THE SOCIO-ECONOMIC IMPACTS OF THE COMING OF THE RAILWAYS TO HERTFORDSHIRE, BEDFORDSHIRE AND BUCKINGHAMSHIRE, 1838-1900.

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Abstract

This research presents a demographic investigation into the effects the development of Britain's railways in the Victorian Era had on the largely rural counties of Hertfordshire, Bedfordshire and Buckinghamshire. A 'gateway' to London, this region was traversed by many lines with a wide range of impacts. Railway historiography has questioned the extent to which railways affected national development; contemporary views of their central importance giving way to more critical opinion. Local rural studies have been recognised in addressing this; these at present are, however, few.

Comparing and contrasting the three counties, the findings were used to create hypotheses of rural impacts, subsequently tested for accuracy and applicability by comparison with individual settlements. They demonstrated that occupations became decreasingly agricultural; railways having varying involvement. Sometimes a key factor, mostly they were of a supporting nature triggering knock-on effects. Land use became more urbanised but this was not railway originating; contrarily land use affected rail development itself. Railways, nonetheless, actively boosted urbanisation and industry by 1900, and in cases even supported agriculture. Population changes were assisted by railways, particularly rural-urban migration, but while aiding later in the period, railways did not initiate the process. A case study of Wolverton (Buckinghamshire), the first planned 'railway town', reveal exceptional differences even down to the appropriateness of the broader historiography. Limited prior research on this settlement type had been undertaken, and this study revealed their development was more complex than at first glance. As a result, a new structural framework was created to explain how they could transform from company tool to independent town.

The contribution of this research is thus threefold. In analysing a new region, another area is added to a growing number collectively building a national understanding from a local level. As a rural region yet close to London, this shows that while current historiographical 'facilitator' views are correct, variation was rife. The hypotheses present a starting point for future rural rail studies – a method for comparing regions alongside a list of investigable aspects. Lastly, the proposed model for 'railway town' development provides a framework for comparison not just of these settlements but potentially other forms of planned 'company town'. While railways were one factor among many, their importance should not be underestimated.

Acknowledgements:

Contents:

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Abbreviations:

A&BR	Aylesbury & Buckingham Railway
B&CR	Bedford & Cambridge Railway
B&LARS	Bedfordshire & Luton Archives and Records Service
BoT	Board of Trade
BRC	Buckinghamshire Railway Centre, Quainton
GCR	Great Central Railway
GER	Great Eastern Railway
GJC	Grand Junction Canal
GNR	Great Northern Railway
GWR	Great Western Railway
H&StAR	Hatfield & St Albans Railway
HALS	Hertford Archives & Local Studies
HL&DR	Hertford, Luton & Dunstable Railway
LBR	London & Birmingham Railway
LMR	Liverpool & Manchester Railway
LNWR	London & North Western Railway
LSWR	London & South Western Railway
MetR	Metropolitan Railway
MKM	Milton Keynes Museum
MPD	Motive Power Depot
MoStA	Museum of St Albans
MR	Midland Railway
N&ER	Northern & Eastern Railway
NRM	National Railway Museum
S&PR	Sandy & Potton Railway
TNA	The National Archives
VCH	*Victoria County History*
WPM	Wardown Park Museum, Luton
WR	Wycombe Railway

St Albans was given city status in 1877; beforehand it was considered a town and is referenced as such throughout for consistency.

Illustrations:

Part 1: Studying the Railways of the Chilterns

Chapter 1: Historiography

The development of steam propulsion revolutionised global transportation, and the work of Trevithick and the Stephensons transformed Elizabethan 'plateways' into one of the most iconic Victorian engineering feats - the railways.[1] Railways had a wide spectrum of impacts on all aspects of life, some beneficial, others harmful, but all varying greatly for just as many reasons. As a result, their overall impact is very complex to rationalise, particularly as some aspects are comparatively under-studied while others are open to interpretation, causing confusion, uncertainty and disagreements throughout the historiography. Of the countless enthusiast-led and growing number of academic studies, the focus has primarily been on industrial and urban effects, ranging from their involvement in the development of the stock market and goods haulage to the impacts they had on alternate transports. By comparison, the number of rural or agricultural-based studies are few, local micro-studies are primarily the domain of PhD theses.[2] With much of Britain at this time still very rural, 50% c.1851, this disproportion in research towards urban studies directly affects the national historiography.[3]

Particularly due to the difficulties in clarifying these smaller debates, the most fundamental issue currently discussed centres on the widest question – whether railways actually made a difference to national development. Formerly credited with being the 'locomotive' of all progress, more recent works suggest it was not as all-encompassing as thought contemporarily.[4] This paramount question is the first of four key historiographical issues presented, being followed by economic and social themes before concluding with an investigation into the important but fledgling study of 'railway towns'.

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[1] R. Baxter, 'Railway Expansion and its Results', *Journal of the Statistical Society*, XXIX (1866), pp.549-595.

[2] B.R. Mitchell, 'The Coming of the Railway and United Kingdom Economic Growth', *The Journal of Economic History*, Vol. 24, No. 3 (Sep., 1964), pp.322, 325; T.R. Gourvish, *Railways and the British Economy 1830-1914* (London, 1980), pp.13, 27, 42; T.C. Barker & C.I. Savage, *An Economic History of Transport in Britain* (London, 1974), pp.67, 123; M. Casson, *The World's First Railway System: Enterprise, Competition and Regulation on the Railway Network in Victorian Britain* (Oxford, 2009), p.323; R. Stewart-Beardsley, *After the Railway. A Study of Socio-Economic Change in Five Rural Parishes in the Upper Thames Valley, 1830-1901* (Reading University, 2008); F. Andrews, *The Effect of the Coming of the Railway on the Towns and Villages of East Kent, 1841-1919* (University of Kent, 1993).

[3] P. Waller, *Town, City and Nation* (Oxford, 1983), p.8.

[4] J. Simmons, *The Railway in Town and Country 1830-1914* (Newton Abbot, 1986), pp.20-1; Gourvish, *Railways Economy*, pp.9, 14; Barker & Savage, *Transport*, p.79; M. Casson, *The Determinants of Local Population Growth: A Study of Oxfordshire in the Nineteenth Century*, EHS Annual Conference 2011, p.15; R. Church, *The Victorian Boom 1850-1875* (Economic History Society, 1975), p.34; Baxter, 'Railway Expansion', *Journal of the Statistical Society*, p.561; M. Robbins, *The Railway Age* (London, 1962), p.11.

Although Richard Trevithick invented the steam locomotive in 1803 and colliery lines began using rudimentary locomotives shortly thereafter, the steam railway in a recognisable form only began in 1825, with the opening of the Stockton & Darlington Railway.[5] The first line to connect two cities, providing a regular steam passenger service, was the Liverpool & Manchester Railway (hereafter LMR), opened on 15th September 1830.[6] Although intended primarily for goods, passenger numbers rocketed, vastly exceeding freight revenue. Such was its significance that the LMR is generally considered 'the birth of the Railway Age'.[7]

Once proven to be practical, further new lines were proposed. Numerous were rejected, particularly when conflicting, but the number and scale of proposals rapidly grew. The two most significant were the London & Birmingham Railway (founded in 1830 from the merger of two companies and completed in 1838; hereafter LBR) and the Great Western Railway (founded in 1833 and completed in 1841; hereafter GWR). In turn, each was the longest railway in the world and highly lucrative.

Table 1: Constructed mileage and percentage increase 1840-1900.

Year	Miles of line open	% increase
1840	1,498	
1850	6,084	306.1
1860	9,069	49.1
1870	13,563	49.6
1880	15,563	14.8
1890	17,281	11.0
1900	18,672	8.0

Compiled from B.R. Mitchell, *British Historical Statistics* (Cambridge, 1988) and J. Simmons, *The Victorian Railway* (London, 2009), p.317.

While not all proposed lines successfully raised capital, early financial successes triggered three railway manias - the first in 1839-40, the second 'Great Mania' in 1845-7 and the last in 1865-6. These periods of intense prospecting with huge numbers of proposed lines, attracted

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[5] Robbins, *Railway Age*, p.20, National Railway Museum, Science Museum.
[6] S. Garfield, *The Last Journey of William Huskisson* (London, 2002).
[7] Robbins, *Railway Age*, p.21; H. Dyos & D. Aldcroft, *British Transport: An Economic Survey from the Seventeenth Century to the Twentieth* (Leicester, 1971), p.118.

increasing numbers hoping for quick riches. But as more Acts were passed, increasing competition and finite raw materials meant many lines failed to be built.[8] With these financial collapses, critics (often unfairly) claimed that many proposals were essentially fraudulent, and the public became more wary of railway investments. But, in spite of these, over 70% of the finished system was completed by 1875 (Table 1).[9]

In this mid-period, three important companies were formed: the Great Northern Railway (founded in 1844; hereafter GNR), the Midland Railway (founded in 1844 with the merger of three companies; hereafter MR) and the Great Eastern Railway (founded in 1862 with the merger of the Eastern Counties Railway and seven smaller companies; hereafter GER).[10] With the former LBR as part of the London & North Western Railway (hereafter LNWR) and the GWR, these made the top five companies in England. The 1840s saw many amalgamations, but these declined as parliament increasingly rejected them, aiming to keep fares and monopolies low by encouraging competition. While such competition was substantial, there were cases of inter-company cooperation, especially with the formation in 1842 of the 'Railway Clearing House'.[11]

Considering limitations imposed by parliament on railways, there was much friction between the two. By far the most important was the Board of Trade's Railway Regulation Act of 1844.[12] Created by William Gladstone, as Head of the Board of Trade (hereafter BoT), it enforced penny-a-mile fares, proper coaches for all classes (previously being open trucks for third class) and a minimum of one third class train daily – the infamous 'Parliamentary Trains'.[13] Particularly with growing competition, this heralded improvements in passenger conditions; the MR being the first company to abolish second class in 1875. A second 'Cheap Trains Act' was created in 1883 abolishing duties on 1d/mile fares, encouraging further travel and the development of commuting.[14]

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[8] M. Reed, *Investment in Railways in Britain 1820-1844* (Oxford, 1975), p.14.
[9] Gourvish, *Railways Economy,* pp.9, 20.
[10] The Midland Railway was the first major amalgamation, formed (and initially chaired) by George Hudson. See Appendix II.
[11] Barker & Savage, *Transport*, p.67; Dyos & Aldcroft, *British Transport*, p.161.
[12] J. Simmons, *The Victorian Railway*, (London, 1991), p.74.
[13] As parodied in Gilbert and Sullivan's comic opera 'The Mikado' - *The Complete Plays of Gilbert and Sullivan* (London, 1997), p.332.
[14] Simmons, *Victorian Railway*, p.326; Dyos & Aldcroft, *British Transport*, p.148.

Other parliament actions (heavily resisted) slowly enforced operational uniformity across all companies.[15]   This aim of uniformity led to the highly publicised 1840-68 'Battle of the Gauges' between Brunel's broad gauge and the more common standard gauge. After a Royal Commission finding against the broad gauge in 1846, parliament limited the number of such proposals passed, and regauging took place piecemeal thereafter, completed in 1892.

Fig. 1: Approximated maps showing English and Welsh railway development.

1845   **1852**   **1914**
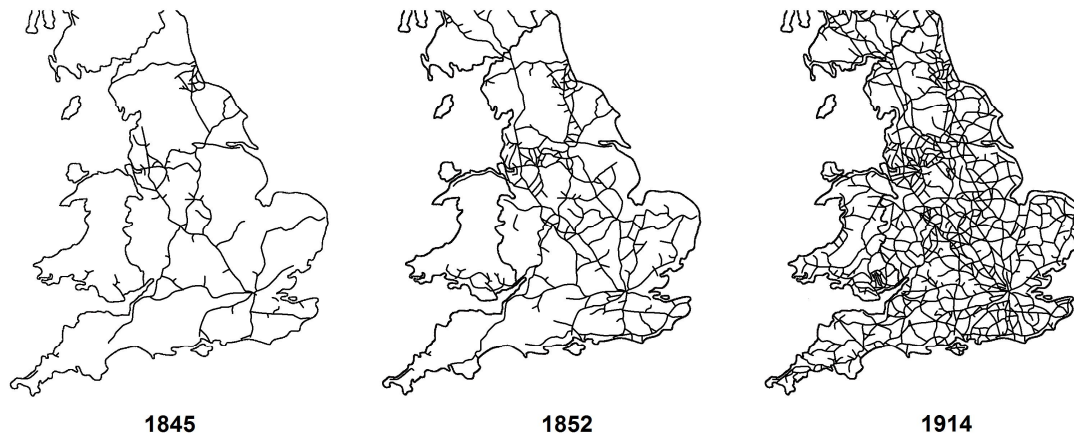
Based on H. Dyos & D. Aldcroft, *British Transport: An Economic Survey from the Seventeenth Century to the Twentieth* (Leicester, 1971), pp.120-1, 136-7, 152-3.

Construction did not cease even after the periods of the manias (Fig. 1). The number of new routes diminished; the last major line being the 1899 London extension of the Great Central Railway (hereafter GCR).   Instead, most construction in the 1870s involved system improvements – quadrupling tracks and building more direct routes.[16] Some of the great engineering projects of the period were associated with this, notably the Tay and Forth Bridges.   Many larger companies also expanded into other services such as shipping.[17] Partially as a result of improved routes and advancements in locomotive and carriage design, competition rose in the form of speed - the 'Race to the North' of 1888 and 1895 exemplifying the surrounding publicity.   With such actions, it is unsurprising that the government subsequently lessened its laissez-faire policy and increased its control of the railways, particularly concerning safety.[18] By 1900 railways had changed from an untested

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[15] Simmons, *Victorian Railway*, p.95.
[16] W. Ashworth, *An Economic History of England 1870-1939* (London, 1960), pp.111-3; Dyos & Aldcroft, *British Transport*, p.148.
[17] Dyos & Aldcroft, *British Transport*, p.154.
[18] Gourvish, *Railways Economy,* p.53.

technological novelty to a widespread system that, in spite of effectively consisting of over 200 companies, was beginning to operate as an integrated national network.[19]

Historiographical Models

Railways have had great credit for social and economic advancement during the era of the 'Industrial Revolution' - being recognised even by contemporaries as arguably its most significant accomplishment. However, there has been increasing historiographical debate on whether their actual role in socio-economic development has been exaggerated.[20] Countering the period's embellished acclaim, many subsequent historical studies omitted railways nearly entirely.[21] Railway history has since emerged as a distinct field worthy of research, particularly in terms of its impacts on economic development.[22] Simmons noted insufficient study of 'pure' social history, few finding 'their place in the general life of the age' – Simmons' own (particularly his groundbreaking 1986 *The Railway in Town and Country 1830-1914*) being the most significant in scope and detail.[23] In turning to social effects, though, he demonstrated the need for local historical studies in this field to build a better understanding of the many facets of change railways played a part in.

Studies of many rail aspects within the period produced two core interpretations about the overall effect of railways. Developed by historians such as D. Turnock and M. Robbins after research concentrating on large, urbanised, heavily-industrial settlements, or the nation as a whole, the original interpretation was that railways directly led to advancement and initiated 'change': all the social and economic improvements in each location studied were primarily attributable to the railways.[24] The ways it did so were by stimulating population growth through facilities provided, bringing people in from surrounding areas to live, work, buy or sell, helping develop suburbs. They encouraged and assisted industry, fostering its own

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[19] See Appendix I.

[20] For example: Gourvish, *Railways Economy*; Simmons, *Town and Country*.

[21] Simmons, *Town and Country*, p.15.

[22] For example PhD theses such as Stewart-Beardsley, *After the Railway* (Reading University, 2008); Andrews, *East Kent* (University of Kent, 1993).

[23] Simmons, *Victorian Railway*, p.10; Simmons, *Town and Country*.

[24] R. Fogel, *Railroads and American Economic Growth* (Baltimore, 1964), pp.1-9. For example: D. Turnock, *An Historical Geography of Railways in Great Britain and Ireland* (Aldershot, 1998); Robbins, *Railway Age*, pp.54, 156; Baxter, 'Railway Expansion', *Journal of the Statistical Society*, p.594; G. Hawke & M. Reed, 'Railway Capital in the United Kingdom in the Nineteenth Century', *The Economic History Review*, New Series, Vol. 22, No. 2 (Aug., 1969), p.269; John Langton, The Industrial Revolution and the Regional Geography of England, *Transactions of the Institute of British Geographers*, New Series, Vol. 9, No. 2 (1984), p.163.

industries, such as rail manufacture, or helping develop others, such as improving port connections. In some cases they created new towns; railways even affected the physical improvements of towns, for example street layout.[25]

Largely unchallenged for many years, this view has now been superseded by a far more critical analysis first theorised by R.W. Fogel and A. Fishlow.[26] Far from being the initiator of all improvements, the railways instead acted as a 'facilitator' for development, both positive and negative.[27] All the attributes above were points that *could* trigger socio-economic changes, but these changes could equally have resulted from unrelated factors.[28] This new analysis proposed that railways played a more limited role than previously thought, with much less uniformity in its effects nationwide.[29] Initially based on similar industrial areas, but at a more local level, new studies of distinctly rural areas and specific case study settlements continue to support this newer theory. As Simmons noted, the previous notion that stagnation only came from lacking railway access fails to recognise many locations with stations that also declined; the overall loss or gain in an area was not determined by railways alone.[30]

Underpinning these theories are several heavily-debated themes, but the analyses supporting these arguments are fraught with difficulties. Although many railway records survive, purges left records 'woefully incomplete', particularly affecting timetables and financial documents.[31] Exact figures are thus elusive, and even the most precise studies are often broad in nature, as many impacts were qualitative rather than quantitative.[32] Bar the few locations with obvious railway-led growth, extracting railways as factors from areas 'where

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[25] Simmons, *Town and Country*, p.17; G. Hawke, *Railways and Economic Growth in England and Wales 1840-1870* (Oxford, 1970), p.410-1; M. Fell, *London & North Western Railway Garston Docks* (Rothbury, 2012), p.4.

[26] Fogel, *Railroad Growth*; A. Fishlow, *American Railroads and the Transformation of the Ante-Bellum Economy* (Harvard, 1965); Simmons, *Town and Country*, p.20; Dyos & Aldcroft, *British Transport*, p.182; P. O'Brien, *The New Economic History of the Railways* (London, 1977), p.19.

[27] Fogel, *Railroad Growth*, pp.1-13, 207-8, 224; Fishlow, *American Railroads*, pp.13-14, 34, 55, 62, 236, 260; Barker & Savage, *Transport*, p.79.

[28] Fogel, *Railroad Growth*, p.224; Fishlow, *American Railroads*, p.62.

[29] Fogel, *Railroad Growth*, pp.13, 228-30; Fishlow, *American Railroads*, pp.260, 311. For example: Dyos & Aldcroft, *British Transport*, p.215; Gourvish, *Railways Economy,* pp.13, 31, 33; Mitchell, 'Railway Growth', *Journal of Economic History*, pp.316, 333; O'Brien, *New Economic History*, pp.27, 100; Church, *Victorian Boom*, p.34; Simmons, *Victorian Railway*, p.173; R. Schwartz, I. Gregory & T. Thévenin, 'Spatial History: Railways, Uneven Development, and Population Change in France and Great Britain, 1850-1914', *Journal of Interdisciplinary History*, Volume 42, Number 1 (Summer 2011), pp.55-6; P. Maw, *Transport and the Industrial City: Manchester and the Canal Age, 1750-1850* (Manchester, 2013), pp.255-6.

[30] Simmons, *Town and Country*, p.19; Casson, O*xfordshire*, p.19.

[31] Simmons, *Town and Country*, p.24; Gourvish, *Railways Economy,* p.43.

[32] Simmons, *Town and Country*, p.29.

the economy and society were more varied' is, therefore, highly complex.[33]   To quote Simmons: 'much that we should like to understand will never be satisfactorily explained'.[34]

The Economic Impact of Railways

Railway Investment and Mania

The national impacts of railway finances are hotly debated, not only in quantity but in the actual manner of investing.   B.R. Mitchell showed that railways 'became a significant element in domestic investment', playing a leading role.[35]   Conversely, R. Matthews, later supported by Mitchell, argued that while there was some influence on the national economy, 'its role was to support rather than to lead'.[36]   Aiming to identify the nature of this influence, three investment studies were completed.[37]   With broad agreements, G. Hawke's summary is taken as a general consensus: 'railway investment…required a reduction of consumption…not only a redirection of investment resources'.[38]   However, particularly with the late 1840s mania periods, there was continual variation, historians placing different emphasis on varying percentages of contribution.[39]   Gourvish warned against underestimating the importance of investment after the 1840-47 'Great Mania', noting some 60% of investment 1825-75 was post 1850, although P. Deane's 1862-6 figure of 2.5% Gross National Product suggests it dropped significantly.[40]   Gourvish summarised stating 'the contention that the railways played a sustaining role in the economy seems more fragile when applied to the period after the second mania'.[41]

Gourvish also noted a 'clear lag' between economic and investment peaks, supporting Matthew's claim that railways supported, rather than led the economy.[42]   This lag time questions possible links between the economy and railway manias, specifically their creation

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[33] Simmons, *Town and Country*, p.17.
[34] Ibid; p.21.
[35] Mitchell, 'Railway Growth', *Journal of Economic History*, p.322; Gourvish, *Railways Economy*, p.13.
[36] Gourvish, *Railways Economy*, p.13.
[37] Mitchell's UK gross capital formation (1831-1919), A. Kenwood's British gross investment (1825-75) and G. Hawke & M. Reed's raised capital data (1825-1912).
[38] Hawke, *Economic Growth*, p.210.
[39] Barker & Savage, *Transport*, p.79; Gourvish, *Railways Economy*, p.13; P. Deane, 'New Estimates of Gross National Product for the United Kingdom 1830-1914', *Review of Income and Wealth*, XIV (1968), p.104.
[40] Gourvish, *Railways Economy*, p.13.
[41] Ibid; p.14.
[42] Ibid; pp.13-14; R. Matthews, *A Study in Trade Cycle History: Economic Fluctuations in Great Britain 1833-1842*, Cambridge (1954), pp.110, 112.

and impact.[43] Cyclical economic booms, according to Reed, did not induce manias, instead having 'emerged from pre-existing promotional booms'.[44] But S. Broadbridge suggested, following Matthew's 'caution' claim, that 'internally-generated factors' must have played a more significant role. Gourvish collated these ideas, stating that while 'boom conditions encouraged company promotion', factors suggest that 'promotion was not only influenced by but itself influenced the prevailing economic climate'.[45] Each mania period impacted on the next to some extent; investment became more limited with less impact on trade cycles. As profits decreased, primarily due to increasing competition arising from the manias themselves, fewer investors came forward until railways became dependent on market conditions rather than continual investment.

However, there was another significant investment element – raising funds. Forming joint stock companies selling shares, the amounts needed to build a railway had never been generated by private concerns before, particularly with competition and duplication 'wasting' capital, so the infrastructure for dealing with shares had to change.[46] Both Gourvish and C. Savage agreed that the stock exchange expanded, early high dividends attracting investors.[47] Unlike with canal shares, the Victorian capital market was transformed with the demand for 'marketable securities' due to railways.[48] There was growth in the numbers of investment journals and provincial stock exchanges, enabling increased mobilisation of local capital, all of which was credited to railways.[49] Mitchell even claimed the development of financial centres at this time to be how railways 'had their most pronounced impact on the economy'.[50] This view has some disapproval; period critics of share dealing are seen as important negatives against the less unambiguous former view that 'it was the railways that won the acceptance of general limited liability'.[51] Indeed, H. Dyos credited the rise in shares to the canals and the growth in real wealth, noting canals as the most important part of the 'general economic advance' that ultimately created the railways.[52]

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[43] Hawke, *Economic Growth*, pp.410-1.
[44] Reed, *Investment*, pp.1-31.
[45] Gourvish, *Railways Economy*, p.15.
[46] Barker & Savage, *Transport*, p.40.
[47] Ibid; p.42; Gourvish, *Railways Economy*, p.17.
[48] Gourvish, *Railways Economy*, p.19.
[49] T.R. Gourvish & M. Reed, 'The Financing of Scottish Railways before 1860 – a Comment', *Scottish Journal of Political Economy*, XVIII (1971), p.215.
[50] Gourvish, *Railways Economy*, p.17.
[51] Barker & Savage, *Transport*, p.77; H. Shannon, 'The Coming of General Limited Liability', in E. Carus-Wilson (ed.), *Essays in Economic History*, Volume 1 (London, 1966), p.376.
[52] Dyos & Aldcroft, *British Transport*, pp.50, 103, 123; O'Brien, *New Economic History*, p.100.

The periods of railway mania are frequently referenced; their part in railway economics is unquestionable. But there have been issues with their origins. Recent work by M. Casson has created an altogether different and distinctly non-financial theory. Far from previous notions (initially contemporary) that manias were caused by fraudulent tricksters, Casson argued that many proposed lines were based on 'sound economic logic', and under different companies most were eventually built.[53] However, poor management and too-rapid investment swamped the market. Most failed not through being rejected but because they were *accepted* – there being insufficient funds, materials or workforce to go round. Casson explained these collapses as arising from a national 'financial crisis' (1846), external issues such as the Irish potato famine, and most importantly from the initial construction spree: as more lines were built, there was more duplication, thus competition. Dyos, however, claimed competition created the duplication, reducing profits and thus dividends and share prices.[54] Smaller less-established companies suffered worst; those already established or linking wealthy towns survived.

But how did so many proposals come about to trigger these collapses? According to Casson the early railways were 'interested mainly in intercity traffic and in the traffic of the region as a whole' and 'paid little heed to towns of modest size'.[55] As these towns grew, the population increasingly desired railway access, more often through pride than actual need, often choosing between a branch line or creating their own intercity route. Towns wanted connections to major cities, not branching with 'competing' local towns.[56] As railways required parliamentary acts, local MPs were lobbied, who after the first Reform Bill of 1832 became accountable to their constituencies, and generally had a 'parochial outlook'.[57] Parliament and the BoT initially did not wish to decide between rivals, rejecting both, often resulting in mergers and stronger companies. But Casson argued the rise in applications and the need of MPs to be seen as 'championing' the local railway bid to remain electorally popular saw political 'fudging', cases being seen individually rather than as a national network.[58] When the 1845 BoT Railway Committee began to reject proposals, MPs fearing a popularity drop began ignoring it to push their lines through. When MPs supported another's

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[53] Casson, *First Railway System*, pp.320-1.
[54] Dyos & Aldcroft, *British Transport*, p.151.
[55] Casson, *First Railway System*, p.17; Casson, O*xfordshire*, p.19.
[56] Casson, *First Railway System*, p.324.
[57] Ibid; pp.20, 28.
[58] Ibid; pp.18-20.

bill, it would be tactless to block theirs, resulting in extreme duplication.[59] Parliament did not prevent this because competition was seen as good for limiting fares.

Savage stressed government's failings, particularly the various BoT Committees, stating the collapse of the first 'was to remove a curb to speculation that might have prevented the Railway Mania from growing to such serious proportions'.[60] His summary showed Parliamentary indecision and 'ad hoc' planning in their recognition of the need for government controls, but also their desire for the effects of competition: reducing fares and broadening services. This inconsistency is the main factor of haphazard early development, worsened by many railway directors becoming members of the Houses of Commons and Lords. G. Alderman stated although many of these directors were ineffective, there was sufficient 'pressure interest' for the lobby to exert substantial powers.[61] After the 1865 Stapelhurst Disaster, in which Charles Dickens was involved, he asked of Lord Shaftesbury: 'Ask the minister what *he* thinks about the votes of the railway interest in the House of Commons, and about his being afraid to lay a finger on it with an eye to his majority.'[62] As Savage summarised, 'a basic series of essential lines which had taken some 20 years to build was almost trebled in the following six'.[63] By 1849 only 3,411 miles of the 8,652-mile planned increase was actually built; by 1851 some 6,700 miles were open.[64] MPs' flawed belief that the 'net benefits' of lines was additive and their failure to block duplication through personal ambition and to aid colleagues, Casson claimed, were the real reasons for the railway manias.[65] 'Parliament lacked the will to address the issue; as a result, short-term local interest triumphed over long-term national interest'.[66]

Casson's claim, amongst other historians, of the earliest trunk line companies being only interested in intercity traffic is itself a significant point.[67] 'Intercity traffic' operated essentially from end to end, terminus-to-terminus. 'Modest towns' along the routes were

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[59] Casson, *First Railway System*, p.322.
[60] Barker & Savage, *Transport*, p.77.
[61] Ibid; p.89.
[62] A viaduct at Stapelhurst, Kent, had the track removed for maintenance but the foreman overseeing the work misread the timetable, failing to stop a train which derailed, falling into the river with ten fatalities - http://www.railwaysarchive.co.uk/documents/BoT_Staple1865.pdf T. Williams, Dickens and 'The Moving Age', Gresham College, 13 November 2006, http://www.gresham.ac.uk/lectures-and-events/dickens-and-the-moving-age
[63] Barker & Savage, *Transport*, p.69.
[64] Ibid; p.69.
[65] Casson, *First Railway System*, p.27.
[66] Ibid; p327.
[67] Ibid; p.17; Casson, O*xfordshire*, p.19.

deemed unimportant and while having railway access, were not properly served by them.[68] Early on few even had stations. But as line numbers and general competition increased, revenue was forced down to such an extent that the railways had to offer a broader service ('larger-volume lower-margin business') to retain profits.[69] The Railway Regulation Act of 1844 further insisted on penny-a-mile services stopping at all stations.[70] Therefore, lesser stations, several being added to the earliest lines, increasingly gained regular and cheap services allowing local areas to directly interact with railways in regards to travel and business, and thus settlements farther away, where they had not been able to before.[71] Even more importantly, there initially was a rural-urban divide arising, as early railways traffic was primarily urban in origin, hence concentrating on their termini over perceived 'lesser' rural needs.[72]

One of the latest studies placed considerable emphasis on a new theme resulting from the manias - network efficiency and competition. Blaming much on nineteenth century governments for 'fostering' competition while encouraging private construction of 'socially beneficial schemes', Casson created a counterfactual 'efficient' network model, comparing it to the actual system.[73] Concluding that it 'suggests that the actual network was even more inefficient than is commonly alleged', he detailed the main reasons as excessive competition (between towns as well as companies), railway disruption strategies to block competitors and government weakness in control.[74] This was not the first efficiency study; Simmons, Biddle and Turnock each suggested that the network was highly inefficient.[75] But Casson reasoned that not only was this through duplication but also excessive line mileage in 'lightly populated rural areas'.[76] Casson recognised that some suggest greater efficiency because 'the density of lines, relative to area and population, was relatively high' but countered by arguing

[68] Simmons, *Town and Country*, pp.312, 324; Simmons, *Victorian Railway*, p.324.
[69] Gourvish, *Railways Economy*, p.27; Casson, *First Railway System*, p.317; Dyos & Aldcroft, *British Transport*, pp.150-1.
[70] http://www.railwaysarchive.co.uk/documents/HMG_Act_Reg1844.pdf
[71] P. Richards & B. Simpson, *A History of the London and Birmingham Railway Volume 1* (Whitney, 2004), p.36; Simmons, *Victorian Railway*, p.324; Casson, *First Railway System*, pp.17, 323-4; Casson, O*xfordshire*, p.17; Dyos & Aldcroft, *British Transport*, p.150; Schwartz, Gregory & Thévenin, 'Spatial History', *Journal of Interdisciplinary History*, pp.61, 70.
[72] E. Wrigley, 'Men on the Land and Men in the Countryside: Employment in Agriculture in Early-Nineteenth Century England', in L. Bonfield, R. Smith & K. Wrightson (eds.), *The World We Have Gained: Histories of Population and Social Structure* (Oxford, 1986), pp.295-336. See Chapter 6.
[73] Casson, *First Railway System*, p.314.
[74] Ibid; p.iv.
[75] Ibid; p.1.
[76] Ibid; p.16.

that much of this density was duplication, echoing Dyos.[77] Noting the aforementioned urban pride, he suggested that many of the connecting 'hubs' were rural rather than main urban/industrial points.[78] Cross-country lines he emphasised as particularly unsuccessful, cutting into company 'territories' drawing off potential traffic. Such monopolies usually failed, attracting rivals, so making travel cheaper (and broadening services, ending terminus-terminus trade practices) but only through ever-increasing competition. While there has yet been no major rejoinder to Casson's work, one aspect would appear likely for future discussion. Casson created a purpose-designed integrated network model to compare to the as-built network, despite criticising parliament for looking at proposals individually, not collectively, and even admitting that 'the British railway system was never designed to be operated as a national network'.[79]

Railway Operation

While it is undoubted that traffic levels rose dramatically with many social effects, its stages of development and the initiating factors are still contested. Gourvish presented a dramatic rise in revenue; the totals virtually doubled four times over - starting at £4,800,000 in 1842 they rose to £61,300,000 by 1875.[80] He noted that while some was new traffic, most was pre-existing, the rise resulting from improving the services available. This is markedly different from the contemporary claim by R. Baxter that all railway traffic was newly created, and was otherwise 'impossible without railways'.[81] Additionally, Gourvish stated that early railways were only concerned with high-tariff traffic, improved speed and reliability being a great attraction.[82] Initially highly expensive, trains were primarily first class, Gourvish calculating that in 1845-6 third class travel constituted under 50% of total passengers and 20% of total revenue. But by 1870 it accounted for 65% of passengers and 44% of revenue.[83] He reasoned that as competition increased and profits decreased, more companies turned to 'larger-volume lower-margin business'. This is supported when noting that between 1840 and 1850 the average fare decreased by 30-40%, with a further 10% drop in the 1870s.[84]

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[77] Casson, *First Railway System*, p.315; Dyos & Aldcroft, *British Transport*, p.151.
[78] Casson, *First Railway System*, p.17.
[79] Ibid; p.326.
[80] Gourvish, *Railways Economy*, p.26.
[81] Baxter, 'Railway Expansion', *Journal of the Statistical Society*, pp.560-4.
[82] Gourvish, *Railways Economy*, p.26.
[83] Ibid; p.27.
[84] Gourvish, *Railways Economy*, p.29.

Table 2: Outline trends of passenger numbers and journeys 1850-1900, based on railway and census returns (omitting season ticket holders).

Year	Total number of Passengers carried (millions)	Passenger Journeys (by 000)	% Increase (Journeys)	Population (by 000)	Passenger Journeys per population head	% Increase (Journeys)
1850	72.9	67,359		20,817	3.2	
1860	251.9	153,452	127.8	23,128	6.6	106.3
1870	336.5	315,680	105.7	26,072	12.1	86.8
1880	603.9	586,626	85.8	29,710	19.8	63.2
1890	817.1	796,331	35.8	33,029	24.1	22.1
1900	1,142.30	1,114,627	40	37,000	30.1	24.9

Compiled from J. Simmons, *The Victorian Railway* (London, 2009), p.317, H. Dyos & D. Aldcroft, *British Transport: An Economic Survey from the Seventeenth Century to the Twentieth* (Leicester, 1971), p.148, T.R. Gourvish, *Railways and the British Economy 1830-1914* (London, 1980), p.26.

All studies recognised the Railway Acts of 1844 and 1883 enforced affordable travel, wherefrom came the realisation that low fares but full trains were more profitable, until third class was greater than first and second combined.[85] Savage warned that although penny-a-mile trains enabled movement more freely, the increased numbers it suggested were 'optimistic'.[86] Companies, though, aimed not to reduce fares, instead improving services, including construction of more direct routes. Second class was abolished (first by the MR in 1875, carriages and waiting rooms becoming third class), Savage describing as 'better facilities at lower fares'.[87] Between 1851 and 1870, 6,700 miles were opened and passenger numbers increased fivefold (Table 2).[88] These views appear generally accepted; passenger numbers increased not just through lowering fares but with increasing/improving services. Simmons added that numbers rose through 'new mobility', more people deciding to travel.[89] Casson, however, argued that while high-profile trains benefitted, less publicised but more economically significant trains did not - more effort went into competition than improving minor services, contrary to Dyos' claim of improvements across all lines.[90]

Goods traffic, conversely, grew more slowly, Savage calculating that of five million tons carried in 1842, four million was local coal traffic.[91] Gourvish supported this broad stance,

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[85] Barker & Savage, *Transport*, p.83.
[86] Ibid; p.83.
[87] Ibid; p.99.
[88] Simmons, *Victorian Railway*, p.317, Dyos & Aldcroft, *British Transport*, p.148, Gourvish, *Railways Economy,* p.26.
[89] Simmons, *Town and Country*, p.281.
[90] Casson, *First Railway System*, p.316; Dyos & Aldcroft, *British Transport*, p.150.
[91] Barker & Savage, *Transport*, p.67.

arguing that railway expansion required two compositional changes: increased emphasis on freight, rising from under 25% to over 50% by the mid-1840s, and the aforementioned growth in third class travel.[92]   He added 'railways were relatively under-used in 1850, and were able to increase traffic over the next two decades without additional heavy investment'.[93]   Mitchell suggested that before 1850 there was little market-widening effect from freight traffic, faulting railways as slow to exploit natural advantages; Hawke calculated a subsequent improvement in annual productivity c.1840-70, increasing by 3%.[94]   Contrary to general perceptions, Mitchell further proposed that canals only had substantial competition after the major amalgamations and the creation of the Railway Clearing House (c.1846).[95] Gourvish countered suggesting railways stimulated a reduction in transport costs, turnpike/canal tolls declining 'before they [the railways] themselves became substantial movers of freight'.[96]   He further added that the 'thesis of 'missed opportunities' is a rather misleading one'.[97]   Far from economic reasons, Gourvish noted that before the 1840s locomotives did not have sufficient tractive power.[98]   Only when capable did lengthy freight trains become normal practice.

Freight also shifted towards a higher proportion of lower-rate traffic, Gourvish calculating 60% of total tonnage by the 1870s being cheap coal.[99]   Hawke's research went further, suggesting a drop in average rate to 1.21d/ton/mile by 1865.[100]   This was 28% lower than D. Lardner's estimate for 1843-8, described by Gourvish as 'not far short of the mark'.[101]   By this point, freight had massively increased: 'retailing was transformed, and essentially new traffics were encouraged in perishable goods'.[102]   Savage noticed 'market enlargement' was greatest where speed gave an advantage.[103]   With growing intensity, costs decreased and consumables could travel further, Savage suggesting agricultural changes were as much due to improved transport as they were to new agricultural process.[104]   Savage calculated a goods

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[92] Gourvish, *Railways Economy*, p.27.
[93] Ibid; p.28.
[94] Hawke, *Economic Growth*, pp.304-8; Gourvish, *Railways Economy*, pp.27-8.
[95] Mitchell, 'Railway Growth', *Journal of Economic History*, pp.319-20.
[96] Ibid; p.29.
[97] Gourvish, *Railways Economy,* p.27.
[98] Ibid; p.27.
[99] Ibid; p.30.
[100] Ibid; p.30; Hawke, *Economic Growth*, p.62.
[101] Gourvish, *Railways Economy,* p.30.
[102] Ibid; p.31.
[103] Barker & Savage, *Transport*, p.68.
[104] Ibid; p.81.

increase of 470% between 1843 and 1852; a goods-passenger ratio of 55:45.[105] In spite of these increases and associated reductions in rates, 1873-96 saw a national economic downturn due to cheap imported grain and raw materials and a rise in new manufacturing techniques. According to Savage, its austere effects led to many unmerited complaints concerning rates from traders.[106]

Gourvish emphasised the key features in traffic changes as amalgamation and increasing competition: mergers allowed for long-distance flows while the rise in competition and associated dividend fall forced a move from high-value to high-quantity traffic.[107] Nonetheless, as he stressed, railways merely strengthened 'patterns of settlement and industrial location', but did not create them.[108] Savage also credited wider influences, notably the introduction of standardised time, and emphasised that the change towards high-quantity traffic did not lead to dividends recovering.[109] So while passenger traffic initially rose, shifting towards third class, after its late start the main traffic became freight, being improved as much as passenger services and ultimately having as much impact on product diversity as passenger travel did on class.

Railway traffic patterns also led to wider effects, most notably on other modes of transport. While overall it remains the view that stagecoaches retained passengers but the poorly-maintained turnpikes were superseded by canals in terms of goods, details of when railway-initiated decline occurred to these, and the level of economic impact the changeover caused, are not.[110] Early turnpikes were accused of a 'lack of financial accountability; to jobbery in purchasing materials; to the trustees' tendency, in their capacity as local inhabitants, to reduce the parish commitment to turnpike roads whenever they could; and to the cost of toll collection', summarising road conditions as particularly poor, reducing speed and quantity carried.[111] Once seen as 'scattered', Savage contested that the heaviest-used roads were initially turnpiked followed by 'much-used stretches' – a natural network being created.[112] He also emphasised the precariousness of road transport. Dependencies included oat prices

[105] Barker & Savage, *Transport*, p.82.
[106] Ibid; p.97.
[107] Gourvish, *Railways Economy*, p.27.
[108] Ibid; p.31.
[109] Barker & Savage, *Transport*, p.103.
[110] Casson, *First Railway System*, p.314; Barker & Savage, *Transport*, p.48.
[111] Barker & Savage, *Transport*, p.32.
[112] Ibid; pp.31-3.

linked to harvest fluctuations and knock-on effects on coaching stops as they turned from hostelries to horse-changing posts, particularly following the construction of canals.[113] Dyos added that coaches were losing passengers even before the railways; by the end of the century there were no more roads than before the railways.[114] The decision in 1840 to transport mail by rail had an instantaneous effect on road travel, ending the former mail coach services and heralding the decline of stagecoaches generally.[115] Importantly, however, Savage argued that far from railways reducing road travel, it *increased* it: long-distance road travel effectively collapsed, but short-distance travel, especially to and from stations, dramatically rose.[116]

Canals, Savage implied, closely matched the railways' development pattern: initial lone construction projects created initial high dividends, although 'traffic took time to build up'.[117] It was soon recognised that canals increased transport capacity, making freight movement cheaper. Conversely, being slower than roads meant passenger services were limited.[118] As with railways, canals attracted investment with a similar period of 'mania', until competition meant traffic was divided between companies, lowering profits. Once railways adopted heavy freight, canals collapsed financially, like stagecoaches previously, with many ultimately being purchased by railway companies. Savage summed up turnpike and canal limitations, and the comparative boon of railways, stating that 'the steam railways' real significance lay in the fact that they could cater for both high-value and low-value traffic. Before the coming of these railways there was no such single form of transport capable of performing this two-fold function'.[119]

While this is accepted, the extent to which railways had a greater economic impact than roads and canals remains controversial. Quoting M. Huish's statement that 'quantity is the essential element of railway success', Gourvish agreed that once started, the 'valuable service' canals played declined economically.[120] Simmons noted that even with coaches being undercut, travel was still not cheap.[121] Claiming reductions in canal tolls anticipating (and sharp drops following) railways, Hawke concentrated on 'social saving theory' – how

[113] Barker & Savage, *Transport*, pp.48-50.
[114] Dyos & Aldcroft, *British Transport*, p.76.
[115] Mail Coach c.1840 - Stockwood Discovery Centre.
[116] Barker & Savage, *Transport*, p.123. Station Omnibus c.1880 - Stockwood Discovery Centre.
[117] Barker & Savage, *Transport*, p.42.
[118] Casson, *First Railway System*, p.314.
[119] Barker & Savage, *Transport*, p.15.
[120] Gourvish, *Railways Economy*, p.29.
[121] Simmons, *Victorian Railway*, p.313.

the national income would have been affected by using roads or canals instead of railways.[122] This followed the 'new economic history' analysis developed in the 1960s by Fogel, attempting to quantify the importance of selected inputs.[123] Estimating resource and non-railway costs, Hawke calculated a road passenger 'social saving' increase of £33,600,000 (5% of the net national income) and canal freight 'social saving' increase of £14 million (4% of the net national income).[124] He concluded that 'railway services in 1865 represented a social saving of between seven and 11 per cent of the net national income of England and Wales', so 'the innovation of the railway… did have a considerable impact on the growth of [the] economy'.[125] Casson also supported social saving theories, stating of his research that 'had the discipline of social cost-benefit analysis been adopted systematically at the time of the Mania, a much more efficient railway system would have been created'.[126]

Gourvish, however, argued that Hawke's figures were questionable, noting methodological and empirical weaknesses - Gourvish adding that varying the figures altered the results wildly.[127] P. O'Brien most vocally criticised it, stating that as railway benefits increased over time either early figures were calculated too high or later figures too low, and comparison of the result to various ratios (such as Gross National Product) can make it very small or quite monumental.[128] He concluded that the 'new economic history' failed to give a quantified 'definitive solution', primarily as the questions posed 'defy quantification'.[129] Casson's conclusion arguably defended itself from such problems, claiming the efficiency difference between his model and actuality was so great that even if recalculated to raise model inefficiencies, the result would remain constant.[130] So even though there have been other similar tests (Baxter calculating that 'it would have cost three times as much'), debate continues, while many believe these studies only 'make rather limited points'.[131]

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[122] Hawke, *Economic Growth*, pp.64, 86; Gourvish, *Railways Economy*, p.30.
[123] O'Brien, *New Economic History*, p.17; Fogel, *Railroad Growth*, pp.209-19; Fishlow, *American Railroads*, pp.23-32, 301; Maw, *Manchester Canal*, pp.255-6.
[124] Gourvish, *Railways Economy,* p.34; Hawke, *Economic Growth*, pp.178, 180.
[125] Hawke, *Economic Growth*, p.410; Gourvish, *Railways Economy,* pp.34-5.
[126] Casson, *First Railway System*, p.29.
[127] Gourvish, *Railways Economy*, p.39.
[128] Ibid; pp.27, 35, 95.
[129] O'Brien, *New Economic History*, pp.23, 100.
[130] Casson, *First Railway System*, pp.315-6.
[131] Ibid; p.39; Baxter, 'Railway Expansion', *Journal of the Statistical Society*, p.564.

The Social Impacts of Railways

One of the most important themes, and to an extent a different field from the above, are the social effects of railways. Many economic factors included social repercussions, for example the rise of shares and local stock markets were dependent on increasing numbers of people investing who previously could not due to their high values.[132] Primarily concentrating on case study locations to demonstrate various factors, albeit selecting the most applicable locations nationwide rather than concentrating on any one particular area, Simmons' work highlights the main difficulties with compiling an accurate overview of social impacts linked to railways.[133] First is the continuing issue of identifying what was directly attributable to railways instead of other factors.[134] Second, while many social studies merely infer many of the changes, Dyos follows Simmons' stance that local examples are superior to national averages, primarily as the averages seldom actually fit individual locations.[135] But herein is the issue – a compilation of the many and varied social impacts of the railways from case studies taken out of their context would be equally as limited as using national averages.[136]

Simmons' numerous case studies demonstrate that railways affected every aspect of society. This ranged from health and diet, particularly providing cheap fresh produce where previously unavailable, to the growth of Trade Union movements and company reactions to strikes. Industry benefitted, with cheaper materials provided faster at lower costs, creating more employment (and aiding migration, also changing occupation ratios and former cases of rural under-employment). This had multiple knock-on effects such as urbanisation and directly creating demand in, thus developing, certain industries and occupations (notably during construction). With urbanisation increasing (also through migration), later developing into the rise of suburbs with increasing speed/decreasing fares, civic pride and development grew – requests for line construction were frequent, primarily for economic and cultural connections, but also partly as railways often led to slum clearance and the development of urban facilities.[137] If bypassed, urban stagnation often occurred. Conversely, O'Brien suggested some smaller semi-rural towns successfully grew 'as a result of neighbouring

[132] Barker & Savage, *Transport*, p.42.
[133] Simmons, *Town and Country*; Simmons, *Victorian Railway*.
[134] Simmons, *Town and Country*, p.17.
[135] Illustrated by the national population statistic in Chapter 6; Dyos & Aldcroft, *British Transport*, p.178.
[136] Robbins, *Railway Age*, p21.
[137] Casson, *First Railway System*, p.324; Dyos & Aldcroft, *British Transport*, pp.181, 229.

towns' resistance to the intrusion of the railways'.[138] Equally, there were displacement/land issues, particularly opposition and compensation, but also displacing people in cases of slum clearance. Most broadly, railways impacted on international standing – much of British railway expertise/material was exported, plus cases of prestige and embarrassment such as the Tay and Forth bridges.

But while railways often correlated with these impacts, no location ever experienced all these changes, and many might have possessed them for unrelated reasons, or even completely opposite effects.[139] Crediting railways with these numerous social improvements would essentially follow the now-questionable former historiography of railways dictating 'change', defeating its purpose. Furthermore, variations between settlements worsens the issue of actual railway impact, and while initially credited for virtually everything, subsequent historians reduced their significance to such an extent that many now forewarn against *understating* their role.[140] Therefore, local studies are of greater use to historical research, but need to be placed within an appropriate context such as their countywide region.

Local railway history theses often slant towards economics, generally declaring that the effects of the railways varied substantially between locations but with broadly similar effects on employment, urban development and competing transport types, along with affecting areas much wider than simply the settlements connected.[141] The number of theses, in spite of their necessity in forming accurate and detailed case studies with which to test this overview, is, however, comparatively low. Therefore, the broader the range of settlements covered, particularly considering the limited number of studies, the greater the benefit to historians in being able to identify trends for particular settlement sizes, employments and settings.[142]

Railways, Government and the Public
Despite varying debate on the extent of national railway impacts, some social factors were dramatically affected. For example, they helped standardise time through the need for

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[138] O'Brien, *New Economic History*, p.183.
[139] Schwartz, Gregory & Thévenin, 'Spatial History', *Journal of Interdisciplinary History*, pp.55-6.
[140] Simmons, *Town and Country*, p.21.
[141] Stewart-Beardsley, *After the Railway* (Reading University, 2008); Andrews, *East Kent* (University of Kent, 1993).
[142] Andrews, *East Kent* (University of Kent, 1993), p.13; Dyos & Aldcroft, *British Transport*, p.182.

reliable timetables - credited as a major act towards creating national uniformity.[143] They helped 'to produce a change in the lives and habits of women' as single travel rose in frequency, travel becoming 'a symbol of liberation'.[144] Similarly, the ultimate predominance of third class is often used as an example of the 'levelling' properties of railways on class.[145] This, however, has been countered by Robbins and Simmons, instead proposing that segregated compartments, 'snobbery' concerning ticket purchases and even the provision of *eight* classes, ranging from Mail Expresses and Pullmans to Workman's and Parliamentary Trains increased and emphasised the class gap.[146] Interconnected with expanding usage, the development of privately organised railway excursions fostered tourism and recreation, with Robbins calling Great Exhibition excursions 'the railway's social revolution'.[147]

But arguably the most significant is the change in the public's perceptions of railways themselves. The earliest colliery lines were practically unknown to the general public, while Simmons claims the opening of the LMR led to a national growth in interest long before most areas received a railway.[148] However, this was primarily as 'news', dying down after the 1829 Rainhill Trials.[149] With newer and longer lines built there was increased concern from affected parties, particularly landowners, but this was similar to the canals, both equally receiving much support. This construction support balances the opposition more commonly referenced, even if much opposition was really to boost compensation.[150]

The upheaval of construction, 'vandalism' to the landscape and the perceived general conduct of navvies, did little to endear railways to many. The mania periods developed further fears of a financial nature; caricatures extolling the dangers of investments amongst other railway 'evils' (Fig. 2). I. Carter contested that 'this panic was limited to propertied classes' who had

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[143] Barker & Savage, *Transport*, p.84; Robbins, *Railway Age*, pp.43, 47; Simmons, *Victorian Railway*, pp.184, 345-7; Williams, 'Moving Age' lecture.
[144] Simmons, *Victorian Railway*, pp.332-3, 336.
[145] J. Rogers (ed.), *Public Addresses by John Bright M.P.* (London, 1879), p.419; Robbins, *Railway Age*, p.15; Simmons, *Victorian Railway*, p.363.
[146] Robbins, *Railway Age*, pp.48-50; Simmons, *Victorian Railway*, p.362.
[147] Most unusually, transport to a public execution in Wadebridge in 1836 - Simmons, *Victorian Railway*, pp.272, 277, 291-2, 301; Simmons, *Town and Country*, pp.86-7; J. Simmons, 'Railways, Hotels, and Tourism in Great Britain 1839-1914', *Journal of Contemporary History*, Vol. 19, No. 2 (Apr., 1984), p.218; Robbins, *Railway Age*, p.33; W. Johnson, *Industrial Monuments in Hertfordshire* (Hertford, 1967), p.25; R. Taylor & B. Anderson, *The Hatfield & St Albans Branch*, (Oxford, 1988), p.47; M. Freeman, *St Albans: A History*, (Lancaster, 2008), p.252.
[148] Simmons, *Victorian Railway*, p.13.
[149] Ibid; p.236; M. Bailey & J, Glithero, *The Engineering and History of Rocket: A Survey Report* (London, 2001), p.7; NRM, Science Museum.
[150] Robbins, *Railway Age*, p.58.

the expendable wealth to invest.[151]   In spite of the press' portrayals of George Hudson's fraudulent activities as the epitome of perceived 'shady dealings', Robbins argued that this notion of railway shares was totally incorrect, supported by Casson.[152]

Fig. 2: 1845 Caricature by John Leech: the locomotive *Speculation* 'destroying family life in households where papa invested in fraudulent railway schemes.'
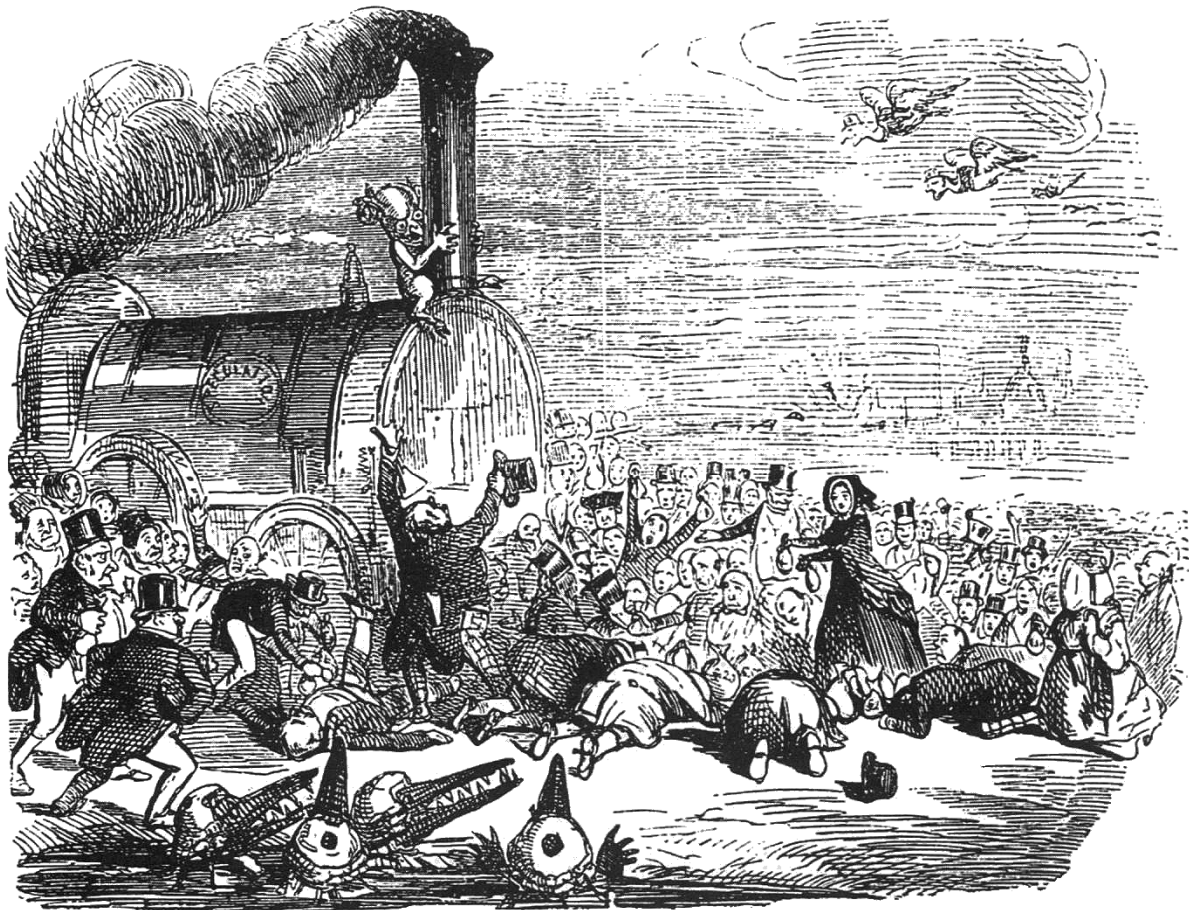
THE RAILWAY JUGGERNAUT OF 1845,

Punch, 26 July 1845 (IX), p.46.

As competition between companies increased, passenger conditions improved, varying between companies; Simmons and Casson claiming developments in some areas such as carriages, but not in others, notably waiting rooms.[153]   Although fear waned and travel increased, criticism continued, ranging from the slackness of companies to adopting safety systems to often unwarranted accusations against directors (Fig. 25, Chapter 5).[154]   Robbins

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[151] I. Carter, 'Rain, Steam and What?', *Oxford Art Journal*, Vol. 20, No. 2 (1997), p.8.
[152] Robbins, *Railway Age*, pp.36-7; Simmons, *Victorian Railway*, p.147; Casson, *First Railway System*, p.320.
[153] Simmons, *Victorian Railway*, pp.74, 259.
[154] Carter, 'Rain Steam', *Oxford Art Journal*, p.7.

even said that 'the trading public, and some political influences, were generally against the railways'.[155] Dyos similarly emphasised that due to competition and the lack of stable monopolies 'in the long run, therefore, it was the companies, not the traders, who stood to lose from poor railway services'.[156]

However, safety remained a key concern; fear of accidents was only emphasised by the strange noises, smoke and inanimate propulsion unlike anything ever seen before, undoubtedly adding to general unease.[157] Along with various health scares, the 'threatening' nature of steam propulsion is seen frequently.[158] For example, Dickens' *Dombey and Son*, described the Camden construction of the LBR as the destruction of 'the varied local rural worlds', while his short ghost story *The Signalman*, part of a set of disparaging railway stories entitled *Mugby Junction*, also emphasised their danger.[159] Equally Turner's painting, *Rain, Steam and Speed – the Great Western Railway* (1844), with stormy weather contrary to the clement road bridge; is seen as the 'new order' destroying the somewhat rose-tinted 'old England'.[160]

But not all opinion was negative. Carter theorised that Turner's *Rain, Steam and Speed*, possibly showed 'not supersession and loss, but progress and synthesis'.[161] This correlates with many supporting views of the railway 'triumph'.[162] While some early travellers enjoyed the excitement of perceived danger and such power, Robbins noted that 'the railway was accepted as part of the social scene with astonishingly little difficulty' and that 'the aspirations of the age' were encapsulated in steam technology.[163] More turned to the new technology as its speed and cost benefits became clear, and increasing usage by the Royal Family boosted popularity.[164] Railways initially evoked great emotion, both positive and

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[155] Robbins, *Railway Age*, p.81.
[156] Dyos & Aldcroft, *British Transport*, p.163.
[157] Simmons, *Victorian Railway*, pp.15-16.
[158] Ibid; pp.120-154; A. Hart-Davis, 'Isambard Kingdom Brunel and the Engineers of the Nineteenth Century', *Oxford Dictionary of National Biography* (Oxford University Press); http://www.oxforddnb.com/public/themes/95/95272.html
[159] Carter, 'Rain Steam', *Oxford Art Journal*, p.10; C. Dickens, 'The Signalman' *Mugby Junction, the Extra Christmas Number of All the Year Round* (London, 1866), pp.17-20; J. Matus, 'Trauma, Memory, and Railway Disaster: The Dickensian Connection', *Victorian Studies*, Vol. 43, No. 3 (Spring, 2001), pp.413-436.
[160] The National Gallery, NG538 Turner Bequest, 1856 - *Rain, Steam, and Speed - The Great Western Railway*; Carter, 'Rain Steam', *Oxford Art Journal*, pp.5, 9, 10.
[161] Carter, 'Rain Steam', *Oxford Art Journal*, p.4.
[162] Baxter, 'Railway Expansion', *Journal of the Statistical Society*, p.549.
[163] Carter, 'Rain Steam', *Oxford Art Journal*, p.5; Robbins, *Railway Age*, p.55.
[164] Simmons, *Victorian Railway*, p.18; B. West, *The Railwaymen - Wolverton* (Buckingham, 1987), p.97; Milton Keynes Museum.

negative. However, as competition made trains more accessible, comfortable, quicker and cheaper, they became less central in the public psyche. Railways became more common, a normality seen as mundane and ultimately being overlooked by early historians.[165]

Rising public use, however, meant more trains and thus accidents.[166] Public safety concerns reveal one of the main impacts of railways on government - the decline of laissez-faire policy. Gourvish even claimed that the change from laissez-faire to stringent controls meant 'the industry must be given a central place in any account of business organisation in the nineteenth century'.[167] Despite many railway directors entering politics, legislation gradually turned to a more controlling stance, becoming increasingly concerned with accidents, amalgamations, passenger duty, employers' liability, goods rates, staff hours and dangers in staff employment.[168] Gourvish and Simmons also noted that while initial controls 'wavered', allowing near-uncontrolled expansion and operation for the majority of the period, their need was recognised almost immediately, particularly with fear of monopoly abuse and as Companies refused to improve safety. This is especially demonstrated by the Railway Regulation Act of 1844.[169]

Parliament was still reluctant to coerce, even repealing some safety policies such as continuous brakes until outrage following the Armagh Disaster of 1889.[170] Such accidents and public outrages (also at fares and rates) were major factors in forcing the government to limit companies' powers and enforce safety changes, the most significant being introducing the 'absolute block' system.[171] Simmons and Robbins agreed that while the success and extent of government control was limited, the period saw the first cases of parliament directly controlling the actions of railways as private businesses, an intervention formerly unheard of. This ties with discussions, both modern and contemporary, that railways transformed from private concerns to a public service, another case of changing public perception.[172] Even

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[165] Simmons, *Victorian Railway*, pp.18, 126, 154.
[166] J. Cutler, 'Neglected Historical Sources: The Railway Inspectors' Reports', *History Workshop*, No. 27 (Spring, 1989), p.175.
[167] Gourvish, *Railways Economy*, p.11.
[168] Simmons, *Victorian Railway*, p.265.
[169] Ibid; p.97.
[170] An Irish excursion train separated on a hill; insufficiently braked, the rear part lost control and hit a second train. Gourvish, *Railways Economy*, p.52; Simmons, *Victorian Railway*, p.95; J. Currie, *The Runaway Train: Armagh 1889* (Newton Abbot, 1971).
[171] O'Brien, *New Economic History*, p.151.
[172] Gourvish, *Railways Economy*,, p.57; Simmons, *Victorian Railway*, p.218; Robbins, *Railway Age*, pp.14, 16, 105.

with its limitations, Gourvish concluded that government involvement led to 'a more hostile environment' for companies.[173] Triggering declining profits, it necessitated service improvements with static fares, aiming to recover profits by attracting more low-tariff clientele.[174] Alderman stated that only with the safety Acts of 1893, 1897 and 1900 (particularly alongside the 1901 Factory Act) did the government essentially take 'almost complete control over the conditions of railway operation'.[175]

Along with changes in public and government stance, with increasing numbers travelling greater distances the spread of ideas naturally occurred, and operative impacts have also been credited as significant in the rise of newspapers and mail. The effects have been seen as two-way: Gourvish noted wider railway services resulted from these communication improvements, but these improvements were still 'closely dependent on rail facilities'.[176] He added that, as a result, faster and cheaper travel stimulated leisure growth, stating that 'the railway's influence on the economy was truly ubiquitous'.[177] Savage, however, emphasised the impacts on the railways themselves, the demand for mail and telegraphs leading to collaborations.[178] The Railway Clearing House is a prime example, as by 1845 half of all railway mileage was under the scheme, accounting for 500,000 passengers across three companies.[179]

With increasing speeds and reduced stamp duty, chartered newspaper trains made wide circulation possible. For the first time, London newspapers could reach the farthest points of the country the same day.[180] Simmons noted that provincial newspapers seldom lost to London papers, though, mostly due to their expense and lack of local news.[181] That said, newspapers were an ideal revenue source for railways, which again competed for faster services, along with increasing knock-on competition between the newspapers themselves.[182] In 1840 with the introduction of the penny post the number of letters doubled and by 1850 it

[173] Gourvish, *Railways Economy*, p.52.
[174] Barker & Savage, *Transport*, p.97.
[175] G. Alderman, *The Railway Interest* (Leicester, 1973), p.177; Robbins, *Railway Age*, p.105; Casson, *First Railway System*, p.26.
[176] Gourvish, *Railways Economy*, p.31.
[177] Ibid; p.31.
[178] Barker & Savage, *Transport*, p.67.
[179] Ibid; p.67.
[180] Ibid; p.240.
[181] Simmons, *Victorian Railway*, p.240.
[182] Ibid; p.240.

had increased fivefold.[183] Savage surmised that 'such an increase, coming so soon after the growth of newspaper traffic, would have been unthinkable without railways to handle it all', and that cutting mail charges while increasing delivery speed was 'one of the railways' main contributions not just to the commercial efficiency of the country but to the whole of its social life'.[184]

Interestingly, Simmons investigated the impact of railways on language itself, noting the dissemination of railway words and expressions into common use, such as 'timetable' or 'getting up steam'.[185] He also showed how railways adopted former words, such as 'cutting' from canals or 'season ticket' from steamboats, and how nicknames arose, notably 'Bradshaws' for timetable.[186] One amusing, if extreme, example is by Sir Francis Head. Describing Wolverton and the importance of the railway, he stated:

'…not only their services and their thoughts but their parts of speech are more or less devoted to it:- for instance, the pronoun "she" almost invariably alludes to some locomotive engine; "he" to "the chairman," "it" to the London Board.'[187]

While tongue-in-cheek, although the accuracy of his work suggests otherwise, railwaymen's nicknames were common and this demonstrates the links between railways, communities and language. Considering literacy, Simmons claims that while company schools aided railwaymen's children, there was minimal involvement with staff themselves, with some early exceptions such as at Wolverton.[188] Simmons instead claims that railways inadvertently increased the amount people read, rather than aiding literacy itself, and that reading as a pastime can to some extent be credited to it.[189] Firstly, printing and distributing books was no longer limited to London, as production spread nationwide: Simmons noted 'the railways alone made this practice possible'.[190] Secondly, improvements in travel comfort and space available, coupled with necessary waits for departures and connections, created good reading conditions. Platform book stalls originally were of low quality, but entrepreneur W.H. Smith

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[183] Barker & Savage, *Transport*, p.82.
[184] Ibid; p.82.
[185] Ibid; p.177.
[186] After George Bradshaw, who collated the first nationwide timetable.
[187] F.B. Head, *Stokers and Pokers, or the London and North Western Railway, The Electric Telegraph and The Railway Clearing House* (London, 1849; reprinted Trowbridge, 1968), p.82.
[188] Simmons, *Victorian Railway*, p.189.
[189] Ibid; pp.245-7.
[190] Ibid; p.243.

improved those under his control (others following his example), albeit only making small profits.[191] Towards 1900 these stalls became larger chain businesses, selling inexpensive novels printed especially for railway travel, giving wider audience to previously out-of-fashion authors such as Jane Austen. Simmons claimed it created an 'enlarged market', noting 'railways certainly helped to make reading a more common study or pastime among travellers than it had ever been before'.[192]

Population and Commerce

While many impacts were specific to certain industries and locations, some broad social aspects are also visible, as noted for standardised time and class. Railways in the period affected the extent of migration and had impacts on industrial and urban development, along with reducing the underemployment/overpopulation of rural areas.[193] They were not the sole factor leading this, but were nonetheless a substantial one.[194] Simmons noted an increase in migratory distance with railways, while he and O'Brien stated that others claimed this migratory effect to be one of the railways' most important contributions.[195]

When referring to suburbs, commuting being a major and direct railway factor, Dyos claimed they were a 'decentralised part' of cities with direct economic and social ties.[196] Simmons contested this view, noting suburbs seldom acted as mere districts, quoting Robbins's view of 'no transport, no suburb'.[197] Simmons added that for most urban areas 'the physical changes wrought by railways… were almost all for the worse' – different to earlier claims of continual urban improvement.[198] Furthermore, while increased speed made suburban living viable, originally this was only if travel could be afforded. The wealthier, therefore, moved to suburbs while the poorer remained static – leading to class polarisation.[199] This had changed by 1914, though: 'the new suburbs gave many of them [city dwellers] opportunities and pleasures they had never dreamt of before'.[200]

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[191] Simmons, *Victorian Railway*, p.246.
[192] Ibid; p.247; R. Altick, *The English Common Reader* (Ohio, 1957), pp.89, 305.
[193] Casson, *First Railway System*, p.315; Robbins, *Railway Age*, p.21; Simmons, *Victorian Railway*, p.319.
[194] O'Brien, *New Economic History*, pp.97, 100; Schwartz, Gregory & Thévenin, 'Spatial History', *Journal of Interdisciplinary History*, pp.57-8, 70, 77.
[195] Simmons, *Victorian Railway*, p.319; C. Torr, *Small Talk at Wreyland* (1918), p.45.
[196] Dyos & Aldcroft, *British Transport*, p.230.
[197] Simmons, *Town and Country*, pp.59-60; Simmons, *Victorian Railway*, p.324.
[198] Simmons, *Town and Country*, p.130.
[199] Robbins, *Railway Age*, p.48.
[200] Simmons, *Victorian Railway*, p.332.

