Mid Devon District Council

Renewables and Air Quality

Reduced Transport Assessment in Support of Local Plan Review

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1 Introduction

Background

1.1 Mid Devon District Council (MDDC) is currently in the process of preparing an updated local plan for the period 2013-2033, outlining sites that have the potential to be developed for residential, employment and commercial purposes. The Options Consultation (January 2014) sought to obtain feedback on the sites proposed for development.

1.2 Following the consultation, a set of preferred sites is being further assessed. MDDC has produced a trajectory (15 July 2014) outlining proposed housing and commercial development within the three major towns, Tiverton, Cullompton and Crediton, as well as in rural areas.

Scope of this Report

1.3 Arup was commissioned by MDDC to assess carbon reduction, low emission strategies, renewable energy capacity and air quality improvements in relation to its Local Plan Review. The study report was issued on 19 June 2014 and subsequent work is commissioned as follows:-

- further assessment of potential air quality impacts; and
- a transport assessment that complements and takes account of work being carried out by Devon County Council (DCC).

1.4 This report presents the transport element of the supplementary work and covers a high-level assessment of identified sites and cumulative impacts, informed by existing data sources and GIS. Approximately 50 proposed housing allocations are assessed, plus existing commitments, and commercial allocations. Where appropriate, sites are grouped together, for example if they are all housing and in the same village. The aims of the assessment are to:

- quantify vehicle trip generation for each site or cluster;
- derive the impact of allocated developments on key highway links;
- indicate where mitigation proposals could be required;
- summarise the transport context for each site or cluster.

1.5 Our scope of work does not cover highway design, detailed traffic modelling or other modes of travel. The highway link impact will indicate where future development would trigger a need for improvement works, which would likely depend on future turning movements rather than link flows. Testing of junction capacity constraints would be the next stage of work, as an outcome of this report's findings.

1.6 DCC is working on the options for major highways infrastructure that would be required to enable the development of strategic sites at Junction 28/Cullompton and Junction 27/Willand. Alongside DCC's work, MDDC requires a robust transport evidence base that takes account of all the proposed sites in the local plan, and not only the infrastructure requirements for the strategic options.

1.7 We have received detailed comments on the draft report(s) from MDDC as our client and local planning authority, and from DCC as local highway authority. All comments are addressed within this final issue of the report. The Highways Agency (HA) has not commented but we are satisfied that DCC is aware of both the local and strategic issues that are of concern in Mid Devon District.

1.8 A number of acronyms and abbreviations are used within this report, as summary of which is presented in a glossary in Appendix A.

2 Assessment Methodology

2.1 This assessment is guided by the HA's Spatial Planning Advice Note: SP 09/09 *Local Plans Evaluating Transport Impacts* (9 January 2014). The specifics are agreed with MDDC as local planning authority and provide a Reduced Transport Evaluation as suggested in SP 09/09.

2.2 We only assess road traffic impacts and no other modes of transport. Further to this, we do not design any highway improvement schemes, but do identify and comment on where works may be required and what the work could entail. All modelling is spreadsheet based and we do not carry out highway capacity testing using transport software.

2.3 A spreadsheet model is produced to calculate the vehicular impacts of development on the local and strategic road networks. We estimate weekday peak hour person trip generation (8-9am and 5-6pm) for each site. Appropriate adjustments are made for internal capture within mixed use sites. Mode share at ward level is taken from the year 2011 census for journeys to work by residents; and from the year 2001 census for journeys to work to the commercial allocations (daytime population). Trip distribution is also based on journey to work data from 2001.

2.4 Baseline traffic data is obtained from DCC. The year of assessment is 2033 for consistency with the Local Plan Review. Highway link capacity is estimated and ratios of flow to capacity (RFCs) calculated for the baseline, and for cumulative impact with all sites.

2.5 The assessment provides MDDC with an initial high-level study that indicates potential subsequent stages of study. For example, mode shares highlight where public transport could be improved, and the highway capacities highlight where improvement works could be explored further. Some clustering of sites may indicate a need for area-wide modelling such as Saturn.

3 Proposed Development

3.1 MDDC has provided a trajectory of housing and employment allocations across the district for the plan period up to year 2033. For the purposes of this assessment, some sites are clustered, for example if both housing and in the same location. The trajectory includes allocations being assessed by DCC, which could be added explicitly to our work. Housing sites are tabled below including an indication of clusters.

Table 3-1: Proposed Housing Sites

Location	Development	Cluster
Tiverton		
EUE	1,500	
Roundhill	13	
Moorhayes	8	1,606
Phoenix Lane	60	
Howden Court	10	
Palmerston Park	15	
Cullompton		
East Cullompton	2,100	
NW Cullompton	1,150	
Ware Park and Footlands	38	3,483
Cummings Nursery	120	
Knowle Lane	30	
Acklands	45	
Crediton		
Wellparks	185	
Cromwells Meadow	35	
Woods Group	8	
Pedlerspool	200	583
Sportsfield	120	
Land at Barn Park	20	
Alexandra Close	15	
Rural Sites		
Bampton – Newton Square	5	
Bow – Hollywell	20	26
Bow – Godfrey Gardens	6	
Bradninch – Hele Road	7	
Chawleigh – Barton	20	
Cheriton Bishop – Land off Church Lane	30	

Location	Development	Cluster
Cheriton Fitzpaine – Barnshill Close	7	29
Cheriton Fitzpaine – Land adj School	22	
Copplestone – Old Abattoir	30	
Culmstock – Linhay Close	6	16
Culmstock – Hunters Hill	10	
Halberton – Land adj Fishers Way	10	
Hemyock - Depot	10	
Lapford – Land south of Sandhurst	18	
Morchard Bishop - Greenaway	20	
Newton St Cyres – Court Orchard	25	
Sampford Peverell – Former Tiverton Parkway Hotel.	10	
Sandford – Fannys Lane	27	
Silverton – Old Butterleigh Road	8	
Silverton – Livinghayes Road	8	
Thorverton – South of Broadlands	12	
Willand – Land east of M5	40	
Total for rural sites	**351**	
Total for all sites	**6,023**	

Source: trajectory for Arup as at 15.07.14

3.2 The assessment of transport impacts is based on the quantum of development outlined in this trajectory, which runs to year 2033. In the longer term, East Cullompton is expected to deliver 2,600 dwellings overall, but only 2,100 are forecast for delivery within the plan period to year 2033.

3.3 The local plan review includes commercial sites: classes A (retail), B (employment), C (hotels, care homes) and D (healthcare, leisure). Of these classes, A and D are likely to serve the immediate communities and be locally contained and are not taken forward in this assessment. Employment and hotels, however, would affect the wider district area and beyond, particularly for larger sites. Proposed commercial sites taken forward in this assessment are tabled below. Hotels are included at East and NW Cullompton but not Tiverton because the size is unknown at this stage.

Table 3-2: Proposed Commercial Sites

Location	Development	Cluster
Tiverton		
EUE	B1 – B8 30,000 m²	36,800m²
The Foundry	B1 – B8 6,800 m²	
Cullompton		
Week Farm	B2 – B8 15,000m²	46,800m²
Venn Farm	B2 – B8 15,000m²	
East Cullompton	B1 16,800m²	
	C1 5,600m²	17,600m²
NW Cullompton	C1 12,000m²	
Crediton		
Wellparks	B1 – B8 2,220m²	9,820m²
Land south of A377	B1 – B8 7,600m²	
Willand Industrial Estate	B1 – B8 8,800m²	

3.4 As noted above, the trajectory includes major sites that are being assessed by DCC. We understand that DCC is reviewing the amount and location of future growth for three options:

1. Expand the existing market towns.

2A. New community between Willand and junction 27 of the M5 motorway.

2B. New community east of M5 at Cullompton.

3.5 To date, DCC has provided matrices for commercial development previously known as 'Devon Gateway' and renamed by the site promoters as 'Westwood'. MDDC has asked that we exclude this commercial development in the first instance. Westwood is not, at present, being taken forward in MDDC's trajectory.

3.6 DCC has also provided matrices for 3,000 dwellings at J27/Willand (Option 2A). MDDC has asked that we exclude this housing development and focus on 2,100 dwellings in East Cullompton (Option 2B), which is emerging as the preferred option. Option 2B would also include some commercial uses up to 32,400m², potentially including around 16,800m² B1. The other proposed land uses would be hotels and leisure, C1-C2 and D1-D2. Local facilities are not assessed in this study but the hotel could have an impact from afield (see Table 3-2 above)

3.7 To confirm, this assessment does not use material provided to date by DCC, we make our own estimates of trip generation for all sites in MDDC's trajectory. As DCC's work progresses, we could substitute our estimates with DCC's as appropriate.

4 Baseline Traffic

4.1 Mid Devon's administrative area extends from Cheriton Bishop and Chawleigh in the west to Hemyock in the east. The M5 motorway cuts through the east of the district including junctions 28 and 27, Cullompton and Tiverton respectively. Primary roads comprise the A30, A361 and A377. The M5 and A30 from part of the Strategic Road Network (SRN) and are the responsibility of the HA. All other roads including the A361, A377 and A38 are the responsibility of DCC as local highway authority.

4.2 Assessment of traffic impacts across the district looks at the SRN and all A- and B-roads. Unclassified roads are referred to as necessary when looking at individual sites or clusters, but are not assessed for development impact. This is because the rural sites are, in themselves, too small to have a discernible impact on road links. Few, if any, sites would have a cumulative impact on the rural roads due to the spread of the sites across the district. Minor links that could be sensitive to an increase in traffic are those that are affected by development in the towns, and these links are assessed along with A- and B-roads.

4.3 Road traffic counts are mostly taken from DCC's database and are mostly automatic traffic counts and a few manual classified counts. Additional counts for the SRN are sourced from the HA's online Traffic Flow Data System (TRADS). The periods of interest in this assessment are the weekday peak hours 8-9am and 5-6pm, which are when the proposed housing and commercial developments would be at their busiest. Figure 4-1 shows existing traffic counts and the year it was collected.

4.4 The traffic counts are factored up a common base year of 2013 and the assessment year of 2033 using the Tempro[1] database. Forecast growth includes population and employment from the national GB level down to urban or rural areas. Planning data is based on local plans and includes committed and allocated sites but not potential options. DCC considers that using Tempro to forecast future traffic flows will provide a robust baseline for assessing the impact of the optional sites. We concur with this, and add that is the most appropriate way for us to take account of committed/allocated sites. Although MDDC provides committed housing numbers within its trajectory, the sites are not further defined and we cannot estimate trips any more accurately than Tempro.

4.5 DCC has commented that factoring older traffic counts to the common base year is unnecessary, since the traffic flows on most of the roads in Devon have remained constant over the last five years during the recession. Historic automatic traffic count data for the major roads in Mid Devon could be assessed to see if the factoring is required. However, the factoring is retained for this high-level assessment as it

[1] *Trip End Model Presentation Program* (Tempro) version 6.2 using datasets 6.2, Department for Transport, April 2010

provides a worst case but should be reviewed in any later, more refined, stages of transport assessment.

4.6 It is also acknowledged that the background growth factors will be overestimates due to double counting, whereby some of the allocated sites will already be accounted for in the Tempro database, and also included explicitly in this assessment. As noted by DCC, this provides a robust baseline. The factors could be refined by stripping out the quantum of development that is being assessed explicitly, should this be considered appropriate in any revision or updates to this report.

4.7 Road traffic growth factors are calculated using Tempro and *Road Transport Forecasts*[2] (RTF) from the National Transport Model. The Tempro data is for Mid Devon and the RFT factors are for 'all area types' and 'all road types'. Full details of calculations to derive road traffic growth factors to years 2013 and 2033 can be seen in Appendix B.

4.8 Figure 4-2 shows baseline traffic flows for year 2013 and Figure 4-3 for the assessment year 2033.

4.9 Highway links being assessed in this report are predominantly rural. We assume lane capacities of 1,600 vehicles per hour on the primary and strategic roads, and 1,300 on all other A- and B-roads. DCC considers that these lane capacities appear low but we are taking a cautious approach to allow for the reduced lane capacities at junctions. Baseline capacities across the road network are show on Figure 4-4, and Figure 4-5 shows the ratios of flow to capacity (RFCs) in year 2033. Generally, the RFCs indicate that traffic should be free-flowing although this does not allow for the reduced capacity at junctions. The busiest links are, as would be expected, those approaching the main urban areas and Exeter in particular.

[2] *Road Transport Forecasts 2013* (RTF13), Department for Transport, July 2013

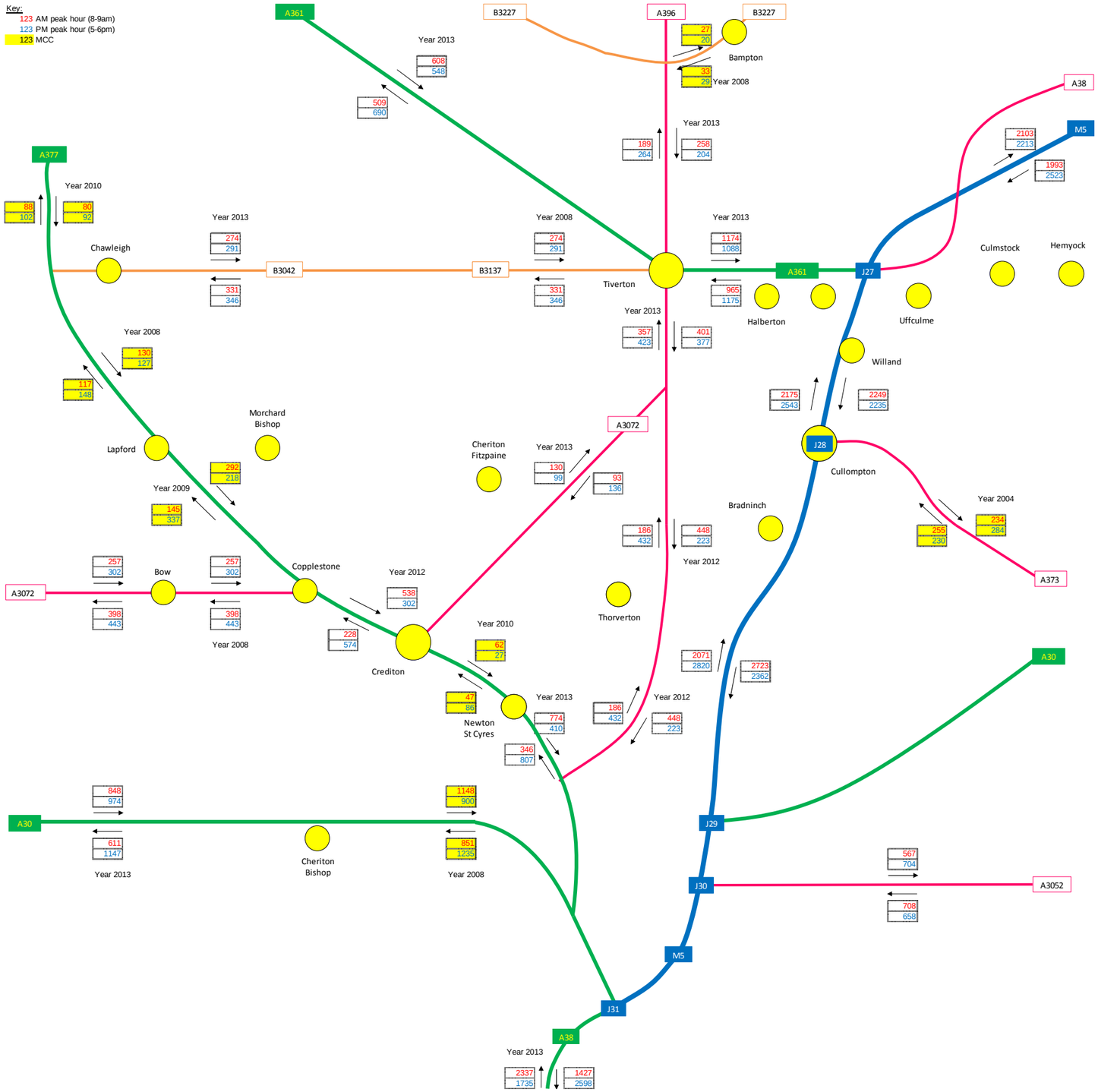

Figure 4-1: Existing Traffic Counts

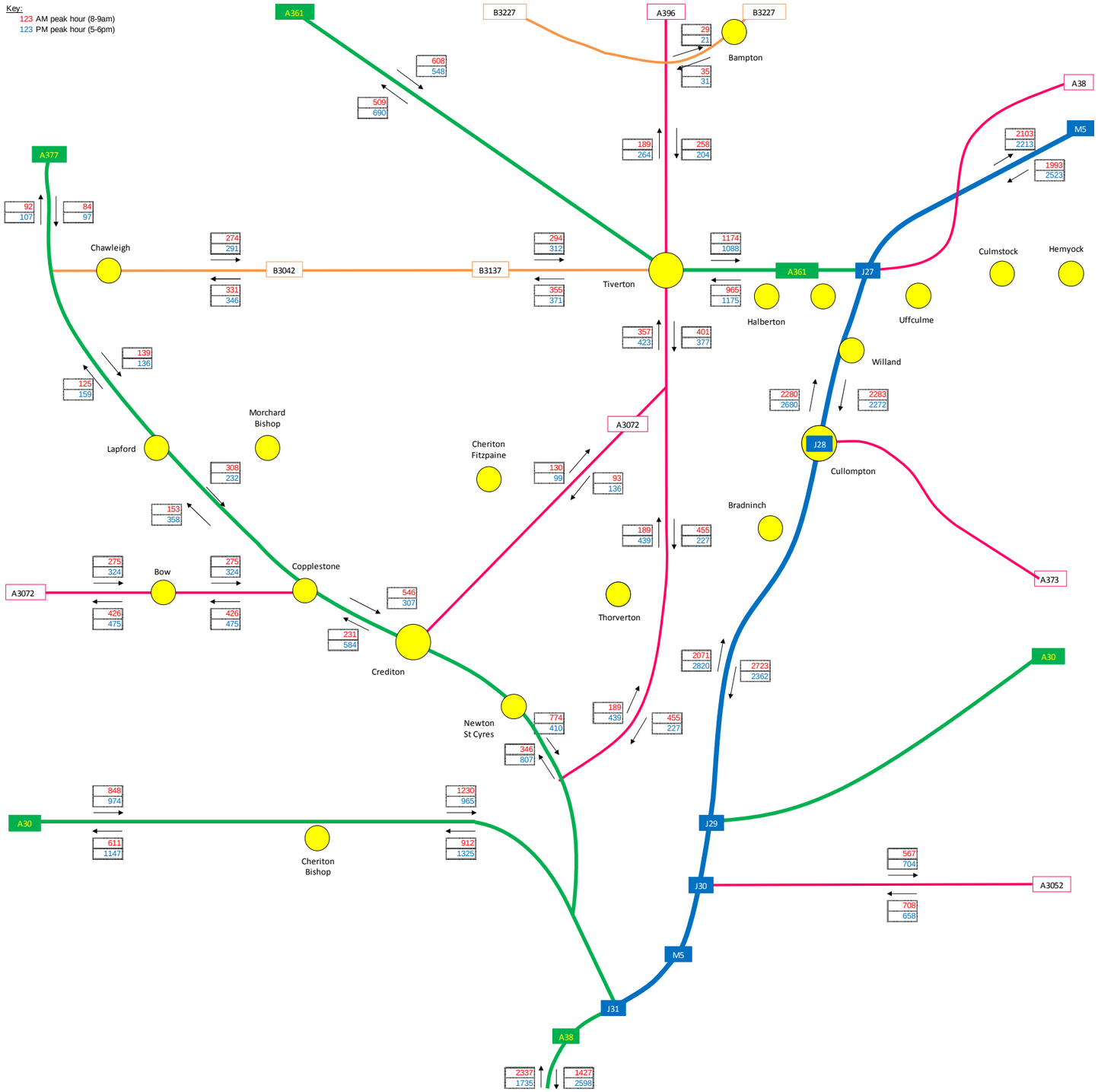

Figure 4-2: Baseline Traffic Flows Year 2013

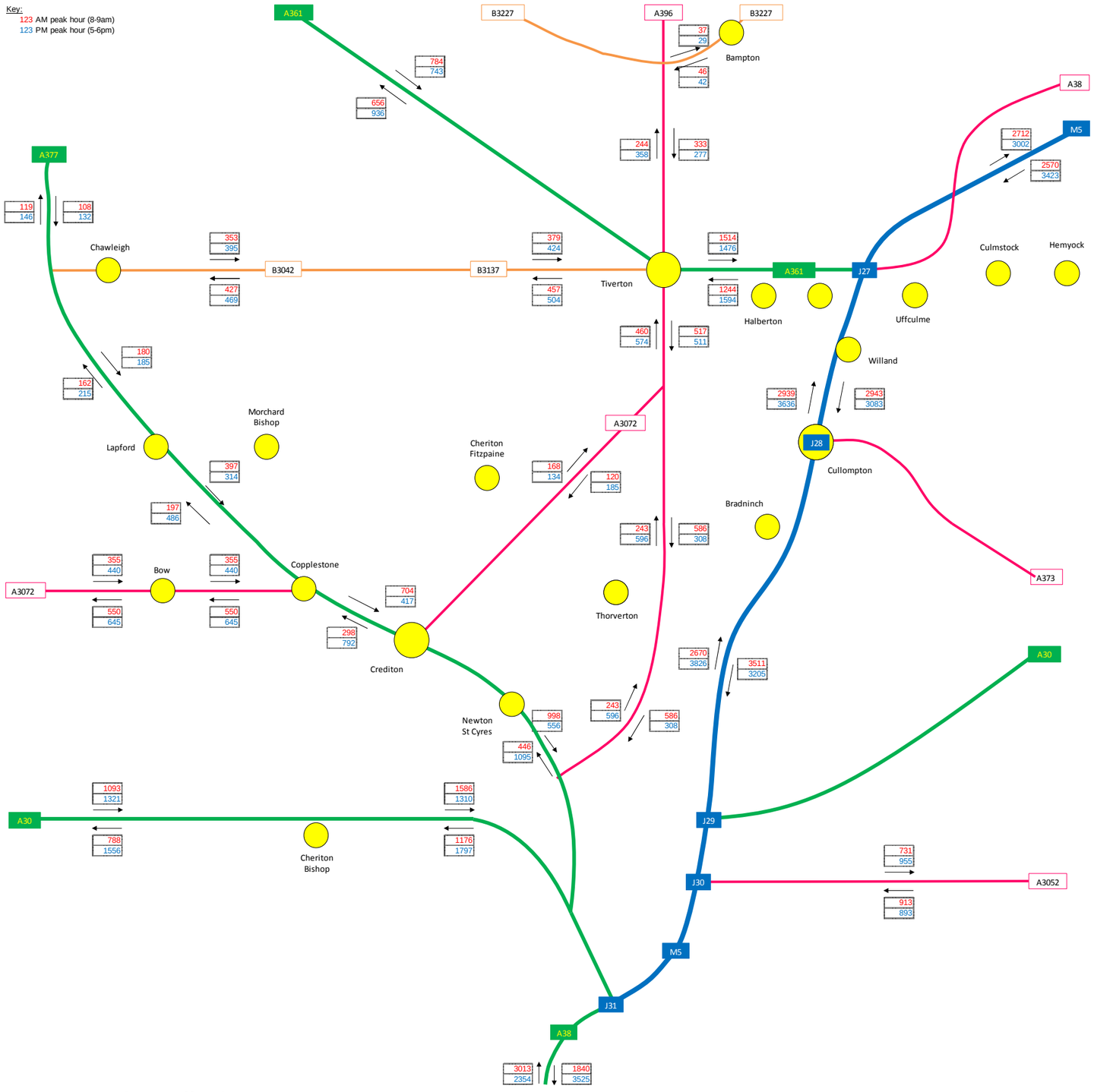

Figure 4-3: Baseline Traffic Flows Year 2033

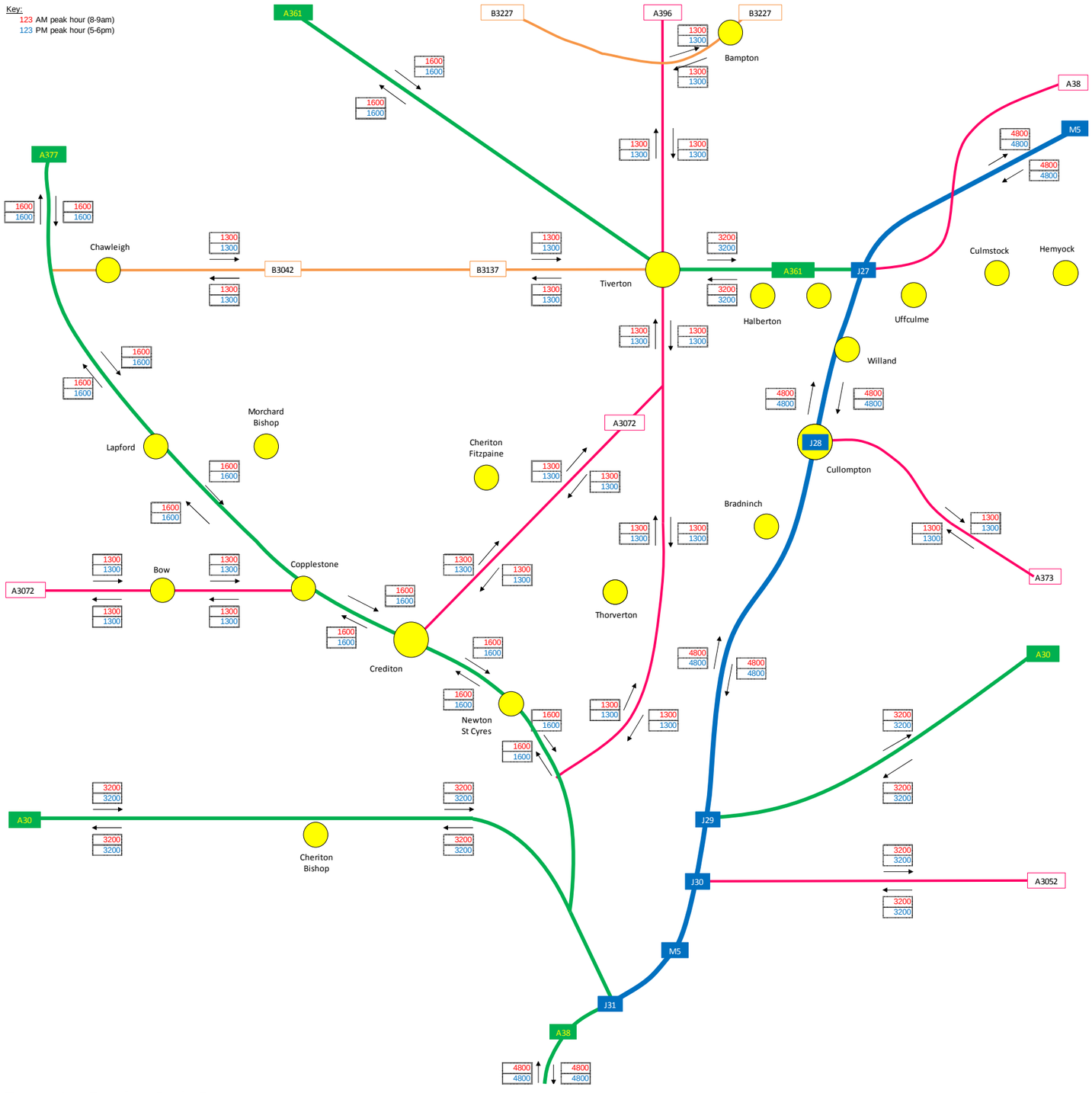

Figure 4-4 Baseline Link Capacities

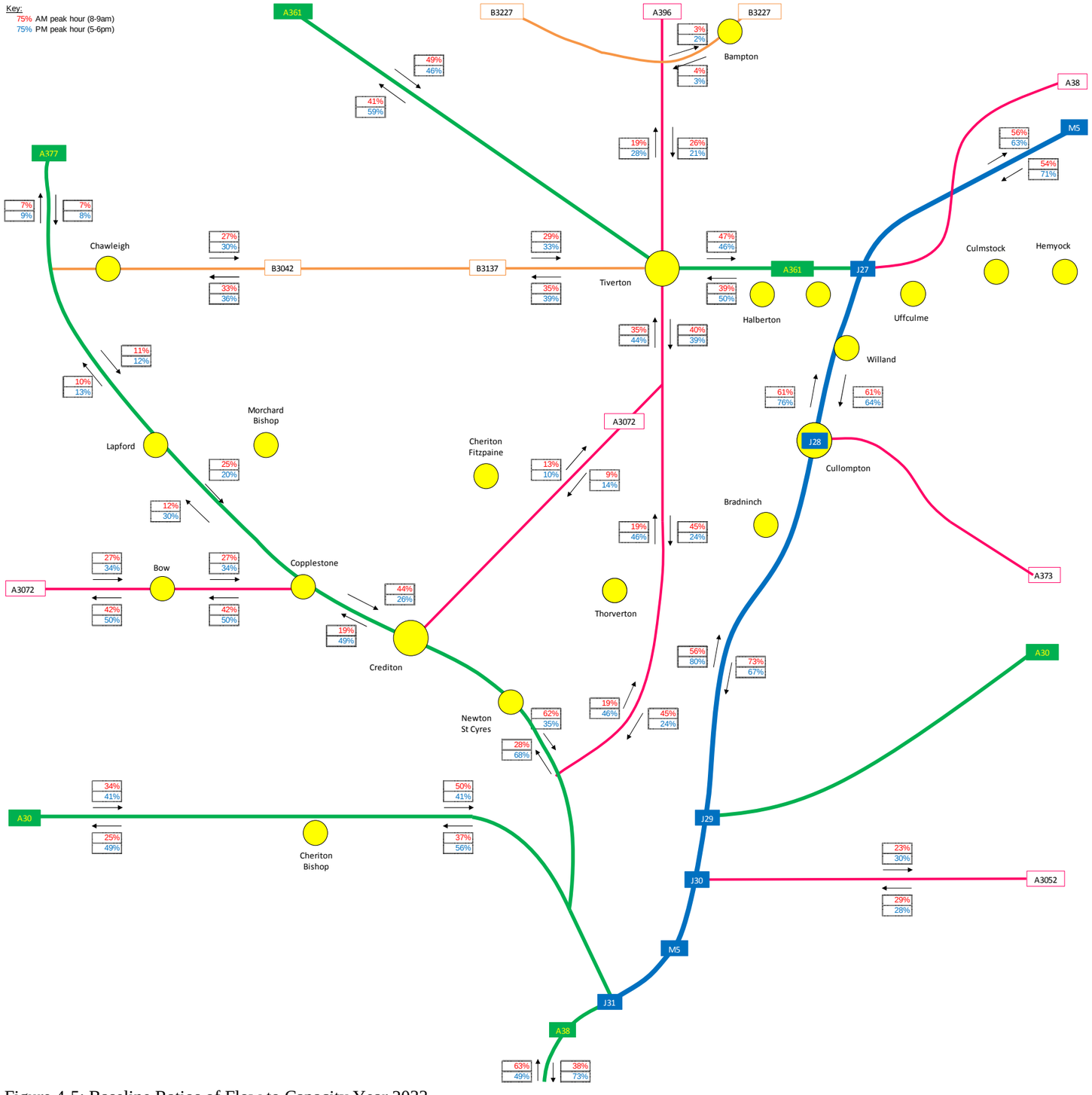

Figure 4-5: Baseline Ratios of Flow to Capacity Year 2033

5 Trip Generation

Trip Rates

5.1 DCC's trip rates for the three towns were forwarded by MDDC (*Trip Distribution for MDDC*, 1 May 2014). The same rates, both housing and employment, are used in this assessment but not for rural housing. This is because DCC's rates are filtered for sites of 100 dwellings or more, whereas the rural sites are much smaller than this. We have therefore reverted to the Trics[3] database to derive residential trip rates for the rural sites. The filtering process is, with the exception of dwelling numbers, the same as that used by DCC:

1. Regions exclude Greater London, Wales, Scotland, Northern Ireland and Ireland.
2. Maximum number of dwellings 100.
3. Suburban areas, edge of town and neighbourhood centres.
4. Residential zones and zones with no category.
5. Trip rates are 85th percentile because the sites are small and spread across a large geographical area.

5.2 The same filtering process is followed for hotels. Peak hour trip rates for the various land use categories are tabled below. DCC has commented that the trip rates look acceptable.

Table 5-1: Trip Rates

Land Use	**Morning Peak Hour**		**Evening Peak Hour**	
	Arrivals	**Departures**	**Arrivals**	**Departures**
Housing per household:				
Towns	0.163	0.434	0.321	0.405
Rural	0.410	0.247	0.405	0.369
Employment per 100m² GFA				
B1	1.399	0.280	0.194	1.147
B2	0.421	0.217	0.125	0.354
B8	0.060	0.046	0.032	0.075
Hotels per 100m² GFA	0.174	0.522	0.406	0.290

5.3 Trip rates for towns are applied to all sites in Tiverton, Cullompton and Crediton; trip rates for rural locations are used for all other sites. Employment land uses are mixed: B1-B8 in Tiverton and Crediton and B1, B2, B8 in Cullompton. The likely split between use classes is not known at this stage of planning, so average rates are assumed across the two or three classes. Table 5-2 below shows trip generation for all proposed housing and commercial sites across Mid Devon's district.

[3] *Trip Rate Information System* (TRICS) version 7.1.1, JMP consultants Ltd, 2014

Table 5-2: Trip Generation

Location	Proposed Development	Morning Peak Hour		Evening Peak Hour	
		Arrivals	Departures	Arrivals	Departures
Proposed Housing Sites					
Tiverton	1,606	262	697	658	397
Cullompton	3,483	568	1,512	1,428	860
Crediton	583	95	253	239	144
Rural Sites					
Bampton	5	2	2	2	2
Bow	26	8	11	11	10
Bradninch	7	2	3	3	3
Chawleigh	20	6	8	8	7
Cheriton Bishop	30	10	12	12	11
Cheriton Fitzpaine	29	9	12	12	11
Copplestone	30	10	12	12	11
Culmstock	16	5	6	6	6
Halberton	10	3	4	4	4
Hemyock	10	3	4	4	4
Lapford	18	6	7	7	7
Morchard Bishop	20	6	8	8	7
Newton St Cyres	25	8	10	10	9
Sampford Peverell	10	3	4	4	4
Sandford	27	9	11	11	10
Silverton	16	5	6	6	6
Thorverton	12	4	5	4	4
Willand	40	13	16	15	15
Proposed Commercial Sites (employment and hotel)					
Tiverton	36,800m^2	231	67	43	193
Cullompton	46,800m^2	307	86	56	257
Hotels	17,600m^2	31	92	71	51
Crediton	9,820m^2	62	18	11	52
Willand	8,800m^2	55	16	10	46

Trip Distribution

5.4 The focus of this assessment is the weekday morning and evening peak hours, when the road network is at its busiest. A significant proportion of peak hour journeys are for work purposes and therefore it is reasonable to base trip distribution on journey to work data from the year 2001 census. (Note that, at the time of producing this report, the year 2011 data is not yet available with detailed tables likely to be available towards the end of year 2014.)

5.5 Origins and destinations are extracted from the census as follows:-

1. All wards in Mid Devon.
2. Districts, boroughs and cites in the south-west region, and

3. Rest of the UK.

5.6 Trip distributions for the towns are averaged across the wards. The full origin-destination matrices for housing and residential trip distributions can be seen in Appendix C. Subsequent to the matrices, trip distribution for each site or cluster is shown figuratively. Distribution for all sites and clusters assumes that a proportion of trips would be contained locally and that the current (2001) rate of containment would prevail. In practice, this means that the balance between jobs and housing would not change as a result of the new development. It should be noted that a Local Plan strategy of significant economic growth such as could be delivered through Westwood or an equivalent scheme, could result in an alteration to this balance between jobs and housing.

5.7 Estimating trip distributions requires making assumptions about preferred routes where drivers often have a choice. Decisions will be influenced by time of day, journey time, distance, personal preferences etc. Generally, the trip distributions are based on the fastest routes whilst avoiding congested routes where feasible. Specifically for routes queried by MDDC:

A396 Tiverton to Exeter

Trips between Tiverton and Exeter are distributed onto the A396 including villages in between (Thorverton, Silverton). For most other locations there are alternative routes such as the M5 motorway and A3072.

A373 Cullompton to Honiton

Honiton is one of the market towns within East Devon and has a population of 11,800. By far the largest town in East Devon is Exmouth, population 32,600. Trips between sites in Mid Devon and the district of East Devon are distributed to/from Exmouth, which is mostly along the A3052.

Trip Assignment

5.8 The trip generations for each site/cluster are assigned into the road network in line with the trip distributions. Appendix D contains figures illustrating the trip assignment for the sites. Within the main body of this report, Figure 5-1 shows the housing trip assignment, Figure 5-2 shows commercial and Figure 5-3 shows the total for all sites and clusters.

