



Transport Demand in the Hagley Area

January 2020

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1. Introduction

- 1.1 The village of Hagley is in the Bromsgrove District of Worcestershire, in the very north of the County, close to the boundary with the West Midlands Conurbation (specifically Dudley Metropolitan Borough Council area).
- 1.2 The A456 passes through Hagley village, linking the Wyre Forest and a wide, dispersed rural population to the west with the West Midlands Conurbation and the motorway network (M5, Junction 3) to the east, with connections to the M6 and the rest of the national motorway network. The A491 intersects this corridor from north to south, connecting Dudley to the north with M5 Junction 4 to the south, with onward connections to the M42 (for Birmingham Airport/NEC), London and the South East (via the M40) and Bristol and the South West (via the M5 south)

1.3 A map of the local highway network in the Hagley area is provided below in Figure 1.

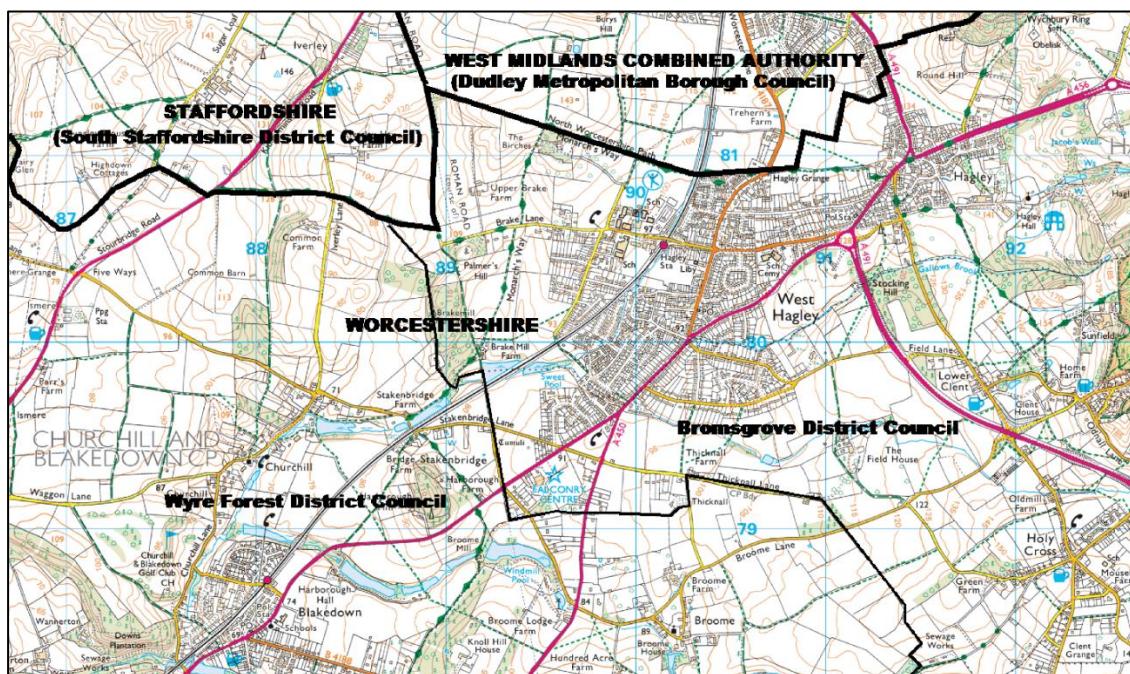


FIGURE 1 – MAP OF HAGLEY VILLAGE AND THE LOCAL HIGHWAY NETWORK

- 1.4 As such, Hagley village's highway network is at the crossroads of two nationally significant transport corridors. It is perhaps unsurprising that both routes have been proposed for inclusion in the Government's proposed Major Roads Network, which is aimed to complement the Strategic Road Network as roads which carry a high proportion of traffic with a national economic significance.

2. Census 2011 Travel Demand Analysis for the A456 Corridor

- 2.1 Evidence suggests that the A456 is the principal route between the Wyre Forest Towns and the M5 (either northbound via Junction 3/A456) or southbound via Junction 4/A491), which is logical, given the access opportunities that this route provides to the Birmingham Box (M5/M6/M42), Birmingham Airport, the NEC and wider UK destinations.
- 2.2 Alternative access routes to the motorway network from the Wyre Forest Towns include the A449 (southbound for M5 Junction 6), A448 (eastbound via Bromsgrove for M42, Junction 1) and A442 (south bound for M5 Junction 5). Some traffic also rat-runs through Belbroughton using the B4188 to bypass Hagley, although as this report focuses specifically on the A456, these routes will not be considered in any further detail in this report.
- 2.3 In 2011, the A456 through Hagley carried 31,852 vehicles per day¹ (Annual Average Daily Traffic or AADT), of which:
- 25,495 were cars and taxis (80%)
 - 6,090 were LGVs/HGVs (19%)
 - 319 were buses, coaches, motorcycles and cycles (1%)
- 2.4 The Census of 2011, being the most recent data source from which to assess travel demand, identifies that the Wyre Forest was a relatively ‘contained’ economy. Specifically, a significant proportion of residents live and work within the District (see Tables 1 and 2, below).