A recent work by R. Schwartz, I. Gregory and T. Thévenin on railway-induced population change presents a variation on the usual view.[201] They agreed on the uneven nature of railway impacts, on competition and on unconnected settlements being more likely to stagnate, but contrary to the notion of railways acting as a factor towards a rural-urban population shift they claimed the opposite.[202] Instead they suggested that railways gave rural communities a 'second chance' through stimulating commerce in a 'second phase of industrialization' and through this actively *reduced* rural migration where they ran.[203] At odds in this respect with Simmons and O'Brien, it nonetheless demonstrates the continuation of debate and how a national study of what were in essence localised trends can reveal substantial variation in conclusions.

Migration was not the only way railways aided businesses. The rise of the engineering profession in status is generally credited to the publicity surrounding the railways.[204] Other businesses grew through the ability to move produce quickly, suburban lines also creating wider catchments, undermining smaller local shops. [205] Companies serving railway-created gaps particularly benefitted, like short-distance connecting buses. These aided former coaching inns - one of many examples of how railways had impacts reaching wider than just the connected settlement. Increased production and escalating competition between shops and distributors, along with growing real wage, would have also affected consumerism among the lower classes. But the negative social effect on areas where markets moved or coaching inns failed are equally important, both for bypassed *and* connected settlements.

Simmons suggested that finding a new function/industry was major in regeneration, and railway connection could help, but where this was not forthcoming 'some never recovered, remaining stagnant, like the towns destroyed by the Dissolution of the Monasteries 300 years before'.[206] The railways created much upheaval, and without other local factors it was by no means guaranteed that prosperity would follow its arrival: 'The railways usually coincided with growth, and made some contribution towards producing it. That is clear enough. But

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[201] Schwartz, Gregory & Thévenin, 'Spatial History', *Journal of Interdisciplinary History*, pp.53-88.
[202] Ibid; pp.55-6, 61, 70, 84.
[203] Ibid; pp.56, 58, 77, 79, 81.
[204] Simmons, *Victorian Railway*, p.118.
[205] Dyos & Aldcroft, *British Transport*, p.197; O'Brien, *New Economic History*, pp.93, 97, 99; Simmons, *Town and Country*, pp.273-5.
[206] Simmons, *Town and Country*, p.298; Schwartz, Gregory & Thévenin, 'Spatial History', *Journal of Interdisciplinary History*, pp.56, 58, 70-1, 84.

there is no natural law in the matter'.[207] Robbins, however, suggested that failing to receive a connection would equally produce such 'decay'.[208] As is apparent, views have changed substantially from Baxter's claims that railways were key to aiding failing districts.[209]

'Railway Town' Historiography

Of all settlement types, the 'railway town' (such as Wolverton in Buckinghamshire, the first planned 'railway town') was the most significant exception to railway impacts.[210] Having already noted the overlapping spheres of economic and social railway history, that of 'railway towns' is a distinct aspect in its own right. Vital for the railways, unlike the 'facilitator' or even 'causation' historiographies, these settlements were under near-total railway control. The wider theories do not fit this aspect, so the thesis conclusions propose a new framework building on the historiography to fill this significant gap in understanding.[211]

All 'railway towns' arose from early locomotive limitations. Often purchased from private construction firms, most railway works originated solely for repairs, but the unreliability of locomotive production, high demand and issues with acquiring spares inspired companies to manufacture engines themselves.[212] Settlements quickly grew around them to house workers – 'railway towns'. As the size of Works depended on railway needs, company policy and mileage dictated the creation and evolution of these settlements.[213] Allowing for much variety, there were recurring trends.

Although the name 'railway town' implies a simple definition, this is far from the case. The simplest defining aspect was that the settlement be directly and continually impacted by the railways.[214] But, as J. Porteous stated, this should not be as a 'transport community', but

[207] Simmons, *Town and Country*, p.16.
[208] Robbins, *Railway Age*, p.55.
[209] Baxter, 'Railway Expansion', *Journal of the Statistical Society*, p.567.
[210] G. Revill, 'Railway Derby': Occupational Community, Paternalism and Corporate Culture' 1850-1890', *Urban History*, 28 (3), (2001), p.378.
[211] See Chapter 12.
[212] B. Turton, 'The Railway Town: A Problem in Industrial Planning', *The Town Planning Review*, Vol. 32, No. 2 (Jul., 1961), p.98; Simmons, *Town and Country*, p.172. See Appendix IV.
[213] D. Drummond, *Crewe: Railway Town, Company and People 1840-1914* (Aldershot, 1995), p.45; B. Barber, 'The Concept of the Railway Town and the Growth of Darlington 1801-1911: A Note', *Transport History*, 2, 3 (1970), p.285.
[214] B. Turton, 'The Railway Towns of Southern England', *Transport History*, 2 (1969), p.105.

must be 'under the full control of the transport company'.[215] Motive Power Depots (hereafter MPDs), with no direct rail involvement in the town itself, were, therefore, disregarded. Most 'railway towns' were thus specifically centres of manufacture. Thereafter, variations led to development of classification.[216] Quoting B. Barber, the first basic 'railway town' definition was 'that its origin and growth was determined by and dependent upon the employment potential created by the establishment of railway company works for the manufacture of capital equipment'.[217] J. Allen similarly proposed a definition as 'any community which has been built wholly to support the operations of a single company, in which all houses, buildings, and other real estate property are owned by that company, having been acquired or erected specifically for the benefit of its employees, and in which the company provides most of the public services'.[218] Concentrating on occupation, being primarily one-industry, Simmons defined 'railway towns' as where 'the railway, either one company or several, came to be the most powerful employer'; arguably including some MPDs.[219]

Under these criteria, 'railway towns' needed to have been created from scratch by a railway company to meet its own needs and provide all main facilities – 'pioneering' in effect.[220] However, for many this was inaccurate: Swindon and Darlington existed as settlements before the railway; Derby and Eastleigh had little rail-built housing or facilities; Crewe and Wolverton gained non-rail facilities, while many ultimately gained alternate forms of employment/industry.[221] Allen changed his definition to 'any community which is owned and operated by a particular company', Simmons concluding they were towns 'developed by the railways for their own purposes, either from nothing or by the addition of a new industrial plant to an existing market town, [this addition being so large] that it engulfs the older place

[215] J.D. Porteous, 'The Nature of the Company Town', *Transactions of the Institute of British Geographers*, No. 51 (Nov., 1970), p.130.

[216] Turton, 'Planning', *The Town Planning Review*, p.97; Porteous, 'Company Town', *Transactions of the Institute of British Geographers*, p.131.

[217] Barber, 'Darlington', *Transport History*, p.283.

[218] J. Allen, *The Company Town in the American West* (Oklahoma, 1967), pp.4-6.

[219] Turton, 'Planning', *The Town Planning Review*, p.97; Simmons, *Town and Country*, p.171.

[220] Drummond, *Crewe*, p.213; K. Hudson, 'The Early Years of the Railway Community in Swindon', *Transport History*, 1 (1968), p.145; Turton, 'Southern', *Transport History*, p.118.

[221] Hudson, 'Swindon', *Transport History*, p.130; B. Barber, 'The Concept of the Railway Town and the Growth of Darlington 1801-1911: A Note', *Transport History*, 2, 3 (1970), p.284; G. Revill, 'Railway Derby': Occupational Community, Paternalism and Corporate Culture' 1850-1890', *Urban History*, 28 (3), (2001), pp.382-3; Turton, 'Southern', *Transport History*, p.108; Drummond, *Crewe*, p.24; E. Vollans, 'Derby: A Railway Town and Regional Centre', *Transactions and Papers* (Institute of British Geographers), No. 15 (1949), p.97.

and makes a combined settlement town dominated by the railway'.[222] Under this newer view, railways had to be instrumental to the development of a town economically and to some degree socially, but need not have formed the settlement from scratch. With wide interpretation, potentially covering many unrelated settlements and revealing little of form or development, this is of limited use, especially as variations mean any in-depth 'model' would be suspect.[223] This may explain Simmons' claim that, while admitting the 'first stage' of development usually was planned, 'not one [railway town] was truly planned at all', arguing both the growth of speculative building and the complexity of organisation.[224]

Yet there is an even wider issue - discussion remains on how many actually existed. B. Turton, conductor of some of the most widespread research, counted six, Barber eight, while G. Reville referenced circa seven, including York; all variations both numerically and in chosen settlements.[225] Simmons noted that under the 'strict' definition there were six, but when considered more broadly this rose to 15.[226] His 'railway towns' chapter, though, references 26.[227]

D. Drummond, however, proposed a core of 11 main 'railway towns' (Fig. 3).[228] Dating from 1826-1910, Wolverton, Crewe, Swindon, Ashford, Doncaster, Horwich and Eastleigh were considered the primary centres; Shildon, Stratford, Derby and Melton Constable being comparatively less significant. The inclusion of Derby but not Darlington demonstrates the difficulty of classification. Although considered 'exceptions' by some, being notable settlements beforehand and developing differently from the rest, the issue over inclusion based on strict definition is shown through Derby developing a distinct Works suburb as its first industry while Darlington previously had textiles; not developing a majority working for

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[222] Allen, *Company Town*, pp.4-6.; Simmons, *Town and Country*, p.171; D. Drummond, Living in a Railway Town, TNA 'Railways Change Lives' Conference, 7/9/2013.

[223] Allen, *Company Town*, pp.4-6; P. Bonner & K. Shapiro, 'Company Town, Company Estate: Pilgrim's Rest, 1910-1932', *Journal of Southern African Studies*, Vol. 19, No. 2 (Jun., 1993), p.180; Simmons, *Town and Country*, p.195; B. Ricks, 'New Town Development and the Theory of Location', *Land Economics*, Vol. 46, No. 1 (Feb., 1970), p.11; M. Forsyth, 'Watford's Railway Housing', *The L&NWR Society Journal*, Vol. 6 No. 9 (June 2011), pp.3-5.

[224] Simmons, *Town and Country*, p.193; Drummond, TNA Conference; Turton, 'Southern', *Transport History*, p.111.

[225] Turton, 'Planning', *The Town Planning Review*, p.98; Barber, 'Darlington', *Transport History*, p.283; Revill, 'Derby', *Urban History*, p.378.

[226] Simmons, *Town and Country*, p.171.

[227] Ibid; pp.171-195.

[228] Drummond, TNA Conference.

the railway (17-19% of total employed males by 1911, as opposed to Wolverton at 85% or Swindon at 92%).[229]

Fig. 3: The main 'railway towns' of England by 1914.

| 1 SHILDON |
| 2 WOLVERTON |
| 3 CREWE |
| 4 SWINDON |
| 5 STRATFORD |
| 6 DERBY |
| 7 ASHFORD |
| 8 DONCASTER |
| 9 HORWICH |
| 10 MELTON CONSTABLE |
| 11 EASTLEIGH |
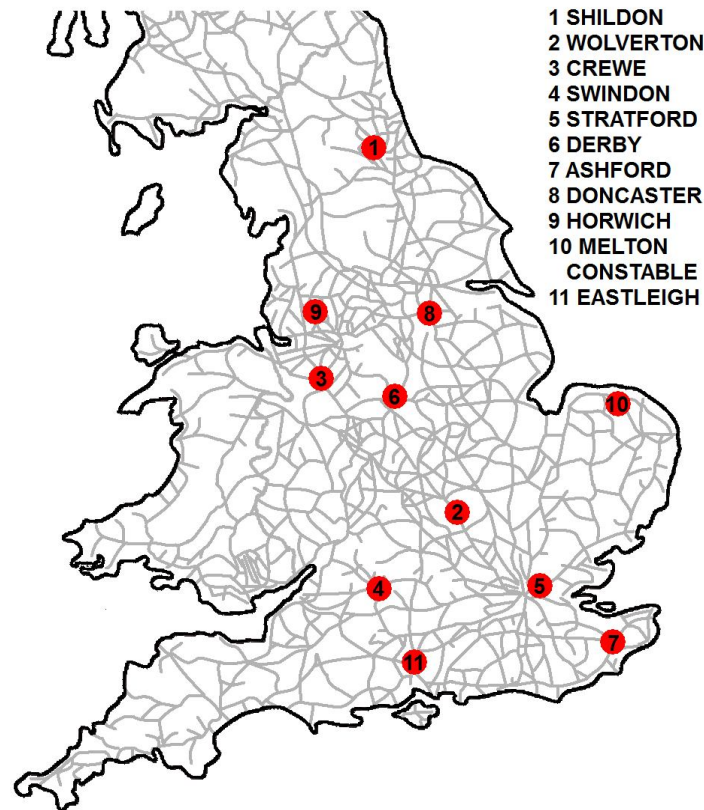
Based on D. Drummond, Living in a Railway Town, TNA 'Railways Change Lives' Conference, 7/9/2013.

Geography, Occupation, Migration and Paternalism

Several aspects of 'railway towns' have already been investigated. These include geographic analysis of design and layout, much concentrating on land costs. While 'railway towns' were limited to some extent where they could be located, this aspect identified correlations between cheapness of land versus cost of creating facilities to attract/retain workers in the face of a wider employment market.[230] Similarly, development of alternate industry features prominently in many studies, noting many were attracted either due to the presence of skilled workers at a transport 'hub', or were actively targeting railway business, such as making

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[229] Barber, 'Darlington', *Transport History*, pp.283, 289; Revill, 'Derby', *Urban History*, p.378; Vollans, 'Derby Town ', *Transactions and Papers* (Institute of British Geographers), p.97; Turton, 'Southern', *Transport History*, p.113.

[230] Hudson, 'Swindon', *Transport History*, p.132; Turton, 'Southern', *Transport History*, p.110; Drummond, *Crewe*, p.119; Simmons, *Victorian Railway*, p.65; Simmons, *Town and Country*, p.194.

uniforms.[231] Industry arose in several cases using female labour as a captive market, often with railway company backing.[232] These industries, though, seldom gained dominance.[233]

As populations had to be amassed from scratch, migration patterns are significant and demonstrate uniform tendencies. Studies of worker birthplaces in several 'railway towns' show many came from nearby counties, but also from Lancashire, Durham and Staffordshire (Table 39, Chapter 11).[234] With industrial specialism centring on these locations, these migrants were skilled workers attracted to railways as increasing mechanisation reduced employment in these areas.[235] Drummond theorised two forms of migration: unskilled labourers undertaking short 'step' migration and skilled migrants travelling longer distances.[236] These later interacted on worker skills and the wider employment market.

Other aspects affecting 'railway town' occupation and society fall within the largest characteristic studied – paternalism.[237] Replacing views of a natural 'labour aristocracy', 'railway town' paternalism is separate from 'model villages'; Saltaire and Bournville were potentially as altruistic in development as strategic, as emphasised by their adherence to temperance, although this benefited productivity nonetheless.[238] Instead, the notion of a fatherly company providing for its workers is seen as a managerial business plan – facilities provided not for wellbeing but as an obligation, encouraging immigration and preventing

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[231] Drummond, *Crewe*, p.78; Vollans, 'Derby Town ', *Transactions and Papers* (Institute of British Geographers), 97; Turton, 'Planning', *The Town Planning Review*, p.102; Turton, 'Southern', *Transport History*, p.116.

[232] Drummond, *Crewe*, pp.28; Turton, 'Planning', *The Town Planning Review*, p.102; Turton, 'Southern', *Transport History*, p.115; Vollans, 'Derby Town ', *Transactions and Papers* (Institute of British Geographers), pp.93-112; Barber, 'Darlington', *Transport History*, p.284; M. Rosenfeld, 'It was a Hard Life': Class and Gender in the Work and Family Rhythms of a Railway Town, 1920-1950', *Historical Papers/Communications Historiques*, Vol. 23, no. 1 (1988), p.237.

[233] Simmons, *Town and Country*, p.173; Revill, 'Derby', *Urban History*, p.393; Turton, 'Southern', *Transport History*, p.113.

[234] Turton, 'Southern', *Transport History*, pp.121-3; P. Richards, 'The Influence of the Railways on the Growth of Wolverton, Buckinghamshire', *Records of Buckinghamshire*, XVII, 2 (1962), pp.119-121; Revill, 'Derby', *Urban History*, pp.388-390.

[235] Drummond, TNA Conference; Drummond, *Crewe*, pp.22-3; Turton, 'Southern', *Transport History*, pp.121-3.

[236] Drummond, *Crewe*, pp.20-3; Revill, 'Derby', *Urban History*, p.394.

[237] Drummond, *Crewe*, pp.3, 19, 63, 131; Robbins, *Railway Age*, p.72; Hudson, 'Swindon', *Transport History*, p.131; Revill, 'Derby', *Urban History*, p.378; M. Crawford, 'The 'New' Company Town', *Perspecta*, Vol. 30, Settlement Patterns (1999), p.51; Porteous, 'Company Town', *Transactions of the Institute of British Geographers*, p.132; B. Dunleavy, *The Lost Streets of Wolverton*, (2010), p.147; Allen, Company Town, p.122.

[238] Drummond, *Crewe*, p.119; Revill, 'Derby', *Urban History*, pp.378, 380; Simmons, *Victorian Railway*, pp.3-4; A. Davison, 'Try the Alternative': the Built Heritage of the Temperance Movement', *The Journal of the Brewery History Society*, 123, (2006), pp.92-109.

emigration of trained staff.[239] This business-led 'obligation' over philanthropy explains some of the wider variations between these settlements.[240] While managerial 'railway paternalism' has been claimed to be mostly hidden, at Wolverton LBR/LNWR Chairman George Carr Glyn claimed:[241]

…I am sure it will be as great a satisfaction to you, as it is to the Directors, and I hope that you will find that the money you have, from time to time, voted for this purpose, has not been thrown away. The result is more important than the mere comfort of the Company's servants there. It has a result which not only acts on our profits, but also most materially on the convenience and safety of the public.[242]

While Glyn, later Lord Wolverton, had some philanthropic intent, business was foremost.[243] In return for paternalism though, loyalty and 'deference' from the workforce was expected. However, as detailed by Drummond, worker responses covered a broad spectrum ranging from full agreement with the railway, either through 'deference' or common ideology, to active opposition.[244] This 'independence' materialised primarily through nonconformity in religion and politics, and the rise of trade unionism (c.1871), resulting in growing conflict such as the political 'Intimidation Affairs' in Crewe.[245] The use of 'influence politics', namely coercing workers to vote to company wishes, weakened relations between employer and employee.[246] Conflict appeared more physically with the construction of non-railway chapels and buildings funded independently by workers, weakening the hold of the company

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[239] Drummond, *Crewe*, pp.10, 18-19, 63, 72; Turton, 'Planning', *The Town Planning Review*, p.102; Simmons, *Victorian Railway*, p.65; Barber, 'Darlington', *Transport History*, p.284; Richards, 'Wolverton', *Records of Buckinghamshire*, p.119.

[240] Turton, 'Southern', *Transport History*, pp.109, 111, 115-6; Simmons, *Town and Country*, p.175; Hudson, 'Swindon', *Transport History*, p.145; Drummond, *Crewe*, p.24; Revill, 'Derby', *Urban History*, pp.378, 394.

[241] Drummond, *Crewe*, pp.63, 191.

[242] TNA RAIL 1110/260 – London & Birmingham Railway Shareholders Reports – Report for 9/2/1844.

[243] As with nearly all 'railway towns' - Drummond, *Crewe*, pp.5, 13, 64-8, 91; D.R. Green, 'Reviewed work: D. Drummond, Crewe: Railway Town, Company and People, 1840-1914', *Labour/Le Travail*, Vol. 40 (Fall, 1997), p314; Hudson, 'Swindon', *Transport History*, p.151; P. Kingsford, *Victorian Railwaymen: The Emergence and Growth of Railway Labour, 1830-1870* (London, 1970), p.81.

[244] Drummond, *Crewe*, pp.132, 135, 198, 213, Drummond, TNA Conference; Bonner & Shapiro, 'Pilgrim's Rest', *Journal of Southern African Studies*, p.187.

[245] Drummond, *Crewe*, pp.76-86, 91, 132-5, 153-4, 164, 173; Drummond, TNA Conference; Revill, 'Derby', *Urban History*, pp.381, 394; J.A. Jaffe, 'Reviewed work: Crewe: Railway Town, Company and People, 1840-1914 by Diane Drummond', *Albion: A Quarterly Journal Concerned with British Studies*, Vol. 28, No. 1 (Spring,1996), p.137; Allen, *Company Town*, p.121.

[246] Drummond, *Crewe*, pp.2, 5, 73, 154, 171, 186-7, 211-2; Drummond, TNA Conference; Bonner & Shapiro, 'Pilgrim's Rest', *Journal of Southern African Studies*, p.177.

on physical expansion as well as its government.[247] Ultimately paternalism was abandoned as a policy and 'railway towns' gained greater independence, particularly with the decline of company involvement in government and building/facility construction turning to local building societies.[248]

Aspects of a 'Railway Town'

Despite distinct variations between 'railway towns', many statements made are interchangeable between examples.[249] For example, Wolverton was openly the blueprint for Swindon and this form was repeated for many other examples.[250] Therefore, a simplified overview is identifiable of their primary trends.

The location of every 'railway town' followed a strict pattern. Bound by railway constraints rather than power or materials, the earliest sites were usually central to prevent engine wear and allow refuelling.[251] With improved engines and greater mileage, the remainder were on notable junctions enabling wider access across the network.[252] Through cheap land the majority were rural, either creating a settlement from scratch or developing from a small pre-established town.[253] The main concentration was in northern England, correlating with the area's growing industrialisation, while the remainder were more spread out (Fig. 3). Shildon, Wolverton and Melton Constable were the most isolated, the former two being the earliest examples.

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[247] Drummond, *Crewe*, pp.16, 133-5 144, 147-8; Hudson, 'Swindon', *Transport History*, p.137; Turton, 'Southern', *Transport History*, p.110; Revill, 'Derby', *Urban History*, pp.383, 397.

[248] Drummond, *Crewe*, pp. 91, 154, 177, 208, 211; Robbins, *Railway Age*, p.72; Simmons, *Town and Country*, p.195; Jaffe, 'Reviewed work: Crewe: Railway Town', *Albion: A Quarterly Journal Concerned with British Studies*, p.137; Crawford, 'Company', *Perspecta*, p.51; Dunleavy, *Lost Streets*, p.151.

[249] Turton, 'Southern', *Transport History*, p.107; A. Harris, Changes in the Early Railway Age: 1800-1850, in H. Darby (ed.), *A New Historical Geography of England* (Cambridge, 1973), pp.519-20; Drummond, TNA Conference.

[250] A. Peck, *The Great Western at Swindon Works* (Royston, 1998), p.10.

[251] Barber, 'Darlington', *Transport History*, p.283; Turton, 'Southern', *Transport History*, p.110; Turton, 'Planning', *The Town Planning Review*, p.100; Drummond, *Crewe*, pp.10, 119; Hudson, 'Swindon', *Transport History*, pp.130-1.

[252] Barber, 'Darlington', *Transport History*, p.283; Turton, 'Southern', *Transport History*, pp.106, 110; Turton, 'Planning', *The Town Planning Review*, p.102; Vollans, 'Derby Town ', *Transactions and Papers* (Institute of British Geographers), p.99.

[253] Simmons, *Victorian Railway*, p.65; Turton, 'Southern', *Transport History*, pp.106-7; Harris, Early Railway Age, in Darby, *Historical Geography*, pp.519-20; Turton, 'Planning', *The Town Planning Review*, pp.98-100; Drummond, TNA Conference; Drummond, *Crewe*, p.20; Barber, 'Darlington', *Transport History*, p.284; Hudson, 'Swindon', *Transport History*, p.130; Revill, 'Derby', *Urban History*, p.382; Casson, *First Railway System*, p.2; Crawford, 'Company', *Perspecta*, p.49.

Housing, far from perceived paternal altruism, was deemed 'necessary', and without the residential section the works could not have operated.[254] While many used local lodging or dormitory satellites either with or (rarely) instead of company-owned housing, (such as Stony Stratford, Newport Pagnell and New Bradwell around Wolverton) in most cases house provision correlated with works employees.[255] When railway needs required Works' expansion, only then were more houses financed, and they remained under railway ownership.[256] But, as paternalism declined, most companies ceased building construction, leaving it to speculative builders and building societies by c.1870.[257]

Table 3: Populations of 'railway towns'.

	WOLVERTON	CREWE	SWINDON	ASHFORD	DONCASTER	HORWICH
1831	257		1,742	2,508		
1841	202	747	2,459	3,082	10,455	
1851	381	5,006	4,876	5,007	12,052	
1861	1,658	8,801	12,224	6,950	39,388	3,471
1871	2,409	19,904	17,459	8,458	45,205	3,671
1881	4,147	24,835	22,374	9,693	21,139	3,761
1891	5,323	32,926	32,744	10,728	63,481	12,850
1901	4,809	42,074	42,074	12,808	83,832	15,084
1911	5,780	44,960	44,960	13,668		16,285

D. Drummond, Living in a Railway Town, TNA 'Railways Change Lives' Conference, 7/9/2013. Note the first census after creation of each Works is highlighted.

Returning to population, there were specific areas that skilled workers came from, often segregating in the town.[258] Manufacturing workers were in railway terms static.[259] The railway was the primary employer, and while other occupational groups did gravitate towards 'railway towns', sometimes being actively encouraged, pre-World War Two it was

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[254] Hudson, 'Swindon', *Transport History*, pp.131-2; Turton, 'Planning', *The Town Planning Review*, p.100; Simmons, *Victorian Railway*, pp.65-6.

[255] Turton, 'Southern', *Transport History*, pp.108, 111-2, 116-8; Turton, 'Planning', *The Town Planning Review*, p.100; F. Markham, *History of Milton Keynes and District Volume 2* (Luton, 1986), pp.90, 193; B. Simpson, *The Wolverton to Newport Pagnell Branch* (Banbury, 1995), pp.13, 37, 40, 47; Barber, 'Darlington', *Transport History*, p.284; Simmons, *Victorian Railway*, p.65; Hudson, 'Swindon', *Transport History*, p.135; Drummond, *Crewe*, p.119; Drummond, TNA Conference; Dunleavy, *Lost Streets*, pp.60, 65;Parishes: Bradwell, *A History of the County of Buckingham: Volume 4* (1927), pp.283-288; MKM.

[256] Turton, 'Planning', *The Town Planning Review*, p.113; Turton, 'Southern', *Transport History*, pp.111, 113, 117, 130-1; Simmons, *Town and Country*, p.176; Revill, 'Derby', *Urban History*, pp.384-7; Drummond, *Crewe*, p.13; Hudson, 'Swindon', *Transport History*, p.136.

[257] Simmons, *Victorian Railway*, p.66; Simmons, *Town and Country*, p.193; Turton, 'Southern', *Transport History*, pp.116, 130-3; Drummond, TNA Conference; Drummond, *Crewe*, p.17; Hudson, 'Swindon', *Transport History*, p.136; B. West, *The Trainmakers - the Story of Wolverton Works* (Buckingham, 1982), p.53.

[258] Revill, 'Derby', *Urban History*, p.387; Drummond, *Crewe*, p.24.

[259] Rosenfeld, 'Gender', *Historical Papers/Communications Historiques*, p.245; Drummond, *Crewe*, pp.29, 32, 126; Drummond, TNA Conference.

substantially smaller and chiefly aimed at the vacant female employment market. When comparing settlements (Table 3), the migration-caused jump in population is vivid, while the comparative scale of undertakings are equally plain.

Whether to attract or retain workers, facilities were essential. These were initially limited, becoming established as much speculatively as through prior planning.[260] Shops and pubs were a necessary feature, if originally few where ready-established alternatives were available.[261] As these towns rose, though, especially where rural, these facilities grew in importance.[262] Many later had non-physical facilities; company savings banks and company friendly societies.[263] Improved water supplies/sewage and fire stations appear commonly as reactions to health and fires, rather than pre-emptive, although these still generally appeared before national legislation.[264] For example, Wolverton's water came from the canal, and when a Works well was found damaged locomotive boilers, the water was given to the inhabitants.[265] 'Wholly unfit', it caused widespread illness.[266] New wells were dug and a superior water system constructed in 1887.[267] Swindon experienced similar water issues, suggesting a trend arising from cheap rural land.[268]

The most significant social facilities were educational and religious. Many had a Mechanics' Institute offering adult education, a library and social activities. There were company-funded schools for workers' children, and apprentice schemes within the works, enabling expansion of skills.[269] Derby was the exception, though, with no railway support.[270] All towns had an

[260] Hudson, 'Swindon', *Transport History*, pp.145, 147; Drummond, *Crewe*, p.24; Richards, 'Wolverton', *Records of Buckinghamshire*, p.119; Revill, 'Derby', *Urban History*, pp.383, 394; Dunleavy, *Lost Streets*, p.20; Simmons, *Town and Country*, p.176.

[261] Drummond, *Crewe*, pp.15, 27; Hudson, 'Swindon', *Transport History*, pp.146-7; W. Ashworth, 'Reviewed work: The Social and Economic Development of Crewe 1780-1923 by W. Chaloner', *The Economic History Review*, New Series, Vol. 4, No. 1 (1951), p.121; Vollans, 'Derby Town ', *Transactions and Papers* (Institute of British Geographers), p.104; Turton, 'Southern', *Transport History*, p.110; Dunleavy, *Lost Streets*, pp.37, 42, 93, 151.

[262] Dunleavy, *Lost Streets*, pp.1, 37.

[263] TNA RAIL 791/163 - Rules and regulations of LNWR Savings Bank at Wolverton, 1858; Kingsford, *Victorian Railwaymen*, p.170; Drummond, *Crewe*, pp.16, 84.

[264] Richards, 'Wolverton', *Records of Buckinghamshire*, p.118; West, *Trainmakers*, p.61.

[265] P. Richards & B. Simpson, *A History of the London and Birmingham Railway Volume 1* (Witney, 2004), p.33; G. Corfe, 'Sanitary Questions, Observations, and Suggestions on the Wolverton Well-water, as Supplied to the Inhabitants', *The Pharmaceutical Journal and Transactions* (1 July 1848), p.31.

[266] Corfe, 'Wolverton Well-water', *Pharmaceutical Journal*, pp.30-6.

[267] Ibid; p.36; http://www.mkheritage.co.uk/wsah/hood/docs/aqueductbook5.html

[268] K. Hudson, 'The Early Years of the Railway Community in Swindon', *Transport History*, 1 (1968), p.145.

[269] Simmons, *Town and Country*, p.194; Vollans, 'Derby Town ', *Transactions and Papers* (Institute of British Geographers), pp.109-110; Drummond, *Crewe*, pp.14-16, 23; Barber, 'Darlington', *Transport History*, p.284.

Anglican church, often linked to the schools, yet only six were company-financed 'railway churches'.[271]   This was the centre of company-controlled society, but 'deference' was diminishing with religious and political nonconformity.[272]   Therefore, multiple chapels arose from public subscription, commonly the first non-railway buildings in the town.[273]   These had their own schools and social circles, representing a physical stand against railway control.[274]

These settlements clearly differed from others, and the railways were paramount to their development.   But through the simplicity of this statement, they have been overlooked; detailed investigations exist but with limited uniform structure outside of the role of paternalism in their establishment and control.

Overall Summary

The main historiographical change in the last fifty years is a more critical view of impacts: railways facilitating change, not solely enabling advancement.   Although there are still many ongoing debates, the current stance is as follows.   Railway investment was less significant to Gross National Product than previously thought, but the increase in the amounts of capital being raised led to development of the stock exchange and made share dealing more common.   Manias arose from promotional booms and town pride, not from fraud, only collapsing because MPs passed too many Acts.   Operationally, passenger numbers rose dramatically as services increased, third class becoming dominant following government involvement, causing a switch from high-tariff to high-quantity traffic.   Freight took longer to develop, but grew to be the main traffic.   While initially having limited market effects, this increased with wider social implications, for example perishables being carried further afield. Stagecoaches and coaching inns saw quick decline and while canals continued longer than previously thought, once heavy rail freight was routine this too rapidly dwindled.[275] However, short road trips to and from stations increased as stations were often outside urban centres.   Social saving studies, especially Hawke's, suggest that while turnpikes and canals

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[270] Revill, 'Derby', *Urban History*, pp.383, 394; Hudson, 'Swindon', *Transport History*, p.150; Drummond, *Crewe*, p.140.
[271] Kingsford, *Victorian Railwaymen*, p.75; H. Jack, *Locomotives of the LNWR Southern Division: London & Birmingham Railway, London & North Western Railway and Wolverton Locomotive Works* (Sawtry, 2001), p.29.
[272] Drummond, *Crewe*, pp.133-5, 141; Kingsford, *Victorian Railwaymen*, p.75.
[273] Drummond, *Crewe*, p.16.
[274] Ibid; p.147; Revill, 'Derby', *Urban History*, p.381; Drummond, TNA Conference.
[275] Fogel, *Railroad Growth*, p.13; Fishlow, *American Railroads*, p.34.

could have made similar achievements, railways assisted the economy by saving 7-11% of the net national income, though this is highly contentious.[276]

Railways had widespread social impacts, most significantly the change in public perception. The rise of third class led to a decrease in some aspects of the class gap, aided by abolishing second class, but in the process creating new forms of 'snobbery'. Public concern led to the earliest cases of government controls on private businesses in order to improve safety. Businesses in general were greatly affected, from providing raw materials and employees (thus impacting on urban sprawl and suburbs) to moving markets and creating new business demands of its own. Government and the public as a whole gained from improved communications, and railways even had significant impacts on language, reading and even time. Newspapers and mail increased - two of the most important effects of railways on society. Speed was certainly an element of many changes in the period and was so different to anything beforehand that it grabbed public imagination – fear and wonder. As more lines were built and used, wonder faded and public interest changed.

Railways themselves were equally subject to change. Profits declined as fares were reduced, costs increased and extensions required investment, with increasing government control and inter-company competition further weakening it. Competition explains many of these developments, with subsequent unnecessary duplication ultimately resulting in dwindling profits and rising manias. Baxter recognised other 'wasteful' factors, notably, that this was initially an untested technology so prone to errors.[277] Had parliament placed tighter controls earlier, then the manias would have been capped, directors (and earlier MPs) would have had less involvement and much damaging duplication would thus have been prevented. Quoting Simmons, 'railways need to be seen not only as mechanical contrivances but as instruments of social change, in the context of the whole Victorian age'.[278]

Of the completed 'railway town' studies, the primary facet has been paternalism, with some research on geography, occupation and migration. These have shown how the railway was the most central component of development, but with advancement came external factors and rising resistance amongst workers, decreasing railway control. These studies have been

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[276] Hawke, *Economic Growth*, p.410.
[277] Baxter, 'Railway Expansion', *Journal of the Statistical Society*, pp.559-60.
[278] Simmons, *Town and Country*, p.335.

hindered, though, by difficulties of definition opening debate on which settlements actually constitute 'railway towns'. Under current classification, though, claims of being highly atypical emphasise the lack of comparative study, either between themselves or with other company-created towns that follow the general pattern.[279] The existence of these variants worldwide shows that this is an international issue.[280]

Regional Analysis and Conclusion

Most important to the overall historiography, none of these many aspects were entirely uniform in occurrence; each displayed various positives and negatives and could have differing results.[281] For example, enforced housing demolition often cleared diseased slums, but could also worsen others due to population displacement.[282] This variation emphasises the difficulty in forming a uniform consensus on the effects of the railways, and the main reason for continued debate. Clearly the historiography is confused in places, and there are numerous facets that are either unresolved or insufficiently researched. Highly apparent is the lack of in-depth work centring on rural areas, resulting in limited debate on the range of rural effects potentially resulting from railway expansion. This omission is partly explained by the urban origins of most early traffic through terminus-terminus business strategies, despite passing through rural areas en-route.[283] Consequently, many claims made at a national level have been based on urban areas at the expense of virtually half of the country. Often founded on wide-scale macro studies, these claims ultimately created generalisations that fail to be wholly applicable to actual locations, or were conversely based on isolated micro studies that have similar limitations. It is, therefore, plain that while both provide valuable information, many benefits can be gained by conducting regional level analysis in conjunction with the national historiography and local case studies. Under this, a manageable countywide area could be researched to find trends and patterns, which can subsequently be compared to individual settlements to confirm whether they remain valid. If sufficient

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[279] Bonner & Shapiro, 'Pilgrim's Rest', *Journal of Southern African Studies*, pp.171-200; Crawford, 'Company', *Perspecta*, pp.48-57; P. Merlin, 'The New Town Movement in Europe', *Annals of the American Academy of Political and Social Science*, Vol. 451, Changing Cities: A Challenge to Planning (Sep., 1980), pp.76-85; Porteous, 'Company Town', *Transactions of the Institute of British Geographers*, pp. 127-142.

[280] Bonner & Shapiro, 'Pilgrim's Rest', *Journal of Southern African Studies*, pp.171-200; Crawford, 'Company', *Perspecta*, pp.48-57; J. Willis, 'Reviewed work: A. Sikainga, Transport Workers' Town 'City of Steel and Fire': A Social History of Atbara, Sudan's Railway Town, 1906-84', *The Journal of African History*, Vol. 45, No. 1 (2004), pp.134-135.

[281] Schwartz, Gregory & Thévenin, 'Spatial History', *Journal of Interdisciplinary History*, pp.55-6.

[282] Simmons, *Town and Country*, p.32.

[283] Wrigley, 'Men on the Land', in Bonfield, Smith & Wrightson, *The World We Have Gained*, pp.295-336.

studies were undertaken across the country then a national overview of the effects of the railways, but with regional and parish variations, could be accomplished.

Under the earlier historiography of direct rail-led 'change', Robbins claimed 'the impact of the railway was overwhelming; it met the needs of the age, and did so much more'.[284] Simmons granted many of the above benefits, emphasising the 'hesitancy' of economic historians to admitting these, noting 'the railways became in Victorian Britain – what they remain still – unequalled movers of people in large numbers at a good steady speed'.[285] But of their effects he was much warier, matching the newer historiography: 'Railways brought with them evident benefits to the country and opened up others, hitherto undreamt of. They also injured it, quite extensively in fact, and by intention – if they had not been curbed – much more'.[286] For the most part railways acted as a conduit for change, not its initiator. No single factor lead development.[287] However, historians have been increasingly emphatic about warning of the risk of overestimating (or *under*estimating) the significance of railways to the Victorian Era.[288] To quote Gourvish:

Railways did not occupy a central place in Britain's early industrialisation, of course, and references to their 'indispensability' for further growth in the mid-nineteenth century are to be ignored. But it is generally accepted that their impact was greater than that of any other single innovation in the period, and although a satisfactory measure of their contribution to the economy must necessarily remain elusive, this is not to imply it was in any way a meagre one.[289]

Despite the arising complexities and disagreements, the railways were very important to the decades in which they developed. To quote John Bright M.P., 1877:

'…we can never regard them without wonder and without admiration.'[290]

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[284] Robbins, *Railway Age*, pp.11, 54.
[285] Simmons, *Victorian Railway*, pp.330, 373.
[286] Ibid; p.173.
[287] O'Brien, *New Economic History*, p.100; Simmons, *Town and Country*, p.17.
[288] Gourvish, *Railways Economy,* p.57.
[289] Ibid; p.40.
[290] Simmons, *Victorian Railway*, p.15; Rogers (ed.), *Public Addresses*, p.414.

Chapter 2: Introduction to the Study

As the historiography revealed, there is much uncertainty remaining in many aspects of railway history, worsened by the use of national generalisations that do not necessarily fit actual locations, and further compounded by insufficient study of several facets, notably of rural areas and of 'railway towns'. But one way around these analytical issues is combining the methodologies behind regional and local level investigation. This enables not only the identification of trends and developments in a substantial area, and likewise those in specific settlements, but by comparing the two it can be demonstrated whether the regional findings are generalisations or appropriate for actual locations. Similarly, it can demonstrate whether factors in individual parishes are isolated incidents or indicative of wider trends. Particularly as historiographical disagreements often stem from examples having opposing results, this dual methodology can provide much-needed clarity, especially when applied to lesser-studied facets, such as rural rail impacts, and in revealing the pattern of variations that is the origin of so many of these debates.

Regional Background

On the northern border of London and encircling the Chiltern Hills, Hertfordshire, Bedfordshire and Buckinghamshire comprise the northernmost portion of the 'home counties'. First referenced under these name in the Anglo Saxon period, but having Celtic and Roman origins, agriculture was the region's primary economic function, only beginning to shift towards commuting by the 1920s with population growth.[1] The seats of many influential landowners throughout history, from Francis Bacon and the Cecils, Earls of Salisbury, to the canal-building Duke of Bridgewater and Benjamin Disraeli, these counties have always held national importance, particularly due to St Albans Abbey and its geographic positioning as the first coaching point outside London.[2]

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[1] R. Leleux, *A Regional History of the Railways of Great Britain, Volume 9 The East Midlands* (Newton Abbot, 1976), p.13; S. Jenkins, *The Watford to St Albans Branch* (Usk, 1990), pp.18, 21; D. Payne, *The Story of Bushey in the Age of the Steam Train* (Bushey, 2011), p.25.

[2] E. Doubleday, *Hertfordshire: Survey Report and Analysis of County Development Plan, 1951* (Hertford, 1951), p.18; Hatfield House; St Michael's Church, St Albans; Museum of St Albans; https://www.nationaltrust.org.uk/hughenden/ ; http://www.stalbanscathedral.org/history/monastic-site ; http://www.nationaltrust.org.uk/ashridge-estate/history/

Hertfordshire is the southernmost of the three counties, located approximately 20 miles from London. Just under 400,000 acres in size, it has for the most part a flat terrain and with a geology primarily comprising chalk and clay, it has many small rivers, most notable being the Chess, Colne, Lee and Stort.[3] The county had a total of 131 parishes in 12 registration districts (Fig. 4 & Appendix VI). Having a steadily growing population throughout the region, at a level slightly over half that of the national growth rate, the 1851 census revealed that 24% of the populus lived in the nine existing towns.[4] Compared with the main national urban centres, those in Hertfordshire were not substantial in size, mostly located towards the south, but nonetheless the primary towns of Hertford, St Albans and Watford had a significant impact on the couty as a whole, as did London itself.[5]

The economy of Hertfordshire was diverse, the main market towns naturally having a broad range of occupations ranging from customary retail and victualing to more specialised trades such as silk manufacture and lace work.[6] Paper-making and printing was mostly limited to the south, notably around Watford, while malting was a long-standing trade in the south east around Ware.[7] This led to much brewing, such as around Baldockand Hitchin.[8] Although not widespread, in these areas they came to be well-known industries.[9] By no means an 'industrialised' region, mostly craft trades being undertaken, the largest industry was in straw plait and hats.[10] Covering all three counties, in Hertfordshire this concentrated around St Albans and the south west, employing mostly women, often as a subsidiary to agricultural

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[3] *Post Office Directory of Hertfordshire*, 1862.

[4] N. Goose, *Population, Economy and Family Structure in Herts in 1851: The Berkhamsted Region* (Hatfield, 1996), p.27; N. Goose, 'Pubs, Inns & Beer Shops: The Retail Liquor Trade in St Albans', *Hertfordshire's Past*, Issue 43/44 (Summer 1998), p.55; 1851 census report population table 1, LXXXV, pp.civ; http://www.histpop.org See Chapter 6.

[5] Goose, 'Liquor Trade', *Hertfordshire's Past*, p.55; N. Goose, *Population, Economy and Family Structure in Herts in 1851: St Albans and its Region* (Hatfield, 2000), p.50; J. Moore, *The Impact of Agricultural Depression and Land Ownership Change on the County of Hertfordshire, c.1870-1914* (University of Hertfordshire, 2010), p.49.

[6] N. Goose, 'Cottage Industry, Migration, and Marriage in Nineteenth-Century England', *Economic History Review*, 61:4 (2008), p.806; Goose, *Berkhamsted Region*, p.34; Goose & Short, *Historical Atlas*, pp.96-7.

[7] W. Johnson, *Industrial Archaeology of Hertfordshire* (Newton Abbot, 1970), pp.16, 28-40, 55-61; Parishes: Ware, *A History of the County of Hertford: Volume 3* (1912), pp. 380-397.

[8] Parishes: Baldock, *A History of the County of Hertford: Volume 3* (1912), pp. 65-73; Hitchin: Introduction and Manors, *A History of the County of Hertford: Volume 3* (1912), pp. 3-12; *A History of the County of Hertford: Volume 4* (1971), p.231.

[9] *A History of the County of Hertford: Volume 4* (1971), pp.239, 242-4, 256-64; Moore, *Agricultural Hertfordshire* (University of Hertfordshire, 2010), p.90; N. Goose & D. Short, *An Historical Atlas of Hertfordshire* (Hatfield, 2011), pp.80-1, 98-9.

[10] *A History of the County of Hertford: Volume 4* (1971), pp.251-6; Goose & Short, *Historical Atlas*, pp.90-2; Goose, *St Albans Region*, pp.71-4; Johnson, *Industrial Archaeology*, pp.19, 70-6.

wages.[11]   However, the overriding economic activity was agriculture.   Hertfordshire was primarily an arable corn-growing area, although there was some pasture present to the south.[12]   Considered the 'first corn county', its straw not only aided the plait industry (though this diminished considerably) but had much trade in London as feedstock.[13]   Productivity increased throughout the period despite few large farms, and market gardening grew in areas such as watercress near Watford.[14]

Bedfordshire, the northernmost of the three counties, covers approximately 300,000 acres, with slightly undulating topography to the north and the Chiltern Hills themselves in the far south.[15]   Its main rivers are the Lea, Ouse, and the artificial 'New River'. Opened in 1613 to supply London with clean water, it originates from the Lea and passes through Bedfordshire and Hertfordshire.[16]   Made up of six registration districts, one shared with Buckinghamshire, the county had 143 parishes (Fig. 5 & Appendix VI). Its population growth was similar to Hertfordshire's, if slightly lesser by 1900, but despite the 1851 census listing only seven towns, they comprised 29% of the total population.[17]   Of these, only Bedford and Luton were notable centres, the remainder being substantially smaller. Previous census research shows that much of the mobile population of the three counties originated from within the region, inward migration from other counties being lower than necessarily expected.[18]

Bedfordshire's economy had similar diversity to Hertfordshire in terms of urban market provision in its larger towns, and had some limited cases of industry such as sand excavation around Linslade and heavy engineering in Bedford itself.[19]   Towards 1900, Luton also gained some industrial firms, notably Vauxhall automobiles in 1905.[20]   Lace-making had once been

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[11] Goose, *St Albans Region*, pp.39, 104; Goose, 'Cottage Industry', *Economic History Review*, pp.807, 809. See Chapter 9.

[12] Goose & Short, *Historical Atlas*, pp.122-3.

[13] Doubleday, *Hertfordshire Survey*; Moore, *Agricultural Hertfordshire* (University of Hertfordshire, 2010), p.62; Goose, *Berkhamsted Region*, pp.48-9; Goose, *St Albans Region*, pp.106, 116.

[14] *A History of the County of Hertford: Volume 4* (1971), pp.272-3; Goose, *Berkhamsted Region*, pp.47, 53; Goose & Short, *Historical Atlas*, pp.94-5.

[15] *Slaters Royal National and Commercial Directory and Topography (including Bedfordshire)*, 1850; D. Fryer, Part 54 Buckinghamshire, in L. Dudley Stamp, *The Land of Britain: The Report of the Land Utilisation Survey of Britain* (London, 1942), p.47.

[16] Johnson, *Industrial Archaeology*, pp.97-101; http://www.thameswater.co.uk/about-us/17250.htm?source=newriver

[17] 1851 census report population table 1, LXXXV, pp.civ; http://www.histpop.org See Chapter 6.

[18] Goose, *Berkhamsted Region*, p.57.

[19] *A History of the County of Bedford: Volume 2* (1908), pp.125-7; I. Bowley, 'Light Rail to Lighthouse', *Chaloner: The Magazine for the Leighton Buzzard Narrow Gauge Railway*, No. 153 (Summer 2011), pp.42-5.

[20] J. Simmons, *The Railway in Town and Country 1830-1914* (Newton Abbot, 1986), p.277; http://www.bbc.co.uk/threecounties/community/vauxhall/milestones.shtml

widespread, but was declining by 1850 with mechanisation.[21] However, the county's largest non-agricultural employment was straw work, becoming the national centre for the industry.[22] Originating in the 1550s, becoming most well-known from Luton in particular, it employed much of the population.[23] As plait production ultimately declined by 1900, the industry here was maintained through hatmaking, as opposed to the other counties where it saw greater deterioration, although as fashions changed this work increasingly turned towards felt-based styles.[24] Benefitting from chalky and sandy loam soil, Bedfordshire's agriculture was divided west-east between pasture and arable, the former being only slightly more prevalent. While much grown was wheat, the eastern arable area had the largest proportion of market gardening in the three counties, mostly vegetables grown around Biggleswade and Sandy.[25]

Buckinghamshire, to the west, was the largest county at over 450,000 acres.[26] Topographically similar to Bedfordshire, with the Chilterns in its south, its main rivers are the Colne, Ouse and Thames. It contained 206 parishes in nine registration districts, although two northern districts were also part of Northamptonshire (Fig. 6 & Appendix VI). The 1851 census credited the county with eight towns containing 36% of its population, the largest percentage of the three counties, but it had the lowest overall population growth rate throughout the period.[27] Of the towns, most were very minor, Buckingham and Aylesbury being its primary urban centres. In part due to isolated industrial activity, some others were expanding, though, such as Linslade, Slough and Wolverton, explaining how the most rural of the counties strangely gained the highest urban population percentage.[28] The northern half of the county was more rural than the south, having less London influence, and the few market towns present were smaller in size and population.[29]

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[21] *A History of the County of Bedford: Volume 2* (1908), pp.122-4.

[22] See Chapters 4 and 9.

[23] *A History of the County of Bedford: Volume 2* (1908), pp.118-22; Simmons, *Town and Country*, pp.276-7.

[24] N. Goose, The Straw Plait and Hat Trades in Nineteenth-Century Hertfordshire, (ed.) N Goose, *Women's Work in Industrial England* (Hatfield, 2007), p.100; *Luton: Hat Industry 1750-2000* (Luton Museum Education Service), p.5, Wardown Park Museum.

[25] C. Fitchett, Part 55 Bedfordshire, in L. Dudley Stamp, *The Land of Britain: Land Utilisation Survey of Britain* (1943), pp.121, 129; *A History of the County of Bedford: Volume 2*, (1908), pp.118-22.

[26] *Slaters Royal National and Commercial Directory and Topography (including Buckinghamshire)*, 1851.

[27] 1851 census report population table 1, LXXXV, pp.civ; http://www.histpop.org   See Chapter 6.

[28] *A History of the County of Buckingham: Volume 2* (1908), pp.103, 114, 126-7; Parishes: Linslade, *A History of the County of Buckingham: Volume 3* (1925), pp. 387-391; Parishes: Slough, *A History of the County of Buckingham: Volume 3* (1925), pp. 301-302; Parishes: Wolverton, *A History of the County of Buckingham: Volume 4* (1927), pp. 505-509.

[29] Fryer, *Buckinghamshire Survey*, pp.70, 72.

Economically, Buckinghamshire was the most dependant on agriculture, having little industry outside straw plaitting. There were some localised exceptions, though, such as furniture manufacture around Wycombe and the railway workshops at Wolverton.[30] These grew to be well-known, although the former was operated as a cottage craft, as was typical of most examples across these counties, rather than the factory-based industry of the latter. Unlike Hertfordshire or Bedfordshire, Buckinghamshire had no specific straw centres and no hatmaking, so suffered particularly with the decline of the trade.[31] There were also cases of brick, paper, needle and lace-making, but these were particularly small, the latter two dying out in the period.[32] Having chalky and sandy soil, much of the county was centred on pasture, becoming a significance source of milk for London and famed for the 'Aylesbury duck'.[33] The far south had some market gardening, the only large area of pure arable working, although the southern half of the county did grow some crops in addition to pasture on the Chiltern Hills.[34] It also had the greatest amount of woodland, particularly around Wycombe supplying its chair industry.[35]

The three counties surround the north of London; a 'gateway' to the capital, being crossed by innumerable travellers. Its transport links have, therefore, always been of great importance.[36] Having seven main roads radiating out from London, five of Roman origin, there were 44 turnpike trusts.[37] There were four major navigable waterways, including the Grand Junction Canal (hereafter GJC), although four additional canal branch 'arms' were constructed.[38] Most importantly, the region was traversed in total by 48 railways, both main line and branch, the majority of which ran north-south serving London, forming a complex network that remained until the 'Beeching Axe' of 1963.[39]

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[30] *A History of the County of Buckingham: Volume 2* (1908), pp.109-10, 126-7; http://www.wycombe.gov.uk/council-services/leisure-and-culture/local-history/furniture-making-in-high-wycombe.aspx
[31] *A History of the County of Buckingham: Volume 2* (1908), pp.113-4; *A History of the County of Bedford: Volume 2* (1908), p.121.
[32] *A History of the County of Buckingham: Volume 2* (1908), pp.106-9, 111-12, 114-15, 127-28.
[33] Fryer, *Buckinghamshire Survey*, pp.74, 89, 91-92.
[34] Ibid; p.69; *A History of the County of Buckingham: Volume 2* (1908), p.106.
[35] *A History of the County of Buckingham: Volume 2* (1908), p.110; Fryer, *Buckinghamshire Survey*, pp.61, 64.
[36] See Chapter 3.
[37] Goose & Short, *Historical Atlas*, pp.36-7, 40-1; Dyos & Aldcroft, *British Transport*, p.21; Johnson, *Industrial Archaeology*, pp.102-16; http://www.turnpikes.org.uk/Turnpike%20details.htm See Appendix III.
[38] C. Hadfield (J. Boughy ed.), *Hadfield's British Canals* (Stroud, 1998), p.147; Goose & Short, *Historical Atlas*, pp.46-7; *A History of the County of Hertford: Volume 4* (1971), p.241; Johnson, *Industrial Archaeology*, pp.116-22.
[39] Moore, *Agricultural Hertfordshire* (University of Hertfordshire, 2010), p.49; D.I. Gordon, *A Regional History of the Railways of Great Britain, Volume 5 The Eastern Counties* (Newton Abbot, 1976); R. Leleux, *A Regional History of the Railways of Great Britain, Vol. 9 The East Midlands* (Newton Abbot, 1976); Goose &

Objectives and Methodology

The historiography revealed issues requiring further research, particularly at a regional level, and this study's objectives aim to build thereon. The choice of these counties presents a number of useful aspects: aside from not previously having had detailed rail analysis undertaken, it introduces a rural region markedly different from the rising industrial areas more commonly focussed on. Conversely, its proximity to London adds an interesting juxtaposition between rural 'countryside' and the expanding effects of one of the world's most important cities. Concentrating primarily on demographic and economic analysis, the initial aim, therefore, is to identify how, and the extent to which, railways affected these intrinsically rural counties, and add an additional region to the slowly growing number of localised railway studies.

Railway history research has traditionally taken two modes of enquiry. The most prolific are enthusiast-led narratives of company, locomotive or line histories. Benefitting from these are academic works analysing the effects railways had and the overall significance of railways to national development. This 'significance' has seen two opposing opinions form: the near-contemporary view of railways as the prime reason for virtually all socio-economic progress, versus the newer rationale of railways acting as a 'facilitator' enabling other independent effects to create both positive and negative changes - much more varied and unregimented than once thought.[40] This newer 'facilitator' view is being rapidly accepted as more likely, but the limited number of rural studies has resulted in an incomplete urban-centric perspective, hence some of the opposing historiographical views. This study, therefore, intends to evaluate which of the two historiographical theories is the most applicable outside of an industrial setting.

The focus in previous local railway analysis has usually been on a single line or select settlements. The study of three counties collectively, however, is a new format, enabling trends and variations to be identified not merely within a restricted area but in the context of a

Short, *Historical Atlas*, pp.48-9; Johnson, *Industrial Archaeology*, pp.122-33; *The Reshaping of British Railways Part 1: Report* (London, 1963). See Appendix II.
[40] R. Fogel, *Railroads and American Economic Growth* (Baltimore, 1964), pp.1-9; A. Fishlow, *American Railroads and the Transformation of the Ante-Bellum Economy* (Harvard, 1965); Simmons, *Town and Country*, p.20; H. Dyos & D. Aldcroft, *British Transport: An Economic Survey from the Seventeenth Century to the Twentieth* (Leicester, 1971), p.182.

more comprehensive vicinity. More complex logistically, this study aims to demonstrate the benefits that a dual-level methodology can bring to this: in this instance, analysing impacts at a coutywide level, then testing these results by comparison with selected case study settlements at a local parish level. To enable this comparison, the countywide conclusions were used to create hypotheses of rural railway impacts, which can act as a theoretical framework for similar future studies of other locations. This method of regional overview and localised detail helps bridge the gap between macro and micro studies, circumventing some of the limitations that each have and furthering the opportunity of a national analysis at a local level.

Considering the local aspect, the case study settlement of Wolverton proves a significant exception to most other parishes, being the first planned 'railway town', so enabling the development of a rail-led company town to be investigated.[41] This oft-overlooked facet has wider implications for 'company town' studies, and a new structure for understanding how such settlements changed over time is proposed to aid future analyses, providing a basis for considering the impacts on these wholly different towns within the context of the broader historiography.

A wide variety of sources were used, most notably railway company records, local trade directories and census material. Beneficial for population and occupation data, the census has spawned much debate on limitations, such as female and secondary employment, overall accuracy, and variations in definitions.[42] But many of these can be mitigated to an extent through current methodologies, such as the 'Goose Code' of occupational classification or the use of population percentage growth banding.[43] The *Victoria County History* (hereafter *VCH*), *Imperial Gazetteer* and the 1940-50s *Land of Britain* surveys further provide invaluable details on industry, land ownership and land use, although potential omissions and

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[41] B. West, *The Railwaymen - Wolverton*, (Buckingham, 1987), p.14.

[42] M. Drake & R. Finnegan, *Studying Family and Community History Volume 4: Sources and Methods: a Handbook* (Cambridge, 1997), pp.61-2; C.A. Crompton, 'Changes in Rural Service Occupations during the Nineteenth Century: An Evaluation of Two Sources for Hertfordshire, England', *Rural History*, Vol. 6, 2 (1995), p.196; E. Garrett, The Dawning of a New Era? Women's Work in England and Wales at the Turn of the Twentieth Century, Ed. N Goose, *Women's Work in Industrial England*, (Hatfield, 2007), p.315; E. Higgs, *Making Sense of the Census* (London, 1989), pp.81-90; E. Higgs, *A Clearer Sense of the Census* (London, 1996), p.163; www.histpop.org

[43] E. Wrigley, *The Early English Censuses* (Oxford, 2011), pp.28, 96-7, Fig 3.1; Goose & Short, *Historical Atlas*, D. Mills, *Rural Community History from Trade Directories* (Aldenham, 2001), pp.90-1; Goose, *Berkhamsted Region*, pp.21-2, 30, Table 2.

subjectivity are present, explained in the following chapters.[44]   At the local level, trade directories, agricultural returns and OS maps, in addition to the above sources, reveal parish details, but with their own issues.[45]   Not all are strictly comparable with other years in their raw state, and directories in particular vary in reliability and content.[46]   The chapters, therefore, present an overview of each theme rather than a comprehensive investigation.[47]

Structure of the Study

Under this methodology, the structure of this study consists of three broad sections, commencing with the historiographical overview in part one.   Part two comprises of the countywide study, with the three counties as a combined region.   The third chapter focuses on transportation developments and the interactions between railways and turnpikes, stagecoaches and waterways.   Chapter four reveals the changes occurring throughout the period in terms of occupation and the role railways played in increasing diversification and urbanisation.   The fifth chapter investigates rail effects on land use, particularly industrial positioning, agriculture, and land ownership.   Chapter six addresses population, identifying correlations in timing and location of percentage growth or decline with initial railway development and the subsequent consolidation of this new transport medium.   Lastly, the countywide section concludes with hypotheses of rural effects of the railways based on these findings.

The third part turns to the six case studies selected to undergo similar analysis as conducted for the complete region.   Compared to the countywide hypotheses, this local-centric analysis demonstrates their applicability, and so their usefulness as a future parish and county level structural tool.   Chapter eight opens with an introduction to the settlements and a background of their transport history, before turning to the effects of railway business on local carriers.

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[44] Fitchett, *Bedfordshire Survey*; Fryer, *Buckinghamshire Survey*; Doubleday, *Hertfordshire Survey*; J. Wilson, *Imperial Gazetteer of England and Wales* (1870-72); J. Bartholomew, *Gazetteer of the British Isles* (1887); www.visionofbritain.org.uk

[45] For example: TNA MAF 68/6, MAF 68/231, MAF 68/687, MAF 68/1257, MAF 68/1827 - Parish Summaries of Agricultural Returns, Buckinghamshire; Drake & Finnegan, *Community History*, pp.27, 58; Crompton, 'Rural Occupations', *Rural History*, pp.193-203; G. Shaw, *British Directories as Sources in Historical Geography*, (Norwich, 1982), pp.5-6; http://digimap.edina.ac.uk/

[46] W. Stephens, *Sources for English Local History* (Manchester, 1973), pp. 14, 38-9, 123, 126-7; Drake & Finnegan, *Community History*, pp.58, 60-1; Crompton, 'Rural Occupations', *Rural History*, pp.198, 200-2; Shaw, *British Directories*, pp.16, 29-30, 40-1; Mills, *Trade Directories*, p.44;

[47] Mills, *Trade Directories*, p.20; Stephens, *Local History*, p.39; Crompton, 'Rural Occupations', *Rural History*, p.202; Wrigley, *Early Censuses*, pp.29-30.

The ninth chapter covers occupational change and the variation of effects railways could provide, particularly the extent to which they fostered an 'urbanising' economy. Chapter ten considers land use, notably any changes in agricultural practices, evidence for industrial positioning, and the extent and direction of urban expansion. The eleventh chapter completes the case study analysis, looking at railway correlation with population changes, before the study closes with a final analysis of the overall significance of the railways on these counties.

This study, therefore, aims to reveal information from a new rural area and identify the applicability of the two main historiographical claims. Using a variety of sources, regional and micro analyses are combined to gain a better understanding of what occurred in this large area, while ensuring that the resulting hypothese remain appriopriate when compared to individual settlements. Lastly, the provision of new methodological structures resulting from this study can help rationalise the complexities of railway interaction and aid in understanding how these counties, along with rural and 'railway town' settlements generally, fit into the wider historiography and our understanding of the development of the railways.

Fig. 4: County map of Hertfordshire.

Hertfordshire Archives and Local Studies (HALS).

Fig. 5: County map of Bedfordshire.