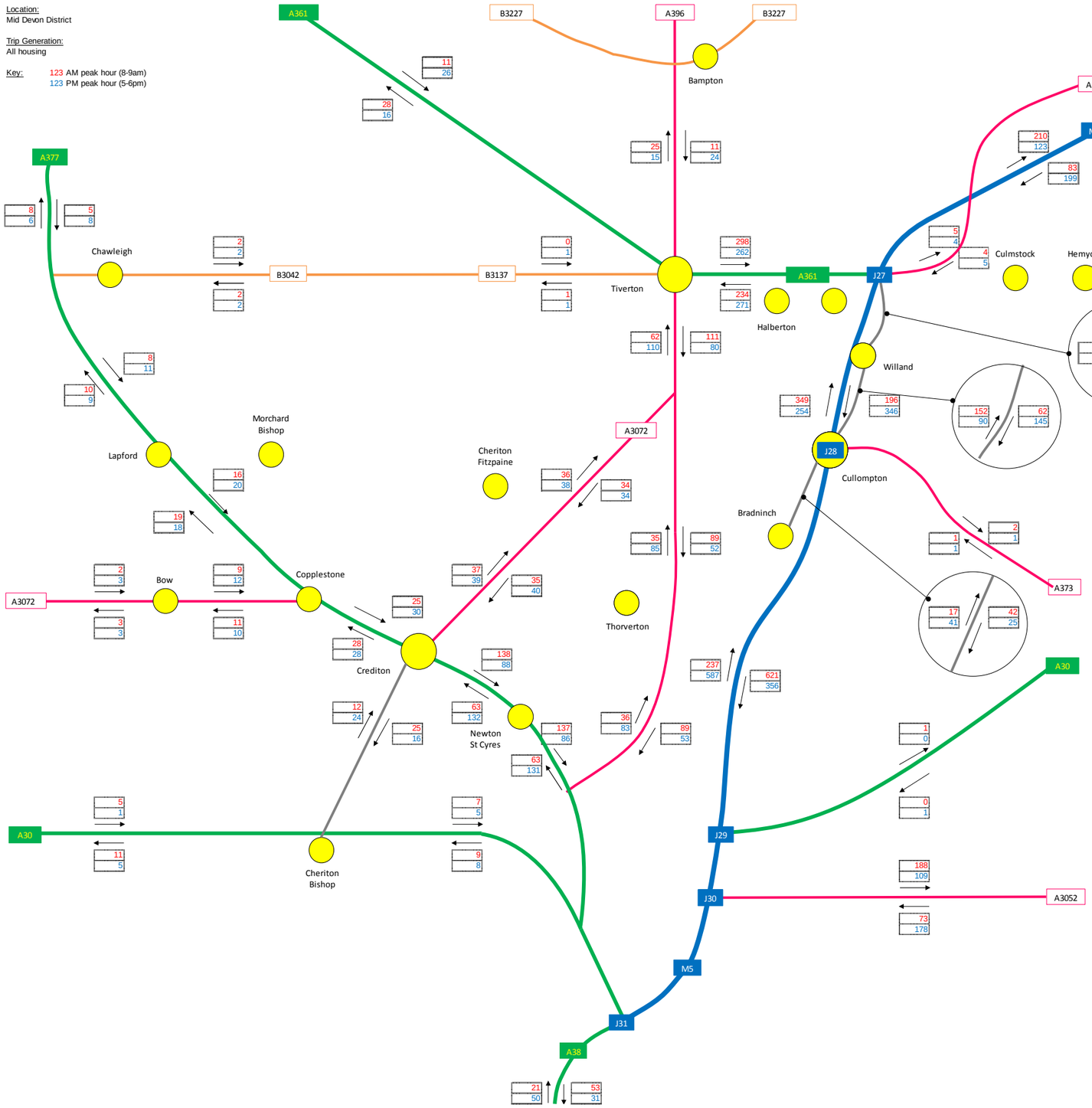

Figure 5-1: Housing Trip Assignment

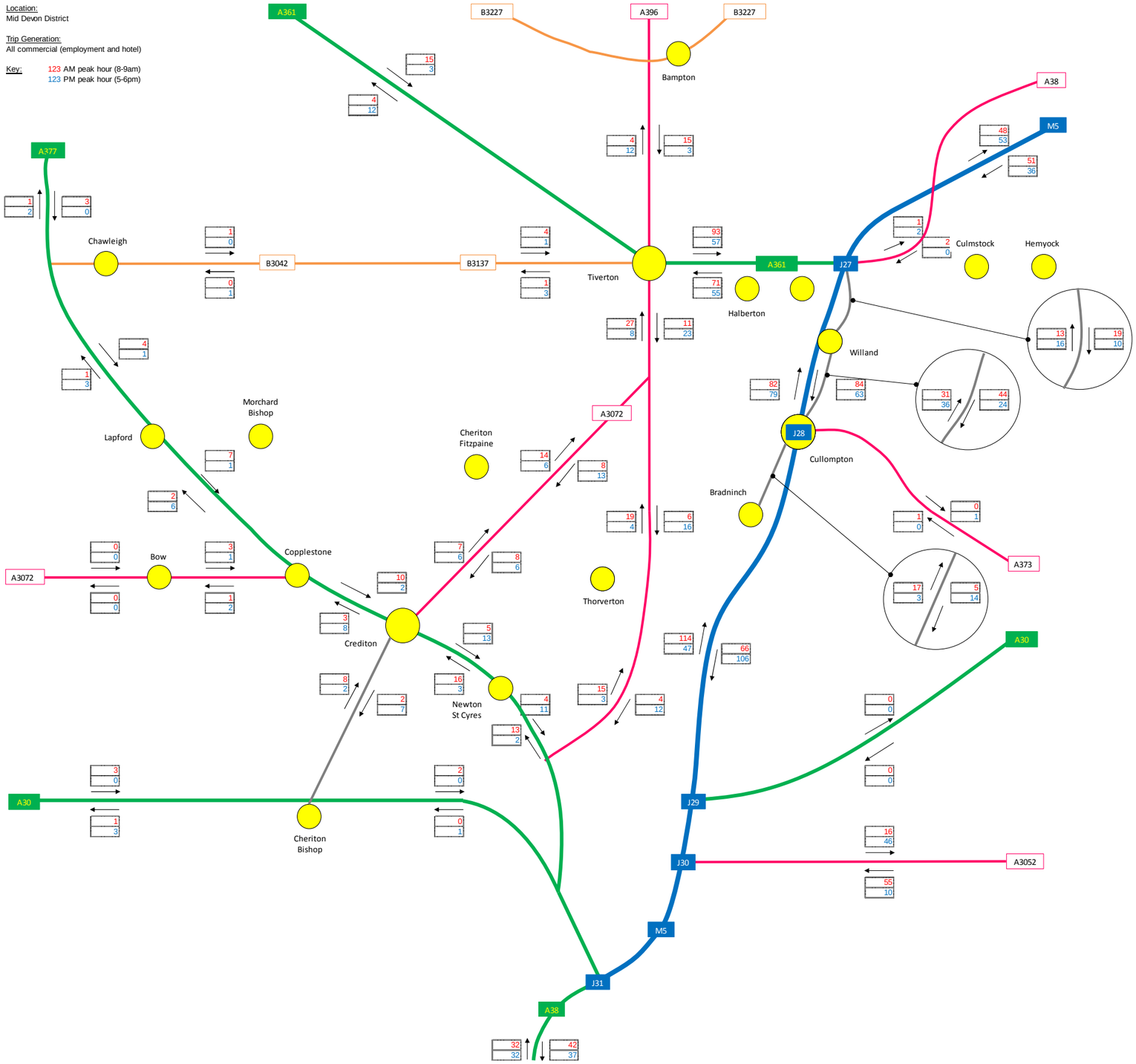

Figure 5-2: Commercial Trip Assignment

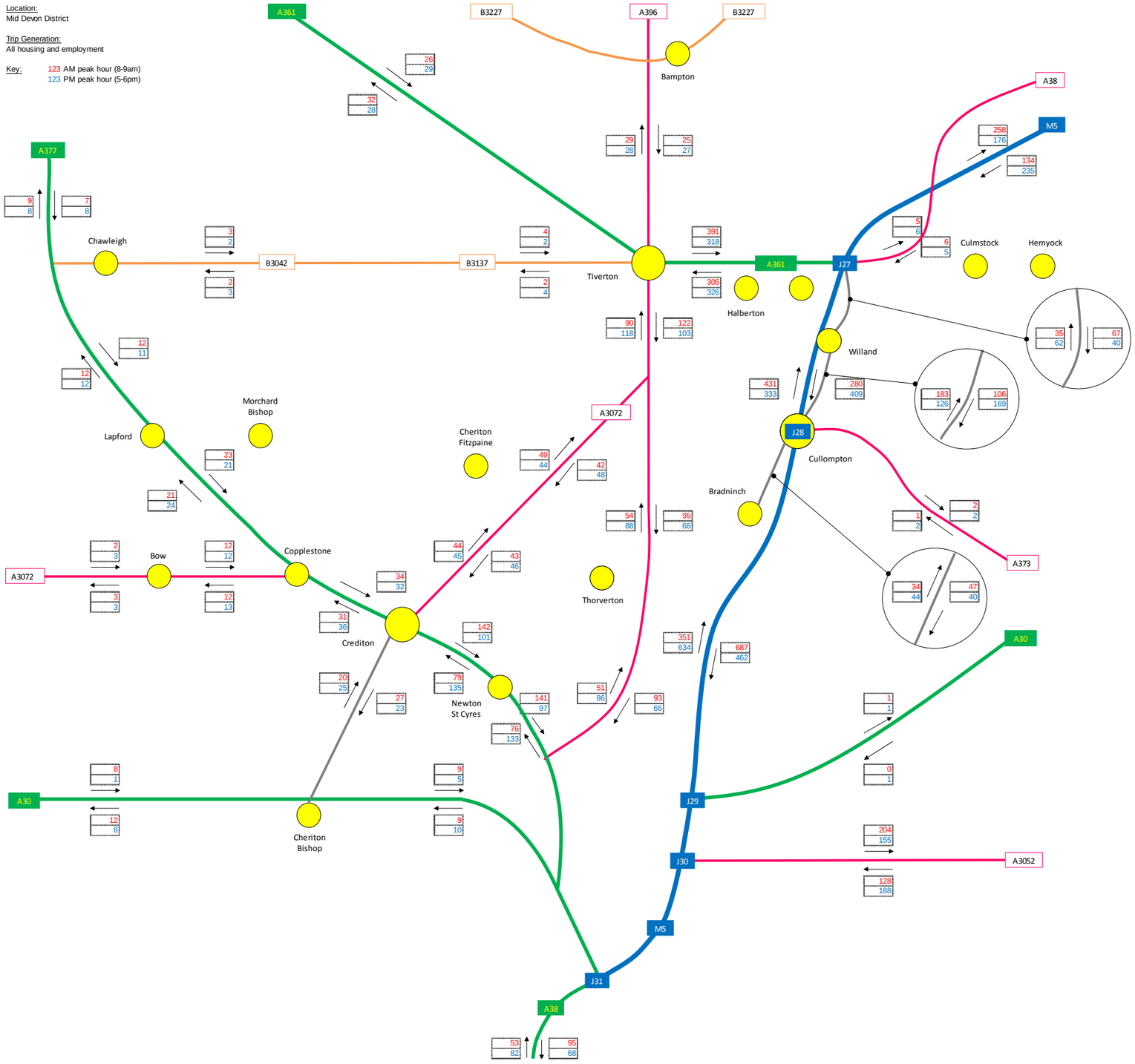

Figure 5-3: Total Trip Assignment

6 Development Impact

6.1 The cumulative impact of the proposed site allocations is relative to the baseline traffic flows. As a general rule, impacts greater than 10% require further investigation or 5% in congested areas. Figure 6.1 shows the highway link impact of the proposed sites in year 2033. Key links showing a significant impact are the:

- A3052 east of the M5;
- A3072 between Crediton and the A396; and
- A377 between Crediton and Exeter.
- A396 between Exeter and Tiverton;
- A361 between Tiverton and the M5, and
- M5 motorway.

6.2 The development impact is also a function of the highway link's capacity. If there is ample spare capacity, a large impact may not be discernible. Contrariwise, if a link is congested even a small impact may have adverse effects on traffic flow. Figure 6.2 shows the estimated link capacities with all sites fully built in year 2033.

6.3 The highway link capacities do not suggest any issues and theoretically traffic should be free-flowing. However, this does not take account of reduced capacity at junctions. Putting aside links where development impact would be significant but there is ample spare capacity leaves two links for discussion:

- the A377 between Crediton and Exeter; and
- the M5.

A377 Crediton to Exeter

6.4 The A377 is forecast to be operating at up to 68% of its theoretical capacity in year 2033. Proposed development in Mid Devon would increase traffic by about 140 cars an hour in the weekday peaks, which would mostly be new residents of Crediton travelling to work in Exeter. Operational capacity on the A377 would increase to 77%, which could lead to queues and delays at junctions. Simple T-junctions could benefit from the addition of a ghost island to cater for right turning traffic. Capacity at the A377/A396 roundabout could be a constraint and signal control may need to be considered.

6.5 Crediton Link Road will provide an alternative access to existing and proposed employment and residential developments in Crediton. The proposal is required to alleviate congestion, support economic development and improve air quality. The scheme is nearing completion to be operational in autumn 2014. This new road does not affect the calculations in this report, since the urban areas are not broken down beyond the approach roads. However, it is expected that new development on the north-east side of Crediton would access the

A377 via the new road if travelling to Exeter. All the major sites in Crediton – Wellparks, Pedlerspool and Sportsfield – are located to the east of the town and new residents could be predisposed to use the link road. This would be dependent on the sites' masterplans and how vehicular access is managed, and could trigger a need for local improvement schemes directly related to the sites' traffic generation. Further afield towards Exeter, any traffic using the link road will still use the A377 and A377/A396 roundabout.

M5 Motorway

6.6 The M5 is three-lane motorway in both directions as it passes through Mid Devon. Junctions 27 and 28 would be adversely affected by proposed development in Mid Devon and in particular the major allocations at Tiverton and Cullompton. Both junctions are subject to separate ongoing studies by the HA/DCC. We recommend that those studies take account of our trip estimates as appropriate.

6.7 DCC contributed design funding and resources to enable the HA to successfully bid for the Department for Transport's SRN Pinch Point Fund. This secured £1.4m for widening the southbound exit slip road at J27 of the M5 and full-time traffic signal control. The works are planned to start on site in winter 2014 and be operational by spring 2015.

A361 Tiverton to Barnstaple

6.8 Data in this report is used to inform the Habitat Regulations Assessment (HRA) for the emerging local plan. Annual Average Daily Traffic (AADT) is expected to increase along the A361 between Tiverton and Barnstaple by 251 vehicles in a north westerly direction and 256 in a south easterly direction – an increase in AADT of 507, that would not be regarded as significant as it is an increase of less than 1,000 AADT.

6.9 The increased traffic is unlikely to result in a change in daily average speed of 10 km/hr or more in the vicinity of the Culm Grassland SAC. Road traffic on a highway link that is operating within its theoretical capacity free-flows without restriction, and speeds should remain fairly constant unless the link approaches its capacity, in which case speeds would likely reduce. Traffic speeds would only increase as a result of influences beyond the scope of this study, for example highway improvements intended to relieve congestion.

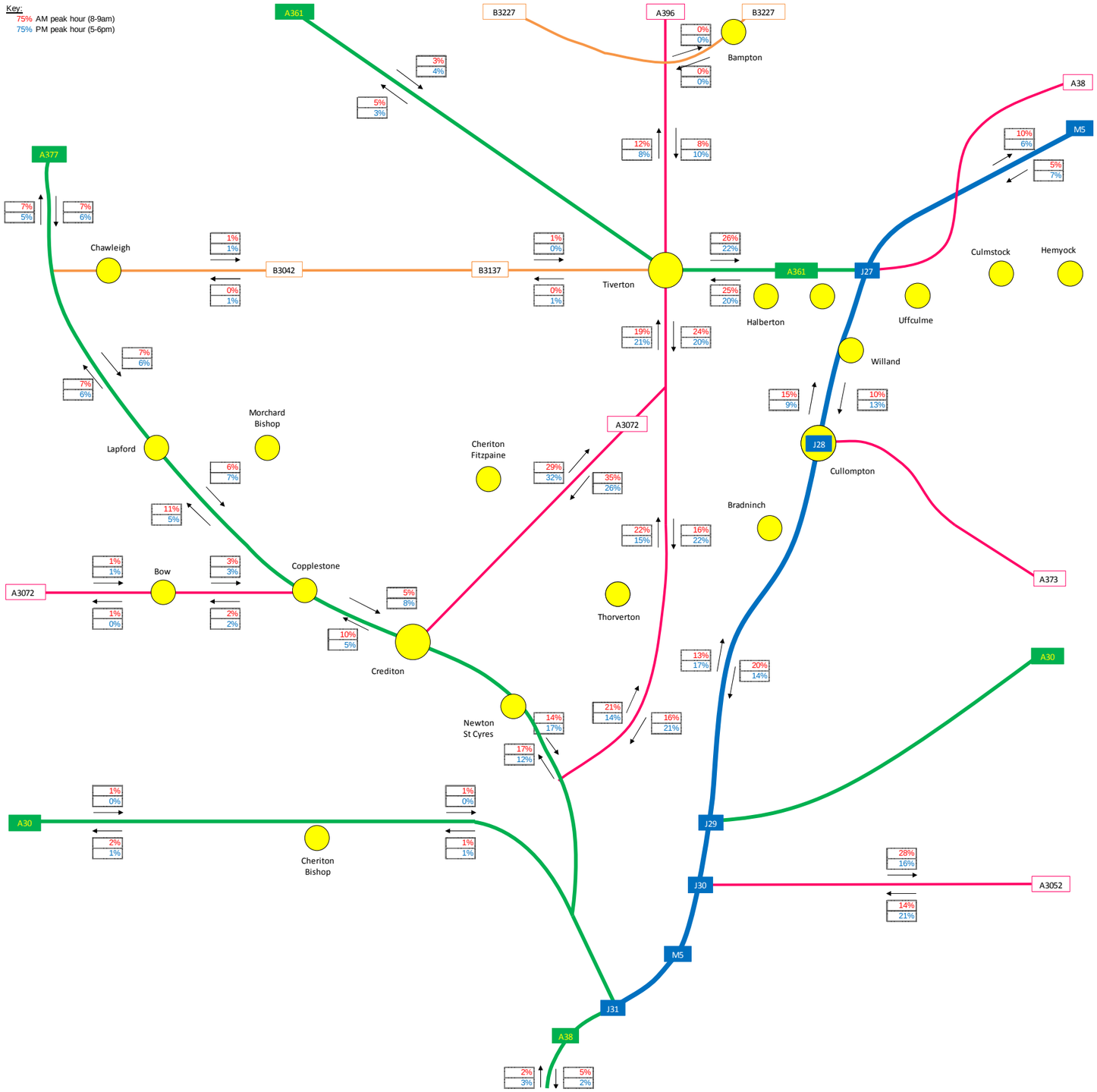

Figure 6-1: Highway Link Impact

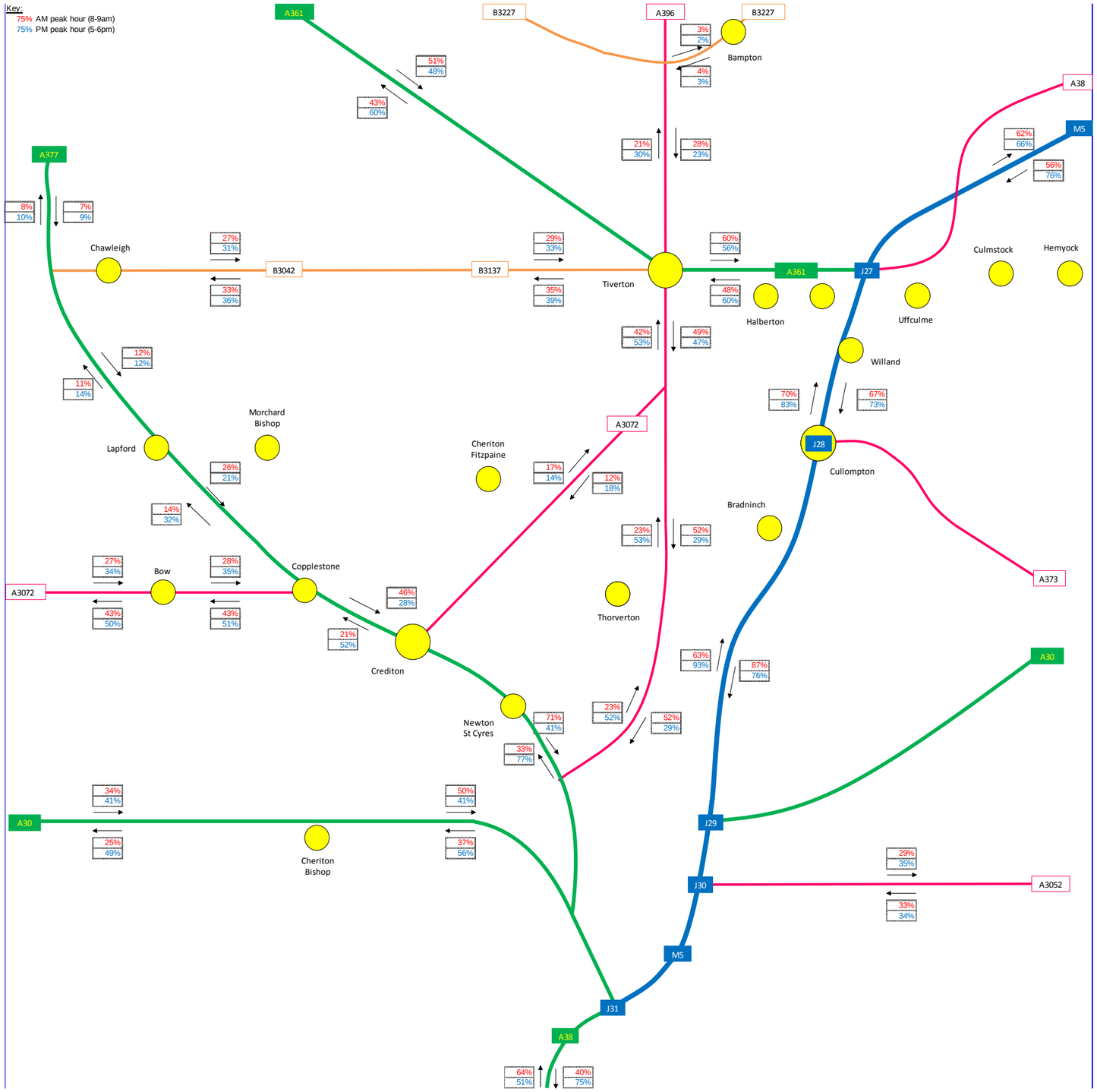

Figure 6-2: Forecast Ratios of Capacities Year 2033

7 Mode Share

7.1 The focus of this report is road traffic flows and the cumulative highway impact of proposed development sites. Opportunities to travel by sustainable modes are an important factor when considering future development. A low take-up of public transport will show a site that would benefit from improved services, or it may not be suitable for development if there is an apparent over reliance on the personal car.

7.2 Mode of travel to work for daytime and residential populations is taken from the population census data. 'Daytime' refers to people resident during the daytime, including workers; 'residential' refers to people who live in an area. The journey to work data for the two population categories indicates how workers travel to an area for work, and how residents travel from an area. Mode share for the daytime workers is available only for year 2001, the more recent 2011 data having not been released yet. Mode share for residential population is available for both years 2001 and 2011. Appendix E contains the tabulated data for the towns and wards.

7.3 Key indicators for the residential populations are that Crediton and Tiverton show similar proportions for all modes, whereas Cullompton shows a greater proportion of car drivers at the expense of walking. Of the wards, Silverton is the most car-dependent and Taw the least. Generally in the 10 years between 2001 and 2011, mode share by car has increased. Surprisingly, this is largely due to shift from working at home to travelling elsewhere.

7.4 For the daytime population, the proportion of people driving to work is about the same for the three towns. Crediton and Tiverton show more people walking to work whereas Cullompton shows more people working at home.

8 Conclusions

8.1 Mid Devon District Council is currently reviewing its local plan and a number of sites, both housing and commercial, are being considered for allocation. This report provides MDDC and the highway authorities of Devon County Council and the Highways Agency with a high-level assessment of development impact on the road network. The assessment complements work being carried out by DCC looking at options for major highways infrastructure that would be required to enable the development of strategic sites. We provide a robust evidence base that takes account of all the proposed sites, and not only the major allocations.

8.2 The HA's Spatial Planning Advice Note SP 09/09 guides the methodology used in this assessment. As far as practicable, the assessment complements and takes account of work being carried out by DCC. However, with our study and DCC's study running concurrently, the opportunities to share data have been limited.

8.3 Proposed development allocations amount to 50 sites, of which 41 are housing and nine commercial. The residential sites include major allocations at Tiverton (1,500 dwellings in the east urban extension) and Cullompton (1,150 north-west and 2,100 east). In the longer term, East Cullompton is expected to deliver 2,600 dwellings overall, but only 2,100 are forecast for delivery within the plan period to year 2033. MDDC has also considered an alternative at J27/Willand for 3,000 dwellings but we are advised it is not being taken forward, Cullompton being a more favourable location.

8.4 Assessment of traffic impacts across the district looks at the Strategic Road Network and all A- and B-roads. Unclassified roads are referred to as necessary when looking at individual sites or clusters, but are not assessed for development impact. This is because the rural sites are, in themselves, too small to have a discernible impact on road links. Few, if any, sites would have a cumulative impact on the rural roads due to the spread of the sites across the district. Minor links that could be sensitive to an increase in traffic are those that are affected by development in the towns, and these links are assessed along with A- and B-roads.

8.5 The focus of this assessment is the weekday peak hours, 8-9am and 5-6pm, which is when the road network is at its busiest. They are also the time periods when the proposed developments would be at their busiest, as people travel to and from work. Highway link capacity is assessed for its worst case in terms of both baseline and development trip generation. Seasonal variations, which in summer can be a particular issue in Devon and along the M5, are not addressed.

8.6 Baseline traffic flows on Mid Devon's road network were extracted from DCC's database. The flows are mostly automatic traffic counts plus a few classified counts. Additional counts for the SRN were sourced online from the HA's traffic system. Traffic growth factors for Mid Devon, adjusted in line with current Road Transport Forecasts for the south-west region, are used to forecast traffic flows in the

assessment year 2033. This takes account of committed development sites, which are not assessed explicitly, although it also introduces an element of double counting. The assessment year of 2033 is consistent with the end date of the local plan review.

8.7 Highway links being assessed in this district-wide study are predominantly rural. We assume lane capacities of 1,600 vehicles per hour on the primary and strategic roads, and 1,300 on all other A- and B-roads. These lane capacities for the links are on the low side to take account of the reduced lane capacities at junctions. Baseline capacities in year 2033 show that generally traffic should be free-flowing. The busiest links are, as would be expected, those approaching the main urban areas and Exeter in particular.

8.8 Trip generation rates for the proposed site allocations are the same as those used by DCC in its work. The exception is trip rates for rural housing, for which we calculate alternative 85th percentile rates. Trip distribution is based on origin-destination data from the year 2001 census for journeys to work. (At the time of carrying out the assessment, year 2011 is not yet available although its release is imminent. The most recent prospectus states that a small number of tables will be available initially, with more detailed tables likely towards the end of the year.) Trip assignment across the road network shows potentially significant numbers of trips on the A3052, A3072, A377 between Exeter and Crediton, A396, A361 between Tiverton and the M5, and on the M5 motorway.

8.9 Assigned development trips are compared to the baseline traffic flows to estimate the highway link impact. As a rule of thumb, impacts greater that 10% require further investigation or 5% in congested areas. All the links that show significant numbers of trips could be adversely affected: A3052, A3072, A377 between Exeter and Crediton, A396, A361 between Tiverton and the M5, and on the M5 motorway.

8.10 Looking at the theoretical highway capacities, traffic should be free-flowing. Putting aside links where development impact would be significant but there is ample spare capacity leaves two links for discussion: the A377 between Crediton and Exeter and the M5 itself. However, this does not take account of reduced capacity at junctions but there are no potential problems indicated by our study beyond the affected links.

8.11 We understand that DCC has an area-wide Saturn model for Tiverton and highway improvements associated with the Eastern Urban Extension are currently under way. Further to this, their current work is looking at M5 junction 27. Highway improvement works, both planned and under construction, include M5 junctions 28 and 30 and Crediton Link Road.

8.12 We would be pleased to meet with DCC and the HA to discuss their work and options being assessed, to enable us to contribute where appropriate. At the time of finalising this report, we suggest that the proposed local plan allocations would not introduce any congestion

across the district, but they affect the M5 motorway that is currently the subject of separate studies. The A377 between Crediton and Exeter is the only link where we believe future development could lead to operational problems, along the link at junctions with minor roads and at the A377/A396 junction.

8.13 Future development would lead to an increase in traffic on the A361 between Tiverton and Barnstaple. This could potentially have an adverse effect on the Culm Grassland SAC but the volume of traffic is would not be regarded as significant as it is an increase of less than 1,000 AADT. Road traffic speeds along this highway link would not be expected to increase as a consequence of the revised local plan allocations.

8.14 Our scope of work does not cover highway design or detailed traffic modelling. The highway link impact indicates where future development would trigger a need for improvement works, which would likely depend on future turning movements rather than link flows. Testing of junction capacity constraints would be the next stage of work, as an outcome of this report's findings.

8.15 Mode share (Appendix E refers) is also an important consideration when assessing proposed development allocations. Residents and workers should have a choice of travel modes and not be car dependent. Data from the year 2011 census shows that Tiverton and Crediton exhibit the best travel habits, with fewer than 60% of journeys by car and over 20% on foot or by bicycle. Cullompton is less favourable, with 67% of residents driving to work and only 14% walking/cycling. The rural locations vary from 61-70% of residents driving and 6-12% walking/cycling. Take-up of public transport is generally low across the district from 0-7%.

8.16 In conclusion, the cumulative impact of the proposed site allocations requires detailed assessment of M5 motorway junctions 27 and 28. This is already being carried out by DCC and we recommend that our trip estimates for the smaller sites are fed into its models. The other highway issue is the A377 between Crediton and Exeter, which will be approaching capacity and could be subject to queues and delays at minor junctions and the A377/A396 junction. The next stage of work is likely to be testing of junction turning movements and capacity constraints.

Appendix A

Glossary

A1 Glossary

AADT	Annual Average Daily Traffic
DCC	Devon County Council
DMRB	Design Manual for Roads and Bridges
EUE	Eastern Urban Extension
GIS	Geographic Information System
HA	Highway Agency
HRA	Habitats Regulations Assessment
MDDC	Mid Devon District Council
RFC	Ratio of Flow to Capacity
RTF	Road Transport Forecasts
Saturn	Simulation and Assignment of Traffic to Urban Road Networks
SRN	Strategic Road Network
TEMPRO	Trip End Model Presentation Program
TRADS	Traffic Flow Data System
Trics	Trip Rate Information System

Appendix B

Traffic Growth Factors

B1

RTF13
2008-2013

South West 'all areas'	2003-2035	142%	
Assessment period	2008-2013	1.0561	(a)

Tempro 2008-2013

Car driver factors	AM Peak Period		PM Peak Period		Average Day		
	Production	Attraction	Production	Attraction	Production	Attraction	
Mid Devon	1.0470	1.0746	1.0474	1.0764			(b)
South West					1.0455	1.0455	(c)

Source: Tempro 6.2 using datasets 6.2

Local Growth Factors 2008-2013		AM	PM
RTF	a	1.0561	1.0561
Average Tempro factor (Mid Devon)	b	1.0608	1.0619
Average day SW	c	1.0455	1.0455
Background traffic growth 2008-2013	a x b/c	1.0716	1.0727

RTF13
2009-2013

South West 'all areas'	2003-2035	142%	
Assessment period	2009-2013	1.0446	(a)

Tempro 2009-2013

Car driver factors	AM Peak Period		PM Peak Period		Average Day		
	Production	Attraction	Production	Attraction	Production	Attraction	
Mid Devon	1.0383	1.0584	1.0471	1.0648			(b)
South West					1.0374	1.0374	(c)

Source: Tempro 6.2 using datasets 6.2

Local Growth Factors 2009-2013		AM	PM
RTF	a	1.0446	1.0446
Average Tempro factor (Mid Devon)	b	1.0484	1.0560
Average day SW	c	1.0374	1.0374
Background traffic growth 2009-2013	a x b/c	1.0557	1.0633

RTF13
2010-2013

South West 'all areas'	2010-2035	140%	
Assessment period	2010-2013	1.0412	(a)

Tempro 2010-2013

Car driver factors	AM Peak Period		PM Peak Period		Average Day		
	Production	Attraction	Production	Attraction	Production	Attraction	
Mid Devon	1.0298	1.0428	1.0356	1.0480			(b)
South West					1.0294	1.0294	(c)

Source: Tempro 6.2 using datasets 6.2

Local Growth Factors 2010-2013		AM	PM
RTF	a	1.0412	1.0412
Average Tempro factor (Mid Devon)	b	1.0363	1.0418
Average day SW	c	1.0294	1.0294
Background traffic growth 2010-2013	a x b/c	1.0482	1.0537

RTF13
2012-2013

South West 'all areas'	2010-2035	140%	
Assessment period	2012-2013	1.0135	(a)

Tempro 2012-2013

Car driver factors	AM Peak Period		PM Peak Period		Average Day		
	Production	Attraction	Production	Attraction	Production	Attraction	
Mid Devon	1.0105	1.0136	1.0120	1.0155			(b)
South West					1.0106	1.0106	(c)

Source: Tempro 6.2 using datasets 6.2

Local Growth Factors 2012-2013		AM	PM
RTF	a	1.0135	1.0135
Average Tempro factor (Mid Devon)	b	1.0121	1.0138
Average day SW	c	1.0106	1.0106
Background traffic growth 2012-2013	a x b/c	1.0150	1.0167

RTF13
2013-2033

South West 'all areas'	2010-2035	140%	
Assessment period	2013-2033	1.3089	(a)

Tempro 2013-2033

Car driver factors	AM Peak Period		PM Peak Period		Average Day		
	Production	Attraction	Production	Attraction	Production	Attraction	
Mid Devon	1.1057	1.1657	1.1620	1.2281			(b)
South West					1.1529	1.1529	(c)

Source: Tempro 6.2 using datasets 6.2

Local Growth Factors 2013-2033		AM	PM
RTF	a	1.3089	1.3089
Average Tempro factor (Mid Devon)	b	1.1357	1.1951
Average day SW	c	1.1529	1.1529
Background traffic growth 2013-2033	a x b/c	1.2894	1.3567

Appendix C

Trip Distribution

C1

ARUP	Job No. 235489	Sheet No.	Rev. A
	Member/Location		
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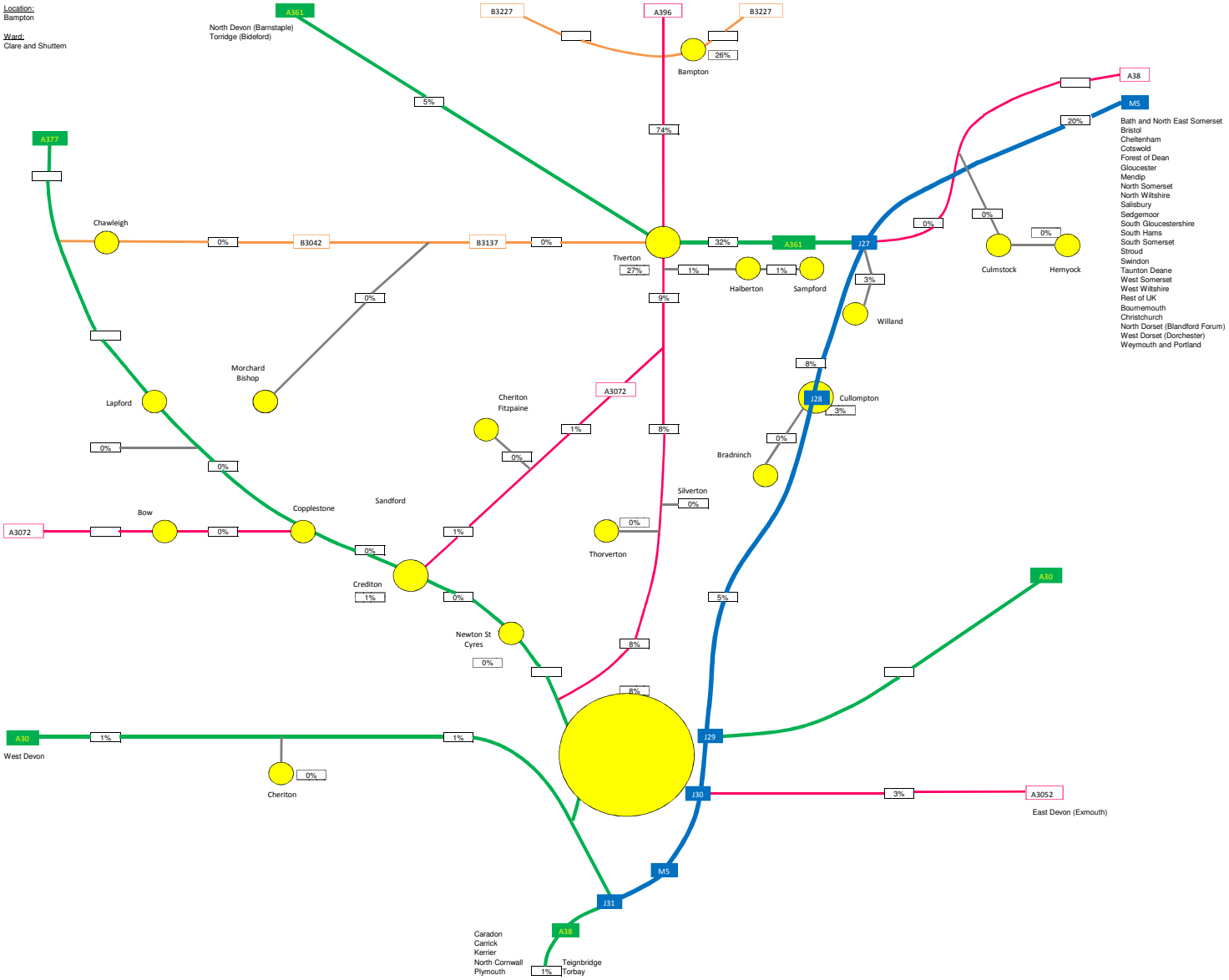
Bampton