DISTRICT OF RESIDENCE (ORIGIN)	Commuting to Wyre Forest District		DISTRICT OF WORK (DESTINATION)	Commuting from Wyre Forest District	
Bromsgrove	679	2%	Bromsgrove	1,186	3%
Redditch	221	1%	Redditch	478	1%
Wychavon	1,043	4%	Wychavon	3,377	9%
Wyre Forest	20,165	71%	Wyre Forest	20,165	56%
Worcester	774	3%	Worcester	2,387	7%
Malvern Hills	635	2%	Malvern Hills	717	2%
Birmingham	472	2%	Birmingham	2,318	6%
Dudley	1,924	7%	Dudley	2,473	7%
Solihull	98	0%	Solihull	277	1%
Sandwell	321	1%	Sandwell	902	2%
Stratford-on-Avon	38	0%	Stratford-on-Avon	104	0%
Walsall	118	0%	Walsall	138	0%
Coventry	23	0%	Coventry	93	0%
Wolverhampton	194	1%	Wolverhampton	395	1%
Warwick	18	0%	Warwick	116	0%
South Staffordshire	298	1%	South Staffordshire	221	1%
Shropshire	1,037	4%	Shropshire	638	2%
Herefordshire	114	0%	Herefordshire	120	0%
Tewkesbury	20	0%	Tewkesbury	80	0%
Cheltenham	23	0%	Cheltenham	48	0%
Gloucester	9	0%	Gloucester	37	0%
Rest of GB and NI	573	2%	Rest of GB and NI	1,415	4%
TOTALS	28,237		TOTALS	36,270	

TABLE 1 – NUMBERS OF WYRE FOREST EMPLOYMENT TRIPS BY ORIGIN AND DESTINATION (CENSUS 2011)

¹ <https://roadtraffic.dft.gov.uk/manualcountpoints/47847>

TWO WAY FLOWS	Commuting to or from the Wyre Forest District	Commuter Routes to/from Wyre Forest District and Direction of Travel
Bromsgrove	1,865	3% A448 (East), A456 (North East)
Redditch	699	1% A456 (North East), A448 (East)
Wychavon	4,420	7% A449 (South), A442 (South East), Rail (South - 1% of trips)
Wyre Forest	40,330	61% Internal
Worcester	3,161	5% A449 (South), Rail (South - 5% of trips)
Malvern Hills	1,352	2% A451 (South West), A456 (West), A449 (South), Rail (South - 2% of trips)
Birmingham	2,790	4% A456 (North East), Rail (North East - 22% of trips)
Dudley	4,397	7% A451 (North East), A449 (North East), A456 (North East)
Solihull	375	1% A456 (North East), Rail (North East - 10% of trips)
Sandwell	1,223	2% A456 (North East), A449 (North), Rail (North East - 5% of trips)
Stratford-on-Avon	142	0% A456 (North East)
Walsall	256	0% A456 (North East)
Coventry	116	0% A456 (North East)
Wolverhampton	589	1% A449 (North), A456 (North East)
Warwick	134	0% A456 (North East)
South Staffordshire	519	1% A449 (North)
Shropshire	1,675	3% A442 (North), A449 (North)
Herefordshire	234	0% A456 (West), A451 (South West)
Tewkesbury	100	0% A449 (South)
Cheltenham	71	0% A449 (South)
Gloucester	46	0% A449 (South)
Rest of GB and NI	1,988	3% Various
TOTALS	66,482	

TABLE 2 – NUMBERS OF EMPLOYMENT JOURNEYS TO AND FROM WYRE FOREST ORIGINS AND DESTINATIONS BY TRANSPORT CORRIDOR (CENSUS 2011)

- 2.5 The data contained in Table 2 above includes a number of assumptions about transport corridors used by employment trips to and from the Wyre Forest District. Included in the table above is the known mode share for rail (drawn from Census 2011 data).
- 2.6 From the information set out in Tables 1 and 2, when rail journeys are accounted for, it is estimated that the Wyre Forest generates between 5,500 and 6,000 employment trips which will route via the A456 through Hagley; or approximately 18% of total traffic flow.
- 2.7 Since 2011, the Wyre Forest has seen an uplift in regeneration of former derelict employment and residential sites, particularly around the former British Sugar site at Hoobrook and at Churchfields, but travel flows appear to have remained largely static since that time.
- 2.8 As identified earlier, the area immediately to the west of the Wyre Forest Towns and beyond is ‘deep rural’ in nature, with sparsely distributed settlements. For residents of this (geographically significant) area, the A456 is the natural corridor of choice to access the West Midlands and the Motorway network. Figure 2 below attempts to illustrate this concept of the (much) wider catchment of the A456, beyond the Wyre Forest District.