BEDFORDSHIRE PARISHES C1880

① Colworth
② Shefford Hardwick
③ Shefford
④ Holwell
⑤ Higham Gobion
⑥ Harlington
⑦ Westoning
⑧ Houghton Regis
⑨ Studham
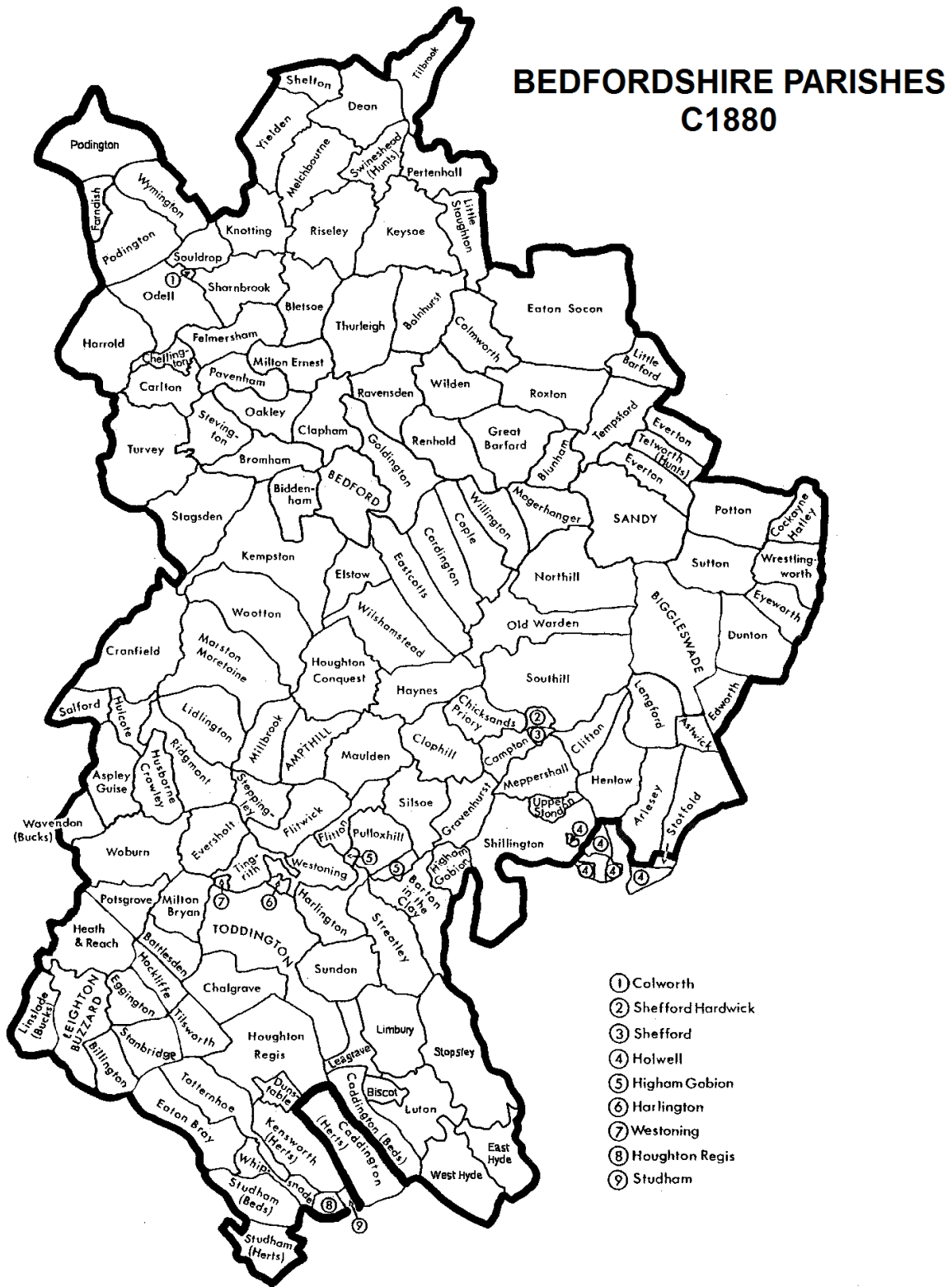
Bedfordshire and Luton Archives and Records Service (B&LARS).

Fig. 6: County map of Buckinghamshire.

Parish Map
of
Buckinghamshire

Northamptonshire

Bedfordshire

Oxfordshire

Hertfordshire

Berkshire

Key
☿ Parishes
+ Chapelries

0 1 2 3 4 5 6 7 8 9 10 **Miles**
Scale

© Kevin Quick 1998

http://www.bucksgs.org.uk/maps/parish.html
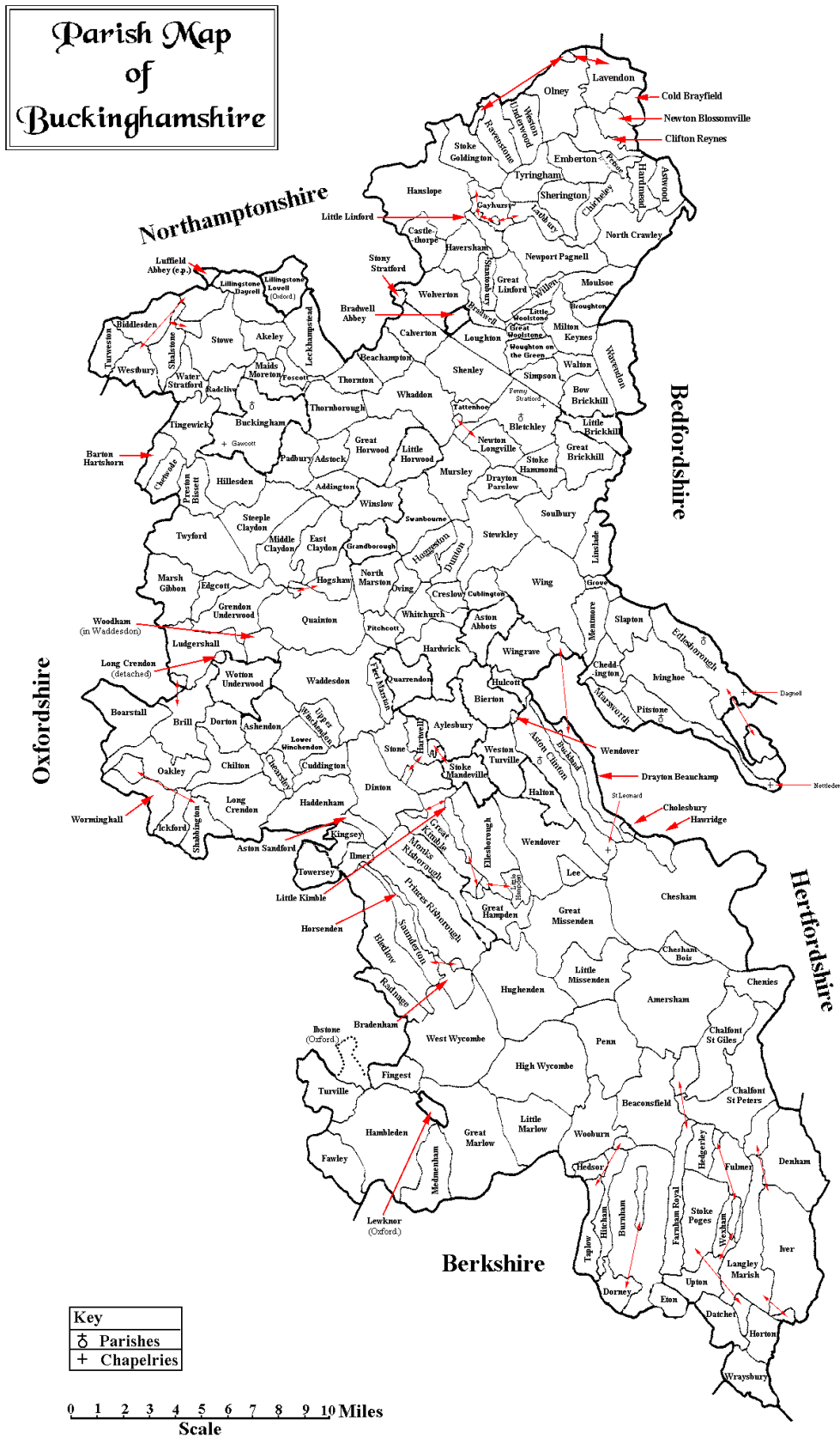
Part 2: County-wide Analysis and Findings

Chapter 3: Transportation in the Region

One of the most visible effects of the railways, both in the period and in historical discussion, was on other transport systems.[1] The historiography emphasises competition, but the vying for trade between different transport types means this aspect was not simply occurring amongst railway companies. Before the eighteenth century the country's transport infrastructure was essentially just navigable rivers and the routes of ancient roads; their transformation in the early 'Industrial Revolution' to a coordinated transport system has been credited as vital to the nation's 'general economic advance'.[2]

Road Transportation

In 1663 the first turnpike gate was erected at Wadesmill, Hertfordshire, but it was the General Turnpike Act of 1773 that led to a massive rise in their numbers, with 18,000 miles turnpiked by 1821, a trend encouraged by potential tolls from the rising numbers of stagecoaches.[3] As canals took over goods transport, roads turned to speed: by the early 1830s the London-Birmingham stagecoaches were capable of completing the journey in 12 hours. However, only 6% of England's roads were turnpiked, while historians agree most trusts had poor financial astuteness and stinted on repair materials, so limiting their potential.[4] Increasing competition between stagecoach operators forced fares down, and especially considering the ever-worsening state of some turnpikes, coaches were running half-empty even before the railways.[5] When established, railways demolished the weakened market for long-distance road travel, with the last turnpike in the country closing in 1885.[6]

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[1] T.C. Barker & C.I. Savage, *An Economic History of Transport in Britain* (London, 1974), pp.63-4.
[2] H. Dyos & D. Aldcroft, *British Transport: An Economic Survey from the Seventeenth Century to the Twentieth* (Leicester, 1971), p.50.
[3] Barker & Savage, *Transport*, p.31.
[4] Ibid; p.32; Dyos & Aldcroft, *British Transport*, pp.68-9.
[5] Dyos & Aldcroft, *British Transport*, p.76.
[6] Barker & Savage, *Transport*, p.32; Dyos & Aldcroft, *British Transport*, p.69;
http://www.geog.port.ac.uk/webmap/hantsmap/hantsmap/turnpike.htm

At its height, Bedfordshire had three main roads: the Icknield Way, Watling Street and the Great North Road.[7] Fifteen turnpikes were in the county on sections of these and other roads – collectively 220 miles (Fig. 7).[8] Buckinghamshire was traversed by the Icknield Way and Watling Street too, also having Akeman Street and the Bath Road (also known as the Great West Road).[9] Sixteen turnpikes served the county, a combined length of 210 miles (Fig. 8), but their lack of uniformity hindered development, like the centre of the county would find later with no cross-county railway until the 1860s.[10] Hertfordshire also had the Great North Road, Watling Street, the Icknield Way and Akeman Street, but also Ermine Street and Stane Street – the high number of Roman roads explained by the significance of the Roman city of Verulamium (now St Albans).[11] Thirteen turnpikes were in the county, totalling 260 miles (Fig. 9).[12] Therefore, much of Buckinghamshire was inaccessible by turnpike, particularly in the north. Bedfordshire had the greatest number of turnpike trusts, concentrating around Bedford, but Hertfordshire, despite having the fewest controlling trusts, had the greatest mileage. As towns such as St Albans and Hatfield were known as the first major coaching points outside London, the 'funnel' effect towards the capital is obvious.[13] While provincial centres such as Bedford warranted connections, Dyos crediting Bedfordshire with superior road/water carriage to other counties nationally, the long-distance routes that later competed with railways all funnelled towards London.[14] Therefore, Hertfordshire's roads elevated the importance of the county, making it 'closely tied with national history and the growth of London'.[15]

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[7] H. Davies, *Roads in Roman Britain* (Stroud, 2002), p.10.
[8] http://www.turnpikes.org.uk/Turnpike%20details.htm See Appendix III.
[9] I. Margary, *Roman Roads in Britain Volume 1* (London, 1955), pp.118, 166-7.
[10] http://www.turnpikes.org.uk/Turnpike%20details.htm ; *A History of the County of Buckingham: Volume 2* (1908), pp.103-4.
[11] N. Goose & D. Short, *An Historical Atlas of Hertfordshire* (Hatfield, 2011), pp.36-43; O. Roucoux, *The Roman Watling Street From London to High Cross* (Dunstable, 1984), p.37.
[12] http://www.turnpikes.org.uk/Turnpike%20details.htm
[13] Barker & Savage, *Transport*, p.28.
[14] Dyos & Aldcroft, *British Transport*, p.21.
[15] E. Doubleday, *Hertfordshire: Survey Report and Analysis of County Development Plan, 1951*, (Hertford, 1951), p.18; W. Johnson, *Industrial Archaeology of Hertfordshire* (Newton Abbot, 1970), p.122.

Fig. 7: Map of Bedfordshire (*Cary's Traveller's Companion*, 1814).

Fig. 8: Map of Buckinghamshire (*Cary's Traveller's Companion* 1814).

Fig. 9: Map of Hertfordshire (*Cary's Traveller's Companion*, 1814).
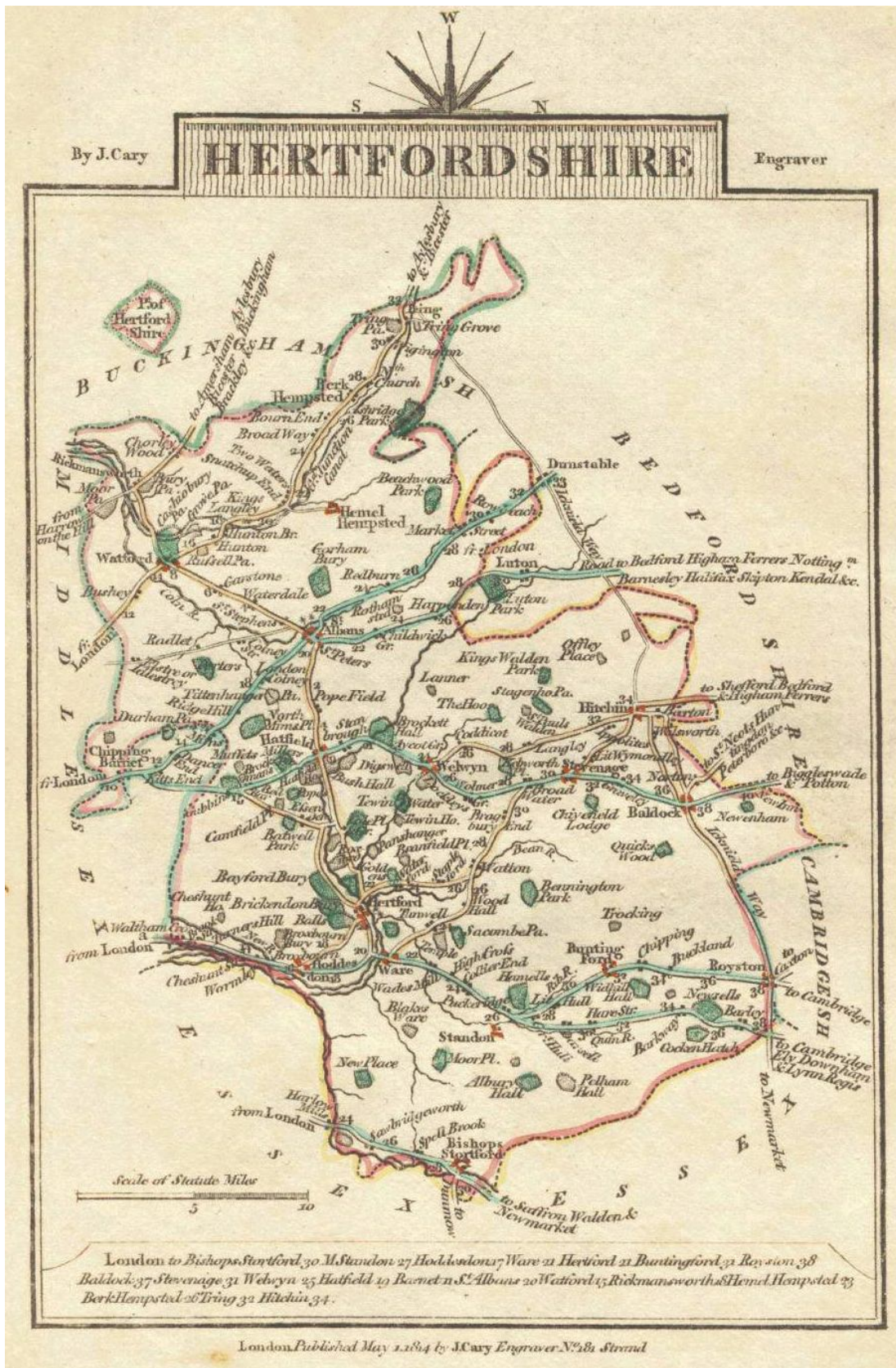
<u>Water-borne Transportation</u>

While turnpikes excelled at passenger travel, they were slow and cumbersome for heavy goods, particularly where poorly repaired. Water was limited to where it could naturally reach, even with the aid of canalisation and other techniques. Therefore, the introduction of fully man-made canals with the Duke of Bridgwater in 1761 led to its own period of mania (1790s-1810s).[16] While only a fraction of the costs the railways would need, they were still among the largest sums of money privately amassed up to that point.[17] By 1838 there were 4,385 miles of waterway nationally, peaking at 4,484 in 1850 when closures started decreasing overall mileage.[18] Early railway locomotives did not have the tractive power for heavy goods, and high breakages in some products meant canals lasted longer against the railways than historically expected.[19] However, locomotive designs rapidly progressed, forcing repeated reductions to previously excessive tolls. Maintenance suffered, making them even slower and those employed began to live on their boats as wages (including for rents) plummeted. By the 1870s the canals were seen as intrinsically 'old fashioned'; the last major work for many was moving materials to help construct the railways.[20] Canals are now recognised by historians for their role in Georgian economic development, particularly in halving overland goods transport costs, being 'the vital prerequisite of the railways and of the great Victorian boom which attended them'.[21]

Waterways in the region had been used since the Middle Ages; rivers such as the Great Ouse (Bedfordshire), the Lee and the Stort (Hertfordshire).[22] These latter two had early canalisation work in 1766, primarily to supply London with malt. Trade figures for the Stort demonstrate the success and importance of waterways over roads for goods, especially bulky low-value items such as coal or grain – between 1791 and 1811 tonnage increased from 18-

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[16] C. Hadfield (J. Boughy ed.), *Hadfield's British Canals* (Stroud, 1998), pp.83-104.
[17] Barker & Savage, *Transport*, p.40.
[18] http://www.jim-shead.com/waterways/Locks-distances.php?ty=GY&gr=3 and http://www.jim-shead.com/waterways/Locks-distances.php?ty=GY&gr=4
[19] Barker & Savage, *Transport*, p.67; T.R. Gourvish, *Railways and the British Economy 1830-1914* (London, 1980), pp.27-8.
[20] Hadfield, *Canals*, p.206.
[21] Dyos & Aldcroft, *British Transport*, pp.103, 106; Barker & Savage, *Transport*, p.45; Hadfield, *Canals*, pp.22, 95; R. Fogel, *Railroads and American Economic Growth* (Baltimore, 1964), p.13; A. Fishlow, *American Railroads and the Transformation of the Ante-Bellum Economy* (Harvard, 1965), p.34
[22] *A History of the County of Hertford: Volume 4* (1971), p.241.

19,000 tons to 40,000 tons.[23] But the railways ultimately proved fatal, especially as the malt trade subsequently declined.[24] The 1805 Grand Junction Canal added the first through-route by water, not only enabling local produce to travel further but for distant produce to be brought in cheaper and more plentifully. Creating a more direct route, it reduced journey times, being able to move products between London and Birmingham using 'flyboats' in three days.[25]

Of the three counties, only Bedfordshire and Hertfordshire had navigable rivers, and only the Lee was a direct through route. The GJC cutting through Buckinghamshire and Hertfordshire was undoubtedly the most major route – the highway of its day – with 'arms' feeding Buckingham, Aylesbury and Wendover, although this lattermost was mostly to provide water rather than connect the settlement. But the wider effect of the waterways was limited; the GJC was primarily for trade between its termini and major locations – not regularly along its length.[26] The 'arms' and rivers assisted the destination towns, but as goods had to go by road to be distributed further, the road difficulties remerged. The exceptions on the GJC would be Watford and Hemel Hempstead, which saw an increase in industry; the ability to move raw materials by water 'undoubtedly assisted the development of the paper and printing industries in these two towns'.[27] Leighton Buzzard already had some involvement in sand excavation, though canals were also significant in expanding this industry, having many local canal carriers until the 1848 branch railway.[28] Therefore, the waterways, as the railways would later do, were able to aid industries and businesses in preference over areas that did not have such infrastructure.

Railway Transportation

Britain's railways grew exponentially throughout the period, particularly during the three periods of 'mania'.[29] With London being such a pivotal centre, the region quickly became a 'gateway' to the north, with most major companies passing north-south through it (plus two

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[23] http://www.jim-shead.com/waterways/History.php?wpage=STRT
[24] *A History of the County of Hertford: Volume 4* (1971), p.242.
[25] Hadfield, *Canals*, p.147.
[26] Barker & Savage, *Transport*, p.42.
[27] Doubleday, *Hertfordshire: Survey*, p.21; Watford Museum.
[28] I. Bowley, 'Light Rail to Lighthouse', *Chaloner: The Magazine for the Leighton Buzzard Narrow Gauge Railway*, No. 153 (Summer 2011), pp.42-5.
[29] See Appendix I.

unusual west-east lines). The region had many lines opened in the first two manias (1839-40; 1845-7), particularly towards the fringes of Hertfordshire and Buckinghamshire. Conversely, while only one line was opened during the final mania itself (1865-6), many of those in the years following were mooted during it. It would thus be erroneous to place heavy emphasis on one mania period over another, especially considering the 63 Hertfordshire, 57 Buckinghamshire and 27 Bedfordshire proposals that were never constructed.[30]

To present an overview of the haphazard development, the region witnessed some of the most significant rail projects in this part of the country.[31] The London & Birmingham Railway, the world's first trunk line, was built through Hertfordshire and Buckinghamshire in 1838. A great success, effectively triggering the first mania, later becoming part of the London & North Western Railway, it was soon followed by other pioneering lines: the London Paddington-Bristol Great Western Railway of 1841 through south Buckinghamshire, the 1842 London Liverpool Street-Norwich Northern & Eastern Railway (hereafter N&ER) in south Hertfordshire, becoming part of the Great Eastern Railway in 1865, and the 1850 London Kings Cross-York Great Northern Railway though eastern Bedfordshire and central Hertfordshire.[32] Branch lines were constructed, notably the Aylesbury & Cheddington Railway in 1839 – the first ever branch line.[33] While relatively minor at this stage, the Bletchley-Bedford, Bletchley-Banbury and Bletchley-Oxford lines were slowly expanding into a scarce example of west-east, rather than north-south line. By 1851, the region had 12 lines constructed by eight companies.

However, by 1901, this had risen to 33 inter-connected lines operated by 11 companies (Fig. 10). The most important were the 1857 Leicester-Hitchin and 1868 Bedford-London St Pancras extensions of the Midland Railway, through Bedfordshire and Hertfordshire, the Maidenhead-Verney Junction line through Buckinghamshire built in sections by the Wycombe Railway (hereafter WR) and later the GWR between 1854 and 1868, the Hertfordshire and Buckinghamshire extensions of the Metropolitan Railway (hereafter MetR) from 1887 to 1892 (in 1891 taking over the section of the former WR between Aylesbury and

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[30] F. Cockman, *The Railways of Hertfordshire* (Hertford, 1978); F. Cockman, *The Railway Age in Bedfordshire*, Publications of the Bedfordshire Historical Record Society, 53 (Bedford, 1974); F. Cockman, *The Railways of Buckinghamshire from the 1830's* (Aylesbury County Record Office, 1971).
[31] See Appendix IIA-D.
[32] P. Richards & B. Simpson, *A History of the London and Birmingham Railway Volume 1* (Oxford, 2004), pp.7-27; C. Awdry, *Encyclopaedia of British Railway Companies* (Frome, 1990), pp.13, 134-5, 153-4.
[33] Awdry, *Encyclopaedia*, p.88.

Verney Junction), and the 1899 Annesley-London Marylebone Great Central Railway extension through Buckinghamshire, joint operating with the MetR south of Quainton.[34] Branch lines were even more prolific, particularly the Hertford, Luton & Dunstable Railway (hereafter HL&DR), completed in 1860, which stretched across most of the region west-east rather than the more common north-south direction. Even when operated by a larger concern, most branch lines had their own individual company created.[35] A final line should be mentioned: the 1862 Bletchley-Cambridge line connected the various earlier Bletchley lines, creating an Oxford-Cambridge west-east main line.[36]

Hertfordshire was the quickest to build up a railway system, Buckinghamshire second and Bedfordshire last.[37] However, while Bedfordshire was the slowest to gain its first railway, with the least number of lines it was the first to have them all completed, the last opening in 1872. The final period line built was completed by 1899, crossing Hertfordshire and Buckinghamshire. Buckinghamshire gained a further line in 1906, the 'Great Western & Great Central Joint Committee' (under construction by 1900).[38] Buckinghamshire became the last of the three counties to have a 'completed' railway infrastructure, but it should be remembered that railway development continued. For example, Hertfordshire gained the Croxley branch in 1912, the Hertford loop in 1924 and the Watford Metropolitan branch in 1925.[39] Additional stations were also frequently opened during and after the period.

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[34] G. Goslin, *The London Extension of the Midland Railway: the History of the St Pancras - Bedford Route* (Caernarfon, 1994), pp.1-12; Cockman, *Buckinghamshire*, pp.54, 133; Awdry, *Encyclopaedia*, p.105.
[35] See Appendix II.
[36] L. Oppitz, *Lost Railways of the Chilterns* (Newbury, 1991), pp.143-8.
[37] See Appendix II.
[38] Awdry, *Encyclopaedia*, p.216.
[39] Lost Rails: Remembering Hertfordshire's Branch Lines, Museum of St Albans Exhibition, November 2010.

Fig. 10: Railway lines and stations opened in the region by 1900, coloured by owning company.

OPERATING RAILWAY
COMPANIES:
1900

LNWR
GWR
GER
LSWR
GNR
MR
METROPOLITAN RAILWAY
GREAT CENTRAL RAILWAY
METROPOLITAN & GREAT
CENTRAL JOINT RAILWAY
WOLVERTON, STONY STRATFORD
& DISTRICT LIGHT RAILWAY
STRATFORD-UPON-AVON,
TOWCESTER & MIDLAND
JUNCTION RAILWAY

BEDFORD
BUCKINGHAM
LUTON
AYLESBURY
HERTFORD
ST ALBANS
WATFORD
SLOUGH

1   WOLVERTON
2   QUAINTON
3   POTTON
4   LUTON
5   ST ALBANS
6   BUSHEY

NB: Not all owning companies operated

By 1851 Hertfordshire was already a 'gateway' to London; this period being the county's most significant in its railway development.[40] Of the four main lines out of north London at this point, three cut through Hertfordshire whereas Buckinghamshire had two – the GWR barely within its borders though. Bedfordshire had the shortest main line mileage, although one of the more significant branches (Bletchley-Bedford). This and subsequent maps indicate the majority of stations opened on completion of each line, though some additional ones were occasionally constructed. Furthermore, initially branches only ventured short distances from main lines. The historiography explains this as locations that nearby lines bypassed, clamouring for a connection.[41] The GWR and London & South Western Railway (hereafter LSWR) branches to Eton/Windsor demonstrate that even at this early stage competition between companies was rife; the GWR branch was constructed solely to defend 'territory' rather than any long-standing need for it.[42]

The 1852-62 period (the aftermath of the first two mania periods) showed branch line development in all three counties – the fruition of these schemes.[43] Bedfordshire had its greatest point of development with completion of the west-east Oxford-Cambridge line, also having repercussions on Buckinghamshire as the former branches essentially became a significant route, and the MR connection with Hitchin. The Luton, Dunstable & Welwyn Junction Railway through Hertfordshire was substantial, but not as major a route as hoped for. Buckinghamshire's WR was important for entering a new region rather than connecting up earlier lines, but was again a provincial line.

1863-73 (the final mania) added further branch lines and main line developments with the MR St Pancras extension and the completion of the line between Maidenhead and Verney Junction.[44] The former added another major through route to Hertfordshire and greater access to central Bedfordshire parishes (though the Hitchin section was demoted). The latter,

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[40] See Appendix IIA.

[41] Government failures to limit this clamour being key to the manias and rising competition – M. Casson, *The World's First Railway System: Enterprise, Competition and Regulation on the Railway Network in Victorian Britain* (Oxford, 2009), pp.iv, 20, 323.

[42] Cockman, *Buckinghamshire*, pp.47-8; Casson, *First Railway System*, p.318.

[43] See Appendix IIB.

[44] See Appendix IIC.

never an official main line, improved connections to Aylesbury, opened up central Buckinghamshire and gave the first north-south line through the whole county.

The final 1874-1900 period was the pinnacle (up to this date) for Buckinghamshire.[45] Bedfordshire had no mileage constructed, while Hertfordshire had only one branch line and a small section of MetR. However, Buckinghamshire, in addition to branches, not only gained its second full north-south main line (the MetR to Verney Junction, bisecting the former WR), but also had this line extended, becoming the Metropolitan & Great Central Joint Railway, providing wider access to the county as a whole.

Therefore, by the end of the period, Bedfordshire had three main lines (including the west-east Oxford-Cambridge line) and four branches, Buckinghamshire had five main lines (including the MetR, GCR and the Oxford-Cambridge line) and 11 branches, while Hertfordshire had five main lines (including the MetR and LNWR to Buckinghamshire and the GNR and MR to Bedfordshire) and 13 branches (including the Hatfield-Luton and Aylesbury-Cheddington; Fig. 10).

Junctions and 'Hubs'

Historically the most significant positions on all transport networks are connecting-points – junctions and 'hubs' (Fig. 11).[46] The relative importance of these varied across the period and for this study was qualitatively defined by the importance of the lines being linked (main vs. branch). This is not to say branch lines did not have an effect on connected small communities, but they were less important for the region as a whole.[47] Bedfordshire, having the least mileage, unsurprisingly only had five connection areas – two major junctions at Sandy and Bedford, one major 'hub' at Luton (not being physically linked as with a proper 'junction'), one minor 'hub' (Dunstable) and one minor junction (Linslade). These were polarised to north and south, spread reasonably far out; central Bedfordshire had no junctions.

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[45] See Appendix IID.
[46] Casson, *First Railway System*, p.323.
[47] R. Schwartz, I. Gregory & T. Thévenin, 'Spatial History: Railways, Uneven Development, and Population Change in France and Great Britain, 1850-1914', *Journal of Interdisciplinary History*, Volume 42, Number 1 (Summer 2011), p.61.

Fig. 11: Locations of junctions and 'hubs' in the region by 1900, coloured by importance.
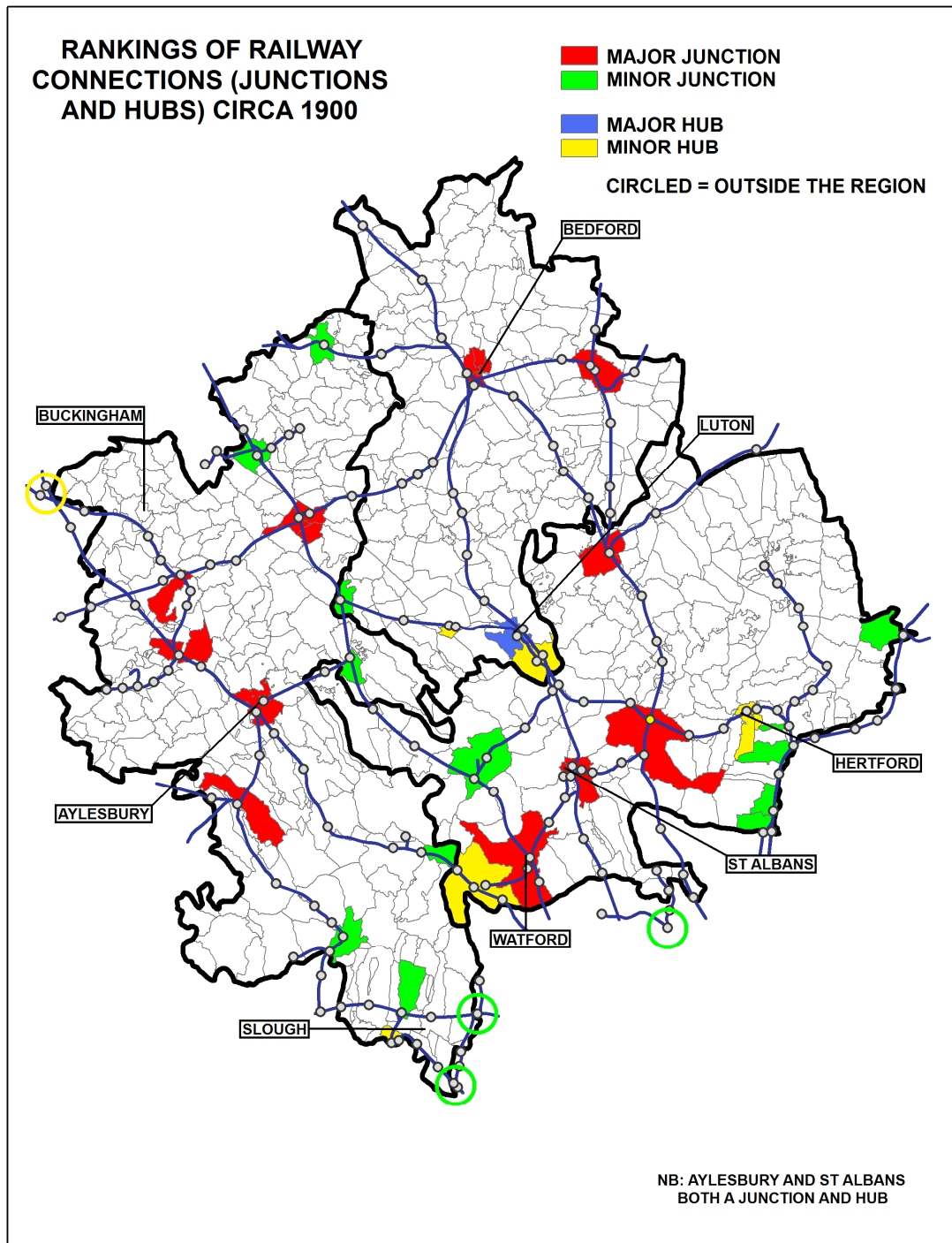
Buckinghamshire had 12 connections – most for branches, only five were major junctions (Aylesbury, Bletchley, Princes Risborough, Quainton Road and Verney Junction). These were located roughly central, towards the western border; the far north and south thus had far fewer connections (all minor). The most significant area was Aylesbury as both a junction

and a 'hub'.[48] Verney Junction and Quainton Road were unusual as they served particularly small settlements, having minimal effect on their immediate surroundings. From a passenger perspective they were minor, but as the meeting-points between different companies they were significant for the railway companies themselves.[49]

Hertfordshire also had 12 connections, five being major. Again the minor connections were with branches, but the major junctions (Hatfield, Hitchin, St Albans [also a 'hub'], Welwyn Junction [1858-60] and Watford) were all main lines connecting with either other main lines or directly to significant local places, such as the first line to St Albans. All these settlements were sizeable compared to several in Buckinghamshire, while Watford and St Albans were noteworthy urban centres. Excluding Hitchin in the north, most were clumped towards the south-west, the north-east thus being the poorest-served in the county.

Therefore, the potential ease of movement between lines, and thus between companies, at these junctions demonstrates Hertfordshire as having the most integrated network, with Bedfordshire, having both the least number of major towns (relative to the region) and overall railways, as the least accessible by rail. This indicator is important not only in revealing the range of routes/destinations given to passengers and businesses, accessibility thus acting as a potential migratory 'pull factor', but also the impact on railways of proximity to urban centres. The closer to an important town, the more important the junction connections (with the exception of where companies metals met). Finally, it suggests the historiographical 'competition' was more complex, as despite the known 'in-fighting' between companies there were several junctions where companies openly cooperated with each other, such as St Albans LNWR Station, Hitchin and Quainton Road, though none in Bedfordshire – emphasising the effect of London influence and the above point on the value of urban settlements.

Railway Impacts on Turnpikes

While the current railway 'facilitation' historiography argues against sweeping generalisations, especially concerning direct impacts, the region demonstrated the national trend of undercutting canals and turnpikes, and even during construction there was outright

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[48] The LNWR station was not physically linked to the MetR or former WR station.
[49] Oppitz, *Lost Railways*, pp.39, 69.

hostility.[50]   Comparing the turnpike and canal routes with the 1851 railways (Fig. 12), it is clear why long-distance passenger travel rapidly turned to the railways.

Fig. 12: Approximated routes of major roads, navigable water and railways by 1851.

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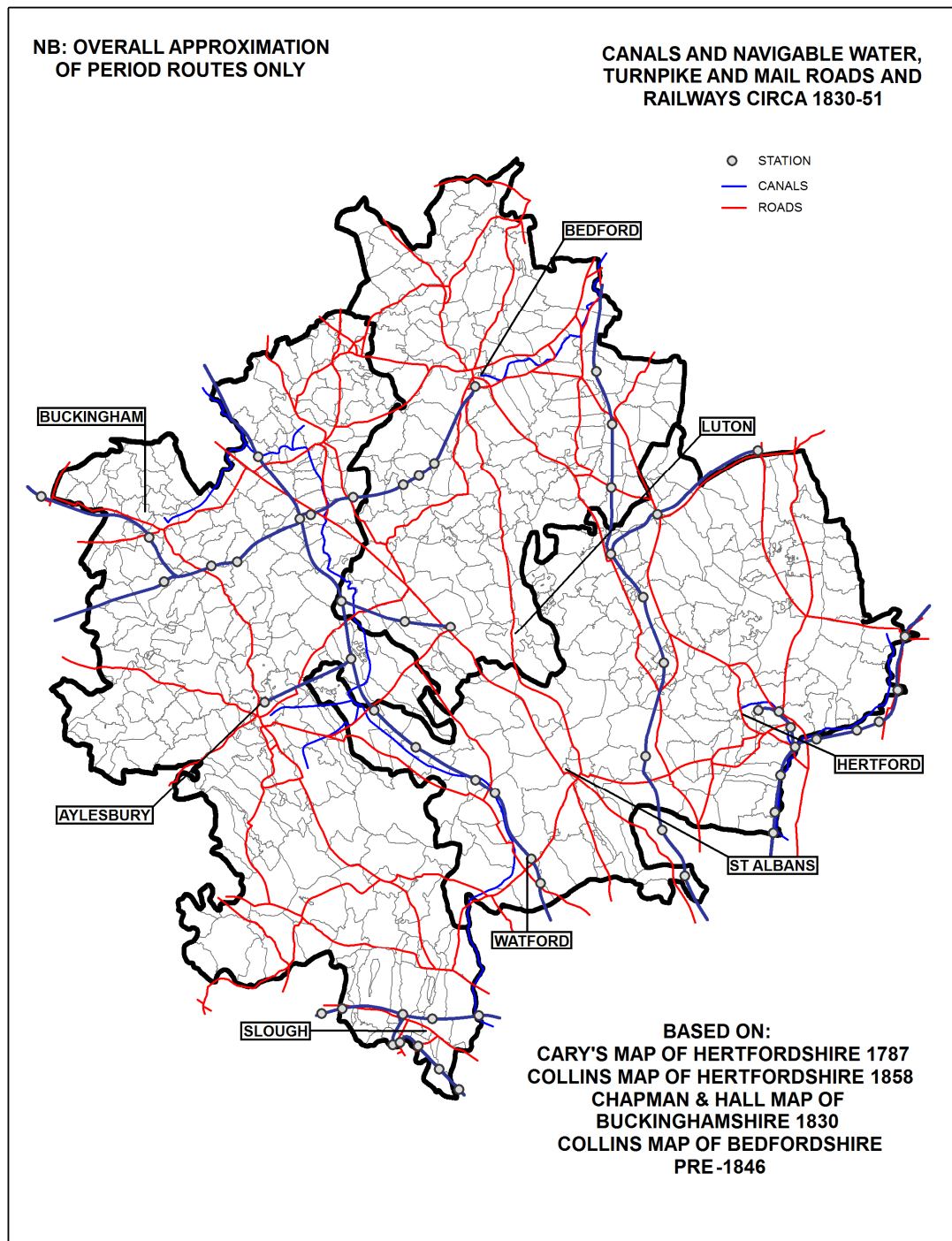
[50] See Chapter 8.

Watling Street (through all three counties) was some distance from the railways completed by 1851 in Hertfordshire (later changing with the MR St Pancras extension), though closer in northern Buckinghamshire. Ending tolls in 1875, it remained for the first half of the period at least the main route to St Albans, although the LNWR ultimately covered similar destinations, such as Holyhead, reducing its long-distance use for many urban centres.[51]

The Great North Road had greater correlation; its route was closely followed by the GNR (its name thus being unsurprising). Coaching points along it, such as Hatfield and Sandy, suffered distinct decline, though strangely the last London-Newcastle coach ran in 1842 – eight years *before* the opening of the GNR.[52] This suggests some decline before the railway, or that the earlier LBR and N&ER lines were already affecting north-bound coaching. As roads were seldom as direct as railways generally, a wider area was affected than just the immediate vicinity of the railways themselves.

The Bath Road was similar; an affluent road due to the Georgian importance of Bath, for most of its route through Buckinghamshire it was followed by the GWR. Having its last coach in 1843, two years after the railway opened, the speed of Brunel's broad gauge (greater than most lines) significantly affected its decline.[53]

Ermine Street had already lost much of its importance with the construction of the Great North Road. With the N&ER partially following it in south Hertfordshire, the GNR Royston branch bisecting it (thus making the GNR main line a competitor) and eventually both these lines reaching Cambridge (the road's destination) with the Buntingford branch also loosely following it, its decline was inevitable.[54]

Many recognised the potential losses on stagecoaches, even before the railways were opened, and numbers soon dwindled 'dramatically'.[55] Robson's 1838 *Directory of Herts* said the LBR 'is…calculated to suspend all intercourse by stage coach…'[56] An example of how devastating the railways could ultimately be, it was claimed after the LBR opened that 'grass

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[51] J. Douglas, *A Run through South Wales via the London and North Western Railway* (1868).
[52] N. Webster, *The Great North Road* (Bath, 1974), pp.6-9.
[53] C. Hamilton Ellis, *Four Main Lines* (London, 1950), pp.129, 142.
[54] Awdry, *Encyclopaedia*, pp.153-4; Cockman, *Hertfordshire*, p.5; Oppitz, *Lost Railways*, pp.126-32.
[55] Johnson, *Industrial Archaeology*, p.23; M. Singleton, *The Stevenage Biggleswade Turnpike Trust: Traffic Flows, Management and Demise 1811-1868* (Kings College London, 2008), p.41.
[56] Johnson, *Industrial Archaeology*, p.23.

grew down the middle of the road' in St Albans, there being so few coaches.[57] The effects on settlements formerly servicing coaches were described as 'blows to the town's coaching trade'; as knock-on effects disrupted inns and other businesses, most turnpike trusts 'virtually collapsed'.[58] Even at the time, railways were recognised as the primary reason, but turnpike trust finances demonstrate the severity of stagecoach failures.[59]

Researched for the Great North Road's Stevenage and Biggleswade Turnpike Trust by M. Singleton, the late 1820s/early 1830s were indeed a 'golden age of coaching', with 'long distance stage coaches' the biggest toll earners.[60] However, the famed road builder McAdam – a member of the Trust - noted in 1845:

'I regret a considerable diminution has taken place in the Toll Revenue of the Trust from the cessation and alteration of Stage Coaches…the general long travelling has also diminished especially posting and Gentlemen's Carriages and I fear that a further reduction will take place.'[61]

Collating data from the Treasurers account book of 1845-68, Singleton proved McAdam correct (Fig. 13); not only did stagecoach-based tolls rapidly collapse after the opening of Baldock Station in 1850, but even when allowing for seasonal variation there was earlier decline as people turned to other railways.[62]

Considering other turnpikes, the historiography claims many 'joining' roads recovered with short-distance journeys, often to and from stations, and turnpikes lasted longer where for localised travel far from railways.[63] The dates of Turnpike Act expiry in the region show many closed in 1873-8, seen nationally as the end of the turnpike era culminating with the

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[57] MoStA.

[58] Johnson, *Industrial Archaeology*, p.109; J. Corbett, *A History of St Albans* (Chichester, 1997), p.88; R. Leleux, *A Regional History of the Railways of Great Britain, Volume 9 The East Midlands* (1976), p.31; M. Freeman, *St Albans: A History* (Lancaster, 2008), p.253.

[59] TNA ZPER 34/10 - Illustrated London News return for the half-year ended Dec 1846 'Bedford & London & Birmingham Railway causes cessation of old coach service', p.35; J. Moore, *The Impact of Agricultural Depression and Land Ownership Change on the County of Hertfordshire, c.1870-1914* (University of Hertfordshire, 2010), p.165.

[60] Singleton, *Stevenage Turnpike*, p.41; C. Harper, *Stage-Coach and Mail in Days of Yore Volume II* (London, 1903), p.173.

[61] Singleton, *Stevenage Turnpike*, p.42.

[62] Ibid; pp.43-5.

[63] Barker & Savage, *Transport*, p.67; Gourvish, *Railways Economy*, p.123; P. Maw, *Transport and the Industrial City: Manchester and the Canal Age, 1750-1850* (Manchester, 2013), p.96.

Highways Act of 1878.[64]   Frequently in heavy debt (Fig. 13) and poor condition, they continued against the railways, though the 1878 Act suggests that railways overtook them even before fully completed.   But interestingly the region shows many cases of earlier expiries, particularly in Bedfordshire.   Its earliest closure was the Great North Road turnpike from Biggleswade to Alconbury Hill (Cambridgeshire) in 1867 – directly on the GNR main line of 1850 for its entire length.   Five turnpikes closed in 1870, all around Bedford and Luton (also to Hitchin and St Albans), with another in 1872.[65]   Only a few years earlier (1868), the MR St Pancras extension had been constructed.

Fig. 13: Monthly Total Toll Income Returns 1845-1855 on the Stevenage-Biggleswade Turnpike. Note the December 1845-February 1846 spike, believed caused by the construction of an additional toll gate and the sharp decline after the 1850 completion of Baldock Station.
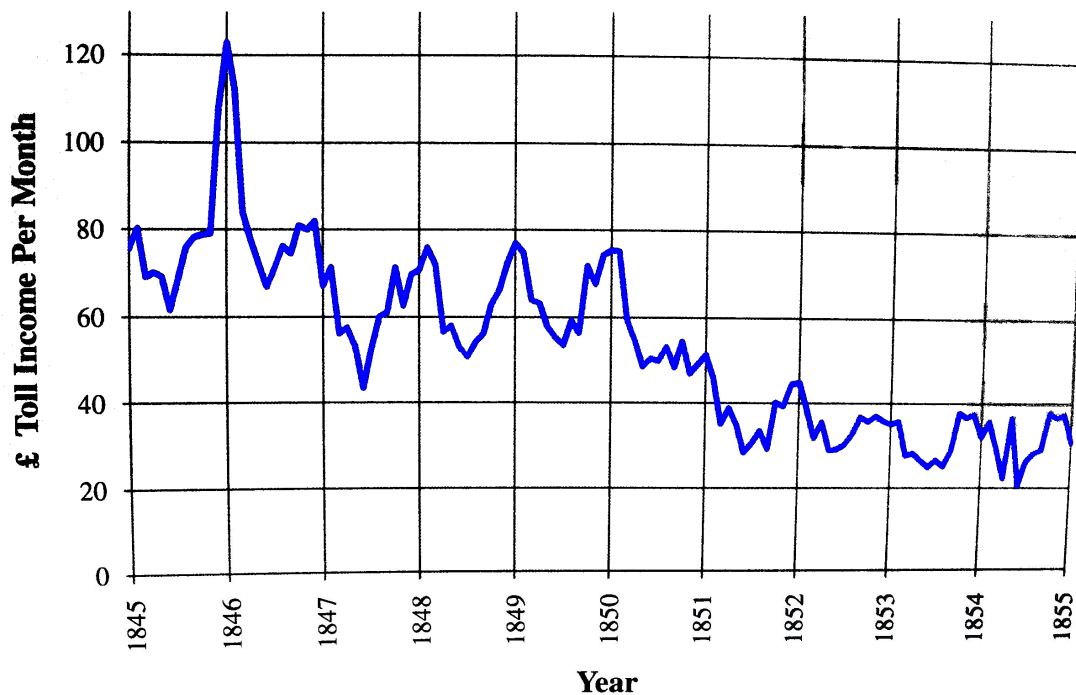
M. Singleton, *The Stevenage Biggleswade Turnpike Trust: Traffic Flows, Management and Demise 1811-1868* (Kings College London, 2008), p.43.

Buckinghamshire similarly experienced early closures.   In 1867 the Beaconsfield and Stokenchurch turnpike expired; the 1859 Princes Risborough extension of the WR meant most of this turnpike was rail connected, and the 1863 WR extension added Aylesbury access that the turnpiked section did not.   The Hockliffe and Stony Stratford Turnpike (the

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[64] http://www.turnpikes.org.uk/The%20Turnpike%20Roads.htm See Appendix III.
[65] http://www.turnpikes.org.uk/English%20turnpike%20table.htm

northernmost section of Watling Street in the region) also failed in 1867; the sole section of Watling Street on the LBR main line. The Aylesbury and Hockliffe turnpike ended in 1868; its route a longer variant of the 1839 Aylesbury-Chedington branch. The time lag between these dates is explained by social fears of early railways, the untested idea of branch lines and the exorbitant cost of railway travel before 1844 – all of which changed by 1868. Finally, the upper section of the Buckingham to Hanwell turnpike lasted to 1871; in 1868 the Aylesbury-Verney Junction line connected the WR to the Buckingham LNWR branch, essentially following the same path.[66]

Hertfordshire's turnpike closures continue the trends shown by Bedfordshire and Buckinghamshire. For example, the Stevenage-Biggleswade turnpike closed in 1868 (the same year as the other main Great North Road turnpike in Bedfordshire); it lay alongside the 1850 GNR main line. Unusually though, the Sparrows Herne to Walton (Aylesbury) turnpike lasted untill 1872, despite the same journey being achievable on the LBR and Aylesbury branch after 1839. Nonetheless, the LBR/LNWR still had a major impact - between 1838 and 1872 gate tolls halved and outlay was repeatedly cut.[67] The road's route, however, was actually slightly shorter, considering waiting for a connection on the branch. The need to change trains thus limited the railway's appeal until the technology and social appraisal had developed, hence the later than expected closure date. On a similar point, the Reading to Hatfield turnpike provided a direct route while the same railway journey meant diverting to London and changing stations (and companies) – the road being more convenient, it lasted latest of all to 1880.[68]

Railway Impacts on Waterways

The GJC was the region's most important waterway, however, the LBR ran literally on its banks, turning a three day journey into six hours.[69] As a result, within the six years following the LBR's opening, the GJC's revenue halved.[70] Reducing tolls and upgrading facilities, traffic increased but revenue dwindled. In 1848 the GJC entered the carrying trade in direct competition with the railways, investing in steam boats in 1864. But railway technology

[66] http://www.turnpikes.org.uk/English%20turnpike%20table.htm
[67] M. March, *The Sparrow Hearnes Turnpike* (Wall Hall College, 1969), pp.17, 26.
[68] http://www.turnpikes.org.uk/English%20turnpike%20table.htm
[69] Richards & Simpson, *London Birmingham Railway* Vol. 1, p.45.
[70] P. Bagwell, P. Lyth, *Transport in Britain from Canal Lock to Gridlock* (London, 2002), p.16.

advanced rapidly and by 1867 the GJC's carrying trade was too unprofitable to continue.[71] It continued after the period, but only by amalgamating with the Regents Canal in 1929, forming the Grand Union Canal.

Of the three 'arms' off the GJC to Buckingham, Aylesbury and Wendover, strangely the only one not closed was to Aylesbury, alongside the branch line. Along with the goods argument, the canal was slightly more direct to London. This changed with the MetR, but the 'arm' survived. The Wendover and Buckingham 'arms' became unnavigable (Wendover 'disused') by 1904, by which point both towns had easy London access via the MetR.[72]

The Lee and Stort Navigations in Hertfordshire both had the N&ER follow their course (1842) – most blatantly their Hertford branch (1843). The Lee was improved in 1844, akin to attempts on the GJC to counter the new threat, but to no avail and the navigation changed hands in 1868 to the 'Lee Conservancy Board'.[73] Considering the important local malt trade and that canal infrastructure was in place long before the railways, the navigation appears to have been able to meet railway competition (possibly as it was only a branch line) – far from declining, it ultimately bought the Stort Navigation in 1911. The Stort had been an important route, but the railway heavily affected revenue – dropping between 1838 and 1848 from £5,477 to £2,593. As the company did not fold in the period, some slowing of this decline appears likely, particularly considering the rejected Lee takeovers of 1868 and 1874. However, after being sold in 1873 decline returned with 1901 revenue only £927 and many repairs needed. The Lee took it over in 1911.[74]

The Great Ouse River (from Bedford running north) had been upgraded in the 1830s. However, between 1855 and 1862 tolls halved – after the MR and Oxford-Cambridge main lines. Declared derelict in 1870, there was a restoration attempt under new ownership in 1893 but this was stalled by legal issues until 1904 and had minimal success.[75]

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[71] Hadfield, *Canals*, p.210.
[72] Ibid; p.245.
[73] http://www.jim-shead.com/waterways/History.php?wpage=LEE; http://www.canalmuseum.org.uk/history/lee.htm
[74] http://www.stortfordhistory.co.uk/guide11/river_stort.html; J. Boyes & R. Russell, *The Canals of Eastern England* (Newton Abbot, 1977), pp.41-9.
[75] http://www.bedfordshire.gov.uk/CommunityAndLiving/ArchivesAndRecordOffice/GuidesTo Collections/TransportRecordsWaterwaysandAirTransport.aspx

The final waterway, with the most unusual railway impact, was the Newport Pagnell Canal. This had been sufficiently successful (transporting coal) that it had tolls almost ten times the GJC's. With such success, particularly as it terminated in an area with no competing goods transport, there appears to have been no significant decline, railway-initiated or otherwise, before the canal was bought in 1862, filled in and used as the trackbed for the Newport Pagnell branch.[76]

To summarise the effects of this inter-transport rivalry, the historiography concerning railways overtaking turnpikes and later canals is borne out. Towards the end of the period, but before the end of railway construction, most turnpikes had expired but all three counties demonstrated the earliest closing (when the railway system was still comparatively rudimentary) were mostly sections of major roads that were eclipsed by railways operating essentially the same routes. Short-distance journeys, however, would have increased, partly due to serving railway stations, especially considering the number of stations only on the fringes of the settlements served. Canals survived longer as they already had the infrastructure and fewer breakages while the railways were untested and underpowered, but only for the earlier period prior to railways being fully developed. The overriding reason for turnpike and later canal failures was proximity to railway lines. Ironically, due to roads and canals taking the most level route, many were followed by early railway engineers wanting to place the least strain on the basic locomotives. Following these routes gave access to trade being carried on them; railway speeds quickly proved superior, so trade turned from the earlier transport systems. In areas where railways were late in development canals and turnpikes continued more successfully, but by 1900 the canals had declined and long-distance road travel would only resurge with the introduction of internal combustion.

Summary

The region demonstrated a strong London influence – there was greater rail development occurring earlier in areas closer to the capital (particularly Hertfordshire) compared to those farther away (such as Bedfordshire).[77] This linked with topography and trade: major railways in spread-out parts of the country wanted a London terminus. These lines from the north thus 'funnelled' in from a wide area. Hertfordshire's position thus made it a gateway for these

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[76] B. Simpson, *The Wolverton to Newport Pagnell Branch* (Waverly, 1995) pp.4-6, 16. See Appendix II.
[77] Moore, *Agricultural Hertfordshire* (University of Hertfordshire, 2010), p.49.

lines over other less well-situated counties. Initially the terminus-terminus policy resulted in little local impact, but the main infrastructure was in place for when this changed, most stations (excepting the LBR to an extent) being opened at the same time as the lines. The development across the period shows one issue with this geographical theory, as while Hertfordshire was the first to peak, Bedfordshire was second (1852-62) before Buckinghamshire (1874-1900). As Bedford was of substantial importance and not previously connected, it appears that London was replaced by the main urban centre as the point of influence. The negative reaction to the railways in Northampton (although the actual extent of this is still debated) shows this influence could fall either way.[78] While the west-east Bletchley-Bedford line was of importance to Bedfordshire, the railways still only considered it at this stage to be a branch. Conversely, it and Buckinghamshire's north-south WR extensions support that with development and social acceptance of the railways, not to mention the initial clamour resulting from the periods of mania, branches spread farther from their main lines than previously, opening more of the country to easy transport.

While the final major lines in the area, the MetR and GCR, appear not to follow these trends, they do nonetheless when considering that the MetR was feeding out from its main operating area, essentially being built as a string of branches. As for the GCR, historians have believed it poorly thought-out and unsuccessful.[79] That by 1900 Bedfordshire had three main lines and four branches, Buckinghamshire had five main lines and 11 branches, and Hertfordshire had five main lines and 13 branches demonstrates a trend favouring the south of the region.

Competition in the region was as blatantly rife as the historiography would have us believe, as shown by the GWR LSWR Eton/Windsor branches, but several shared stations openly cooperating suggests that this was far more complex, occurring on a local as well as national level. Interestingly, the lack of any shared stations in Bedfordshire appears to emphasise London influence and the value of urban settlements – fewer major towns (relative to the region) meant fewer railways were attracted, diminishing the need for sharing. The number of lines unsurprisingly tallies with the number of junctions between them, and the number of 'major' (as in significant to the region) towns fits the relative importance of the junctions, emphasised by their north/south polarising (notably Bedford/London). This is where the

[78] M. Robbins, *The Railway Age* (London, 1962), p.55; P. Richards & B. Simpson, *A History of the London and Birmingham Railway Volume 2*, (Witney, 2009), p.150.
[79] C. Leigh, 'Quainton Road', *Steam Railway*, No. 390 (July 2011), p.72.

number of railways had its real impact. While many would have wished to take long-distance journeys, and did, many equally would have been shorter local journeys, such as to markets, often across several lines. Indicating the range given to passengers and businesses, acting as a potential migratory 'pull factor', it suggests Hertfordshire by the end of the period was the closest to an integrated system, instead of simply through-running as the earliest lines were intended for. The important exception, however, is where company lines met, creating 'important' junctions that had little use for passengers or goods and having minimal impact on their immediate surroundings.

While it should be the case that previous transport types limited the extent of the above effects, the historiography argues that railway superiority (initially speed, later on for example in haulage, costs) meant this was not so; the earlier types instead were ultimately brushed aside.[80] P. Maw added, though, that despite competition there was also simultaneous 'complementarity' between them as they worked together.[81] The region upholds these views entirely, especially considering their routes, coverage and dates. Compared with turnpikes, those far from lines survived until their collapse nationally. Those superseded by railways were nearly all major national roads and all failed within a few years. However, the ultimate collapse in the 1870s is still prior to the peak of rail construction, emphasising the significance of railway speed in long-distance travel. Conversely, from this data alone the impact on local road journeys cannot be ascertained, although it appears unlikely that this region deviated from the national historiography of an overall increase, owing to the peripheral placement of most stations to their respective settlements.[82] The historiography claims canals survived longer due to the undeveloped nature of early railways compared to their proven infrastructure.[83] The dates of canal 'arm' closures support this, collapsing shortly after the period, therefore after the peak of railway construction when they had become fully established. The GJC was the most important canal nationally, but even so only survived through a large amalgamation.

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[80] Gourvish, *Railways Economy*, pp.27, 29; Barker & Savage, *Transport*, pp.15, 42, 48; Casson, *First Railway System*, p.314; B.R. Mitchell, 'The Coming of the Railway and United Kingdom Economic Growth', *The Journal of Economic History*, Vol. 24, No. 3 (Sep., 1964), pp.319-20.

[81] Maw, *Manchester Canal*, p.70.

[82] Ibid; p.74.

[83] Barker & Savage, *Transport*, pp.15, 69; Mitchell, 'Railway Growth', *Journal of Economic History*, pp.319-20; Gourvish, *Railways Economy,* p.27; Maw, *Manchester Canal*, p.87.

But the evidence also suggests very strong correlations between the development of these systems. All favoured north-south routes over west-east (again the draw of London); in some cases they followed exactly the same flat route. This was the main reason for the failure of turnpikes and canals, as each aided local economies in succession (notably coaching stops), taking long-distance trade from the former. Where this proximity was less, they continued for longer. All were run by private companies, developing the stock market with the canals and railways. While the turnpikes had no official mania period, there was still a period of markedly increasing numbers.[84] But most important was the need for speed. Turnpikes outdid parish roads. Canals outdid turnpikes. Railways outdid canals. Internal combustion ultimately outdid railways.[85] As technology allowed for faster communications, so old systems diminished in turn, even if continuing to support in some role. It seems almost a question not of what impacts led to the rise and fall of these three forms of transport, but to what extent the same impacts affected them.

In conclusion, the claims made here correspond well to the current historiography, demonstrating that the historiographical theories are applicable to this region. These findings suggest almost a cyclical pattern: to access London from the north, the region had to be traversed. When choosing a route, the flattest course was taken but via as many important settlements as possible, settlements thus affecting the transport. But when complete, the routes encouraged quicker and cheaper travel with all its possible effects, transport potentially aiding the settlement. The location, theoretically becoming more significant, would thus become more attractive to future transport routes, and so this pattern could be repeated. That turnpikes, canals and railways all had such similar progressions suggests such a cycle could be applicable for each of their development.

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[84] Barker & Savage, *Transport*, pp.31-3, 44-5.
[85] Ibid; pp.131-43.

Chapter 4: Occupations and the Railways

A heavily discussed facet of railway historiography is the impact of railways on occupational structures, that is, whether settlements with railway connections underwent changes in employment, potentially leading to urbanisation. Simmons warned that contrary to the earlier historical belief of ever-improving rail-led 'change', this impact could be either positive *or* negative, as markets were attracted to one location over another, mostly due to other factors being facilitated by the railways.[1] Therefore, in understanding wider railway implications, occupational development is important.

This region, with the exception of a few isolated parishes, was never industrialised, agriculture was its main employment source.[2] As such, understanding any changes in urban-based occupations, such as light industry, is especially useful in identifying the overall effect of railways on this area. Here, railways had shifting effects across the region and period. While there was no single overall railway impact, most of the area did have railways as a factor – one of many – influencing development. How significant a factor it was for each occupation sector, and the presence of several noteworthy exceptions, emphasises just how variable the railways' long-term impact really was.

<u>Methodology</u>

To gain an overview of such a large area, conducting a parish-by-parish study, for example using directories, was not feasible.[3] Instead, county census occupation summary tables were accessed.[4] While the tables for 1801-31 gave data for each parish, occupations were grouped into 'agriculture', 'trade/manufacture/handicraft' and 'other'. Conversely, the 1841-1901 tables only gave county-wide figures, but gave each individual job, subdivided by gender for 1851-71. There were further sub-variations: some had a tailored occupations list, others a standardised list frequently including occupations not in the region.

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[1] J. Simmons, *The Railway in Town and Country 1830-1914* (Newton Abbot, 1986), pp.19-20.
[2] M. Freeman, *St Albans: A History* (Lancaster, 2008), pp.176, 181, 209, 227; J. Corbett, *A History of St Albans* (Chichester, 1997), p.110.
[3] This has, however, been undertaken for the case studies - see Chapter 9.
[4] http://www.histpop.org/

Having several hundred occupations per county per table, plus the great variations in format, severely limited the raw data. To make these lists manageable the occupations were coded. Numerous methods exist, such as W.A. Armstrong's sector-based system, itself based on C. Booth's system from the 1880s, but these had potential limitations.[5] As these were headings rather than covering job types, it was very subjective and worsened by how to categorise individuals, especially women. Historians have also argued over the meaning of class and how to definitively allocate/rank it for decades. Requiring updating and modification with every census released, E. Higgs even said that post-1881 the class system simply 'breaks down'.[6]

Table 4: The 'Goose Code', using raw materials as the criteria for classification.

1	Agriculture	Minus farmers wives and daughters.
2	Textiles	All involved in textiles and clothing (excepting shoe/boot makers; coded under leather).
3	Miscellaneous Manufacture	
4	Leather	
5	Building	Not including carpenters; coded under wood.
6	Metal	
7	Wood	Includes article manufacturers who may use wood.
8	Food & Drink	
9	Transport	
10	Domestic Service	
11	Public Service/Professional	
12	Independent Means	Includes property owners and annuitants.
13	Special Industry	For this region constituting solely of the straw hat and plait trade.
14	Quarry/Mining	
15	Retail/Distribution	Excluding those who could be placed in other categories.
16	Miscellaneous	Such as general labourers.
17	Dependent/No Occupation	

N. Goose, *Population, Economy and Family Structure in Herts in 1851: The Berkhamsted Region* (Hatfield, 1996), pp.21-2, 30, Table 2.

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[5] E. Higgs, *A Clearer Sense of the Census* (London, 1996), pp.134-8; E. Higgs, *Making Sense of the Census* (London, 1989), pp.93-5; C.A. Crompton, 'Changes in Rural Service Occupations during the Nineteenth Century: An Evaluation of Two Sources for Hertfordshire, England', *Rural History*, Vol. 6, 2 (1995), p.196.
[6] Higgs, *Making Sense*, p.95.