Ward:
Clare and Shuttern



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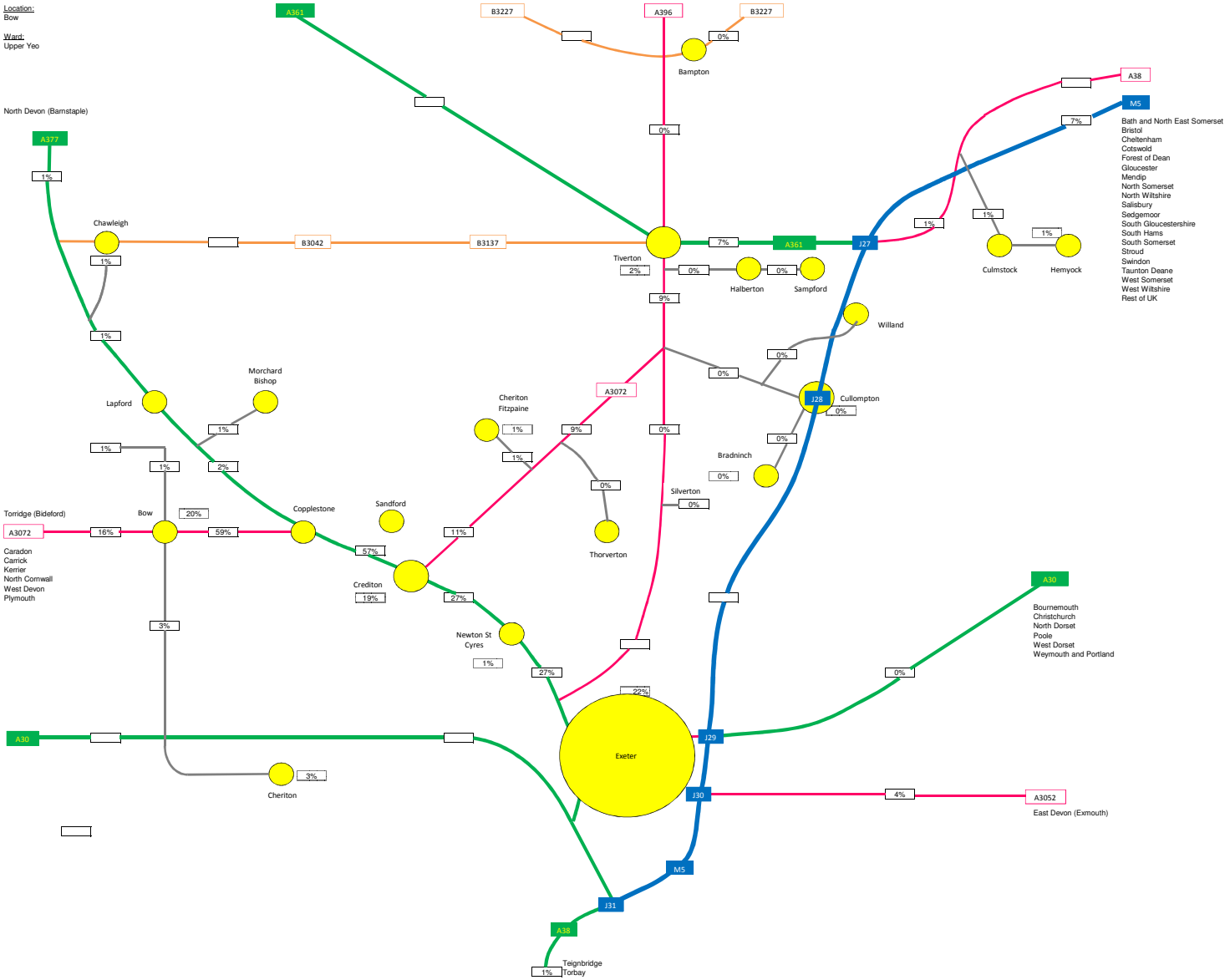
Calculation	Made by TJB	Date 04/06/2014	Chd. MJD

Location:
Bow

Ward:
Upper Yeo



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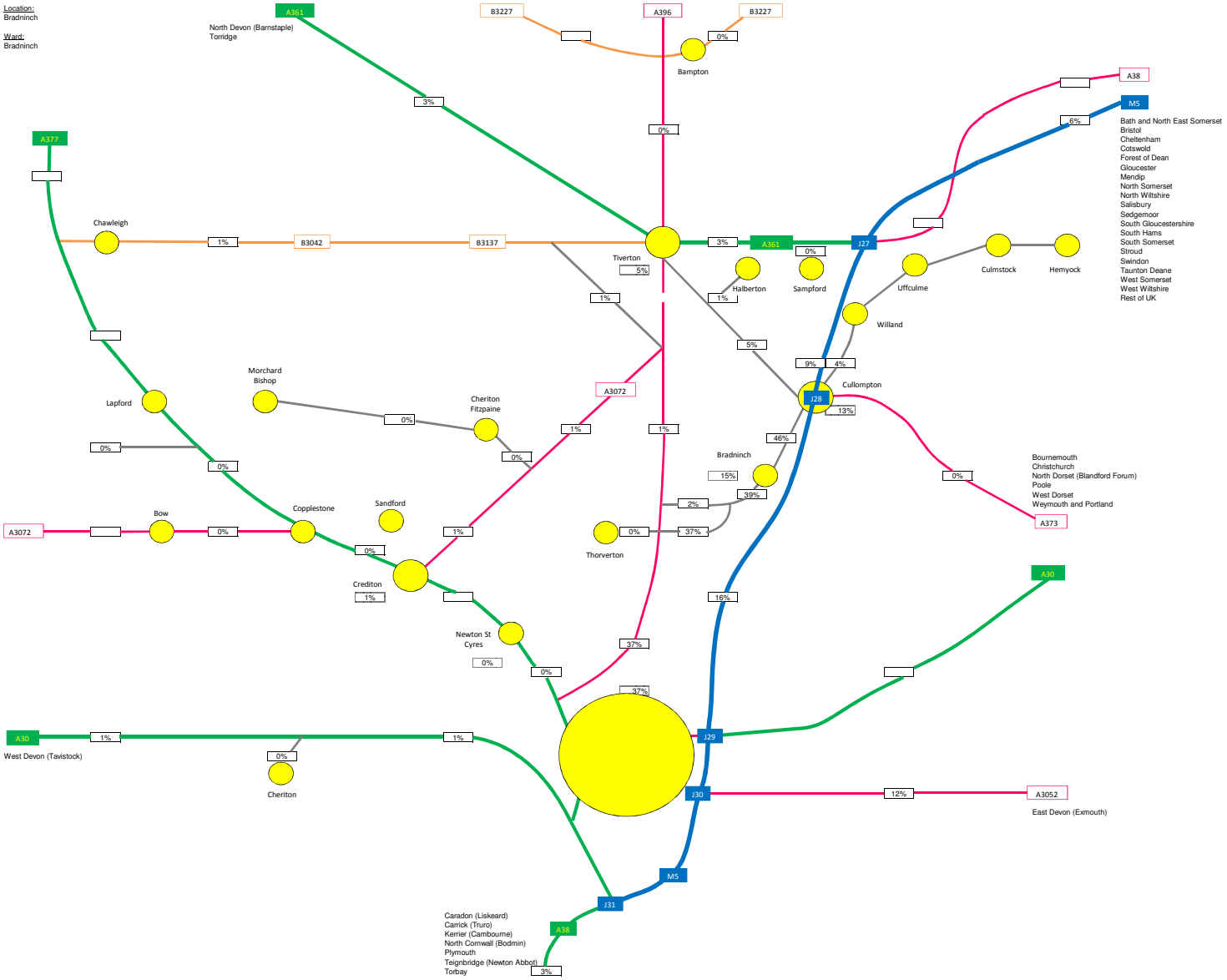
Calculation	Made by TJB	Date 04/06/2014	Chd. MJD

Location:
Bradninch

Ward:
Bradninch



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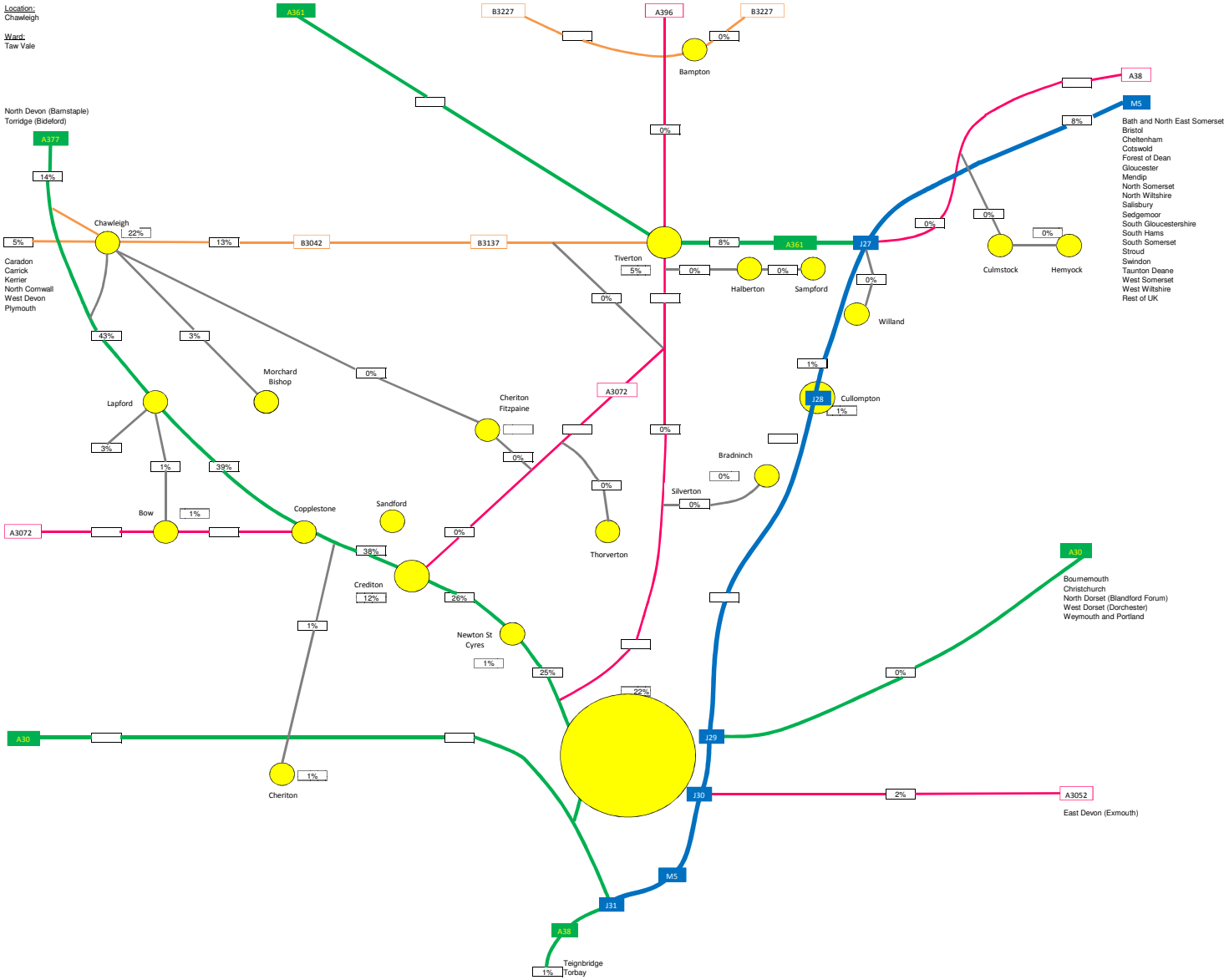
Calculation	Made by TJB	Date 04/06/2014	Chd. MJD

Location:
Chawleigh

Ward:
Taw Vale



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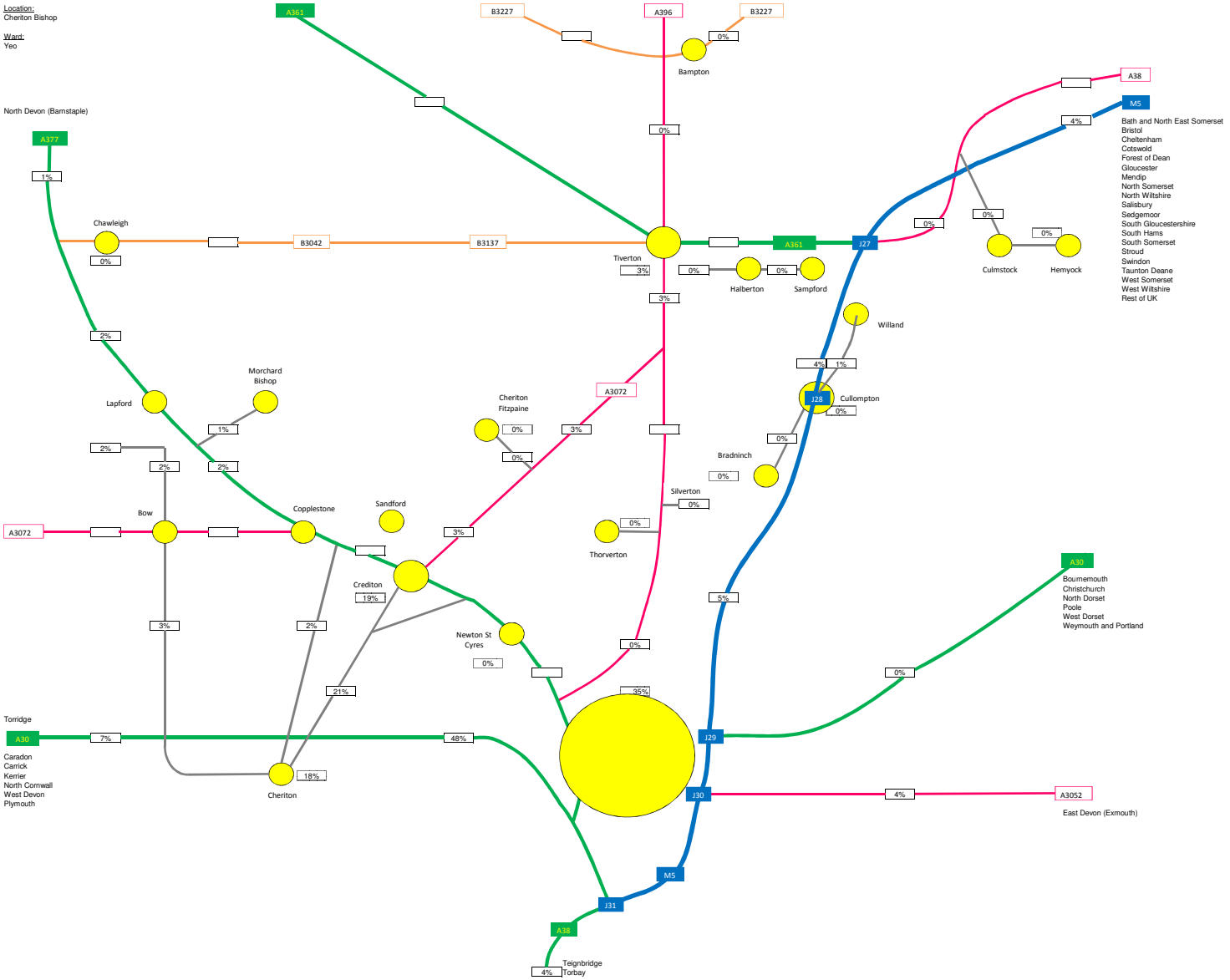
Calculation	Made by TJB	Date 04/06/2014	Chd. MJD

Location:
Cheriton Bishop

Ward:
Yeo



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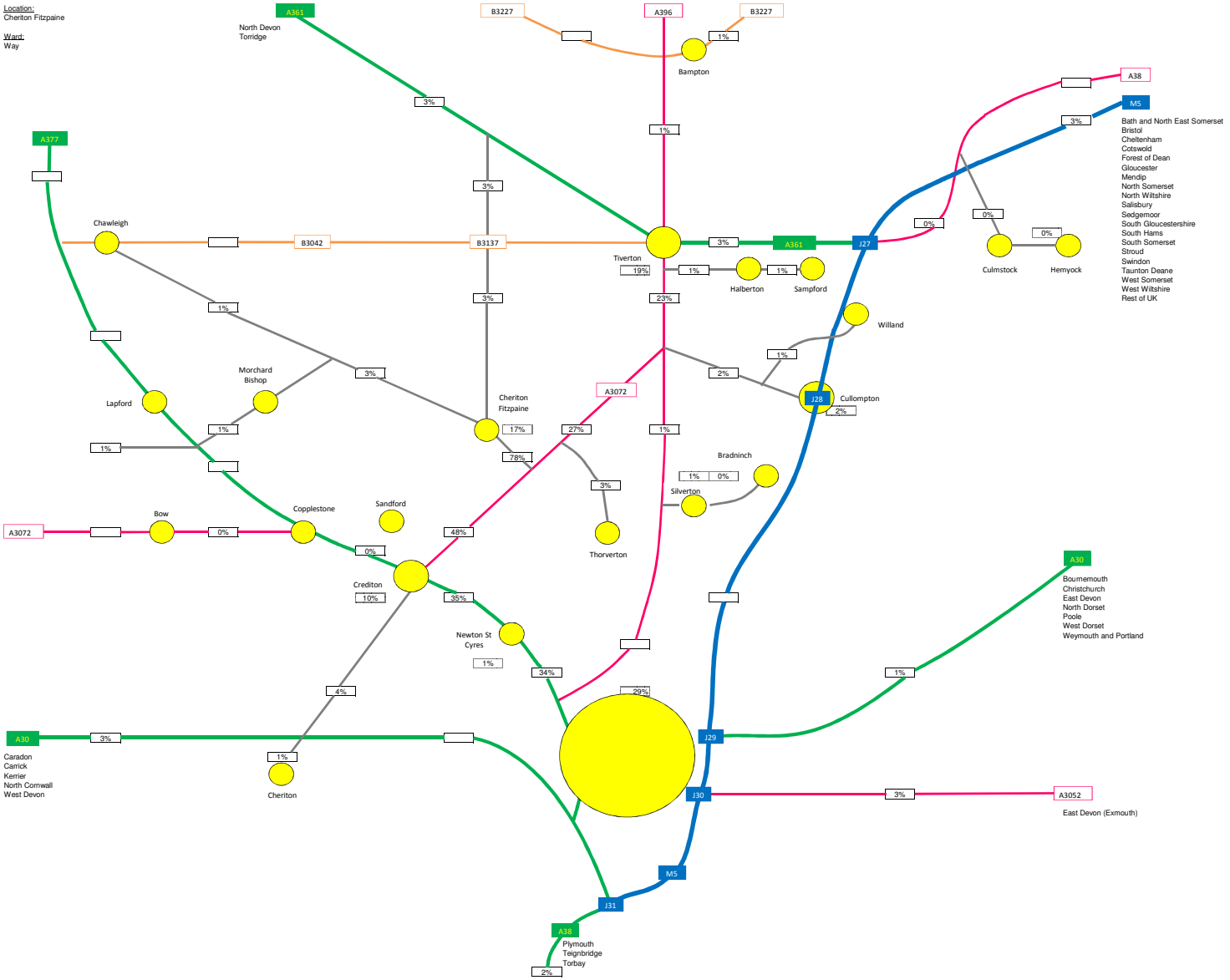
Location:
Cheriton Fitzpaine

Ward:
Way



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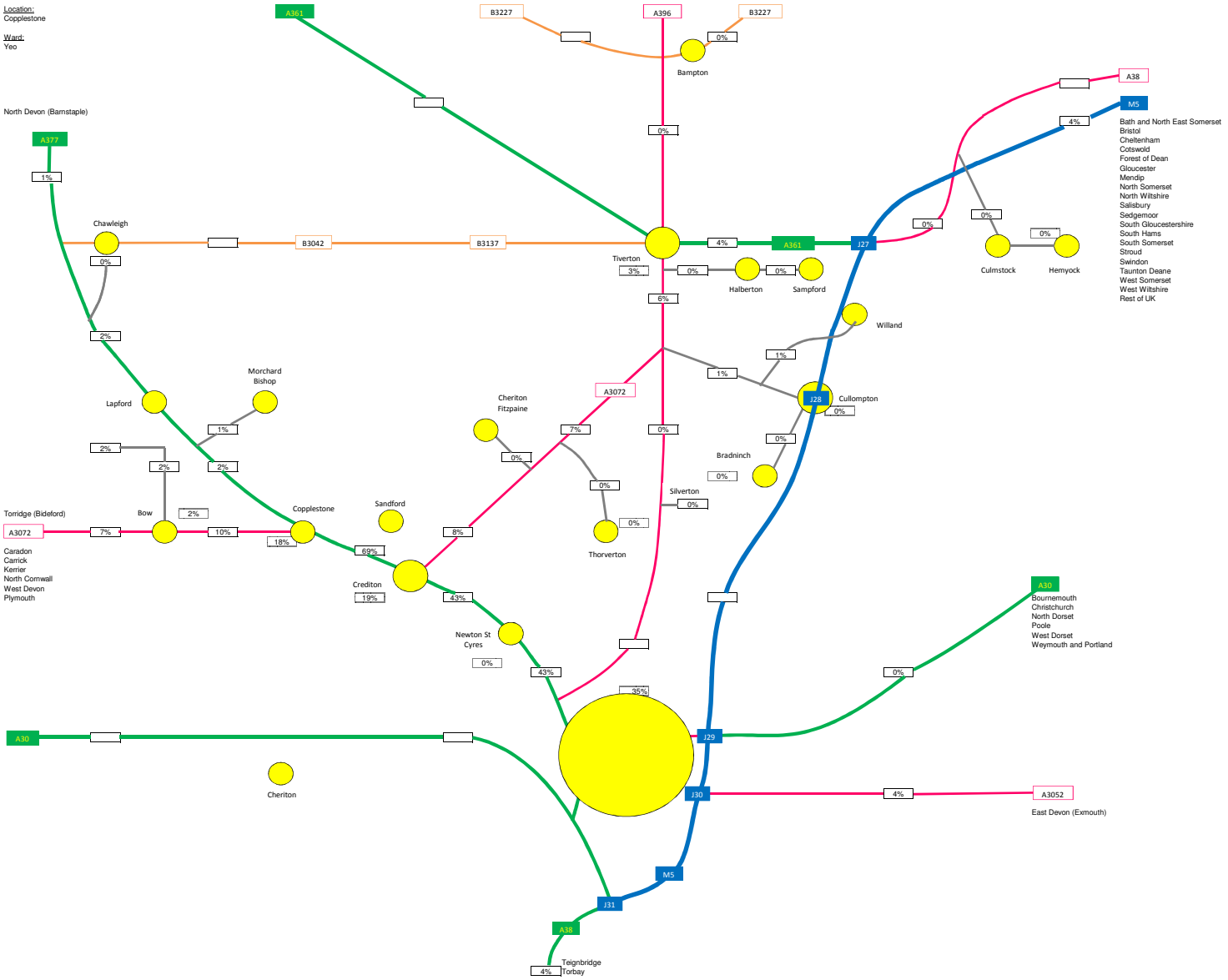
Location:
Copplestone

Ward:
Yeo



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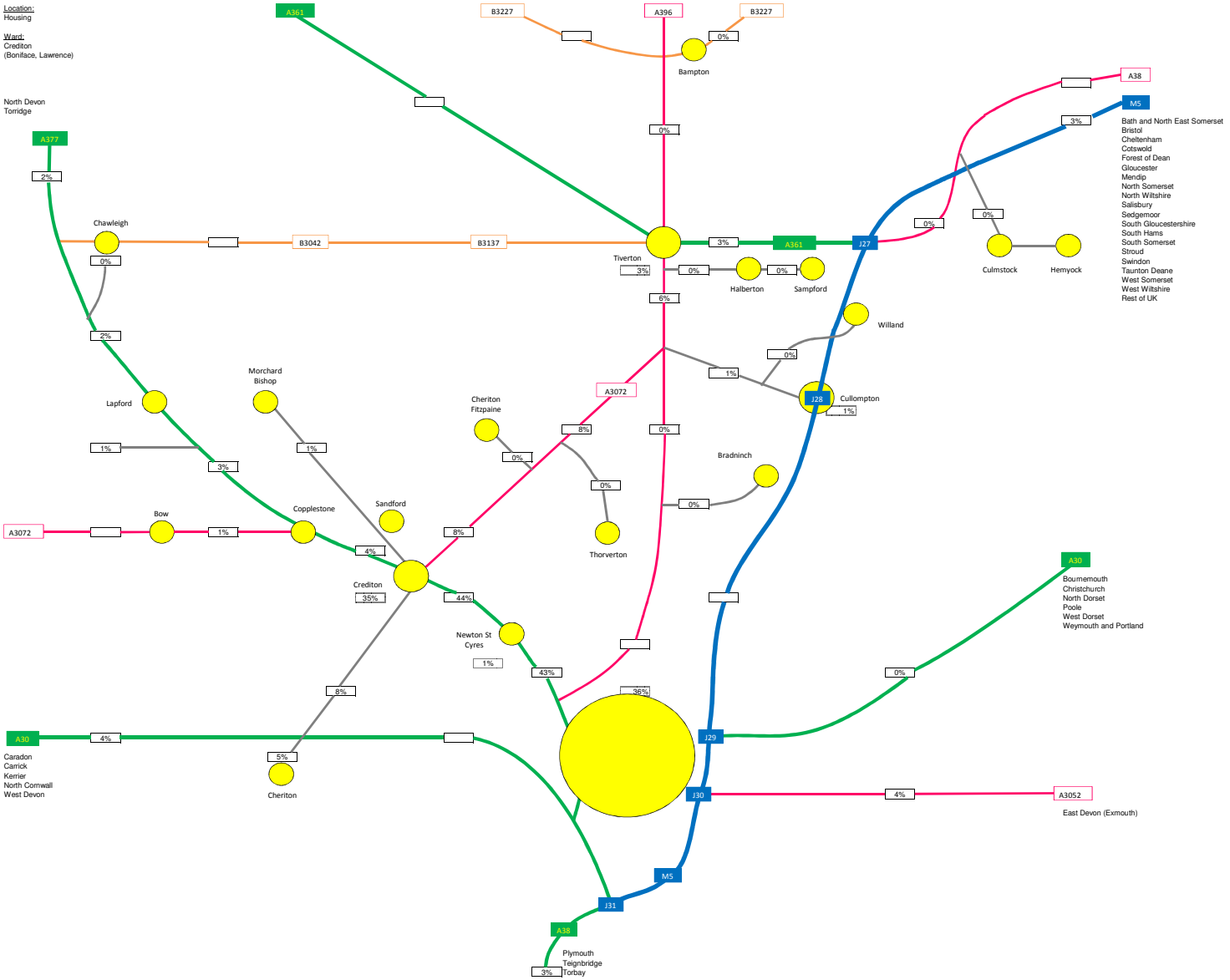

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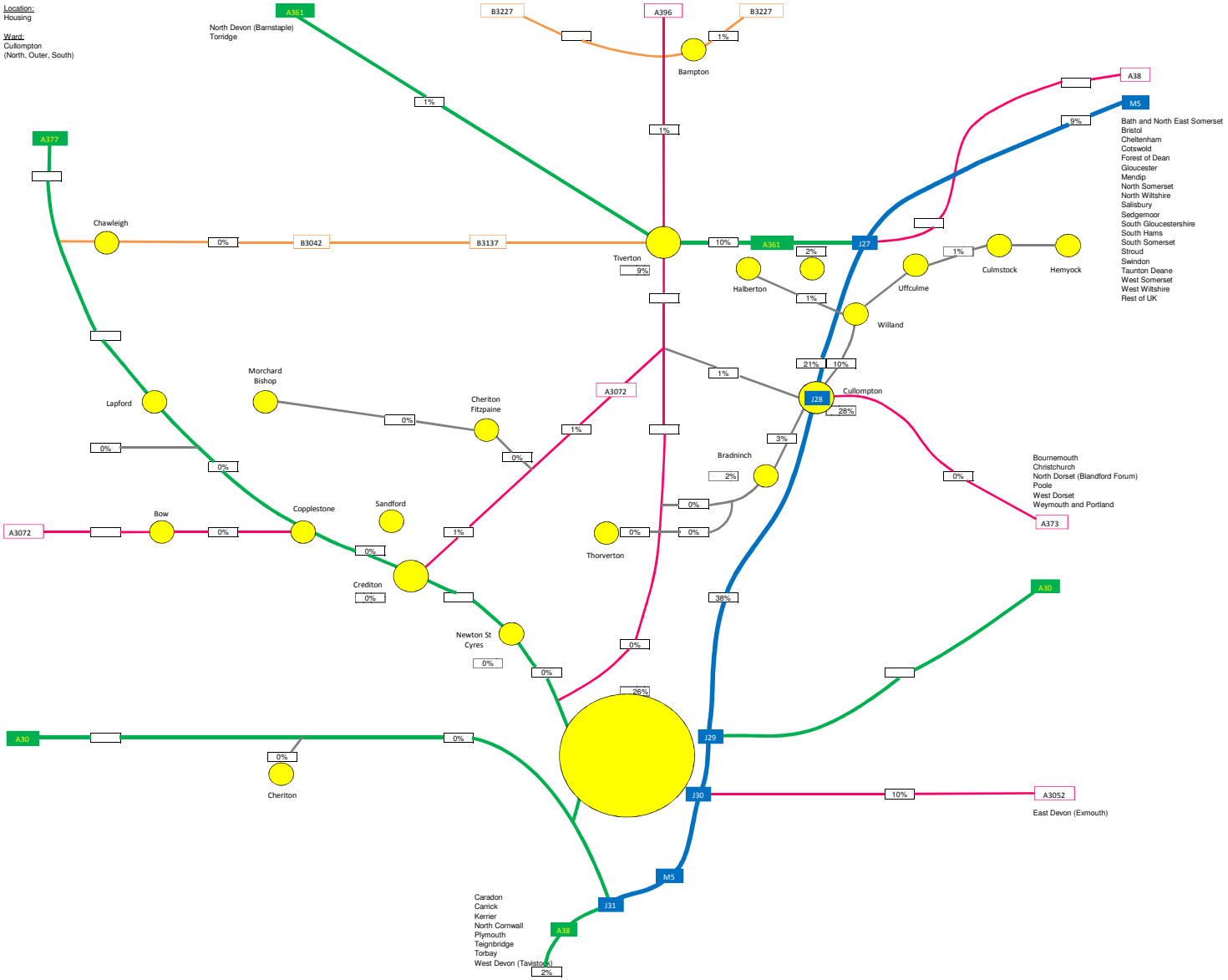
Location:
Housing

Ward:
Cullompton
(North, Outer, South)



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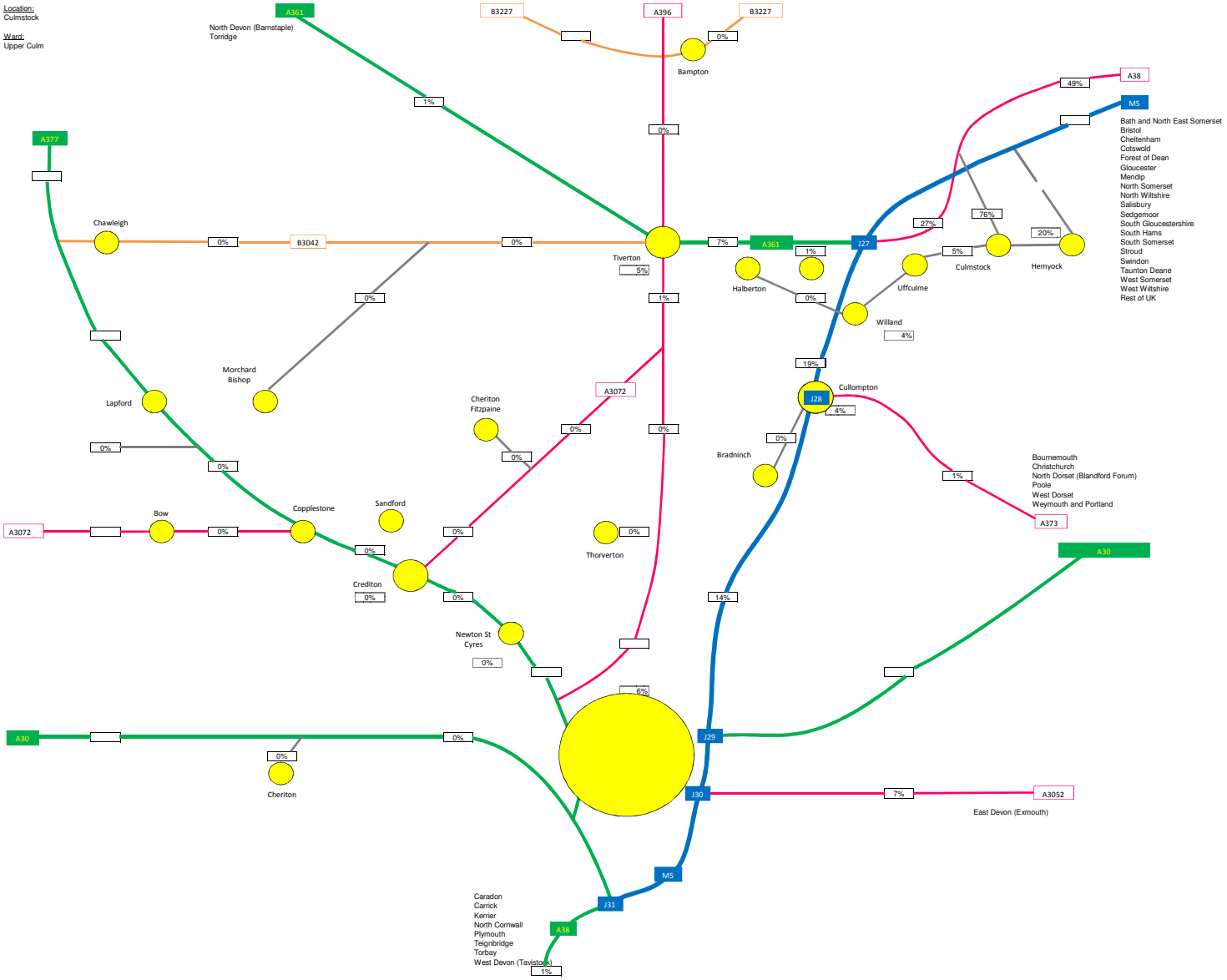
Location:
Culmstock

Ward:
Upper Culm



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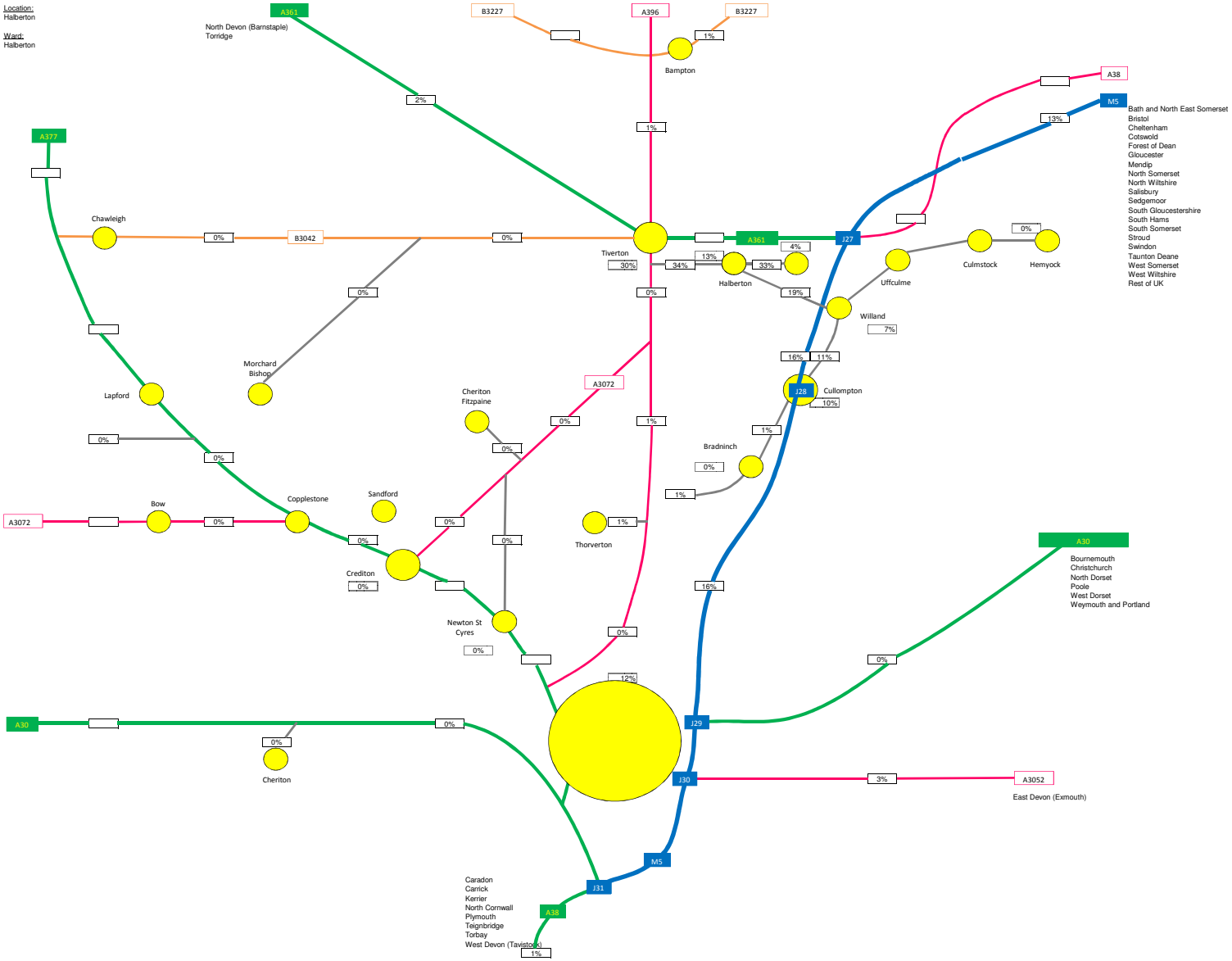
Halberton