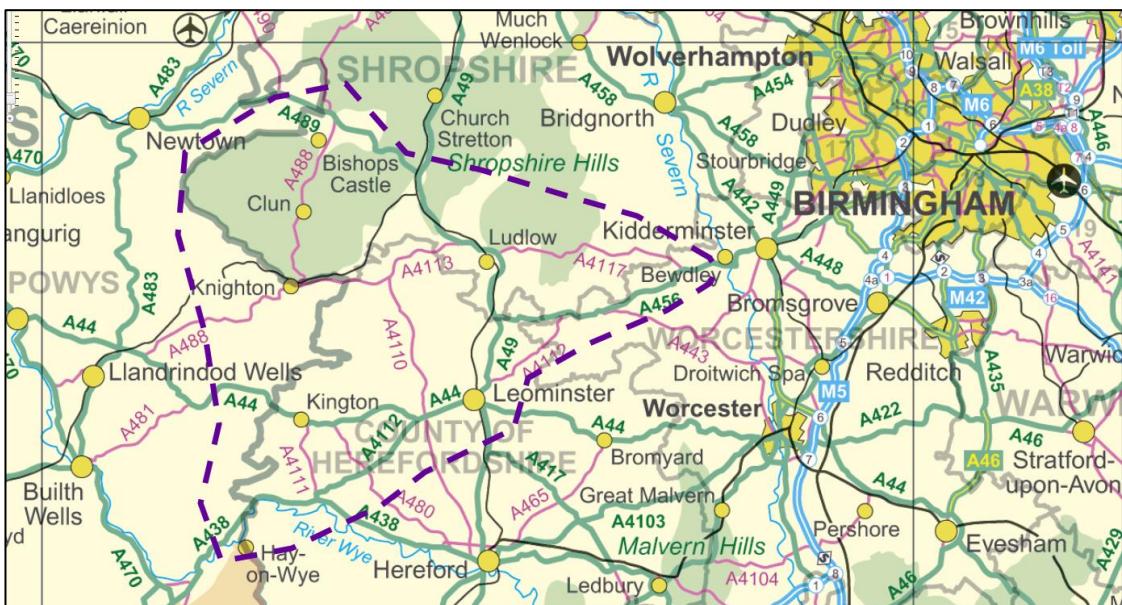


FIGURE 2 – MAP OF ASSUMED WIDER CATCHMENT OF THE A456 TRANSPORT CORRIDOR

- 2.9 The loss of much of the rural rail network in the Marches as part of the Beeching cuts means that for many residents of the area identified in Figure 2 above, driving represents the only realistic option for accessing the West Midlands Conurbation from this area. For residents of this area, the nearest rail heads offering direct access into the West Midlands Conurbation are Shrewsbury to the north, or Hereford/Ledbury to the south. To access these, a train must be taken from Ludlow (nearest railhead) to either Hereford or Shrewsbury, or users must drive to access this mode. The trip attraction of this area for employment purposes is low (particularly for higher paid professional work) so it is reasonable to assume that any growth in demand in this wider area with destinations in the West Midlands Conurbation will disproportionately affect demand to travel experienced on the A456 passing through Hagley. There is comparatively little development growth proposed in South Shropshire/North Herefordshire area, but the lure of higher paid employment in the West Midlands Conurbation may continue to stimulate increased demand to travel over time. Census data suggests that over 1,450 trips are made each day, by car, from this wider area to destinations in the West Midlands Conurbation to access employment alone. It is reasonable to assume that a significant additional volume of traffic will also be using this corridor for other purposes, including tourist traffic and business-related journeys.
- 2.10 The recently adopted West Midlands Rail Investment Strategy (2018 – 2047) proposes a new railway station to be opened at the West Midlands Safari Park, making use of the Severn Valley Railway heritage railway line. Should a suitably positive business case be identified, this could offer an opportunity to pursue significant modal transfer from road to rail for strategic trips into the West Midlands Conurbation and beyond for the rural areas to the west of the Wyre Forest District.

3. Duty to Cooperate Meetings

- 3.1 Worcestershire County Council has held formal Duty to Cooperate Meetings with Dudley Metropolitan Borough Council and South Staffordshire District Council, to understand the likely impacts that forecast growth in these areas may have on Worcestershire.

South Staffordshire District Council

- 3.2 Negligible growth is proposed in the southern part of South Staffordshire (which adjoins Worcestershire). As such, no impacts are expected on Worcestershire's transport networks.

Dudley Metropolitan Borough Council

- 3.3 It was identified that significant growth is proposed in the Black Country area, as set out in the Black Country Core Strategy. There are two significant housing growth corridors which have relevance: the Dudley / Brierley Hill/ Stourbridge corridor and the Brierley Hill / Stourbridge corridor. This growth is expected to place further demand on the A456 east of Hagley (within Dudley Metropolitan Borough Council's boundary) which may impact upon Worcestershire's transport networks.
- 3.4 A highway improvement scheme is due to be implemented in the near future at the Grange Roundabout (junction of A456, A459 and B4551), although this improvement scheme has been designed to cater exclusively for existing demand. It will not cater for forecast demand growth.
- 3.5 Dudley Metropolitan Borough Council's adopted transport strategy focusses investment on significant improvement of local public transport networks, to mitigate demand generated by development growth.
- 3.6 Station car parks within the West Midlands Conurbation are currently free to use, but the West Midlands Combined Authority are proposing to implement a charging regime in the near future, to discourage car-based access to rail services in line with adopted policy. It is expected that this will result in car parking charges becoming consistent across the local area. Further, it is suggested that this could displace demand currently travelling into the conurbation from Worcestershire and further afield which currently takes advantage of this. This would have the effect of making car park charges levied at Blakedown and Kidderminster Stations consistent with those in the West Midlands Conurbation.
- 3.7 Colleagues at Dudley Metropolitan Borough Council were strongly supportive of Worcestershire County Council's proposal to build a large 'rail and ride' facility at Blakedown, as this will complement their adopted transport strategy to pursue modal shift to passenger transport, before trips enter the Conurbation.