Instead, the system adopted here is the 'Goose Code' developed by N. Goose.[7] This categorises occupations by raw material used (Table 4). For example, a cabinet maker and a shipwright would be grouped under the wood sector, while a watchmaker and a blacksmith would be under the metal sector. While still slightly subjective where occupations used multiple materials, this is much less than presuming 'class'. Importantly, it is the only system that follows the early census procedure. While Higgs noted there was variations to this, particularly whether a listed occupation consisted of manufacturers, dealers or both, they were still 'fairly accurately recorded'.[8] So despite later census format changes, this coding system lends itself more readily to the original data. Once the data was recalibrated, percentages of the total employed population were calculated, providing a near-continuous picture of change. However, as the data is countywide and not at parish level, the results provide only a general overview and cannot demonstrate variations within each county.

This region, especially Luton, was renowned for straw plait and hat manufacture, the coding being tailored to measure this sector specifically (No. 13).[9] Agricultural hay and straw dealers, though, were omitted as unconnected to this specifically fashion-based industry.

Census Limitations

The 1801 census, as the first, was riddled with errors and is unreliable, but even as the procedures became standardised and refined there were still issues. The most significant, especially for rural areas, was the absence of part-time or seasonal work.[10] Furthermore, every census form varied slightly, both in what was recorded and definitions – often with further regional variations.[11] So 'clothier' initially could be a manufacturer or dealer but later would be defined one way or the other.[12] 'Carmen, carriers, carters and draymen' in rural areas (not urban) were listed as 'agricultural labourers' until 1891, when reclassification

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[7] N. Goose, *Population, Economy and Family Structure in Herts in 1851: The Berkhamsted Region* (Hatfield, 1996), pp.21-2, 30, Table 2.

[8] Higgs, *Clearer Sense*, pp.163, 166; Higgs, *Making Sense*, p.79.

[9] N. Goose & D. Short, *An Historical Atlas of Hertfordshire* (Hatfield, 2011), pp.90-2.

[10] Higgs, *Making Sense*, p.78; E. Wrigley, 'Men on the Land and Men in the Countryside: Employment in Agriculture in Early-Nineteenth Century England', in L. Bonfield, R. Smith & K. Wrightson (eds.), *The World We Have Gained: Histories of Population and Social Structure* (Oxford, 1986), p.295; Crompton, 'Rural Occupations', *Rural History*, p.202.

[11] Wrigley, 'Men on the Land', in Bonfield, Smith & Wrightson, *The World We Have Gained*, pp.304, 313, 318-9.

[12] Higgs, *Making Sense*, p.79.

created a false increase.[13] The most challenging are where raw material was omitted – 'general labourer' could be almost any low-skilled occupation and can only be assumed part of the region's main employ.[14] Conversely, there is minimal reference in earlier census to the retired, so not all of those listed could still be active.[15] The introduction of 'employer/employee' details in 1891, which were rarely completed correctly, furthers confusion.

A major issue is women and children. By 1871-81 the census dictated that only men working and living on farms could be 'farm servants' - though this definition changed frequently. Women who worked in agriculture, such as farmers' wives, were omitted, or in some cases listed under domestic service – only one job was ever listed.[16] Farmers' male relatives also varied in inclusion.[17] This difficulty was not only for women in agriculture; shopkeepers' wives were similar.[18] But the biggest issue with women's occupational figures was in housework – not a census category.[19] Early censuses wanted 'work' but by 1901 they stipulated paid employment, with 'housewifery' and 'domestic duties' classified under 'unoccupied'.[20] Therefore, the definition of work, paid or not, made the census unreliable concerning women, as 'unoccupied' steadily increased through changing meanings rather than actual numbers.

Post-1841 the census modified format, creating new issues formerly not present. The dependent/no occupation sector produced misleading results so excessive and varying so wildly that it would have corrupted all the percentages, so was omitted. Interestingly, when considering aid for dependents who would have been under this sector, many almshouses and charities were gifted stocks and shares to raise capital, several having railway shares. One even gained capital after selling land for railway construction.[21] Surprisingly, these shares

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[13] Higgs, *Clearer Sense*, pp.163-4.
[14] Higgs, *Making Sense*, p.79.
[15] Ibid; p.88.
[16] Ibid; pp.82, 87.
[17] Wrigley, 'Men on the Land', in Bonfield, Smith & Wrightson, *The World We Have Gained*, p.304.
[18] E. Garrett, The Dawning of a New Era? Women's Work in England and Wales at the Turn of the Twentieth Century, Ed. N Goose, *Women's Work in Industrial England* (Hatfield, 2007), p.350; Higgs, *Making Sense*, pp.81-2.
[19] Garrett, Dawning Era, *Women's Work*, p.315.
[20] Ibid; p.333.
[21] Parishes: Farnham Royal with Seer Green, *A History of the County of Buckingham: Volume 3* (1925), pp.225-231.

were not always with the locally-operating companies; a couple were as far afield as Indian railways.[22]

The independent means sector is equally anomalous in cases. In 1881 this sector erroneously claimed 43-51% of those employed. As such, the results for *all* 1881 sectors appear lower than they should be, as this error affected the overall ratio between all the sectors. Much of this may stem from farmers, seeing how the agriculture sector inexplicably collapsed and recovered in a decade, which is completely anomalous. So while included, all sectors bar mining demonstrated a very brief artificial decline in 1881. For the other years, though, the sector was sufficiently small that it does not substantially affect the rest of the results.

Lastly, the figures for the domestic service sector are subject to a significant problem. In 1841 this was one of the larger sectors, dropping noticeably by 1851. Thereafter the results show it recovering, however, these later censuses changed and broadened the sector's definition. As argued by E. Garrett, formatting raw data with changing structures could substantially alter the number of people listed under certain occupations when there was no actual change.[23] She outlined reasons including redefinition to variation based on who completed the initial household form. This was not necessarily just the case for domestic service, but as a sector with traditionally larger numbers of women it was especially susceptible. Garrett summarised that censuses post-1911 were incomparable with earlier trends.[24] In calling for a standardised classification to identify 'real' changes, she furthermore defended the principal of the 'Goose Code'.[25] Therefore, far from rising, the numbers in this sector actually should have been decreasing in the period.[26]

There are many other issues with the census, so the results presented here give only an overview rather than a final word on this much broader topic.[27]

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[22] For example, Berkhampstead St Peter was the site of 'Bourne's Charity School', holding securities with the L&SWR, the GER and the East Indian Railway - none of which operated anywhere near the parish. Berkhampstead St Peter: Borough, churches and charities, *A History of the County of Hertford: Volume 2* (1908), pp.171-179.

[23] Garrett, Dawning Era, *Women's Work*, p.320.

[24] Ibid; p.324.

[25] Ibid; p.326.

[26] Ibid; pp.319-26; R. Sarti, 'Domestic Service: Past and Present in Southern and Northern Europe', *Gender & History*, Vol.18 No.2 (August 2006), p.223.

[27] Wrigley, 'Men on the Land', in Bonfield, Smith & Wrightson, *The World We Have Gained*, p.308.

Due to format changes, 1801-31 (Tables 5A-C) has to be considered separately. The agriculture sector in all three counties rose over double between 1801 and 11, suggesting errors with the 1801 census, with a slow decline thereafter. Bedfordshire was the largest in 1811 (63%) with Hertfordshire becoming lowest (45%) by 1831. This was by far the main source of employment.

Tables 5A-C: Percentage total employed per occupation group, 1801-31.

BEDFORDSHIRE

	1801	1811	1821	1831
Agriculture	31	63	62	57
Trade/Manufacture/Handicraft	23	28	28	26
Other	47	9	10	18
Total	100%	100%	100%	100%

BUCKINGHAMSHIRE

	1801	1811	1821	1831
Agriculture	25	55	58	53
Trade/Manufacture/Handicraft	20	33	29	26
Other	55	11	14	21
Total	100%	100%	100%	100%

HERTFORDSHIRE

	1801	1811	1821	1831
Agriculture	22	53	52	45
Trade/Manufacture/Handicraft	13	31	30	29
Other	65	15	18	25
Total	100%	100%	100%	100%

Based on records from www.histpop.com

'Trade, manufacture and handicraft' employment also showed a sudden jump in percentage by 1811, due to the excessive size of the 'other' category in 1801, and a similar slow decrease following. The only major difference was Buckinghamshire dipped at a slightly faster rate than Hertfordshire, drawing level with Bedfordshire by 1831 (26%). This category at its height was barely half that of agriculture.

The 'other occupations' category was the opposite of the previous categories. Erroneous in 1801, said employing virtually half the region's population, by 1811 it registered only 9-15%. While this nearly doubled by 1831, Hertfordshire peaking at 25%, it was still very minor.

The categories saw marked changes for 1801-11, with only small variations by 1831. The simplest explanation for the dramatic 1801-11 change, as noted by Higgs, is the sheer inaccuracy of the 1801 census – described by E. Wrigley as 'worthless'.[28] That so many were listed in the undefined 'other' category demonstrates the unreliability of the data collected, it altering the ratio within the agriculture and trade categories. When the necessary protocols for recording census information became stricter and clearer, a more accurate image became apparent, hence massive changes followed by much smaller variations.

1801-31 Summary

While inaccuracies and vague categories raise doubts about the data up to 1831, the slow 1811-31 decrease in agriculture and 'trade' employment suggests the beginning of a rise in alternative non-agricultural occupations. This is especially so considering that the population was increasing at this time, rather than the drop in agricultural employment being through migration or mortality.[29] With increasing population alongside increasing numbers in more 'urban' occupations, this further tallies with views of the fledgling 'Industrial Revolution', with diminishing dependency on agriculture.[30] Importantly, the initiator for this was emphatically *not* the railways. In this region the initial transfer was minimal though – a drop of only 2-8% in the agriculture category by 1831. For a rural region that never gained widespread industry, this is understandable.

Data for 1841-1901

Turning to the 1841-1901 results (Tables 6A-C), trends and issues for the 'railway age' are apparent. Agriculture was still dominant, but it decreased in percentage – other sectors rising in relative significance. Many sectors that were traditionally associated with agriculture and rural society also diminished, though to a lesser degree in Buckinghamshire. These included the textile, leather and wood trades.

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[28] Higgs, *Making Sense*, p.78; Wrigley, 'Men on the Land', in Bonfield, Smith & Wrightson, *The World We Have Gained*, p.329.
[29] See Chapter 6.
[30] J. De Vries, 'The Industrial Revolution and the Industrious Revolution', *The Journal of Economic History*, Vol. 54, No. 2, Papers Presented at the Fifty-Third Annual Meeting of the Economic History Association (Jun., 1994), pp.258-9; Wrigley, 'Men on the Land', in Bonfield, Smith & Wrightson, *The World We Have Gained*, pp.295-336.

Tables 6A-C: Percentage total employed per occupation group, 1841-1901.

BEDFORDSHIRE

	1841	1851	1861	1871	1881	1891	1901
Agriculture	42	34	29	25	13	20	15
Textiles	11	15	13	11	7	8	7
Misc Manu	0	0	0	0	0	1	2
Leather	3	3	2	2	1	2	1
Building	2	3	2	3	2	4	6
Metal	2	2	1	2	1	3	5
Wood	4	5	3	3	2	3	3
Food & Drink	5	5	4	4	3	6	7
Transport	1	1	1	2	1	5	7
Domestic Service	12	6	8	9	6	12	14
Public Service/Professional	3	3	3	3	4	8	6
Independent Means	4	1	1	1	43	4	4
Special Industry	7	17	26	27	13	17	15
Quarry/Mining	0	0	0	0	0	0	0
Retail/Distribution	1	1	2	2	1	2	4
Misc	2	4	4	7	3	6	6
Total	100%	100%	100%	100%	100%	100%	100%

BUCKINGHAMSHIRE

	1841	1851	1861	1871	1881	1891	1901
Agriculture	41	35	33	30	13	22	18
Textiles	11	20	17	15	6	7	5
Misc Manu	1	1	2	2	1	3	4
Leather	3	3	3	3	2	3	3
Building	2	3	2	3	2	4	6
Metal	2	2	2	2	1	2	3
Wood	5	6	7	8	4	11	8
Food & Drink	5	6	5	5	3	6	7
Transport	1	2	2	2	2	6	10
Domestic Service	15	8	11	13	8	13	17
Public Service/Professional	3	4	3	4	4	7	6
Independent Means	5	1	1	1	50	4	3
Special Industry	3	3	5	5	1	1	0
Quarry/Mining	0	0	0	0	0	0	0
Retail/Distribution	1	1	2	2	1	2	3
Misc	2	4	6	6	4	10	6
Total	100%	100%	100%	100%	100%	100%	100%

HERTFORDSHIRE

	1841	1851	1861	1871	1881	1891	1901
Agriculture	38	35	34	28	12	20	12
Textiles	4	8	6	4	3	5	5
Misc Manu	1	1	2	1	1	2	4
Leather	3	3	2	2	1	2	1
Building	3	3	3	3	2	4	7
Metal	2	2	2	1	1	2	3
Wood	5	5	4	4	2	4	4
Food & Drink	5	7	6	6	3	7	8
Transport	1	3	3	3	2	7	9
Domestic Service	16	10	13	15	9	15	21
Public Service/Professional	5	5	4	4	4	9	9
Independent Means	6	1	2	2	51	4	4
Special Industry	8	10	13	14	4	4	2
Quarry/Mining	0	0	0	0	0	0	0
Retail/Distribution	1	2	2	2	1	2	4
Misc	2	5	5	10	4	11	7
Total	100%	100%	100%	100%	100%	100%	100%

The dependent/no occupation sector was omitted as it was massively erroneous and would inaccurately disproportionate the rest of the data. The quarry/mining sector was at its height under 0.5% so was rounded to zero. Erroneous results have been highlighted.
Based on records from www.histpop.com.

While some formerly-large sectors dropped by over half through the period, notably agriculture and textiles, many of those that grew were distinctly different. The types suggesting increased urbanisation, including miscellaneous manufacture and the public service/professional sector all exhibited marked increases towards 1891-1901. Conversely, the main specialist industry of the region, straw-work, acted very differently, rising rapidly before falling away even more swiftly.

Of 'urbanising' manufacturing, public and professional sectors, Hertfordshire generally showed the largest initial percentage, and often had the lowest levels of 'rural' sectors. With the exception of the straw industry, Bedfordshire, conversely, frequently experienced the lowest of the 'urbanising' sectors. As known, Hertfordshire was the earliest county to gain railway connections, while by 1901 Bedfordshire remained the county with the lowest mileage.

The results show some sectors diminished in preference of others, ever increasingly by the end of the period. The rising sectors, notably miscellaneous manufacture, building, transport, public service/professionals and retail, were initially minor and would likely have only been needed in greater numbers with urbanisation. Their uniformity in expansion supports this wider trend, as do the notable population and agricultural declines by 1901. However, despite all factors working towards urbanisation, the region remained substantially agrarian, even though this sector had diminished. The lack of any massive changes confirms that there was no rapid or dramatic economic transformation.

That there were marked deviations in the rate of increase/decrease between some sectors further demonstrates differences in the importance of some occupation sectors over others – an intrinsically local issue. Additionally, while the tables insinuate continual fluctuation, many of the percentages were so small that these fractional changes were comparatively minor in most cases. When considered overall many sectors were thus relatively stable.

Comparing 1851 and 1901

To present the change in percentages working in each sector between 1851 and 1901, sectors were grouped by county (Tables 7A-C). As the first of the new format, 1841 was omitted due to resultant inaccuracies. For 1851-1901, the counties saw distinct occupational changes. They were similar in most respects, particularly with agriculture remaining the lead employer. Having outlined the overtaking of more traditional sectors by others, here the true extent of these changes can be seen.

The largest sectors were relative static, with a few exceptions such as Buckinghamshire's textiles sector. Similarly, some of the most minor sectors were near-stationary throughout. Of the remainder, some diminished while others grew, but the broad image is one of general stability, albeit with the beginnings of change. The percentages are relative - in virtually all sectors the number of physical jobs was increasing. The region was never dominated by one industry, and agriculture likewise was not the sole occupation.

Tables 7A-C: Percentage total employed per occupation group, ranked by size for 1851 and 1901, showing how sectors grew and shrank. Note that the domestic service and independent means sectors are erroneous due to definition changes in the census.

BEDFORDSHIRE

1851	%	1901	%
Agriculture	34	Agriculture	15
Special Industry	17	Special Industry	15
Textiles	15	Domestic Service	14
Domestic Service	6	Textiles	7
Food & Drink	5	Transport	7
Wood	5	Food & Drink	7
Miscellaneous	4	Public Service/Professional	6
Public Service/Professional	3	Building	6
Leather	3	Miscellaneous	6
Building	3	Metal	5
Metal	2	Independent Means	4
Transport	1	Retail/Distribution	4
Retail/Distribution	1	Wood	3
Independent Means	1	Misc Manufacture	2
Misc Manufacture	0	Leather	1
Quarry/Mining	0	Quarry/Mining	0

BUCKINGHAMSHIRE

1851	%	1901	%
Agriculture	35	Agriculture	18
Textiles	20	Domestic Service	17
Domestic Service	8	Transport	10
Wood	6	Wood	8
Food & Drink	6	Food & Drink	7
Miscellaneous	4	Building	6
Public Service/Professional	4	Miscellaneous	6
Leather	3	Public Service/Professional	6
Special Industry	3	Textiles	5
Building	3	Misc Manufacture	4
Transport	2	Independent Means	3
Metal	2	Leather	3
Retail/Distribution	1	Retail/Distribution	3
Misc Manufacture	1	Metal	3
Independent Means	1	Special Industry	0
Quarry/Mining	0	Quarry/Mining	0

HERTFORDSHIRE

	1851	%		1901	%
Agriculture		35	Domestic Service		21
Special Industry		10	Agriculture		12
Domestic Service		10	Transport		9
Textiles		8	Public Service/Professional		9
Food & Drink		7	Food & Drink		8
Wood		5	Miscellaneous		7
Miscellaneous		5	Building		7
Public Service/Professional		5	Textiles		5
Building		3	Independent Means		4
Transport		3	Misc Manufacture		4
Leather		3	Retail/Distribution		4
Metal		2	Wood		4
Retail/Distribution		2	Metal		3
Independent Means		1	Special Industry		2
Misc Manufacture		1	Leather		1
Quarry/Mining		0	Quarry/Mining		0

Evaluating Specific Changes in Occupational Rankings

Considering 1811-31, there were no changes in ranking. As a rural area, agriculture was dominant, as demonstrated for 1811, but with the slow rise of alternative employment (trade/manufacture/handicraft) the ratios shifted as shown by the slowly decreasing percentages in agriculture and trade by 1831. The 'other' category was minor throughout and most likely a vague definition as 'general labourer' would be in later censuses. Patently the start of changes leading to urbanisation had origins pre-dating the railways. But for 1841-1901 (Tables 7A-C), particular sectors rose while others declined, impacting on the overall control agriculture had. These sectors are thus key to understanding the region's occupational development and the railway's role in it.

By far the most important of the non-agricultural sectors in this rural region, straw plaiting and hatmaking (the 'special industry' sector) in Bedfordshire remained second only to agriculture, which had effectively halved. In Hertfordshire, however, it dropped substantially, despite the decadal results showing it previously increasing. Buckinghamshire was even more pronounced, with the sector all but failing by 1901. As lace-making was initially prolific, there was some early percentage increase in the textile sector. The sector decreased drastically from 1861, though; lace declining with mechanisation to the point of

dying out.[31] Bedfordshire's hat manufacture, fabric as well as straw, explains why this sector was more stable in ranking than the other counties, but the decline of cottage work such as lace clearly affected textile occupations across the whole region. Other traditional sectors, such as wood and leather, similarly diminished in preference to newer rising employments, notably the transport and building sectors. This was less the case with Buckinghamshire as its wood sector stayed constant. Buckinghamshire's transport sector rose in importance even more than in the other counties, but the slight fall in the professional sector and the static nature of retail trades suggests much of Buckinghamshire remained rural.

Hertfordshire gained the greatest increase in the professional sector. With straw, wood and leather-based trades down and the transport sector increasing, the county follows the trends shown under Bedfordshire. Some sectors mimicked the exceptions shown for Buckinghamshire, though, notably the transport and (to a lesser degree) building sectors being slightly higher ranked than Bedfordshire. When considering comparative mileage of railways, and the connected number of rail-based jobs, this is noteworthy. The increase in professional occupations when considered alongside rising railway mileage and proximity to London also acts as an indicator of commuting and urbanisation in Hertfordshire.[32] Similarly, the small region-wide increase in those of independent means supports the historiography of improved transport allowing people to live further away from the capital.[33]

The ranking and percentages indicate that domestic service as a sector increased in importance - eclipsing agriculture in Hertfordshire. But this is wholly inaccurate, as demonstrated by Garrett.[34] Hertfordshire was still very agricultural by 1901, but the marked rise of non-agricultural 'urban' sectors suggests it was beginning a significant change in occupational form, particularly with the rise of commuting. Quoting W. Johnson on the comparative significance of this, railways led 'as much to residential and commuter as to industrial development.'[35]

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[31] Parishes: Biggleswade with Stratton and Holme, *A History of the County of Bedford: Volume 2* (1908), pp. 209-215; *A History of the County of Buckingham: Volume 2*, (1908), p.106; *A History of the County of Hertford: Volume 4* (1971), p.247; http://venetianred.net/2009/09/09/a-history-of-lace-in-seven-portraits-gloria-swanson/

[32] J. Moore, *The Impact of Agricultural Depression and Land Ownership Change on the County of Hertfordshire, c.1870-1914* (University of Hertfordshire, 2010), p.53; Freeman, *St Albans*, p.231.

[33] J Simmons, *The Victorian Railway* (London, 1991), p.330.

[34] Higgs, *Clearer Sense*, p.164; Garrett, Dawning Era, *Women's Work,* p.331.

[35] W. Johnson, *Industrial Archaeology of Hertfordshire* (Newton Abbot, 1970), pp.14, 24.

For 1841-1901, the railway years, it was apparent that while the counties were similar per category, there was great variation between these categories. While some sectors were anomalous, others indicate substantial changes. Some anticipated changes/trends were borne out, for example an agricultural depression affecting the region in the 1870s.[36] Equally, the sharp rise and, through foreign competition, marked decline of straw-work ('special industry') in Bedfordshire is demonstrated.[37] Most significantly, the pattern of changing ratios in types of occupation - the rise of alternatives to agriculture - is apparent. That this shift increased its rate with no single occupation rising in its stead emphasises the development of previously-lesser occupational sectors as the region began to diversify. In other words, there was an increase in the number of job types, rather than a single sector replacing agriculture – the area throughout the period was not, nor has ever been, a one-occupation region.

Railway Involvement in Occupational Change

Occupational structures diversified in the period, becoming more 'urban' in form. But what was the relationship between this and the railways? Various trends are readily apparent – some sectors rose in percentage overtaking others that, while still growing in actual numbers, were becoming less central thus showing percentage decline. For those that were rising, the last few decades led to greater increases at a much faster rate. Finally, the 1870s agricultural decline is demonstrated. But on the immediate surface the railways had no dramatic effect. There was no point when a line opened and the entire occupational structure transformed – no direct 'change' as theorised by the early historiography. Instead, railways had a wider general economic stimulus; even if just through facilitating worker mobility or goods/material movement they still had some effect. But this was for the most part subtle and across the board. With agricultural decline and canal-boosted rudimentary industry (such as printing), railways were unlikely to have started this process either.[38] However, through the benefits railways provided they were in a position to facilitate the growth of the more 'urban' sectors listed, so indirectly aiding the development of a more sophisticated rural-

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[36] Goose & Short, *Historical Atlas*, p.122; R. Schwartz, I. Gregory & T. Thévenin, 'Spatial History: Railways, Uneven Development, and Population Change in France and Great Britain, 1850-1914', *Journal of Interdisciplinary History*, Volume 42, Number 1 (Summer 2011), pp.56, 70-1; Moore, *Agricultural Hertfordshire* (University of Hertfordshire, 2010), pp.15, 62.

[37] N. Goose, 'Cottage Industry, Migration and Marriage in Nineteenth-Century England', *Economic History Review*, 2008, vol. 61, issue 4, pp.806-7.

[38] Johnson, *Industrial Archaeology*, pp.14, 23.

urban occupational structure. In this manner, railway development had the capability to affect occupational development.

As for the sharper rise c.1881-1901 across most sectors, this was the point when competition in terms of service and price was at its zenith. It was the era of the two great 'Race to the North' speed competitions (1888, 1895).[39] Under the auspices of engineers such as Johnson, Ivatt and Webb the locomotive itself had developed in speed and haulage power from even only the 1850s, while governmental insistence on continuous brakes and the 'absolute block' enabled greater safety at these speeds.[40] Therefore, with the railways in a time of renewed improvement and needing to compete through service as much as construction, it is highly likely they were a factor in aiding growing sectors to expand faster, quickening the rate of economic development on a general level.

<u>Railway-impacted Sectors</u>

Railways could, however, also stimulate individual sectors. As the historiography demonstrates, railways had particular relevance for industry – past research frequently skewing towards it. This view is supported even in this rural region with interesting connections to railway timings. Commerce is often considered linked, not just through providing goods and perishables but also through impacts on industry.[41] In the region, though, this appears somewhat different to what may be expected, suggesting the regions' rural nature was still a guiding factor. Transport as a sector itself was massively affected; many became platelayers and railway labourers, along with footplate crews and station staff who were the public face of the railways. In understanding the impact of railways on the region, which sectors and occupational changes can be attributed, even just in part, to railway development?

1) Agriculture:

This major sector declined in percentage terms throughout the period, particularly after 1841. Agricultural employment had already ceased expanding in numbers before the railways and was actively declining well after railways were established. This correlates with Wrigley's

[39] M. Casson, *The World's First Railway System: Enterprise, Competition and Regulation on the Railway Network in Victorian Britain* (Oxford, 2009), pp.316-7.
[40] See Appendix I.
[41] Simmons, *Victorian Railway*, p.247.

findings of static national farm employment.[42]   Furthermore, as he stated, with rising population but stationary agricultural job numbers, not only did non-agricultural jobs expand, as shown here, but as Britain (until US imports in the 1870s) 'remained very largely home fed' there must have been increases in the agricultural output-per-head.[43]   With improved farming techniques and equipment requiring fewer people, increased profits would equally have spurred market demand for non-agricultural items, which had not yet increased its output-per-head so requiring more people.[44]   That J. Fordham said 'those farms living on or near a railway line prospered, wages rose, conditions improved, wealth was created' may be somewhat exaggerated, it does mirror Wrigley and the population data.[45]   While railways had little direct correlation, there being no major changes in type of agricultural employment, in providing rapid transit of perishable foodstuffs, opening up distant markets, and enabling superior communication of improved or mechanised ways of agriculture, railways had some effect.[46]   But at best railways were only a minor factor in a decline that was already well underway.[47]

3) Miscellaneous Manufacture:

While Bedfordshire had no noteworthy miscellaneous manufacture, remaining the lowest, the individual jobs showed this sector in Hertfordshire and Buckinghamshire mostly concentrated on printing and paper-making.[48]   Initially at low levels (387 in Buckinghamshire and 310 in Hertfordshire in 1841), it rose throughout the period.   By 1901 Buckinghamshire had 1,864 working with paper and printing, while Hertfordshire had 2,628.

In terms of physical rail involvement, however, the impact upon Hertfordshire's papermaking was less clear-cut than elsewhere.   When the industry was first forming in the early nineteenth century, many smaller works were taken over by John Dickinson and relocated to his larger sites, notably at Apsley (Hemel Hempstead) and Croxley (Rickmansworth).[49]

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[42] Wrigley, 'Men on the Land', in Bonfield, Smith & Wrightson, *The World We Have Gained*, p.295.

[43] Ibid; pp.295-6, 334-5; Freeman, *St Albans*, pp.186, 213, 229; Corbett, *St Albans*, p.101; J. Fordham, *The Crisis in Agriculture: 1880 and Beyond* (Odsey Park, 2011), p.9.

[44] Wrigley, 'Men on the Land', in Bonfield, Smith & Wrightson, *The World We Have Gained*, pp.335-6.

[45] Fordham, *Crisis in Agriculture*, p.5; Moore, *Agricultural Hertfordshire* (University of Hertfordshire, 2010), pp.66, 68; E. Wrigley, *The Early English Censuses* (Oxford, 2011), pp.29-30. See Chapter 6.

[46] T.R. Gourvish, *Railways and the British Economy 1830-1914* (London, 1980), p.31.

[47] Schwartz, Gregory & Thévenin, Spatial History, *Journal of Interdisciplinary History*, pp.56, 70-1.

[48] Goose & Short, *Historical Atlas*, pp.80-1, 98-9.

[49] *A History of the County of Hertford: Volume 4* (1971), p.258; L. Evans, *The Firm of John Dickinson and Company Limited* (London, 1896), p.14; Johnson, *Industrial Archaeology*, p.25; Watford Museum.

These used the Grand Junction Canal.[50] While Hertfordshire was the county with the first railway network, Dickinson found the subsequent drop in canal costs to be lucrative and kept the majority of material movements with this cheaper transport form, mirroring the historiography of railways being slower to take over from canals than once believed.[51] Railways were not ignored, though – the London & North Western Railway ran close by and was used, while Croxley Works had not only sidings but an internal 'tramway' for ease.[52] In Dickinson's own words:

'The practice in our trade is to deliver our paper at all considerable places to which there is an easy access by canal or other water carriage, or by railway carriage…...We do not undertake to send anything by waggons, or the ordinary land conveyance.'[53]

Furthermore, while there was no drastic expansion directly due to railways, the rail and canal system's ability to transport Hertfordshire paper to a wider market before Buckinghamshire's railway system reached a similar state of development may explain why Hertfordshire paper became more renowned.[54]

Turning to printing, Watford (Hertfordshire) in particular became a major centre, partly through the canals and paper manufacturers, but equally with rail access to these and London publishers.[55]   Rail-based distribution became ever-broader and cheaper; St Albans also developing the trade by 1914.[56] These paper-based industries had broader railway influences,

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[50] E. Doubleday, *Hertfordshire: Survey Report and Analysis of County Development Plan, 1951* (Hertford, 1951), p.21.

[51] *A History of the County of Hertford: Volume 4*, (1971), p.258; Evans, *Dickinson*, pp.26, 46; B.R. Mitchell, 'The Coming of the Railway and United Kingdom Economic Growth', *The Journal of Economic History*, Vol. 24, No. 3 (Sep., 1964), pp.319-20.

[52] Evans, *Dickinson*, pp.28, 46; J. Rannard, *The Location and Economic Growth of the Watford Paper and Printing Industries* (University of Bristol, 1963), p.10; J. Evans, *The Endless Webb: John Dickinson and Co Ltd 1804-1954* (London, 1955), p.57; *A History of the County of Hertford: Volume 4* (1971), p.258; F.W. Goudie & D. Stuckey, *West of Watford: Watford Metropolitan & the L.M.S. Croxley Green and Rickmansworth Branches* (Bracknall, 1990), p.37; http://www.dacorumhistory.bravehost.com/RailDickinsons.html

[53] Commission on the Post Office, 2 March 1838, answer No 2438 - in Evans, *Endless Webb*, p.57.

[54] *A History of the County of Buckingham: Volume 2*, (1908), p.111; W. Johnson, *Industrial Monuments in Hertfordshire* (Hertford, 1967), pp.20-1; P. Richards, 'Watford and the Railway', *Herts Past & Present*, No. 22 (Autumn 2013), p.12.

[55] Johnson, *Industrial Archaeology*, p.25; Rannard, *Watford Paper and Printing*, p.21; D.C. Hughes, *The Historical Development of the Printing Industry of Watford*, (1961), pp.25-6; Watford Museum.

[56] TNA RAIL 1167/251 – GNR Agreements for siding construction to printers Orford Smith Ltd, St Albans, 1897; P. Greenhill & B. Reynolds, *The Way of the Sun – The Story of Sun Engraving and Sun Printers* (Exeter, 2010), p.4; Freeman, *St Albans*, pp.216, 224-5, 229.

as detailed by Simmons.[57] In addition to increased demand through growing national business, the railways themselves had increasing demand for printed material.[58] Furthermore, the historiography claims improved communications due to railways led to rising circulation of newspapers and facilitated the penny post, while platform bookstalls and heightened literacy led to greater demand for books – creating a boom time for printers and papermakers.[59]

Considering negative rail effects, the *Victoria County History* presents a particularly revealing example, albeit regarding a minor occupation. Since c.1560 Long Crendon (Buckinghamshire) manufactured needles, but mechanisation in Birmingham caused the industry to die out as workers migrated.[60] There was a revival in 1848, but citing inadequate rail links in the centre of the county at that time, 'the lack of railway communication, however, proved fatal'.[61] Although the Wycombe Railway to Thame opened soon after (1862), the industry never returned.[62]

5) Building:

This sector had the most direct connection to urbanisation, and its increased ranking (Tables 7A-C) indicates urbanisation in parts of the region, as with a mobile population and the increase in non-agricultural 'urban' occupations, along with increased commuting through rail access and London proximity. This sector in Hertfordshire was slightly higher by 1861 at 3%, while the others wavered around 2%. Having many of its railways completed, the slight increase can with some reliability be associated with this development. With most railway development in place, and the greatest mileage, Hertfordshire's building sector percentage remained higher and more stable than the others, more than doubling c.1891-1901 (to 7%). Buckinghamshire and Bedfordshire were still developing their primary railways up to the 1880s; the building sector concurrently having lower and less stable percentages. Ultimately their building sector percentages rapidly rose at the same time as Hertfordshire, to a slightly

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[57] Simmons, *Victorian Railway*, pp.240, 243, 247; M. Robbins, *The Railway Age* (London, 1962), pp.21, 45; Gourvish, *Railways Economy*, p.31; T.C. Barker & C.I. Savage, *An Economic History of Transport in Britain* (London, 1974), p.68. See Chapter 1.
[58] Evans, *Dickinson*, p.40; F. Markham, *The Nineteen Hundreds* (Buckingham, 1951), p.19; Milton Keynes Museum.
[59] Simmons, *Victorian Railway*, p.240; Greenhill & Reynolds, *Sun Engraving*, p.24; Rannard, *Watford Paper and Printing*, p.3; Johnson, *Industrial Archaeology*, p.59.
[60] *A History of the County of Buckingham: Volume 2* (1908), p.127.
[61] Ibid; pp.104, 128.
[62] Ibid; p.128. See Appendix II.

lower level (6%) – but only after the majority of their lines were completed. Additionally, Hertfordshire took the lead and remained the largest in this sector, even after railway construction was effectively complete. This suggests London influence affecting Hertfordshire's building rate as it rose as a commuter area, this itself due to railway access.[63]

Railway-related building work was not merely through connecting roads to stations and railway construction; many stations in urbanising areas actively led to concentrations of new housing, often with commuting connotations, and businesses.[64] Therefore, unusually, railways can be credited with some direct impact, being a notable factor in this development, unlike other sectors where local non-rail factors played a much greater role. This is especially so when considering locations with Motive Power Depots where railway companies would often fund the construction of staff housing.[65] As an extreme example of chain reaction, some houses built in 1868 in Sparrows Herne, near Bushey, came with a free ten-year First Class LNWR ticket as encouragement to purchase them.[66] Additionally there were supply industries for building, in this region notably brick-making, which had direct use of railways for transportation.[67]

6) Metal:

Historians have claimed that metal industries were impacted less by railways than previously assumed.[68] While most employed in the sector were blacksmiths, by 1861 Hertfordshire and Buckinghamshire showed a rise in other metal-working jobs, notably in mechanics, toolmakers, founders and boilermakers. Barring a slight dip around 1871 for Hertfordshire and Bedfordshire, the sector remained stable until 1891-1901 saw varying rates of increase –

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[63] Moore, *Agricultural Hertfordshire* (University of Hertfordshire, 2010), pp.49, 53; Freeman, *St Albans*, pp.225, 231, 253.

[64] Simmons, *Town and Country*, pp.94, 326; Casson, *First Railway System*, p.324; H. Dyos & D. Aldcroft, *British Transport: An Economic Survey from the Seventeenth Century to the Twentieth* (Leicester, 1971), p.189. See Chapter 10.

[65] M. Forsyth, 'Watford's Railway Housing', *The L&NWR Society Journal*, Vol. 6 No. 9 (June 2011), pp.3-5.

[66] D. Payne, *The Story of Bushey in the Age of the Steam Train* (Bushey, 2011), p.15; Johnson, *Industrial Archaeology*, p.139; M. Forsyth, *The Railway at Watford Junction* (Watford, 1988), p.10; D. Levinson, 'The Orderliness Hypothesis: The Correlation of Rail and Housing Development in London', *The Journal of Transport History*, Volume 29, Number 1 (March 2008), p.102; Watford Museum.

[67] TNA RAIL 1167/117 - MR Agreements for siding construction to Luton Brick and Lime Company and B.J. Forder & Son, 1884; TNA RAIL 1167/159 - GNR Agreements for siding construction to Luton Brick and Lime Company, 1886; TNA RAIL 236/1119 - GNR Agreements for siding construction to brick manufacturers Joseph Fenwick Owen & Co, St Albans, 1899; *A History of the County of Buckingham: Volume 2* (1908), p.114.

[68] Gourvish, *Railways Economy*, p.23; Mitchell, 'Railway Growth', *Journal of Economic History*, p.325; R. Fogel, *Railroads and American Economic Growth* (Baltimore, 1964), pp.230-3; A. Fishlow, *American Railroads and the Transformation of the Ante-Bellum Economy* (Harvard, 1965), p.132-49.

Hertfordshire and Buckinghamshire, with the most completed railways, reaching 3%. Bedfordshire had already finished its final railway, but at this point rose to 5%. This was mostly in iron founders and machinists/fitters. While it appears this increase was not directly related to railways themselves, the rise of hatmaking was followed by increasing industrial works in Luton and Bedford resulting from the 1889 'New Industries Committee'.[69] This fits Simmons' comments on rail-assisted 'regeneration'; in this case after rail-based stagnation of plait.[70] These industries were undoubtedly linked to the need for railway access to transport raw materials and finished goods, demonstrated by their proximity to stations along with cases of physical connection through sidings.[71]

While very small-scale across the county, Bedford itself became noteworthy for engineering products.[72] For example, from 1916 Bedford constructed the 'Simplex' narrow-gauge locomotives used extensively in World War One.[73] Secondly, W.H. Allen Engineering relocated from London to Bedford in 1893, producing pumps, dynamos, fans and turbines.[74] In 1909 they were commissioned by Harland & Wolff shipyard of Belfast to construct generating plants, some of the most powerful of the day, for the *Olympic* and *Titanic*.[75] The only way to deliver these large products was by rail.

Conversely, it may appear strange that Buckinghamshire did not exhibit an equivalent rise. By 1901 it was only on a par with Hertfordshire, despite the development of Wolverton Works. However, there are two potential explanations. Retaining the highest level of agriculture of the three counties (18% by 1901), Wolverton may have still been key to what increase was present: there was little need for machinists/fitters across most of the very rural county. Secondly, the initial small Buckinghamshire increase followed by a lesser secondary rise than expected fits the chronology of locomotive and carriage construction at Wolverton Works, while the drop in number of boilermakers further corroborates it. Buckinghamshire

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[69] *Luton: Straw Hat Boom Town 1890-1910* (Luton Museum Education Service), p.5; Simmons, *Town and Country*, p.277; Wardown Park Museum; http://www.disused-stations.org.uk/l/luton_bute_street/
[70] Simmons, *Town and Country*, p.298.
[71] TNA RAIL 1167/151 – GNR Agreements for siding construction to hydraulics manufacturer Hayward, Tyler and Company, Luton, 1873; *A History of the County of Bedford: Volume 2* (1908), pp.126-7.
[72] The Borough of Bedford: Introduction, *A History of the County of Bedford: Volume 3* (1912), pp.1-9.
[73] http://www.mrt.org.uk/simplex
[74] http://www.whallenengasn.org.uk/whaeaweb_005.htm
[75] B. Beveridge, S. Andrews, S. Hall, D Klistorner & A. Braunschweiger, *Titanic: The Ship Magnificent: Vol. 1* (Stroud, 2008), p.371; http://www.whallenengasn.org.uk/whaeaweb_005.htm

had a high number of engineers in 1841 (141), second only to blacksmiths. This was when Wolverton stopped purchasing Bury locomotives, starting instead to construct their own.[76]

Simply put, locomotive manufacture - from scratch, including foundry-work - directly increased numbers working in the metal trades early on (post 1845) when there was little need elsewhere. But, fitting the timing of when the Works turned to carriage construction with a slight time lag during the change-over, this level dropped, carriages being mostly wood, with metal running-gear and fixtures – these initially being imported from Crewe.[77] But as the Works expanded and more carriages were built/repaired, this lesser level rose in its own right. Hertfordshire, by comparison, gained various printing and paper works, so while not 'industrial' there was still a need for skilled workers.[78] This, however, was not as geographically concentrated as either Bedford or Wolverton.

7) Wood:

This sector exhibited two noticeable points; from 1861 Hertfordshire and Bedfordshire's percentages dropped by almost half, while Buckinghamshire's increased throughout, doubling by 1891 (11%) before dropping (8%). There is no obvious reason for the former aside from ratio changes, with many jobs increasing in physical numbers – even coachmakers. Under the broader hatmaking industry, wooden blockmaking and box manufacture were vital.[79]

As for Buckinghamshire, c.1881-91 the main difference was an increase of 1,199 'cabinet makers'; a trade commonly used in carriage manufacture at Wolverton Works.[80] That Buckinghamshire's ranking for wood trades (4th in 1901) remained stable while the others distinctly declined (Tables 7A-C) further shows the significance of the sector. This was not

[76] H. Jack, *Locomotives of the LNWR Southern Division: London & Birmingham Railway, London & North Western Railway and Wolverton Locomotive Works* (Sawtry, 2001), p.111. See Appendix IV.
[77] Ibid; pp.32-3.
[78] Johnson, *Industrial Archaeology*, p.25; Watford: Introduction, *A History of the County of Hertford: Volume 2* (1908), pp. 446-451 & *Volume 4*, (1971), pp.256-261; Evans, *Dickinson*, p.14.
[79] TNA RAIL 236/1076 and RAIL 236/1127 – GNR Agreements for siding construction to box and packing case manufacturer George Noah Gathard, 1889 and 1899; WPM.
[80] B. Turton, 'The Railway Town: A Problem in Industrial Planning', *The Town Planning Review*, Vol. 32, No. 2 (Jul., 1961), p.102; West, *Trainmakers*, p.28; Steam: the Museum of the Great Western Railway, Swindon. See Appendix IV.

solely due to the Works – High Wycombe had a notable chair-making industry which continually expanded until c.1877.[81]

8) Food and Drink:

This has always been associated with transportation, particularly the network of inns serving stagecoaches and the eponymous station refreshment rooms as immortalised by Dickens in *Mugby Junction*.[82] The percentages show this sector was growing in importance; the main body of employment was specifically in inns, butchers, bakers and grocers, with much brewing present. But all these major occupations in the sector were as much retail as food production, especially concerning grocers and innkeepers. That Hertfordshire rose to be predominant again correlates with the rise of commuting.

However, one specific Hertfordshire aspect requires further detail – malting. One of the oldest industries and initially in high demand, it was credited as a factor in establishing the first turnpike roads.[83] After the 1850s it began to actively decline, despite railways dropping costs and allowing 'wider distribution'.[84] As with other market examples, brewers gained access to wider supplies, and although the Great Eastern Railway carried increasing amounts, the majority was coming from East Anglia.[85] So one side of the beer industry was hindered while the other (brewing) benefitted.[86]

Railways undoubtedly impacted on this sector (the 182,500 Banbury cakes sold at Wolverton annually certainly suggests so), and perishables were particularly affected with faster transport to wider markets.[87] This had wider knock-on effects through assisting urban health and broadening urban food provision.[88]

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[81] *A History of the County of Buckingham: Volume 2* (1908), p.110.

[82] A thinly-veiled criticism of the premises at Rugby Junction - C. Dickens, 'The Boy at Mugby', *Mugby Junction, the Extra Christmas Number of All the Year Round* (London, 1866), pp.20-25; T. Williams, lecture: *Dickens and 'The Moving Age'*, Gresham College, 13 November 2006.

[83] Johnson, *Industrial Archaeology*, p.103; *A History of the County of Hertford: Volume 4* (1971), p.239; J. Brown, *Steeped in Tradition – the Malting Industry in England Since the Railway Age* (Reading, 1983), p.18.

[84] Johnson, *Industrial Archaeology*, p.43; Brown, *Steeped in Tradition*, pp.21, 40.

[85] Brown, *Steeped in Tradition*, pp.40, 42; Goose & Short, *Historical Atlas*, pp.41, 88-9.

[86] TNA RAIL 1167/284 - LNWR Agreements for siding construction to Benskins Watford Brewery Ltd, 1887.

[87] F.B. Head, *Stokers and Pokers, or the London and North Western Railway, The Electric Telegraph and The Railway Clearing House* (London, 1849; reprinted Trowbridge, 1968), p.88.

[88] Simmons, *Victorian Railway*, p.351.

11) Public service/Professional:

The rise of professional occupations is often associated with urbanisation, and comparison of this sector's ranking across the period (Tables 7A-C) indicates differences between the counties in the degree to which this was happening.[89] Importantly, it adds weight to the view of Hertfordshire becoming more urbanised than the others. Showing a trend outlined under the building sector, Hertfordshire experienced an early lead over the other counties, coinciding with the height of its railway construction. As Hertfordshire slowed slightly, Bedfordshire and Buckinghamshire caught up, again once their railway systems were close to completion. Despite all the counties increasing in 1891, Bedfordshire and Buckinghamshire diminished c.1901, though there is no obvious reason. The Great Central Railway, completed in 1899, would not have been established sufficiently to affect the 1901 records dramatically, though a positive effect would be more likely, aside from that line's inherent limitations. As the actual employment numbers increased, the drop is probably due to changing definitions or the rise of another sector affecting the percentage ratios.

14) Quarry/Mining:

This was mostly small-scale excavation, the vicinity around Leighton Buzzard and Heath and Reach the main exceptions, both in Bedfordshire.[90] Leighton Buzzard initially used the GJC, later the LNWR and in the 1920s constructed an industrial narrow-gauge railway network, so while the railways played some role, this is the only major case.[91] There was great variety in actual numbers across the period – mostly coal-heavers and sand excavators. Some areas had coprolite diggers, but artificial fertilisers made this uneconomic – according to the *VCH* particularly areas with no nearby railway station.[92] When considering the highest figures were only a fraction of a percentage, railways played little direct overall role in this sector in the period, the later history suggesting any effects occurring post-1901.

15) Retail/Distribution:

This sector slowly increased, becoming more prevalent by 1901. The raw material basis of the coding system masks some retailers under other sectors; this retail sector thus only

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[89] Ibid; p.324; Johnson, *Industrial Archaeology*, p.142; Rannard, *Watford Paper and Printing*, p.3; R. Leleux, *A Regional History of the Railways of Great Britain, Volume 9 The East Midlands* (Newton Abbot, 1976), p.32.
[90] Parishes: Leighton Buzzard, *A History of the County of Bedford: Volume 3* (1912), pp. 399-417; http://www.thesandmuseum.org/sites/presentPits2.html
[91] TNA RAIL 1167/140 - Agreement between the LNWR and Leighton Buzzard Sand Co Ltd, 1897; http://www.buzzrail.co.uk/history.html
[92] *A History of the County of Bedford: Volume 2* (1908), p.117.

including non-manufacturing vendors. Nonetheless, the rankings indicate that it did not rise in significance as much as would be expected. Hertfordshire's retail sector quickly gained the largest percentage and increase in ranking (Table 7C), indicating greater urbanisation than in Buckinghamshire where the sector's rank remained static. But while the aforementioned reasoning of Hertfordshire having much of its railway system finished still holds, Bedfordshire and Buckinghamshire also had some lines, importantly, to their main urban centres.

The less-than-expected levels demonstrate that while the region was 'urbanising', it was still primarily rural and in no way fully 'urban'. Furthermore, while the data does not give a parish-by-parish breakdown, the more specialist retailers were likely concentrated in the larger towns.[93] With ever-improving rail access, more people were capable of cheaply and easily travelling to these bigger centres, or to London itself - impacting on less accessible non-railway settlements.[94] Therefore, the need for specialist retailers in smaller communities would have been much less, so the overall percentage would be lower. This tallies with Simmons' view that railways could lead to small markets collapsing as people could increasingly travel quickly to more important centres for shops and markets.[95] The retail trade thus polarised to more urban areas at the cost of particularly rural areas.

Failed markets in the *VCH* (Fig. 26, Chapter 5) give several examples, such as Rickmansworth. The branch line to Watford (1862) gave easy access to a much wider range of shops and a larger market, so fewer attended the Rickmansworth market, which failed before the coming of the Metropolitan Railway to the parish.[96] Demonstrating this was not just the case for markets, the Wolverton-Stony Stratford tram had advertisements for rail-accessible Northampton department stores on their carriages (Fig. 14).[97] Partially as a result, neither Wolverton nor Stony Stratford had these types of large shop. Conversely, the three lines in St Albans were an active factor in Samuel Ryder (of Ryder Cup fame) establishing his specialist seed business there in 1895.[98]

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[93] See Chapter 10.
[94] Freeman, *St Albans*, pp.210, 225, 253; Corbett, *St Albans*, p.78.
[95] Simmons, *Town and Country*, p.19; Dyos & Aldcroft, *British Transport*, p.197.
[96] Parishes: Rickmansworth, *A History of the County of Hertford: Volume 2* (1908), pp.371-386.
[97] http://www.mkheritage.co.uk/mkm/adverts.html
[98] Freeman, *St Albans*, p.218; Corbett, *St Albans*, p.117.

Fig. 14: Wolverton Tram with Northampton shop advertisements c.1903.

http://www.mkheritage.co.uk/mkm/tram-page.html

When considering retailing innkeepers and grocers as well, however, retail gains greater significance amongst the sectors. This reflects census limitations – the 'Goose Code' differentiates between retail and production while the census does not. So although the food and drink trades appeared substantial, as expected with a large population, and the retail sector less so, this is not so clear-cut when allowing for 'food retail', hence considered together. In moving perishables and goods from far afield, especially the case with exotic consumables such as tea, railways played a role in general and food retail. But arguably they were more significant in bringing in people – in this way they impacted more strongly on the success or failure of markets and provincial towns/commerce. On a similar point, the lack of an early drop in level, when stagecoach travel ended, suggests inns and taverns did not close en-mass, likely switching their primary business away from the coaching trade, hence the figures showing an increase in the actual number of innkeepers.[99]

16) Miscellaneous Occupations:

Primarily comprising general labourers, the specific work they undertook is unknown. However, it is generally accepted that the majority would have been in the main occupation of the county – here, agriculture.[100] For 1841-61 this sector increased substantially in all three counties; Hertfordshire quickest but decreasing below Buckinghamshire by 1861.

[99] Museum of St Albans. This did not occur just in these counties, for example Maidenhead in Oxfordshire: *Great British Railway Journeys* Series 3, Episode 6, Played 9/1/2012.
[100] Higgs, *Making Sense*, p.79.

There would have been many reasons for this, aside from agricultural demand, but the need for navvies, particularly with increasing mileage under construction, was a strong potential employment source.[101] That Hertfordshire's rate was greater but then diminished after 1851, when much of its lines were complete, supports this. Buckinghamshire at this point had numerous lines under construction, notably the Wycombe Railway and its extensions: right when its percentage was highest. Bedfordshire had the least lines; the figures again supporting this concept concerning navvies.

But this sector's results were by no means solely affected by the railways, being just one aspect of wider county development. Furthermore, railway construction was not uniform. Construction could take years prior to opening, thus affecting the data, and the work on it varied dramatically. Building viaducts, embankments, tunnels and cuttings – especially before heavy machinery – took vastly more manpower than simpler stretches of track, and as line construction was subdivided into independently-built sections contracted out, a county with many topographical issues would have had more employed than sections in other counties without these difficulties.[102] For example, there were more miles of the London & Birmingham Railway in Hertfordshire than Buckinghamshire, but the Wolverton Viaduct and embankment was one of the largest, most complex, and last, parts of the line built, requiring many more men.

The final point of note are the figures for 1891. Substantially higher in Hertfordshire and Buckinghamshire, it would be simple to credit it to the MetR and GCR main line constructions, especially as all of Bedfordshire's lines were by now completed. But while the GCR possibly accounts for some small part of this, it would be very little, especially considering the small mileage in the region. The MetR argument, furthermore, is flawed by its largest (and final) extension opening in 1892: much of the labouring work would have been completed by 1891, so unlikely to be retaining the high employment numbers previously needed.[103] It thus most probably is erroneous, and agriculture still remains the likeliest candidate for the main employment in this sector.

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[101] See Appendix II.
[102] TNA RAIL 1110/260 – London and Birmingham Railway – Reports (referred to throughout construction); TNA RAIL 384/163 – Contract LBR & Joseph Nowell, John William Nowell & Jonathan William Nowell (Leeds) ['For making parts of the Railway – commencing at the Wing Wall of the Bridge over the Brent and terminating on the south side of the bridge over the road from Watford to Bushey Heath.']
[103] F. Cockman, *The Railways of Buckinghamshire from the 1830's* (Aylesbury County Record Office, 1971), pp.94-6.

<u>Sector Summary</u>

The railways played a varying role in occupational changes and while some had more direct effects than others, the railways were mostly not an overwhelming dictator of change. Sometimes they were a key factor, mostly with small industry and building construction, also food retail, through their ability to cheaply transport goods from far afield. But there were other significant unrelated factors playing the greater role. Nonetheless, railways did have some effects, however small. For example, railways benefitted white-collar workers by allowing people to commute to work daily.

Each county revealed an exception, though. Hertfordshire had small areas, particularly Watford, undertake industrialised printing, while Bedford had heavy-engineering firms. The biggest and most direct exception is Wolverton in Buckinghamshire. Covered in greater detail as a case study, the results for the metal and wood sectors, along with some specific occupations, correlate with the history and development of the railway works and town.[104] While not the sole reason for the countywide results, that three separate sectors all fit the uncommon 'railway town's history is certainly noteworthy.

<u>Development in the Straw Sector</u>

The results show that the manufacture of straw plait and hats ('specialist industry') was one of the fastest-rising non-agricultural sectors.[105] Particularly famed from Luton, Bedfordshire showed the highest percentage in this sector (15% in 1901).[106] While primarily a female occupation, it is likely some listed elsewhere, such as those who worked the land, also worked in this sector.[107] Considering individual occupations, straw plaiting employed the most people within the sector c.1841-61, followed by straw hatting (Bedfordshire having 1,753 plaiters to 858 hatters in 1841). While the figures are merged for 1881-91, it shows a great decrease on earlier years (Bedfordshire, 23,058 in 1871 but 11,770 by 1891) - 1871 the

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[104] Locomotives 1845-67, carriages 1864-present. Jack, *Locomotives LNWR*, pp.32-4; D. Jenkinson, *LNWR Carriages – a Concise History* (York, 1978), p.8; B. West, *The Railwaymen - Wolverton* (Buckingham, 1987), p.75. See Chapters 8-11 and Appendix IV.
[105] Johnson, *Industrial Archaeology*, p.19.
[106] Simmons, *Town and Country*, pp.276-7.
[107] Higgs, *Making Sense*, p.78; Johnson, *Industrial Archaeology*, p.19; *Luton: Hat Industry 1750-2000* (Luton Museum Education Service), p.29.

peak before the local plait market collapsed under Chinese and Japanese plait imports.[108] By 1901 hatting had risen as the premier industry in Bedfordshire (around 10,623 hatters to only 948 plaiters), its percentage drawing level with the county's agricultural sector.[109]

Buckinghamshire and western Hertfordshire also concentrated on straw-work, referenced by S. Pepys in 1664, although Luton gradually overtook them, noted by Defoe as early as 1724.[110] While their overall numbers rose in 1841-61, they were markedly less than Bedfordshire, and plait remained substantially greater than hatting. By 1881, although still the largest part of the sector, Buckinghamshire's straw industry had collectively fallen to only 1,741 – barely half of the 1871 level (3,524). That in 1871 it had not only been stable but was actually the peak for all three counties demonstrates the sudden collapse of this side of the industry.[111] By 1891 there were only 542 straw workers (plait and hat combined). Decline continued through 1901, with only 289 workers, ten being straw hatters.

Hertfordshire, by comparison, also showed a similar decline in straw work, falling from 12,804 in 1871 to 7,882 workers in 1881. Plait was more dominant than straw hatting, as with Buckinghamshire, but by 1901 the numbers working in plait had fallen faster than straw hats (709 to 1,610). As this shows aspects of both Bedfordshire and Buckinghamshire's changes, Hertfordshire's geographical position between the two may account for this.

An agricultural by-product, straw-work was major in the counties but the rise of imports forced an employment changeover from plait to hats.[112] Buckinghamshire retained plait as its primary straw-work even after the other counties turned to hatting, suffering substantially worse through this.[113] Hertfordshire had some hat and bonnet-making, but was mainly concerned with plait prior to the market's collapse.[114] As with Buckinghamshire, Hertfordshire's plait initially served Bedfordshire's hat factories but ultimately declined

[108] Johnson, *Industrial Archaeology*, p.74.
[109] N. Goose, The Straw Plait and Hat Trades in Nineteenth-Century Hertfordshire, (ed.) N Goose, *Women's Work in Industrial England*, (Hatfield, 2007), p.100; http://www.english-heritage.org.uk/discover/people-and-places/womens-history/womenhatplaitluton/
[110] Johnson, *Industrial Archaeology*, pp.70, 73, 76; *A History of the County of Hertford: Volume 4* (1971), p.251; Goose & Short, *Historical Atlas*, pp.90-2.
[111] Goose, Straw Plait, *Women's Work*, p.100.
[112] *A History of the County of Bedford: Volume 2* (1908), p.121.
[113] Ibid; p.114.
[114] Freeman, *St Albans*, pp.180, 211-5; Corbett, *St Albans*, p.79.

towards the end of the period, albeit at a lesser rate than Buckinghamshire.[115] Therefore, Bedfordshire and to a lesser extent Hertfordshire thus had employment utilising the completed plait, so while the sector diminished with the end of locally-produced plait this alternate employment prevented its total failure.[116] Buckinghamshire, though, did not have this straw hatting 'safety-net', and fell to only a fraction of its previous ranking.

While the rise and fall of the industry does not directly parallel each year of rail development, several important correlations are present. The 1851 jump in Bedfordshire (to 17%) occurred three years after the opening of the Dunstable branch. While not yet connected to Luton, this still aided distribution - Simmons and the *VCH* noted the start of straw business transferring from Dunstable to Luton at this point.[117] The similar increase by 1861 (26%) occurred less than a year after the completion of the Great Northern (ex- Hertford, Luton & Dunstable Railway) branch line, and its prospectus actively referenced potential hatting business.[118] While the Luton-Dunstable section was completed in 1858, this would have only emphasised the effect of the Leighton-Dunstable branch, whereas once fully built it offered Luton access to two main lines to London and the north. The resultant increased market accessibility, encouraging the industry in Bedfordshire, likely led to increased demand and production of plait in the region as a whole – explaining the increases in Hertfordshire and Buckinghamshire as they supplied plait for Luton.

Thirdly, the completion of the Midland Railway main line directly through Luton in 1868 did *not* tally with a large increase in straw-work in 1871; it only rose by 1%. One could assume traffic transferred from the indirect GNR branch to the direct MR main line.[119] However, the modernising of GNR warehouses c.1900 shows goods traffic did not decrease; the MR on opening gained more through passengers rather than 'stealing' goods traffic, especially as many factories were located nearer the GNR line.[120] As MR finances show, this later changed in Luton with goods traffic growing over passengers (Fig. 54, Chapter 8) in clear

[115] MoStA.
[116] N. Goose, 'How Saucy did it Make the Poor? The Straw Plait and Hat Trades, Illegitimate Fertility and the Family in Nineteenth-Century Hertfordshire', *History*, Vol. 91, No. 304 (2006), p.531; Simmons, *Town and Country*, pp.276-7.
[117] Simmons, *Town and Country*, p.277; *A History of the County of Bedford: Volume 2* (1908), p.121.
[118] HALS DE/P/E498 – Prospectus for the Luton, Dunstable & Welwyn Junction Railway; Leleux, *Regional History*, Vol. 9, p.29.
[119] Leleux, *Regional History*, Vol. 9, p.30.
[120] G. Woodward, *The Hatfield, Luton & Dunstable Railway (and on to Leighton Buzzard)* (Usk, 1977), p.42; *Luton's Railways*, (Bedford: Shire Hall, 1973); G. Goslin, *The London Extension of the Midland Railway: the History of the St Pancras - Bedford Route* (Caernarfon, 1994), p.28.

competition.[121] So for the GNR to have remained stable throughout there must have been increasing localised rail goods transport – Luton hats.[122] But this was a delayed local effect at a point when Luton's straw-work was atypical and region-wide the sector was declining.

Finally, while the coming of the lines aided straw industry over time, the opening of the MR did *not* trigger the collapse of the industry either. This was c.1881; the MR opened in 1868 - the collapse thus occurred well after Bedfordshire had the last of its lines completed. During the Napoleonic Wars there were no straw imports available, and c.1815 high tariffs were placed on imports to protect home industry.[123] But as demand increased and transport improved, more was imported.[124] It was claimed in 1871 that railways benefited not just in transporting goods, but should there be a dearth of local straw it could be easily brought in, opening up the market.[125] This premonition quickly became fact: the 1875 invention of mechanised stitching massively increased output at precisely the point when tariffs were removed.[126] Local plaiters failed to keep up with demand so businesses turned to imports, finding them cheaper and of superior quality. While there was still some small-scale UK-US plait export, the home plait market was wrecked.[127] Therefore, the railways on their own did not lead to the collapse through an increase of cheap straw imports. Rather, the end of restrictive tariffs was a far greater issue than any early transport limitations. With railway infrastructure in place, though, once the tariffs were dropped it was capable of more rapidly bringing in overseas raw material, so undercutting that produced locally and thus being a factor in the occupational changeover within the sector.[128] By 1900 only 2% of Luton hats used English straw.[129]

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[121] TNA RAIL 491/672, RAIL 491/674, RAIL 491/675 - Midland Railway Company Records, Traffic and Expenses at Stations.
[122] See Chapter 9.
[123] Johnson, *Industrial Archaeology*, p.73; *A History of the County of Buckingham: Volume 2* (1908), p.113; *A History of the County of Bedford: Volume 2* (1908), p.121; *Luton: Hat Industry*, p.5.
[124] WPM.
[125] T. Austin, *The Straw Plaitting and Straw Hat and Bonnet Trade* (Luton, 1871), p.20; http://www.disused-stations.org.uk/l/luton_bute_street/
[126] *A History of the County of Bedford: Volume 2*, (1908), pp.121-2; *A History of the County of Hertford: Volume 4* (1971), p.256; *A History of the County of Buckingham: Volume 2* (1908), p.114; *Luton: Hat Industry*, p.6; D. Mills, *Rural Community History from Trade Directories* (Aldenham, 2001), p.28; WPM.
[127] *A History of the County of Bedford: Volume 2* (1908), p.122.
[128] Goslin, *London Extension*, p.28; *A History of the County of Bedford: Volume 2* (1908), p.121; Simmons, *Town and Country*, p.298.
[129] *Luton: Hat Industry*, p.7.

Fig. 15: GNR Hat Van No. 8913 at Doncaster, 2nd April 1913. The central text states '*To work between LUTON & KINGS CROSS with HAT TRAFFIC*'.

NRM photo ref. DON 28L.

But rail affected it not just by imports. The popularity and fashionable status of Luton hats was central to encouraging demand for straw hats, and railways enabled their wider distribution. This is emphatically demonstrated, along with the continued use of the GNR for it, by the provision at the end of the period of special trains for hats, and even the construction of vans solely for hat transport (Fig. 15).[130] Revealing its extent, the *VCH* noted the GNR carried 2-3,000 hat and bonnet cases a day.[131] Plainly 'market enlargement' was aided by railways, supporting Savage's broader historiography on rail benefits.[132] This popularity led to demand outweighing home plait production, so railways played a cyclical role with finished hat export fuelling imports.

Steam transport was a substantial factor in the speed with which straw plait declined, though not its initiator. In supporting hatting by quickly transporting materials and goods, railways protected that aspect of the straw industry in Bedfordshire while simultaneously damaging

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[130] NRM Roll No210, Drawing Number 1808, Office Code N, Date 27/5/1913, Bearing spring for Luton covered goods; P. Bunce, 'The Luton Hat Vans', *Journal of the Great Northern Railway Society*, No 114 (November 2000), pp.20-21; Simmons, *Town and Country*, p.277; *Luton's Railways*; Simmons, *Town and Country*, p.277.

[131] Woodward, *Hatfield, Luton & Dunstable,* p.42; *A History of the County of Bedford: Volume 2* (1908), p.122.

[132] Barker & Savage, *Transport*, p.68.

the local plait side.[133]   But this was unusual and not the case for the majority of the region. Railways thus did affect the region's main industry, in particular through facilitating supply and demand and the transporting of raw materials, workers and finished goods, so while far from 'industrial', the historiography pertaining to railways having a specific effect on industry is borne out.

Development in the Transport Sector

The most obvious railway occupational impacts were on the transport sector itself. Compared to most occupations this sector was particularly small – for most of the period barely 2% of the total employment. But by 1901 it had risen substantially; Buckinghamshire at its height accounting for 10%. Its ranking rose to one of the more significant sectors in each county (Tables 7A-C).   The figures (Table 8) unsurprisingly match the railway chronology exactly, but importantly shows similar early trends supporting the above observations.   These trends occurred slightly sooner, though, as jobs were created upon opening whereas effects on other occupations had a time lag.[134]

Table 8: Percentage of the total population employed in railway occupations, 1841-1901.

	BEDS	BUCKS	HERTS
1841	0.00	0.05	0.06
1851	0.53	0.60	1.20
1861	0.61	0.82	0.91
1871	0.94	1.05	1.27
1881	0.78	0.90	0.96
1891	1.92	2.29	2.23
1901	2.22	5.10	3.20

The sector results, however, were for those employed in *all* transports including messengers, not just railways, nor was everyone in railway construction included, such as navvies or many in Wolverton railway town. Therefore, it is vital to differentiate between railway and non-railway jobs.