Ward:
Halberton



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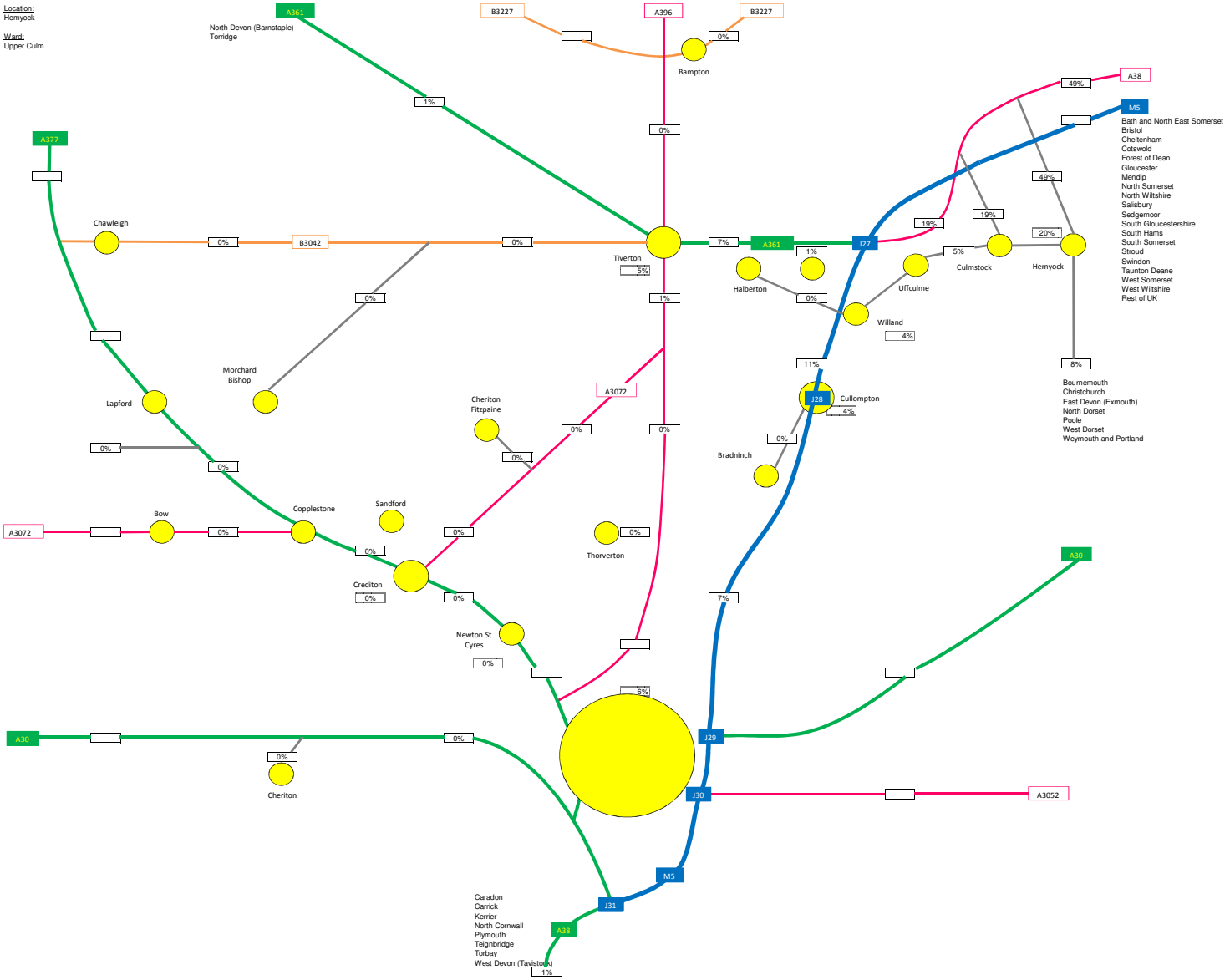
Location:
Hemyock

Ward:
Upper Culm



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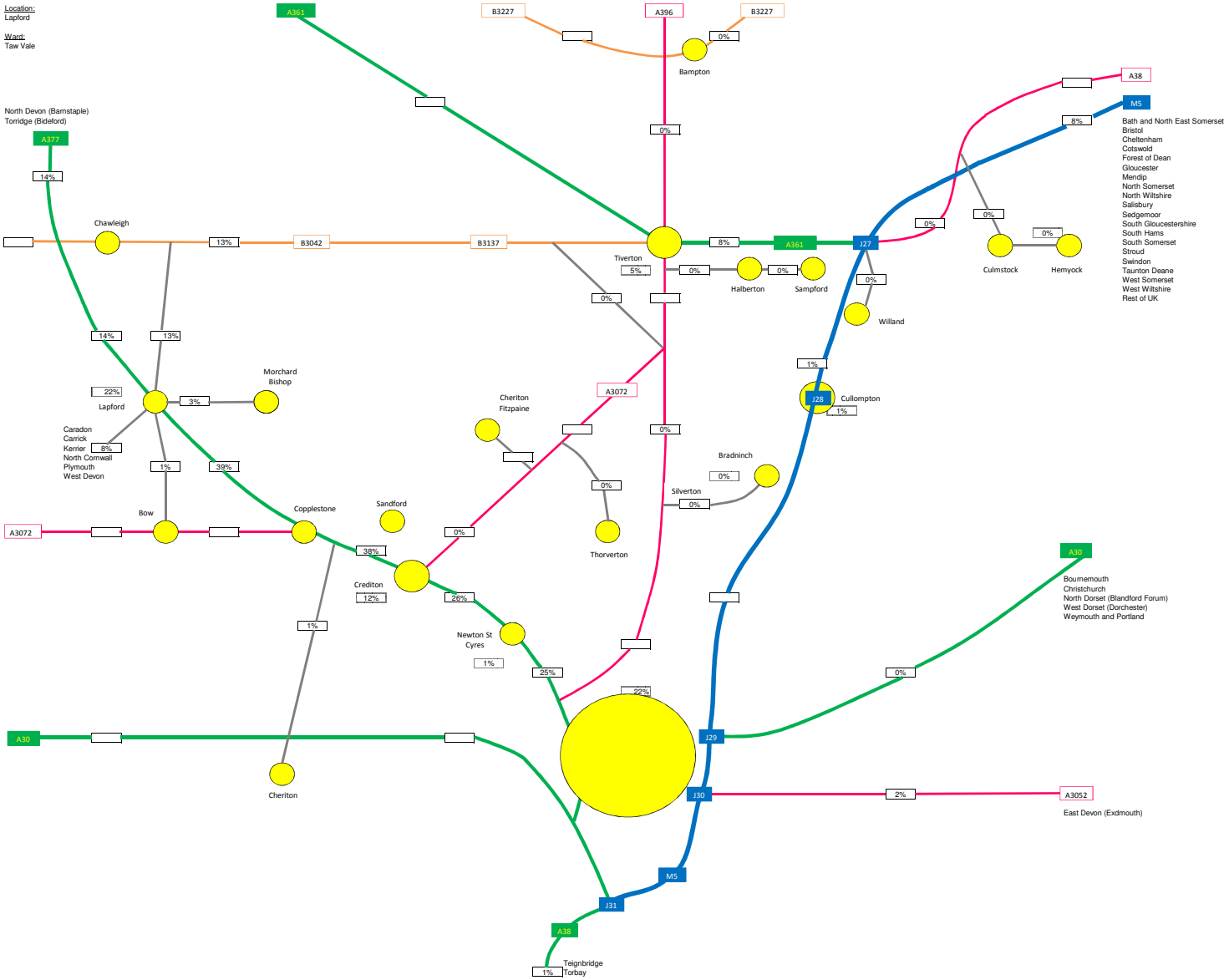
Ward:
Taw Vale



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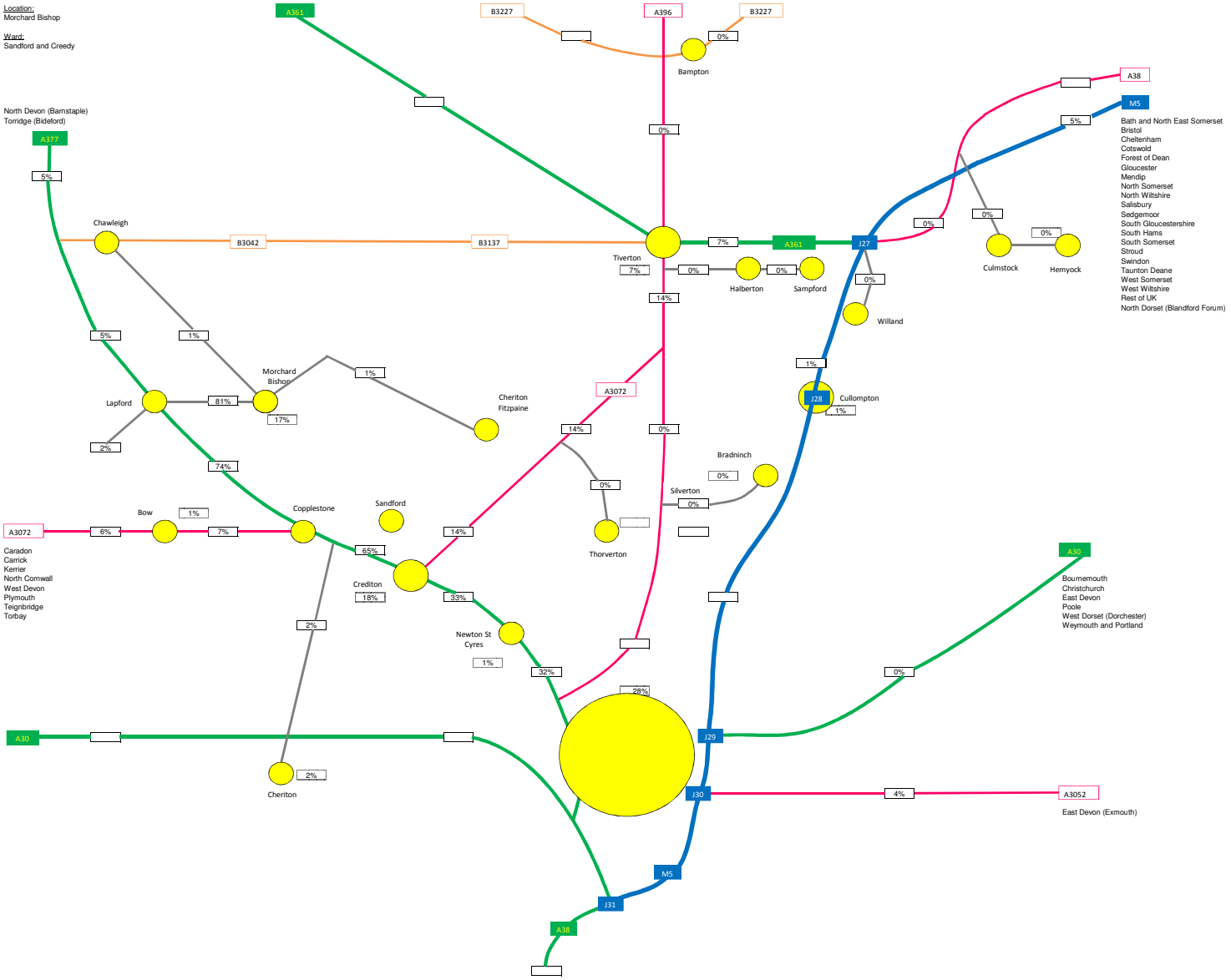
Ward:
Sandford and Creedy



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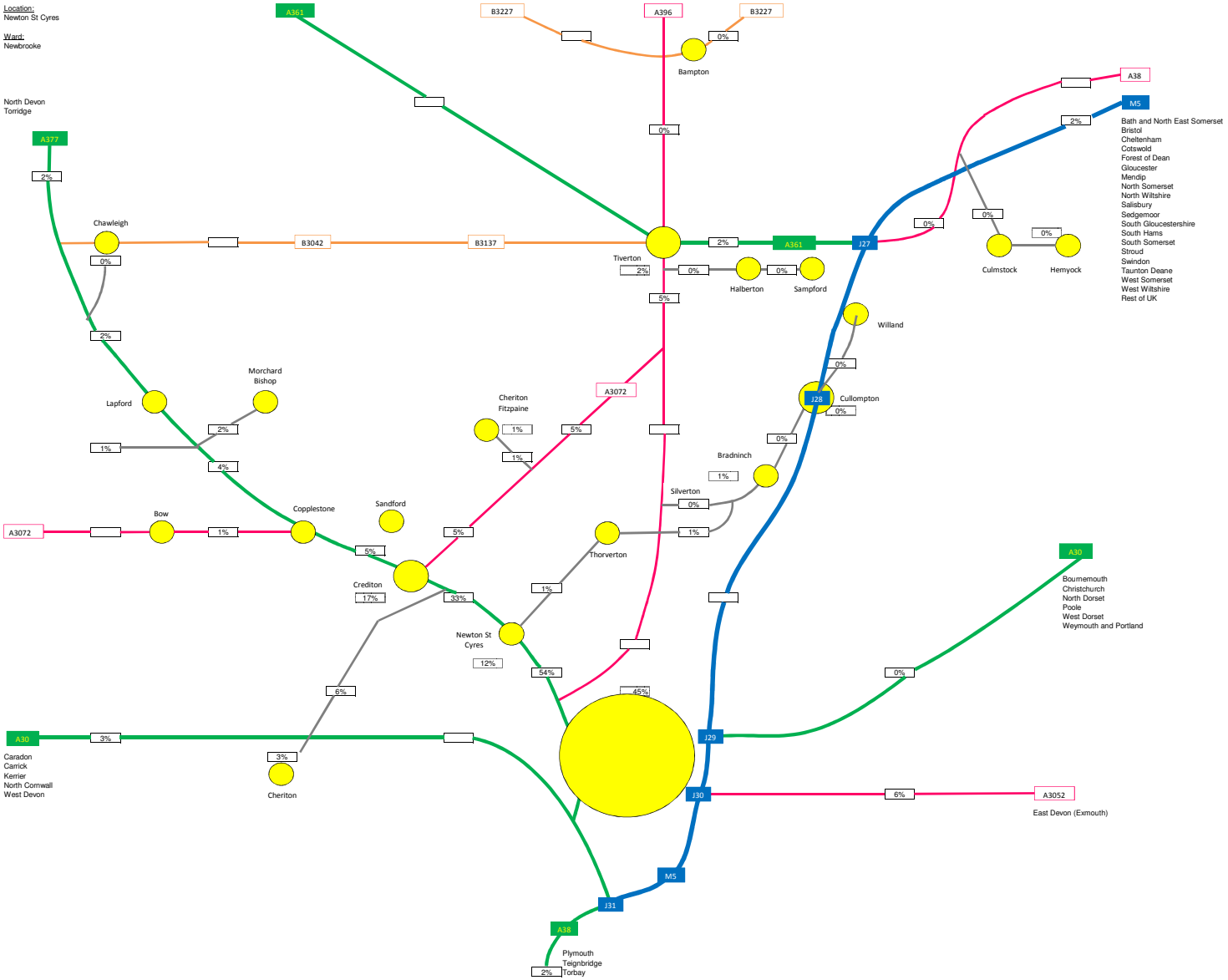
Ward:
Newbrooke



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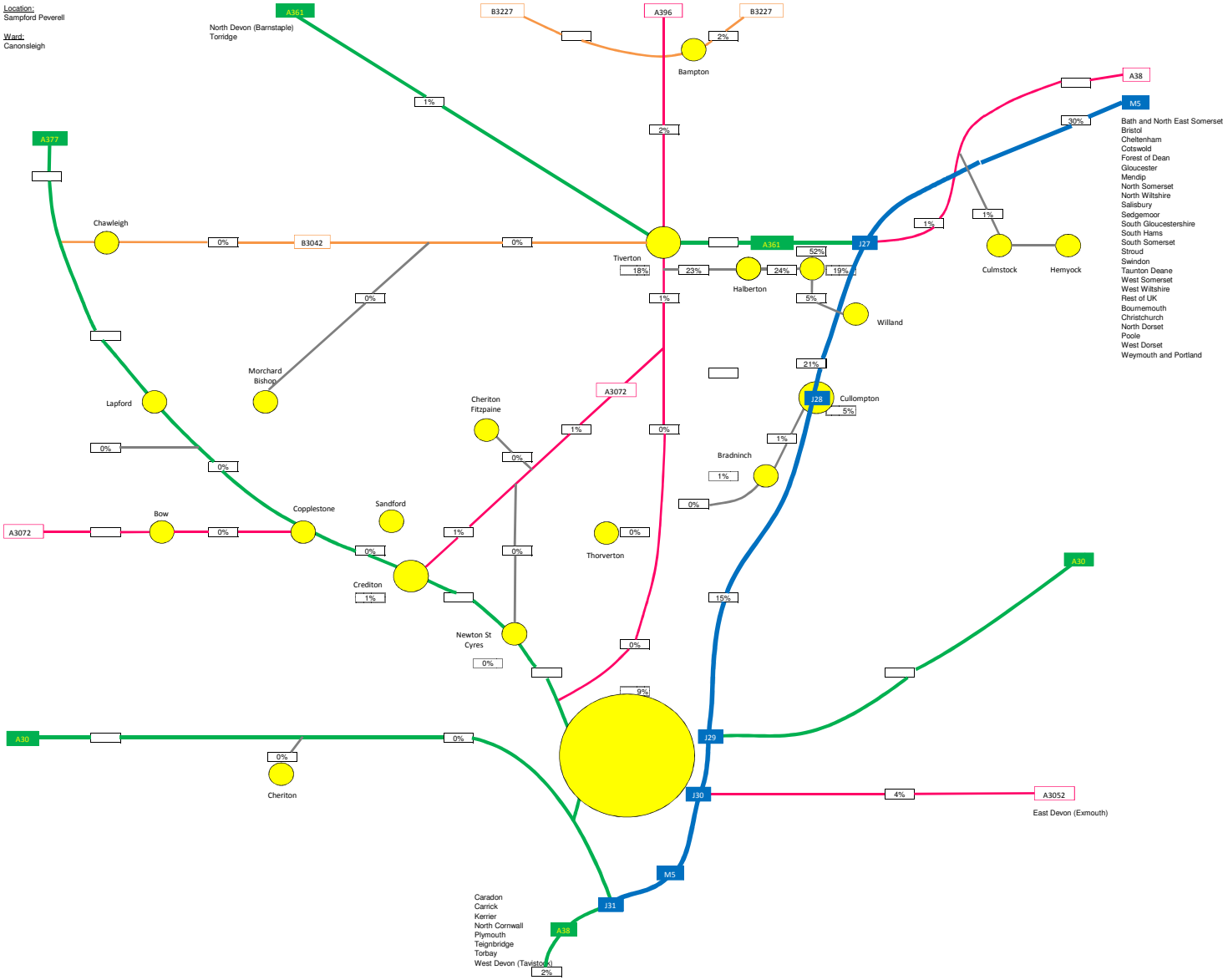
Sampford Peverell

Ward:
Canonsleigh



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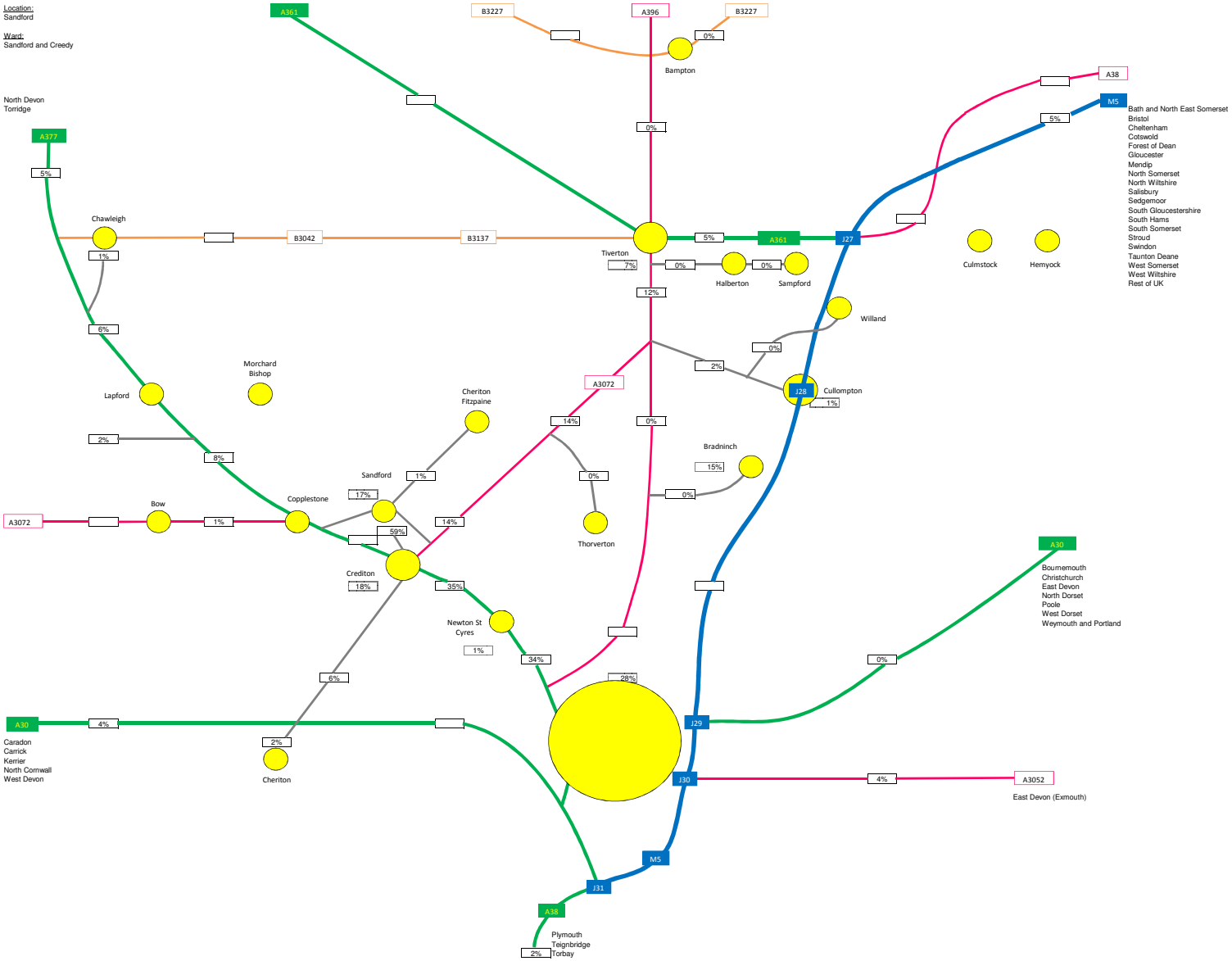

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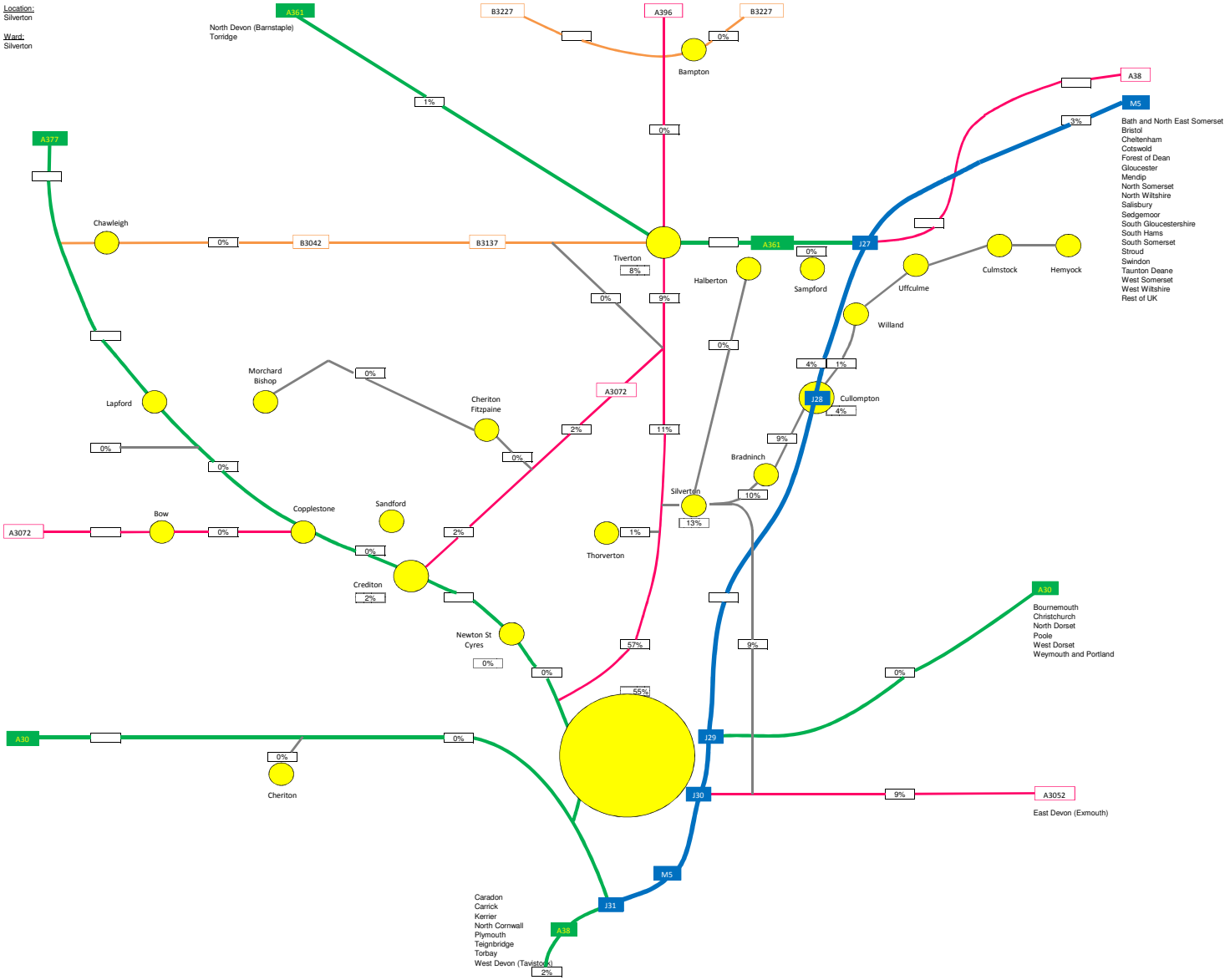
Silverton

Ward:
Silverton



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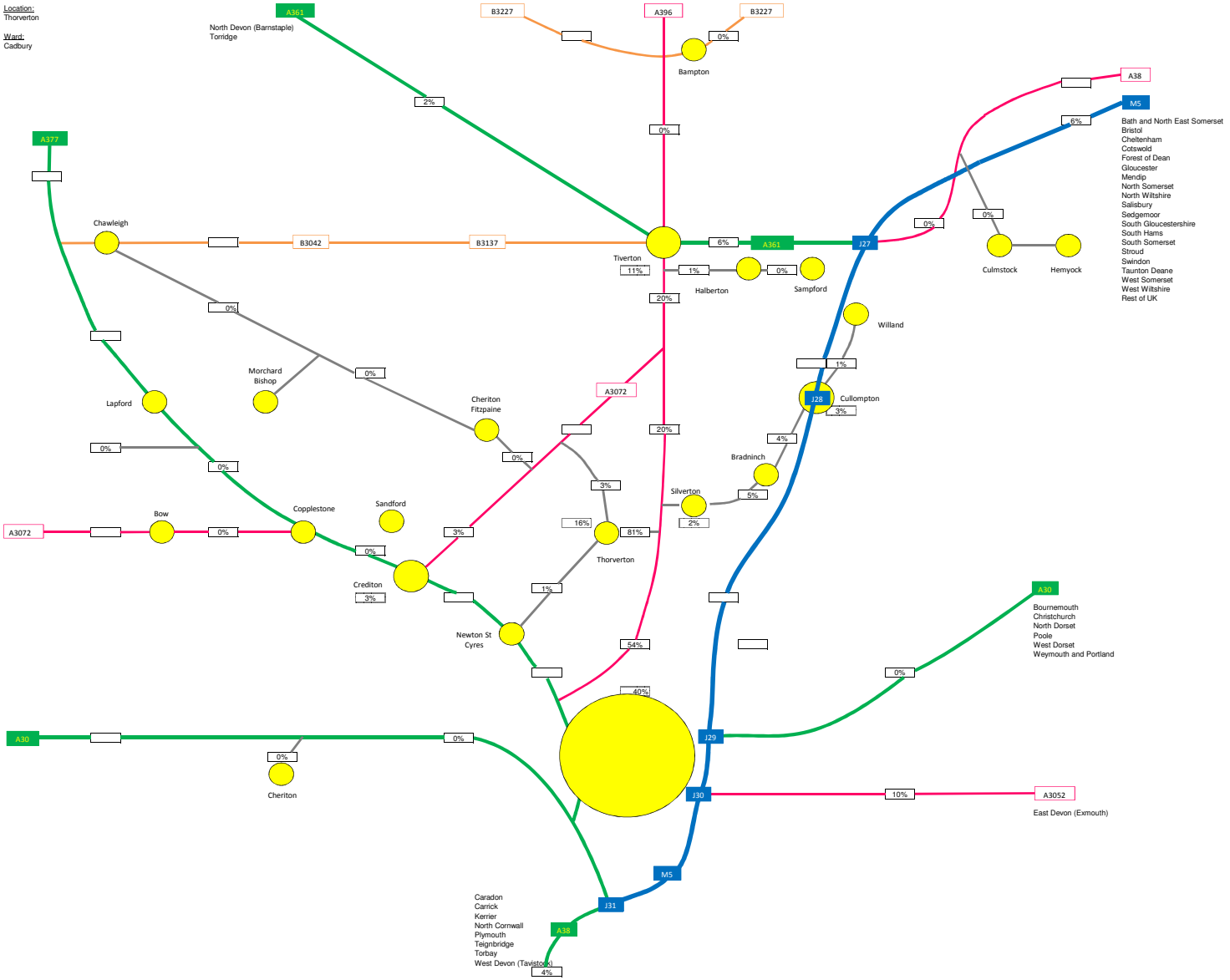
Location:
Thorverton

Ward:
Cadbury



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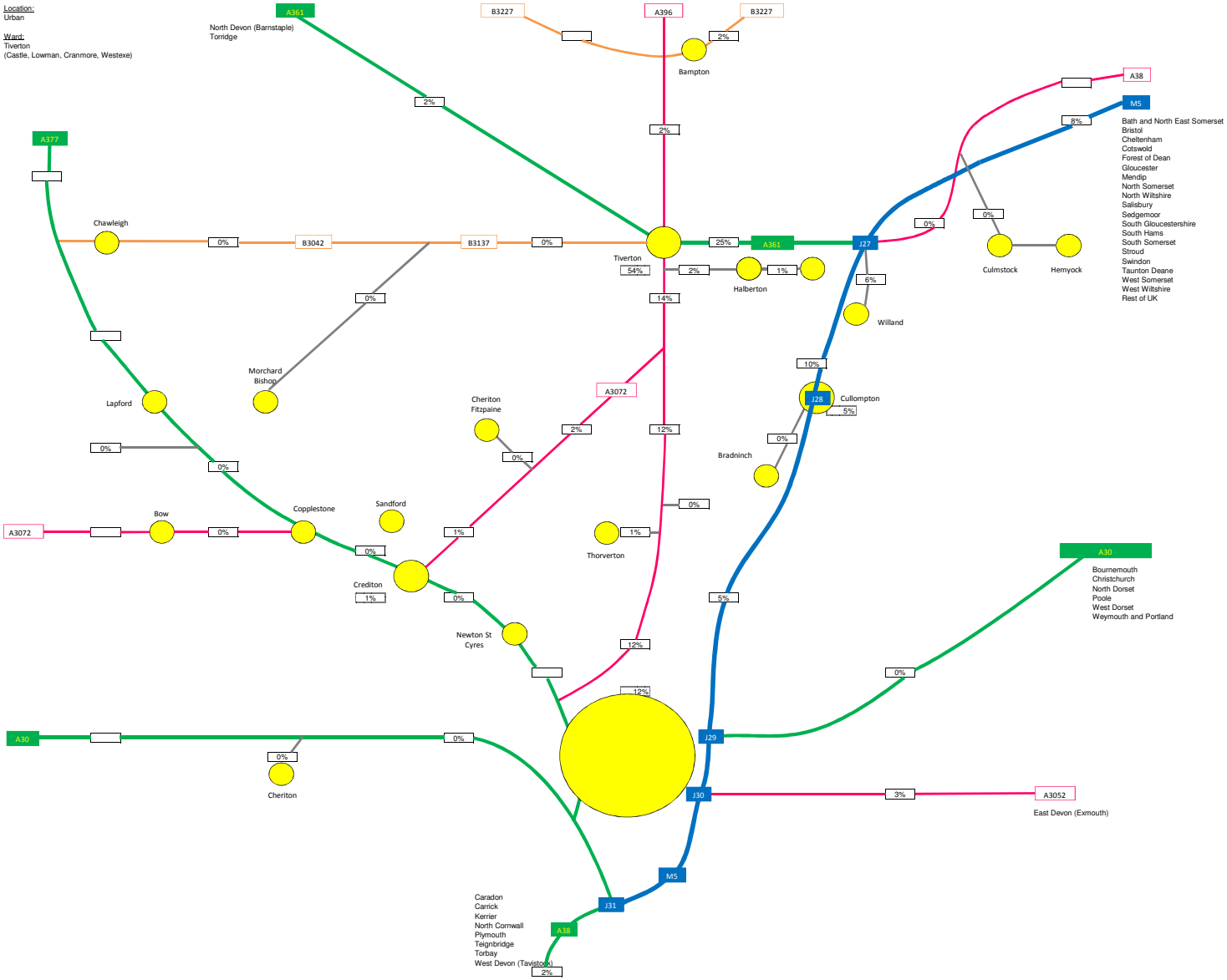
Location:
Urban

Ward:
Tiverton
(Castle, Lowman, Cranmore, Westexe)



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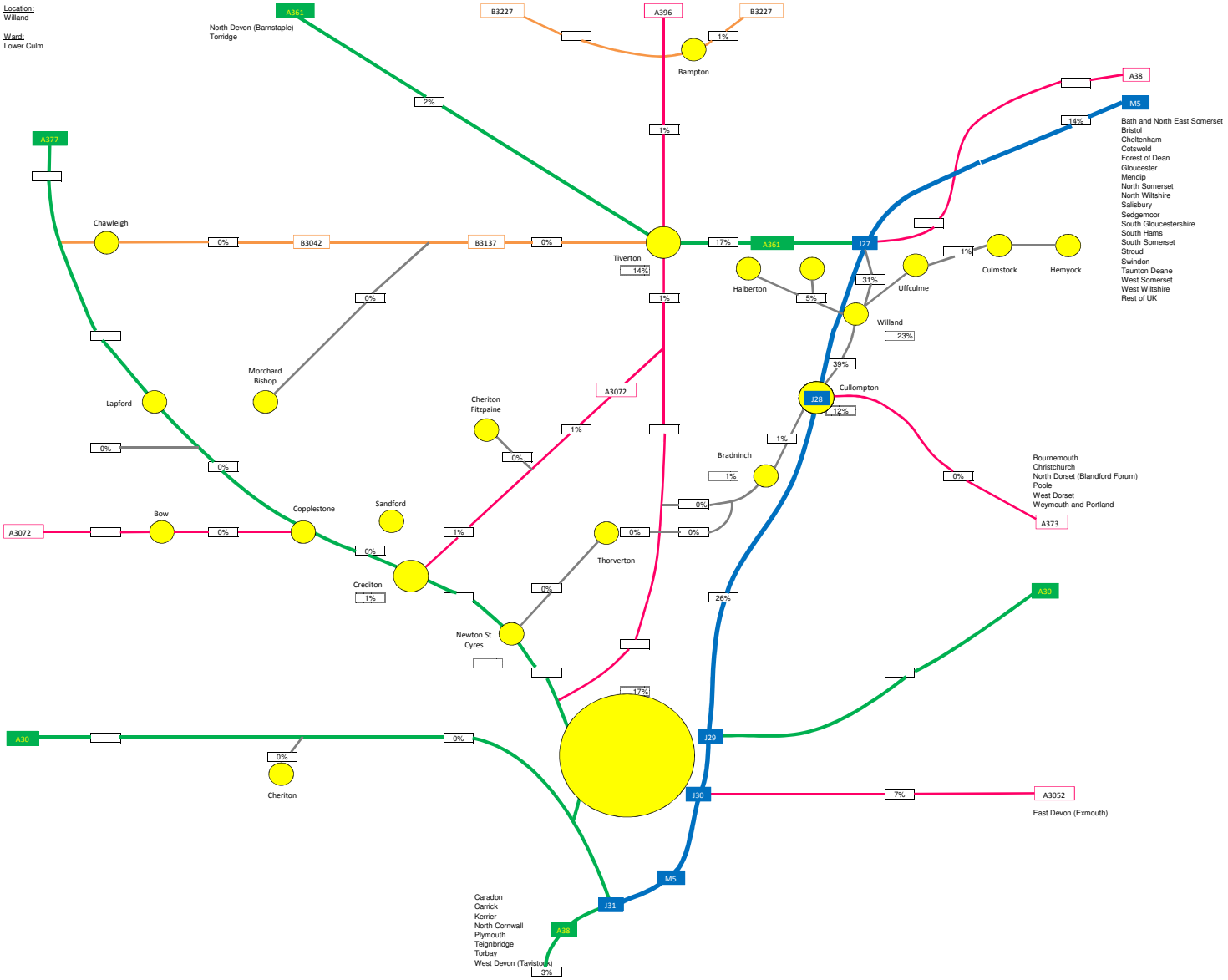
Location:
Willand