Shropshire Council

- 3.8 The Shropshire Development Plan (2015), places development focus on existing urban areas. In the context of this plan, the settlement of Bridgnorth is the closest to Worcestershire, with only 1,400 dwellings proposed for development within the plan period. There are no significant transport infrastructure or service investments proposed in the local area.
- 3.9 A Preferred Options Consultation for Strategic Sites (2019) proposes four strategic sites for major development:
- An area of search in land to the north of M54, Junction 3;
 - Market Drayton (the former Clive Barracks) 750 new dwellings beyond 2026;

- Iron Bridge (the former power stations) 1000 new dwellings beyond 2022/3;
- RAF Cosford, with a focus on further military, tourist and defence industry redevelopment.

3.10 As all of these sites are remote from Worcestershire, it was decided that a Duty to Cooperate meeting was not required with Shropshire Council, as proposed development growth would have no significant impact on Worcestershire's transport networks.

4. Strategic Highway Capacity Enhancement Proposals

- 4.1 Midlands Connect published the Midlands Connect Strategy in March 2017. This document proposed the need for a Western Strategic Route, completing the motorway ring around the West Midlands Conurbation. Following this, Midlands Connect published a Long-Term Midlands Motorway Hub Study in partnership with Highways England, which promotes the need for this route.
- 4.2 If constructed, this route would provide a *de facto* bypass of Hagley, however, it should be noted that development of business cases to construct new motorways is notoriously complex, resulting in long lead-in times. Subject to a suitable business case being developed, it could be decades before any scheme is delivered and benefits realised. For this reason, it is suggested that the Western Strategic Route should not be considered within this context until such a point that a suitable, funded business case has been identified, together with an agreed programme for delivery.

5. Modelling of the Transport Demand Impacts of Proposed Growth in Wyre Forest District

- 5.1 The Wyre Forest Transport Model (WFTM), developed in VISUM, was used to test the likely impacts of forecast development growth in the Wyre Forest, in terms of its distribution across transport networks, and in particular on the A456 corridor in the Hagley area, for a 2036 forecast year.
- 5.2 The 2036 WFTM was run both with Wyre Forest Local Plan allocations traffic (WithLP) and without local plan traffic (WithoutLP). Figure 3 to Figure 6 show difference plots between the WithLP and WithoutLP scenarios for the 2036 AM and PM peaks. The flow differences depict the impact of increased demand due to the local plan allocations as well as the re-routing effects across the modelled transport networks; with significant changes around the Wyre Forest as traffic redistributes along various routes to avoid more congested parts of the network.
- 5.3 Similarly, traffic that passes through Hagley also re-routes due to Wyre Forest Local Plan associated traffic passing through the town. The net impact of change in traffic in Hagley from various directions (A450, A456 west and east, A491 north and south, B4187 etc) is an increase of 43 vehicles inbound and 25 vehicles outbound in the 2036 AM peak hour. The corresponding values for the 2036 PM peak hour are an increase of 52 vehicles in the inbound direction and a decrease of 37 vehicles in the outbound direction. These changes are relatively low due to capacity constraints at junctions in Hagley leading to vehicles choosing alternative routes.
- 5.4 Further analysis was undertaken of the demand from the Wyre Forest Local Plan allocations that pass through Hagley. In the 2036 AM peak, the local plan developments in Wyre Forest generate 2,808 trips in total. It was calculated that 234 (8.3%) of these trips interact with the Hagley network either passing through to other destinations or with one trip end in Hagley.
- 5.5 Similarly, in the 2036 PM peak, the Wyre Forest Local Plan developments in Wyre Forest generate 2,408 trips in total of which 191 (7.9%) trips interact with the Hagley network either passing through or with one trip end in Hagley.
- 5.6 Base total highway demand with origins or destinations in the Wyre Forest District accounts for 5.6% (AM) and 6.3% (PM) of trips passing through Hagley.