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[133] F. Cockman, *The Railway Age in Bedfordshire*, Publications of the Bedfordshire Historical Record Society, 53 (Bedford, 1974), illustration 12 – hat boxes at Luton GNR Station.
[134] Fishlow, *American Railroads*, pp.205-6.

Initially, railway jobs were virtually non-existent. At this point there was only the LBR and no lines at all in Bedfordshire, allowing for Leighton Buzzard station in Linslade.[135] Bedfordshire had the least lines; its percentage increased as construction progressed, though at the lowest level. Buckinghamshire continually increased as well, having the largest amount of new railways (up to the 1899 GCR) and expansions to Wolverton Works, though as many were built after 1871 the less-than-expected rate tallies with lesser levels of construction.[136] Hertfordshire, gaining many principal lines by 1850, had the first early peak (1.2% in 1851) but for 1861 had a slight decrease in percentage. While construction had sharply diminished, the actual numbers (Table 9) show jobs were still increasing, therefore, this percentage decrease likely resulted from shifting ratios between occupation sectors. Exponential increases occurred c.1891-1901, tallying to the counties' railway developments. Considering that all of Bedfordshire's lines were opened by 1872, it is interesting that there was still a rising percentage. Hertfordshire gained only a few extra lines, but also rose substantially. Buckinghamshire gained not only through the MetR and GCR by 1901 but also at Wolverton, peaking at over 5% - 100 times its 1841 level.[137]

Table 9: Actual numbers of those employed in railway occupations, 1841-1901.

	BEDS	BUCKS	HERTS
1841	1	26	37
1851	250	310	694
1861	504	634	800
1871	820	822	1,183
1881	1,055	1,220	1,695
1891	1,520	1,679	2,124
1901	1,763	4,414	3,617

Extra clarity is found when turning to the actual numbers employed (Table 9). Having the largest mileage of the region's earliest railway (the LBR), Hertfordshire gained the first substantial number of railway personnel (694 in 1851). As the LBR's original workforce (all those by 1841) in Hertfordshire was only 37, were this amount duplicated per line built by 1851 it would not match the actual total (694). Furthermore, as this massive rise occurred after the Railway Regulation Act (1844) enforcing 'Parliamentary Trains', the formerly low numbers support the historiography of 'terminus-terminus' operation.[138] Surmising that the

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[135] See Appendix II.
[136] Cockman, *Buckinghamshire*, p.59.
[137] C. Awdry, *Encyclopaedia of British Railway Companies* (Frome, 1990), p.206.
[138] See Appendix I.

earlier business practice of primarily intercity traffic often ignored intermediate locations, increasing competition and other influences such as the Railway Regulation Act led to falling revenue.[139] Consequently, a much broader service was provided to rebuild profits, increasing the interaction of railways with these intermediate connections, thus expanding their potential effects.[140]

Railway Occupation Changes in the Later Period

By this mid-point with the Railway Regulation Act, the railway's business strategy moved to trade along the entire length of their lines. Along with railways having more of an effect on the regions they traversed than before, this also meant more were directly employed. As Buckinghamshire and Bedfordshire had more mileage constructed, their occupation numbers rose to meet Hertfordshire's. Although the number of railway occupations in Hertfordshire was still increasing (800 by 1861), it had slowed slightly; fewer lines being opened at this stage and many necessary jobs filled. As the 1881 percentage figures are suspect, the drop in percentage is anomalous, not tallying with the increasing actual numbers - all three counties doubling in actual numbers and percentage for 1871-91. So as with Hertfordshire in 1861, the decrease is most likely due to either error or shifting ratios within each county, rather than any active dismissals.

Finally, job numbers rose dramatically for 1891-1901 – in Bedfordshire by 243, Hertfordshire by 1,494 and Buckinghamshire by 2,730. While there was some reshuffling in the census - 1891 listing only 20 transport occupations but 35 by 1901 - many occupations categorised the same rose by large numbers when logically, due to the new subdivisions, they should have fallen. For example, Hertfordshire's 'railway officials and clerks' in 1891 numbered 504, but under the same heading numbered 1,189 by 1901. There were not many new stations opened on previously-completed lines, nor for Bedfordshire or Hertfordshire many entirely-new lines either. This increase in part was thus due to the rising acceptance of rail travel. As more people and businesses turned to rail, more trains were operated more frequently, companies

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[139] Casson, *First Railway System*, p.17; M. Casson, *The Determinants of Local Population Growth: A Study of Oxfordshire in the Nineteenth Century*, EHS Annual Conference 2011, p.19; Simmons, *Town and Country*, pp.312, 324; Simmons, *Victorian Railway*, p.324; Dyos & Aldcroft, *British Transport*, p.151.
[140] Gourvish, *Railways Economy*, p.27; Casson, *First Railway System*, pp.17, 317, 323-4; Dyos & Aldcroft, *British Transport*, p.150; P. Richards & B. Simpson, *A History of the London and Birmingham Railway Volume 1* (Whitney, 2004), p.36; Simmons, *Victorian Railway*, p.324; Casson, O*xfordshire*, p.17.

quadrupled lines and ran larger trains. Therefore, the number of staff had to increase to meet demand, aside from those physically building the upgrades.[141]

Although overtaken in job numbers in 1901, Hertfordshire remained the county with the most junctions and connections, explaining the higher numbers of (non-construction) staff, as demonstrated pre-1901 in Table 9. While both percentages and actual numbers appear small compared to other sectors, such as agriculture or straw-work, only a comparatively finite number were needed in this sector, unlike the others. Equally, the percentage of parishes with railways crossing them in Hertfordshire was only 37%, Bedfordshire and Buckinghamshire being only slightly higher (considering their greater size) at 38%.

The 1901 railway increase in Buckinghamshire

The sudden jump in actual figures and percentage of Buckinghamshire railway occupations in 1901 had three likely origins. Firstly, the counties all experienced notable growth at this point. Secondly, much was probably due to the MetR and GCR being built, with most of their mileage in Buckinghamshire. But while the individual occupations all rise, one small recategorisation appears to explain the majority of the 2,730-person increase. Many stock-builders listed themselves under various sectors, such as wood ('cabinet makers'), rather than transport.[142] But in 1881 and 1901, 'railway - coach, waggon makers' was specifically included – listing 2,031 in 1901. This figure does not account for all Works' workers in any event.[143] So this recategorisation, along with continual Works expansion, new lines and general national railway growth explains the sudden rise. Considering railway workers, not all of Wolverton's male railway-based population were in construction. Wolverton MPD originally bridged the northern and southern divisions of the LNWR until eventually closed in 1874.[144] With all early trains having their engines changed over here, this in itself would artificially elevate Buckinghamshire's numbers as engine crews increased, especially considering the rising number of trains.[145]

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[141] Simmons, *Victorian Railway*, p.89; Robbins, *Railway Age*, p.42; P. Bagwell, P. Lyth, *Transport in Britain from Canal Lock to Gridlock* (London, 2002), p.54.
[142] Turton, 'Planning', *The Town Planning Review*, p.102.
[143] See Chapter 9 and Appendix IV.
[144] H. Jack, *The L.N.W.R Bloomers Wolverton's 7ft Singles* (Crewe, 1987), p.34.
[145] West, *Railwaymen*, p.14.

Railway versus Non-Railway Occupations

So what of non-railway transport occupations? Considering each county separately, they all show broader historiographical trends.[146] The format for coach owners changed in the census across the period so a detailed chronological study cannot be accurately made. Additionally, as Higgs emphasised, the reclassification of rural 'carmen, carriers, carters and draymen' (c.1891) partially explains the final jump in non-railway transport occupations - there was not such a sudden rise in road travel employment as intimated, although other rising road-based jobs insinuate the historiography is still correct.[147]

More problematically, the presence of 'messenger, porter, watchman' artificially elevated non-railway transport levels. Generally not using propelled modes of transport, the addition of this occupation as dictated in the 'Goose Code' affected the ratio between the railways and roads/canals, masking their relation so reducing overall accuracy. Therefore, the following tables omit this occupation to give clearer results. For completeness, the number of messengers slowly increased for each county before suddenly accelerating after 1881.

Hertfordshire (Tables 10A-B), already having the LBR in 1841, started with some railway workers, but the vast majority were non-rail. In 1851, while non-rail were still prevalent, railway occupations had already risen dramatically. By 1881 railway occupations have overtaken non-rail, peaking at 60%, but subsequently dipped by 24% in 1891 before recovering slightly.

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[146] Barker & Savage, *Transport*, pp.63, 123; Dyos & Aldcroft, *British Transport*, pp.69, 222; Simmons, *Victorian Railway*, p.147; Leleux, *Regional History*, Vol. 9, p.31; M. Singleton, *The Stevenage Biggleswade Turnpike Trust: Traffic Flows, Management and Demise 1811-1868* (Kings College London, 2008), p.41; M. March, *The Sparrow Hearnes Turnpike* (Wall Hall College, 1969), pp.17, 26; Barker & Savage, *Transport*, p.123.
[147] Higgs, *Clearer Sense*, pp.163-4.

Table 10A: Hertfordshire railway and non-railway employment as a percentage of total
Transport Occupations (excluding Messengers), 1841-1901.

	RAIL	NON-RAIL	TOTAL
1841	5	95	100%
1851	42	58	100%
1861	40	60	100%
1871	49	51	100%
1881	60	40	100%
1891	36	64	100%
1901	41	59	100%

Table 10B: Numbers employed in Hertfordshire railway and non-railway occupations
(excluding Messengers), 1841-1901.

	RAIL	NON-RAIL	TOTAL
1841	37	769	806
1851	694	949	1,643
1861	800	1,206	2,006
1871	1,183	1,214	2,397
1881	1,695	1,133	2,828
1891	2,124	3,765	5,889
1901	3,617	5,251	8,868

Bedfordshire (Tables 11A-B) commenced similarly but with no railways in 1841. By 1851 (having 3) railway jobs rose, though not as greatly as Hertfordshire. Continuing to rise at a slower pace, by 1861 there were more rail than non-railway employed in the sector. Still rising through 1881 (peaking at 74%), there was a sudden change, with increasing non-rail jobs overtaking from 1891 onwards.

Table 11A: Bedfordshire railway and non-railway employment as a percentage of total
Transport Occupations (excluding Messengers), 1841-1901.

	RAIL	NON-RAIL	TOTAL
1841	0	100	100%
1851	39	61	100%
1861	54	46	100%
1871	68	32	100%
1881	74	26	100%
1891	47	53	100%
1901	40	60	100%

Table 11B: Numbers employed in Bedfordshire railway and non-railway occupations (excluding Messengers), 1841-1901.

	RAIL	NON-RAIL	TOTAL
1841	1	294	295
1851	250	395	645
1861	504	425	929
1871	820	379	1,199
1881	1,055	378	1,433
1891	1,520	1,724	3,244
1901	1,763	2,598	4,361

Completing with Buckinghamshire (Tables 12A-B), in 1841 it also had the LBR, so opening with 5% and quickly rising. Overtaking non-rail in 1871, it peaked in 1881 (65%), dropping under non-rail temporarily in 1891, before recovering slightly – the only county with railway occupations outweighing non-railway by 1901.

Table 12A: Buckinghamshire railway and non-railway employment as a percentage of total Transport Occupations (excluding Messengers), 1841-1901.

	RAIL	NON-RAIL	TOTAL
1841	5	95	100%
1851	38	62	100%
1861	43	57	100%
1871	57	43	100%
1881	65	35	100%
1891	43	57	100%
1901	55	45	100%

Table 12B: Numbers employed in Buckinghamshire railway and non-railway occupations (excluding Messengers), 1841-1901.

	RAIL	NON-RAIL	TOTAL
1841	26	517	543
1851	310	505	815
1861	634	829	1,463
1871	822	629	1,451
1881	1,220	658	1,878
1891	1,679	2,260	3,939
1901	4,414	3,618	8,032

Railway and Non-Rail Occupation Comparison

There was a general trend across the counties, but with some differences. Early-on, Buckinghamshire's railway occupation percentage was level with Hertfordshire, probably due to Wolverton Works, while Bedfordshire was clearly lower. While all developed in a

similar manner, peaking in percentage in 1881, Hertfordshire became the lowest, having had many of its lines long-completed. The actual numbers show Buckinghamshire had more railway jobs than Bedfordshire in 1881, but the number of non-rail occupations in Bedfordshire was markedly lower than the other counties, skewing the percentages slightly.

While most other sectors saw a decrease around 1871, railways increased in the counties. The 1881-1901 period, however, showed very different regional changes. Hertfordshire's non-rail occupations rose by 1901 (41% versus 59%), mirrored by Bedfordshire (40% versus 60%). Buckinghamshire exhibited a slight decline in 1891, but afterwards railway jobs expanded far greater than the other counties – railway occupations remaining the main part of the sector. Hertfordshire and Buckinghamshire's line mileage was similar, unlike the lesser amounts in Bedfordshire, so their rail occupations should have been more alike, as was initially the case. But the variation by 1901 supports the significance of Wolverton Works on the countywide transport sector results.[148] The population influx, including the need for New Bradwell, highlights the growing jobs available.[149]

The historiography and local railway chronology presents reasons for these distinct patterns. While the initial 1841-51 drop in non-rail occupations was most likely the result of changing ratios between sectors as more jobs were created, road transport - specifically stagecoaches - suffered a dramatic decline as many became bankrupt.[150] This explains the prolonged decline up to 1881. For Hertfordshire and Buckinghamshire, however, in the early period some road transport would still have been necessary to areas with no railways, such as to Bedfordshire, hence less of an immediate impact for 1841-51 (non-rail at 95%). For example, a coach service from Luton to Watford Station/Junction lasted until 1858.[151] Bedfordshire, on gaining its first railways, did not have this issue as the other counties already had many lines completed. This is demonstrated by the immediate fall of Bedfordshire's non-rail occupations to 61% by 1851, unlike the others in their equivalent timeframe.

Hertfordshire's decrease in railway occupations c.1861, although small, is more puzzling. As the number of actual railway jobs very slightly increased, this lowered percentage can be

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[148] See Chapters 8-11.
[149] F. Markham, *History of Milton Keynes and District* Volume 2 (Luton, 1986), pp.90-1. See Chapter 11 and Appendix IV.
[150] Bagwell & Lyth, G*ridlock*, pp.43, 54; Johnson, *Industrial Archaeology*, pp.23, 109; Singleton, *Stevenage Turnpike*, pp.4-5.
[151] *The Mossman Collection: Horse-Drawn Transport* (Luton), p.19.

explained through a slight rise in non-rail occupations - found in all three counties. Put simply, Hertfordshire gained the majority of its railway system well before the other counties. Therefore, it had its long-term effects occur before the others. The beginning of a rise in non-railway occupations can thus be seen for Hertfordshire in 1861, but for Bedfordshire and Buckinghamshire only after their systems were manly complete – first noticeable c.1891. As for Hertfordshire's lean towards railways again in 1881; the opening of the 1868 MR main line and several others in the 1860s and 1870s created new railway-based jobs offsetting the slower rise of non-railway occupations.[152] The reason for such a long-term non-rail increase is plain – stations often some distance outside the settlements they served, short-distance travel rose to serve them, as the historiography claimed, replacing the erstwhile long-distance stagecoaches.[153] This is further supported by the slow increase, rather than decline, of saddlers, as there was still a need for horse-based transport.[154]

Transport Sector Summary

While initially only very minor, the transport sector rose in importance in the counties, though, with great internal variation. By 1901 transport was Bedfordshire's fifth largest sector (Table 7A), with agriculture and the straw, domestic service and textile trades above it. Hertfordshire also had agriculture and domestic service dominating, with transport as the third largest sector. This was followed by the professional sector, arguably brought in by the railways. In Buckinghamshire, the transport sector was third only to agriculture and domestic service. But as the data for the domestic service sector was erroneous by 1901 it can be omitted - raising the ranking of the transport sector in each county. So as realistically only secondary to agriculture in Buckinghamshire, this not only correlates with the largest mileage by 1901, and Wolverton, but also emphasises the county as predominantly agricultural.

The changes in numbers of railway occupations across the period parallel the development chronology, right down to Hertfordshire having effects earlier than the others due to its earlier construction start and Buckinghamshire having a late boost due to its last major lines opening c.1899. The wider national historiography is further supported by the initially low numbers suddenly rising by 1851 with the decline of terminus-terminus railway trade, the

[152] L. Oppitz, *Lost Railways of the Chilterns* (Newbury, 1991), pp.126-32.
[153] Simmons, *Victorian Railway*, p.221; Barker & Savage, *Transport*, p123.
[154] Rural Trades Gallery - Stockwood Discovery Centre.

steady increase in staff thereafter as more trains were run and even the plummet followed by steady rise of non-rail occupations turning to short-distance travel.[155] While all three counties demonstrated these aspects, the variations between them directly affected the rates and timings of the changes outlined – the specific impacts on both railway and general transport occupations in the period were distinctive to each county.

Overall Summary

Although the data suggests each sector continually changed, most occupations were reasonably stable as the percentage differences were actually very small. County variations were present, most showing slight shifts in ratio between sectors, rather than the area being strictly one-occupation. Nonetheless, the region was distinctly rural, relying primarily on agriculture, although this diminished to a considerable extent by 1900. The main exception was the straw industry in Bedfordshire, which in itself experienced changes as plait gave way to hatting. While the industry was always at a lesser level in the other counties, and hatmaking did not overtake plait in Buckinghamshire, the change-over was partly due to railways giving access to cheaper imports - a negative regional effect. Conversely, railways allowed Luton hats to become more widely available, thus aiding the industry in the immediate vicinity.[156]

The changes in types of occupation, quite aside from any railway involvement, act as an indicator of urbanisation. The rise of the building, retail, professional occupations, specialist industry and transport sectors over others, such as wood or leather (Tables 7A-C), supports the claim that certain areas – almost certainly around the earlier market towns – saw increasing urbanisation and 'modernisation'. Quoting Wrigley, 'The absence of employment growth in agriculture proved no bar to employment gains elsewhere in the local rural communities.'[157] The inclusion of the transport sector in this implies some cyclical action – improved transport aided urbanisation which in turn led to further improving transport. The professional sector, in conjunction with the building sector, furthermore indicates the rise of commuting – again railways being a factor.

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[155] Casson, *First Railway System*, p.323.
[156] http://www.bbc.co.uk/ahistoryoftheworld/objects/HQur3W6ZQQ2YlO2Ikqityg
[157] Wrigley, 'Men on the Land', in Bonfield, Smith & Wrightson, *The World We Have Gained*, p.303.

That Hertfordshire and Bedfordshire saw more of this change than Buckinghamshire also supports the notion of London influence. Buckinghamshire ultimately exhibited the highest 1901 level of agricultural employment, Hertfordshire the least, while the building, retail and professional sectors were essentially the reverse. Bedfordshire had two major towns acting as 'hubs' and Hertfordshire, in addition to St Albans, was close to London. Buckinghamshire had neither 'hub' settlements nor London (bar the extreme south) and the occupation rankings and population data show that it was the least urbanised – its geographical position being key.[158]

Railways had greater effects on some occupations than others; often due to their ability to transport bulky raw materials and finished products quicker and cheaper, or conversely being able to bring the same goods in cheaper from afar.[159] In some cases railways had the potential knock-on effect of encouraging urbanisation – whether helping attract or expand industry, or people for commuting.[160] Both of these would have affected other occupational sectors such as retail - itself assisted by the ease of acquiring consumables and perishables - or building in a domino-effect. The word 'potential', however, is vital. Railways could indeed facilitate this pattern of effects, but could also lead to the opposite; the provision of a railway did not guarantee the occurrence of any of this, as many other factors played a direct role. For example, boosted trade at a market through accessibility by rail could equally and simultaneously initiate decline at another market as people travel further – and with people able to move to larger markets in the region easier, the failing ones could equally be without *or with* rail access. This was equally applicable for supply trades such as malt or plait where cheaper distant alternatives became increasingly available.[161] This indicates that the broader debate surrounding the applicability of 'social saving' analysis is all the more questionable when using small areas to theorise national actions – small-scale variation is patently too great to accurately create wide generalisations.[162]

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[158] See Chapter 6.
[159] *A History of the County of Buckingham: Volume 2* (1908), p.103; Johnson, *Industrial Monuments*, pp.20-1; B.J. Davey, *Ashwell 1830-1914: The Decline of a Village Community* (Dept Engl Loc Hist Occasional Papers, 3rd series no. 5), (Leicester, 1980), p.37.
[160] *Luton: Straw Hat*, p.5; Hughes, *Printing Watford*, p.25; Leleux, *Regional History*, Vol. 9, p.32; Rannard, *Watford Paper and Printing*, p.3.
[161] Brown, *Steeped in Tradition*, p.41; WPM.
[162] Gourvish, *Railways Economy*, pp.34-5; R. Church, *The Victorian Boom 1850-1875* (*Economic History Society*, 1975), p.31; P. O'Brien, *The New Economic History of the Railways* (London, 1977), p.23. See Chapter 1.

The existence of Wolverton, both Works and 'railway town', is a major exception in the region, skewing the results towards its own manufacturing where otherwise there would have been less need.[163] The rise of industrial firms in Bedford is equally unusual, with similar effects on the countywide results. In these cases the railways did directly impact, also to a lesser extent with some rising commuter areas, but these occurrences were not applicable for the majority of the area. The railways themselves created jobs and new occupations, and as they developed both in mileage and operations so these changed in type and extent. Competition with non-rail transport, aside from their own internal inter-company competition, also affected local occupations with many of these former jobs restructuring from long to short-distance journeys.

Railways affected different occupations in different ways, varying between counties due to many local variables. They did not initiate occupational change and while they undoubtedly had an overall stimulus effect, this was very subtle and general across the sectors, though increasing slightly towards 1901 with rail improvements resulting from growing inter-company competition. Equally, there were other major factors with no railway association, notably the 1870s agricultural decline.[164] When considering the sectors individually, just because one was directly impacted in one county did not preclude a lesser, or even no effect on the same in another. Railways undeniably played some role in occupational development, both positive and negative.[165] But for this rural agricultural region, they were for the most part not the central primary factor in occupational development, but one of many shaping the employment of the region.

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[163] See Chapters 8-11 and Appendix IV.
[164] Johnson, *Industrial Archaeology*, p.24.
[165] Wrigley, *Early Censuses*, pp.29-30.

Chapter 5: Land Use and the Railways

The occupational analysis demonstrated the region's intrinsically rural agricultural structure, but with other types of employment expanding.[1] However, its countywide nature failed to give any geographic distribution. As railways turned from terminus-terminus trade to better serving communities along their lines, the land use of settlements served rose in importance. Serving local needs was paramount to railway development, while in some cases the provision of a railway helped change the land use function of its immediate surroundings.[2] Similarly, the ownership of land on intended routes was vital from the outset, especially before the mania periods when the technology was viewed with alarm and suspicion.[3] The routes built, and every knock-on effect thereafter, depended on whether landowners supported the proposals or blocked them. Similarly, the topography of the region dictated where diversions or large engineering projects were necessary. Therefore, to understand their positioning and geographic impacts, land use is a vital factor.[4]

Methodology

The *Victoria County History* provides detailed descriptions of each parish. References to industry ranged from comparatively major straw plait or machinery to small-scale lace-making supplementing main agricultural occupation of agriculture, emphasising that the region has never been 'industrial'.[5] Considering limitations, the most fundamental is the omission of some parishes in the *VCH*; here, only on Hertfordshire's eastern border. The data recorded is also subjective to its writer and while mostly complete does possess further gaps. Furthermore, where industry was stated as having died out it did not necessarily say when, so some may have declined before the advent of the railways.

The 1940-50s *Land of Britain* surveys, despite their late date, are invaluable.[6] Ranging from topography and soil to crop/livestock and industry, their main limitation is that while giving

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[1] See Chapter 4.

[2] J. Simmons, *The Railway in Town and Country 1830-1914* (Newton Abbot, 1986), p.171.

[3] J. Simmons, *The Victorian Railway* (London, 1991), pp.16-17.

[4] R. Schwartz, I. Gregory & T. Thévenin, 'Spatial History: Railways, Uneven Development, and Population Change in France and Great Britain, 1850-1914', *Journal of Interdisciplinary History*, Volume 42, Number 1 (Summer 2011), p.54.

[5] Parishes: Wigginton, *A History of the County of Hertford: Volume 2* (1908), pp.314-317.

[6] C. Fitchett, Part 55 Bedfordshire, in L. Dudley Stamp, *The Land of Britain: Land Utilisation Survey of Britain* (1943); D. Fryer, Part 54 Buckinghamshire, in L. Dudley Stamp, *The Land of Britain: The Report of the Land*

data back to 1866, they were designed to outline 1950s land use, not Victorian, so some discrepancies over the interim period exist.

To understand land ownership in the region, data from J. Wilson, *Imperial Gazetteer of England and Wales* (1870-72) and J. Bartholomew, *Gazetteer of the British Isles* (1887) was collated.[7] This should be used cautiously. As with the *VCH*, omissions or errors in the original texts prevent absolute precision. Topography is similarly vital for railway route planning, so must be considered alongside human reasons for line deviations.

Topography

Considering the region's topography (Figs. 16-18), the most notable aspect are the Chiltern Hills stretching across south Buckinghamshire and Bedfordshire into north Hertfordshire. There is some undulating terrain to the north of Buckinghamshire and Bedfordshire, but at its tallest this is only half the height of the Chilterns.[8] In terms of railway construction, the lines utilised valleys cutting through the Chilterns, especially in Buckinghamshire, and embankments and viaducts were common to bridge low-lying areas, notably in Wolverton, Bushey and Welwyn. Additionally some tunnels were found necessary, such as at Watford and Linslade. These, and the cost of such engineering projects, affected the course of the railways, creating some of the apparent 'meanders' in their routes, as much as landowner access issues.

The topography of the Chilterns directly impacted on agriculture. As outlined by the *Land of Britain* Surveys (Fig. 19), each county exhibited a distinct pattern of arable, pasture and mixed farming, correlating with soil (Fig. 20) and topography. The Surveys also noted major wooded and urban areas.

Utilisation Survey of Britain (London, 1942); E. Doubleday, *Hertfordshire: Survey Report and Analysis of County Development Plan, 1951* (Hertford, 1951).
[7] D. Mills, *Rural Community History from Trade Directories* (Aldenham, 2001), pp.90-1; www.visionofbritain.org.uk
[8] Fryer, *Buckinghamshire Survey*, p.47.

Fig. 16: Relief and topography of Buckinghamshire.

Contours at intervals
of 100 feet
Land over 800 feet
" " 600 "
" " 400 "

Miles
0   10

D. Fryer, Part 54 Buckinghamshire, in L. Dudley Stamp, *The Land of Britain: The Report of the Land Utilisation Survey of Britain* (London, 1942), p.47.

Fig. 17: Relief and topography of Bedfordshire.
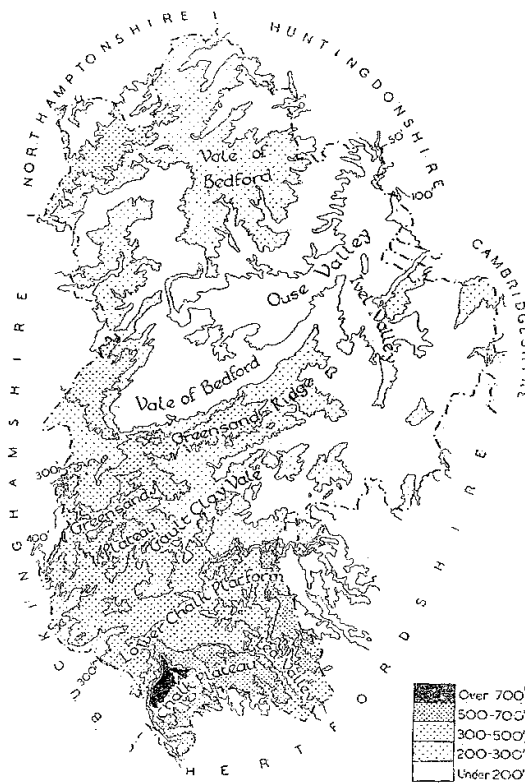
C. Fitchett, Part 55 Bedfordshire, in L. Dudley Stamp, *The Land of Britain: Land Utilisation Survey of Britain* (1943), p.108.

Fig. 18: Relief and topography of Hertfordshire.
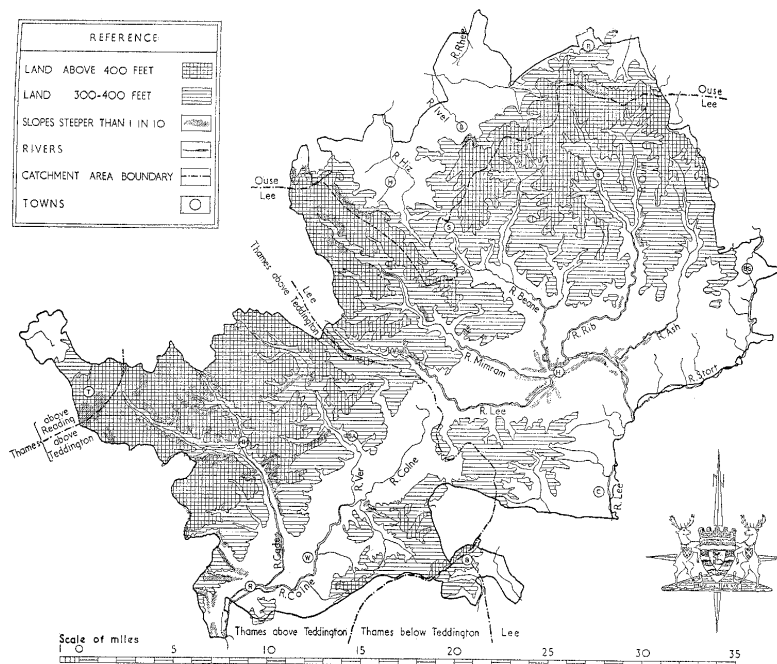
E. Doubleday, *Hertfordshire: Survey Report and Analysis of County Development Plan, 1951* (Hertford, 1951), p.24.

Fig. 19: Land use in the region. Note: the line of the Chilterns is apparent in the expanse of 'mixed' agriculture running west-east through all three counties. The Hertfordshire Survey did not include urban data (such as Watford).
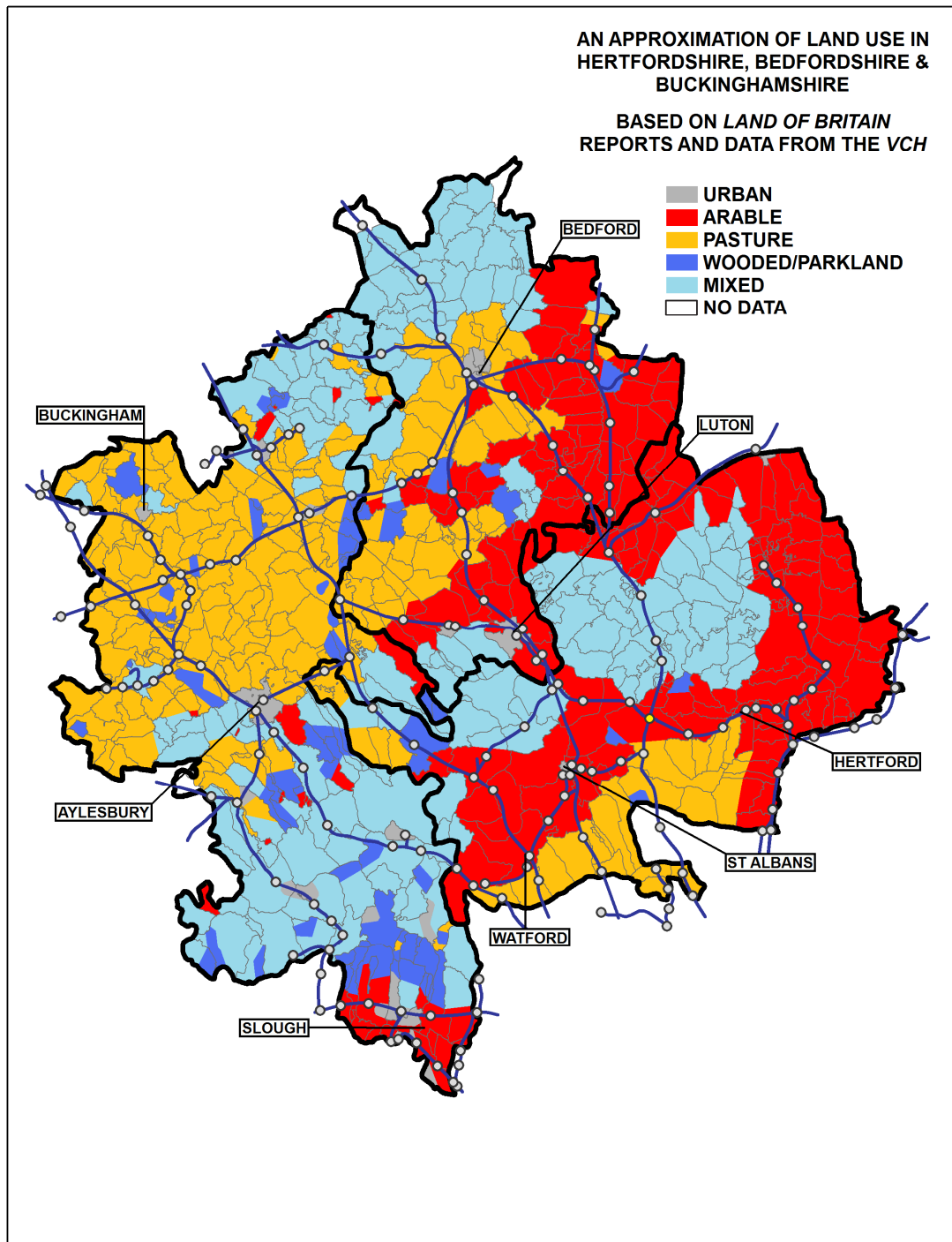
Based on *The Land of Britain: Land Utilisation Survey of Britain* and the *VCH*.

Fig. 20: Soil types in the region.

Legend:
- LIGHT (SANDY) TO MEDIUM (SANDY)
- MEDIUM TO LIGHT (SILTY)
- MEDIUM (SILTY) TO LIGHT (SILTY)
- MEDIUM (SILTY) TO LIGHT (SILTY) TO HEAVY
- HEAVY TO MEDIUM
- ALL
- N/A

SOIL MAP OF BEDFORDSHIRE, BUCKINGHAMSHIRE & HERTFORDSHIRE.

BEDFORD
BUCKINGHAM
LUTON
AYLESBURY
HERTFORD
ST ALBANS
WATFORD
SLOUGH

PRODUCED USING DATA FROM THE
NATURAL ENVIRONMENTAL RESEARCH COUNCIL SOIL PORTAL:
HTTP://WWW.BGS.AC.UK/NERCSOILPORTAL/MAPS.HTML

Based on the Natural Environmental Research Council Soil Portal:
http://www.bgs.ac.uk/nercsoilportal/maps.html

Land Use – Rural and Agriculture

Hertfordshire experienced the greatest proportion of arable farming, occupying much of the eastern border and southern area. Bedfordshire continued this geographic spread, mostly to the east; including the 'mixed area' having 46.5% of the total land under cultivation.[9] Buckinghamshire showed the least arable working, only 18% of the total being cultivated (including 'mixed'), in the south and extreme north neighbouring Bedfordshire.[10] The extreme south was the only pure-arable part of the county.[11]

'Mixed' farming was found in two main regions – the Vale of Bedford and the Chilterns. With poorer soils at higher altitudes, the Buckinghamshire Survey noted the increase of mixed farming in the Chilterns in order to turn any profit from the land.[12] The elevation of north Bedfordshire's 'mixed' area logically had similar issues.

Pasture farming, requiring fewer workers and large tracts of otherwise poor land, was ideal for elevated areas. Pasture occupied two main areas: the extreme south of Hertfordshire and most of northern Buckinghamshire, extending into mid-eastern Bedfordshire. It accounted for just over 50% of Bedfordshire's total cultivated land, essentially consisting Leighton Buzzard, Woburn and parts of Ampthill and Bedford registration districts, but Buckinghamshire was especially known for it, constituting 81% of total agricultural land, mostly dairy cattle and sheep.[13]

Woodland was of lesser importance as an agricultural form, certainly in Hertfordshire. With the most substantial area in Eton registration district, the most well-known use in the region was chair-making, particularly around Wycombe. Increasing in number fivefold from 1830 to 1877, the factories avoided using railways until the twentieth century on grounds of cost, open trucks susceptible to weather and theft, and damage from the minimal suspension.[14]

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[9] Fitchett, *Bedfordshire Survey*, p.121.
[10] Fryer, *Buckinghamshire Survey*, p.58.
[11] Ibid; p.69.
[12] Ibid; p.74.
[13] Ibid; pp.60, 80; Fitchett, *Bedfordshire Survey*, p.139; Wycombe Museum. See Appendix VI.
[14] Marc Meltonville, Historic Royal Palaces – Hampton Court; http://www.wycombe.gov.uk/council-services/leisure-and-culture/local-history/furniture-making-in-high-wycombe.aspx

Therefore, aside from potential cases of railways planting trees to mask lines from aristocratic houses, woodland was essentially unaffected by them.[15]

The main agricultural forms had distinct locations, closely correlating to topography and soil (Fig. 20). The only way this affected the railways was in construction. For example, Stephenson reported that the embankment near Bushey suffered from subsidence due to the 'unsoundness of its substratum in the valley of the Colne'.[16] Unusually, a side effect of the necessary railway cuttings and tunnels was large-scale excavation, so railways actually aided the understanding of geology and soils in the areas they traversed.[17]

Railways and Agricultural Land Use

Agriculture predated the railways, and there was no major change in what was grown and where with their advent, despite some historiographical claims to the contrary.[18] Conversely, railways gained from the region's agriculture, transporting important agricultural goods and opening wider markets. There was milk from Buckinghamshire to London, reducing the number of cattle in the capital.[19] Secondly were the famous Aylesbury Ducks. Decreasing by 1900, they were still a major source of employment and trade; the Survey noting of the study period: 'So important was the duck traffic that the railway companies provided special facilities and freight rates for conveying the ducks to London'.[20] However, limited demand kept the trade localised and low profits meant it was often a supplementary occupation. The trade thus appears more beneficial to the railways as a revenue source than the railways to potentially increasing the duck trade.

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[15] Simmons, *Victorian Railway*, p.20.
[16] TNA RAIL 1110/260 – London & Birmingham Railway – Report for 17/2/1838; P. Richards & B. Simpson, *A History of the London and Birmingham Railway Volume 1* (Witney, 2004), p.18.
[17] NRM 1977-737/2 - Isambard Kingdom Brunel's collection of geological specimens; C. Read, 'Report on the Farming of Buckinghamshire', *The Journal of the Royal Agricultural Society of England*, Volume 16 (1856).
[18] Schwartz, Gregory & Thévenin, Spatial History, *Journal of Interdisciplinary History*, p.71.
[19] Ibid; p.73; K. Bailey, *Aylesbury: A County Town and its Station 1877-1905 – An Examination of the Goods Statistics of the Aylesbury Branch of the London & North Western Railway and the Characteristics of Railwaymen from the Censuses 1881-1901* (Buckingham, 2008), p.5; J. Moore, *The Impact of Agricultural Depression and Land Ownership Change on the County of Hertfordshire, c.1870-1914* (University of Hertfordshire, 2010), pp.12, 20.
[20] Fryer, *Buckinghamshire Survey*, p.94.

The only case where railways may well have actively affected agriculture, so worthy of separate consideration, are market gardens - a feature dominant in counties around London.[21] Only beginning in the period (Table 13) and yet to rise to the levels noted in the 1950s Surveys, the ability to send fresh perishables to London quickly by rail undoubtedly had a great impact, and the majority were located near railway lines.[22] For example, the southern tip of Buckinghamshire, shown as pure arable (Fig. 19), was noted as almost entirely made up of market gardens. This was by the GWR main line and the two Eton branches – the Survey using this line as a measuring point for describing the position of such arable work.[23] Interestingly, the Survey openly credited the GWR with starting the general development of south Buckinghamshire.[24]

Table 13: Market garden acreages in Buckinghamshire and Bedfordshire.

	Bedfordshire	Buckinghamshire
1872	891	164
1877	539	
1882	755	
1886		503
1887	3,593	
1892	6,828	
1897		838
1903	6,980	

From *The Land of Britain: Land Utilisation Survey of Britain.*

Bedfordshire also developed market gardens, at a much greater rate (Table 13), though far from the vast acreages of the 1930s. Specialising almost wholly in carrots, most were concentrated around Biggleswade and Sandy, both with railways.[25] Commercial market gardening had obvious links with soil quality, but here the railways played a dual role, not only transporting produce out but bringing in manure fertilizer from London stables.[26]

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[21] Simmons, *Town and Country,* p.48; E. Wrigley, 'Men on the Land and Men in the Countryside: Employment in Agriculture in Early-Nineteenth Century England', in L. Bonfield, R. Smith & K. Wrightson (eds.), *The World We Have Gained: Histories of Population and Social Structure* (Oxford, 1986), p.315; *A History of the County of Buckingham: Volume 2* (1908), p.106.

[22] TNA RAIL 1189/134 – GNR exchange of land and siding agreement; F Sander & Company (importers and growers of orchids, St Albans), 1890.

[23] Fryer, *Buckinghamshire Survey*, p.69.

[24] Ibid; p.74.

[25] L. Oppitz, *Lost Railways of the Chilterns* (Newbury, 1991), p.144; B. Simpson, *The Brill Tramway* (Oxford, 1985), p.7; B. Gwynne, 'Shannon: Steaming through History', *Steam Railway*, No. 391 (August 2011), pp.72-3; http://www.disused-stations.org.uk/p/potton/ See Chapter 8 and Appendix II.

[26] Fitchett, *Bedfordshire Survey*, p.135; Biggleswade History Society; R. Taylor & B. Anderson, *The Hatfield & St Albans Branch* (Oxford, 1988), p.51.

Despite no references, Hertfordshire possessed similar market gardening, only generally smaller-scale. Mostly to the east around Cheshunt, the *VCH* nonetheless described them as 'of considerable importance'.[27] Smallholdings in the lower Lea Valley led to the rise of glasshouse market gardening by 1883, and the nearby provision of three GER lines lends weight to railways being a factor through providing wider market access.[28] In the 1870s Scottish potato farming was introduced around Hatfield, especially Smallford village. Served by the Hatfield & St Albans Railway (hereafter H&StAR), the line gained several sidings specifically to cope with increasing demand for manure and outgoing produce from the rising number of acres being worked.[29] Several villages around Hertfordshire, especially in the Colne valley, also had ponds for watercress cultivation.[30] A popular Victorian delicacy, it was imported fresh to London by rail from across the country, particularly the Home Counties, by the hundreds of tons - over half of London's watercress came from Hertfordshire.[31] Stations and London-bound Junctions, therefore, probably saw some of this trade, such as between Rickmansworth and Watford Junction.[32]

The topography of the region, especially the Chilterns, had a direct impact on both agricultural land use and railway routes. While arable and pasture were effectively equal in Hertfordshire and Bedfordshire, pasture was prevalent in Buckinghamshire; positioned according to soil type and quality. Aside from construction difficulties, this had no direct effect on the railways, and excepting the rise of market gardens around lines, railways had virtually no impact on the types and locations of agriculture. Furthermore, while some changes in agricultural land utilisation began around the 1910s (Figs. 21&22), the ratios of arable and pasture in the period itself were stable.

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[27] *A History of the County of Hertford: Volume 2* (1908), p.247.
[28] N. Goose, 'Farm Service, Seasonal Unemployment and Casual Labour in Mid Nineteenth-Century England', *Agricultural History Review* (vol. 54, part II, 2006), p.284; Simmons, *Town and Country*, pp.128-9. See Appendix II.
[29] Taylor & Anderson, *Hatfield St Albans*, pp.51-2; Simmons, *Town and Country,* p.330; Moore, *Agricultural Hertfordshire* (University of Hertfordshire, 2010), p.21.
[30] *A History of the County of Hertford: Volume 2* (1908), pp.272-3; N. Goose & D. Short, *An Historical Atlas of Hertfordshire* (Hatfield, 2011), pp.94-5.
[31] *A History of the County of Hertford: Volume 2* (1908), p.273; *Great British Railway Journeys*, Series 3, Episode 7, 10/1/2012.
[32] Parishes: Rickmansworth, *A History of the County of Hertford: Volume 2* (1908), pp.371-386.

Fig. 21: Changes in land utilisation in Bedfordshire, 1866-1937.
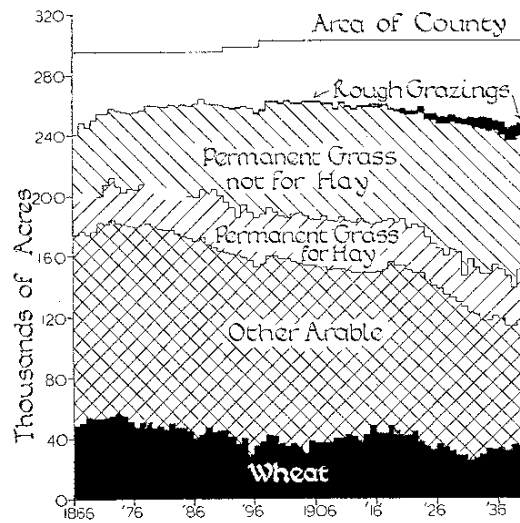
C. Fitchett, Part 55 Bedfordshire, in L. Dudley Stamp, *The Land of Britain: Land Utilisation Survey of Britain* (1943), p.124.

Fig. 22: Changes in land utilisation in Buckinghamshire, 1866-1937.
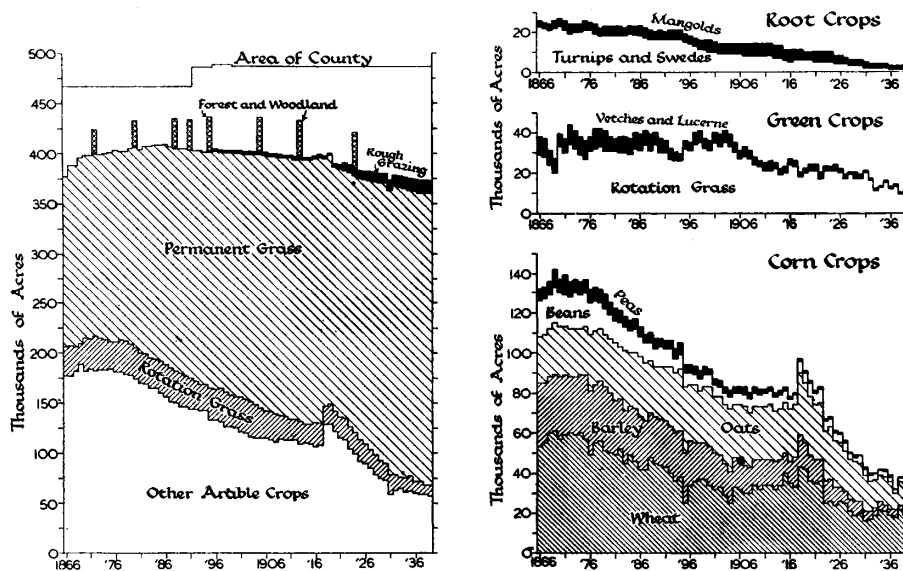
D. Fryer, Part 54 Buckinghamshire, in L. Dudley Stamp, *The Land of Britain: The Report of the Land Utilisation Survey of Britain* (London, 1942), p.76.

<u>Land Ownership</u>

Based on acreage, population and numbers of houses, parishes were classified as 'open' (multiple landowners) or 'close' (few landowners who could potentially control development) using the Bartholomew and Wilson *Gazetteers*.[33] The fewer the number of landowners, the greater their importance in deciding whether a railway would be granted access. Highly important to early railway development, the data, though, cannot account for the individuals involved. For example, some 'close' parishes actively wanted lines while others 'open' actively prevented them.[34] There are also cases of unfavourable landowners being coerced/bought off, or selling small pieces of poor boundary land, thus forcing lines to be both diverted and still run through 'close' parishes.[35]

'Open' and 'close' parishes were evenly spread over most of the region. Buckinghamshire showed more 'open' in the south (Wycombe, Amersham and Eton registration districts), while west Hertfordshire was almost entirely 'open' (Fig. 23). With Luton and its immediate surroundings also mostly 'open', this created a north-south divide with more 'close' parishes to the north. Mirroring the rural-urban population divide, possibly an aspect of London's influence; comparison with land usage (Fig. 19) shows this area contained the most urban settlements, including Wycombe, Slough, Luton and Watford. The heaviest concentrations of 'close' parishes were in the most rural agricultural areas; those with distinct specialisms and little 'mixed' working.

Considering railway development, lines up to 1851 (Fig. 23) were dependent on landowner approval, especially as many were cautious about the technology and its effect on land values.[36] While some had little option but to traverse 'close' parishes, many deviated by circumventing or entering as little of 'close' parishes as possible. Particular examples include

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[33] J. Wilson, *Imperial Gazetteer of England and Wales* (1870-72); J. Bartholomew, *Gazetteer of the British Isles* (1887); S. Banks, 'Nineteenth-Century Scandal or Twentieth-Century Model? A New Look at 'Open' and 'Close' Parishes', *The Economic History Review*, Vol. 41, No. 1 (Feb., 1988), p.52; B. Holderness, '"Open" and "Close" Parishes in the Eighteenth and Nineteenth Centuries', *Agricultural History Review*, Vol. 20, 2 (1972), p.126; Moore, *Agricultural Hertfordshire* (University of Hertfordshire, 2010), p.15; K. Snell & P. Ell, *Rival Jerusalems: The Geography of Victorian Religion* (Cambridge, 2000), pp.440-8.
[34] Simmons, *Town and Country*, p.270; R. Leleux, *A Regional History of the Railways of Great Britain, Volume 9 The East Midlands* (1976), pp.13-14.
[35] M. Casson, *The World's First Railway System: Enterprise, Competition and Regulation on the Railway Network in Victorian Britain* (Oxford, 2009), p.324.
[36] Moore, *Agricultural Hertfordshire* (University of Hertfordshire, 2010), p.56.

the Banbury-Bletchley branch near Buckingham, the GNR near Old Warden and the GWR near Wexham – all cases where the line did not take the shortest route.[37]

Fig. 23: Parish ownership in the region and railway lines up to 1851.
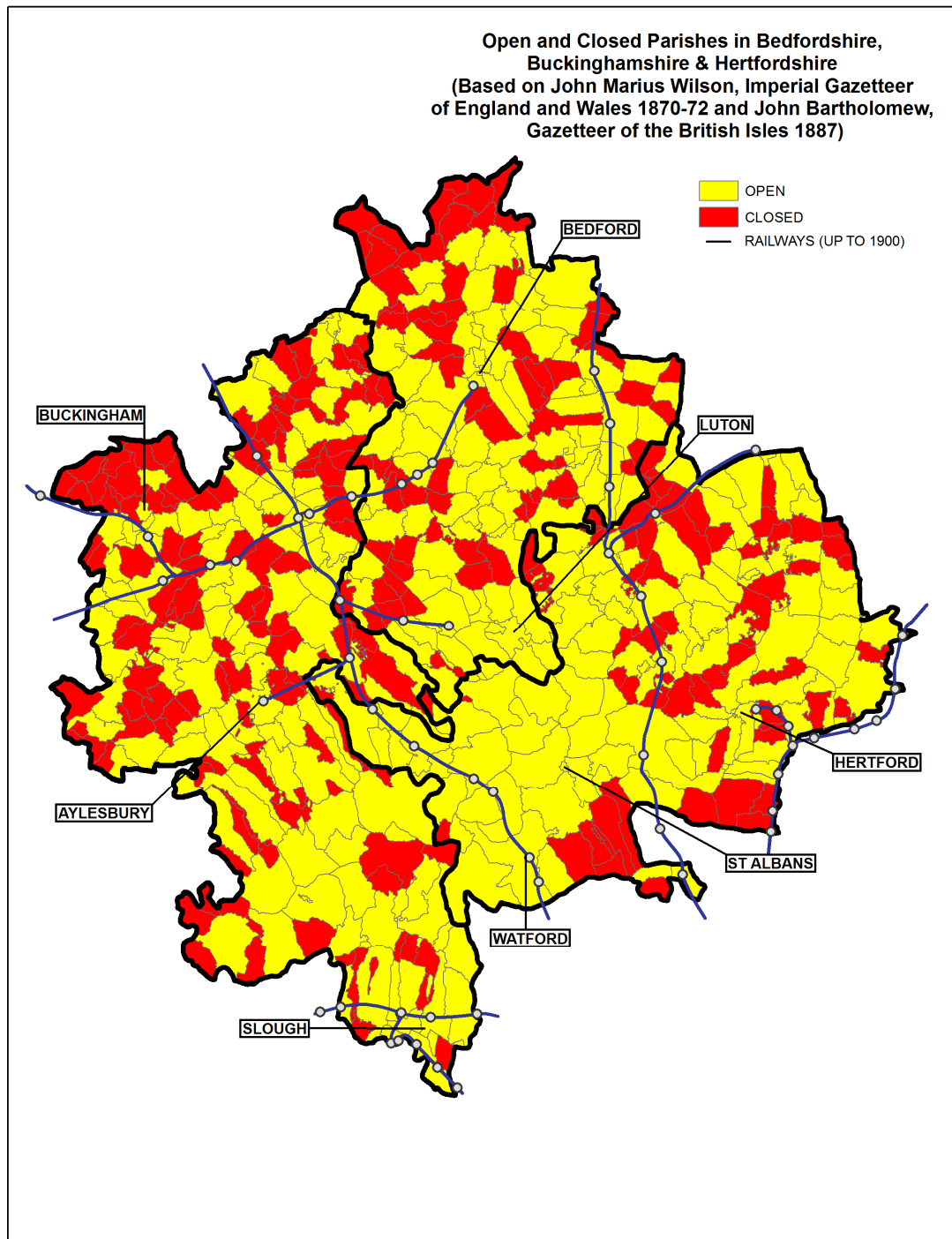
Based on J. Wilson, *Imperial Gazetteer of England and Wales* (1870-72) and J. Bartholomew, *Gazetteer of the British Isles* (1887).

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[37] See Appendix II.

As Hertfordshire had fewer 'close' parishes, more lines crossed 'open' parishes than the other counties.[38] Topography in some instances may have been a factor, such as through the Chiltern Hills, and other deviations such as north of Watford around the estates of the Earls of Essex and Clarendon occurred even though the parish itself was 'open'.[39]

While the landowners had the power to decide, tenants decidedly did not. While some were offered compensation, the majority were simply ordered to vacate. As an example of, to quote Simmons, 'natural and strong' antipathy, often from those renting land and thus having no say in the matter of its selling, Simmons referenced 1834 LBR planning in the Hertfordshire parish of Watford:

One or two strange faces appeared in the town [Watford], and men in leather leggings, dragging a long chain, and attended by one or two country labourers armed with bill-hooks, were remarked as trespassing in the most unwarrantable manner over pasture land, standing crops, copse and cover; actually cutting gaps in the hedges through which they climbed and dragged the land-chain. Then would follow another intruder, bearing a telescope set on three legs, which he erected with the most prefect coolness wherever he thought fit, peering through it at a long white staff, marked with unintelligible hieroglyphics, which was borne by another labourer, and moved or held stationary in accordance with a mysterious code of telegraphic signals made by the hand. The Farmers, naturally indignant, ordered these intruders from their fields. The engineers, for such they were, took but little notice. The farmers proceeded to threats. The ringleader of the invaders produced a red book, folded in an oblong form, from the voluminous pocket of his velveteen jacket, and offered it to the irate farmer as a sedative, informing him that it was the Act of Parliament by authority of which he was acting…One thing alone remained for them [the farmers] to do…they would shoot the intruders. But the latter calmly replied that that was no business of theirs, and the farmers did not draw trigger.[40]

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[38] Holderness, 'Close Parishes', *Agricultural History Review*, p.135.
[39] Richards & Simpson, *London Birmingham Railway* Vol. 1, p.13; P. Richards, 'Watford and the Railway', *Herts Past & Present*, No. 22 (Autumn 2013), p.12; Watford Museum; http://www.thegrove.co.uk/about-us/history/
[40] F.R. Conder, *The Men who Built Railways* (1868; reprinted Trowbridge, 1983), pp.9-10; this abbreviated passage in Simmons, *Victorian Railway*, pp.14-15.

Railways, like canals beforehand, not only clashed with land usage and ownership, but in cutting across the landscape had little correlation with customarily-accepted boundaries – a far cry from when even the Enclosure Acts generally mirrored topography and locally-accepted field borders.

But by 1900 a very different image was apparent (Fig. 24). More lines crossed 'close' parishes and while there were still cases where lines bypassed them, notably the MetR just south of Aylesbury and the southernmost part of the Buntingford branch by Much Hadham, these were fewer than previously and could have been intended waypoints rather than forced deviations.[41]

Much had changed, not only in technology and litigation but also in public perception. With the rise of the mania periods the population turned very pro-rail, encouraging many new proposals.[42] While confidence was damaged by stock crashes, company attempts to establish themselves as reputable meant initial qualms subsided and station proximity became a valuable asset. Some landowning families originally against the railways even went on to defend them.[43] For example, the first Duke of Buckingham and Chandos steadfastly refused to permit the LBR to cross his land at Stowe, preventing the line from reaching Buckingham.[44] His grandson the third Duke, however, became director of the same railway (LNWR) and privately built the Wotton Tramway.[45] Therefore, a family could turn from opponents to shareholders and directors. Interestingly, by the end of the period Aylesbury (early main line and 'hub') had overtaken Buckingham (later branch line) in importance and replaced the former as county town.

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[41] See Appendix II.

[42] See Chapter 3.

[43] Simmons, *Town and Country*, pp.23-4. While Earl Clarendon forced the construction of the Watford Tunnel, later he appeared more accepting of railways, arguing the defence of railway investment in Parliament - Railway Commissioners' Bill, *HL Deb 27 August 1846 Vol 88 c.1057*; http://hansard.millbanksystems.com/lords/1846/aug/27/railway-commissioners-bill

[44] Richards & Simpson, *London Birmingham Railway* Vol. 1, p.8.

[45] TNA RAIL 1110/269 – LNWR Reports; M. Vernon & D. Bonner, *Buckingham: A History of a Country Market Town* (Milton Keynes, 1984), p.109; Oppitz, *Lost Railways*, pp.73-82; K. Jones, *The Wotton Tramway* (Tarrant Hinton, 1974), p.3. See Appendix II.

Fig. 24: Parish ownership in the region and railway lines up to 1900.
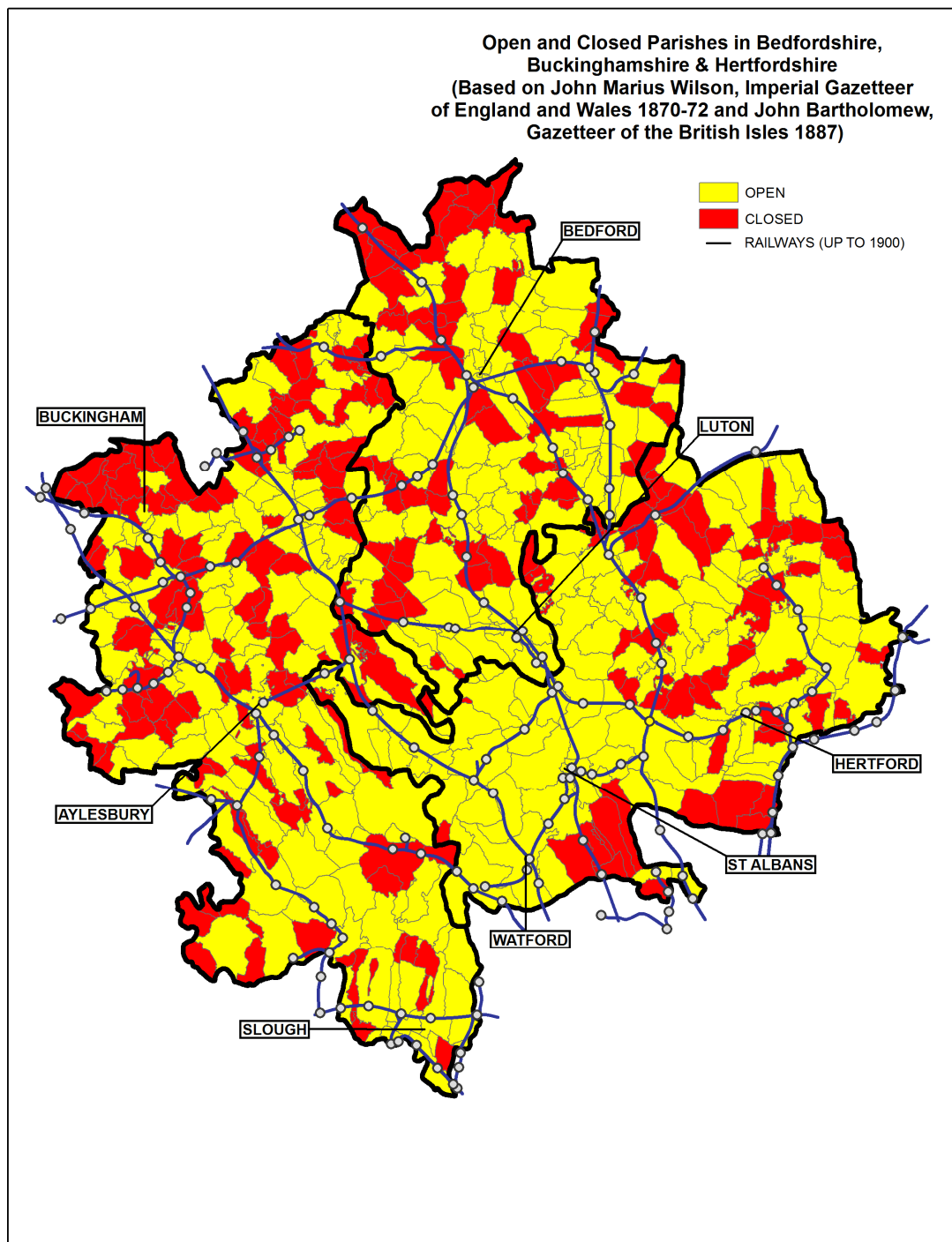
Open and Closed Parishes in Bedfordshire, Buckinghamshire & Hertfordshire (Based on John Marius Wilson, Imperial Gazetteer of England and Wales 1870-72 and John Bartholomew, Gazetteer of the British Isles 1887)

Based on J. Wilson, *Imperial Gazetteer of England and Wales* (1870-72) and J. Bartholomew, *Gazetteer of the British Isles* (1887).

Additionally, by 1900 many proposed lines gained legal powers not previously available. Heavily criticised by some but seen as a 'public benefit' by others, compulsory purchase powers enabled companies to essentially force the sale of land to them, so negating the earlier

importance of 'open' or 'close' parishes.[46] As an example of its significance and criticism, John Tenniel's 1868 *Punch* caricature 'The Modern Dick Turpin; or Highwayman and Railwayman' (Fig. 25) shows the ghost of Turpin approaching a railway director astride the locomotive 'Black Bess'. They exchange words:

> Ghost of Turpin: "Ho ho Mr Director! Doing a bit in my line, eh?"
> Railway Director: "*Your* line? Ha! Ha! You were hanged! *We* rob by Act of Parliament!!!"[47]

Fig. 25: Caricature by John Tenniel: railway directors' conduct.
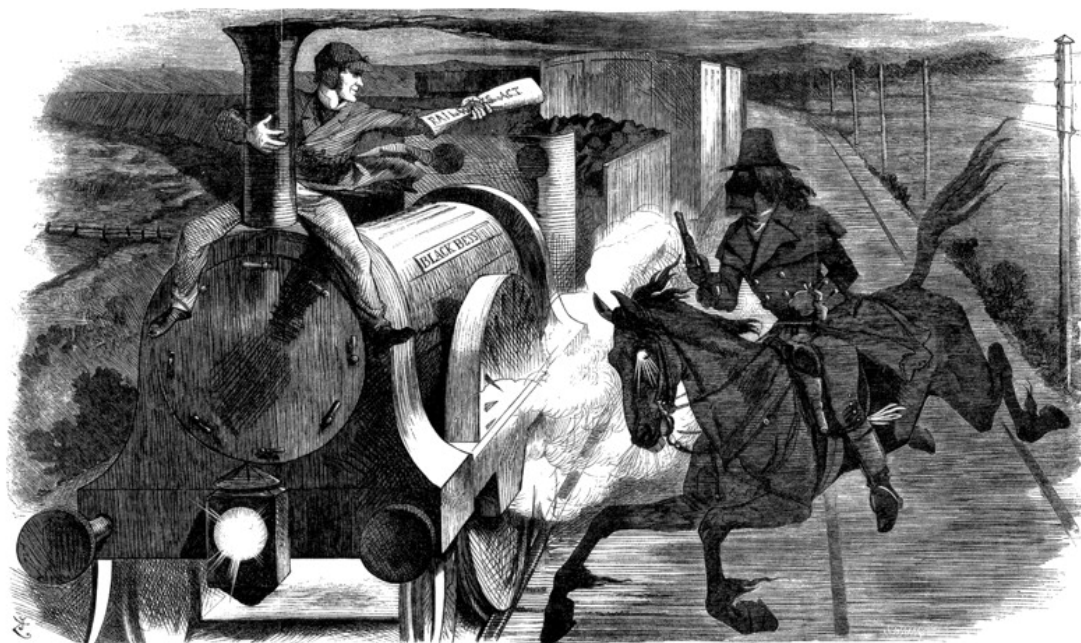
THE MODERN DICK TURPIN; OR, HIGHWAYMAN AND RAILWAYMAN.
Ghost of Turpin. "HO-HO, MR. DIRECTOR! DOING A BIT IN MY LINE, EH?"
Railway Director. "*YOUR* LINE? HA! HA! YOU WERE HANGED! *WE* ROB BY ACT OF PARLIAMENT!!!"

Punch, 15 August 1868 (LV), pp.70–1.

