting, and traffic modelling to compare two sets of traffic volumes. Using the GEH Statistic avoids some pitfalls that occur when using simple percentages to compare two sets of volumes. This is because the traffic volumes in real-world transportation systems vary over a wide range. For example, the mainline of a motorway might carry 5000 vehicles per hour, while one of the on-ramps leading to the freeway might carry only 50 vehicles per hour (in that situation it would not be possible to select a single percentage of variation that is acceptable for both volumes). The GEH statistic reduces this problem; because the GEH statistic is non-linear, a single acceptance

threshold based on GEH can be used over a fairly wide range of traffic volumes. The use of GEH as an acceptance criterion for travel demand forecasting models is recognised in the UK Highways Agency's Design Manual for Roads and Bridges (DMRB), Volume 12, Section 2

Ha - Hectares of land

Highways Agency (HA) - An Executive Agency of Government responsible for managing the motorway and trunk road network within England.

Infrastructure Delivery Plan (IDP) - A key element of the Development Plan which sets out the infrastructure that is essential to allow the spatial proposals contained within the Core Strategy to come forward.

Local Development Framework (LDF) - The Local Development Framework sets out the spatial planning strategy for an area, and is produced by the relevant Local Planning Authority. These have replaced the previous system of county level structure plans, district level local plans and unitary development plans for unitary authorities.

Borough Plan - Local planning authorities must prepare a local plan known as a Local Development Framework (LDF), which is made up of a number of Development Plan Documents (DPDs).

Local Transport Plan (LTP) - Local transport plans, which typically consist of a strategy element and a local implementation plan for transport, are an important part of transport planning in England. Strategic transport authorities (county councils, unitary authorities, passenger transport authorities and London Borough councils), are expected to prepare them as forward-looking plans covering a number of years (typically five years), and present them to the Department for Transport (DfT).

Modal Shift – the change in user choice between modes of travel, usually towards a more sustainable mode. e.g. using cycles instead of cars.

M6 Toll - A privately operated road run by Midland Expressway Ltd (MEL), which allows traffic to avoid the M6 through the West Midlands conurbation.
NUCKLE – The acronym for the proposed heavy rail improvements between **Nu**neaton, **C**oventry, **K**enilworth and **Le**amington Spa.

NTM - See DfT NTM.

Office of National Statistics (ONS) - independent body charged with the collection and publication of statistics related to the economy, population and society of the United Kingdom at national and local levels.

PDA - Proposed Development Area.

PT - Public Transport.

Regional Growth Fund (RGF) - A £1.4bn fund operating across England from 2011 to 2014 which supports projects and programmes that lever private sector investment, creating economic growth and sustainable employment. It aims particularly to help those areas and communities currently dependent on the public sector to make the transition to sustainable private sector-led growth and prosperity.

S106 agreement - A legal agreement between a Local Planning Authority and an applicant/developer, as set out in S106 of the Town and Country Planning Act 1990 (as amended by Planning and Compensation Act 1991 Section 12). Planning Obligations are used following the granting of planning permission (normally major developments) to secure community infrastructure to meet the needs of residents in new developments and/or to mitigate the impact of new developments upon existing community facilities.

S-PARAMICS - A micro-simulation traffic modelling software tool which can be used to test the performance of transport networks and the impact of improvement schemes. Also see 6.2.11

Smarter Choices - Smarter choices are techniques for influencing people's travel behaviour towards more sustainable options such as encouraging school, workplace and individualised travel planning. They also seek to improve public transport and marketing services such as travel awareness campaigns, setting up websites for car share schemes, supporting car clubs and encouraging teleworking.

Strategic Housing Land Availability Assessment (SHLAA) - An assessment of land availability for housing over a 15 year period, which is carried out by Local Planning Authorities and their partners to inform future spatial planning documents.

Supplementary Planning Document (SPD) - provides detailed guidance on how a specific aspect of the local planning authorities planning policy will be applied. This may be in the form of an SPD that sets out a methodology to secure contributions from developers for transport schemes in the district or borough in accordance with the transport strategy of the Local Plan and the Local Transport Plan for Warwickshire.

Strategic Road Network (SRN) - The motorway and trunk road network, which is the responsibility of the Highways Agency.

Transport Assessments (TAs) - A comprehensive and systematic process that sets out transport issues relating to a proposed development. It identifies what measures will be taken to deal with the anticipated transport impacts of the scheme and to improve accessibility and safety for all modes of travel, particularly for alternatives to the car such as walking, cycling and public transport.

Virtual Park and Ride (VPR) -Delivery of a park and ride facility whereby developers donate the land and fund the principal infrastructure. The facility is then served either by the bus services funded by the developers in respect of their sites and/or passing commercial services.

Warwickshire Observatory - the home for information and intelligence about Warwickshire and its people. Provides a centre of excellence in research, data collection and analysis, supporting evidence-based policy-making across the public sector in Warwickshire.