Ward:
Lower Culm



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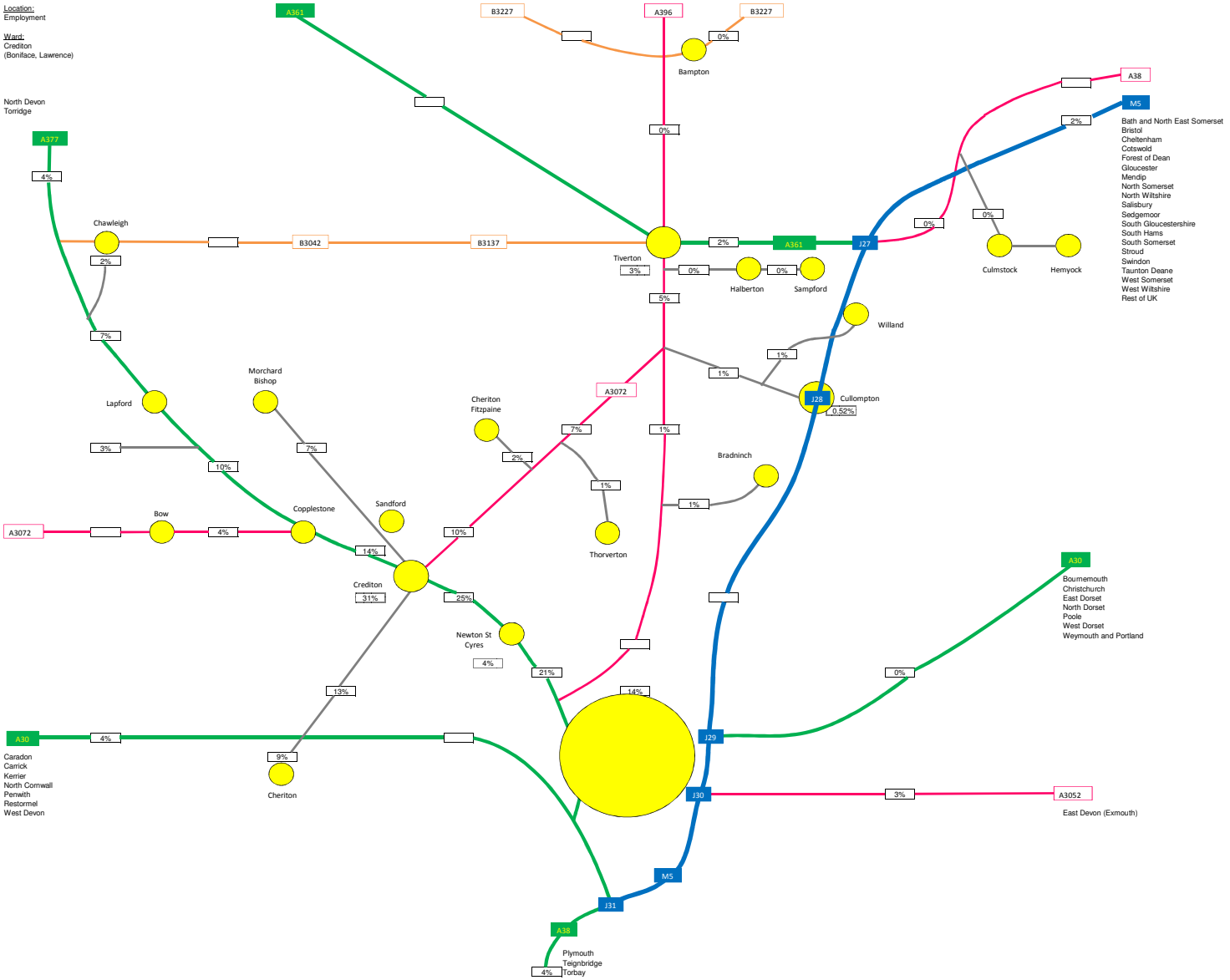
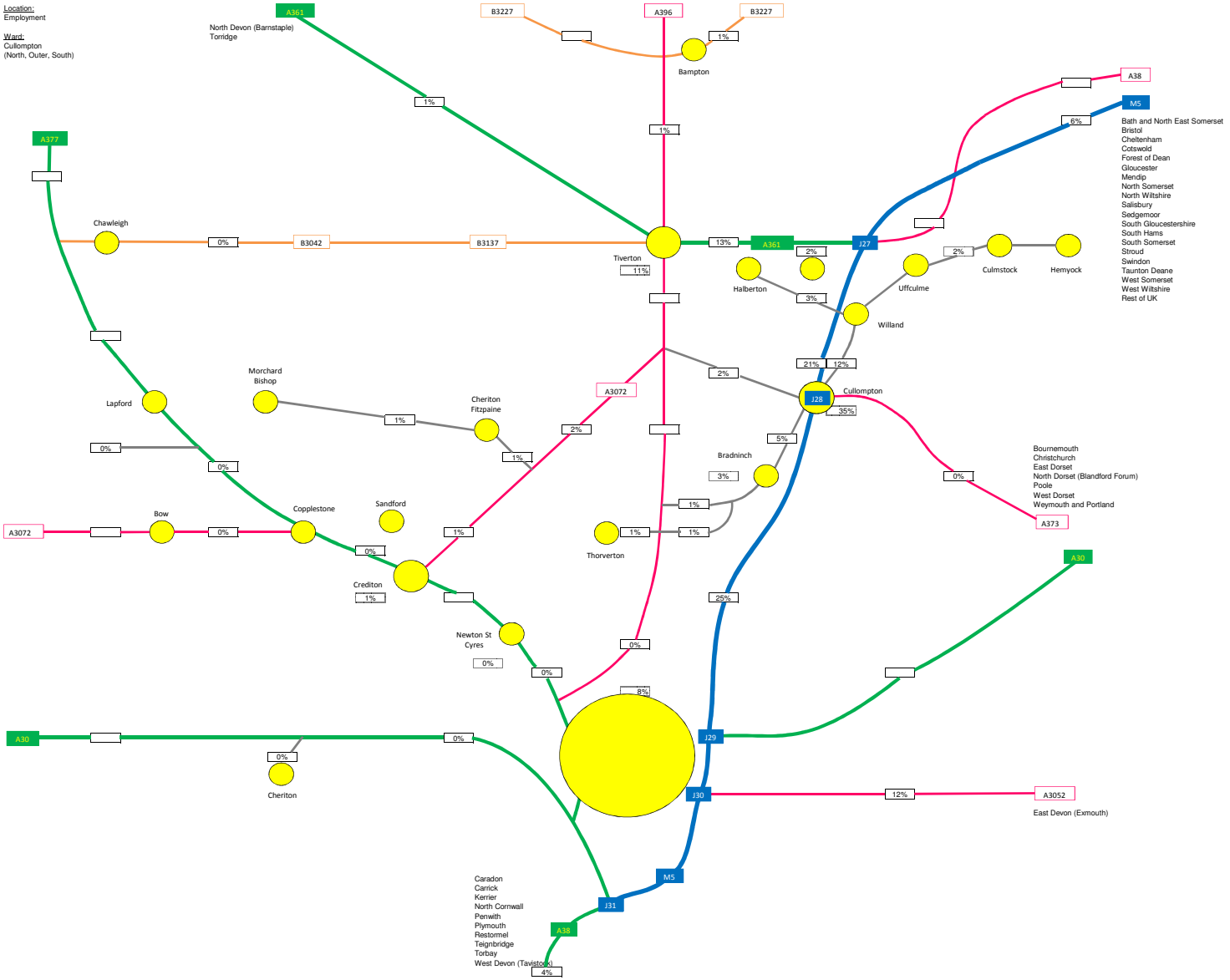
Job Title Mid Devon Renewables & Air Quality	Drg. Ref.		
Calculation	Made by TJB	Date 04/06/2014	Chd. MJD



ARUP	Job No. 235489	Sheet No.	Rev. A
	Member/Location		
Job Title Mid Devon Renewables & Air Quality	Drg. Ref.		
Calculation	Made by TJB	Date 04/06/2014	Chd. MJD

Location:
Employment

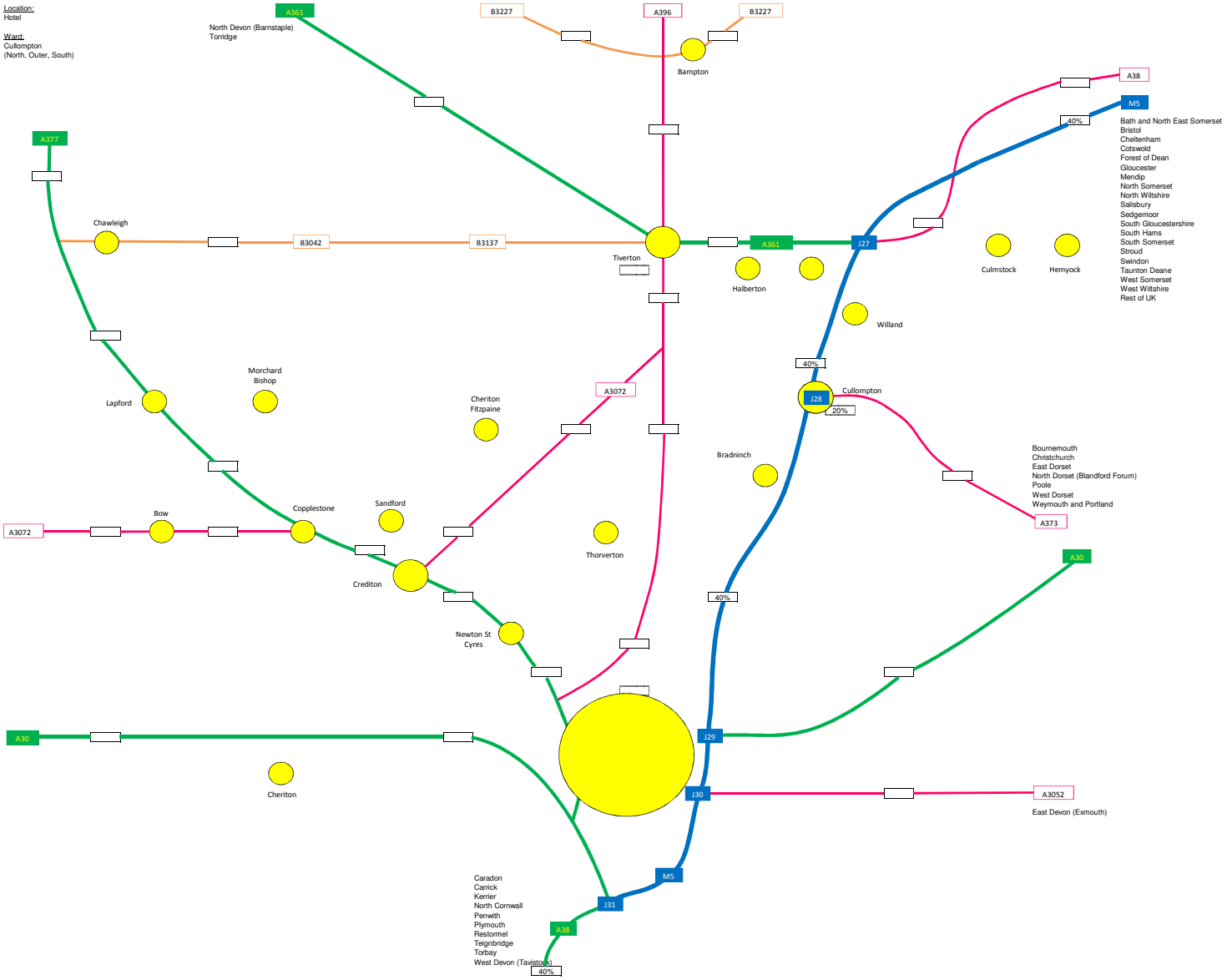
Ward:
Cullompton
(North, Outer, South)



ARUP	Job No. 235489	Sheet No.	Rev. A
	Member/Location		
Job Title Mid Devon Renewables & Air Quality	Drg. Ref.		
Calculation	Made by TJB	Date 04/06/2014	Chd. MJD

Location:
Hotel

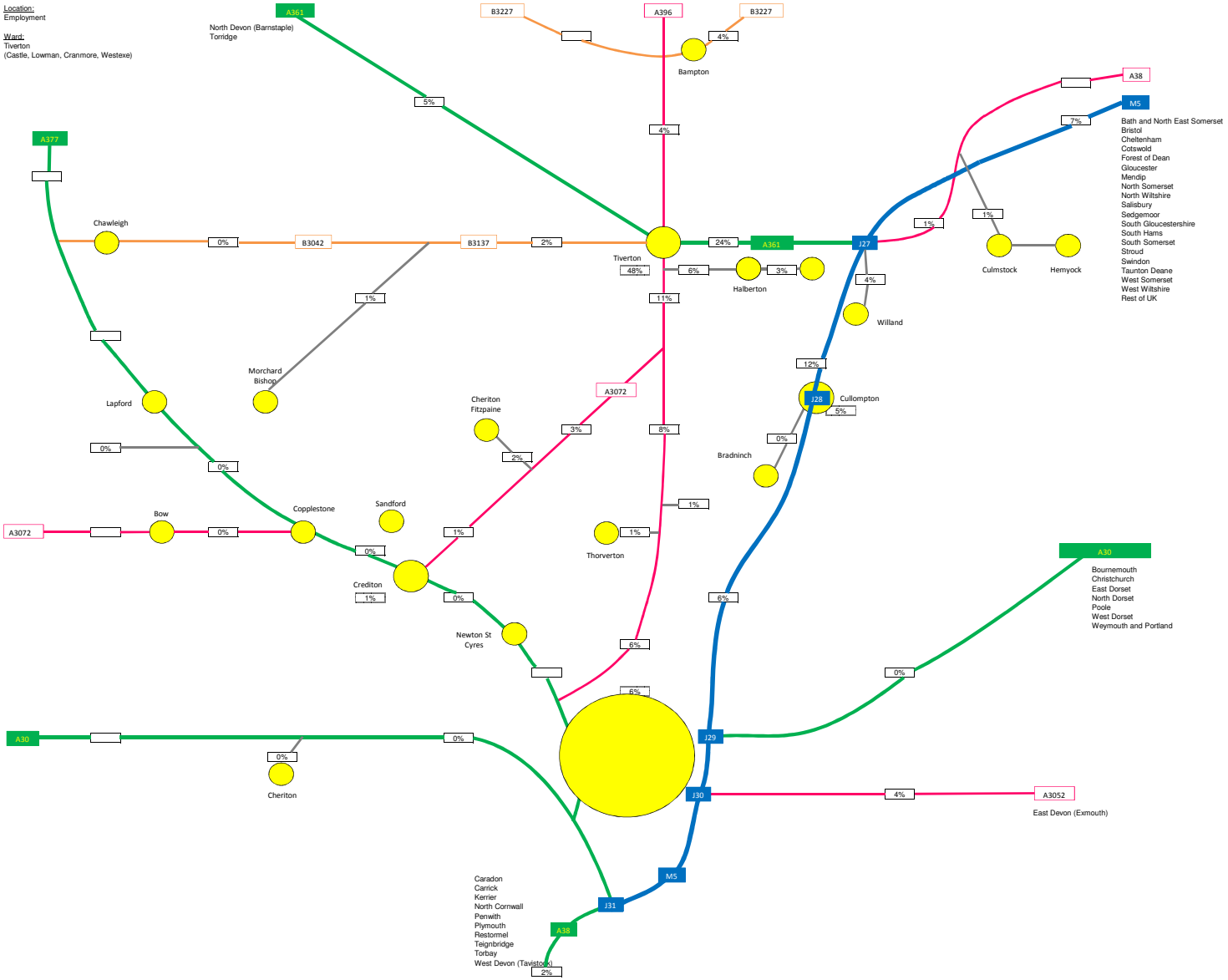
Ward:
Cullompton
(North, Outer, South)



ARUP	Job No. 235489	Sheet No.	Rev. A
	Member/Location		
Job Title Mid Devon Renewables & Air Quality	Drg. Ref.		
Calculation	Made by TJB	Date 04/06/2014	Chd. MJD

Location:
Employment

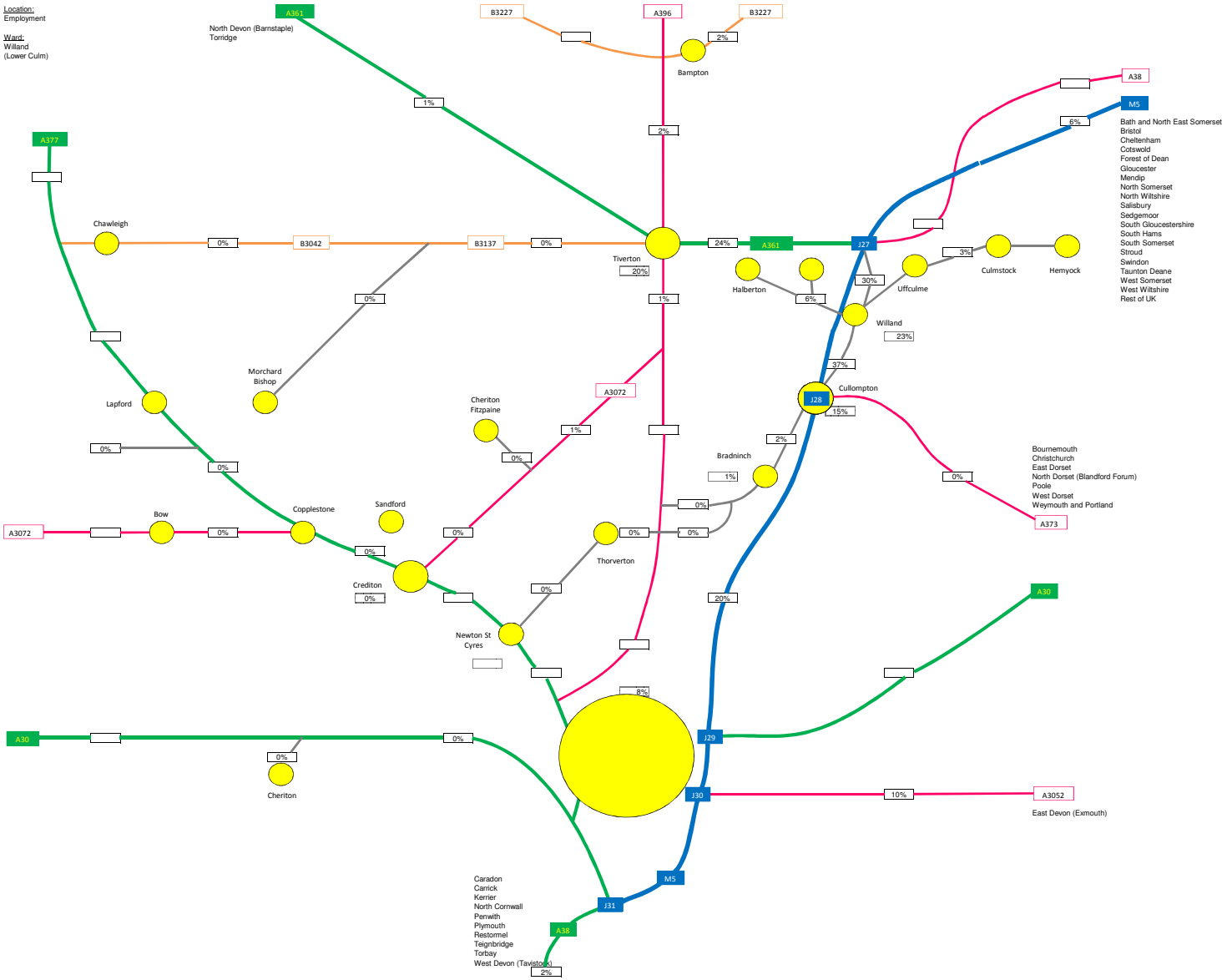
Ward:
Tiverton
(Castle, Lowman, Cranmore, Westexe)



ARUP	Job No. 235489	Sheet No.	Rev. A
	Member/Location		
Job Title Mid Devon Renewables & Air Quality	Drg. Ref.		
Calculation	Made by TJB	Date 04/06/2014	Chd. MJD

Location:
Employment

Ward:
Willand
(Lower Culm)



Appendix D

Trip Assignment

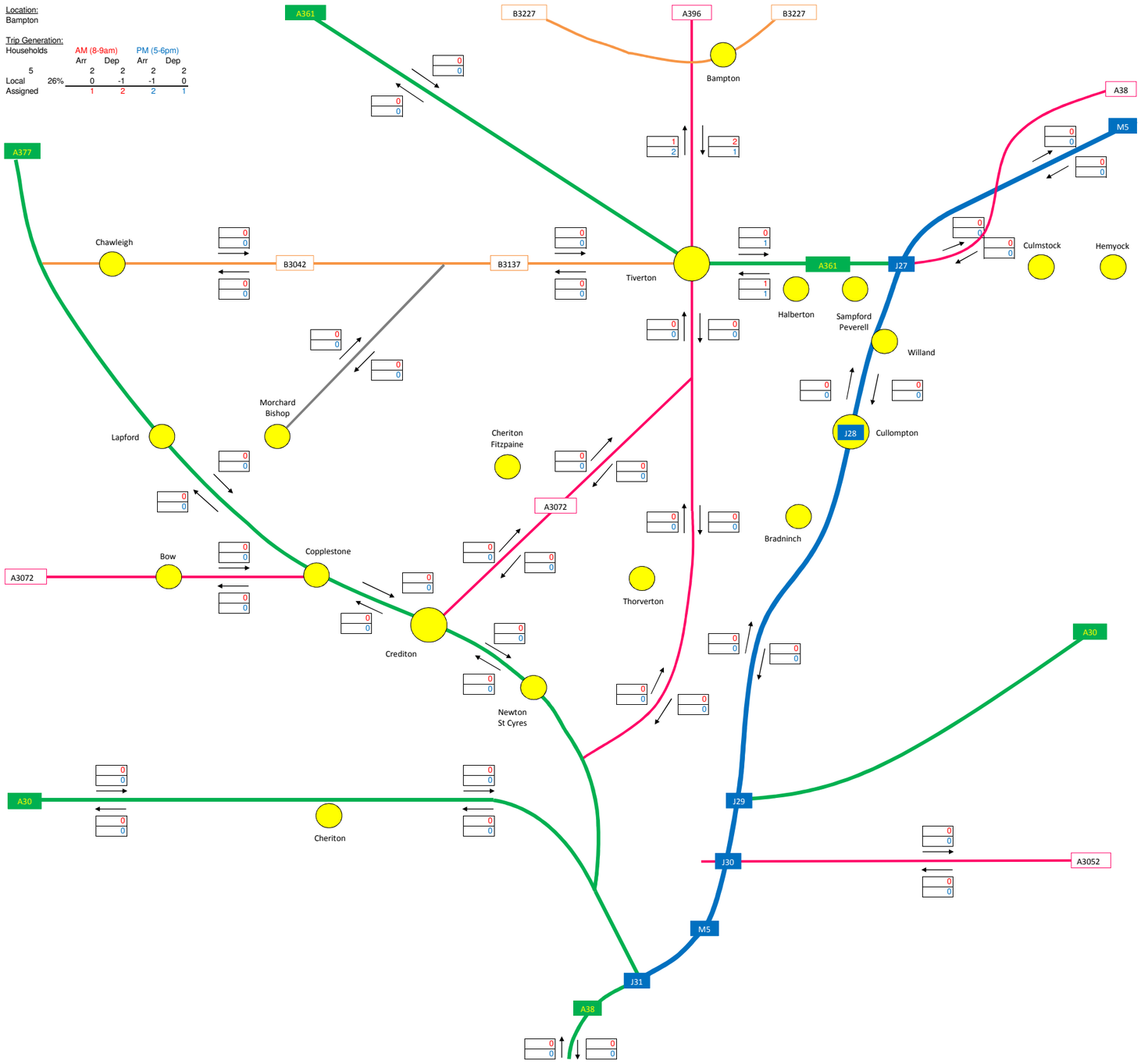
D1

ARUP	Job No. 235489	Sheet No.	Rev. B
	Member/Location		
Job Title Mid Devon Renewables & Air Quality	Drg. Ref.		
Calculation	Made by TJB	Date 04/06/2014	Chd. MJD

Location:
Bampton

Trip Generation:
Households

		AM (8-9am) Arr	AM (8-9am) Dep	PM (5-6pm) Arr	PM (5-6pm) Dep
5		2	2	2	2
Local	26%	0	-1	-1	0
Assigned		1	2	2	1

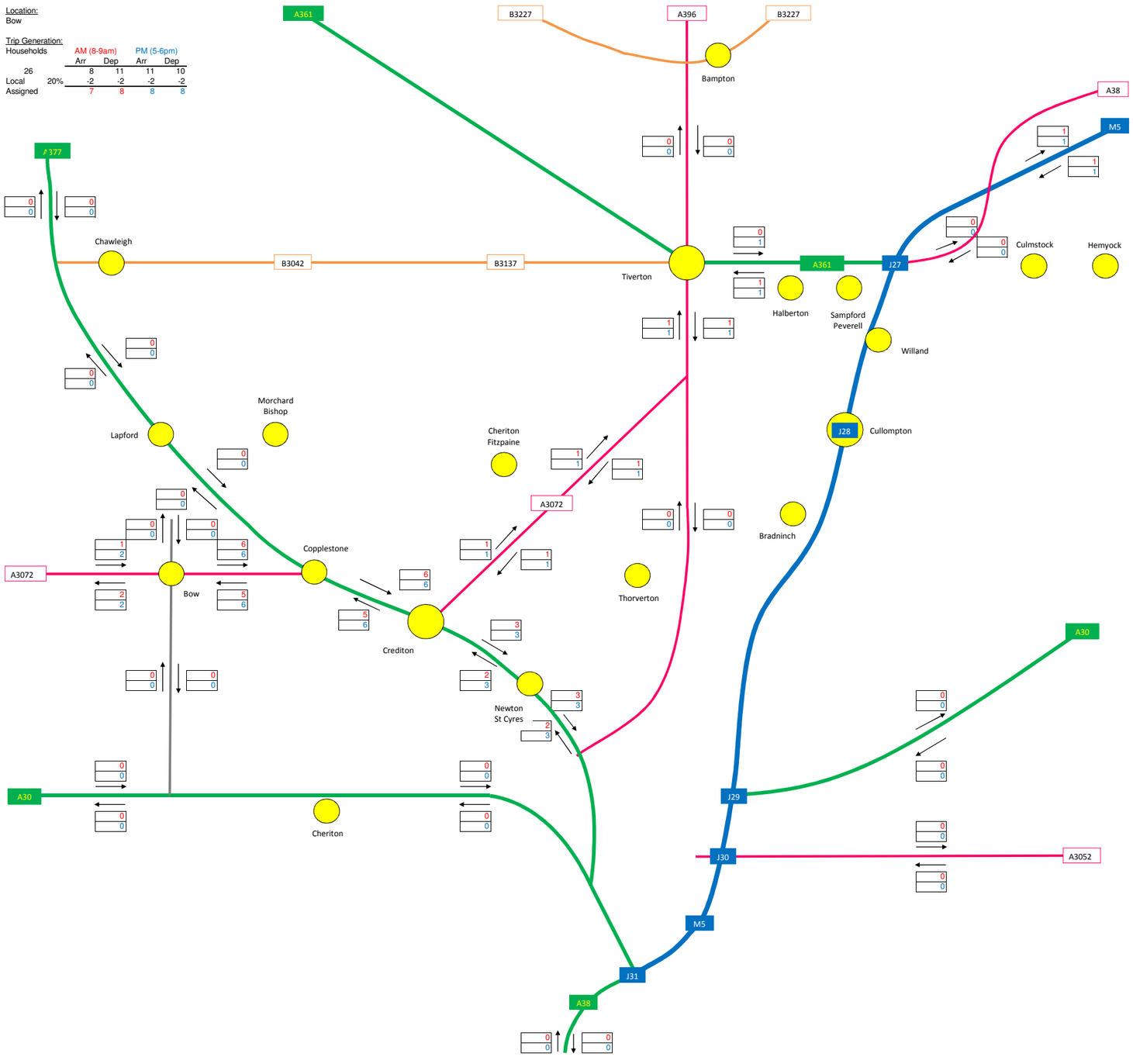


ARUP	Job No. 235489	Sheet No.	Rev. B
	Member/Location		
Job Title Mid Devon Renewables & Air Quality	Drg. Ref.		
Calculation	Made by TJB	Date 04/06/2014	Chd. MJD

Location:
Bow

Trip Generation:
Households

		AM (8-9am)		PM (5-6pm)	
		Arr	Dep	Arr	Dep
26		8	11	11	10
Local	20%	-2	-2	-2	-2
Assigned		7	8	8	8

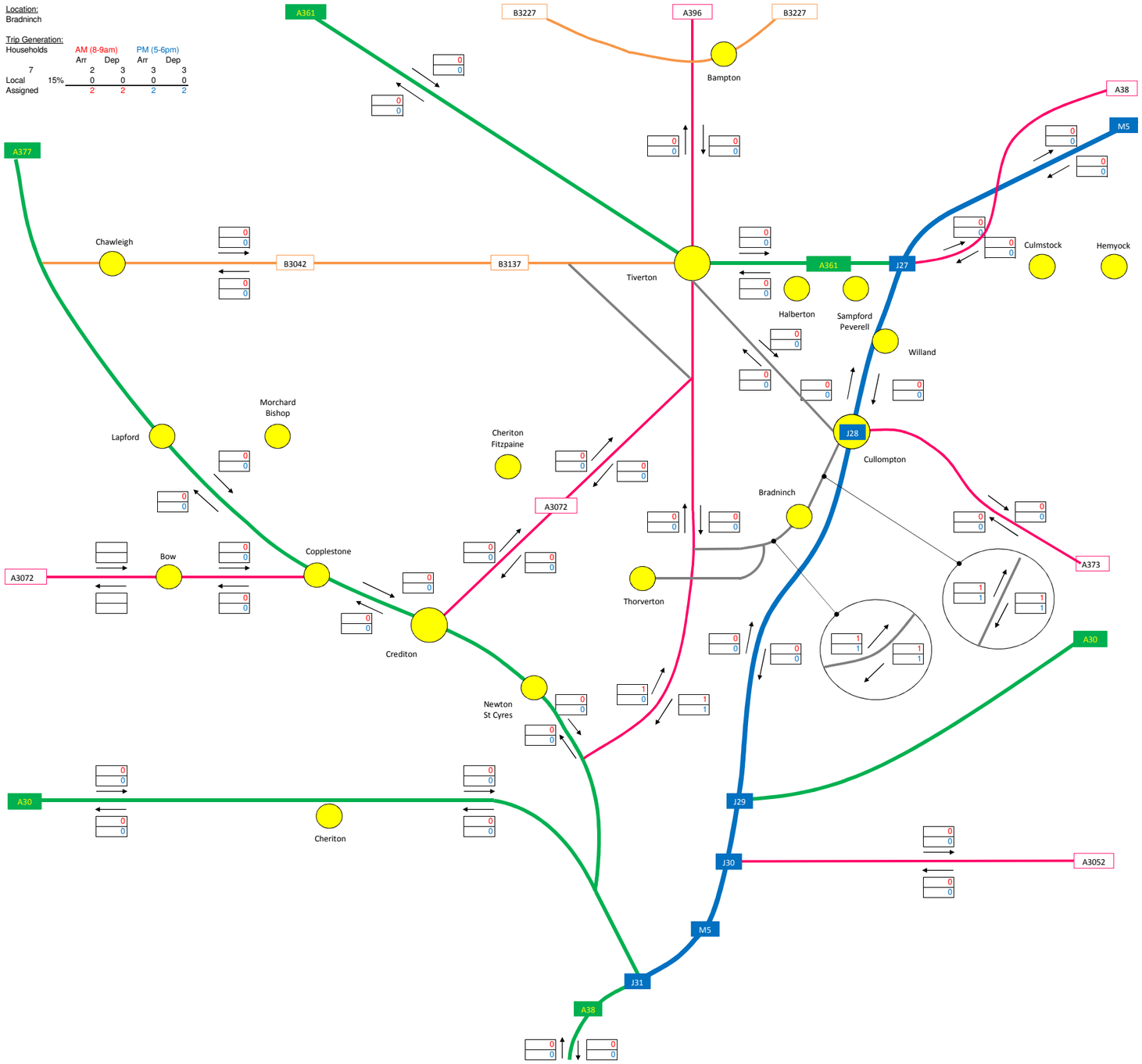


ARUP	Job No. 235489	Sheet No.	Rev. B
	Member/Location		
Job Title Mid Devon Renewables & Air Quality	Drg. Ref.		
Calculation	Made by TJB	Date 04/06/2014	Chd. MJD

Location:
Bradninch

Trip Generation:
Households

		AM (8-9am) Arr	AM (8-9am) Dep	PM (5-6pm) Arr	PM (5-6pm) Dep
7		2	3	3	3
Local	15%	0	0	0	0
Assigned		2	2	2	2

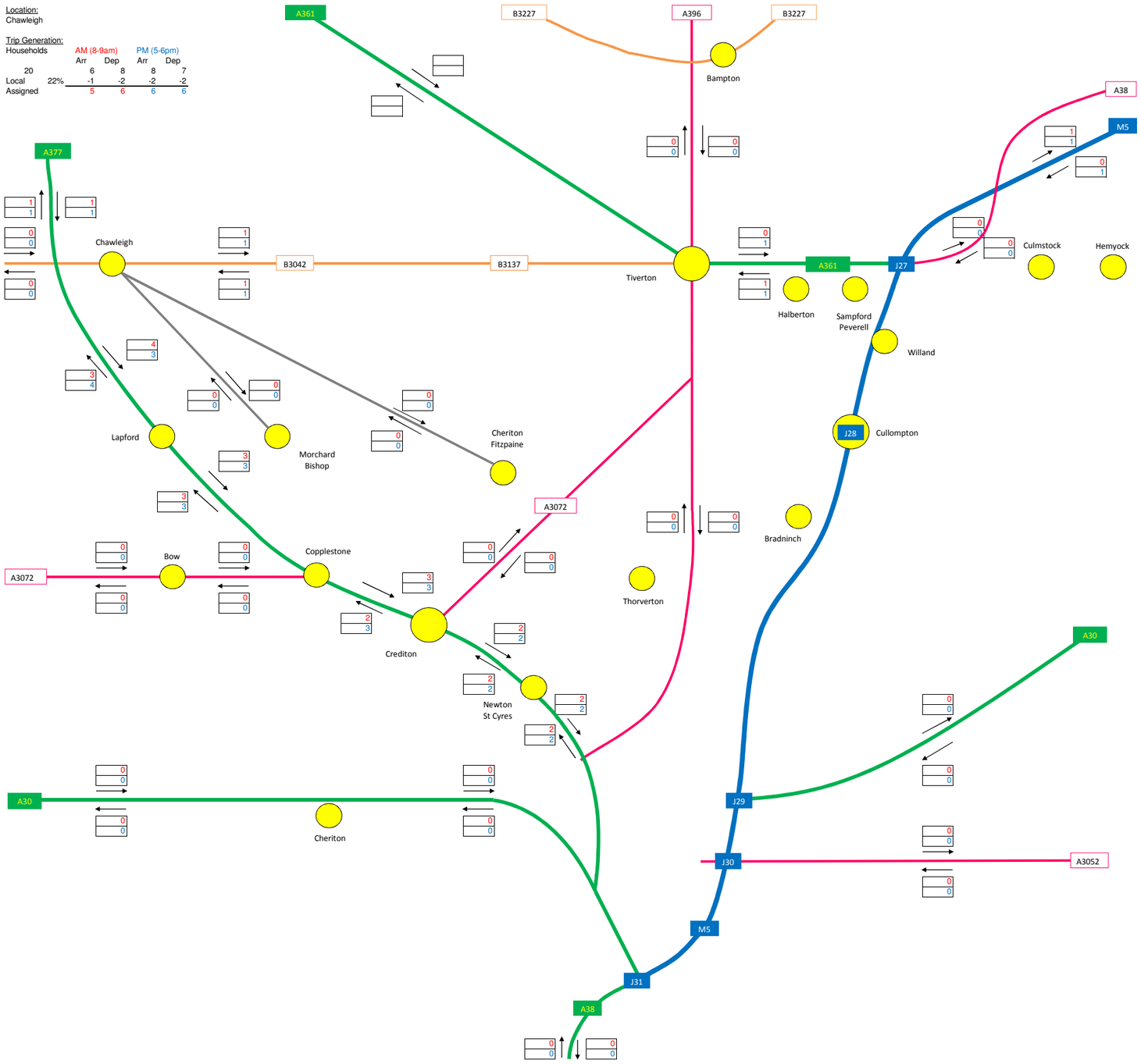


ARUP	Job No.	Sheet No.	Rev.
	235489		B
	Member/Location		
Job Title: Mid Devon Renewables & Air Quality	Drg. Ref.		
Calculation:	Made by: TJB	Date: 04/06/2014	Chd.: MJD

Location:
Chawleigh

Trip Generation:
Households

		AM (8-9am) Arr	AM (8-9am) Dep	PM (5-6pm) Arr	PM (5-6pm) Dep
20		6	8	8	7
Local	22%	-1	-2	-2	-2
Assigned		5	6	6	6