It can cautiously be concluded that the region supports the current historiography; the earliest lines were often blocked by wealthy landowners, instead traversing 'open' parishes, but these objections later subsided.[48] Later lines showed less tendency to conform to 'open' parishes, indicating the impact of changing opinions and circumstances. Historiographically the mania periods led to a wish for railway connections, recognising their merit, potentially the desire

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[46] Casson, *First Railway System*, pp.27, 322.
[47] Caricature by John Tenniel, *Punch*, 15 August 1868 (LV), pp.70–1.
[48] Simmons, *Town and Country*, pp.31, 270, 299-305, 333.

for compensation money and even the oft-criticised 'compulsory purchase orders' being introduced.[49]

Land Use – Urban and Towns

By far the smallest land use (Fig. 19), most towns were located in the southern expanse of 'open parishes', particularly in Hertfordshire. The only significant northern examples were Aylesbury, Bletchley, Wolverton and Bedford. There were also scattered smaller centres, such as Newport Pagnell. To give an example of urban settlements as a part of total land use, Hertfordshire in 1934 (more developed than the study period) had only 9.8%, while the national percentage of urban land use in 1851 – 73 years before – was already 50%.[50] Obviously the total urbanised land increased throughout the period for multiple reasons, and virtually all gained rail access. While not always the case, these settlements frequently became 'hubs' and junctions connecting various lines and transport forms (Fig. 11, Chapter 3).[51] Nearly all these urban areas were expanding prior to railway connection so while railways probably aided later development, as the historiography suggests, urban areas were not dependent on them initially: their growth attracted railways rather than vice versa.[52] This is equally true of earlier transport systems. There are exceptions where railways played a major and direct role, such as Wolverton, but these were rare. Cases of railway junctions built in strictly rural areas with no subsequent urban development further lend weight to the 'facilitator' argument.[53] Concerning the north-south split in urban land use and related London influence, the Survey noted of Hertfordshire that the GNR 'probably had less influence upon the growth of towns higher up the line'.[54]

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[49] Simmons, *Town and Country*, pp. 300, 304.
[50] Doubleday, *Hertfordshire Survey*, p.24; P. Waller, *Town, City and Nation* (Oxford, 1983), p.8.
[51] J. Rannard, *The Location and Economic Growth of the Watford Paper and Printing Industries* (University of Bristol, 1963), p.3.
[52] See Chapter 6.
[53] For example Verney Junction in north Buckinghamshire or Quainton Road.
[54] Doubleday, *Hertfordshire Survey*, p.21.

Fig. 26: Failed and declining markets and coaching places in the region and railway lines up to 1900.
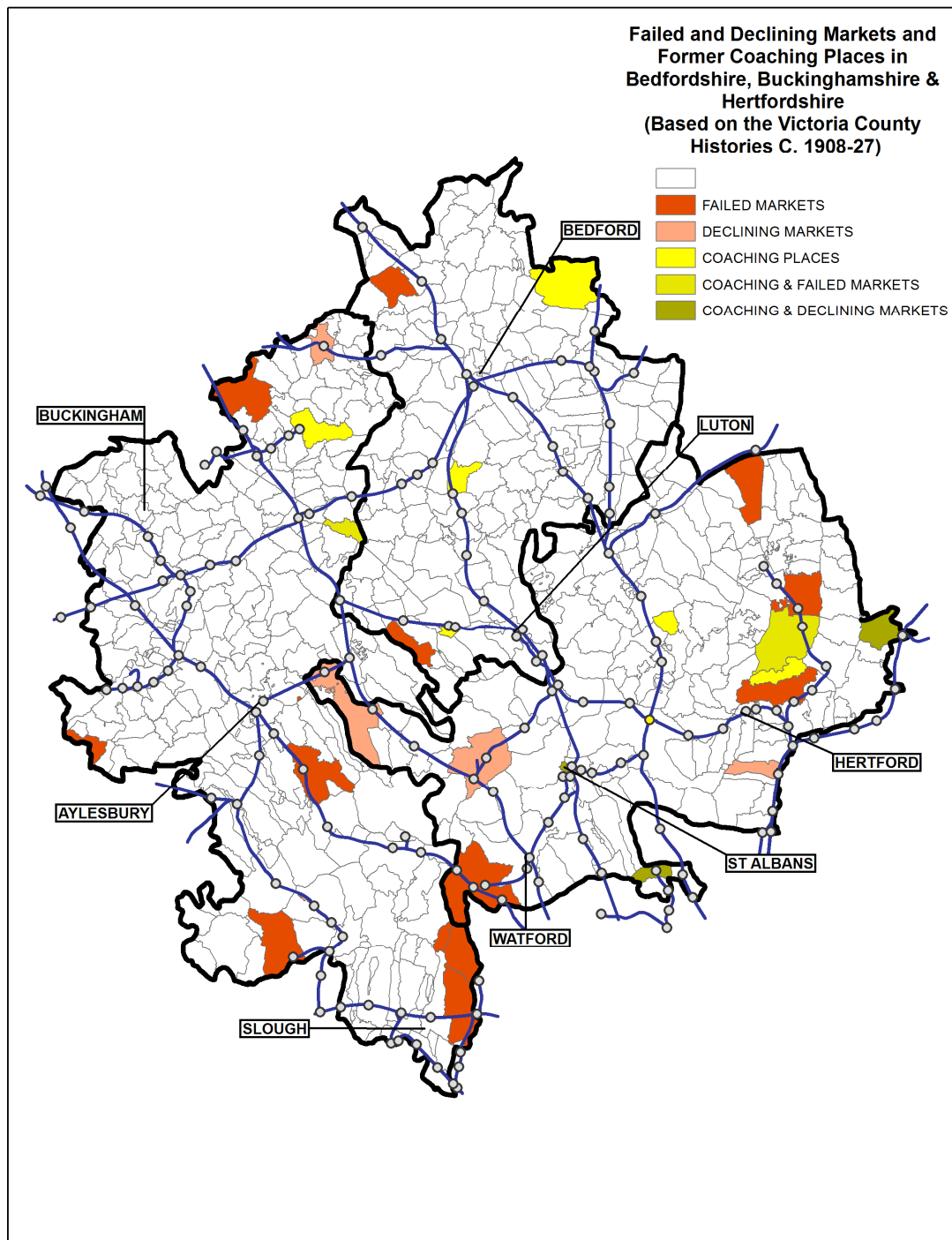
Based on the *VCH.*

The *VCH* provides much other information, but one aspect is especially intriguing. Referencing which parishes had failed or declining markets and which were formerly coaching stops (Fig. 26), comparison with railway routes shows every case was either neighboured or traversed by a railway. As for Worminghall in Buckinghamshire, the WR

Oxford line skirted nearby, though in Oxfordshire. Even though the same limitations stand as with the other *VCH* studies, it is interesting that this fits the historiography precisely.[55] It shows railways rapidly undermining stagecoaches, affecting locations based heavily on the former trade, but also supports Simmon's comments on negative railway impacts – specifically that smaller markets frequently declined when railways enabled easier travel to larger market centres.[56] There are some exceptions, such as St Albans where the railways recouped some of the coaching loss and helped its market stay a regional centre, but for parishes that failed to change specialism the decline was permanent.[57] This aspect is properly analysed using historical directories under the case studies.[58]

Regional Industry and Excavation

With more than just agricultural employment, urban areas always tend to specialise in commerce and industry.[59] Using the *VCH* to plot industry and excavation (Fig. 27), a broad overview of the region is presented, though with some limitations such as the lack of data for Bushey. As with the *Imperial Gazetteer* it is but a snapshot, so changes over the period cannot be accounted for on this level. The majority of the industry and excavation listed was incredibly small-scale, but could not be accurately quantified, so the maps only show geographical positioning, not their extent.

The patterns appear erratic, but there are some clear features. There is a line of 'mixed' industry and excavation from Hughenden in Buckinghamshire to Wheathampstead in Hertfordshire coinciding with mixed agricultural usage (Fig. 19). It follows the Chiltern Hills where additional income was necessary to supplement the poorer agriculture. This is, however, the only correlation with agriculture. Secondly, there is a large area of excavation in eastern Hertfordshire, petering out as progressing north through Bedfordshire with very little in Buckinghamshire, correlating with sandy areas of soil (Fig. 20). Finally, industry itself was evenly spread out, bar eastern Hertfordshire, but most would have been small-scale cottage work. Within this broad spread, however, were a few larger clusters worthy of note. Bedford, Luton, Watford, Aylesbury and to a lesser extent Wycombe, St Albans and

[55] Casson, *First Railway System*, p.323; T.C. Barker & C.I. Savage, *An Economic History of Transport in Britain* (London, 1974), p.63.
[56] Simmons, *Town and Country*, p.19. See Chapter 3.
[57] Ibid; p.298.
[58] See Chapter 9.
[59] See Chapter 4.

Sawbridgeworth showed greater concentration in their immediate surroundings. Most were principal urban areas and each had some degree of industrial specialism, ranging from hatting, straw plait and machinery to printing, chair manufacture and malt-making amongst others.

Fig. 27: Industry and excavation in the region and railway lines up to 1851.
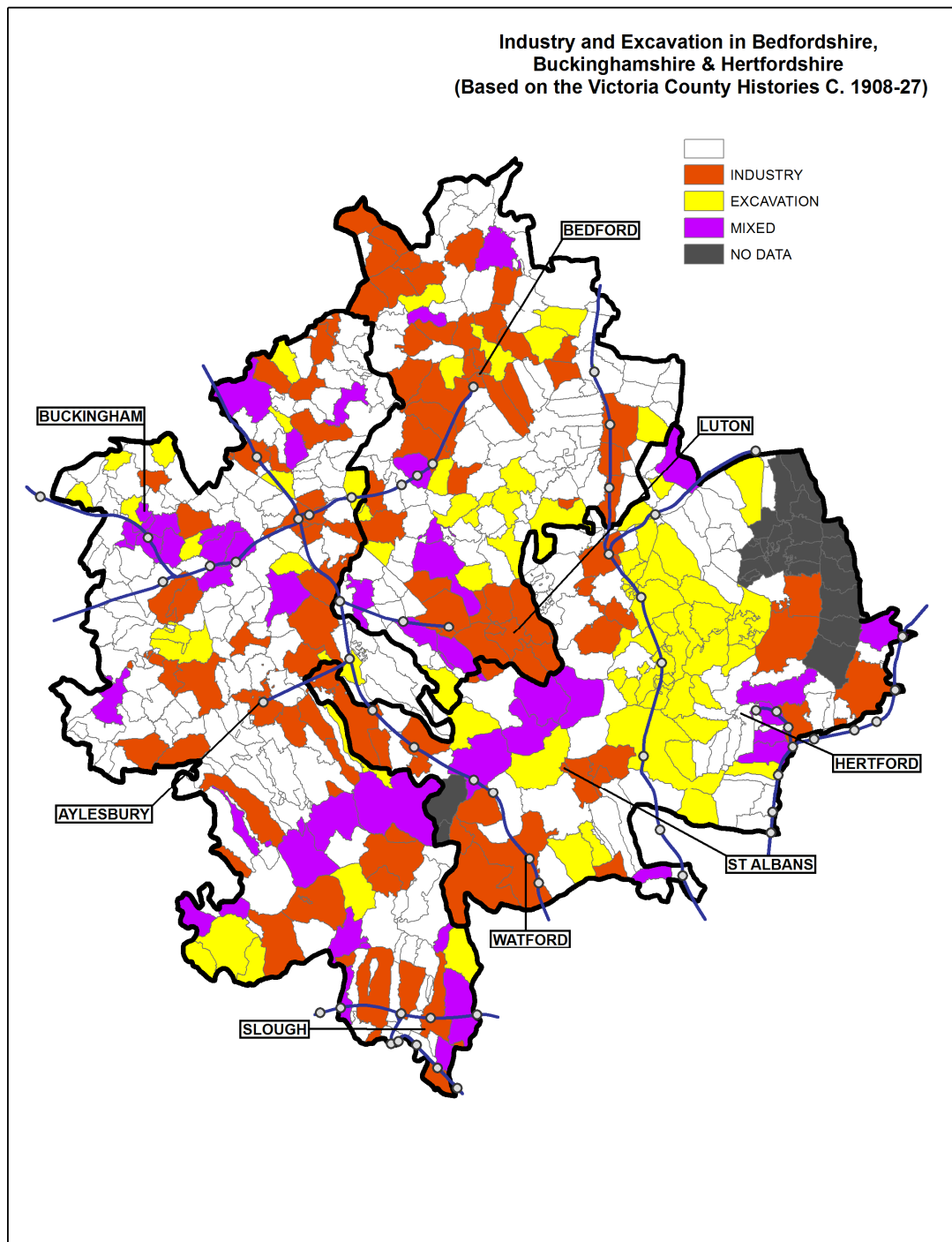
Based on the *VCH*.

Fig. 28: Industry and excavation in the region and railway lines up to 1900.
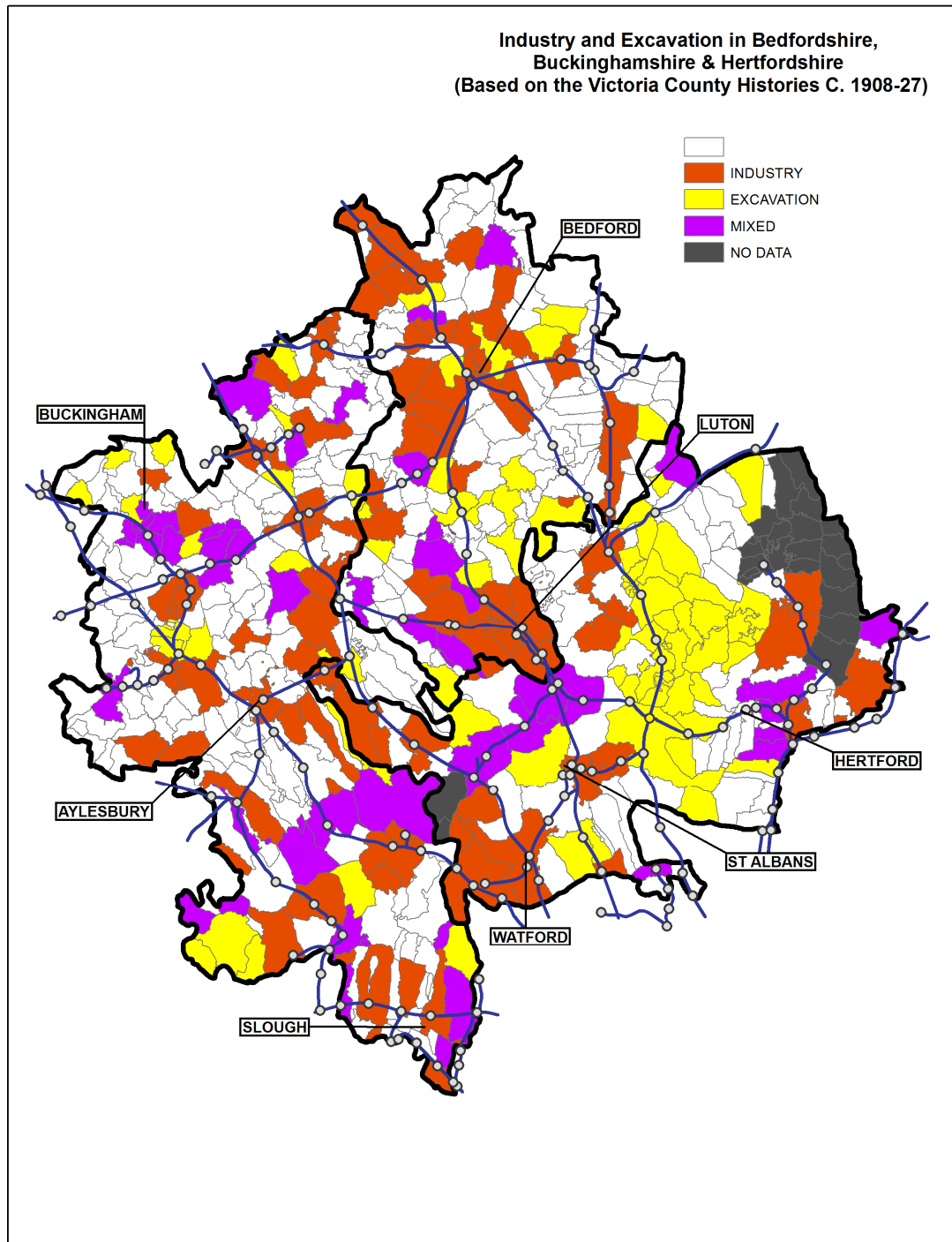
Based on the *VCH.*

As previous studies showed by their specialisation on heavy-industrial urban areas, industry and the railways are often considered together.[60] Comparing the data to the railways, the

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[60] Simmons, *Town and Country*, pp.164, 167.

system by 1851 (Fig. 27) shows some correlation, especially amongst 'hubs' and junctions, but other correlations should be treated cautiously as the origin dates per parish are not fully known. By 1900, however (Fig. 28), when virtually all the otherwise un-datable *VCH* industry/excavation references must have occurred or ended by, much more is identifiable.

Every junction/'hub' contained some industry, although excavation has little correlation. The vast majority of 'industrial' parishes lay either on or adjoining railway lines; areas farthest from them were almost entirely agricultural. While some industries lay on canals, being the first main industrial transport network, their routes were limited in comparison with the railways. So while Watford and Hemel Hempstead in particular gained the start of their paper industries through the Grand Junction Canal, most industry did not correlate with waterways – railways appear more of a developmental factor overall than other transport types.[61] Even so, railways did not automatically lead to industrialisation throughout.[62]

The overall patterns demonstrated two main themes. Casson noted the significance of 'hubs', both to the railways and the settlements themselves – superior services, wider destination options and (through competition) often cheaper.[63] These were beneficial to industry, and as can be seen here there is a direct correlation. However, for the main urban areas this was almost certainly previously-founded industry attracting the lines rather than vice versa. Luton's straw and hat industry, for example, dated back to Georgian times but Luton was one of the last to gain a line, while the Hertfordshire Survey noted 'certain towns have always been centres of trade and industry'.[64] Conversely, once the lines were built in these relatively industrial areas they did experience some impact as industry expanded along their lines rather than elsewhere.

The second theme is demonstrated by H. Hoyt's geographical urban sector model.[65] He theorised that, rather than E. Burgess' earlier model of concentric rings of development as a settlement expanded, distinct sector blocks would establish. Basing specifically on early twentieth century rail transport, Hoyt suggested that industrial sectors would radiate out in

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[61] Doubleday, *Hertfordshire Survey*, p.21; L. Evans, *The Firm of John Dickinson and Company Limited* (London, 1896), pp.26, 46.
[62] Simmons, *Town and Country*, p.18.
[63] Casson, *First Railway System*, pp.317-8, 324.
[64] Doubleday, *Hertfordshire Survey*, p.40. See Chapter 4 and Appendix II.
[65] http://geographyfieldwork.com/UrbanModelsMEDCs.htm

corridors following the primary transport routes – railways.[66] This is clearly seen for Bedford and to some extent in other towns; surrounding parishes with some level of industry are nearly all railway-connected while those without this major transport are much less likely to possess industry. Furthermore, the occupation data showed declining percentages of the workforce engaged purely in agriculture, demonstrating that 'industry' was definitely expanding.[67] Therefore, the likely scenario is that railways did not initiate industry in these areas, instead being drawn to what was already there, especially with the decline of terminus-terminus trade. But once in place they assisted to varying extents and expanding industry followed railway lines in this distinct pattern – railways by then attracting industry as it provided import and export potential for goods, materials and workers. There were urban exceptions, though, some with direct railway interaction, particularly Bletchley and Wolverton where the railways were the main industry, or Bedford's machinery manufacture requiring heavy transport to export goods. But generally industry, urban settlements and railways all have obvious connections to each other which are demonstrated in this region.

Excavation, conversely, saw little correlation to these trends in railway positioning. With the exception of Leighton Buzzard providing sand for the Crystal Palace's glass the majority was small-scale and existed only for local purposes.[68] However, there may have been indirect railway effects. The *VCH* listed many pits and workings as disused. With railways came greater ease in acquiring raw materials cheaply from farther afield so they indirectly offered competition, potentially forcing the closure of local workings.[69] Secondly, uncommonly, the use of cuttings and tunnels often revealed new geology. When boring the Watford tunnel, contractors uncovered 'excellent gravel and chalk'; track ballast material for the Watford-London stretch.[70]

So while excavation experienced little railway effect, bar possible decline, industry showed marked parallels. Excepting Wolverton and a few similar cases, railways did not initiate industrialisation, nor establish the main industries of the region. But once drawn to and servicing these, railways distinctly had some effect, even if just in geographical positioning.

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[66] L. Rodwin, 'The Theory of Residential Growth and Structure', *Appraisal Journal*, 18 (1950), pp.295-317.
[67] See Chapter 4.
[68] Goose & Short, *Historical Atlas*, pp.104-5; Parishes: Leighton Buzzard, *A History of the County of Bedford: Volume 3* (1912), pp. 399-417.
[69] B.J. Davey, *Ashwell 1830-1914: The Decline of a Village Community* (Dept Engl Loc Hist Occasional Papers, 3rd series no. 5), (Leicester, 1980), p.37.
[70] TNA RAIL 1110/260 – London & Birmingham Railway – Report for 17/2/1838.

When considered with the occupation data, historical claims from urban industry-based studies of railway importance are equally valid for this region, though in a much smaller scale.[71]

Conclusion

To summarise, the region's land use was primarily agricultural. Dependent on soil and topography, most arable farming was in Hertfordshire and pasture in Buckinghamshire. The Vale of Bedford and the Chilterns possessed the most 'mixed' farming. With the poorest soils and greatest altitude, the Chilterns needed as much diversity as possible to generate income; a band of mixed industry and excavation showing further income supplementing. While railways had no wide impact on agriculture, there were localised exceptions, notably in Buckinghamshire milk and the rise of market gardens, some of which had specific tramways constructed. Land ownership correlated with early railway routes as companies were initially dependent on goodwill to purchase land. This does not take individual opinions into account, though, and diversions were common on some early routes. But with rising acceptance of the technology and the introduction of compulsory purchase powers this tie became less important. Interestingly, the pattern of parishes suggests urban areas were mostly 'open' while rural areas tended to be more 'close'.

The main urban areas were expanding before the railways, attracting them and creating 'hubs' rather than vice versa.[72] This is emphasised by cases of stagnating rural junctions. Similarly, several coaching places with markets declined after the collapse of stagecoaches – the railways took trade away to larger towns and market centres farther away. This may help explain the broader issue of why some urban centres overtook others – trade disappeared without any other to fall back on. This factor, and the ability to import cheaper material, helps explain declining excavation, which elsewise shows no real railway impact. Industry, however, was markedly different. Most substantial industry, although relatively small-scale, centred on towns and was present before the railways, and was most likely a factor in attracting them to these urban areas, as all the major 'hubs' contained some. The lateness of

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[71] Simmons, *Town and Country*, pp.17-18, 35-8; T.R. Gourvish, *Railways and the British Economy 1830-1914* (London, 1980), pp.31, 40; H. Dyos & D. Aldcroft, *British Transport: An Economic Survey from the Seventeenth Century to the Twentieth* (Leicester, 1971), pp.123, 148, 181; B.R. Mitchell, 'The Coming of the Railway and United Kingdom Economic Growth', *The Journal of Economic History*, Vol. 24, No. 3 (Sep., 1964), pp.315-336.

[72] See Chapter 6.

the line to Luton makes this less conclusive, also noting how the initial terminus-terminus trade was less interested in potential business at intermediate stations.[73] But, following the historiography and geographical modelling, expansion of non-agricultural work often followed railway routes, with virtually all parishes with industry lying on railways. Those farthest away were nearly solely agricultural. So while the railways exhibited only the most minimal impact in establishing industrial areas, primarily Wolverton and Bedford, the results show they did facilitate expansion, with industry ultimately concentrating around this important resource.

In conclusion, most agricultural land uses had little railway origin or connection. Industry and landownership contrarily show that railways were themselves shaped by prior regional trends. But as railways developed, socially as well as technologically, land use was increasingly affected with industrial benefits, changing landowner reactions and shifting market patterns. Railways facilitated some changes in some parishes, but did not initiate mass change across the region.

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[73] Casson, *First Railway System*, p.17. See Chapter 8 and Appendix II.

Chapter 6: Population and the Railways

Since the Liverpool & Manchester Railway it was found that alongside freight there was an even greater demand for passenger transport. For much of the period it became the main source of railway revenue.[1] Therefore, there is a correlation between population and railway business, so population changes are a vital tool for analysing the impact of lines on their immediate and wider vicinity.

Historiography

In this industrial era, diminishing rural and burgeoning urban populations have long been used as an indicator of 'revolutionary' development.[2] In bringing people to urban areas from ever-farther afield, so increasing national mobility, railways have been seen as, at the very least, highly notable. With migration credited as one of the railways' most important contributions, Casson took the effect on population further, suggesting a spiral of development.[3] While some 'modest' urban settlements bypassed by railways declined, never recovering, many grew unaffected - railways not being the sole initiator of 'change'.[4] As towns expanded, in many cases they increasingly wanted the prestige of, ideally, a main-line railway connection. Recognition of railways as an asset to the population, compounded by Parliamentary 'fudging' failing to limit rail expansion, set up conditions for the railway manias.[5] Recently there have been further national studies undertaken, with Schwartz, Gregory and Thévenin claiming that while there was much variation across the country with differing factors, railways generally 'bolstered' rural economies and through this at their

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[1] J. Simmons (ed.), *Rail 150: The Stockton & Darlington Railway and What Followed* (London, 1975), p.49; T.C. Barker & C.I. Savage, *An Economic History of Transport in Britain* (London, 1974), p.69; TNA RAIL 384/10 – LBR Index to Board Minutes, TNA RAIL 1110/260, 1110/269, 1110/270, 1110/271, 1110/275 - LNWR Shareholders Reports.

[2] G. Boyer, 'Labour Migration in Southern and Eastern England, 1861-1901', *European Review of Economic History,* I (1997), p.191; E. Wrigley, 'Men on the Land and Men in the Countryside: Employment in Agriculture in Early-Nineteenth Century England', in L. Bonfield, R. Smith & K. Wrightson (eds.), *The World We Have Gained: Histories of Population and Social Structure* (Oxford, 1986), pp.295-336; J. Simmons, *The Railway in Town and Country 1830-1914* (Newton Abbot, 1986), pp.17, 19-20; N. Goose & D. Short, *An Historical Atlas of Hertfordshire* (Hatfield, 2011), p.56; P. O'Brien, *The New Economic History of the Railways* (London, 1977), pp.97, 100.

[3] M. Robbins, *The Railway Age* (London, 1962), p.21; J. Simmons, *The Victorian Railway* (London, 2009), p.319; E. Wrigley, *The Early English Censuses* (Oxford, 2011), pp.29-30; M. Casson, *The World's First Railway System: Enterprise, Competition and Regulation on the Railway Network in Victorian Britain* (Oxford, 2009), p.315.

[4] Simmons, *Town and Country*, pp.17, 298; Casson, *First Railway System*, pp.17, 25, 323.

[5] Casson, *First Railway System*, pp.17-20, 322-4. See Chapter 3.

height 'was apt to stem migration from rural areas'.[6] This is in stark contrast to the historiography, and for the most rural areas is not accurate for this region.

Methodology

Census summary tables outlining total population per parish were tabulated and issues of nomenclature and boundary changes resolved by checking against contiguous counties.[7] The issue of boundary changes was for the most part negated by the size of the complete study region.[8] Percentage changes in parish populations were calculated, grouped into percentage bands based on *An Historical Atlas of Hertfordshire* and plotted onto parish-level GIS county maps.[9] Using previous research, railway maps and enthusiast publications, railway lines were added, enabling population changes to be analysed in the railway context.[10]

Considering the limitations of this approach, parishes with small population levels, or those which in some censuses were grouped with neighbours, could present anomalous results.[11] Equally, the data represents growth, not distribution, so positioning of the population peaks within the individual parishes' geography is unachievable. Railways also occasionally led to some anomalous results directly – navvies scattered along lines under construction were sometimes counted by census enumerators, artificially inflating parish results.[12] Lastly, the effects of the railways were more limited in parishes traversed but without a station.

Results for 1801-1901

1801-1901 shows a triangle of 50-99% population growth in the south, its apex roughly at Luton, which is logical considering its significance to regional industry (Appendix VA). In this area were mostly urbanising parishes, with growth up to (and over) 500%. Pockets of

[6] R. Schwartz, I. Gregory & T. Thévenin, 'Spatial History: Railways, Uneven Development, and Population Change in France and Great Britain, 1850-1914', *Journal of Interdisciplinary History*, Volume 42, Number 1 (Summer 2011), pp.56, 77, 79, 81.

[7] www.histpop.org ; http://www.genuki.org.uk/contents/

[8] Wrigley, *Early Censuses*, pp.148-9, Fig. 5.1.

[9] Ibid; pp.28, 96-7, Fig 3.1; Goose & Short, *Historical Atlas*.

[10] F. Cockman, *The Railway Age in Bedfordshire*, Publications of the Bedfordshire Historical Record Society, 53 (Ampthill, 1974); R. Leleux, *A Regional History of the Railways of Great Britain, Volume 9 The East Midlands* (Newton Abbot, 1976); *Bradshaw's Railway Map 1907 Great Britain & Ireland* (reprinted Moretonhampstead, 2005); Wrigley, *Early Censuses*, pp.29-30. See Appendix II.

[11] Wrigley, *Early Censuses*, pp.8-10, 32-42.

[12] Population tables. England and Wales. Vol. I. Index, 1861, Page 302; www.histpop.org

similar growth are visible around Bedford and Wolverton, but the majority of central/northern Buckinghamshire, north Bedfordshire and east Hertfordshire was balanced between low 0-32% increase and 1-32% decrease. This broad time-frame is limited in what it can show, especially considering the wide number of potential influencing factors across the century. When subdivided, more detail is revealed, with greater variation and a marked overall change.

Results for 1801-51

Bedfordshire's population increase for 1801-51 (Appendix VB) was within the 50-99% range. The only significant exceptions were the north-western part of Bedford registration district (33-49% increase) and a small group of parishes to the west of Biggleswade (from -32% to +49%).[13] Interestingly, there are distinct 'rings' of growth surrounding Luton; this major town consequently having effects beyond its own parish.[14] For 1851-1901, however, the overall trend plummeted, with most parishes falling to a 1-32% decrease. Some Bedfordshire parishes, almost all along the northern and south-western borders, went as low as a 33-51%+ decrease. Some parishes stayed close to previous levels, notably Luton and Bedford, while a few minor parishes actually increased.

1801-51 Buckinghamshire only exhibited a small overall increase, 0-49%, with slightly higher areas in Buckingham, Amersham, Eton and Leighton Buzzard (shared with Bedfordshire) registration districts. By far the largest population increase, over 500%, was Wolverton - formed c.1839 by the London & Birmingham Railway. Exceptions were sporadically distributed across the county, with some parishes declining. 1851-1901 demonstrated a similar decline to Bedfordshire, around a 1-32% decrease, but with some north-western border parishes and Winslow registration district around a 33-50% decline. In the south (Eton registration district, spreading into Wycombe) there were some low increases, but these were very sparse. Considering the 1801-51 importance of Wolverton on the county, in 1851-1901 its growth rate had slowed, though still increasing by 100-199%. Instead it was superseded by neighbouring Bradwell – another railway satellite.[15]

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[13] For registration districts, see Appendix VI.
[14] Visually similar to the concentric zone model of urban geographical land use patterns by E. Burgess: http://geographyfieldwork.com/UrbanModelsMEDCs.htm
[15] B. West, *The Trainmakers - the Story of Wolverton Works* (Buckingham, 1982), p.34.

Hertfordshire's population for 1801-51 showed a distinct split. Central and western Hertfordshire (everywhere except Royston, Ware and Bishops Stortford registration districts) showed around a 50-99% increase, akin to Bedfordshire.[16] But the eastern districts were significantly lower, around 0-49% - more like Buckinghamshire. 1851-1901 showed substantial reduction, around a 1-32% decrease, primarily in the northern/eastern districts (all bar Watford, Barnet, St Albans, Hemel Hempstead and Berkhamsted registration districts). These western districts were more stable, around a 0-32% increase, while some southernmost parishes retained a 50-99% increase (mostly in Watford registration district).

Considering the region as a whole, many border parishes that failed to fit the trends of their county converged. This demonstrates their overall similarity – for 1801-51 there being effectively three vertical bands of change across the region. Buckinghamshire (excluding Leighton Buzzard, Amersham and Eton registration districts) was the first band, at a 0-99% increase level, eastern Hertfordshire (Royston, Hertford, Ware, Bishops Stortford and Edmonton registration districts) being the third, at a similar growth level, and the majority of Bedfordshire and the remainder of Buckinghamshire and Hertfordshire in the middle at a higher 50-199% increase level. Luton (itself a greater 200-499% increase) was almost central to this middle band. The national average of population percentage change for 1801-51 stood at 101%.[17] In comparison, the two outer bands were similar to this so appear typical. The central band, with the region's larger urban settlements, however, is markedly greater and presents the first indicator of a dramatic change.

Results for 1851-1901

For 1851-1901 (Appendix VC) the results show a great region-wide change, with the larger urban areas standing out as growing amid wider decline. This parallels a historically-recognised period of national rural depression around the 1870s.[18] The region had two main

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[16] J. Moore, *The Impact of Agricultural Depression and Land Ownership Change on the County of Hertfordshire, c.1870-1914* (University of Hertfordshire, 2010), p.51.

[17] http://www.tacitus.nu/historical-atlas/population/british.htm

[18] R. Woods, *The Population of Britain in the Nineteenth Century: New Studies in Economic and Social History* (Cambridge, 1995), pp.20, 49; Boyer, 'Migration', *European Review of Economic History*, p.191; D. McCloskey, 'Did Victorian Britain Fail?', *The Economic History Review*, New Series, Vol. 23, No. 3 (Dec., 1970), p.446; M. Casson, *The Determinants of Local Population Growth: A Study of Oxfordshire in the Nineteenth Century*, EHS Annual Conference 2011, p.16; Schwartz, Gregory & Thévenin, 'Spatial History', *Journal of Interdisciplinary History*, pp.56, 70, 71; Moore, *Agricultural Hertfordshire* (University of Hertfordshire, 2010), pp.15, 62.

areas of change; south Buckinghamshire (primarily Amersham registration district) and west Hertfordshire (Berkhampsted, Hemel Hempstead, St Albans, Watford, Barnet and Hatfield registration districts) experienced around a 0-49% increase. The remainder (north Buckinghamshire, Bedfordshire and west Hertfordshire) showed a 1-50% decrease. The only exception were a few parishes grouped in Watford, St Albans, Berkhampsted and Luton registration districts. This (and a smaller group in Eton registration district) remained around a 100-499% increase. Interestingly, Buckinghamshire had previously been lower than Bedfordshire and Hertfordshire, but by 1901 was effectively level – Buckinghamshire thus decreased at a slightly lesser rate.

As is apparent, the whole region suffered a slowing of population growth, notably the western and eastern extremities. These were, however, lesser in extent than Bedfordshire, which saw the greatest overall reduction. Although still slowing, the vicinity around Watford and Luton retained a growing population and was the most stable area. Overall figures for the region, especially the rural parts, are dramatically lower than the 82% national population growth average, but this national percentage also covered rapid national urbanisation, thus offsetting the substantial rural decline.[19]

The Effects of the Railways c.1839-51 and 1851-1901

Considering how railways in operation by 1851 and 1901 fitted these results, there was a major difference between the two time-frames.[20] For 1801-51 virtually no correlation is visible. Buckinghamshire had few lines, but was similar to east Hertfordshire with two main lines. The largest parishes lay on railway lines, but many, including some notable urban centres, did not. At this point it was more a case of railways being attracted to growing parishes rather than having any direct effect. By 1901, however, a clear correlation was obvious, with population trends adjusting to railway positioning. With very few exceptions, mostly in northern Buckinghamshire, almost all areas of decline were the farthest from railways; population growth decreasing with increased distance from lines. Just as important, with the single exception of Akeley (Buckinghamshire), every parish with a population growing by at least 50% was either traversed by or neighboured a railway. The greater frequency of such growing parishes to the south of the region also suggests some influence

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[19] http://www.tacitus.nu/historical-atlas/population/british.htm
[20] See Appendix V.

from London, which would have increased with railway expansion around the metropolis.[21] But while the region would have only gained increased London influence later with improved transport connections, rapidly-growing settlements in the extreme south - closest to London, such as Watford or Barnet - almost certainly displayed trends like these long before any potential railway-based impact.

Trends in the 1801-51 and 1851-1901 results

These 50-year periods reveal two important regional railway trends. For 1801-51 there was minimal correlation between population and railway locations (excluding Wolverton and Linslade). But for 1851-1901 almost every expanding location had a railway connection. This indicates that early terminus-terminus business operation theory appears applicable. This claims that initially there was a lack of railway interest in intermediate halts, consequently having little effect on their locale. But as competition increased so did the amount of low-value intermediate halt trade. Through this came greater potential railway-facilitated local impacts.[22] The growth changes between 1801-51 and 1851-1901 show that rural population grew 'vigorously' up to c.1850 but afterwards went into widespread 'stagnation', matching Wrigley's national research.[23] However, trends visible in the data change depending on the time-frames analysed. The 1801-1901 results thus show less detail than those for 1801-51 and 1851-1901. Decadal time-frames across the full period were, therefore, collated to provide greater detail and mitigate this issue.

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[21] J. Langton, 'The Industrial Revolution and the Regional Geography of England', *Transactions of the Institute of British Geographers*, New Series, Vol. 9, No. 2 (1984), p.163; Moore, *Agricultural Hertfordshire* (University of Hertfordshire, 2010), p.49.

[22] P. Richards & B. Simpson, *A History of the London and Birmingham Railway Volume 1* (Whitney, 2004), p.36; Casson, *First Railway System*, p.17; Simmons, *Victorian Railway*, p.324; Casson, *Oxfordshire*, pp.17, 19; T.R. Gourvish, *Railways and the British Economy 1830-1914* (London, 1980), p.27; H. Dyos & D. Aldcroft, *British Transport: An Economic Survey from the Seventeenth Century to the Twentieth* (Leicester, 1971), p.151.

[23] Wrigley, 'Men on the Land', in Bonfield, Smith & Wrightson, *The World We Have Gained*, p.295; Wrigley, *Early Censuses*, p.29.

Results for 1801-11

Fig. 29: Population change in the region 1801-11 compared to turnpike and canal routes.
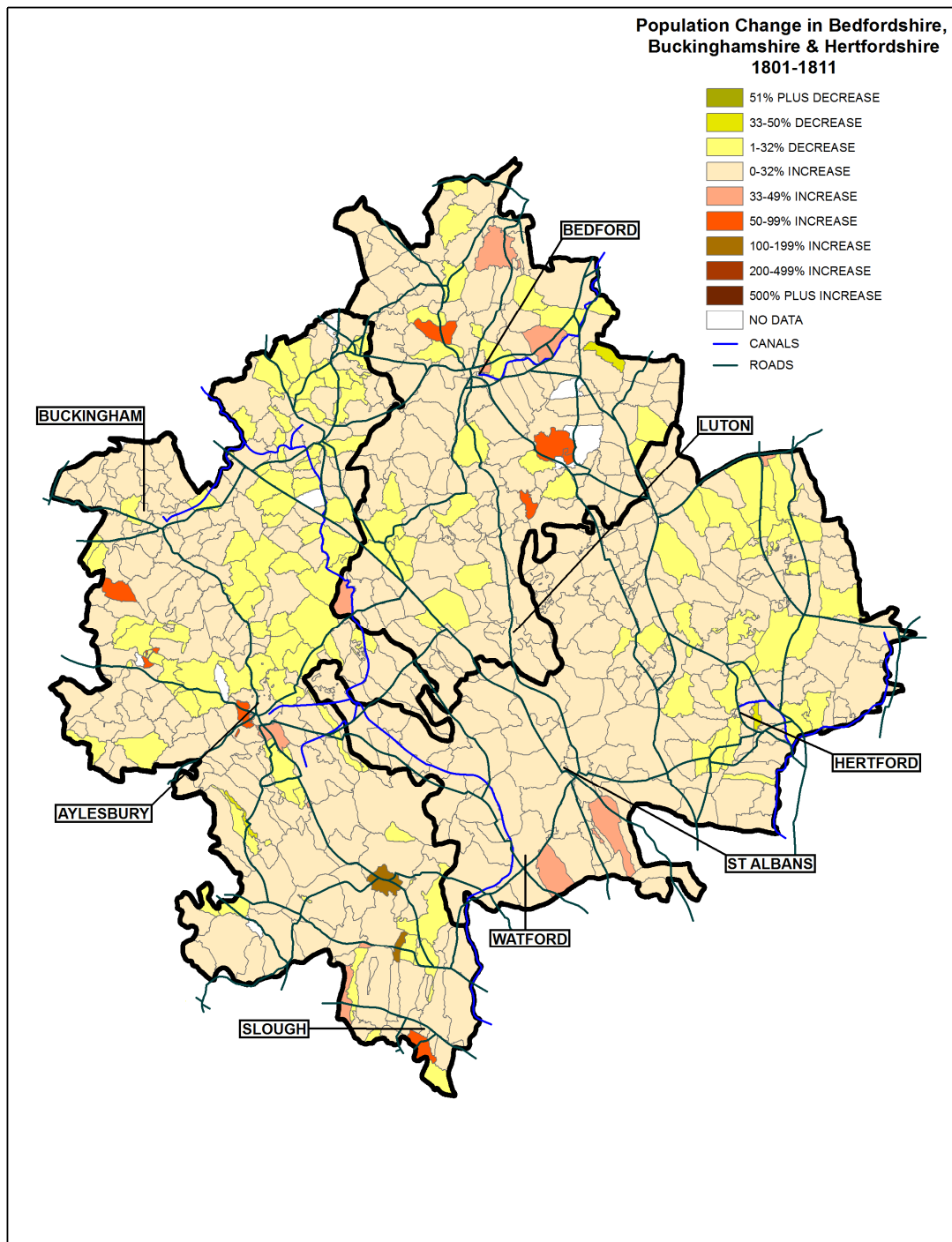
Based on census summary tables via www.histpop.org

Before the railways, the majority of the region in 1801-1811was a stable 0-32% increase, most uniformly in west Hertfordshire (Fig. 29).[24] North Buckinghamshire, east Hertfordshire and some scattered northern Bedfordshire and southern Buckinghamshire parishes were around a 1-32% decline. In terms of actively growing parishes, most were in Buckinghamshire, equally spread from north to south (50-99% increase), with others in central Bedfordshire. Only two lesser examples (33-49% increase) were in Hertfordshire. As most growing parishes lay near declining ones, it is possible the declining parishes were leaching people to these growing settlements, so acting as temporary catchment areas, especially considering the difficulties of pre-railway travel.

Interestingly, the canals, most being operational by this point, show little correlation with population. The lack of major canal-based population changes unusually supports the view of terminus-terminus operation limiting early rail effects, as this business practice was developed from these canals.[25] Throughout the period the failing waterways and turnpikes did not correlate with wider trends, so can be discounted.

Results for 1811-21

1811-21 suggests the previous decline was not major, as the vast majority had risen to the 0-32% increase band (Fig. 30). Population is never static so there would always be some minor variation that can be considered general 'background' not relating to railways. Most declining parishes were in north Buckinghamshire, while most growing parishes were in central Bedfordshire and Hertfordshire. These, however, have little correlation to 1801-11. The overall summary of this decade is of increased stability.

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[24] Moore, *Agricultural Hertfordshire* (University of Hertfordshire, 2010), p.56.
[25] Barker & Savage, *Transport*, pp. 44, 101.

Fig. 30: Population change in the region 1811-21 compared to turnpike and canal routes.

Population Change in Bedfordshire, Buckinghamshire & Hertfordshire 1811-1821

- 51% PLUS DECREASE
- 33-50% DECREASE
- 1-32% DECREASE
- 0-32% INCREASE
- 33-49% INCREASE
- 50-99% INCREASE
- 100-199% INCREASE
- 200-499% INCREASE
- 500% PLUS INCREASE
- NO DATA
- CANALS
- ROADS

BEDFORD
BUCKINGHAM
LUTON
AYLESBURY
HERTFORD
ST ALBANS
WATFORD
SLOUGH
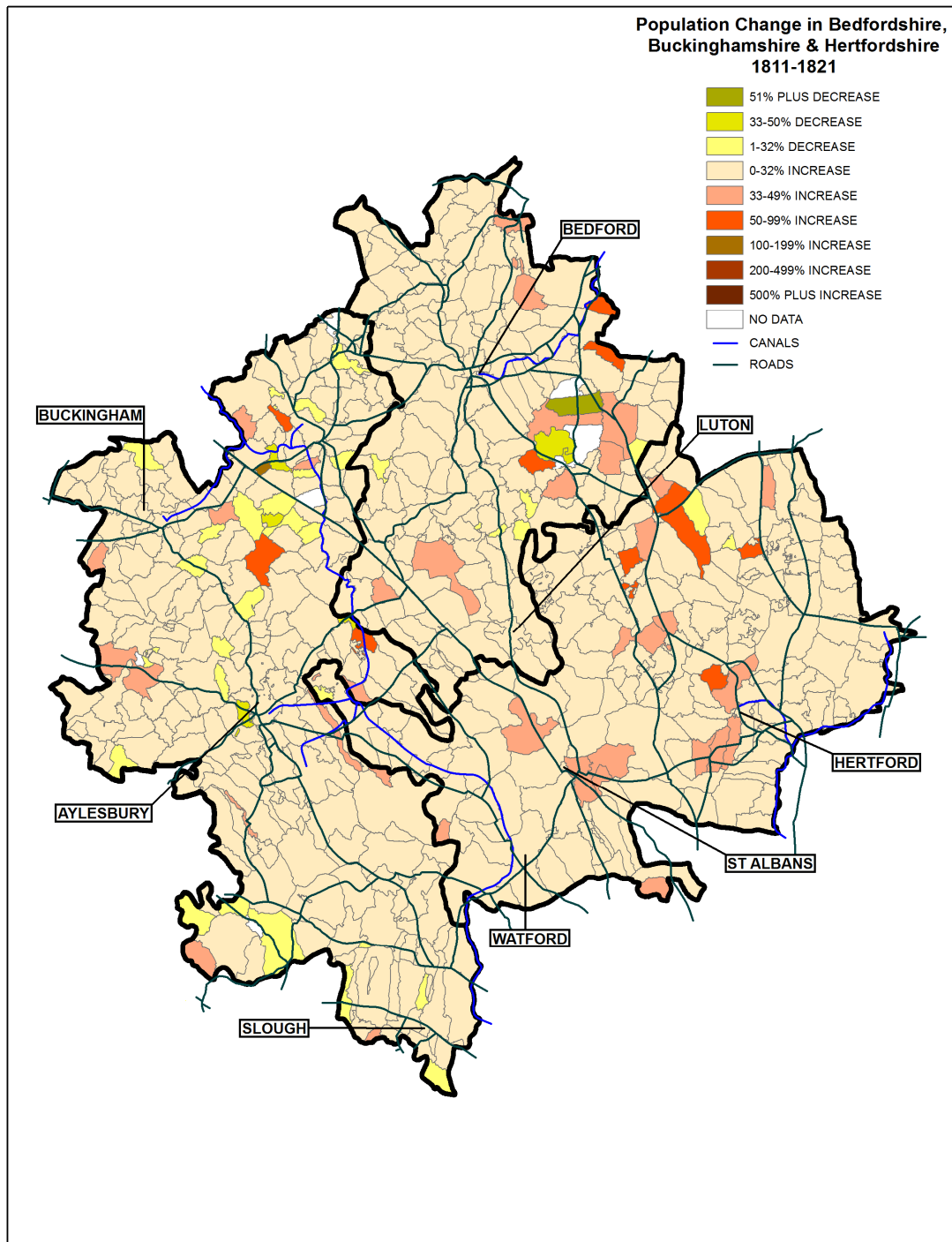
Based on census summary tables via www.histpop.org

Fig. 31: Population change in the region 1821-31 compared to turnpike and canal routes.

Population Change in Bedfordshire, Buckinghamshire & Hertfordshire 1821-1831

- 51% PLUS DECREASE
- 33-50% DECREASE
- 1-32% DECREASE
- 0-32% INCREASE
- 33-49% INCREASE
- 50-99% INCREASE
- 100-199% INCREASE
- 200-499% INCREASE
- 500% PLUS INCREASE
- NO DATA
- CANALS
- ROADS
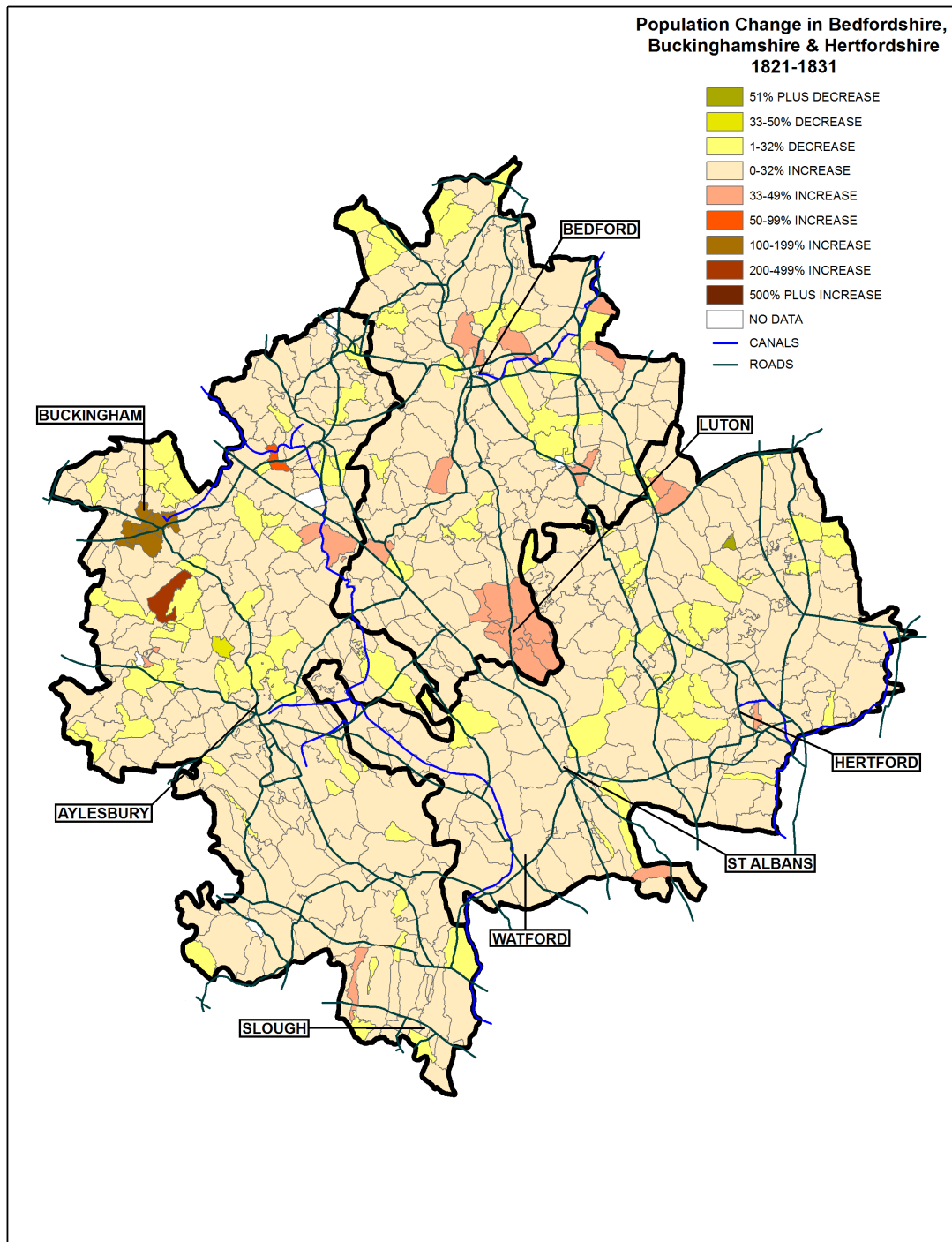
Based on census summary tables via www.histpop.org

Results for 1821-31

The majority of parishes in 1821-31 remained stable at a 0-32% increase, but with a slightly higher proportion of 1-32% decline across the region (Fig. 31).   Middle Claydon

(Buckinghamshire) showed the highest growth (200-499%) and considering all neighbouring parishes bar one were declining, this further supports short-distance leaching of one parish off another before the railways.[26]

Results for 1831-41

1831-41 was important as the first decade to have operational railways.[27] With a greater proportion of 1-32% decline in Buckinghamshire, central Bedfordshire and east Hertfordshire, the remainder mostly a 1-32% increase, there was no immediate correlation (Fig. 32). However, with some exceptions such as the tip of Buckinghamshire (Newport Pagnell registration district) and the centre of the Aylesbury branch (at this time with no intermediate station), declining parishes appear to actively 'avoid' the lines, especially the LBR. Although difficult to discern at this stage, this 'corridor' effect was the start of a longer and highly significant trend. Furthermore, while non-railway Luton was still growing at the same rate as before (33-49%), most rapidly growing parishes were on railways. Of those, Slough, Wolverton (Buckinghamshire) and Linslade (Bedfordshire) historically are recognised as having benefitted from the early railways.[28]

Bushey's population (Hertfordshire) also increased, but the station was only constructed *after* the line, in December 1841, so was not the reason for this particular increase, especially as it did not continue in the next decade.[29] Whether Bushey's growing popularity as a settlement with easy access to Watford was aided by Watford Station is unknown, but if so it would support the chain reaction of factors as suggested by the 'facilitator' hypothesis. While Middle Claydon experienced a large increase in 1821-31, this had massively dropped by 1841 – even greater than Buckingham – suggesting both were temporary fluctuations or anomalies. The lack of any growing parishes in the vicinity of those declining is significant, as this no longer supports the notion of short-distance migration between neighbouring parishes before the railways.

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[26] Simmons, *Victorian Railway*, p.319.
[27] See Appendix II.
[28] Parishes: Slough, *A History of the County of Buckingham: Volume 3* (1925), pp. 301-302; Parishes: Linslade, *A History of the County of Buckingham: Volume 3* (1925), pp. 387-391.
[29] D. Payne, *The Story of Bushey in the Age of the Steam Train* (Bushey, 2011), p.8. See Chapter 11.

Fig. 32: Population change in the region 1831-41 compared to extant railway lines.

Population Change in Bedfordshire, Buckinghamshire & Hertfordshire 1831-1841

- 51% PLUS DECREASE
- 33-50% DECREASE
- 1-32% DECREASE
- 0-32% INCREASE
- 33-49% INCREASE
- 50-99% INCREASE
- 100-199% INCREASE
- 200-499% INCREASE
- 500% PLUS INCREASE
- NO DATA
- ○ STATION
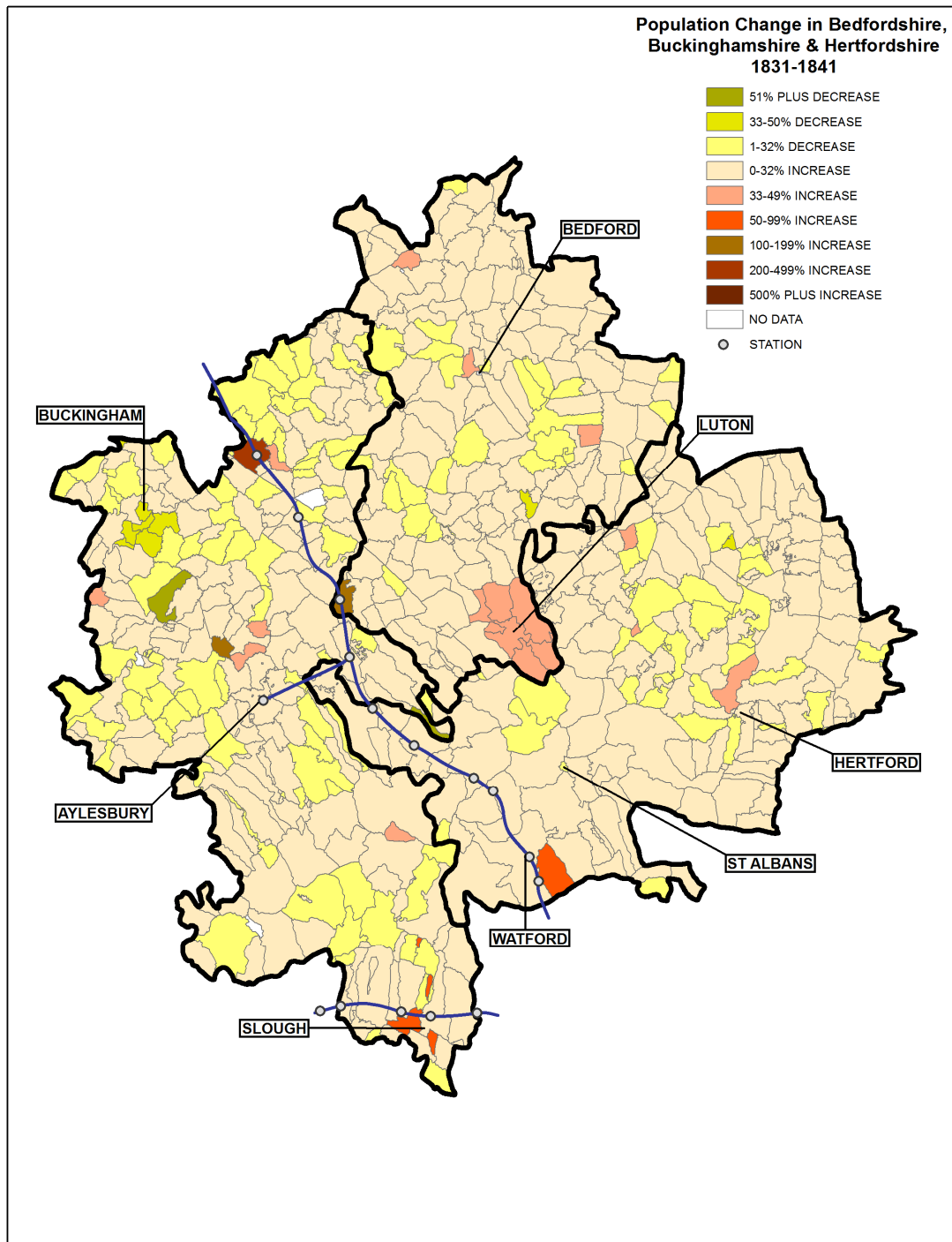
Based on census summary tables via www.histpop.org

Results for 1841-51

While the decades up to 1821 showed a slight north-south divide concerning the smallest-declining parishes (a 1-32% decrease), 1841-51 shows the climax of a quite different

arrangement (Fig. 33). Although most were still stable at a 0-32% increase, this became encircled by decline, with Luton growing at its centre (50-99% increase).

Fig. 33: Population change in the region 1841-51 compared to extant railway lines.
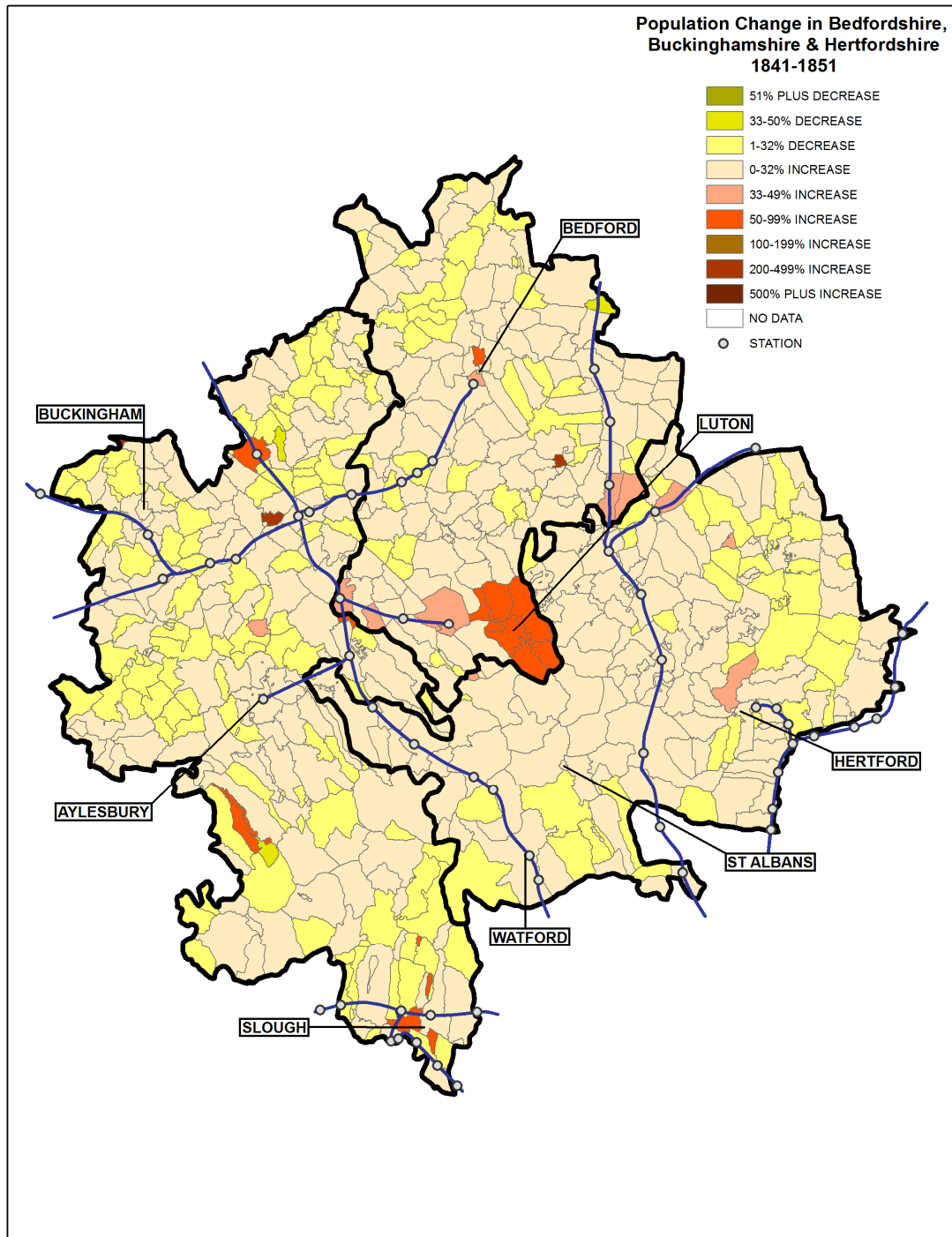
Based on census summary tables via www.histpop.org

The former 1-32% decrease north-south split of 1801-21 may have had a topographical aspect, with the Chiltern Hills acting as a divide, but this diminished after the railways with no further correlation. All notably-growing parishes were on or neighbouring railways, and while Luton still had no direct connection at this stage, its rate of increase rose once neighbouring Dunstable became connected – enabling much easier travel to it and Luton. 'Corridors' of population increase following the lines became more discernable – especially on the Aylesbury and Buckingham branches. Demonstrating this, the Dunstable branch experienced a string of 33-49% increase parishes directly following its length.

Furthermore, bar the centre of the region (south Bedfordshire and north-west Hertfordshire, likely under the effects of Luton) the points of greater decrease were forming in parishes farthest from lines. Branch lines had a lesser effect, particularly when rural. The data shows growth rather than distribution, so decline in some parishes that disrupted the 'corridors' (for example around Buckingham) may actually have been farther away than inferred, so not necessarily attributable to, or even in the immediate vicinity of, the lines themselves. The feature of rising decline with increasing distance from railways became clearer by the end of the period, alongside the 'corridor' claim.

Results for 1851-61

The encircling effect of 1-32% parish decline had spread across the region by 1851-61, with ever-larger blocks present amid the 'background' 0-32% increase (Fig. 34). All rapidly growing parishes remained rail-connected, though Luton conversely – now with a railway – was growing at a lesser rate than the previous decade. This was also the first post-railway decade with no major population growth in Linslade or Wolverton. 'Corridors' remain present, but with a new change. Those in the south were well-defined, particularly the Wycombe Railway, the Hertford branches and the lower portions of the London & North Western Railway and Great Northern Railway. But northern lines, especially in Buckinghamshire, no longer showed this effect – there was as much decline with railways as without – in some areas, even more. This was also the case for the Dunstable and St Albans branches. With Dunstable some probably went to Luton, but the remainder had no nearby parishes with large population increases.