FIGURE 3: GRAPHIC REPRESENTATION OF THE IMPACT OF LOCAL PLAN DEVELOPMENT TRAFFIC—2036 AM (WITH LOCAL PLAN MINUS WITHOUT LOCAL PLAN)

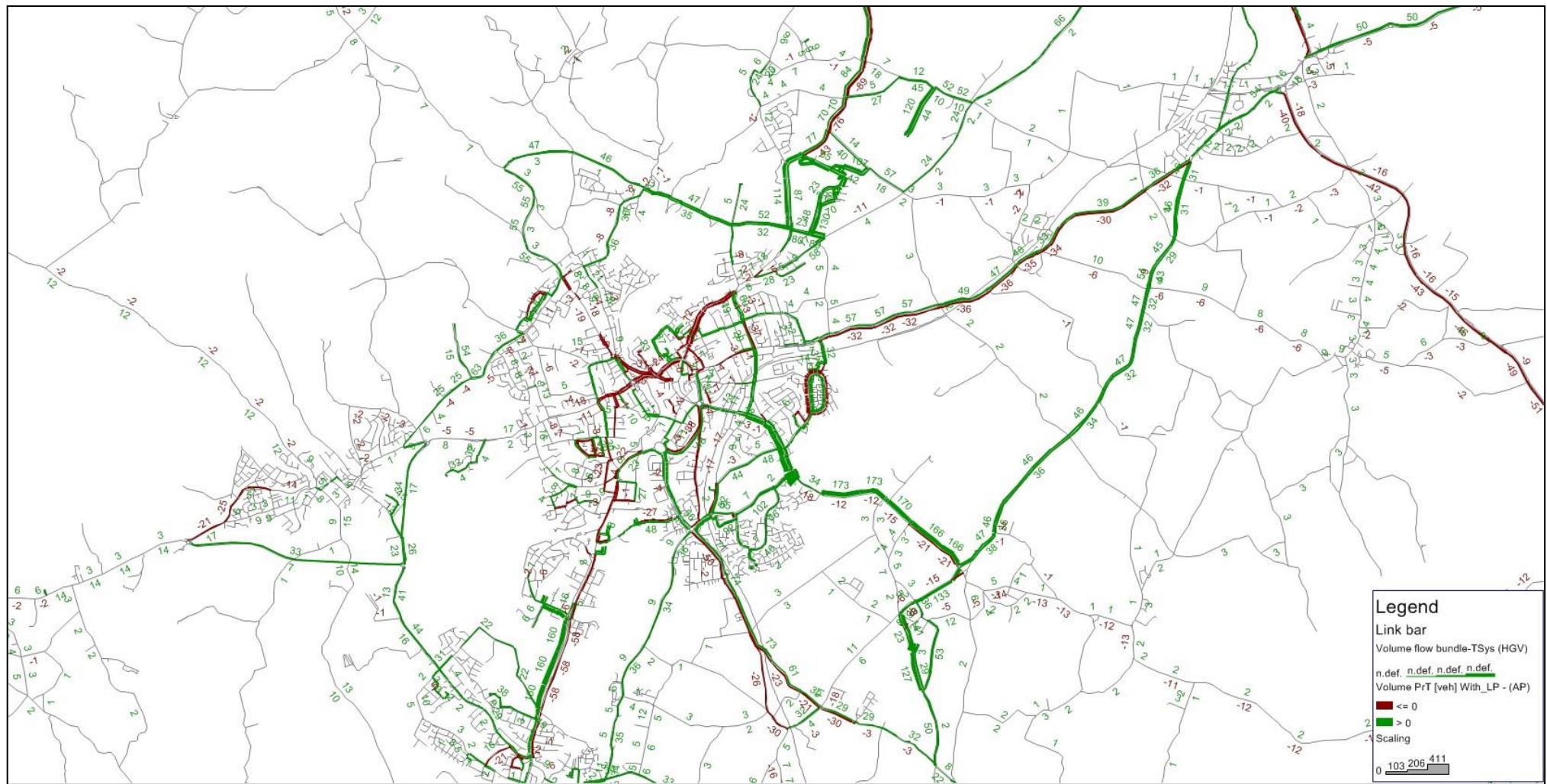


FIGURE 4: GRAPHIC REPRESENTATION OF THE IMPACT OF WYRE FOREST LOCAL PLAN DEVELOPMENT TRAFFIC IN HAGLEY – 2036 AM (WITH LOCAL PLAN MINUS WITHOUT LOCAL PLAN)