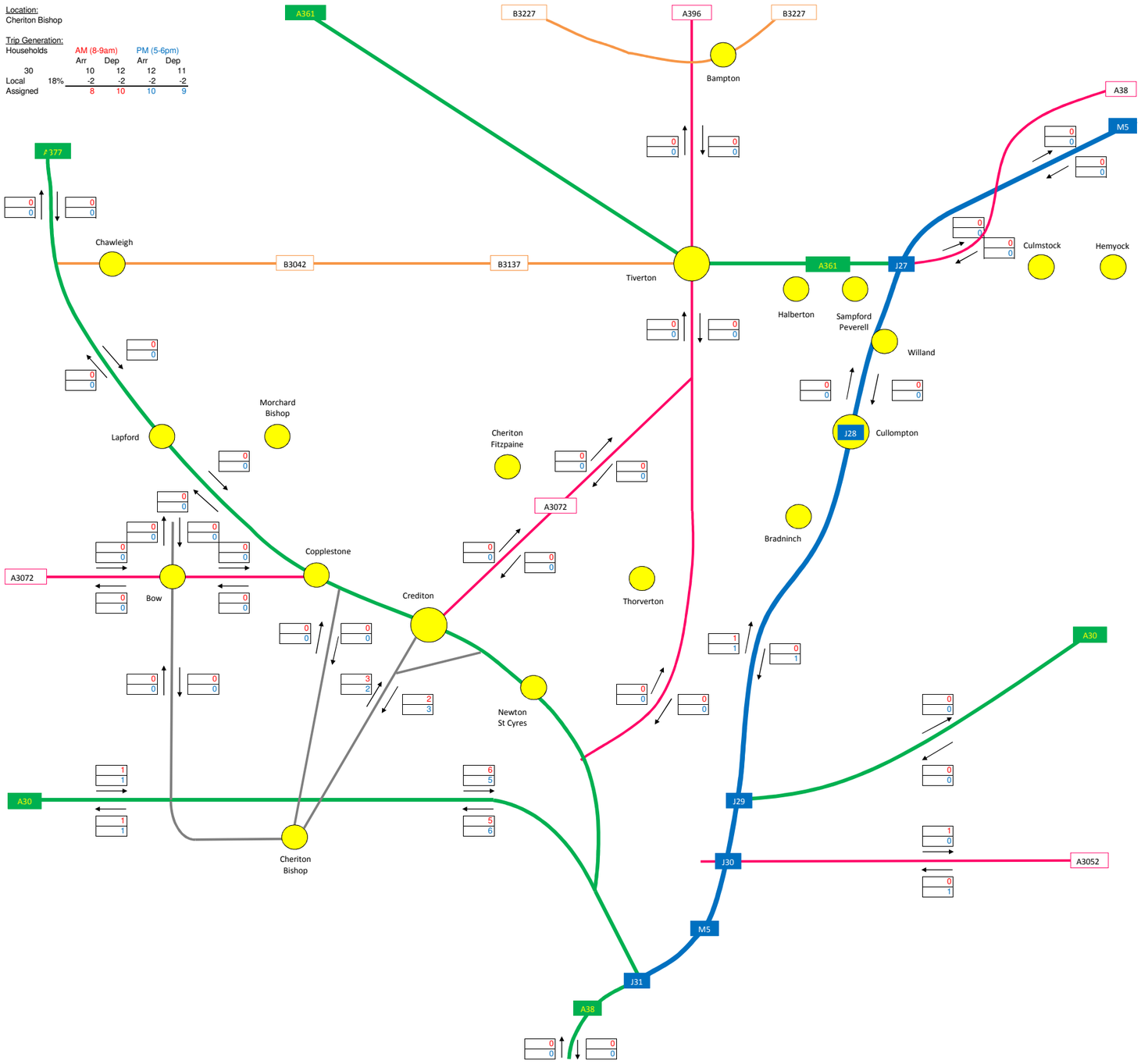


ARUP	Job No. 235489	Sheet No.	Rev. B
	Member/Location		
Job Title Mid Devon Renewables & Air Quality	Drg. Ref.		
Calculation	Made by TJB	Date 04/06/2014	Chd. MJD

Location:
Cheriton Bishop

Trip Generation:
Households

		AM (8-9am)		PM (5-6pm)	
		Arr	Dep	Arr	Dep
30		10	12	12	11
Local	18%	-2	-2	-2	-2
Assigned		8	10	10	9

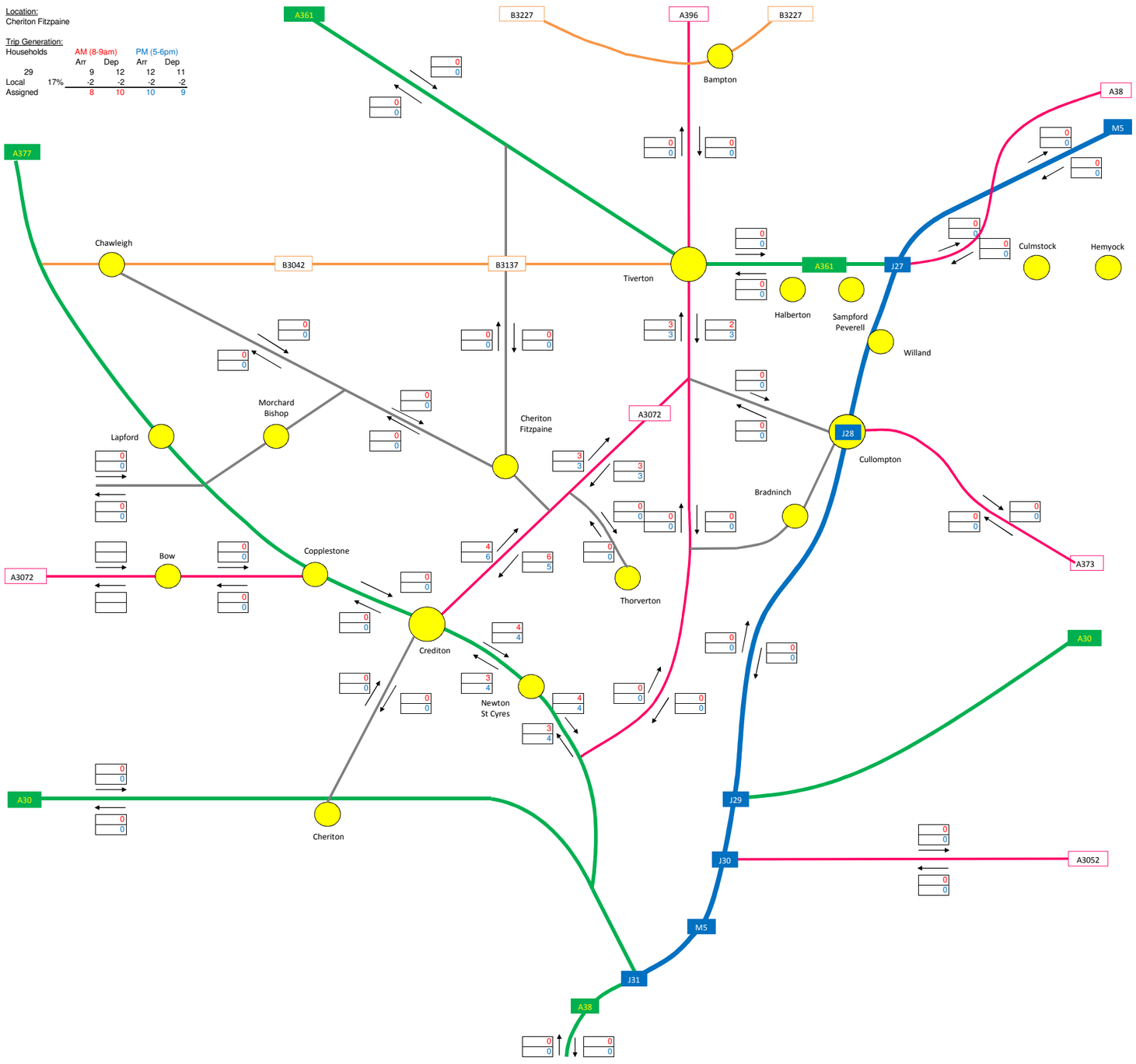


ARUP	Job No.	Sheet No.	Rev.
	235489		B
	Member/Location		
Job Title: Mid Devon Renewables & Air Quality	Drg. Ref.		
Calculation	Made by: TJB	Date: 04/06/2014	Chd.: MJD

Location:
Cheriton Fitzpaine

Trip Generation:

Households		AM (8-9am) Arr	AM (8-9am) Dep	PM (5-6pm) Arr	PM (5-6pm) Dep
29		9	12	12	11
Local	17%	-2	-2	-2	-2
Assigned		8	10	10	9

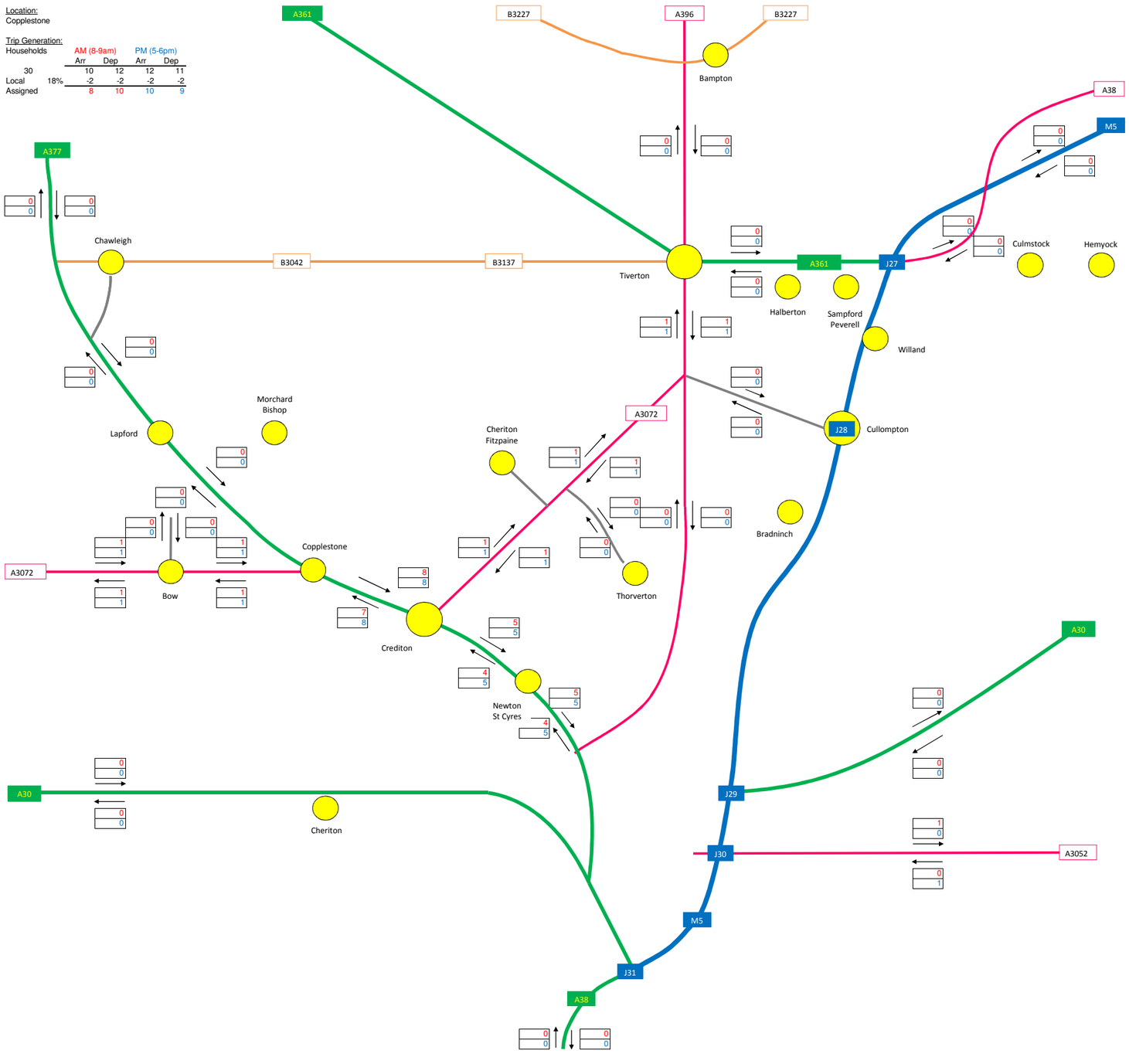


ARUP	Job No.	Sheet No.	Rev.
	235489		B
	Member/Location		
Job Title: Mid Devon Renewables & Air Quality	Drg. Ref.		
Calculation	Made by: TJB	Date: 04/06/2014	Chd.: MJD

Location:
Copplestone

Trip Generation:
Households

		AM (8-9am)		PM (5-6pm)	
		Arr	Dep	Arr	Dep
30		10	12	12	11
Local	18%	-2	-2	-2	-2
Assigned		8	10	10	9

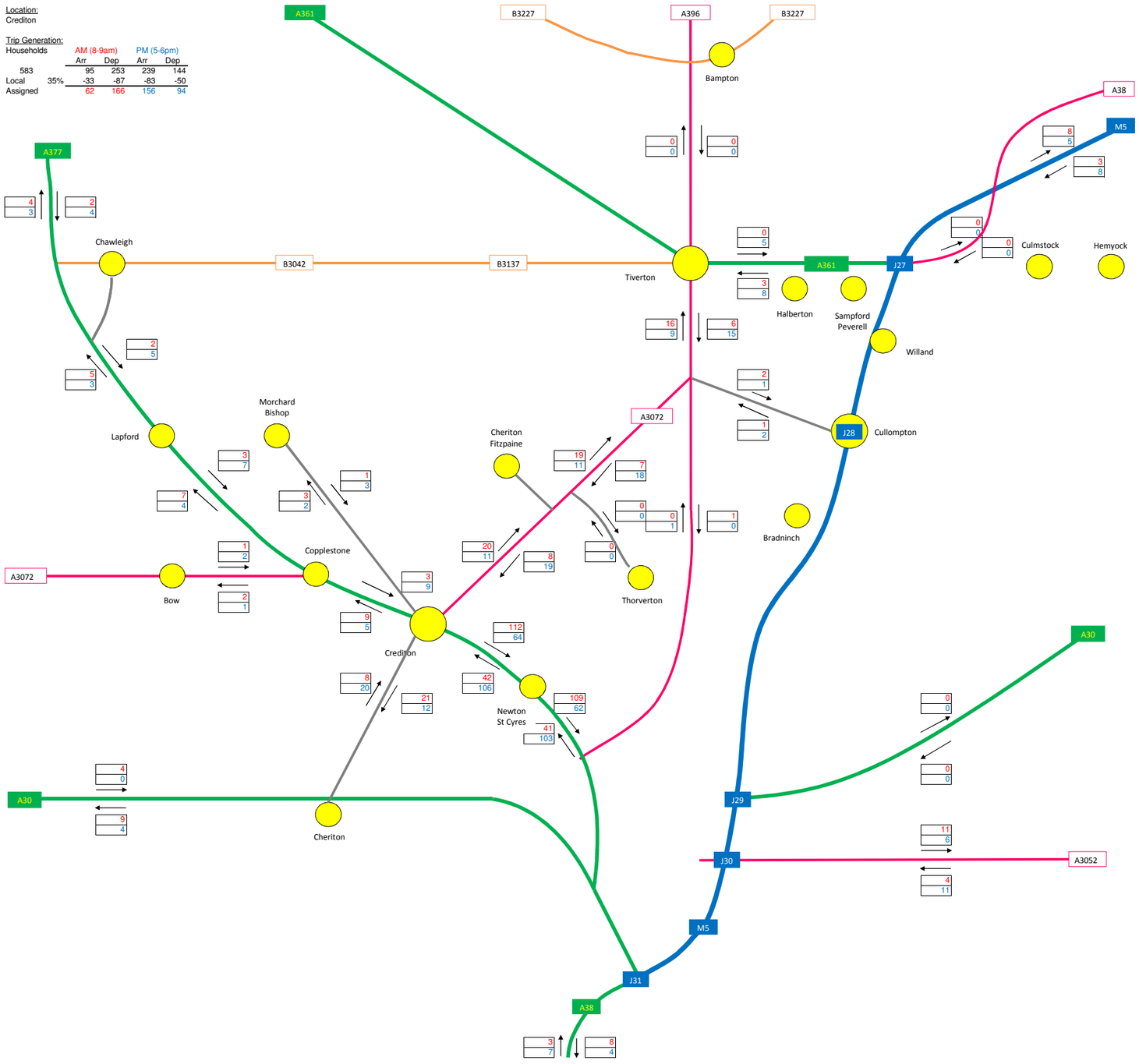


ARUP	Job No.	Sheet No.	Rev.
	235489		B
	Member/Location		
Job Title: Mid Devon Renewables & Air Quality	Drg. Ref.		
Calculation	Made by: TJB	Date: 04/06/2014	Chd.: MJD

Location:
Crediton

Trip Generation:

Households		AM (8-9am) Arr	AM (8-9am) Dep	PM (5-6pm) Arr	PM (5-6pm) Dep
583		95	253	239	144
Local	35%	-33	-87	-83	-50
Assigned		62	166	156	94

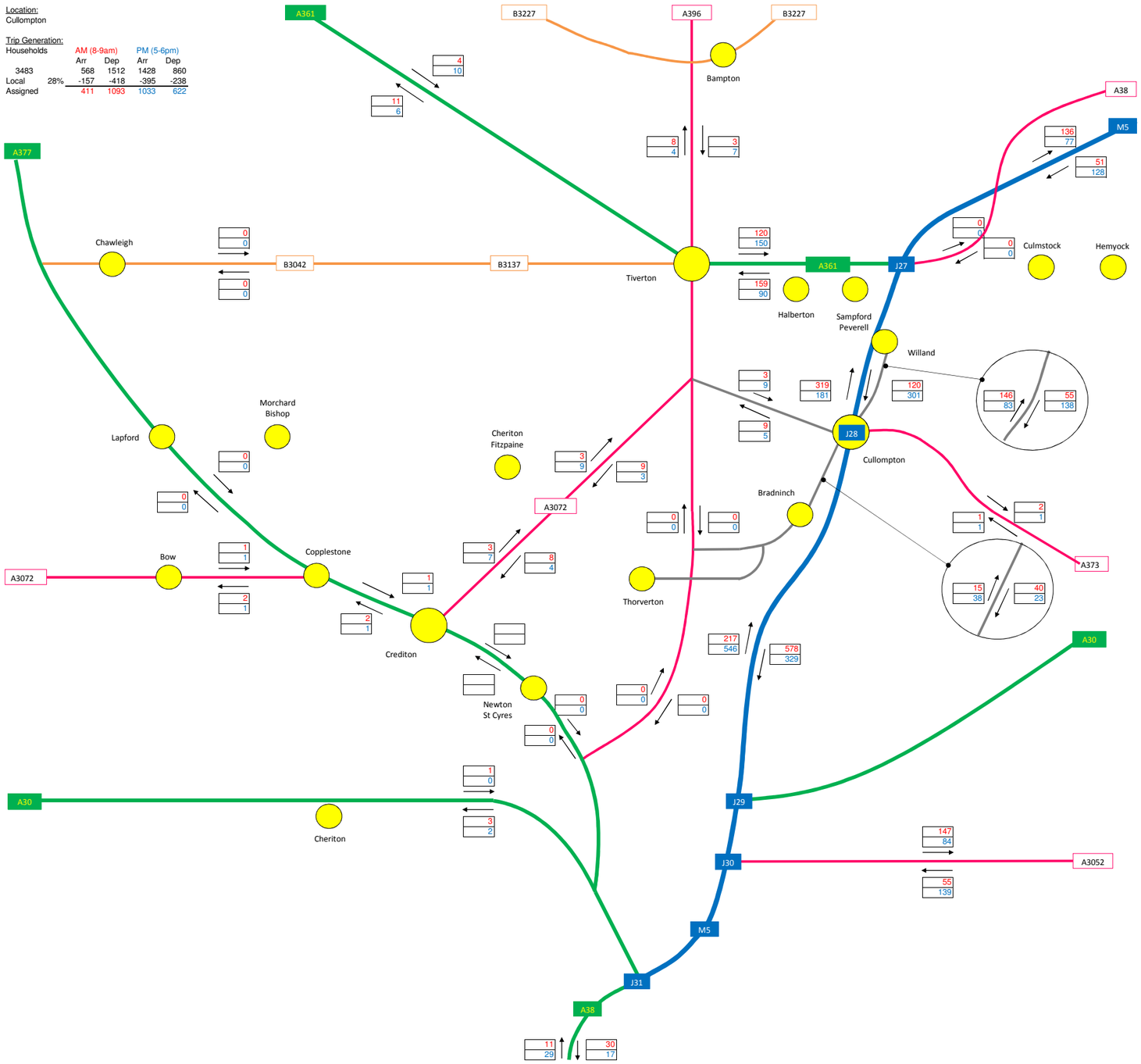


ARUP	Job No. 235489	Sheet No.	Rev. B
	Member/Location		
Job Title Mid Devon Renewables & Air Quality	Drg. Ref.		
Calculation	Made by TJB	Date 04/06/2014	Chd. MJD

Location:
Cullompton

Trip Generation:

Households		AM (8-9am) Arr	AM (8-9am) Dep	PM (5-6pm) Arr	PM (5-6pm) Dep
3483		568	1512	1428	860
Local	28%	-157	-418	-395	-238
Assigned		411	1093	1033	622

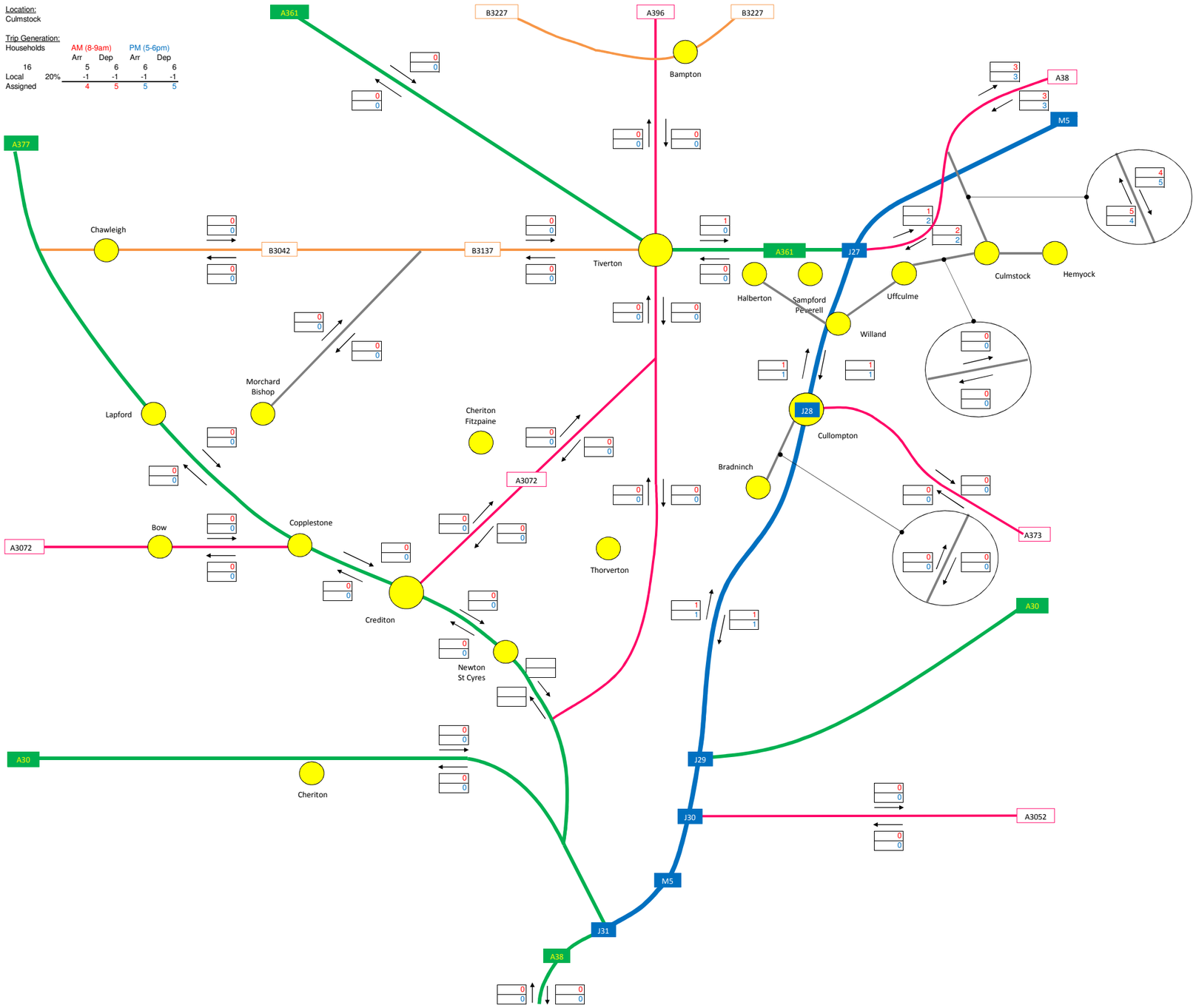


ARUP	Job No. 235489	Sheet No.	Rev. B
	Member/Location		
Job Title Mid Devon Renewables & Air Quality	Drg. Ref.		
Calculation	Made by TJB	Date 04/06/2014	Chd. MJD

Location:
Culmstock

Trip Generation:
Households

		AM (8-9am) Arr	AM (8-9am) Dep	PM (5-6pm) Arr	PM (5-6pm) Dep
16		5	6	6	6
Local	20%	-1	-1	-1	-1
Assigned		4	5	5	5

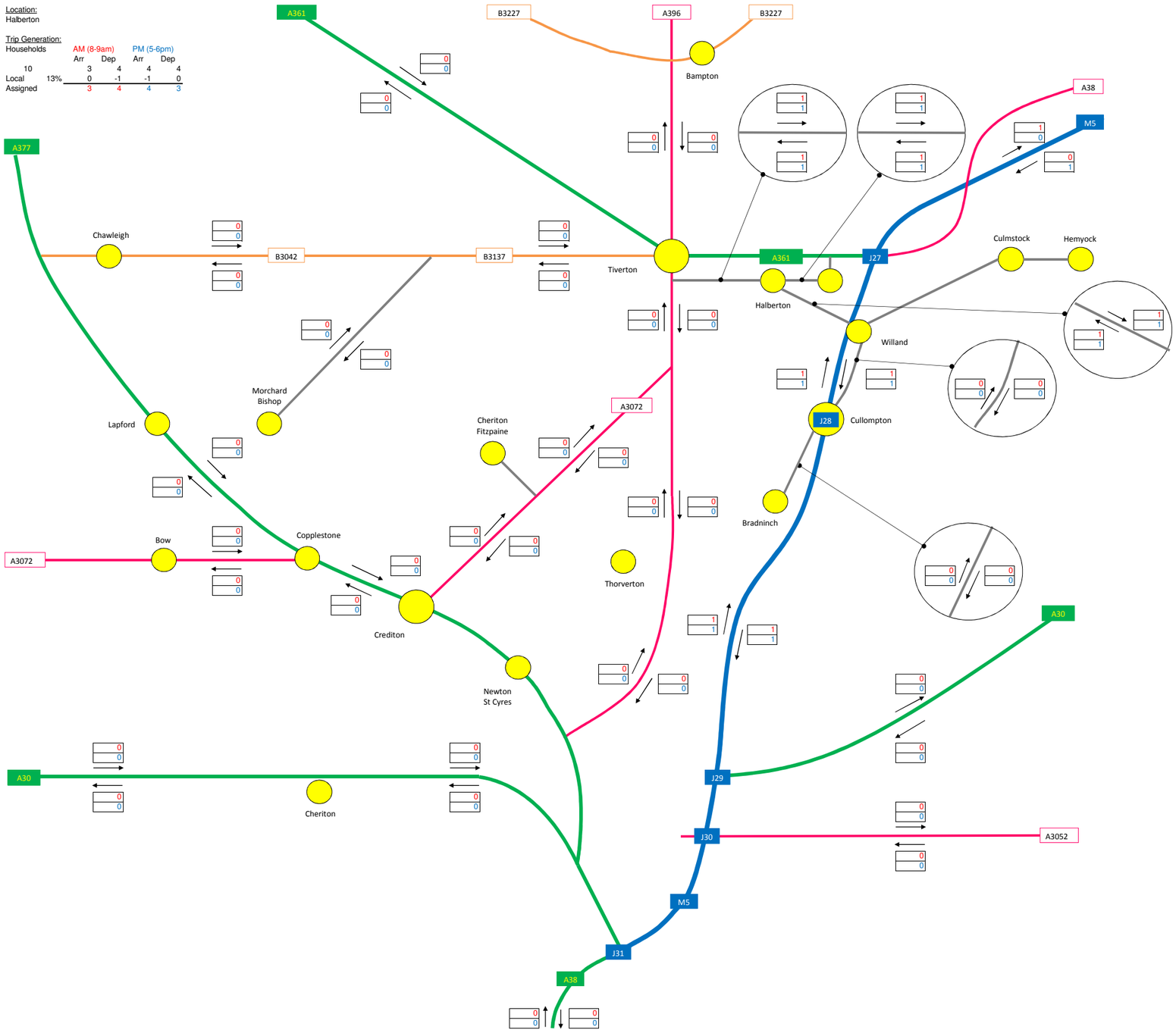


ARUP	Job No.	Sheet No.	Rev.
	235489		B
	Member/Location		
Job Title: Mid Devon Renewables & Air Quality	Drg. Ref.		
Calculation:	Made by: TJB	Date: 04/06/2014	Chd.: MJD

Location:
Halberton

Trip Generation:
Households

		AM (8-9am) Arr	AM (8-9am) Dep	PM (5-6pm) Arr	PM (5-6pm) Dep
10		3	4	4	4
Local	13%	0	-1	-1	0
Assigned		3	4	4	3

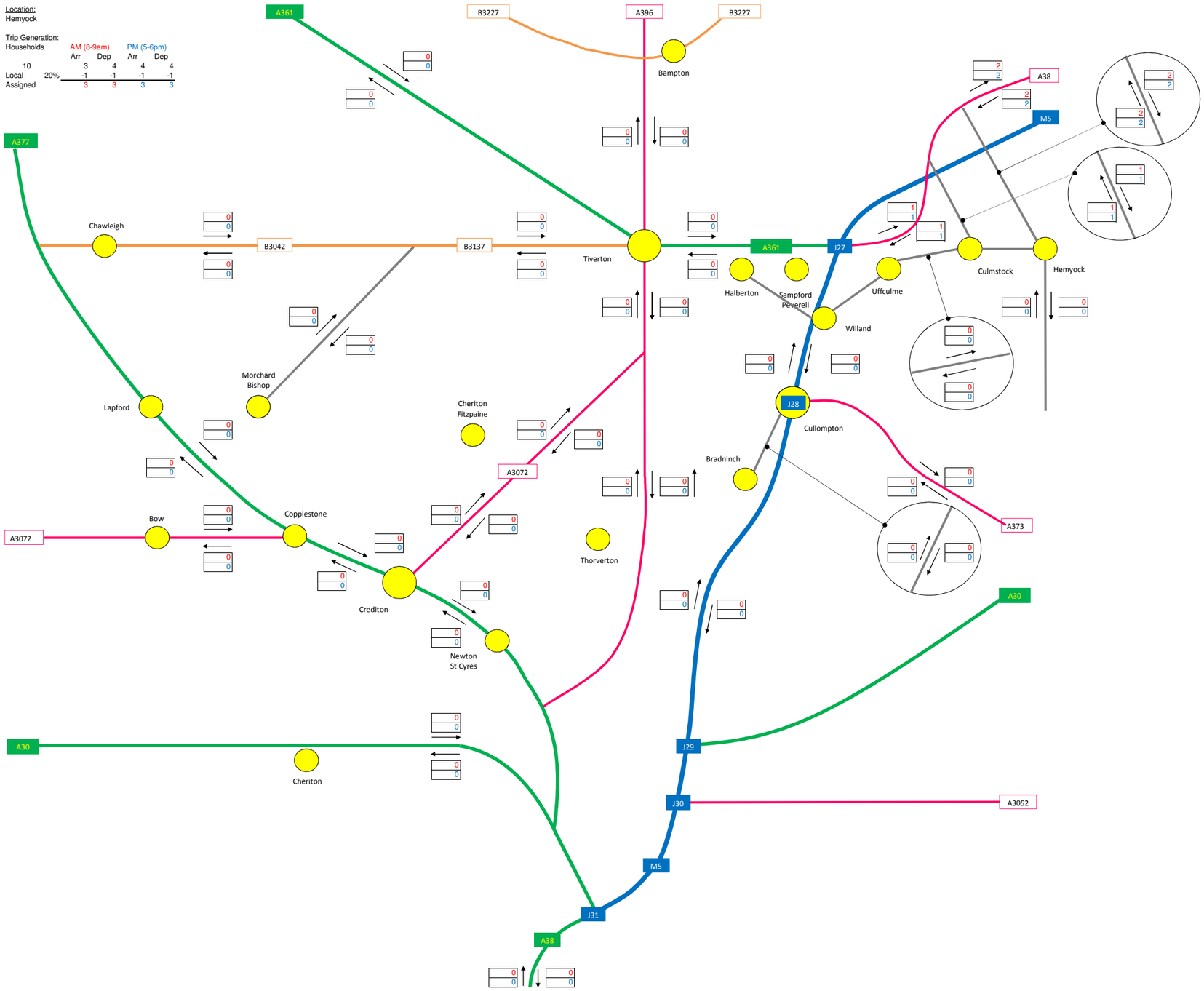


ARUP	Job No.	Sheet No.	Rev.
	235489		B
	Member/Location		
Job Title: Mid Devon Renewables & Air Quality	Drg. Ref.		
Calculation	Made by: TJB	Date: 04/06/2014	Chd.: MJD

Location:
Hemyock

Trip Generation:
Households

		AM (8-9am) Arr	AM (8-9am) Dep	PM (5-6pm) Arr	PM (5-6pm) Dep
10		3	4	4	4
Local	20%	-1	-1	-1	-1
Assigned		3	3	3	3

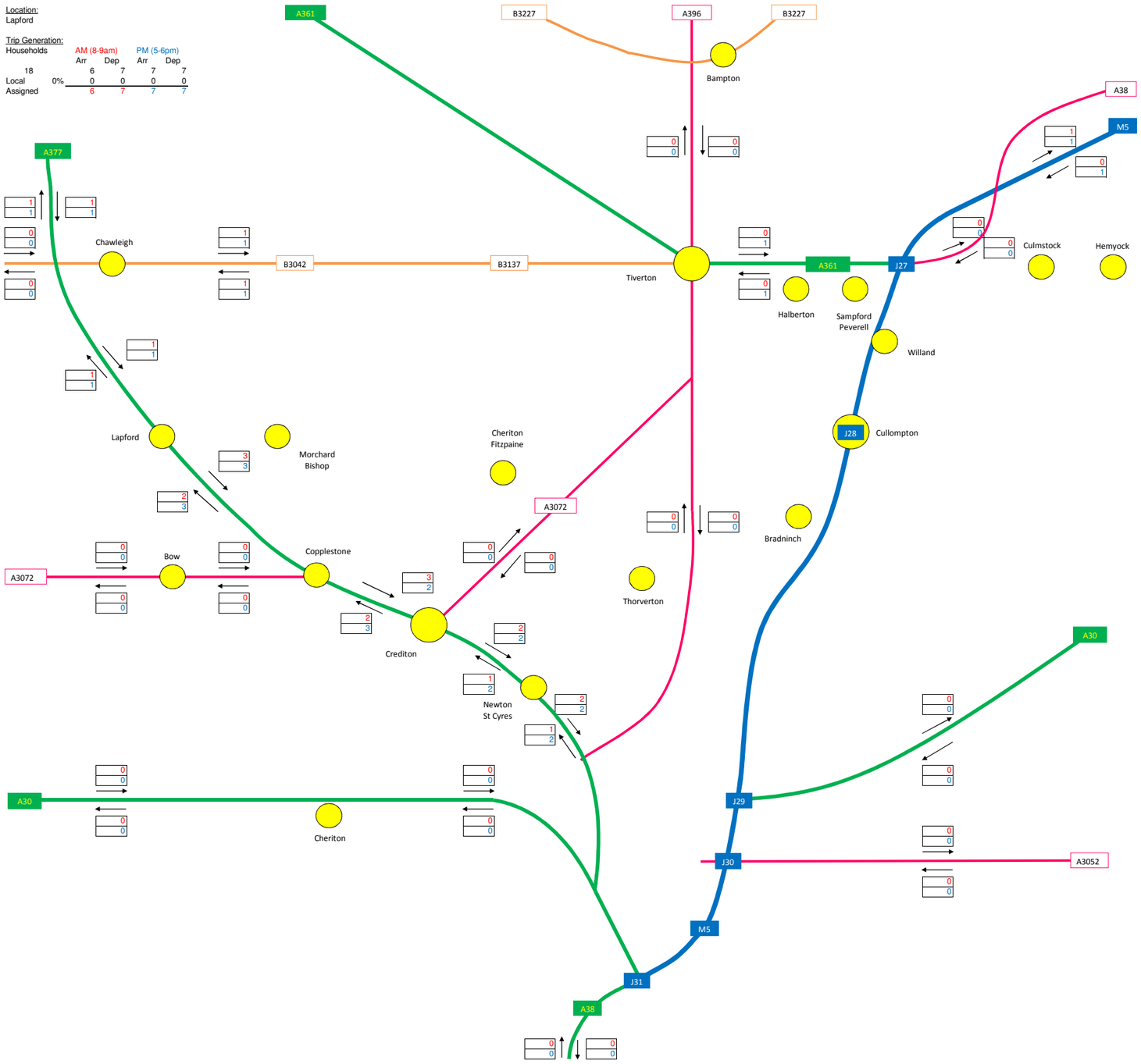


ARUP	Job No. 235489	Sheet No.	Rev. B
	Member/Location		
Job Title Mid Devon Renewables & Air Quality	Drg. Ref.		
Calculation	Made by TJB	Date 04/06/2014	Chd. MJD

Location:
Lapford

Trip Generation:
Households

		AM (8-9am) Arr	AM (8-9am) Dep	PM (5-6pm) Arr	PM (5-6pm) Dep
18		6	7	7	7
Local	0%	0	0	0	0
Assigned		6	7	7	7