Fig. 34: Population change in the region 1851-61 compared to extant railway lines.
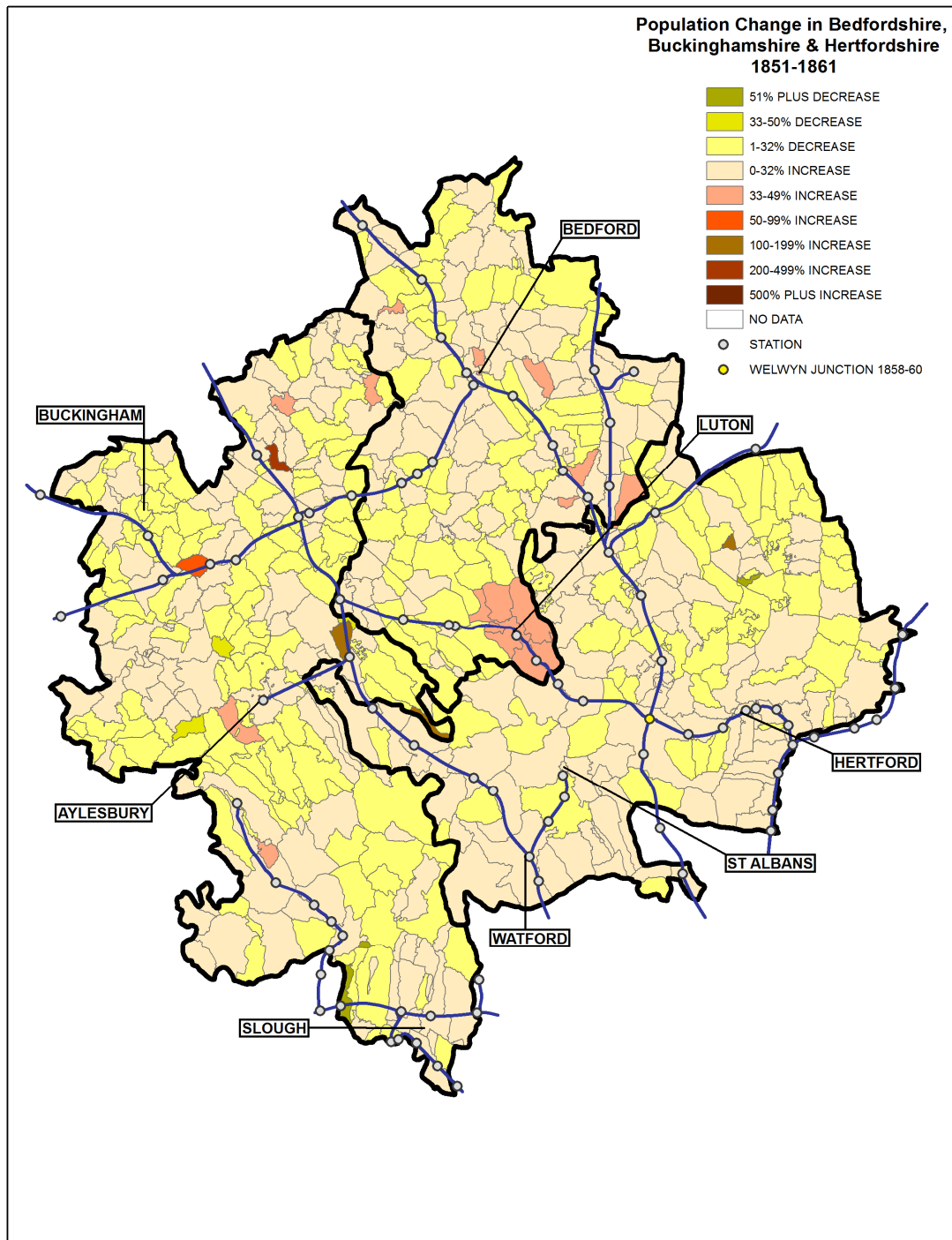
Based on census summary tables via www.histpop.org

This suggests an altogether different series of events. Rather than just 'corridors' of population growth following lines, which remained the case for the comparatively urbanised south, in particularly rural areas the railways began drawing people away rather than bringing them in. Not only does this fit Simmons' claim of positive and negative effects, but it further

supports the urban-rural dichotomy in the era and broader claims of urban areas and industry attracting people away from rural unemployment. This itself is substantiated by decreasing agricultural occupations.[30] It also gives the first indicator of a north-south divide with railway connections.

These trends follow Schwartz, Gregory and Thévenin's points concerning the importance of variables and beneficial effects of the railways, notably their description of a time lag between construction and maximum influence.[31] The 'corridor' effect also supports their view that railways, acting as a factor towards economic stimulation, aided population stability.[32] However, this appears only true for the more urbanised south; they conversely insinuated railways near towns would have led to migration, which was not the case here.[33] Unlike claimed in their national study, these results show that for this region by the end of the period the most rural regions were actively declining irrespective of railways, negating their argument. Wrigley's assertions on rural population growing up to c.1850, thereafter 'stagnating', are equally shown as correct, though growth was not quite as 'vigorous' as he claimed when considered decadally.[34]

Results for 1861-71

While the spread of 'background' 1-32% decline had been expanding, in 1861-1871 the data shows it receded to a pattern similar to 1801-11 (Fig. 35). Considering all markedly-growing parishes, virtually all were on or near lines – clearly an obvious reoccurring pattern. The 'corridors' hypothesis was becoming less clear, especially in the north of the region, but only six main-line stations were in declining parishes. These were all in rural north and east Bedfordshire. All other main line stations, retained 'corridors' of stability/growth.[35]

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[30] Simmons, *Town and Country*, pp.19-20; Langton, 'Industrial Revolution', *Transactions of the Institute of British Geographers*, p156; M. Berg & P. Hudson, 'Rehabilitating the Industrial Revolution', *The Economic History Review*, New Series, Vol. 45, No. 1 (Feb., 1992), pp.33, 37; Goose & Short, *Historical Atlas*, p.56. See Chapter 4.
[31] Schwartz, Gregory & Thévenin, 'Spatial History', *Journal of Interdisciplinary History*, p.79.
[32] Ibid; pp.55-6, 70, 77.
[33] Ibid; p.77.
[34] Wrigley, 'Men on the Land', in Bonfield, Smith & Wrightson, *The World We Have Gained*, p.295.
[35] Casson, *Oxfordshire*, p.17.

Fig. 35: Population change in the region 1861-71 compared to extant railway lines.
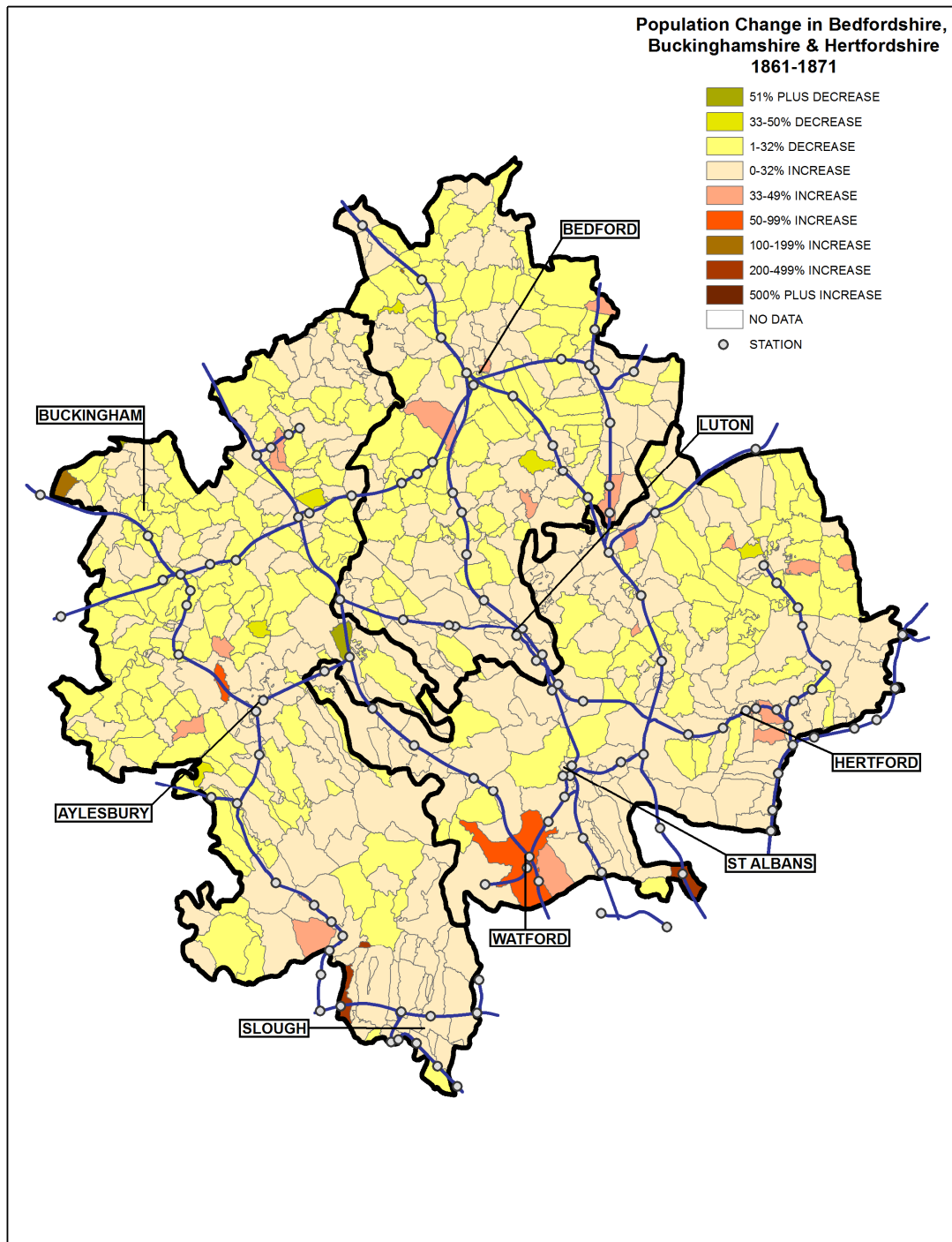
Based on census summary tables via www.histpop.org

Branch line stations, less profitable and from the railway companies' position less important, conversely saw more population decline, although mostly just low levels.[36] There were some slightly growing exceptions, such as to Newport Pagnell (Buckinghamshire) and Buntingford

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[36] Simmons, *Town and Country*, pp. 19, 70, 289; Robbins, *Railway Age*, p.41.

(Hertfordshire), but as branch lines were always limited through their very design, this pattern is understandable.[37] This is not to say that branch lines were not beneficial in other ways, though.[38] The trend of decreasing growth with increased distance from lines remains apparent.

While Luton was at its highest growth in 1841-51, it diminished slightly in 1851-61; its first railway opening in 1858. In 1861-1871 – with all its lines complete – it had fallen to the 'background' 0-32% increase level; markedly different to what expected for an industrialising area. It appears the lateness of receiving lines compared to elsewhere meant the town's greatest development had already occurred, without railway facilitation. That the population did not subsequently decline suggests the railways were beneficial thereafter, particularly when becoming a 'hub', but these lines (separate from any secondary effects from the Dunstable branch) did not assist in Luton's formation as an important centre.[39]

Results for 1871-81

The data for 1871-1881 shows increasing polarisation of the north-south divide, while most notable increases were in north Buckinghamshire and central Bedfordshire. Corresponding to the railways, these sudden increases in a generally-declining rural region were unusual. As three largely-growing parishes neighboured others with no data, it is probable that the census data had been combined in the summary tables, so appearing higher than actually the case.[40] While the north of the region had become a large bock of decline, in the south the 'corridors' were the clearest of all the maps and readily apparent with decline farthest from lines (Fig. 36).

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[37] Casson, *First Railway System*, p.326.
[38] Schwartz, Gregory & Thévenin, 'Spatial History', *Journal of Interdisciplinary History*, p.61.
[39] Simmons, *Town and Country*, pp.276, 298; Schwartz, Gregory & Thévenin, 'Spatial History', *Journal of Interdisciplinary History*, p.61.
[40] Wrigley, *Early Censuses*, pp.32-42.

Fig. 36: Population change in the region 1871-81 compared to extant railway lines.
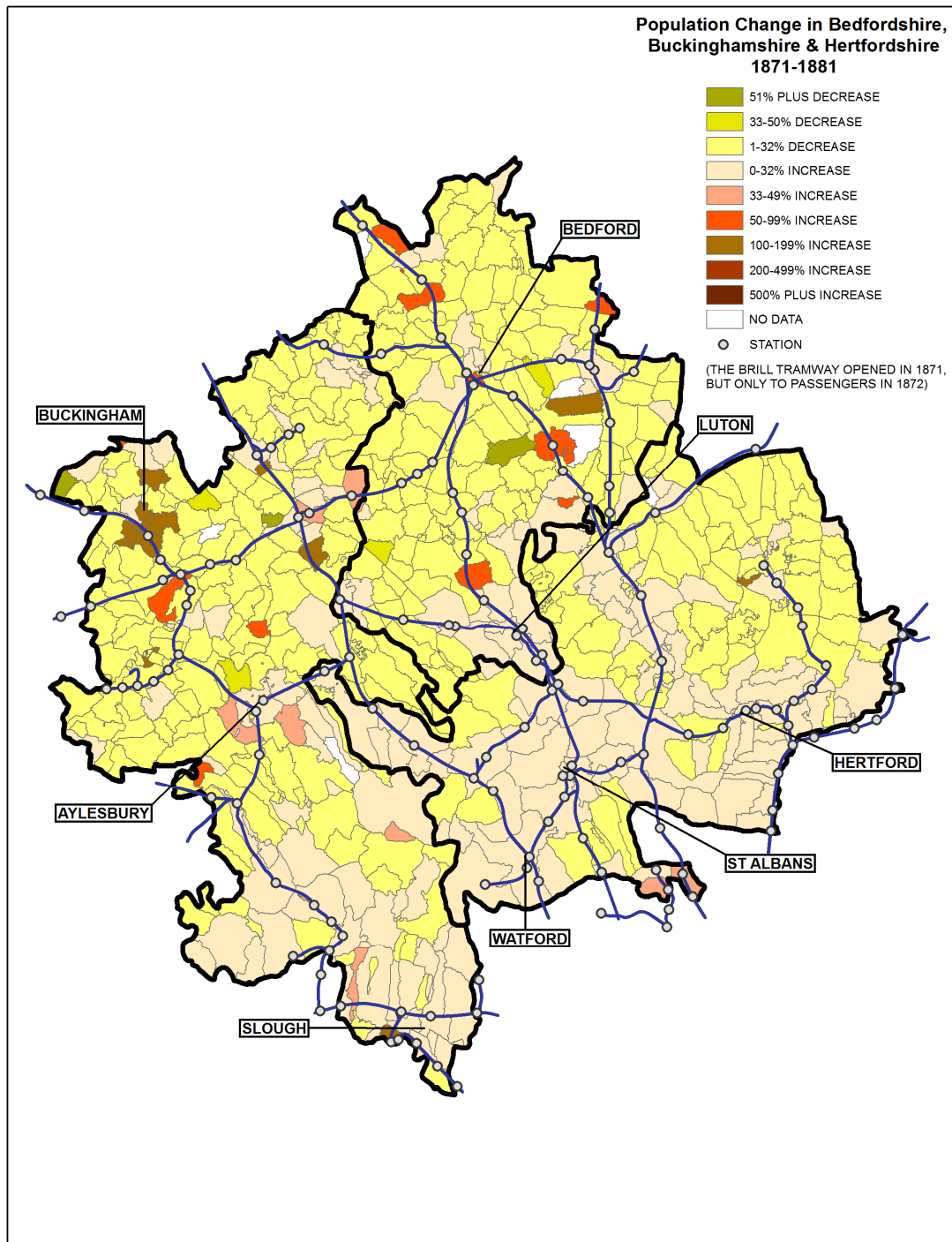
Based on census summary tables via www.histpop.org

One interesting example is present in this decade. Haynes (Bedfordshire) exhibited one of the greatest declines (51%+), while neighbouring Southill was one of the larger increases (50-99%). While having railway access, their neighbouring position suggests short-distance migration occurring. Southill was an area rising in market gardening, produce being taken by

rail, so nearby agricultural employment triggered by reliable access to London markets means railways here appear to have facilitated short-distance migration.[41] Despite rail not being the actual mode of transport, it appears key in assisting this employment-based movement, with little other direct role.

<u>Results for 1881-91</u>

The 'background' 0-32% increase band covered much less in 1881-1891 than previous decades; barely the southernmost part of the region. Excepting central Buckinghamshire, the rest of the region was around a 1-32% decrease (Fig. 37). Bedfordshire was thus near solely in decline; Bedford and Luton the main exceptions. Major increases included two parishes not directly on lines, though the remainder were, while Bedford actively demonstrated population growth radiating out in decreasing bands. Slightly more fragmented that the previous decade, the 'corridors' were still present. The effect of these railways thus did not apparently diminish with time – it was not solely a case of when 'new'.

Conversely, this decade's decline led to slightly more rural main-line stations being in declining parishes.[42] As decline was a nationally-occurring rural phenomenon (Table 14), this may partly be the overall effect of rural-urban migration in the Industrial Age.[43] Interestingly, the Chesham Bois (Buckinghamshire) terminus of the new suburban MetR was markedly higher than its surroundings (a 50-99% increase), tallying with the historiography concerning commuting and the beginnings of suburbia.[44] Nearby parishes on or near that line but with no station decreased, further lending support.

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[41] Simmons, *Town and Country*, pp.20, 48. See Chapter 5.
[42] McCloskey, 'Victorian Britain', *Economic History Review*, p.446.
[43] Boyer, 'Migration', *European Review of Economic History*, pp.191, 212-3.
[44] Simmons, *Town and Country*, pp.59-61; Simmons, *Victorian Railway*, p.332; A. Harris, Changes in the Early Railway Age: 1800-1850, in H. Darby (ed.), *A New Historical Geography of England* (Cambridge, 1973), pp.522-4; Moore, *Agricultural Hertfordshire* (University of Hertfordshire, 2010), p.53.

Fig. 37: Population change in the region 1881-91 compared to extant railway lines.
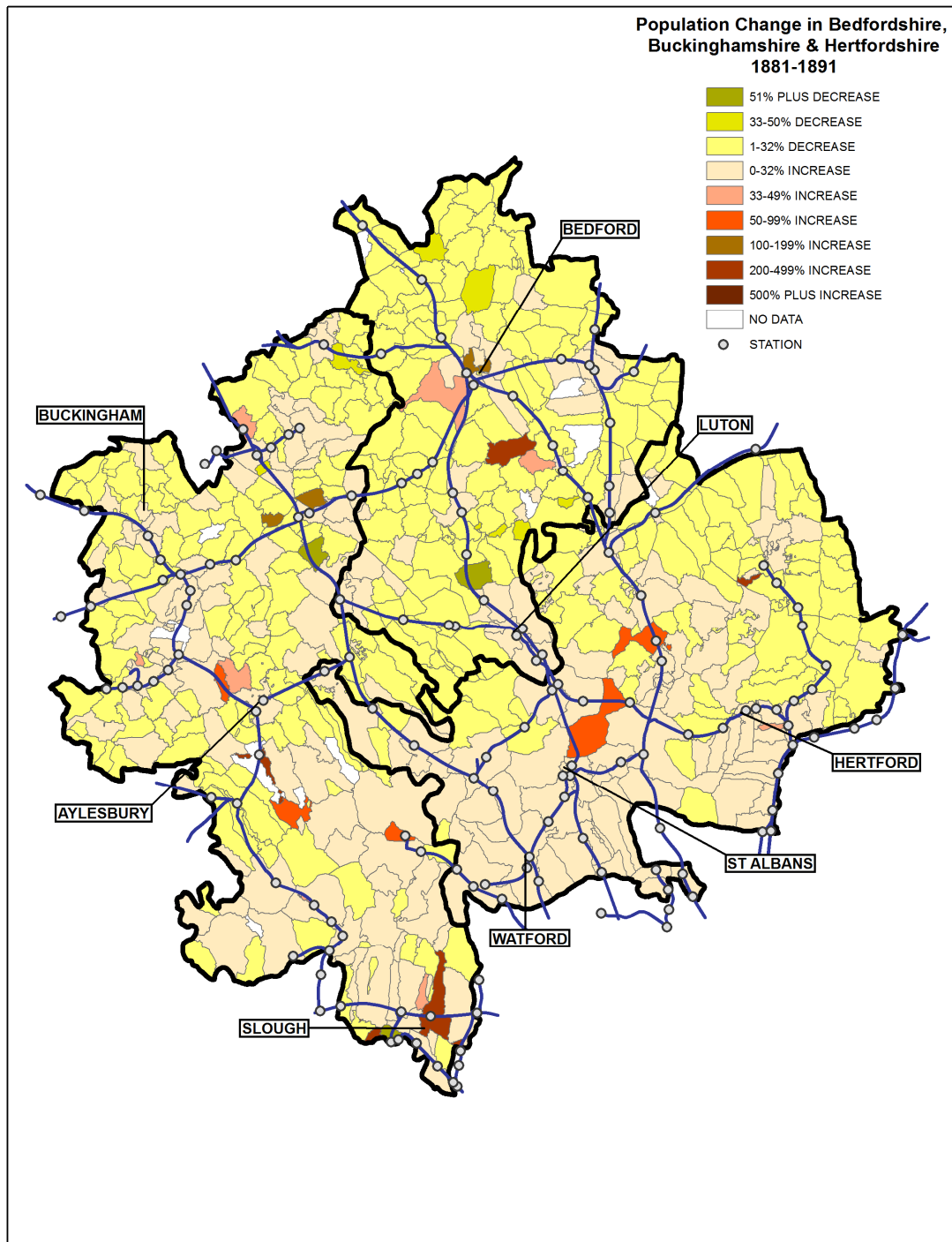
Based on census summary tables via www.histpop.org

Fig. 38: Population change in the region 1891-1901 compared to extant railway lines.
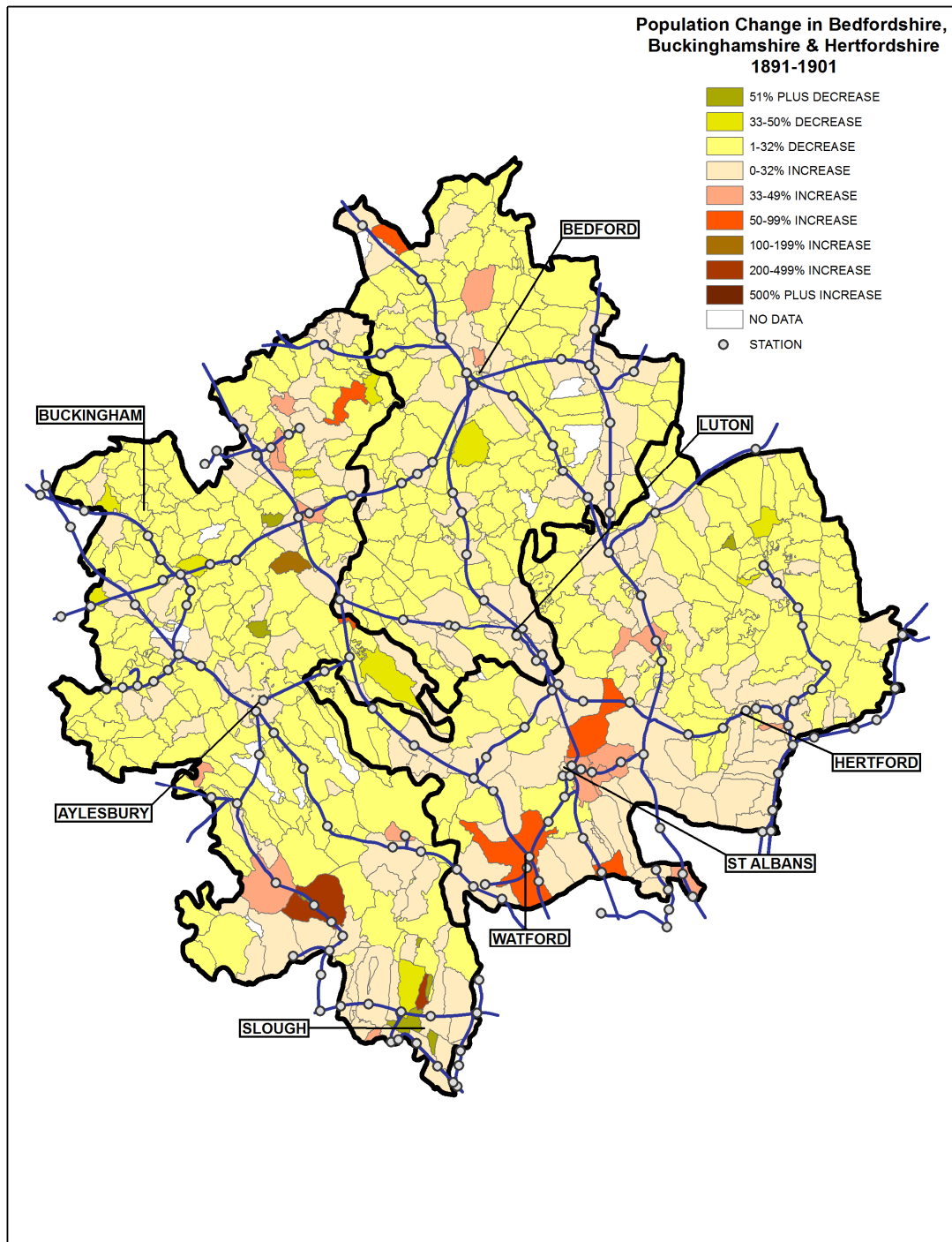
Based on census summary tables via www.histpop.org

Results for 1891-1901

The final 1891-1901 decade completes the second 'background' pattern of low increase/decrease with a similar overall 1-32% decrease pattern to 1851-61, only even denser

(Fig. 38). With some areas of 0-32% increase in north-west Buckinghamshire, west Bedfordshire and their main urban areas, the final large stable area was south Hertfordshire and the southernmost part of Buckinghamshire. Only one increase (northern Buckinghamshire) was not railway connected. This repeated north-south divide supports London influence, and its presence even during the national decline indicates that part of this effect was either due to or compounded by railways. As there were more urban areas to the south than north, in itself a possible London effect, this north-south divide also supports the presence of a broader rural-urban divide, especially considering northern towns, although few, were comparatively stable. While the larger number of declining parishes diminished the effect in places, the 'corridors' following lines were still present with distinct patches of decline farther from the railways. Parishes with a greater 33-50% decline level were more apparent than in any previous decade; many towards the centre of these blocks. Both of these trends were thus present near-continuously from the earliest railways.

Trends in the decadal results

Summarising the main trends; there were three broad stages of development. Prior to the railways, several cases of parishes with marked decline near others with sharp increases indicate short-distance migration with leaching between parishes. While there were exceptional cases occurring after the railways, notably their encouragement of agricultural market gardening attracting nearby (non-rail) migration, this diminished during the Railway Age.

In the early years of railway development there was no immediate correlation with population trends; as with canals and turnpikes beforehand their terminus-terminus operation had only a minor effect. There were exceptions, notably areas with previously-existing industry (such as Linslade), and traces of the emergence of long-running trends. General 'background' increases and decreases in population, with their own cyclical trends, were apparent, firstly with the rise of Luton causing the centre of the region to be encircled by decline, and secondly a recovery from this followed by distinct north-to-south decline. Amid this though, to begin with, were ever-apparent 'corridors' of population growth/stability following lines through wider areas of decline. Linked to this 'corridor' notion, it is clear that overall

population growth actively diminished and declined with increased distance from lines.[45] Virtually all markedly-growing parishes (50% and over) throughout the period were connected to railways.

But in the later railway era – the last decades of the period – the north-south divide of 'background' decline extended further south. The extreme south, having more urban areas, retained a stable population and demonstrated some London influence – quite possibly due to railway connections and the rise of rail-based commuting and suburbs (such as the MetR).[46] But the north, especially Buckinghamshire, conversely revealed ever-fewer 'corridors' present. Instead, decline could be seen with almost no regard for line positions. Contrary to the earlier case of railways being a factor in population *growth*, this indicates railways were by this point actively helping draw people away from these rural areas to urbanised areas both near and far-flung. Farther than generally feasible before the railways, this also explains diminishing cases of visible short-distance 'catchment area' parishes leaching from one another. This negative rural railway impact correlates with the occupational data, historiography and directly with the broader premise of migration in the industrial era.[47] Further showing negative impacts, Luton demonstrates less railway benefit than expected, probably due to the late date of their construction.[48] By the end of the period there was almost as much of a difference between branch and main line railways as there was between the north and south of the region. Short-distance branches were of limited overall merit, impacted to less of an extent and did not spawn short-distance migration. This is quite different to Casson's Oxfordshire study which credited branches with greater positive effects than trunk lines – in contrast to his national study's comment of rural railways having 'little contribution'.[49] Oxfordshire, however, had fewer main trunk lines to this study region, so offering an explanation.

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[45] Schwartz, Gregory & Thévenin, 'Spatial History', *Journal of Interdisciplinary History*, p.84.
[46] Barker & Savage, *Transport*, p.87; J. Rannard, *The Location and Economic Growth of the Watford Paper and Printing Industries* (University of Bristol, 1963), p.3; Moore, *Agricultural Hertfordshire* (University of Hertfordshire, 2010), pp.49, 53; M. Freeman, *St Albans: A History* (Lancaster, 2008), pp.225, 227, 231.
[47] Simmons, *Town and Country*, pp.19-20; Boyer, 'Migration', *European Review of Economic History*, pp.191-3.
[48] Schwartz, Gregory & Thévenin, 'Spatial History', *Journal of Interdisciplinary History*, p.61.
[49] Casson, *Oxfordshire*, pp.12, 16-17; Casson, *First Railway System*, p.317.

Comparison with national decadal percentages

Having referenced a rural 'national decline' at the end of the period, rather than a region-specific change, were the three counties typical for their era? Comparing to decadal estimates of national population growth (Table 14), the variations outlined were clear.[50] In the period the national peak was in 1811-21. Excluding a slight recovery in 1861-81, this peak steadily declined to below the initial 1801-11 level: a difference of 6% between its highest and lowest figures. It is to be expected that the counties' total percentages would not precisely match national percentages, being merely an average, but none followed the basic national pattern of peaks and troughs either – some differences were in stark contrast.[51]

Table 14: Population change nationally and in the region.

	NATIONAL	HERTS	BEDS	BUCKS
% difference 1801-11	15%	11%	11%	9%
% difference 1811-21	18%	19%	19%	14%
% difference 1821-31	16%	10%	14%	10%
% difference 1831-41	14%	10%	13%	6%
% difference 1841-51	13%	7%	15%	5%
% difference 1851-61	12%	4%	9%	1%
% difference 1861-71	13%	11%	8%	7%
% difference 1871-81	15%	6%	2%	4%
% difference 1881-91	12%	8%	7%	2%
% difference 1891-1901	12%	14%	4%	5%

Based on national figures via http://www.tacitus.nu/historical-atlas/population/british.htm

Hertfordshire rose in 1811-21, actually 1% above the national average, slowly declining afterwards until spiking in 1861-71 to nearly double the previous decade. This fell away instead of following the national increase. By 1901 Hertfordshire almost doubled again to 2% over the average and was three times greater than the other counties.[52] Bedfordshire commenced similarly, though its recovery occurred in 1841-51 – earlier than the national trend and its neighbouring counties. Interestingly, this is when it gained its first railways.[53] Growth then diminished with a three-quarter drop in 1871-81. Buckinghamshire exhibited the lowest 1811-21 peak, some 4% below the national average. Falling away the fastest, it

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[50] http://www.tacitus.nu/historical-atlas/population/british.htm
[51] Dyos & Aldcroft, *British Transport*, p.178.
[52] D. Hooson, 'The Recent Growth of Population and Industry in Hertfordshire', *Transactions and Papers (Institute of British Geographers)*, No. 25 (1958), p.197.
[53] G. Woodward, *The Hatfield, Luton & Dunstable Railway (and on to Leighton Buzzard)* (Usk, 1977), pp.7-11; C. Awdry, *Encyclopaedia of British Railway Companies* (Frome, 1990), p.137.

recovered steeply in 1861-71 (though still lowest) and while falling away again it had a second slight recovery by 1901. The region thus only loosely followed the national average. However, despite some atypical regional variations, the comparison is sufficiently similar overall to explain the broader 'background' increases/decreases as part of the wider national trend.

Factors in population change:

London/urban influence

As there was distinct variation between the counties, one explanation is through land use. The region was primarily agricultural, although the occupational data shows this diminished in the period.[54] Occupational decline itself addresses population decline in heavily-rural areas, as people moved away to find employment – traditionally to urban areas.[55] London's influence kept south Hertfordshire's growth slightly higher, especially throughout the later national decline. Similarly, the urbanising 'hubs' of Bedford and Luton had, to a lesser extent, the same effect on their immediate vicinity. Bedfordshire's early railways explain the premature second rise compared to the national average (1841-51, rather than the national 1861-71).

Rural land use

With neither London influence nor major 'hubs' to encourage urbanisation like Hertfordshire and Bedfordshire, Buckinghamshire experienced less urban population growth. This is supported by the mainly-agricultural occupational data, which helps explain variations between its population growth and the others (Table 14).[56] As Hertfordshire became the most 'urban' while Buckinghamshire remained essentially the most 'rural', this rural-urban divide further explains much of the difference between the counties - Buckinghamshire's low and Hertfordshire's high figures.[57] Market gardening (notably Bedfordshire and south Buckinghamshire) often had direct railway links and potentially great migratory appeal. These businesses provided agricultural employment at a time when this occupation sector

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[54] See Chapter 5.
[55] Berg & Hudson, 'Industrial Revolution', *Economic History Review*, pp.33, 37.
[56] See Chapter 5.
[57] Hooson, 'Hertfordshire', *Transactions and Papers (Institute of British Geographers)*, p.197.

was actively diminishing; these parishes consequently showing some of the few rural population growths in the later part of the period.[58]

Urban land use

Conversely, while there was a definite rural-urban explanation for the overall 'background' trend, though no arable/pasture sub-variation, the particularly-high and low parishes were more complex, especially considering potential rail involvement. Comparing the lines to urban areas (see Fig. 19, Chapter 5), there was a definite correlation, also affecting the north-south divide, and although there was a link between decline and distance from lines, the region's main urban centres were already in situ long before the railways. Furthermore, once gaining a connection they did not suddenly grow larger or faster – many remained around only a 0-32% increase. There are two possible reasons for this lack of immediate railway-initiated growth and subsequent time lag.[59] Firstly, the populations of several parishes only suddenly grew after becoming junctions or 'hubs', rather than earlier when merely a stop on a single route. But this explanation does not fit every station, especially considering the differences between main and branch lines, and urban and rural stations. More fundamental is that as the greater population changes were in the later part of the railway age, any rail impacts on population were after the 1844 and 1883 Acts (cheaper fares), increases in mileage, decreasing travel times and, through competition for revenue, the decline of terminus-terminus operation. Only after these changes did train travel become generally more affordable and accessible, giving a superior service to all stations.[60]

However, this would suggest that railways had a direct positive 'changing' impact on urban population, akin to the old historiography, rather than 'facilitating' positive or negative factors as now thought. But, as the exceptions of Buckingham and Luton demonstrate, urban areas were expanding prior to the railways. While railways often aided later development and fostered growth, this was not automatically the case; Luton's growth rate peaking beforehand, with its rate slowing with additional lines. Therefore, the timing of when a railway came to a town compared to the town's own development is a factor in the importance of railways as an aspect of urban growth. In Luton's case the railways came too late to be a founding factor, though they did appear to contribute to later stability in a time of

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[58] Simmons, *Town and Country*, pp.20, 48; Schwartz, Gregory & Thévenin, 'Spatial History', *Journal of Interdisciplinary History*, pp.56-7.
[59] Schwartz, Gregory & Thévenin, 'Spatial History', *Journal of Interdisciplinary History*, p.79.
[60] See Appendix I.

countywide decline.[61] So, with the obvious exception of Wolverton, railways did not directly 'change' urbanisation levels, nor were urban areas dependent on them for initial growth. In the case of the earliest lines, and to an extent those of the 1840s manias, it was a case of towns attracting railways for potential business and prestige rather than railways directly initiating town formation.[62]

The rise of commuting

Wolverton, however, is not the only exception to the 'facilitator' theory. Compared to the declining national average in 1891-1901 (Table 14), Hertfordshire saw a vast population growth, while Buckinghamshire also saw a 1% increase.   While urbanisation was not dependent on the railways, these late sudden rises can be attributable to the rise of commuting, particularly following the 'Cheap Trains Act' of 1883.[63] Famously, suburban development with the MetR following the period caused some villages to expand dramatically as part of 'Metroland', such as Rickmansworth (Hertfordshire).[64] With people moving to well-connected areas to commute daily into work – London influence – railways were a major factor. These unexpected rises in county average thus present an indicator of how the impacts of the railways continued well after 1900.

Land ownership

The results, however, show a very different factor to population growth, and while having a loose railway connection, it demonstrates not only potential variations through railways as a 'facilitator' of developmental factors, but equally that railways were not the sole reason for population 'change'.   Even a cursory comparison of 'open' and 'close' parishes with population growth shows the more 'open' south fitted the more stable population of the later part of the period (Fig. 39).[65]   Where 'close' parishes were higher, notably north Buckinghamshire, there was a greater likelihood of population decline. In these northern rural areas where employment was more limited and there was little prospect for acquiring land this is understandable. Where railways passed, they provided an emigration route rather

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[61] Schwartz, Gregory & Thévenin, 'Spatial History', *Journal of Interdisciplinary History*, p.61; Simmons, *Town and Country*, p.277. See Chapter 11.
[62] Gourvish, *Railways Economy*, p.31; Simmons, *Town and Country,* p.16; Casson, *First Railway System*, p.17.
[63] Dyos & Aldcroft, *British Transport*, p.148.
[64] Leleux, *Regional History* Vol. 9, pp.37-9; M. Eckett, *Signals – A Railway Miscelleny* (Copt Hewick, 2008), p.136; Hooson, Hertfordshire, p.206; Freeman, *St Albans*, p.231.
[65] Woods, *Population*, pp.20, 49; Boyer, 'Migration', *European Review of Economic History*, pp.191-3; Casson, *Oxfordshire*, p.15. See Chapter 5.

than aiding growth. The Chiltern Hills did not differ massively from the rest of the region in the later period, nor acted as a dividing point, so topography was not a factor.

Fig. 39: A comparison of parish ownership in the region and, as an example, population change in the region 1881-91 compared to extant railway lines. A north-south dividing line has been added for clarity.
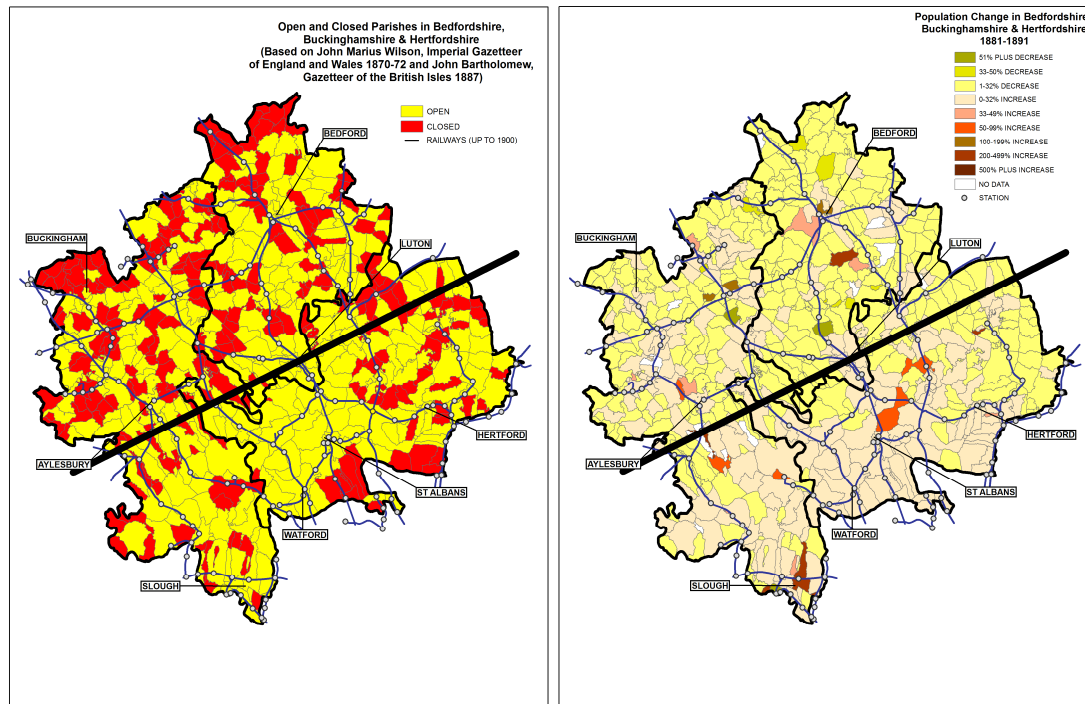
Based on J. Wilson, *Imperial Gazetteer of England and Wales* (1870-72), J. Bartholomew, *Gazetteer of the British Isles* (1887) and census summary tables via www.histpop.org

Industry

As the *Victoria County History* and other studies showed, there is a link between industry and railways.[66] But does the population data support a connection between mobility, industry, urbanisation and railways?[67] Using the 1851-1901 summary map (Appendix VC) as it most clearly shows the main movements of the later period, there were matches. Bedford, Luton, New Bradwell (a satellite of Wolverton), Slough (more than Aylesbury and Buckingham), Watford, St Albans, Hertford and East Barnet encompassed the greatest population growths, and allowing for East Barnet to be part of the expansion of London – partly through its

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[66] Robbins, *Railway Age*, p.21; O'Brien, *New Economic History*, pp.74, 80; Gourvish, *Railways Economy*, pp. 19, 31, 40, 57; Simmons, *Town and Country*, p.124; Langton, Regional Geography, pp.163-4. See Chapter 5.
[67] O'Brien, *New Economic History*, p.93; Wrigley, *Early Censuses*, pp.29-30.

railways – all were urban areas containing industry.[68] There were other small expanding parishes not related to this, many due to very small actual population numbers, but this trend demonstrates a correlation between these four factors. This consequently further supports the notion that industry was attracted foremost to urban areas, with industry and urban settlements generally pre-dating the railways.[69] Industry, therefore, did not depend on the earliest railways.[70] Later, line development did aid industrialisation and, varying in extent per parish, ultimately assisted urbanisation itself at the expense of declining rural areas.[71] It further indicates that the position of industry, thus employment, cushioned the effects of the national population decline; the decline being more pronounced in rural areas. The occupational data suggests not just increasing non-agricultural occupations, but a direct connection between population growth and the need for some of these jobs, such as building construction. With railways as a factor in at least maintaining industry, and so employment change, resulting in effects on population, this facet demonstrates precisely how railway 'facilitation' could create a chain of factors which, through its nature, varied from parish to parish.[72]

Railway junctions and 'hubs'

As many of the most rapidly-growing urban parishes were on or by junctions or 'hubs', did the number of railway connections (route options) aid growth? Comparing their locations (Fig. 11, Chapter 3) to the above list of major growing settlements in 1851-1901, the difference between main and branch lines becomes plain. Excepting Barnet with its London ties and Buckingham, one of the smallest of the main growths and not a junction, all were junctions or 'hubs', but this accounts for only eight out of 29. Considering major lines first; Sandy (Bedfordshire), Quainton, Verney Junction, Princes Risborough (Buckinghamshire) and Hatfield (Hertfordshire) were the others - without major population change. But as several were only significant to the railway companies rather than passengers (such as Quainton), it means the connection between major population growth and major junction location was actually reasonably close. Junctions, though, more likely resulted from railways

[68] *A History of the County of Hertford: Volume 2* (1908) & *Volume 3* (1912); *A History of the County of Bedford: Volume 2* (1908) & *Volume 3* (1912); *A History of the County of Buckingham: Volume 2* (1908), *Volume 3* (1925) & *Volume 4* (1927).
[69] See Chapter 5.
[70] Gourvish, *Railways Economy*, p.31; O'Brien, *New Economic History*, pp.74, 80, 97.
[71] Woods, *Population*, pp.22-4.
[72] Casson, *Oxfordshire*, p.19; O'Brien, *New Economic History*, pp.97, 100; G. Hawke, *Railway and Economic Growth in England and Wales 1840-1870* (Oxford, 1970), p.411.

aiming to gain business from growing towns and through internal competition reducing monopolies rather than them initiating industrial or population expansion in the first place.[73] Once built, they assisted with the stabilisation/growth of the towns during the later decline.[74]

The remainder of the junctions were rural stops or connections to rural branch lines – of little importance to wider migration, with the possible exception of Dunstable and (pre-MR) the LNWR St Albans branch. Wolverton was the exception, as while an important settlement in terms of population, it was made up of mostly railway workers, who used the else-wise minor Newport branch and Stony Stratford tram to get to work.[75] The north-south divide of junctions, most being in Hertfordshire, also mimics the population increase/decrease by 1900, probably due to the positioning of urban areas. Therefore, while there was a connection between major urban areas and railway junction status/connections, possibly also to industry, junctions were also constructed where necessary for the railways, so not a factor in starting initial urban development.

Regional population trends

To summarise, three distinct temporal patterns can be identified. Before the railways, short-distance migration was comparatively common, but with rare exceptions, such as market gardening, this diminished after the first lines. These early lines may have been limited in their impact through terminus-terminus trade and pre-1844 fares, but this does not mean there was no effect, as aside from places directly affected there were the origins of major trends. Contrarily, the lack of large immediate changes supports the broader notion of increasing benefits over time.[76] Once properly established, and after the passage of the Railway Regulation Act, and with ever-increasing inter-company competition, parishes traversed by lines by the end of the period mostly underwent visible changes from earlier decades. 'Background' growth levels appear cyclical throughout the period; 30-year declines sweeping the region from north to south, interspersed with 10-year recoveries. However, the decadal county totals show that they did not correspond to the national average because local factors,

[73] Casson, *Oxfordshire*, p.15.
[74] Schwartz, Gregory & Thévenin, 'Spatial History', *Journal of Interdisciplinary History*, pp.56, 58.
[75] B. Simpson, *The Wolverton to Newport Pagnell Branch* (Waverly, 1995); F. Simpson, *The Wolverton & Stony Stratford Steam Trams* (Bromley Common, 1981).
[76] O'Brien, *New Economic History*, p.35; Schwartz, Gregory & Thévenin, 'Spatial History', *Journal of Interdisciplinary History*, p.79; A. Fishlow, *American Railroads and the Transformation of the Ante-Bellum Economy* (Harvard, 1965), p.62.

including railways, had independent effects. While parishes varied considerably, their effects and changes consisted primarily of just three actual trends:

'Corridors' following lines:

> These patterns of population growth following railway lines were few at first, but grew throughout the period. Significantly, they did not have any other correlation with their immediate surroundings; population growth following lines even when passing through large areas of active decline. This trend remained throughout, but also presented the first indicator of a railway-associated north-south divide. From 1851-61 the north of the region stopped following this 'corridor' theory, while the south continued to. Instead, the north showed increasing expanses of decline irrespective of railway position, indicating railway-supported emigration.

Decline with distance:

> Connected with the 'corridors' trend, not only did railways affect their immediate vicinity, but by the last decades when near-fully formed, the wider area was affected. Parishes the farthest away in all directions demonstrated the highest levels of decline, with those closer to railways becoming more stable. The degree of population decline thus worsened, the greater the distance from any line.[77] This further supports the increasing north-south divide.

Rural-urban divide:

> With a few exceptions in 1831-41, every decade after the first railways had almost every 50%+ growing parish on or neighbouring a line. With the first vestiges of London commuting and suburbia by the end of the period countering national decline, a correlation between railways and urban settlements is obvious. The existence of virtually all towns before the railways, plus the unusual results for Luton show railways did not 'change' or even majorly 'facilitate' *initial* urban development – rather the already-growing towns attracted railways. This also supports Gourvish's view that 'railways did not occupy a central place in Britain's early industrialisation'.[78] But by the *later* period, railways did assist with keeping urban populations stable/growing

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[77] Schwartz, Gregory & Thévenin, 'Spatial History', *Journal of Interdisciplinary History*, pp.70, 84; Wrigley, *Early Censuses*, pp.29-30.

[78] Gourvish, *Railways Economy*, p.40.

throughout the wider decline, as did industrial employment.[79] This was especially so with junctions, although these mostly arose due to town growth.

Rural junctions demonstrated no real impact; the town itself was necessary first with junctions being a following result, rather than initiating factor. With London influence, itself helped by railways, west Hertfordshire as the most urbanised rose against ever-decreasing rural growth.[80] Bedfordshire was primarily rural, suffering much greater decline; Luton and Bedford its only urbanised parishes. In a more localised way these acted akin to London, radiating outwards amd supporting their immediate vicinity. Excepting Slough, in the still-rising south nearer London, Buckinghamshire was the most rural.[81] The 'corridors' became less defined in the rural north of the county and with falling employment, 'close' parishes and none of the benefits of urban areas, widespread decline - particularly on railways - indicates railway presence was a factor in emigration rather than the more usual urban growth. Therefore, while railways did not actively initiate the rise of most towns, they did help maintain them during times of decline, whereas in rural areas especially during these declines they assisted with leaching people away so exacerbating the issue.

These trends all worked together to create an urban-rural divide and, through London and the southerly placement of most urban areas, a north-south divide. While the railways were a factor in this, this in itself affected the railways, with fewer junctions in the north. The rank of main line versus branch line further made some difference, especially as rural branch lines were limited in what effects they might exhibit by their design and by their necessarily-rural positioning.

Conclusion

Excluding Wolverton, there was no evidence that the coming of any of the railways *directly* altered population growth. Indeed, their routes were frequently designed to connect pre-existing urban populations, so initially population attracted and affected the railways rather than vice versa. But that almost every parish growing in the second half of the period had a

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[79] Schwartz, Gregory & Thévenin, 'Spatial History', *Journal of Interdisciplinary History*, p.61.
[80] Moore, *Agricultural Depression* (University of Hertfordshire, 2010), p.51.
[81] D. Fryer, Part 54 Buckinghamshire, in L. Dudley Stamp, *The Land of Britain: The Report of the Land Utilisation Survey of Britain* (London, 1942), p.42.

direct rail link supports the 'facilitator' historiography: *other* factors affected growth, but mostly where established railways were on hand to aid them, or in the case of rural north Buckinghamshire in particular, hinder. In having negative effects at all, the notion of near-automatic improvement in the earlier 'change' historiography is shown to be incorrect. Railways were not central to population change, but after c.1851 they did play an increasingly active role in its development, shown by the correlations post-dating line construction. Railways in the later period were thus not passively following population change but helping to shape it. The decline of particularly rural rail-connected areas additionally demonstrates Simmons' view of potential negative impacts, while questioning aspects of the Schwartz, Gregory and Thévenin theory.[82]

But this impact railway fostered was in itself complex - a symbiosis between old and new lines as the network developed, some lines having more impact than others.[83] As a result, the direction of effects, whether parishes attracted railways or railway promoted parishes, became less defined – both often being the case at differing times. Furthermore, some lines were built not solely for business prospects already present but for town pride and by companies hoping lines would foster future business.[84] Even in spite of the overall decline, the population and occupation data suggests that for some main lines this did occur, with a clear connection between mobility, industry, urbanisation and the railways.[85] Just as differing external factors affected migration, so railways played an increasingly notable role, varying in extent and form from parish to parish.[86]

Although railways had little real impact on initial urban development, and post-1851 only acted as a 'facilitator' to change, they helped connected urban settlements have a greater chance of stability and growth in a time when population was declining; rural decline actively worsening with access to long-distance transport. Through this, the railways' role in migratory development was still highly significant and helped form this key aspect of the industrial age.

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[82] Simmons, *Town and Country*, p.16; Schwartz, Gregory & Thévenin, 'Spatial History', *Journal of Interdisciplinary History*, pp. 77, 79, 81.

[83] Casson, *Oxfordshire*, p.5.

[84] As demonstrated in forecasts of anticipated business detailed in line prospectuses, such as in HALS DE/P/E498-508 – 1855-61, Papers relating to the Luton, Dunstable & Welwyn Junction Railway.

[85] Simmons, *Town and Country*, pp.19-20; Casson, *Oxfordshire*, pp.16-17; Casson, *First Railway System*, p.317; O'Brien, *New Economic History*, pp.97, 100.

[86] Schwartz, Gregory & Thévenin, 'Spatial History', *Journal of Interdisciplinary History*, pp.58, 77.

Chapter 7: Regional Summary and Hypotheses

Hertfordshire, Bedfordshire and Buckinghamshire were a region that set many precedents, the railways playing a varied and significant role within these developments and the many changes that occurred in the period. This region was even significant not just for how transport affected this northern 'gateway' to London, but in how the region affected the development of transportation itself. Wadesmill (Hertfordshire) had the first Turnpike Trust in 1663.[1] The Third Duke of Bridgewater, creator of Britain's first canal, lived in Hertfordshire, as did John McAdam the road builder and Sir Henry Bessemer the steel founder.[2] The world's first branch railway line terminated in Aylesbury, while its later WR extension became the first broad gauge line converted to standard gauge.[3] Wolverton became the first planned railway town and a continual source of technological development.[4] Shortly after the period, Bedford constructed 'Simplex' narrow-gauge locomotives for use in WWI, while Wickhams of Ware began international exporters of railcars.[5] Strangely, the short-lived 1825 Cheshunt suspension railway – only the second ever built – as a stunt on its opening day became the world's first passenger-carrying monorail.[6] These precedents led to common transport developments replicated across the world.

Undoubtedly railways had some social and economic impacts, but these were far from uniform in either form or extent. Other non-railway factors were abundant and could equally have effects, almost certainly more so than railways acting alone as a single 'change'.[7] The historiographical issue of over, or under, crediting railways is very apparent; a result of debate over the extent to which railways acted as a 'facilitator' to development.[8]

It is obvious that any national overview of the railways is, by its very nature, an approximation of innumerable potential variations. But this regional study suggests that even

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[1] http://www.turnpikes.org.uk/English%20turnpike%20table.htm

[2] W. Johnson, *Industrial Archaeology of Hertfordshire* (Newton Abbot, 1970), p.13.

[3] C. Maggs, *Branch Lines of Buckinghamshire* (Stroud, 2000), pp.136-41; F. Cockman, *The Railways of Buckinghamshire from the 1830's* (Aylesbury County Record Office, 1971), p.59.

[4] J. Simmons, *The Railway in Town and Country 1830-1914* (Newton Abbot, 1986), p.173.

[5] L. Ford, *Wickham of Ware – a History of D. Wickham and Company Ltd Railcar Manufacturers* (Ware, 2003).

[6] J. Ashby, 'The First Suspension Railway', *The Railway Magazine* (April, 1950), pp.270-2; H. Hilton, 'The First Railway in Hertfordshire', *The Locomotive* (May 1945), pp.75-7; http://www.albury-field.demon.co.uk/bxind.htm See Appendix II.

[7] R. Schwartz, I. Gregory & T. Thévenin, 'Spatial History: Railways, Uneven Development, and Population Change in France and Great Britain, 1850-1914', *Journal of Interdisciplinary History*, Volume 42, Number 1 (Summer 2011), pp.56, 58, 70.

[8] Simmons, *Town and Country*, p.21.

at a county level creating a single statement on railway impact would have similar limitations. Therefore, for an accurate understanding, regions need to be analysed at a county level to identify basic general patterns and then at an individual parish level to confirm the accuracy of these. Railways may well have been a national and international phenomenon, but it was at the parish level that their real significance was truly felt and demonstrated.

Countywide Overview

While a final answer on railway impacts lies at a parish level, the completed countywide results introduced many noteworthy trends. Although not directly applicable for every settlement, these trends demonstrate how railways could affect different types of areas and people in the region:

Transport

The most marked transportation development was the successive overtaking, but simultaneous mutual complementing, of one type by another: turnpikes overtaken by canals, superseded by railways. This is a common historical claim, and was clearly a direct effect, although the main waterways survived throughout the period and there was evidence for rising numbers of road occupations by 1900.[9] The number of lines around or following the mania periods (the late 1840s and mid 1860s), matches the national explosion in railway mileage, while suggesting a connection between junctions and 'hubs' and the development of locations served. These connections, however, appear more a case of growing locations attracting railways rather than railways actively creating these urbanising settlements.

In some instances the routes support the historiography concerning inter-company competition and resulting route duplications, but it was more complex. The region shows companies building branches in near-open fighting over 'territories', but simultaneously entering cooperative agreements to share terminuses and lines.[10] Furthermore, the ever-

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[9] T.C. Barker & C.I. Savage, *An Economic History of Transport in Britain* (London, 1974), pp. 63-4, 101; H. Dyos & D. Aldcroft, *British Transport: An Economic Survey from the Seventeenth Century to the Twentieth* (Leicester, 1971), p.214; T.R. Gourvish, *Railways and the British Economy 1830-1914* (London, 1980), pp.27-9; P. Maw, *Transport and the Industrial City: Manchester and the Canal Age, 1750-1850* (Manchester, 2013), p.70.

[10] M. Casson, *The World's First Railway System: Enterprise, Competition and Regulation on the Railway Network in Victorian Britain* (Oxford, 2009); Dyos & Aldcroft, *British Transport*, p.151. A regional example would be the two Eton branches (GWR/LSWR). There was also near-open hostility between the GWR and

greater mileage of lines in the south than north, with its associated connections, suggests a final indication. With Hertfordshire as the 'gateway' to valuable trade in London, the capital had some influence on the south of the region, ever increasingly with improved communications. That Bedford (for example) similarly had radiating lines by 1900, though on a much smaller scale, indicates that for this rural region the main urban areas had a similar wider sphere of influence on the countryside, something railways strengthened in a time of national rural decline.

Occupation

The main trend supports the most basic feature of the industrial era; agricultural areas declined while urbanising areas grew.[11] Commonly related to migration, the population and land use data supporting it, here it revealed the decrease of agricultural employment compared to the rise of urban or non-agricultural occupations in the results. A rural region of the sort not generally studied in a railway context, agriculture was still dominant by 1900, but alternate sectors such as straw plait or professional occupations were increasing. Railways could easily be credited, and it is likely they played some role, but the 1870s agricultural depression was undoubtedly the main factor – railways alone did not 'change' occupational development.

Importantly, though, there were distinct variations within the same sectors between the counties. Emphasising the lack of a uniform railway effect, they appear to be one of many factors, so supporting the theory of railway 'facilitation'. For some sectors, far from being a single creator of 'change', even when considered as one factor among many railways were not overly major. In other exceptions, such as Wolverton Works, papermaking and printing in Watford and heavy engineering in Bedford, railways played a significant, if not central, role that fitted neither their county's general occupational trends nor necessarily even either the 'facilitator' or 'change' railway historiographies.[12] The historiography of rapid stagecoach decline was demonstrated in the results by a decrease in non-railway employment,

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LNWR 'affecting injuriously the interests of this company' - TNA RAIL 1110/260 – London and Birmingham Railway Shareholders Reports – Report for 12/8/1853.

[11] M. Berg & P. Hudson, 'Rehabilitating the Industrial Revolution', *The Economic History Review*, New Series, Vol. 45, No. 1 (Feb., 1992), pp.33, 37; G. Boyer, 'Labour Migration in Southern and Eastern England, 1861-1901', *European Review of Economic History,* I (1997), pp.191-3, 212-3.

[12] Watford: Introduction, *A History of the County of Hertford: Volume 2* (1908), pp.446-451. See Chapters 1 and 12.

but this recovered and grew to be largest overall, even with rising levels of railway-based employment.[13] This matches the turn to short-distance service journeys.

Changes were not always positive, and the overall figures were not always substantial, so many occupations can be summarised as essentially stable. But in a period of rural decline, this is still a beneficial outcome. The transfer of occupations from primarily agricultural to distinctly urban suggests that while railways were certainly a factor on a local level, they were not a primary reason as once believed. Though railways likely assisted with fostering urbanisation and the rise of such urban employment sectors, these changes were more dependent on other separate local and national factors.

Land Use

In analysing land use, many trends reappear. The decline of coaching stops and parishes with failed markets supports both the stagecoach historiography and Simmons' comments on negative changes, along with demonstrating how retail trades could shift through improved transportation.[14] Although railways definitely had some effect on market gardens and aided trade in milk and perishables, there were few noticeable impacts on broader agriculture other than railway companies gaining revenue from serving the trade.[15]

While agriculture saw few developments initiated by railways, industrial development has always been considered closely with railways.[16] However, as many industries, notably straw plait, pre-dated the railways and the early terminus-terminus trade pattern would have created little initial rail involvement, it appears urban settlements with these industries attracted railways rather than being established as a result of a rail link.[17] Conversely, while not started by railways, rail connections did affect industry in the later period, as there was

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[13] Dyos & Aldcroft, *British Transport*, pp.211-4, 222-3.

[14] Simmons, *Town and Country*, pp.16, 19-20, 173, 298; Dyos & Aldcroft, *British Transport*, p.197.

[15] Simmons, *Town and Country*, p.48; Schwartz, Gregory & Thévenin, 'Spatial History', *Journal of Interdisciplinary History*, p.73; J. Moore, *The Impact of Agricultural Depression and Land Ownership Change on the County of Hertfordshire, c.1870-1914* (University of Hertfordshire, 2010), pp.12, 20.

[16] B.R. Mitchell, 'The Coming of the Railway and United Kingdom Economic Growth', *The Journal of Economic History*, Vol. 24, No. 3 (Sep., 1964), pp.315-336; Dyos & Aldcroft, *British Transport*, pp.111, 129; G. Hawke, *Railway and Economic Growth in England and Wales 1840-1870* (Oxford, 1970), p.411.

[17] Mitchell, 'Railway Growth', *Journal of Economic History*, p.316; Dyos & Aldcroft, *British Transport*, p.215.

industrial expansion despite the 1870s rural depression affecting both the region and the nation as a whole.[18]

Considering land ownership, there was a noticeable north-south split between 'open' and 'close' parishes, tallying with the rural-urban divide and London influence. This in itself would have been a major issue, with 'close' land ownership being a migratory push factor for residents and limiting urbanisation. Early lines could be seen avoiding 'close' parishes wherever possible, but later lines did not continue this trend, instead benefiting from increasing support for the new technology and the rise of compulsory purchase powers.[19]

Railways generally helped industrialisation more in its expansion rather than formation, while land ownership not only impacted on land use and industry, but was a major factor affecting early railways development. Therefore, railways did play a role by the end of the period, but they were not a major factor in changing land use. Instead, they were themselves shaped by the land they traversed.

Population

The population results show many facets, but overall indicate three stages of development. The first stage, before the railway, was of mostly short-distance migration between nearby parishes, matching that noted by Simmons.[20] Secondly, with the early railways concentrating on terminus-terminus business, there was little effect bar where they had major urban connections and were properly served.[21] Finally, at the height of the railway age, there was a decrease in short-distance migration with a more mobile population travelling greater distances. By then, improving communications resulting from railways allowed prominent urban settlements, especially London, to expand their sphere of influence on the wider area, while actively emphasising the rural-urban divide as people began actively migrating by rail.[22] This is further demonstrated by the rise of commuting and suburbia towards the end of the period, which would become highly important for the region by the 1920s.[23]

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[18] Gourvish, *Railways Economy*, p.40, Schwartz, Gregory & Thévenin, 'Spatial History', *Journal of Interdisciplinary History*, pp.56, 70, 71; Moore, *Agricultural Hertfordshire* (University of Hertfordshire, 2010), pp.15, 62.

[19] J. Simmons, *The Victorian Railway* (London, 1991), p14; Casson, *First Railway System*, p.324.

[20] Simmons, *Victorian Railway*, p.319.

[21] Schwartz, Gregory & Thévenin, 'Spatial History', *Journal of Interdisciplinary History*, p.79.

[22] Barker & Savage, *Transport*, p.87.

[23] Simmons, *Victorian Railway*, p.324; Simmons, *Town & County*, p.59; Barker & Savage, *Transport*, p.96.

Running through these stages were three important trends that correlated with many of those suggested by the other datasets. Population gradually appeared more stable in 'corridors' of growth following the lines. However, by 1900 these 'corridors' disappeared in northern rural areas, notably Buckinghamshire, where railways instead actively aided outgoing migration. Associated with this, population percentages diminished and markedly declined with increased distance from the lines.[24] These both support the urban versus rural population trend after 1841, with railways helping stabilise urban populations while actively leaching rural populations.

As railways appear to have strengthened rather than shaped industry, population increases in more 'industrialised' areas correlate with this, suggesting interconnecting ties between mobility, industry, urbanisation and railways – four key parts of the industrial age.[25] These four parts connected together, in the right circumstances, into a chain reaction: railways aided industry, which helped increase employment opportunities, and through enabling greater mobility people could come to these areas of increasing employment during the agricultural depression, so increasing urbanisation. Other non-railway factors were necessary for this chain, particularly the 1870s depression, and it depended on the character of the individual settlement, but railways were notable for this, even if main lines more than branches.[26]

While most urban areas saw population increases and had railways on-hand, this was not always the case; some saw little real change, while the growth of Luton actually slowed once connected. One of the last towns to gain a railway, Luton suggests that more generally the timing of connection to a railway relative to the independent development of the settlement may have been an issue affecting subsequent settlement urbanisation or expansion.[27] That the region's population levels changed so much in the early decades before the railways conclusively shows that they were not the sole factor that led to these results, but growing correlation as they became more established demonstrates that railways did play an increasingly important role.[28]

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[24] Schwartz, Gregory & Thévenin, 'Spatial History', *Journal of Interdisciplinary History*, pp.70, 77, 84.
[25] P. O'Brien, *The New Economic History of the Railways* (London, 1977), p.93.
[26] Schwartz, Gregory & Thévenin, 'Spatial History', *Journal of Interdisciplinary History*, pp.61, 70.
[27] Ibid; pp.58, 61. See Chapter 8 and Appendix II.
[28] Ibid; p.57.

National Historiography Compared to the Study Region

The countywide analysis demonstrates applicable historiographical aspects and distinct trends that the region's railways followed. Of the applicability of the current historiography to the influence the railways had, the variation between counties, presence of other factors and even that the railways were seldom the most vital of factors strongly supports the 'facilitator' view.

The countywide trends, therefore, enable the definition of aspects within the 'facilitator' model. In it, railways were not necessarily a central or primary initiator of 'change', but generally assisted in some way, often by aiding the actual primary factor. Their effects could vary in type and extent by location and time. Railways could have positive and negative effects on a location and its surroundings and these could interchange where affected by other factors. They could also have knock-on effects, whereby the result of a railway-initiated impact could trigger a secondary non-railway effect in its own right. Lastly, certain locations were distinct exceptions where railways had less effect, or conversely where they could be a major factor or even directly lead 'change' in some unusual cases – there was little to no uniformity.

But these show that even this region is too large to accurately analyse without creating generalisations and approximations, similar to issues in prior national railway studies. While these results offer trends and theories on railway impacts, are they appropriate or accurate at a parish level? With distinct variation between counties, the need for a local-level study remains vital for a proper understanding. Aside from the largest historiographical question as defined above, the countywide summaries presented trends that go some way to suggesting how railways really affected parishes in the region.

Regional Hypotheses

The regional results demonstrate that the impact of the railways was not as all-encompassing as once believed, but nonetheless they were a force to be reckoned with. While varying in extent between the counties and even areas within them, these trends, however, allow countywide hypotheses to be created as a skeleton framework; a structure applicable for the region that can be tested for validity against case study locations:

Transport:

Hypothesis 1: Initial terminus-terminus railway trade delayed the main effects of railway connection to intermediary stops.