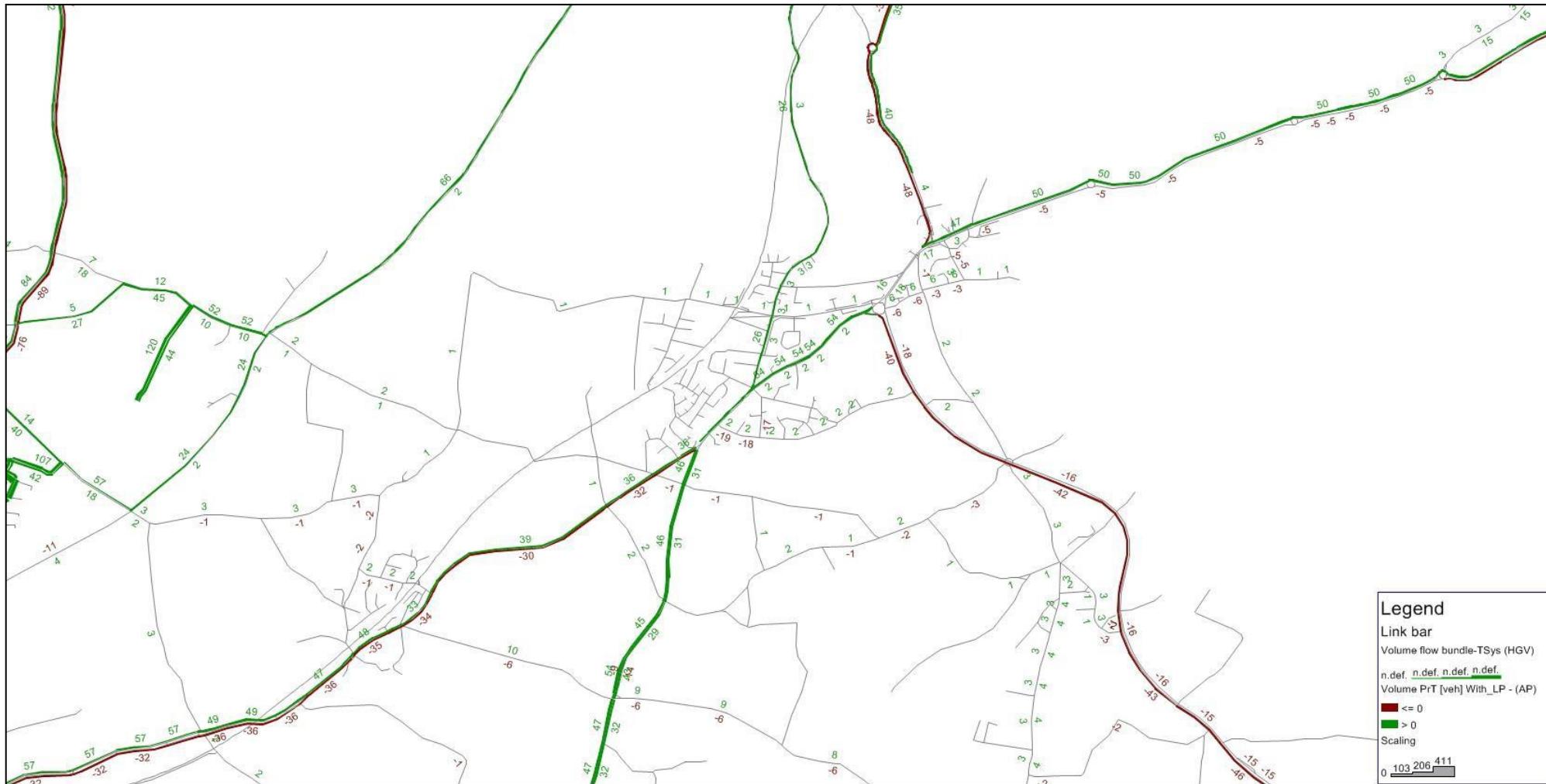


FIGURE 5: GRAPHIC REPRESENTATION OF THE IMPACT OF LOCAL PLAN DEVELOPMENT TRAFFIC—2036 PM (WITH LOCAL PLAN MINUS WITHOUT LOCAL PLAN)