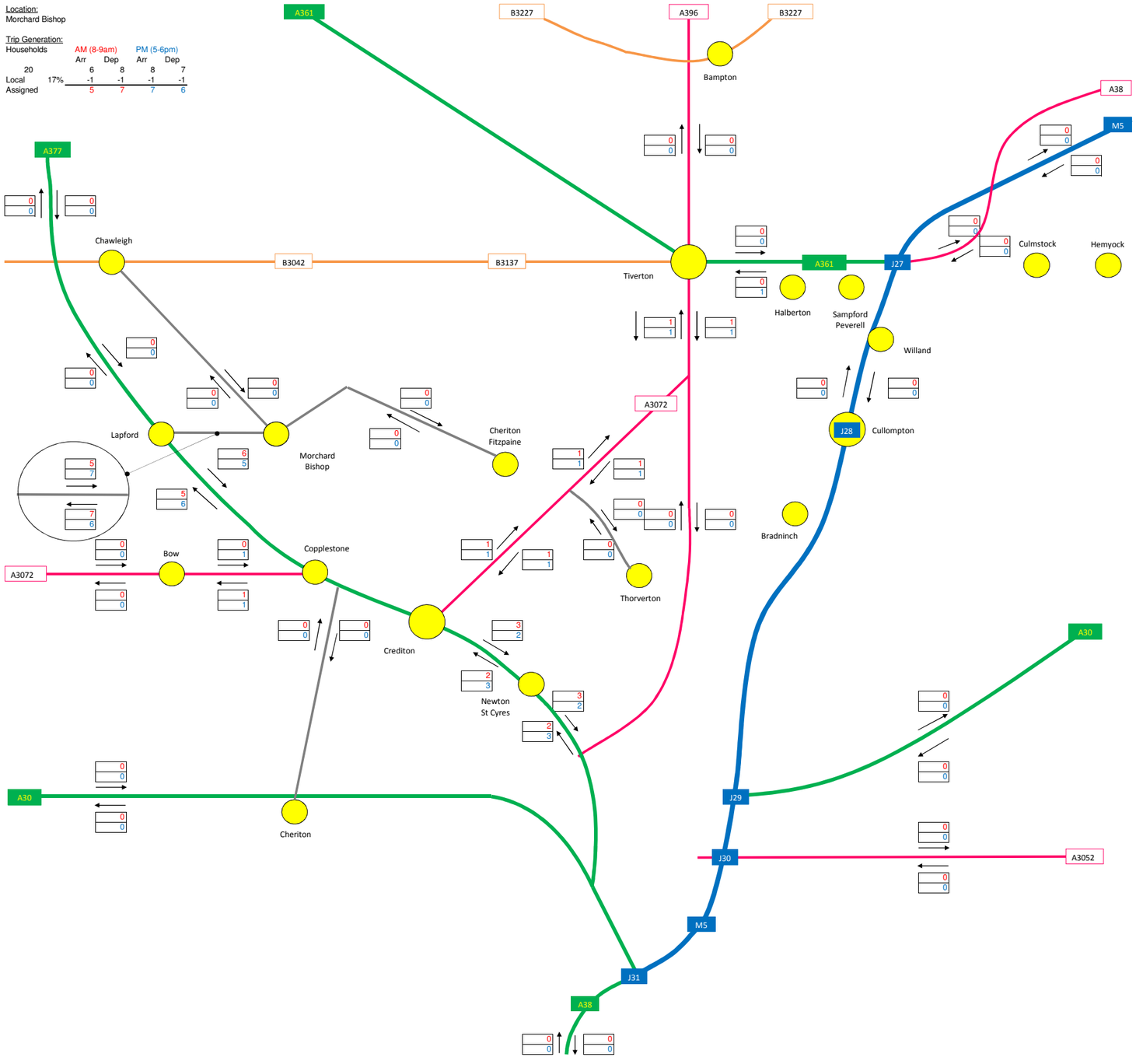


ARUP	Job No.	Sheet No.	Rev.
	235489		B
	Member/Location		
Job Title: Mid Devon Renewables & Air Quality	Drg. Ref.		
Calculation	Made by: TJB	Date: 04/06/2014	Chd.: MJD

Location:
Morchard Bishop

Trip Generation:
Households

		AM (8-9am) Arr	AM (8-9am) Dep	PM (5-6pm) Arr	PM (5-6pm) Dep
20		6	8	8	7
Local	17%	-1	-1	-1	-1
Assigned		5	7	7	6

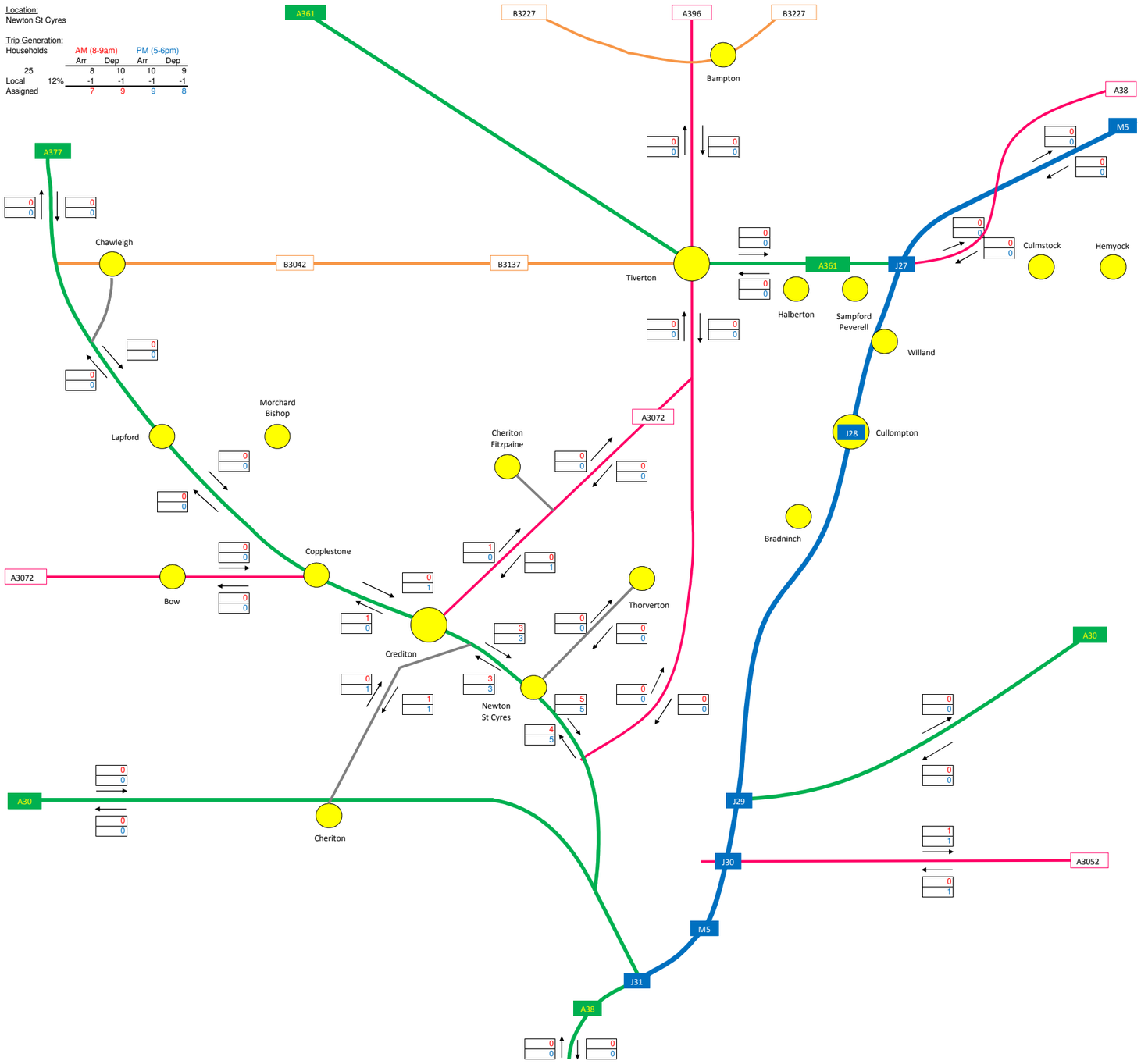


ARUP	Job No. 235489	Sheet No.	Rev. B
	Member/Location		
Job Title Mid Devon Renewables & Air Quality	Drg. Ref.		
Calculation	Made by TJB	Date 04/06/2014	Chd. MJD

Location:
Newton St Cyres

Trip Generation:
Households

		AM (8-9am)		PM (5-6pm)	
		Arr	Dep	Arr	Dep
25		8	10	10	9
Local	12%	-1	-1	-1	-1
Assigned		7	9	9	8

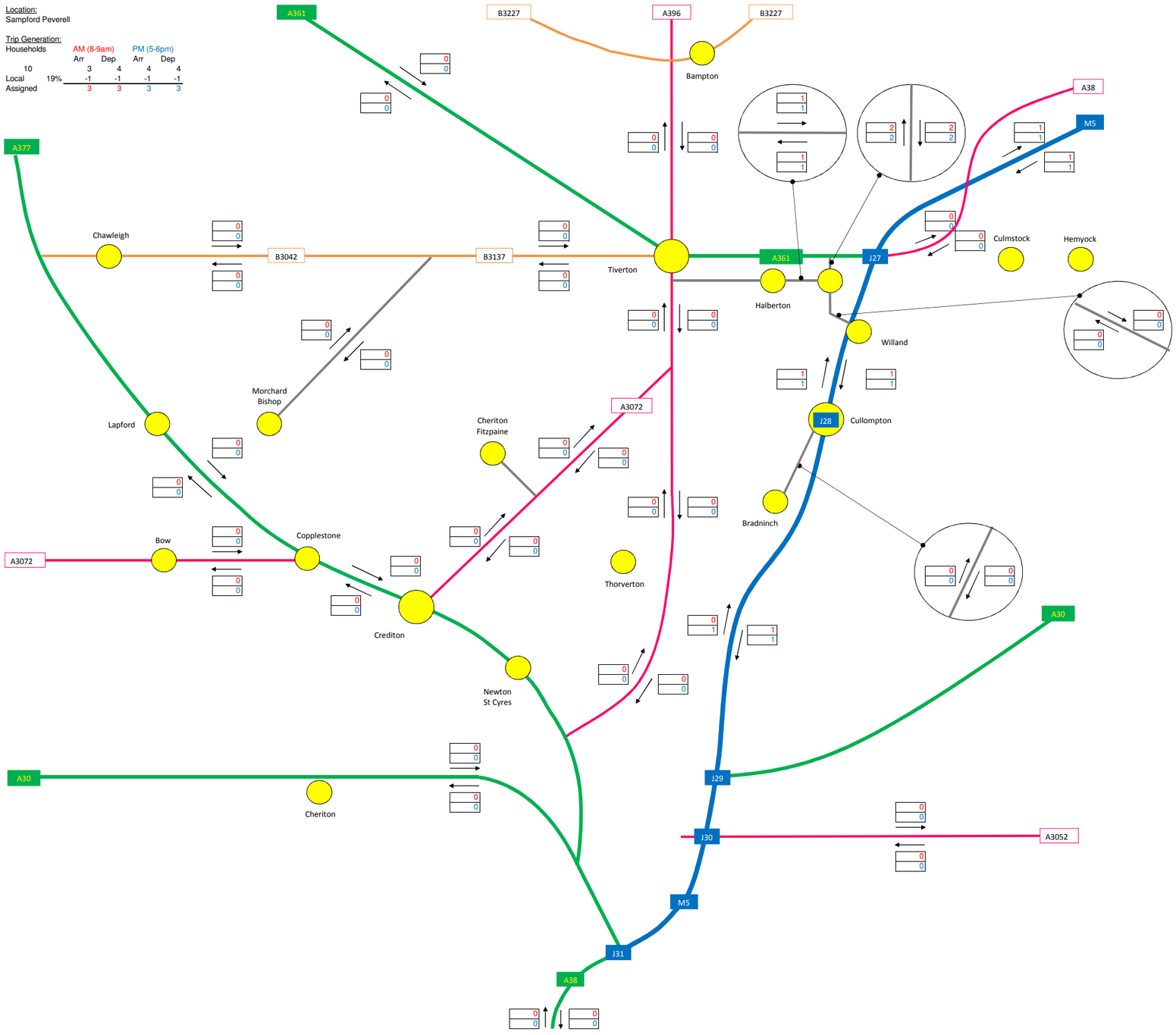


ARUP	Job No.	Sheet No.	Rev.
	235489		B
	Member/Location		
Job Title: Mid Devon Renewables & Air Quality	Drg. Ref.		
Calculation:	Made by: TJB	Date: 04/06/2014	Chd.: MJD

Location:
Sampford Peverell

Trip Generation:
Households

		AM (8-9am) Arr	AM (8-9am) Dep	PM (5-6pm) Arr	PM (5-6pm) Dep
10		3	4	4	4
Local	19%	-1	-1	-1	-1
Assigned		3	3	3	3

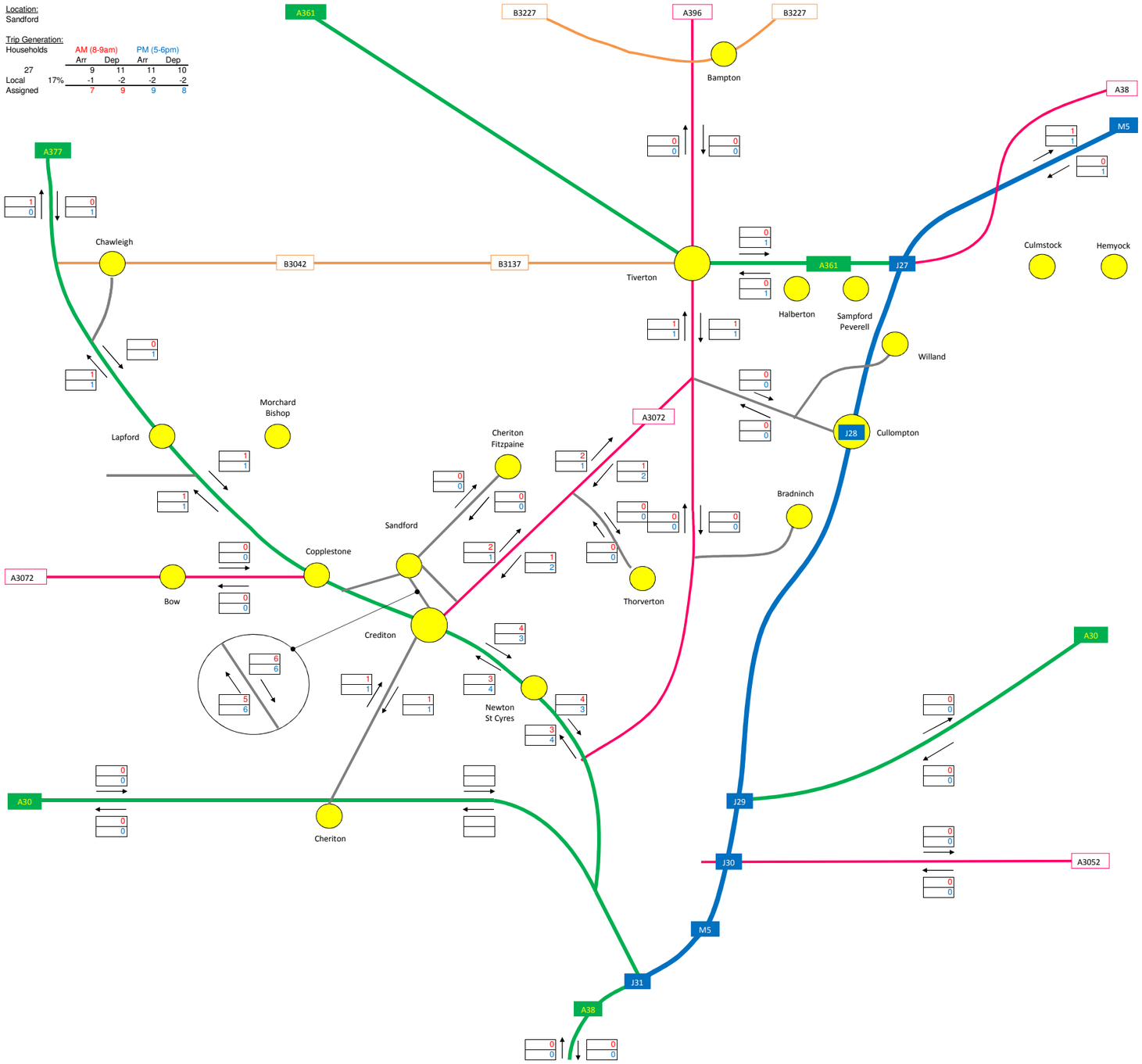


ARUP	Job No. 235489	Sheet No.	Rev. B
	Member/Location		
Job Title Mid Devon Renewables & Air Quality	Drg. Ref.		
Calculation	Made by TJB	Date 04/06/2014	Chd. MJD

Location:
Sandford

Trip Generation:

Households		AM (8-9am) Arr	AM (8-9am) Dep	PM (5-6pm) Arr	PM (5-6pm) Dep
27		9	11	11	10
Local	17%	-1	-2	-2	-2
Assigned		7	9	9	8

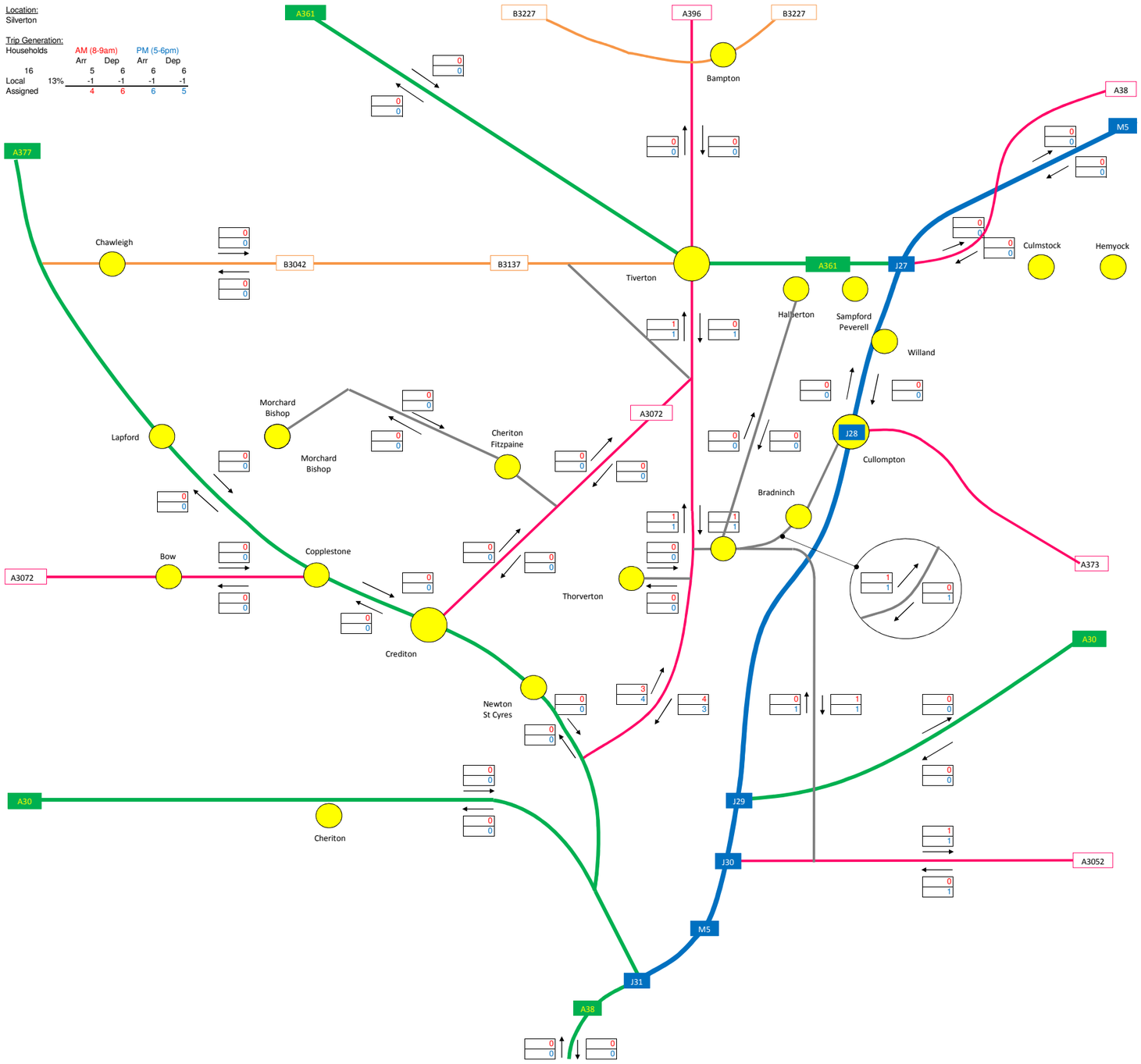


ARUP	Job No. 235489	Sheet No.	Rev. B
	Member/Location		
Job Title Mid Devon Renewables & Air Quality	Drg. Ref.		
Calculation	Made by TJB	Date 04/06/2014	Chd. MJD

Location:
Silverton

Trip Generation:
Households

		AM (8-9am) Arr	AM (8-9am) Dep	PM (5-6pm) Arr	PM (5-6pm) Dep
16		5	6	6	6
Local	13%	-1	-1	-1	-1
Assigned		4	6	6	5

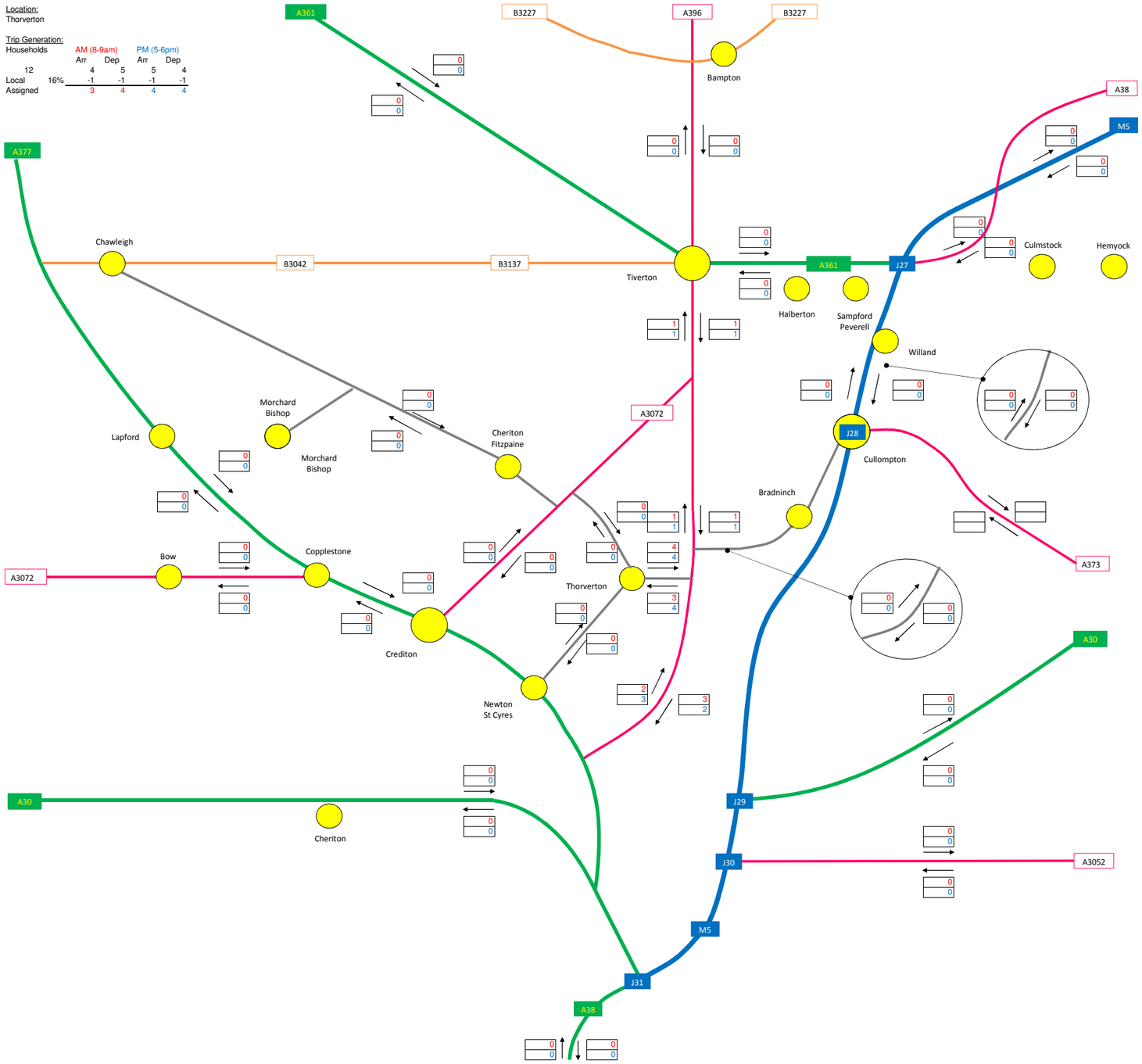


ARUP	Job No. 235489	Sheet No.	Rev. B
	Member/Location		
Job Title Mid Devon Renewables & Air Quality	Drg. Ref.		
Calculation	Made by TJB	Date 04/06/2014	Chd. MJD

Location:
Thorverton

Trip Generation:

Households		AM (8-9am) Arr	AM (8-9am) Dep	PM (5-6pm) Arr	PM (5-6pm) Dep
12		4	5	5	4
Local	16%	-1	-1	-1	-1
Assigned		3	4	4	4

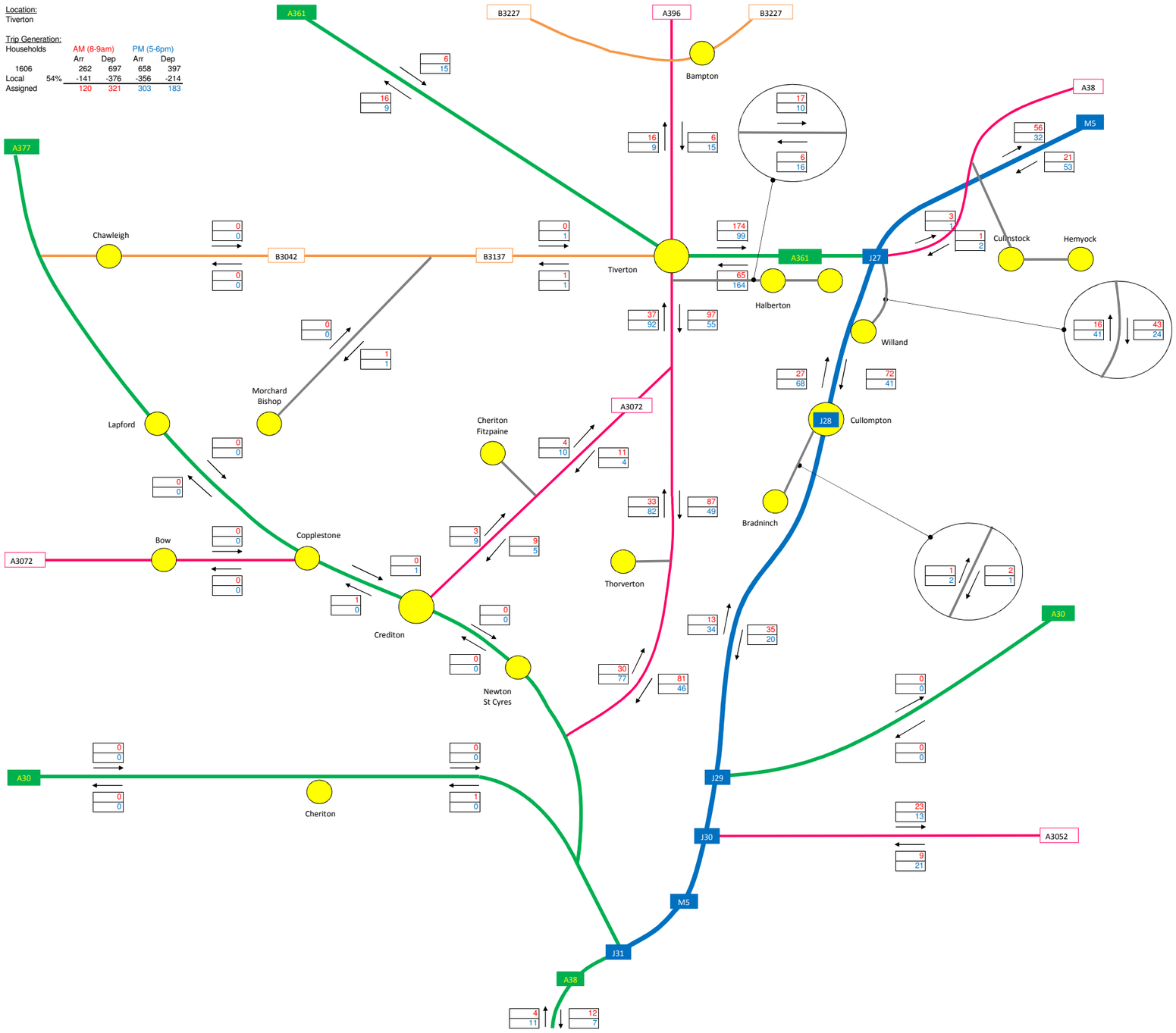


ARUP	Job No. 235489	Sheet No.	Rev. B
	Member/Location		
Job Title Mid Devon Renewables & Air Quality	Drg. Ref.		
Calculation	Made by TJB	Date 04/06/2014	Chd. MJD

Location:
Tiverton

Trip Generation:

Households		AM (8-9am)		PM (5-6pm)	
		Arr	Dep	Arr	Dep
1606		262	697	658	397
Local	54%	-141	-376	-356	-214
Assigned		120	321	303	183

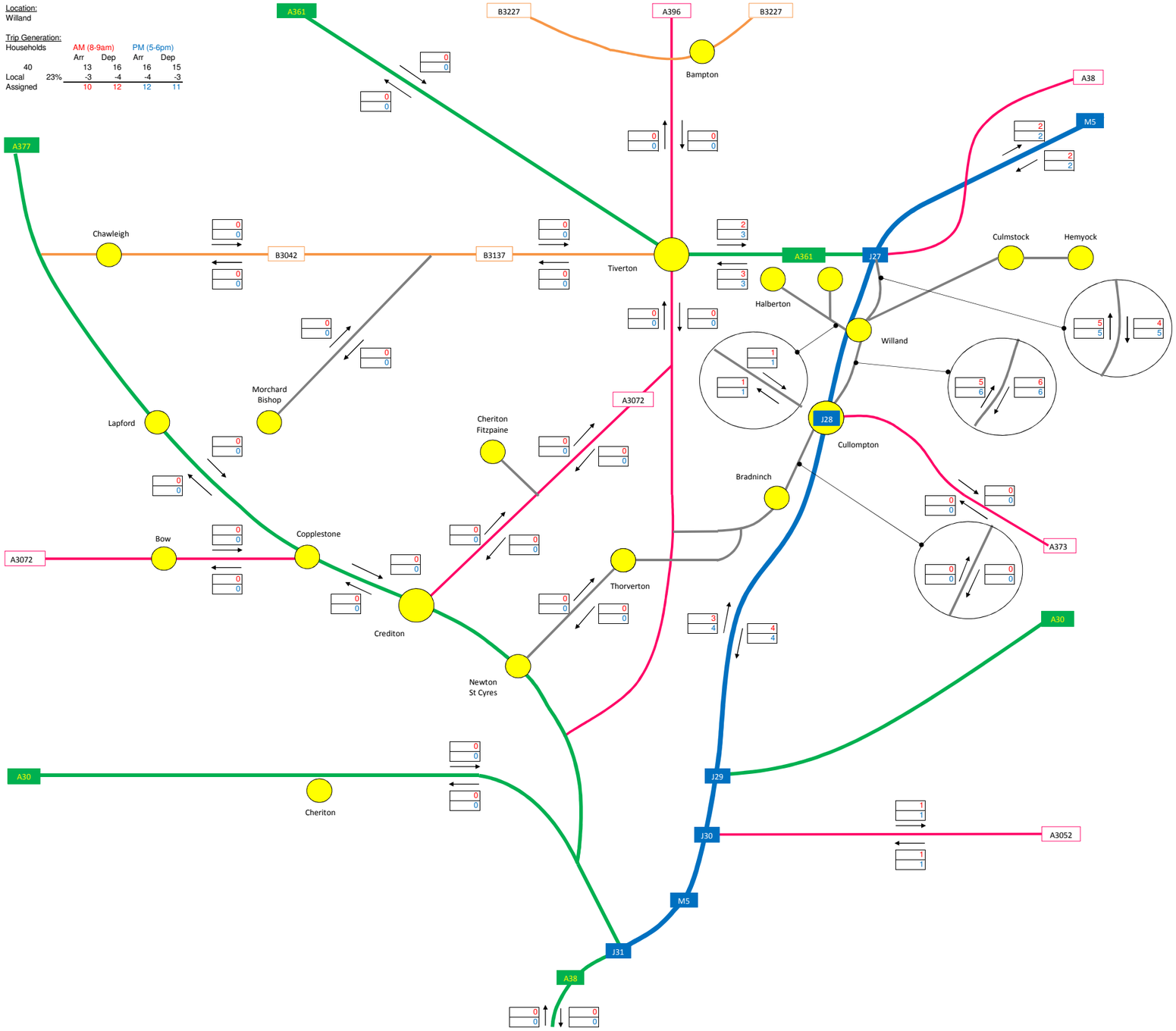


ARUP	Job No. 235489	Sheet No.	Rev. B
	Member/Location		
Job Title Mid Devon Renewables & Air Quality	Drg. Ref.		
Calculation	Made by TJB	Date 04/06/2014	Chd. MJD

Location:
Willand

Trip Generation:

Households		AM (8-9am) Arr	AM (8-9am) Dep	PM (5-6pm) Arr	PM (5-6pm) Dep
40		13	16	16	15
Local	23%	-3	-4	-4	-3
Assigned		10	12	12	11

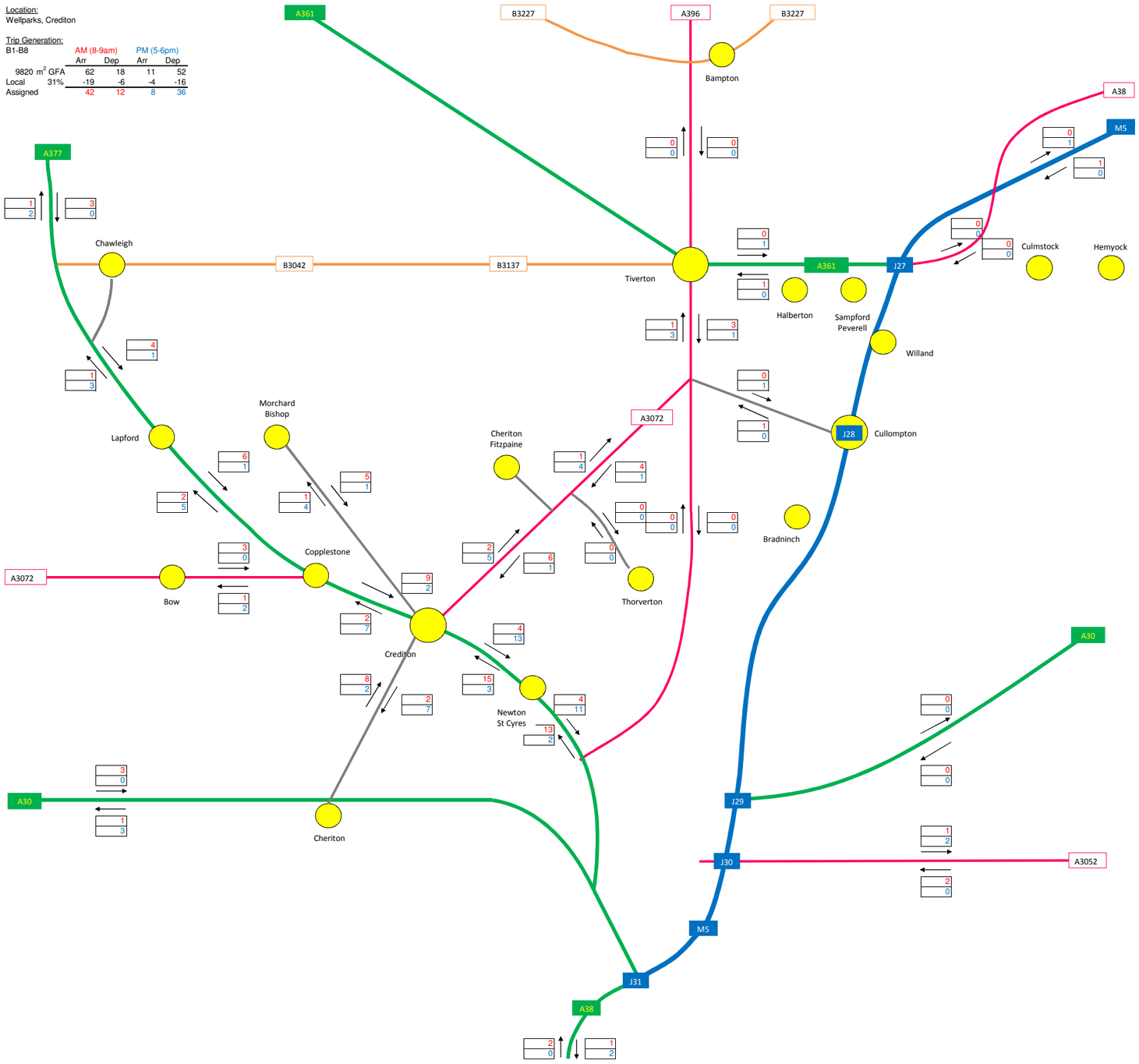


ARUP	Job No. 235489	Sheet No.	Rev. B
	Member/Location		
Job Title Mid Devon Renewables & Air Quality	Drg. Ref.		
Calculation	Made by TJB	Date 04/06/2014	Chd. MJD

Location:
Wellparks, Crediton

Trip Generation:
B1-B8

		AM (8-9am)		PM (5-6pm)	
		Arr	Dep	Arr	Dep
9820 m² GFA		62	18	11	52
Local	31%	-19	-6	-4	-16
Assigned		42	12	8	36