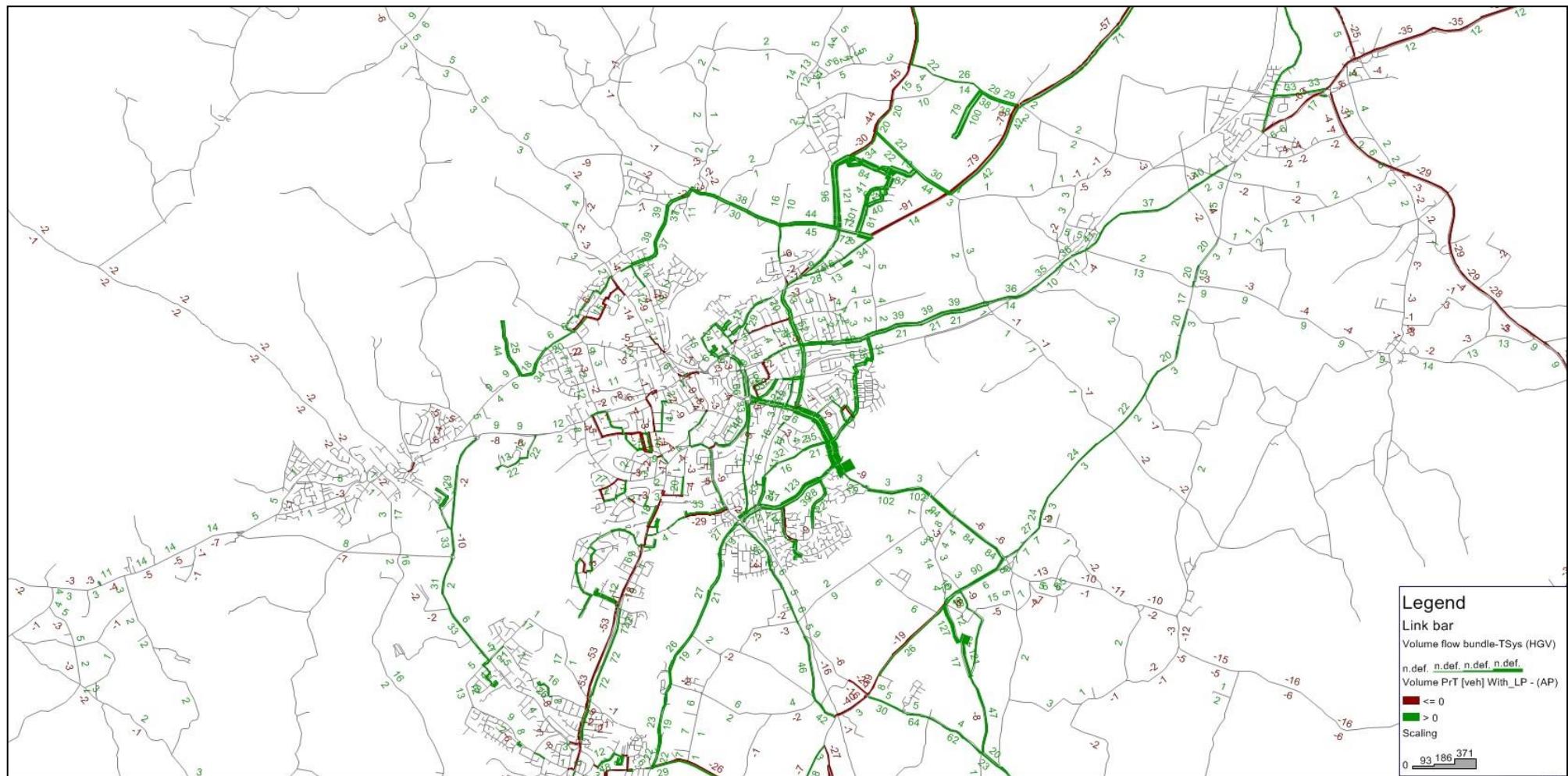
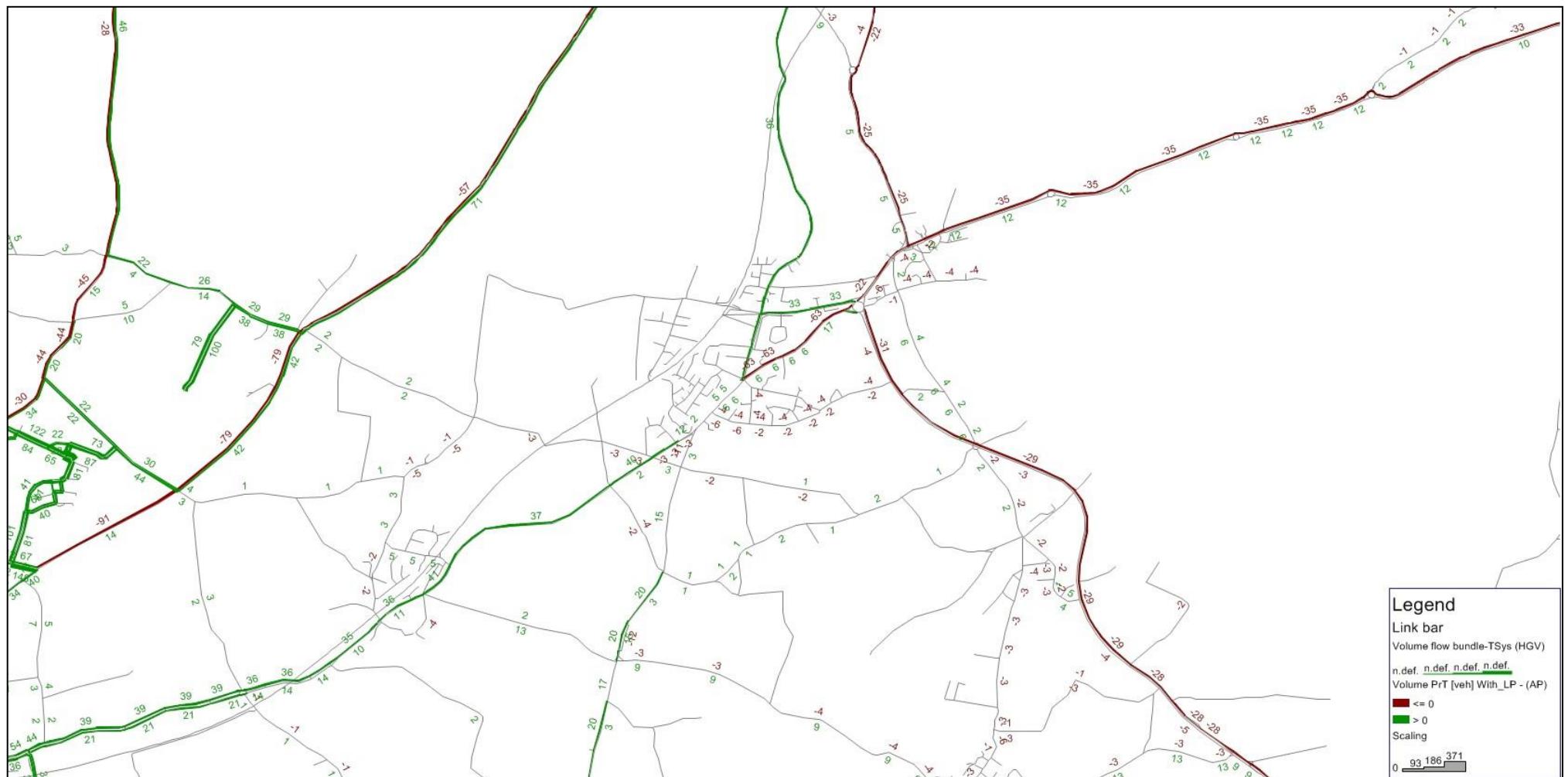


FIGURE 6: GRAPHIC REPRESENTATION OF THE IMPACT OF WYRE FOREST LOCAL PLAN DEVELOPMENT TRAFFIC IN HAGLEY – 2036 PM (WITH LOCAL PLAN MINUS WITHOUT LOCAL PLAN)



5.7 Table 3 shows the total number of trips generated by proposed Wyre Forest Local Plan developments in the Wyre Forest area in the 2036 AM and PM peaks, together with the number of trips that are forecast to route through Hagley.

	Total Wyre Forest Local Plan Trips	Wyre Forest Local Plan Trips using A456 through Hagley
2036 AM Peak	2,808	234 (8.3%)
2036 PM Peak	2,408	191 (7.9%)

TABLE 3: LOCAL PLAN TRIPS SUMMARY

5.8 In the AM peak, 234 of the 2,808 Wyre Forest Local Plan trips travel through Hagley which is equivalent to just 8.3%. In the PM peak, 191 of the 2,408 local plan trips pass through Hagley, accounting for 7.9% of Wyre Forest Local Plan trips.

6. Worcestershire County Council's Demand Management Approach for the A456 Corridor

- 6.1 The significant peak time congestion which is experienced in both Kidderminster Town Centre (northern ring road) and Hagley village is likely to be acting to suppress demand on the A456 corridor. Some journeys that might have otherwise been made by car on this route may take too long or be too unreliable because of peak time congestion, which may force some people to use other routes, other modes or avoid travelling altogether.
- 6.2 The evidence included within this report suggests that forecast travel demand on the A456 arising from the Wyre Forest Local Plan will be limited. As long as proposed investment is prioritised to enhance rail infrastructure, services and facilities within the Wyre Forest District, it is reasonable to assume that this will mitigate this forecast growth in demand. In turn, it would be unreasonable to expect the Wyre Forest Local Plan to contribute to more strategic highway capacity improvements on the A456 corridor beyond the District's administrative boundary.
- 6.3 It is also important to recognise that national mobility trends are anticipated to undergo significant change. This, together with continued growth in home and flexible working patterns is forecast to result in a gradual decline in travel demand, as transport networks become increasingly efficient and telecommunications access and speed improves.
- 6.4 In the wider area, the draft Birmingham Transport Plan (January 2020) www.birmingham.gov.uk/info/20013/roads_travel_and_parking/2032/draft_birmingham_transport_plan represents a marked change in local approach to transport planning, with a strong focus on demand management to discourage single-occupancy car use. Undoubtedly, this will, impact on commuting patterns into the conurbation from the Wyre Forest if adopted, and if other Local Authorities follow suit.
- 6.5 Any proposal to tackle congestion by providing additional highway capacity on this corridor (such as a bypass of Hagley) would make driving on this corridor much more attractive by improving journey times and journey time reliability. In turn, this would act to release suppressed demand, resulting in an overall uplift in traffic using the corridor, which would result

in either maintaining the current status quo, or worse, a net deterioration in corridor efficiency, with linked increases in local emissions of carbon and nitrogen dioxide and deteriorated air quality.

- 6.6 In recognition of this, Worcestershire County Council's demand mitigation strategy for the A456 corridor centres on focussing investment at Blakedown Station expansion to provide strategic rail-based park and ride facilities and investing in improvements at Kidderminster station and station travel plans to support growth, in line with the sustainable development principles of the National Planning Policy Framework. Together, these stations will provide genuinely attractive travel alternatives for a significant percentage of trips using this corridor, mitigating the impacts of demand growth on the busy A456. When station car park charges come forward at stations within the West Midlands Conurbation in future, this is expected to result in a net uplift in demand to use stations in Worcestershire.
- 6.7 This approach is widely supported by National and Local Policy and best practice, including the National Planning Policy Framework (NPPF), balancing demand and making best use of existing transport infrastructure to accommodate travel demand generated by planned development growth. In line with the guidance set out in the NPPF, a bypass for Hagley will be considered only after investment has been made to exhaust alternative travel options. In the specific case of the A456, this means investment in rail infrastructure and services to enable this mode to accommodate a much greater mode share of generated trips.