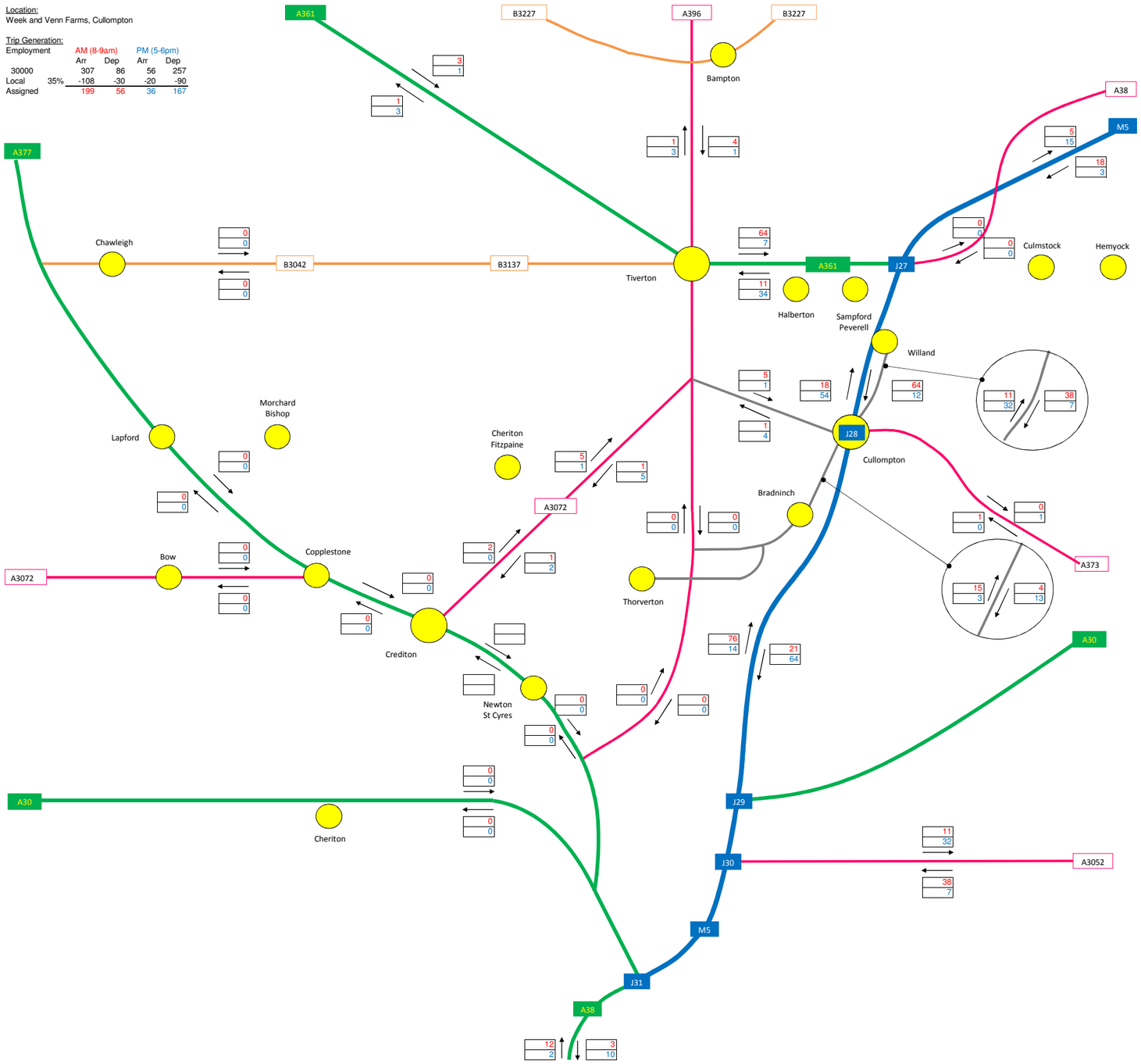


ARUP	Job No. 235489	Sheet No.	Rev. B
	Member/Location		
Job Title Mid Devon Renewables & Air Quality	Drg. Ref.		
Calculation	Made by TJB	Date 04/06/2014	Chd. MJD

Location:
Week and Venn Farms, Cullompton

Trip Generation:

Employment		AM (8-9am) Arr	AM (8-9am) Dep	PM (5-6pm) Arr	PM (5-6pm) Dep
30000		307	86	56	257
Local	35%	-108	-30	-20	-90
Assigned		199	56	36	167

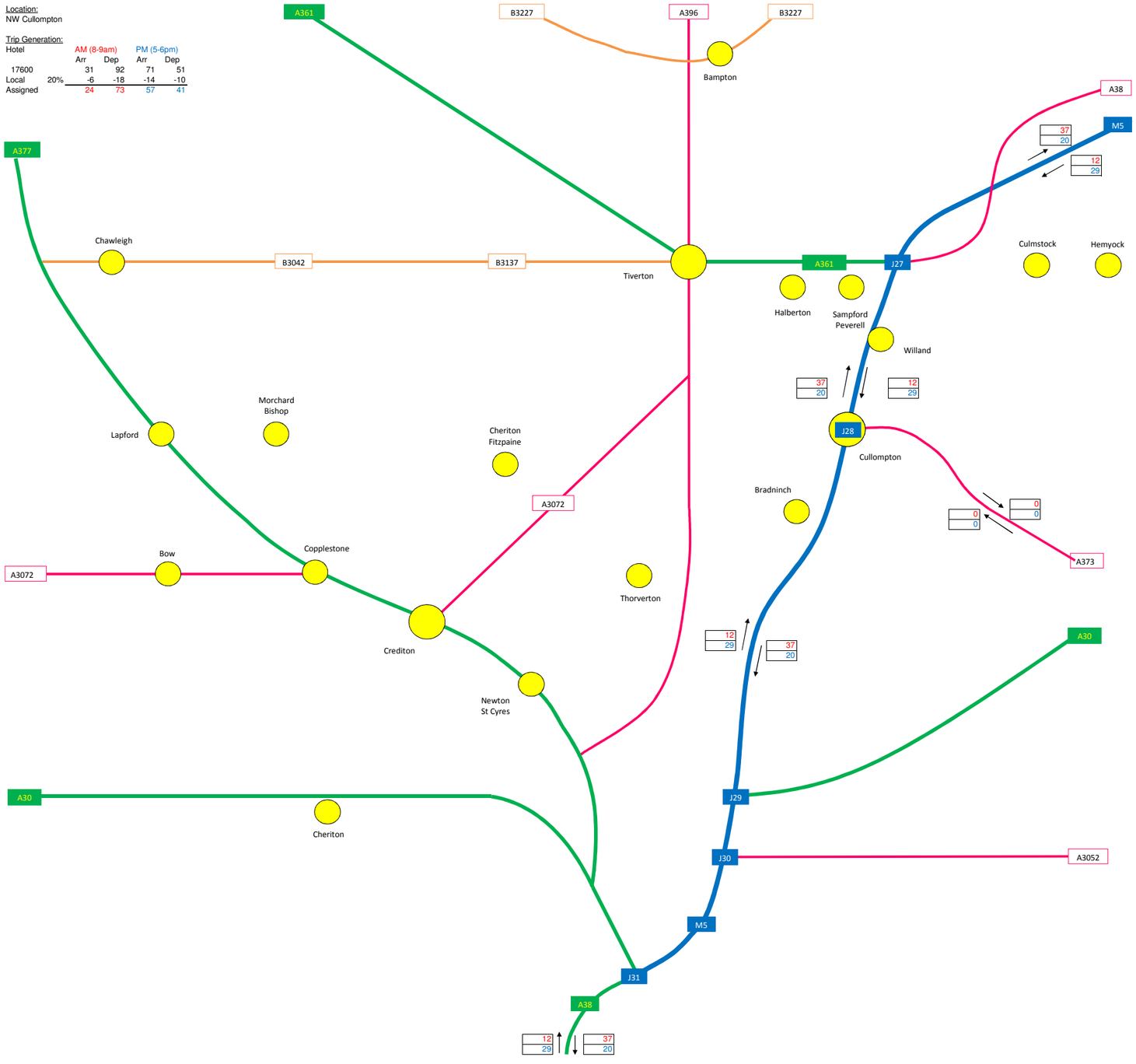


ARUP	Job No.	Sheet No.	Rev.
	235489		B
	Member/Location		
Job Title: Mid Devon Renewables & Air Quality	Drg. Ref.		
Calculation	Made by: TJB	Date: 04/06/2014	Chd.: MJD

Location:
NW Cullompton

Trip Generation:
Hotel

		AM (8-9am)		PM (5-6pm)	
		Arr	Dep	Arr	Dep
17600		31	92	71	51
Local	20%	-6	-18	-14	-10
Assigned		24	73	57	41

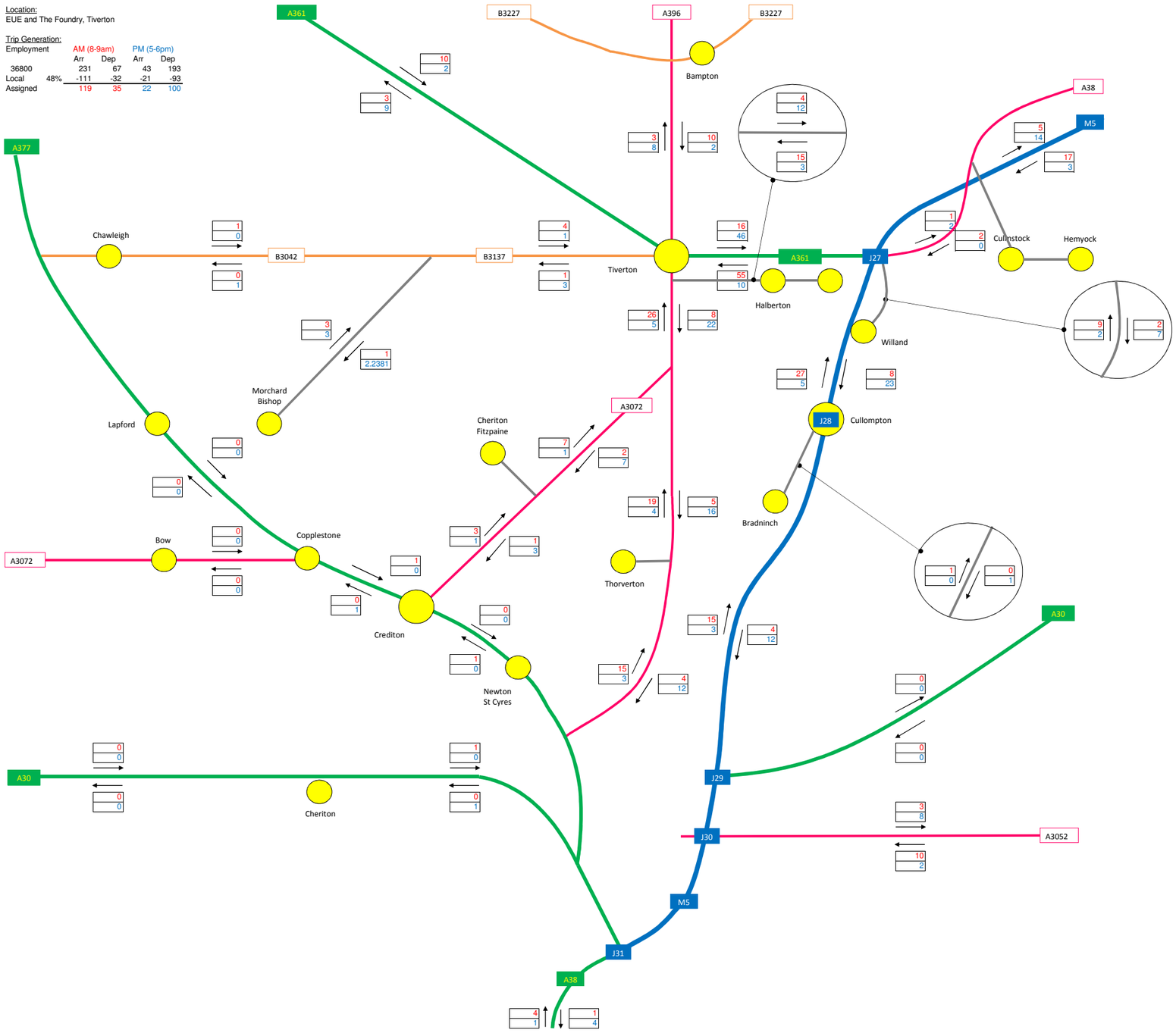


ARUP	Job No. 235489	Sheet No.	Rev. B
	Member/Location		
Job Title Mid Devon Renewables & Air Quality	Drg. Ref.		
Calculation	Made by TJB	Date 04/06/2014	Chd. MJD

Location:
EUE and The Foundry, Tiverton

Trip Generation:

Employment		AM (8-9am)		PM (5-6pm)	
		Arr	Dep	Arr	Dep
36800		231	67	43	193
Local	48%	-111	-32	-21	-93
Assigned		119	35	22	100

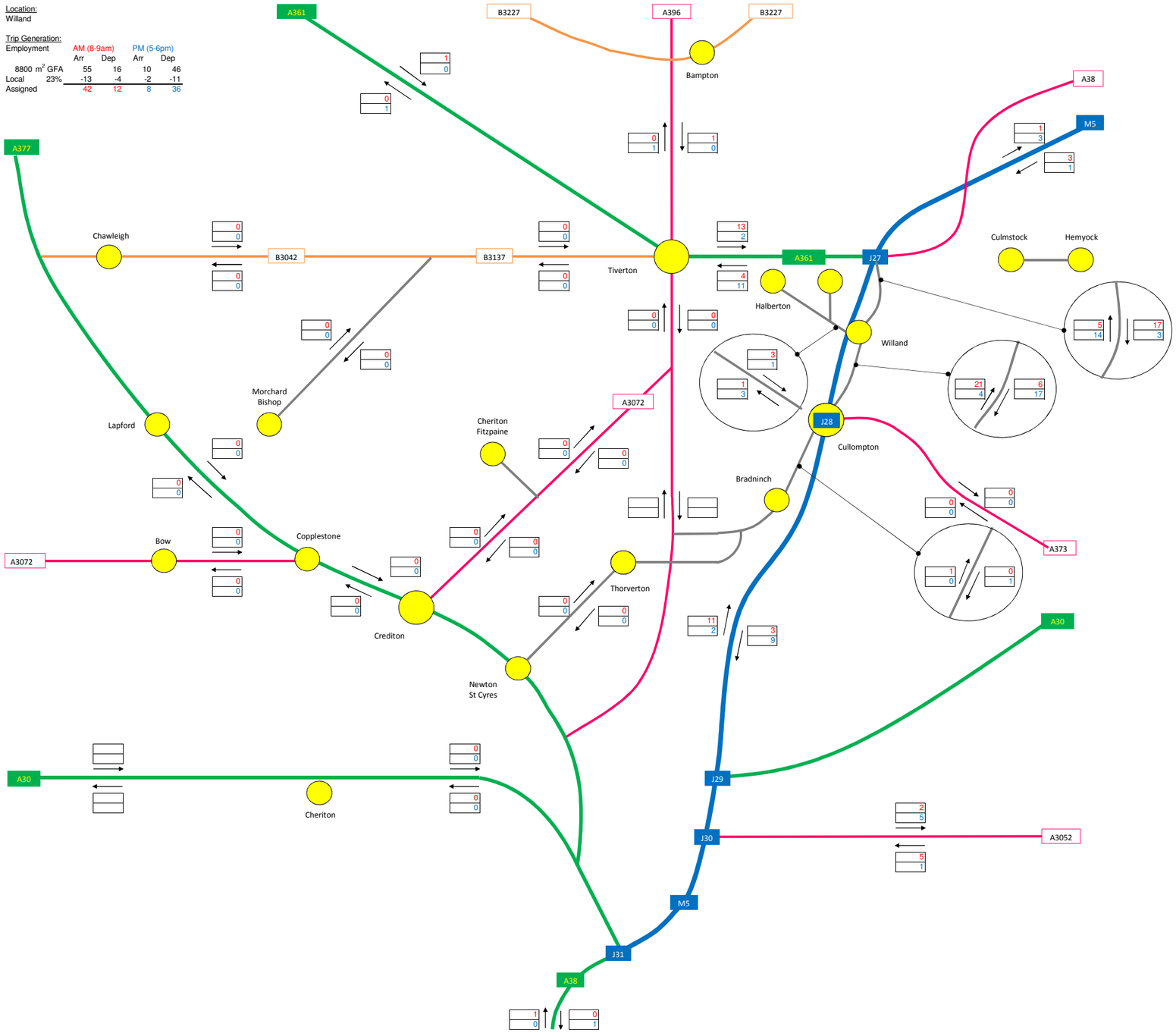


ARUP	Job No. 235489	Sheet No.	Rev. B
	Member/Location		
Job Title Mid Devon Renewables & Air Quality	Drg. Ref.		
Calculation	Made by TJB	Date 04/06/2014	Chd. MJD

Location:
Willand

Trip Generation:

Employment		AM (8-9am)		PM (5-6pm)	
		Arr	Dep	Arr	Dep
8800	m^2 GFA	55	16	10	46
Local	23%	-13	-4	-2	-11
Assigned		42	12	8	36



ARUP	Job No. 235489	Sheet No.	Rev. A
	Member/Location		
Job Title: Mid Devon Renewables & Air Quality	Drg. Ref.		
Calculation: TRIP DISTRIBUTION	Made by TJB	Date 04/06/2014	Chd. MJD

TO ➔ 1-Ward | 2-Authority

FROM ↓

FROM ↓	Boniface	Bradninch	Cadbury	Canonsleigh	Castle	Clare and Shuttern	Cranmore	Cullompton North	Cullompton Outer	Cullompton South	Halberton	Lawrence	Lower Culm	Lowman	Newbrooke	Sandford and Creedy	Silverton	Taw	Taw Vale	Upper Culm	Upper Yeo	Way	Westexe	Yeo
HOUSING TRIP DISTRIBUTION																								
1-Ward																								
Boniface	25%	0%	0%	0%	1%		1%	1%				9%	0%	1%	1%	1%		1%	1%		1%	0%		4%
Bradninch		15%			2%			10%	1%	2%	1%	1%	3%	2%			1%		1%	1%			1%	
Cadbury	1%	1%	16%		4%		2%	2%	1%	1%	1%	1%	1%	4%	1%		2%						1%	
Canonsleigh	1%	1%	0%	19%	7%	2%	4%	3%	1%	1%	1%	0%	5%	6%						1%		0%	1%	0%
Castle	0%	0%	1%	1%	28%	4%	6%	4%	1%	1%	1%	1%	6%	11%			0%	0%		1%			6%	
Clare and Shuttern	1%		0%	1%	10%	26%	4%	3%		0%	0%	0%	3%	6%						0%			6%	
Cranmore	1%	0%	1%	1%	16%	2%	19%	5%	1%	0%	1%	1%	6%	12%	0%	0%				0%	0%	0%	9%	0%
Cullompton North	0%	2%		1%	2%	0%	2%	23%	3%	3%	1%		8%	5%			0%			1%	0%		1%	0%
Cullompton Outer		1%	1%	1%	4%	1%	2%	10%	17%	3%	1%	1%	5%	4%			1%			1%			1%	0%
Cullompton South	0%	3%		2%	3%	1%	1%	13%	2%	10%	1%	0%	9%	4%			0%			0%		0%	1%	0%
Halberton		0%	1%	4%	12%	1%	5%	7%	1%	2%	13%		7%	9%						0%			5%	
Lawrence	13%	0%		0%	1%		1%	0%	0%	0%	0%	22%	1%	1%	1%	1%		1%			1%		1%	6%
Lower Culm	0%	1%	0%	3%	4%	1%	3%	9%	2%	2%	2%	0%	23%	4%		0%	0%			1%			2%	
Lowman	1%	0%	1%	1%	16%	1%	7%	4%	0%	0%	1%	1%	7%	21%						0%	0%		8%	0%
Newbrooke	9%	1%	1%	0%	1%		1%					8%		1%	12%	2%		1%			1%	1%	0%	3%
Sandford and Creedy	9%	0%	0%		2%	0%	2%	1%		0%		8%	0%	2%	1%	17%		2%	1%		1%	1%	1%	2%
Silverton	1%	1%	1%	0%	2%	0%	1%	2%	1%	1%		1%	1%	3%			13%						1%	
Taw	6%			1%			1%	1%				8%		1%		1%		20%	3%	1%	2%			3%
Taw Vale	8%				2%		1%	1%				3%		1%	1%	3%		3%	22%		1%		1%	1%
Upper Culm	0%	0%	0%	1%	2%	0%	1%	3%	0%	0%	0%	0%	4%	2%						20%			1%	0%
Upper Yeo	13%				1%							6%		1%	1%	1%		1%	1%	1%	20%	1%		3%
Way	6%		3%	1%	8%	1%	4%	1%	1%			4%	1%	4%	1%	1%	1%	1%	1%			17%	3%	1%
Westexe	0%	0%	1%	1%	17%	2%	5%	3%	1%	0%	2%	1%	5%	16%		0%				0%		1%	19%	
Yeo	10%		0%		1%		0%	0%				9%	1%	1%		1%		2%	0%		2%		0%	18%
CREDITON	19%	0%	0%	0%	1%		1%	0%	0%	0%	0%	15%	0%	1%	1%	1%		1%	0%		1%	0%	0%	5%
CULLOMPTON	0%	2%	0%	2%	3%	1%	2%	16%	5%	6%	1%	0%	8%	4%			0%			1%	0%	0%	1%	0%
TIVERTON	1%	0%	1%	1%	18%	2%	10%	4%	1%	0%	1%	1%	6%	16%	0%	0%	0%	0%		0%	0%	0%	11%	0%
EMPLOYMENT TRIP DISTRIBUTION																								
CREDITON	17%	0%	1%	0%	0%	0%	1%	0%	0%	0%	0%	15%	1%	1%	4%	7%	1%	3%	2%	0%	4%	2%	1%	9%
CULLOMPTON	0%	3%	1%	2%	2%	1%	3%	14%	7%	14%	3%	0%	8%	3%		1%	1%	0%	0%	2%		0%	2%	0%
TIVERTON	1%	0%	1%	3%	8%	4%	13%	2%	1%	2%	3%	0%	4%	14%	0%	1%	1%	0%	0%	1%	0%	2%	14%	0%
WILLAND		1%	0%	3%	3%	2%	5%	6%	2%	8%	3%	0%	23%	7%		0%	0%			3%		0%	4%	0%

FROM ↓	Bath and North East Somerset	Bournemouth	Bristol, City of	Caradon	Carrick	Cheltenham	Christchurch	Cotswold	East Devon	East Dorset	Exeter	Forest of Dean	Gloucester	Kerrier	Mendip	North Cornwall	North Devon	North Dorset	North Somerset	North Wiltshire
HOUSING TRIP DISTRIBUTION																				
1-Ward																				
Boniface	0%		0%		0%				5%		34%			0%			1%			
Bradninch			0%						12%		37%						2%		1%	
Cadbury			1%		1%				10%		40%						2%		1%	
Canonsleigh			1%						4%		9%						1%		0%	
Castle								0%	4%		13%					0%	3%			
Clare and Shuttern									3%		8%						4%	0%	1%	
Cranmore			0%						3%		10%		0%		0%		1%	0%	0%	
Cullompton North									10%		27%						0%			
Cullompton Outer									10%		24%						1%		1%	
Cullompton South			1%						9%		27%						1%		0%	
Halberton			1%						3%		12%				0%		2%			
Lawrence			0%			0%			3%		37%					0%	2%	0%		
Lower Culm			1%		0%				7%		17%	0%					2%		0%	
Lowman			0%						3%		12%						3%		1%	
Newbrooke			1%						6%		45%			1%		1%	1%			
Sandford and Creedy									4%		28%						4%		0%	0%
Silverton	0%		0%						9%		55%						1%			
Taw					1%				1%		22%					1%	9%			
Taw Vale	1%								2%		22%						13%			
Upper Culm	0%		0%						7%		6%				0%		1%		0%	
Upper Yeo			1%	1%					4%		22%						1%			
Way		1%	1%		1%				3%		29%						2%			
Westexe			0%						4%		12%						2%		0%	
Yeo			1%	0%					4%		35%	0%					1%		1%	
CREDITON	0%		0%		0%				4%		36%			0%		0%	1%	0%		
CULLOMPTON			0%						10%		26%						1%		0%	
TIVERTON			0%					0%	3%		12%		0%		0%	0%	2%		0%	
EMPLOYMENT TRIP DISTRIBUTION																				
CREDITON	0%				0%				3%	0%	14%				0%	0%	2%		0%	
CULLOMPTON	0%		0%			0%		0%	12%		8%				0%	0%	1%			
TIVERTON			0%						4%		6%						4%		0%	
WILLAND	0%			0%					10%		8%					0%	1%			

FROM ↓	Penwith	Plymouth	Poole	Restormel	Salisbury	Sedgemoor	South Gloucestershire	South Hams	South Somerset	Stroud	Swindon	Taunton Deane	Teignbridge	Torbay	Torridge	West Devon	West Dorset	West Somerset	West Wiltshire	Weymouth and Portland	3-Rest of UK	Total
HOUSING TRIP DISTRIBUTION																						
1-Ward																						
Boniface		1%			0%	0%		0%			0%	1%	3%		1%	4%					2%	100%
Bradninch		1%				1%		1%				3%	2%	1%	1%	1%					1%	100%
Cadbury					1%		1%					1%	1%	1%		1%		1%	1%		1%	100%
Canonsleigh		0%				1%		0%	1%			26%	1%		0%			1%			1%	100%
Castle		1%					0%	0%				4%	0%					1%			1%	100%
Clare and Shuttern		1%	0%		0%	1%	1%					8%	0%	0%	1%	1%	0%	4%	0%		4%	100%
Cranmore						0%	0%		0%			4%	0%			0%		0%	0%	0%	2%	100%
Cullompton North						1%	0%		0%			5%	1%	0%		0%			0%		2%	100%
Cullompton Outer		1%				1%	1%		1%			6%	1%	1%		1%		1%			3%	100%
Cullompton South		1%				0%		1%	0%			4%	2%	0%	0%		0%				2%	100%
Halberton		0%				1%						8%	0%	0%							2%	100%
Lawrence						0%	1%	0%				0%	2%	1%	1%	3%					1%	100%
Lower Culm		1%				1%	0%		1%		0%	8%	1%	0%		0%		0%			2%	100%
Lowman		0%				0%	0%		0%			5%	1%	0%	0%	1%		0%			1%	100%
Newbrooke		1%						1%				1%	2%	0%	1%	2%					1%	100%
Sandford and Creedy		1%				0%			1%		0%	1%	1%	0%	1%	4%					2%	100%
Silverton							0%		0%			1%	2%								0%	100%
Taw												1%	1%	1%	4%	9%					2%	100%
Taw Vale		1%				1%	0%					1%	1%		2%	4%		1%			4%	100%
Upper Culm					0%	2%	1%		3%			39%			0%	1%	1%	1%	0%		3%	100%
Upper Yeo							1%			1%		1%	1%		2%	14%					4%	100%
Way												1%	2%		1%	2%					1%	100%
Westexe		1%				0%	0%	0%	0%		0%	4%	0%	0%	0%	0%		0%			1%	100%
Yeo		1%				1%	0%					0%	3%	1%	0%	5%					1%	100%
CREDITON		0%			0%	0%	0%	0%			0%	0%	2%	0%	1%	3%					1%	100%
CULLOMPTON		0%				1%	0%	0%	0%			5%	1%	0%	0%	0%	0%	0%	0%		2%	100%
TIVERTON		0%				0%	0%	0%	0%		0%	4%	1%	0%	0%	0%		0%	0%	0%	1%	100%
EMPLOYMENT TRIP DISTRIBUTION																						
CREDITON		0%				0%		0%				0%	3%	1%	2%	4%		0%			0%	100%
CULLOMPTON		0%				0%		0%	0%			4%	3%	1%	0%	0%	0%	0%			1%	100%
TIVERTON		0%				0%		0%	1%		0%	4%	1%	0%	0%	0%	0%	1%			1%	100%
WILLAND						1%						5%	2%		1%	0%		0%			0%	100%

Appendix E

Mode Share

E1

	Bampton	Bow	Chaw-leigh	Cheriton Bishop	Cheriton Fitzpaine	Copple-stone	Halber-ton	Hemyock	Hol-combe Rogus	Kentis-beare	Lapford	Morchard Bishop	Newton St. Cyres	Sampford Peverell	Sandford	Silverton	Thorver-ton	Willand	Crediton Hamlets (Yeoford)
Method of Travel to Work - Resident Population 2011 (QS701EW)	Parish	Parish	Parish	Parish	Parish	Parish	Parish	Parish	Parish	Parish	Parish	Parish	Parish	Parish	Parish	Parish	Parish	Parish	Parish
All Usual Residents Aged 16 to 74	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Work Mainly at or From Home	17%	9%	20%	18%	17%	9%	15%	11%	15%	15%	10%	18%	9%	12%	18%	10%	15%	7%	16%
Underground, Metro, Light Rail, Tram	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Train	1%	0%	2%	2%	1%	1%	2%	1%	3%	0%	1%	1%	3%	2%	1%	1%	1%	0%	3%
Bus, Minibus or Coach	1%	4%	3%	2%	2%	3%	2%	1%	0%	1%	4%	3%	6%	3%	3%	4%	2%	3%	2%
Taxi	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Driving a Car or Van	62%	70%	63%	57%	66%	73%	67%	71%	72%	68%	70%	65%	66%	70%	65%	70%	69%	70%	63%
Passenger in a Car or Van	4%	4%	4%	4%	5%	6%	4%	4%	3%	3%	5%	4%	5%	4%	4%	5%	3%	6%	4%
Motorcycle, Scooter or Moped	0%	0%	1%	1%	1%	1%	0%	1%	1%	0%	1%	1%	1%	1%	1%	2%	1%	1%	0%
Bicycle	0%	1%	0%	1%	1%	1%	2%	1%	1%	2%	1%	1%	3%	1%	1%	2%	2%	2%	1%
On Foot	13%	11%	6%	11%	6%	4%	6%	9%	3%	9%	7%	7%	6%	6%	6%	6%	7%	9%	9%
Other Method of Travel to Work	1%	0%	1%	3%	1%	1%	1%	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	1%
Method of Travel to Work - Resident Population 2001 (UV39)																			
All People	100%	100%	100%	100%	100%		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Works mainly at or from home	23%	15%	31%	29%	21%		22%	20%	21%	28%	21%	28%	15%	18%	23%	11%	18%	11%	23%
Underground, metro, light rail or tram	0%	0%	0%	0%	0%		0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Train	0%	0%	0%	1%	1%		0%	0%	2%	0%	0%	1%	1%	1%	1%	0%	2%	0%	1%
Bus, minibus or coach	1%	4%	2%	2%	2%		2%	1%	2%	0%	1%	1%	4%	1%	2%	3%	2%	3%	1%
Taxi or minicab	0%	0%	0%	0%	0%		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Driving a car or van	53%	59%	52%	60%	63%		62%	65%	63%	61%	63%	57%	65%	64%	62%	71%	63%	61%	63%
Passenger in a car or van	4%	7%	5%	3%	5%		7%	5%	5%	4%	5%	5%	7%	5%	5%	6%	5%	5%	5%
Motorcycle, scooter or moped	1%	1%	3%	1%	1%		1%	0%	2%	0%	1%	1%	2%	2%	0%	2%	2%	2%	0%
Bicycle	0%	2%	0%	0%	1%		2%	2%	0%	1%	2%	1%	0%	1%	2%	1%	2%	3%	1%
On foot	15%	10%	4%	4%	5%		4%	6%	3%	6%	6%	6%	5%	6%	4%	5%	6%	15%	5%
Other	2%	1%	3%	0%	1%		1%	1%	0%	0%	0%	1%	1%	2%	1%	0%	0%	0%	0%
Method of Travel to Work - Daytime Population (UV37)																			
All People	100%	100%	100%	100%	100%		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Works mainly at or from home	25%	30%	54%	44%	51%		37%	32%	44%	45%	38%	47%	30%	38%	52%	31%	30%	8%	29%
Underground, metro, light rail or tram	0%	0%	0%	0%	0%		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Train	0%	0%	0%	0%	2%		0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	1%
Bus, minibus or coach	2%	0%	0%	0%	0%		1%	0%	2%	0%	0%	1%	4%	1%	0%	1%	3%	9%	1%
Taxi or minicab	0%	0%	2%	0%	0%		0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%
Driving a car or van	47%	47%	34%	46%	32%		48%	47%	37%	46%	47%	39%	49%	47%	35%	46%	42%	59%	50%
Passenger in a car or van	7%	2%	3%	0%	3%		5%	3%	2%	2%	4%	2%	6%	4%	4%	3%	6%	8%	6%
Motorcycle, scooter or moped	1%	3%	2%	0%	0%		1%	3%	2%	0%	2%	0%	0%	0%	0%	2%	3%	2%	2%
Bicycle	1%	0%	0%	1%	0%		2%	4%	3%	1%	0%	1%	0%	0%	0%	3%	3%	3%	2%
On foot	16%	15%	3%	8%	11%		5%	11%	8%	5%	8%	10%	10%	8%	9%	12%	14%	11%	9%
Other	0%	2%	2%	0%	2%		1%	0%	0%	0%	0%	0%	2%	1%	1%	1%	0%	0%	1%

	Town	CULLOMP-TON	TIVERTON	2011 Administ Ward Bradninch	2011 Administ Ward Cadbury	2011 Administ Ward Canons-leigh	2011 Administ Ward Clare and Shuttern	2011 Administ Ward Halberton	2011 Administ Ward Lower Culm	2011 Administ Ward Newbrooke	2011 Administ Ward Sandford and Creedy	2011 Administ Ward Silverton	2011 Administ Ward Taw	2011 Administ Ward Taw Vale	2011 Administ Ward Upper Culm	2011 Administ Ward Upper Yeo	2011 Administ Ward Way	2011 Administ Ward Yeo
Method of Travel to Work - Resident Population, 2001 (UV39)																		
Works mainly at or from home	10%	13%	11%	12%	24%	23%	28%	24%	13%	19%	29%	11%	25%	25%	23%	21%	27%	21%
Underground, metro, light rail or tram	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Train	0%	0%	0%	0%	1%	1%	0%	1%	0%	1%	1%	0%	1%	0%	0%	1%	1%	1%
Bus, minibus or coach	4%	3%	3%	5%	1%	1%	1%	2%	3%	3%	1%	3%	1%	2%	1%	3%	1%	2%
Motorcycle, scooter or moped	1%	1%	1%	3%	1%	2%	1%	1%	2%	1%	1%	2%	1%	1%	1%	1%	1%	1%
Driving a car or van	54%	61%	53%	67%	60%	62%	54%	61%	61%	63%	57%	71%	61%	59%	61%	60%	61%	63%
Passenger in a car or van	7%	7%	7%	5%	5%	5%	4%	6%	4%	6%	4%	6%	5%	6%	5%	5%	5%	5%
Bicycle	2%	2%	4%	1%	1%	1%	1%	1%	3%	1%	1%	1%	0%	1%	2%	1%	1%	0%
On foot	22%	12%	20%	7%	5%	5%	9%	3%	12%	5%	5%	5%	4%	5%	5%	8%	4%	5%
Taxi or minicab	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Other	0%	0%	0%	0%	1%	1%	1%	1%	1%	1%	0%	0%	1%	1%	1%	1%	1%	0%
Method of Travel to Work, 2011 (QS701EW)																		
Work Mainly at or From Home	5%	7%	6%	9%	20%	16%	21%	18%	8%	13%	19%	10%	20%	14%	15%	13%	20%	14%
Underground, Metro, Light Rail, Tram	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Train	1%	0%	1%	1%	1%	2%	1%	2%	0%	2%	1%	1%	2%	1%	1%	1%	1%	2%
Bus, Minibus or Coach	6%	4%	3%	6%	1%	1%	1%	2%	3%	4%	3%	4%	2%	3%	1%	3%	1%	2%
Motorcycle, Scooter or Moped	1%	1%	1%	2%	1%	1%	0%	0%	1%	1%	1%	2%	1%	1%	1%	1%	1%	1%
Driving a Car or Van	58%	67%	60%	68%	65%	69%	61%	66%	70%	67%	64%	70%	63%	67%	68%	65%	64%	66%
Passenger in a Car or Van	5%	6%	6%	5%	4%	3%	4%	3%	5%	4%	4%	5%	4%	5%	3%	4%	5%	4%
Bicycle	1%	2%	3%	1%	1%	1%	0%	1%	2%	3%	1%	2%	0%	1%	1%	1%	1%	1%
On Foot	22%	12%	19%	6%	7%	5%	10%	6%	9%	6%	6%	6%	6%	7%	8%	11%	6%	7%
Taxi	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%
Other Method of Travel to Work	0%	1%	0%	2%	1%	1%	1%	1%	1%	1%	1%	0%	1%	1%	1%	1%	1%	1%
Method of Travel to Work - Daytime Population, 2001 (UV37)																		
Works mainly at or from home	9%	16%	10%	19%	35%	36%	37%	39%	13%	39%	53%	31%	36%	46%	40%	38%	53%	32%
Underground, metro, light rail or tram	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Train	0%	0%	0%	0%	1%	0%	0%	0%	0%	1%	0%	0%	1%	0%	0%	0%	1%	0%
Bus, minibus or coach	2%	1%	2%	3%	3%	2%	1%	1%	7%	2%	0%	1%	0%	0%	0%	0%	0%	1%
Motorcycle, scooter or moped	1%	2%	1%	3%	1%	2%	1%	1%	2%	1%	0%	2%	1%	2%	1%	2%	1%	1%
Driving a car or van	59%	58%	57%	59%	43%	46%	43%	47%	57%	43%	34%	46%	48%	44%	43%	44%	34%	49%
Passenger in a car or van	6%	6%	6%	3%	6%	5%	5%	5%	7%	4%	3%	3%	5%	3%	3%	3%	3%	4%
Bicycle	2%	3%	4%	1%	1%	2%	1%	1%	3%	0%	1%	3%	1%	0%	3%	1%	1%	1%
On foot	20%	14%	19%	11%	9%	7%	11%	5%	11%	8%	7%	12%	7%	6%	8%	12%	7%	10%
Taxi or minicab	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Other	0%	0%	0%	1%	1%	1%	1%	1%	0%	2%	1%	1%	1%	0%	1%	1%	1%	0%