A countywide rather than parish-level issue, the evidence suggests that, dependent on the importance of the location and thus the service it received, this was generally correct.

Hypothesis 2: Competition was a major aspect of railway development, especially where important locations attracted multiple companies, or companies entered another's 'territory'.

Another broader issue; the region's segmented expansion, particularly with cases of lines being duplicated and smaller companies bought out by larger conglomerates, suggests for the most part this was true. But some aspects of inter-company cooperation show there were exceptions when mutually-beneficial for railway trade.

Hypothesis 3: Main lines and branch lines had different effects and degrees of influence.

Hypothesis 4: Junctions and 'hubs' were important, but in aiding already-rising locations rather than establishing them as urbanising centres.

Hypothesis 5: Unlike other effects, railway 'change' near-directly triggered the collapse and decline of stagecoaches and canals, although with roads recovering by turning to shorter-distance journeys.

Occupation:

Hypothesis 6: The transport sector rose as a notable employer in its own right.

While this experienced great variation between parishes, so appearing false, the countywide results (notwithstanding the impact of Wolverton) demonstrate a marked increase. Although the majority in 1901 were by no means specifically in railways, the non-railway transport jobs had connections, particularly in short-distance travel.

Hypothesis 7: Industries in the region generally pre-dated the railways so were not dependent on them for initial establishment. Once the railways were in place, though, industry was aided with material accessibility and migratory effects (for both employment and retail/marketing) in larger settlements.

Hypothesis 8: The period saw the first vestiges of commuting and the very beginnings of suburbanisation.

Hypothesis 9: Parts of the region saw the beginning of a shift from agricultural to urbanised occupations, correlating with improvements in railway services. Equally, the most rural areas with no prior industrial activities saw greater decline, especially in population.

Land Use:

Hypothesis 10: The largest urban settlements had a far-reaching influence on their locality. This influence increased over the period with improved railway communications.

Only identifiable at a countywide level, the positioning of most urban areas to the south strongly supports the notion of London influence, as to a lesser extent do the Burgess and Hoyt-style rings of population and industry around Bedford and Luton.[29] That the land use became ever-increasingly rural with distance from these major settlements further corroborates it.

Hypothesis 11: Land ownership was a factor in early railway development – placing limitations on route availability. This was less so by the end of the period. In rural 'close' parishes, this was also a factor in population decline and the lack of any notable urbanisation.

Hypothesis 12: The expansion of urbanising settlements occurred relative to local railway development. Considering the rises in commuting, some industries and the building trade, much of this expansion would centre geographically on railway lines, yards and/or stations.

Population:

Hypothesis 13: There was a major rural to urban population shift in the period, moving greater distances, towards which railways acted as a facilitating factor.

This hypothesis, although broad in definition, is clearly shown in the north-south divide in the region's population results. Within this claim were three additional explanatory sub-theories:

Hypothesis 14: Once established, railways began to exhibit 'corridors' of population stability and growth following their lines, acting quite separately to the trends of the areas. This effect decreased with increasing rurality.

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[29] http://geographyfieldwork.com/UrbanModelsMEDCs.htm

Only visible when considering whole counties, the evidence suggests railways had a distinct effect on where they passed, but more-so where served by stations. Equally, the ever-worsening rural decline negated this effect when farther from main urban centres. There, railways were just as significant a factor, but in drawing people away rather than bringing them in. The trend of declining population percentage with increased distance from a line adds an interesting secondary correlation.

Hypothesis 15: As railway services improved, short-distance migration between parishes was slowly replaced with more long-distance migration, not necessarily within the same county or region.

The countywide population maps demonstrate that cases of neighbouring parishes jointly increasing/decreasing actively diminished throughout the period, and bar some potential market garden exceptions were no longer found once the railways had reached their peak.

Hypothesis 16: Railways were generally attracted to rising urban/industrial towns, rather than the provision of a railway being the trigger for the town's mass urbanisation or industrialisation.

These hypotheses provide a useful summary of the trends and developments that this region experienced. However, the regional countywide study is fundamentally an overview, it not being feasible to investigate every last detail. As the historiography demonstrated, this means that the above claims may not be fully appropriate when applied to individual locations. Following the proposed dual-methodology, this regional conclusion now forms the start of a more detailed local parish level investigation, which will test these hypotheses and reveal if they can be considered an accurate characterisation of rural railway impacts in this area, and thus if they can be proposed for rural regions as a whole.

Part 3: Case Study Analysis and Findings

Introduction to the Case Studies

To examine the accuracy of the hypotheses, six case study parishes were investigated similar to the region as a whole for comparison (Fig. 40, p.207). These were selected to reflect a broad spectrum of aspects, two per county. Each pair represents a notable urban settlement and a small rural village – one substantial in size and regional importance, the other comparatively minor. Some gained railway connections early, others late, and comprised through stations, branch junctions, main line junctions or even 'hubs' where multiple lines and companies converged. Some of the hypotheses can only be analysed at a countywide level, but parish-level analysis of the remainder demonstrates their applicability, and thus the extent to which railways affected this rural region.

Wolverton

Originally a small village in northern Buckinghamshire, 'Old Wolverton', as the early settlement ultimately became known, was located near the small towns of Stony Stratford and Newport Pagnell. Anglo Saxon in origin, most land was owned c.1380 by the Longville family until 1713 when the manor was sold to Dr John Radcliffe.[1] On his death in 1714 the lands were amassed in the charitable 'Radcliffe Trust' to support his Oxford University library.[2] The effects of enclosure in 1654 weakened farming and the village declined, only recovering slightly with the construction of the Grand Junction Canal and a local wharf c.1803.[3] However, with the opening of the London & Birmingham Railway the parish was transformed; nearby fields becoming the site of 'New Wolverton' – the world's first planned 'railway town'.[4]

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[1] J. Wilson, *Imperial Gazetteer of England and Wales* (1870-72); Parishes: Wolverton, *A History of the County of Buckingham: Volume 4* (1927), pp.505-509; Milton Keynes Museum; http://www.mkheritage.co.uk/wsah/hood/docs/aqueductbook7.html

[2] F. Markham, *History of Milton Keynes and District Volume 2* (Luton, 1986), p.28; Parishes: Wolverton, *A History of the County of Buckingham: Volume 4* (1927), pp.505-509.

[3] B. Dunleavy, *The Lost Streets of Wolverton* (2010), p.2; M. Robbins, *The Railway Age* (London, 1962), p.60; B. West, *The Trainmakers - the Story of Wolverton Works* (Buckingham, 1982), p.13; MKM; http://www.mkheritage.co.uk/wsah/hood/docs/aqueductbook7.html

[4] B. West, *The Railwaymen - Wolverton* (Buckingham, 1987), p.14.

Fig. 40: The six case studies relative to the region and its railways.
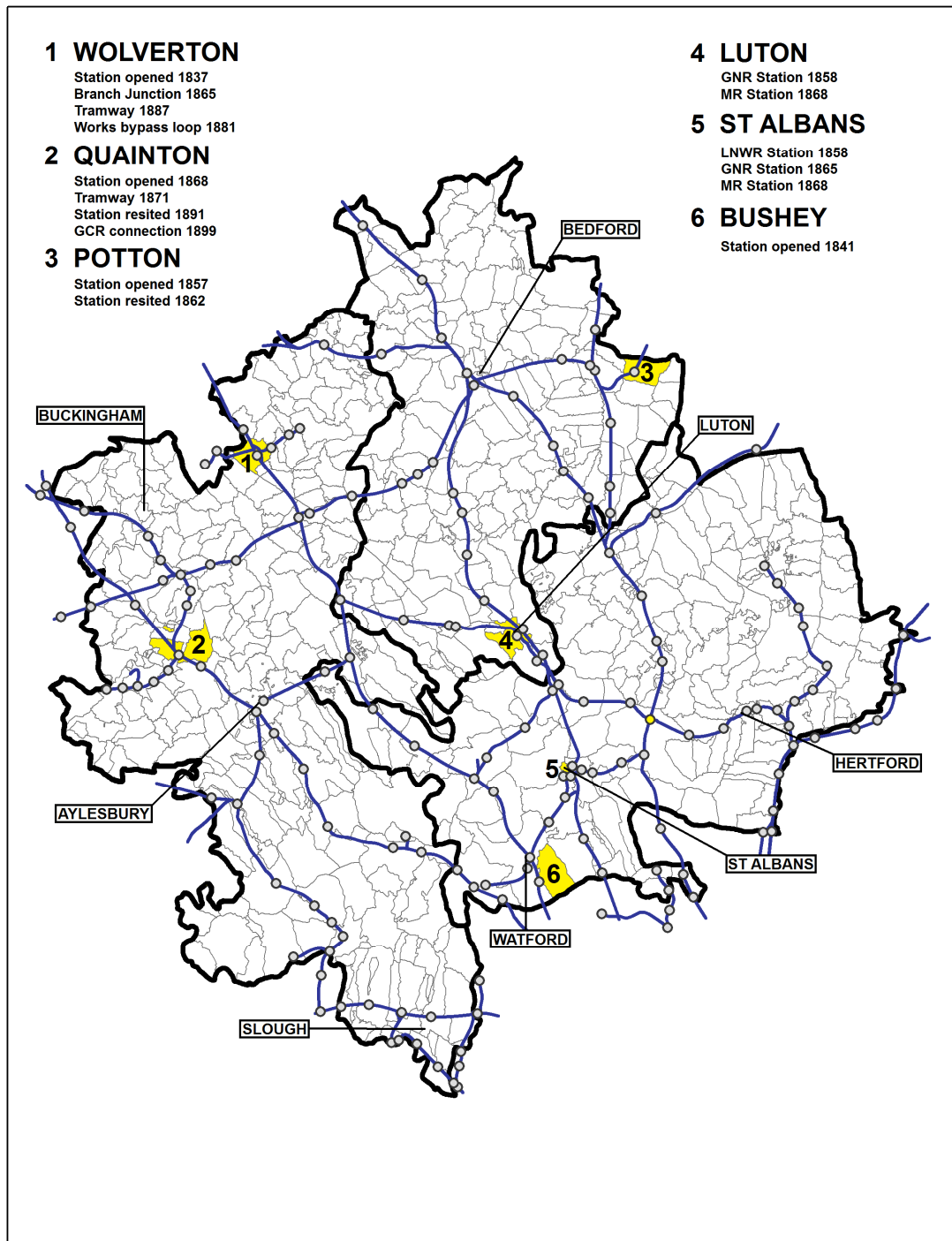
Quainton

Set in central Buckinghamshire, Qainton's manor lands were first mentioned c.1086.[5] A very minor agricultural village seven miles from Aylesbury, little is recorded bar changes in manor owner, some seventeenth century buildings and enclosure in 1840, but the nearby village of

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[5] Parishes: Quainton with Shipton Lee, *A History of the County of Buckingham: Volume 4* (1927), pp.92-99; https://ubp.buckscc.gov.uk/SingleResult.aspx?uid=TBC761

Stowe had the estate of the Dukes of Buckingham (the house built in 1680; rebuilt c.1770s) which would have had some influence over Quainton and the area.[6]

Potton

With Saxon origins and from 1094 a market town known particularly for wool, Potton in Bedfordshire was decimated by fire in 1783.[7] Despite remaining significant after rebuilding, having several fairs including a horse fair attracting nationwide visitors, the town failed to return to its former economic height.[8] Primarily agricultural, although having a large tannery, the parish was enclosed piecemeal by 1832.[9] The manor was divided in 1237, recombined by 1637 and in the 1750s was owned by Admiral Byng who was famously executed on his flagship.[10]

Luton

Prior to the nineteenth century, Luton in Bedfordshire was described by the *Victoria County History* as 'a quiet market town with a comparatively uneventful history'.[11] First referenced in Domesday, already with a market, there was much decay by the sixteenth century but its fortunes changed in the early seventeenth century with the introduction of straw plait manufacture, purportedly begun in Bedfordshire by James I c.1764.[12] Raising the profile of the town and its market, the industry continually grew throughout the Napoleonic Wars.[13] Of the manors, the Crawleys purchased many between the fourteenth and eighteenth centuries, while in 1611 Luton Hoo estate was purchased by the (future) Lords of Bute.[14] In 1896

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[6] Parishes: Quainton with Shipton Lee, *A History of the County of Buckingham: Volume 4* (1927), pp.92-99; https://ubp.buckscc.gov.uk/SingleResult.aspx?uid=TBC761 ; http://www.stowe.co.uk/house/about-stowe-house/history/

[7] Wilson, *Imperial Gazetteer*; P. Ibbett, *The Great Fire of Potton 1783* (Potton, 1983), pp.4-7; P. Ibbett, *Potton Bedfordshire: A Brief History* (Potton, 2000), pp.4-5; http://www.pottonhistorysociety.com/history.html ; http://www.bedfordshire.gov.uk/CommunityAndLiving/ArchivesAndRecordOffice/CommunityArchives/Potton/Introduction.aspx

[8] P. Ibbett, *Potton Market Square* (Potton, 1986), pp.18, 22; http://www.bedfordshire.gov.uk/CommunityAndLiving/ArchivesAndRecordOffice/CommunityArchives/Potton/Introduction.aspx

[9] Ibbett, *Fire Potton*, p.43; Ibbett, *Potton*, pp.2-3.

[10] Ibbett, *Potton*, p.3; Parishes: Potton, *A History of the County of Bedford: Volume 2* (1908), pp.237-242; http://www.pottonhistorysociety.com/history.html

[11] Parishes: Luton, *A History of the County of Bedford: Volume 2* (1908), pp.348-375.

[12] J. Bartholomew, *Gazetteer of the British Isles* (1887); Wilson, *Imperial Gazetteer*; *A History of the County of Bedford: Volume 2* (1908), pp.119, 348-375; *Luton: Market Town 1750-1850* (Luton Museum Education Service), p.8; Wardown Park Museum.

[13] WPM.

[14] Wilson, *Imperial Gazetteer*; Parishes: Luton, *A History of the County of Bedford: Volume 2* (1908), pp.348-375; WPM.

several hamlets were made civil parishes; they are not considered in this study unless directly referenced.

St Albans

Established as Verlamio by the Celtic Catuvellauni Tribe in what is now Hertfordshire, Roman Verulamium rose to be one of Romano-Britain's three largest cities and a major stopping point for travellers thereafter.[15] Rebuilt after the Boudiccan attack, the martyrdom of St Alban led to the post-Roman settlement migrating to the hilltop where a major abbey was founded by King Offa in AD793.[16] Site of two battles in the Wars of the Roses and purportedly England's first printing press, the Abbey was dissolved by Henry VIII, weakening the control of the erstwhile city over the region, although the market remained influential.[17] A Charter was granted in 1664 and the town became foremost a coaching stop with a silk mill and straw plait as its main (small-scale) industries.[18]

Fig. 41: The parishes that make up St Albans.

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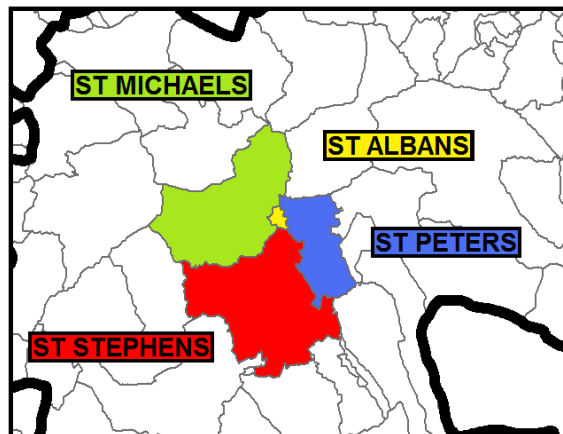
[15] Bartholomew, *Gazetteer*; M. Freeman, *St Albans: A History* (Lancaster, 2008), p.190; J. Corbett, *A History of St Albans* (Chichester, 1997), pp.1-10; Verulamium Museum.

[16] Wilson, *Imperial Gazetteer*; E. Doubleday, *Hertfordshire: Survey Report and Analysis of County Development Plan, 1951* (Hertford, 1951), p.19; Freeman, *St Albans*, pp.15-16, 48-9; Corbett, *St Albans*, p.13; Verulamium Museum; Museum of St Albans.

[17] Doubleday, *Hertfordshire Survey*, p.22; Freeman, *St Albans*, pp.119-20, 132-4, 184-6; Corbett, *St Albans*, pp.41-59; MoStA.

[18] Freeman, *St Albans*, pp.176-7, 181, 211-5; R. Leleux, *A Regional History of the Railways of Great Britain, Volume 9 The East Midlands* (Newton Abbot, 1976), p.31; Corbett, *St Albans*, p.73; Doubleday, *Hertfordshire Survey*, pp.20, 40; The City of St Albans: The Borough, *A History of the County of Hertford: Volume 2* (1908), pp.477-483.

'St Albans' constitutes four parishes, but the sprawl that merged them is essentially a modern occurrence.[19] Therefore, while only the central St Albans parish, the original main settlement of this period for which the stations were intended, is considered as the case study, St Michaels, St Peters and St Stephens are referenced for completeness (Fig. 41).

Bushey

With pre-Norman origins, Bushey was an agricultural village in the vicinity of Watford, Hertfordshire, with little marked history.[20] Most land was under the control of St Albans Abbey until the Dissolution; the manors thereafter were originally united under the De Mandevilles but were later subdivided.[21] Subsequent landowners included the Capels (Earls of Essex c.1661), while Bushey Hall changed owners several times; Edward Marjoribanks purchasing it in 1839.[22] Bushey Heath, a nearby hamlet (not detailed in this study), was popular with Georgians for its fresh air.[23] In 1894 the area to the west (by the station) was separated, becoming Oxhey Ward, but is still included in this study.[24]

These case studies range from comparatively insignificant villages to larger towns with wider spheres of influence. Even so, the size of these provincial towns was limited compared to industrialising regions and were significantly smaller than in the Victorian era. As demonstrated over the following chapters, the history of these case studies reflects the complexity of railway interaction and the balance between localised variations and wider general trends as in the hypotheses.

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[19] Parishes: St Michael's, *A History of the County of Hertford: Volume 2* (1908), pp. 392-405; Parishes: St Stephen's, *A History of the County of Hertford: Volume 2* (1908), pp. 424-432; Parishes: St Peter's, *A History of the County of Hertford: Volume 2* (1908), pp. 412-424; MoStA.

[20] Parishes: Bushey, *A History of the County of Hertford: Volume 2* (1908), pp.179-186; Bushey Museum.

[21] Parishes: Bushey, *A History of the County of Hertford: Volume 2* (1908), pp.179-186.

[22] Ibid; Bushey Museum.

[23] D. Payne, *The Story of Bushey in the Age of the Steam Train* (Bushey, 2011), p.6.

[24] G. Longman, *Bushey Then & Now: Introduction* (Bushey, 1997), p.13; Parishes: Bushey, *A History of the County of Hertford: Volume 2* (1908), pp.179-186.

Chapter 8: Transportation in the Case Studies

The railways of the case studies varied in construction date, company, extent and overall network significance, enabling broader investigation of these factors. Equally, the subsequent changes in other transport types reveal further noteworthy points reflecting and building upon the county-wide research.

<u>Wolverton</u>

Fig. 42: Wolverton parish.
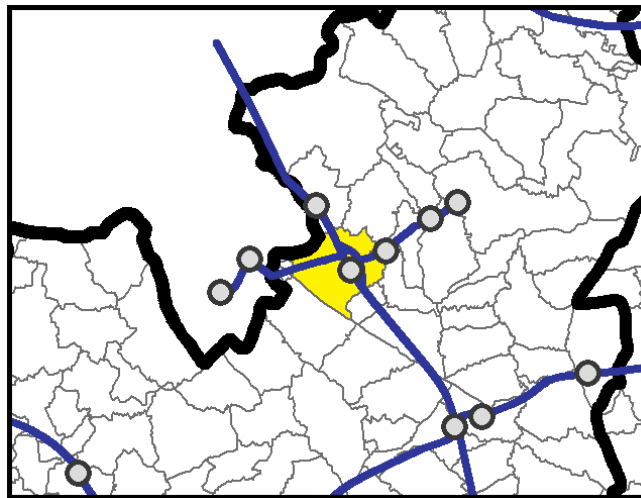
Wolverton (Buckinghamshire; Fig. 42) is an exceptional example of railway impacts.[1] The London & Birmingham Railway was the regions' first line, opening in 1838. Originally intended to take a different route via Buckingham, the completed line was forced to skirt to the east, crossing the river Ouse at Wolverton.[2] The viaduct and embankments were the most substantial and difficult single construction task, having land slips and spontaneous combustion.[3]

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[1] See Chapter 10 and Appendix IV.

[2] P. Richards & B. Simpson, *A History of the London and Birmingham Railway Volume 1* (Witney, 2004), p.21; B. Simpson, *The Dunstable Branch* (Banbury, 1998), p.34; F. Markham, *History of Milton Keynes and District* Volume 2 (Luton, 1986), pp.11, 64-5.

[3] Richards & Simpson, *London Birmingham Railway* Vol. 1, p.21; F. Hyde, *Wolverton: A Short History of its Economic and Social Development* (Wolverton, 1946), p.30; http://www.mkheritage.co.uk/wsah/hood/docs/aqueductbook1.html ; http://www.mkheritage.co.uk/wsah/hood/docs/aqueductbook2.html

Locomotives for the line were contracted to Edward Bury, but operative issues were apparent.[4] Aside from the need for comfort breaks on the six hour journey, the Bury engines and tenders could not complete the run uninterrupted:

Tender capacity: 21cwt coke, 700 gal water
Locomotive fuel efficiency: 36.575lb/mile (figure for 1840)[5]
21cwt = 2352lbs (1.05 imperial tons)
2352 lbs ÷ 36.575lb/mile = 64.3 miles per tender capacity
LBR Length = 112 miles

Therefore a 'central station for engines and goods' was established for refuelling, passenger facilities and to prevent unnecessary engine wear.[6] The contract with Robert Stephenson expressly stated construction between 'London and Wolverton and between Wolverton and Birmingham'.[7] This directly correlates with other 'railway towns' located mid-way.[8] Northampton was bypassed - claims of being 'refused' a Works there apparently fictitious - so the green-field site of Wolverton was chosen, particularly as it possessed turnpike and canal access, aiding construction.[9] Eight acres were purchased from the landowning Radcliffe Trust.[10]

The first main locomotive shed, solely for stabling and repairs until 1845, was situated to the west of the line north of the first few streets – named after directors (Fig. 43).[11] Chairman Glyn (1797-1873) would ultimately become the first modern 'Baronet of Wolverton'.[12] The first station was to its north, opened in November 1838. Too small and inconvenient for 'Wolverton Station' as the settlement was originally known ('New Wolverton' in 1846 and

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[4] See Appendix IV.

[5] H. Jack, *Locomotives of the LNWR Southern Division: London & Birmingham Railway, London & North Western Railway and Wolverton Locomotive Works* (Sawtry, 2001), p.86; NRM_CT_960239 – Furness Railway 'Coppernob', 1846.

[6] TNA RAIL 1110/260 – London & Birmingham Railway Shareholders Reports – Report for 21/8/1838; Jack, *Locomotives LNWR*, pp.26, 83; C. Hamilton Ellis, *Four Main Lines* (London, 1950), p.25; B. West, *The Railwaymen - Wolverton* (Buckingham, 1987), p.13.

[7] TNA RAIL 384/153 – Articles of Covenant and Agreement between Robert Stephenson and the London & Birmingham Railway, 21/9/1833.

[8] D. Drummond, *Crewe: Railway Town, Company and People 1840-1914* (Aldershot, 1995), pp.10, 119.

[9] West, *Railwaymen*, pp.13-15; B. Dunleavy, *The Lost Streets of Wolverton* (2010), pp.2, 17; P. Richards & B. Simpson, *A History of the London and Birmingham Railway Volume 2* (Witney, 2009), p.150.

[10] Jack, *Locomotives LNWR*, p.26; Dunleavy, *Lost Streets*, p.4; B. Simpson, *The Wolverton to Newport Pagnell Branch* (Banbury, 1995), p.46; Markham, *Milton Keynes*, p.65.

[11] Jack, *Locomotives LNWR*, p.32; Dunleavy, *Lost Streets*, p.9; J. Simmons, *The Railway in Town and Country 1830-1914* (Newton Abbot, 1986), p.172.

[12] B. West, *The Trainmakers - the Story of Wolverton Works* (Buckingham, 1982), p.113; Dunleavy, *Lost Streets*, p.57.

ultimately 'Wolverton' with the former settlement being prefixed 'Old'), it was closed in 1839.[13]

Fig. 43: 1900 OS Map extract of Wolverton, with station sites highlighted (first to north west, second to south, third to north east).
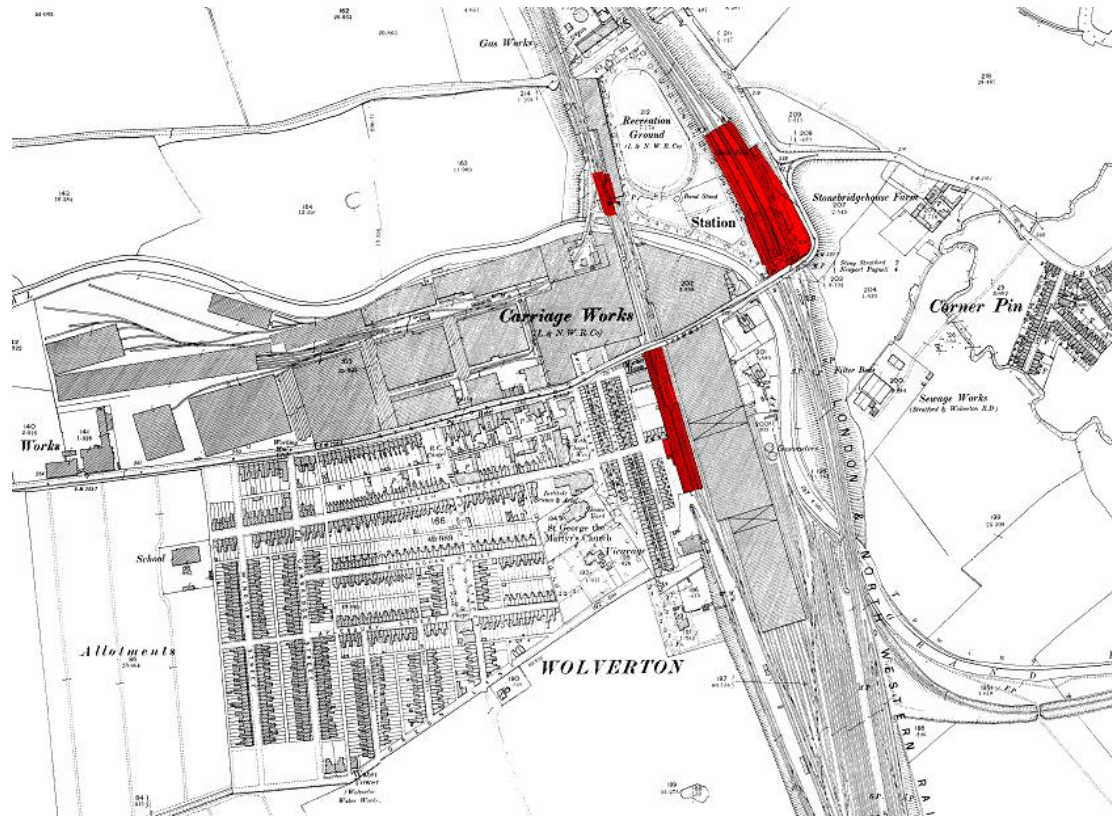
As every train stopped at Wolverton to enable refuelling, rest and relief to both locomotive and passengers, the compulsory-stop second station (opened 1840) provided waiting rooms, facilities and most famously included the renowned refreshment room immortalised by Sir F. Head.[14] High consumption quantities demonstrate the great numbers frequenting the station, despite few actually travelling specifically to Wolverton itself.[15]

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[13] Dunleavy, *Lost Streets*, pp.6, 135; Jack, *Locomotives LNWR*, p.28; Richards & Simpson, *London Birmingham Railway* Vol. 2, p.29; Markham, *Milton Keynes*, p.71; West, *Trainmakers*, pp.13, 25; http://www.mkheritage.co.uk/wsah/hood/docs/aqueductbook1.html

[14] F.B. Head, *Stokers and Pokers, or the London and North Western Railway, The Electric Telegraph and The Railway Clearing House* (London, 1849; reprinted Trowbridge, 1968), p.85; Jack, *Locomotives LNWR*, pp.17, 26, 28; Dunleavy, *Lost Streets*, pp.136, 139-40; Hamilton Ellis, *Four Main Lines*, p.25; Hyde, *Wolverton Development*, p.30; Markham, *Milton Keynes*, p.71; D. Lardner, *Railway Economics* (1850; reprinted New York, 1968), pp.109, 139.

[15] Dunleavy, *Lost Streets*, p.137.

Queen Victoria first visited in 1843, returning in 1845 and 1850. Purportedly she was sufficiently impressed with the station and Works library that she declared her Royal train to be constructed there.[16] It brought some fame and standing to the town, which grew in status as a centre of high-quality manufacture, alongside the refreshment room, probably explaining its inclusion in the 1876 music-hall song 'Bradshaw's Guide'.[17]

In 1846 the London & North Western Railway was formed, Wolverton becoming centre for its Southern Division.[18] With much rivalry against Crewe, James McConnell expanded the Works, advancing Wolverton designs most famously with his 'Bloomer' designs, again creating prestige for the town.[19] Yet with McConnell's replacement by John Ramsbottom in 1862 the Divisions were merged, while improving engine designs ended the need to change locomotives or refuel. As other lines sapped passengers, Wolverton Station's importance diminished and its Motive Power Depot closed in 1874.[20]

Locomotive and carriage production/repair were also unified and carriage work moved from Saltley to Wolverton in 1864.[21] Locomotive construction ended in 1863, but the full change-over and end of locomotive repairs lasted until 1877, when the final shop was passed over to carriages.[22] As the more public side of railway stock, and with the Royal Train, Wolverton under Carriage Superintendent Charles Archibald Park remained well-known.[23] After 1866

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[16] TNA RAIL 1014/10 – Queen Victoria's first journey on the London & Birmingham Railway; Dunleavy, *Lost Streets*, p.142; Markham, *Milton Keynes*, p.237; West, *Trainmakers*, pp.113-4; West, *Railwaymen*, pp.97-7; Hyde, *Wolverton Development*, p.30; Railcare Ltd Works tour. See Appendix IV.

[17] 'Bradshaw's Guide' by Fred Albert & Henry S. Leigh (London, 1876): British Library Shelfmark: Music Collections H.1778.(35.)

[18] C. Awdry, *Encyclopaedia of British Railway Companies* (Frome, 1990), p.88; Jack, *Locomotives LNWR*, p.62; Hyde, *Wolverton Development*, p.31; West, *Trainmakers*, p.25.

[19] TNA RAIL 1110/260 – London & Birmingham Railway Shareholders Reports – Report for 18/2/1848; Richards & Simpson, *London Birmingham Railway* Vol. 2, pp.33, 46; H. Jack, *The L.N.W.R Bloomers Wolverton's 7ft Singles* (Crewe, 1987), pp.9, 18; Hamilton Ellis, *Four Main Lines*, pp.43-4; Railcare Ltd Works tour. See Appendix IV.

[20] Markham, *Milton Keynes*, p.185; O.S. Nock, *Premier Line: The Story of London & North Western Locomotives*, (London, 1952), p.47; W. Acworth, The Railways of England (London, 1900), pp.80-1; Dunleavy, *Lost Streets*, pp.136-7, 143; West, *Trainmakers*, p.27; Jack, *Locomotives LNWR*, p.34; Richards & Simpson, *London Birmingham Railway* Vol. 2, p.13; West, *Railwaymen*, p.119; R. Leleux, *A Regional History of the Railways of Great Britain, Volume 9 The East Midlands* (Newton Abbot, 1976), p.43.

[21] Jack, *Locomotives LNWR*, p.33; West, *Railwaymen*, pp.25-6; West, *Trainmakers*, p.51; Nock, *Premier Line*, p.47; Hamilton Ellis, *Four Main Lines*, p.25; Richards & Simpson, *London Birmingham Railway* Vol. 2, p.31; Hyde, *Wolverton Development*, p.31; Simpson, *Newport Pagnell*, p.53; http://www.mkheritage.co.uk/wsah/hood/docs/aqueductbook2.html

[22] Numerous references in TNA RAIL 1110/270 – LNWR Shareholders Reports, for example Report for 23/2/1878; Jack, *Locomotives LNWR*, pp.33-4; West, *Railwaymen*, p.26; West, *Trainmakers*, pp.53, 127; Leleux, *Regional History*, Vol. 9, p.25; http://www.mkheritage.co.uk/wsah/hood/docs/aqueductbook2.html

[23] D. Jenkinson, *LNWR Carriages – a Concise History* (York, 1978), pp.8, 13; West, *Railwaymen*, pp.11, 27; West, *Trainmakers*, pp.71, 75, 130, 132; Hyde, *Wolverton Development*, p.36; Markham, *Milton Keynes*, p.189;

Works growth was rapid (Figs. 44-6), even demolishing housing north of the Stratford Road and by the main line.[24] Clearly historiographical paternalism came second to business acumen.[25] Matching broader comments of high 'railway town' costs, such was the expenditure that LNWR Chairman Richard Moon declared:

'Money was spent like water at Wolverton.'[26]

Fig. 44: Wolverton Works 1860. Note: The original 1838 engine shed is highlighted in red for clarity.
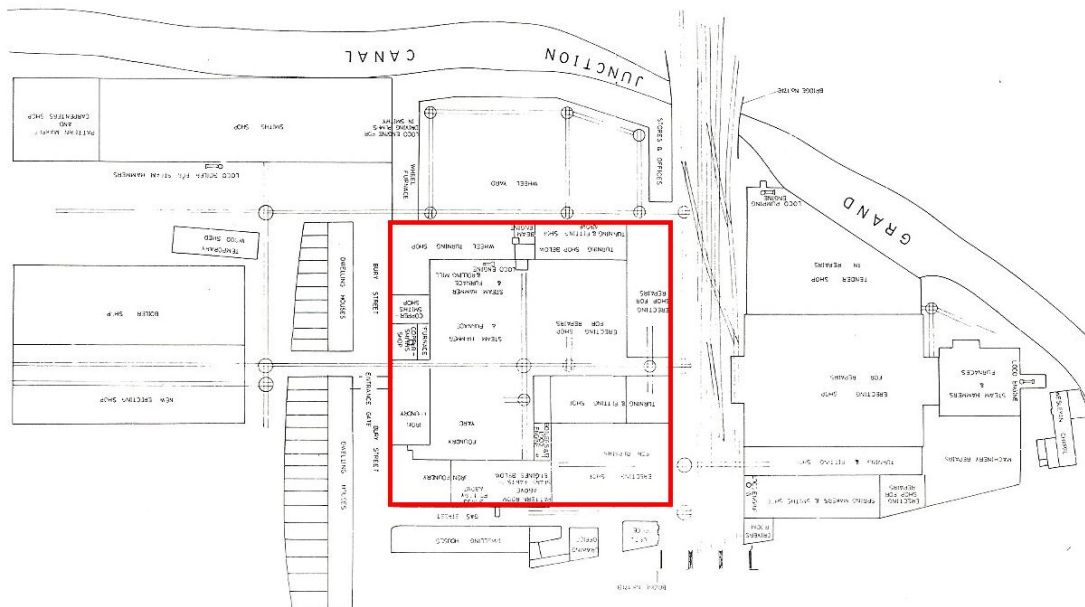
B. West, *The Trainmakers - the Story of Wolverton Works* (Buckingham, 1982), p.46.

Hamilton Ellis, *Four Main Lines*, p.56; *Description of the London & North Western Railway Company's Carriage Works at Wolverton* (1906; LNWR Society reprint); B. Elliot, *Piano & Herrings: Autobiography of a Wolverton Railway Worker* (Stantonbury, 1986), p.8; http://www.brc-stockbook.co.uk/LNWR_No77.HTM See Appendix IV.

[24] West, *Trainmakers*, pp.35, 37, 51-59, 102; pp.5, 34, 97, 149, 150; Richards & Simpson, *London Birmingham Railway* Vol. 2, p.31; Markham, *Milton Keynes*, p.187; West, *Railwaymen*, p.27; Simpson, *Newport Pagnell*, p.51. See Chapter 10.

[25] Drummond, *Crewe*, pp.10, 18-19, 63, 72.

[26] Jack, *Locomotives LNWR*, p.32.

Fig. 45: Wolverton Works 1873. Note: The original 1838 engine shed is highlighted in red for clarity.
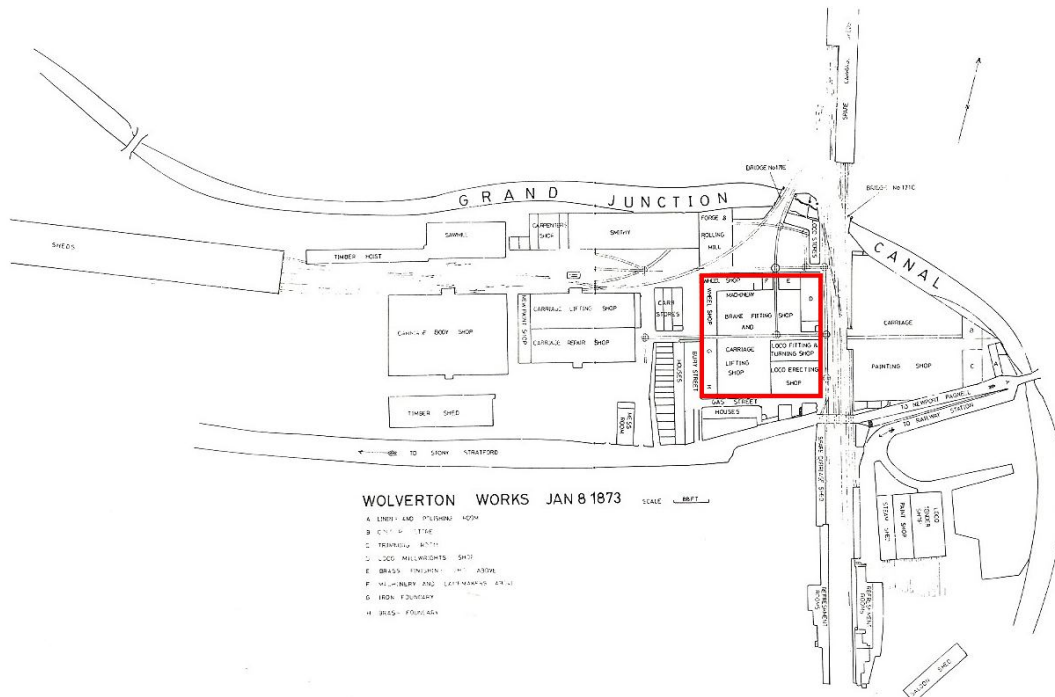
B. West, *The Trainmakers - the Story of Wolverton Works* (Buckingham, 1982), p.48.

Fig. 46: Wolverton Works 1906. Note: The original 1838 engine shed is highlighted in red for clarity.
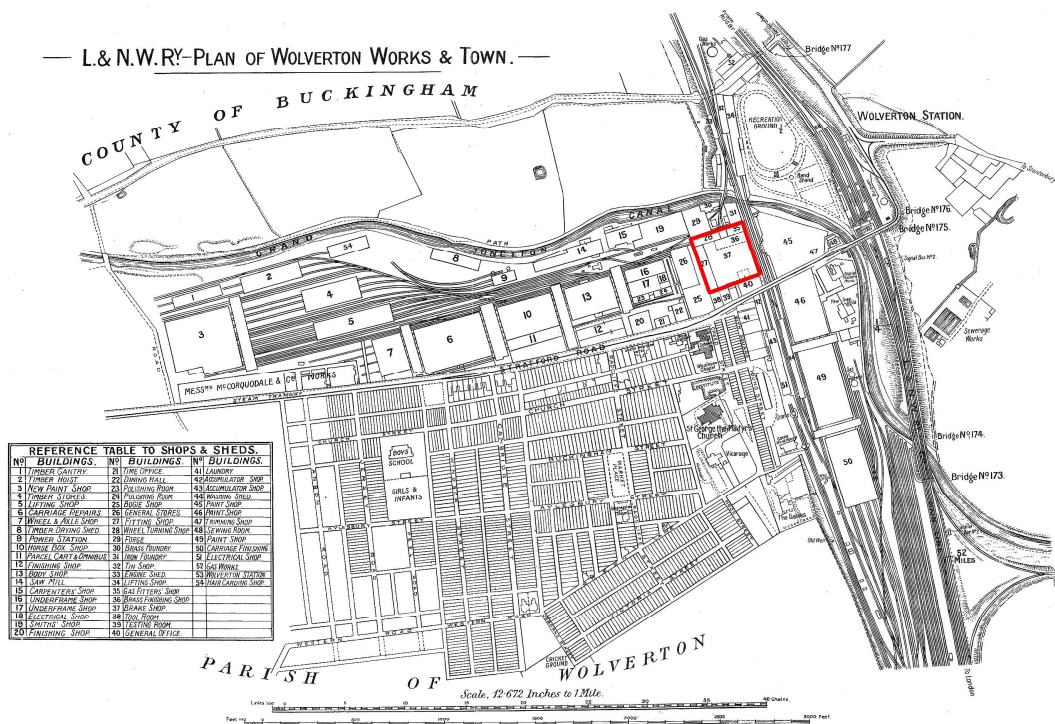
Description of the London & North Western Railway Company's Carriage Works at Wolverton (1906; LNWR Society reprint).

During the years the Radcliffe Trust blocked expansion (1860-1866) the workforce still expanded. With insufficient housing, many lodged elsewhere and the separate satellite settlement of 'New Bradwell' developed (formerly known as 'Stantonbury').[27] This matches other examples worldwide.[28] To improve access and connect Newport Pagnell, a branch was constructed by the Newport Pagnell Railway Company.[29] Authorised in 1865, it purchased the Newport Pagnell canal for its trackbed in 1862.[30] Opened to goods traffic on 24th July 1866, financial delays and arguments with the LNWR (wanting £500 p.a. for station access) delayed completion of the Wolverton Station connection until 2nd Sept 1867.[31] Heavily in debt, it was taken over by the LNWR on 29th June 1875.[32] Used daily by workers alongside market trade, services increased and some trains even carried 600 workers at a time.[33]

From 1879 the main line was quadrupled, but at Wolverton the tracks passed through the Works.[34] With the second station's major decline, later becoming a goods depot, Chairman Moon backed a bypass line around the Works to the east with a new (third) station.[35] Nicknamed 'Moon's Folly', it and the station (Fig. 43) were completed in 1882.[36]

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[27] Dunleavy, *Lost Streets*, pp.25, 60; Hyde, *Wolverton Development*, p.27; West, *Trainmakers*, p.51; Jack, *Locomotives LNWR*, p.32; Markham, *Milton Keynes*, p.90; Simpson, *Newport Pagnell*, pp.13, 47, 49; Parishes: Bradwell, *A History of the County of Buckingham: Volume 4* (1927), pp. 283-288; Milton Keynes Museum.

[28] B. Turton, 'The Railway Towns of Southern England', *Transport History*, 2 (1969), p.116; Drummond, *Crewe*, p.119; P. Bonner & K. Shapiro, 'Company Town, Company Estate: Pilgrim's Rest, 1910-1932', *Journal of Southern African Studies*, Vol. 19, No. 2 (Jun., 1993), p.174.

[29] K. Scholey, *Buckinghamshire's Lost Railways* (Glasgow, 2004), p.20; Simpson, *Newport Pagnell*, pp.11, 13; Leleux, *Regional History*, Vol. 9, p.25. See Appendix II.

[30] Simpson, *Newport Pagnell*, pp.11, 16; Scholey, *Buckinghamshire's Railways*, p.20; C. Maggs, *Branch Lines of Buckinghamshire* (Stroud, 2000), p.129; M. Eckett, *Signals – A Railway Miscelleny* (Copt Hewick, 2008), p.146.

[31] Simpson, *Newport Pagnell*, pp.21, 24, 28, 31-5; Scholey, *Buckinghamshire's Railways*, p.20; Maggs, *Branch Buckinghamshire*, p.129; Markham, *Milton Keynes*, p.187.

[32] TNA RAIL 1110/270 – LNWR Shareholders Reports – Report for 21/8/1875; Simpson, *Newport Pagnell*, pp.36-37; Eckett, *Signals*, p.147; Maggs, *Branch Buckinghamshire*, pp.129-30; L. Oppitz, *Lost Railways of the Chilterns* (Newbury, 1991), p.85.

[33] Scholey, *Buckinghamshire's Railways*, p.21; Maggs, *Branch Buckinghamshire*, p.131; Eckett, *Signals*, p.146; Simpson, *Newport Pagnell*, pp.30, 40.

[34] Simpson, *Newport Pagnell*, p.55; Leleux, *Regional History*, Vol. 9, p.20; West, *Trainmakers*, p.13.

[35] Dunleavy, *Lost Streets*, pp.137, 145; Richards & Simpson, *London Birmingham Railway* Vol. 2, p.39; West, *Trainmakers*, p.55; Simpson, *Newport Pagnell*, pp.13, 57; O.S. Nock, *The London and North Western Railway* (London, 1960), p.66.

[36] TNA MT 6/348/11 - London & North Western Railway: Bletchley. Top File No: R10135; Dunleavy, *Lost Streets*, p.145; Markham, *Milton Keynes*, p.188; Leleux, *Regional History*, Vol. 9, p.20; West, *Trainmakers*, p.55.

As worker accessibility had always been a priority, the final period development was the steam tram to Stony Stratford (Fig. 14, Chapter 4).[37] Continually having financial difficulties and being renamed multiple times under various companies, it was opened on 27th May 1887.[38] Built to three foot six inch gauge, its passenger cars were the largest tramway vehicles in Britain.[39] It closed through insolvency in 1889 but reopened on 20th November 1891.[40] Taken over by the LNWR in 1919, it closed during the General Strike.[41] Used by 300 Works employees twice daily, the tram was not a heavily-used service, ultimately losing out to buses.[42]

The site of 'New Wolverton' lay just off the Stratford to Dunchurch Turnpike.[43] Created in 1706 for stagecoaches travelling via Stony Stratford, it was deviated via the station in 1842, only expiring in 1876.[44] Surviving longer than others, Wolverton's rural nature meant local access was necessary, particularly for its workforce. Some pubs had 'transport clubs' whereby for a shared cost carts and horses could be stabled; whether by wagon, cycle or walking, until the tram all used the turnpike.[45] Equally there were stagecoach/omnibus connections to the station from the general vicinity.[46] While stagecoaches declined, the road's necessity remained strong; F. Markham declared it 'one of the busiest rural roads in the county'.[47] Interestingly, with Stony Stratford losing trade with falling stagecoaches many of its traders moved and opened new premises in Wolverton.[48]

[37] Leleux, *Regional History*, Vol. 9, p.25; Simpson, *Newport Pagnell*, p.133.

[38] Maggs, *Branch Buckinghamshire*, p.121; F. Simpson, *The Wolverton & Stony Stratford Steam Trams* (Bromley Common, 1981), pp.5-6, p.6; Oppitz, *Lost Railways*, p.89; Simpson, *Newport Pagnell*, p.134.

[39] Simpson, *Wolverton Tram*; MKM; http://www.mkmuseum.org.uk/exhibit/tram.htm

[40] TNA BT 31/15338/39586 – Wolverton and Stony Stratford District New Tramway Co. Ltd; Maggs, *Branch Buckinghamshire*, p.121; Simpson, *Wolverton Tram*, p.6; Oppitz, *Lost Railways*, pp.89-90; Simpson, *Newport Pagnell*, p.135; MKM.

[41] Maggs, *Branch Buckinghamshire*, p.121; Simpson, *Wolverton Tram*, pp.8-9; Oppitz, *Lost Railways*, p.90; Simpson, *Newport Pagnell*, p.136.

[42] Simpson, *Wolverton Tram*, pp.4, 8; Oppitz, *Lost Railways*, p.89; MKM.

[43] Markham, *Milton Keynes*, p.59; Richards & Simpson, *London Birmingham Railway* Vol. 1, p.31; http://www.turnpikes.org.uk/English%20turnpike%20table.htm

[44] Richards & Simpson, *London Birmingham Railway* Vol. 1, p.31; Dunleavy, *Lost Streets*, p.1; http://www.turnpikes.org.uk/English%20turnpike%20table.htm

[45] Oppitz, *Lost Railways*, p.88; Markham, *Milton Keynes*, p.199; http://www.mkheritage.co.uk/wsah/hood/docs/aqueductbook4.html ; http://www.mkheritage.co.uk/wsah/hood/docs/aqueductbook6.html

[46] *Slaters Royal National and Commercial Directory and Topography (including Buckinghamshire)*, 1851; *Kelly's Directory of Buckinghamshire*, 1883; Leleux, *Regional History*, Vol. 9, p.72; Simpson, *Newport Pagnell*, p.13.

[47] Markham, *Milton Keynes*, pp.69, 90.

[48] Dunleavy, *Lost Streets*, p.37; http://www.mkheritage.co.uk/wsah/hood/docs/aqueductbook6.html See Chapter 9.

The Grand Junction Canal, however, had greater interaction with the railway, being a major reason for choosing Wolverton for the Works.[49] This section was opened c.1799 with an aqueduct and wharf near 'Old Wolverton'.[50] There were also the nearby Buckingham and Newport Pagnell arms, the latter becoming the branch railway.[51] After the coming of the railway the canal retained some business, but with minimal non-agricultural work in the vicinity, there was little for the railway to take from the canal.[52] Remarkably, the only industrial alternative to the Works was Hayes boatbuilders, naturally using the canal.[53] 70 miles inland, this was arguably the most land-locked ocean-going boat constructer in history.[54] Conversely, Pickford still heavily used the canal as well as the LBR, and requested a new Wolverton Wharf by the Works to enable dual-transport between the two.[55]

Yet the canal's most direct involvement occurred was more unusual. When the line was being constructed a memo in the Shareholders Reports noted 'the Contractor at Wolverton has been partially retarded by the opposition of the Grand Junction Canal Company, to the construction of a temporary bridge over the canal'.[56] This event, known locally as the 'Battle of Wolverton', centred on the GJC contesting the right for the LBR to erect a bridge. Stephenson surreptitiously had the bridge erected by torchlight on 23rd December 1834.[57] In retaliation on 30th December the canal's workers demolished the bridge, leading to an injunction from the Court of Chancery.[58] This demonstrates long-lasting issues of labour protest and sentiments felt at this time of Swing Riots.[59] As a GJC initiated a petition against the 1882 deviation line, the canal was thus continually at loggerheads with the railway.[60]

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[49] Markham, *Milton Keynes*, p.65; http://www.mkheritage.co.uk/wsah/hood/docs/aqueductbook1.html
[50] M. Robbins, *The Railway Age* (London, 1962), p.60; http://www.mkheritage.co.uk/wsah/hood/docs/aqueductbook7.html
[51] Simpson, *Newport Pagnell*, p.16.
[52] Simpson, *Wolverton Tram*, p.6.
[53] *A History of the County of Buckingham: Volume 2* (1908), p.126; MKM.
[54] F. Markham, *The Nineteen Hundreds* (Buckingham, 1951), p.23; MKM.
[55] Jack, *Locomotives LNWR*, p.27.
[56] TNA RAIL 1110/260 – London & Birmingham Railway Shareholders Reports – Report for 13/2/1835.
[57] West, *Trainmakers*, p.14; Jack, *Locomotives LNWR*, p.27.
[58] West, *Trainmakers*, p.14; Leleux, *Regional History*, Vol. 9, p.16; Railcare Ltd Works tour.
[59] K. Navickas, 'Captain Swing in the North: the Carlisle Riots of 1830', *History Workshop Journal*, 71 (2011), pp.5-28; K. Navickas, 'What Happened to Class? New Histories of Labour and Collective Action in Britain', *Social History*, 36: 2 (2011), pp.192-204.
[60] TNA RAIL 410/2231 - Agreement between LNWR and Grand Junction Canal Company to construction of Wolverton Deviation Railway.

Wolverton was unusual in becoming a local transport centre with continued use of roads, canal, main/branch railway and tram.[61] Considering the carriers and routes available, (Table 15), up to the end of the turnpike (1876) there was an increasing number of routes available, decreasing thereafter, with none listed after the opening of the tram (1887).[62] As the number of local carriers diminished, notably after the opening of the branch (1867), this was likely due to external companies such as Pickfords and established carrier businesses from the former stagecoach towns of Stony Stratford and Newport Pagnell limiting the need for similar businesses in Wolverton. Therefore, while still necessary and used, improvements in rail-based connections reduced the overall need for carriers in Wolverton, both through improved accessibility and by affecting earlier local road businesses.

Table 15: Number of carrier firms and routes as listed in business directories for Wolverton 1830-1903. Note: the totals in these tables only cover the exact term 'carrier' so do not include 'coach proprietor' or equivalent who may not have actually operated in the area. The routes do, however, cover all listed including coaches, carriers and omnibuses.

	ROUTES	CARRIERS
1830	X	X
1839	1	X
1851	2	4
1863	4	2
1871	X	X
1883	1	X
1891	X	X
1903	X	X

[61] Turton, 'Southern', *Transport History*, pp.106, 110.
[62] D. Mills, *Rural Community History from Trade Directories* (Aldenham, 2001), p.16.

Quainton

Fig. 47: Quainton parish.
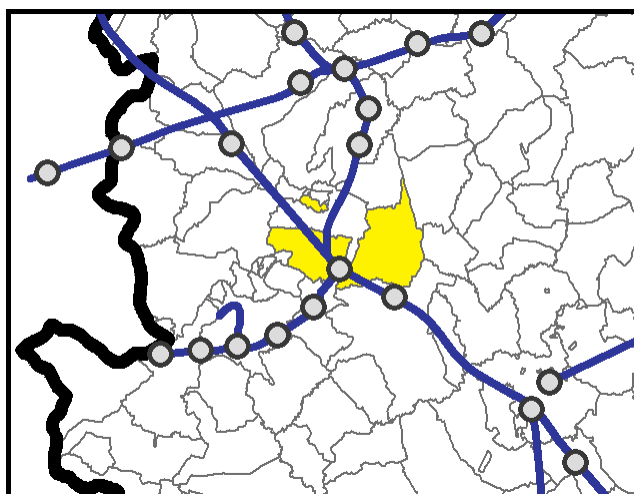
Central Buckinghamshire's railway development came late, and the village of Quainton (Fig. 47) demonstrates different extents of rail application. The first discussion of a line via Quainton was the original Buckingham route of the LBR, but it was only with the opening of the Aylesbury & Buckingham Railway (hereafter A&BR) on 23rd September 1868 that a connection was formed.[63] The line ran between Aylesbury (Great Western Railway ex-Wycombe Railway) and Verney Junction on the Bletchley-Oxford/Buckingham LNWR branches, but as running powers were declined by the LNWR there never was a through train from Aylesbury to Buckingham.[64] Instead, the GWR operated the line, built to standard gauge rather than their usual broad gauge.[65]

The original Quainton Road Station was small and, with traffic from Verney Junction and surrounding villages 'almost non-existent', the line was initially unsuccessful.[66] However, the third Duke of Buckingham, who lived nearby and was one of the main promoters of the A&BR, constructed a private roadside tramway to transport produce from his estate to Quainton Road and on to London.[67] Requiring no Act of Parliament, being entirely on his land, construction started in September 1870 using surplus local labourers.[68] The 'Wotton

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[63] Awdry, *Encyclopaedia*, p.206; Simpson, *Dunstable Branch*, p.34.
[64] F. Cockman, *The Railways of Buckinghamshire from the 1830's* (Aylesbury County Record Office, 1971), pp.70-1; Buckinghamshire Railway Centre.
[65] Eckett, *Signals*, p.134; BRC.
[66] Oppitz, *Lost Railways*, p.30; C. Leigh, Quainton Road, *Steam Railway*, No. 390 (July 2011), p.72; Scholey, *Buckinghamshire's Railways*, p.35.
[67] B. Simpson, *The Brill Tramway* (Oxford, 1985), pp.7, 15; Maggs, *Branch Buckinghamshire*, p.87.
[68] Simpson, *Brill*, pp.15-17; Maggs, *Branch Buckinghamshire*, p87; BRC.

Tramway' was opened on 1st April 1871 and was extended twice – to a local brickworks in November and further to Brill village in March 1872.[69] A spur to Kingswood was added in 1873.[70]

Constructed for horse-propelled goods traffic, local requests led to a steam passenger service commencing January 1872.[71] Originally operating at barely five mph, it took longer to get from Quainton to Brill than from Quainton to London.[72] In 1874, Baron Ferdinand de Rothschild began construction of Waddesdon Manor (completed 1889), with stone being brought in via the tramway on its own personal supply spur.[73] Taken over by a new dedicated company in 1893 and renamed the Oxford & Aylesbury Tramway, after a failed extension bid the tramway was leased as a branch to the Metropolitan Railway in 1899.[74]

Fig. 48: 1880 OS Map extract of Quainton Road, showing the original station site and Wotton Tramway (following the road south of the main line).
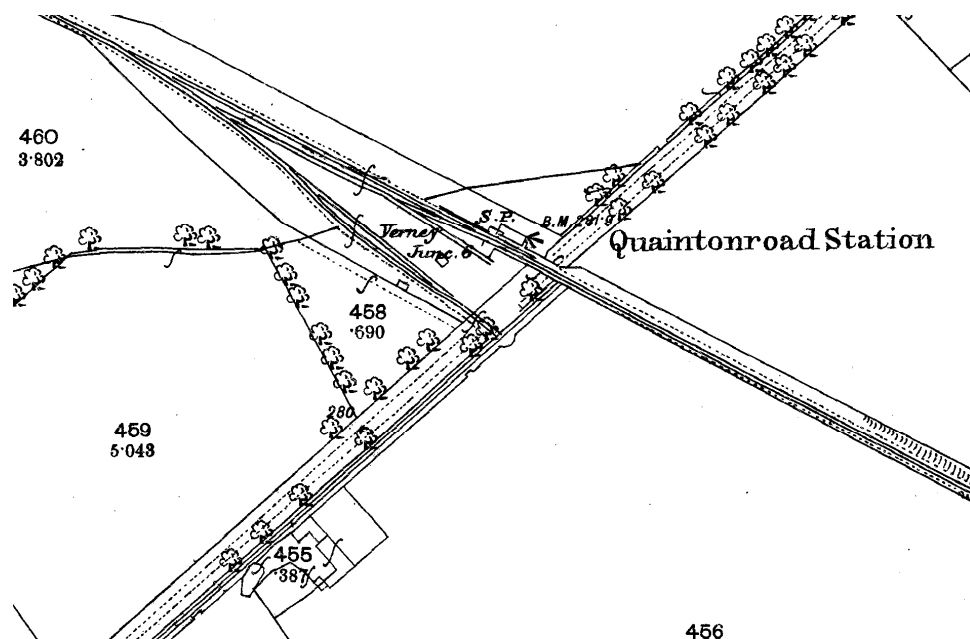
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[69] Maggs, *Branch Buckinghamshire*, pp.87-95; Oppitz, *Lost Railways*, pp.73-82; Eckett, *Signals*, p.139; K. Jones, *The Wotton Tramway* (Tarrant Hinton, 1974), p.49.

[70] Simpson, *Brill*, pp.18-9.

[71] Ibid; pp.28-30; Leleux, *Regional History*, Vol. 9, p.37; Oppitz, *Lost Railways*, p.74; Eckett, *Signals*, p.140; BRC.

[72] B. Simpson, *A History of the Metropolitan Railway Volume 3* (Witney, 2005), p.69; BRC.

[73] R. Schofield, *Along Rothschild Lines: The Story of Rothschild & Railways Across the World* (London, 2010), p.21; Maggs, *Branch Buckinghamshire*, p.87; Scholey, *Buckinghamshire's Railways*, p.13; Simpson, *Brill*, pp.20-1; Jones, *Wotton Tramway*, p.21.

[74] Simpson, *Brill*, pp.24, 39-40, 61; Maggs, *Branch Buckinghamshire*, p.94; Eckett, *Signals*, p.140; Simpson, *Metropolitan*, pp.71-2.

Quainton Road Station was originally a small structure to the north of the village road on a single track (Fig. 48).[75] However, in 1891 the A&BR was taken over by the MetR and the station was demolished; a replacement was built to the south of the road c.1896-7 (Fig. 49).[76] This included dual tracks and an improved tramway connection. In 1893 the Great Central Railway began constructing an extension from Annesley to London Marylebone.[77] Its Chairman, Sir Edward Watkin, was also Chair of the MetR (and formerly a director of the A&BR), so it was agreed the GCR line would meet the MetR and have joint running powers, forming the Metropolitan & Great Central Joint Railway.[78] Its northern junction was at Quainton.

Fig. 49: 1899 OS Map extract of Quainton Road, showing the second station, improved Wotton Tramway connection, yard and diverted road via the new bridge.
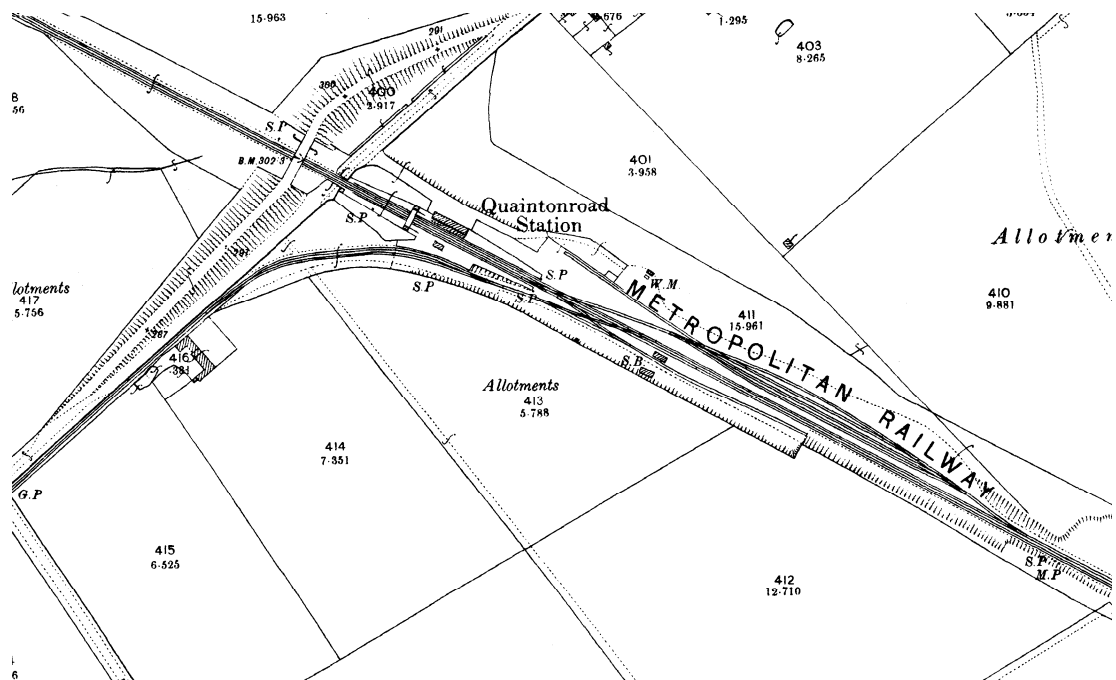
As the last trunk line to London, so built with more modern technology, the GCR had longer signalling blocks and broader curves, enabling larger goods trains. But these trains were too

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[75] Oppitz, *Lost Railways*, p.70.
[76] Eckett, *Signals*, p.140; Maggs, *Branch Buckinghamshire*, p.57; Simpson, *Brill*, p.47; Oppitz, *Lost Railways*, p.30; Jones, *Wotton Tramway*, p.19; https://ubp.buckscc.gov.uk/SingleResult.aspx?uid=MBC24866
[77] F. Cockman, *The Railways of Hertfordshire* (Hertfordshire, 1978), pp.12-3; Cockman, *Buckinghamshire*, p.133; Awdry, *Encyclopaedia*, p.206.
[78] Leleux, *Regional History*, Vol. 9, p.32; Eckett, *Signals*, pp.135-6; BRC.

large for the blocks and curves on the MetR, forcing each train to be split into multiple separate trains. A large yard was constructed at Quainton Road specifically for this purpose (Fig. 49).[79] Opened on 15th March 1899, non-stop shunting, frequent trains across the level crossing and many trains halting waiting to enter the reception sidings meant the road was near-continually blocked, so it was redirected over a new bridge.[80]

So Quainton Road, originally a small provincial halt, became the junction of a 'branch', two nationally-significant railways, and a major yard for London freight. Quoting John Betjeman: 'Quainton Road Station - it was to have been the Clapham Junction of the rural part of the Metropolitan. With what hopes this place was built…'[81]

Quainton was never on a turnpike, so transport before the railway was rudimentary. Possibly as a result, though, the number of carriers was always greater than routes provided (Table 16), although the village was so minor that it failed to be included in the earliest directories. Stable in number throughout, the distance from Quainton Road Station to Quainton village is an obvious explanation. Furthermore, the 1891 MetR takeover coincided with an increase in the number of carriers. The commencement of non-stop trains potentially explains this, especially considering London trade coming off the Wotton Tramway and surrounding area – the tramway encouraging local carriers to work around their railheads.[82] The 1903 drop has no obvious explanation, and may be a case of carrier business takeovers or simply changes within the directory itself.

Table 16: Number of carrier firms and routes as listed in business directories for Quainton 1854-1903.

	ROUTES	CARRIERS
1854	2	3
1863	1	3
1876	1	3
1883	1	3
1891	1	4
1903	1	2

[79] Oppitz, *Lost Railways*, p.70; BRC.
[80] Simpson, *Metropolitan*, p.35; BRC.
[81] J. Betjeman, *Metroland.*
[82] Maggs, *Branch Buckinghamshire*, p.87; Simpson, *Brill*, p.37.

Potton

Fig. 50: Potton parish.
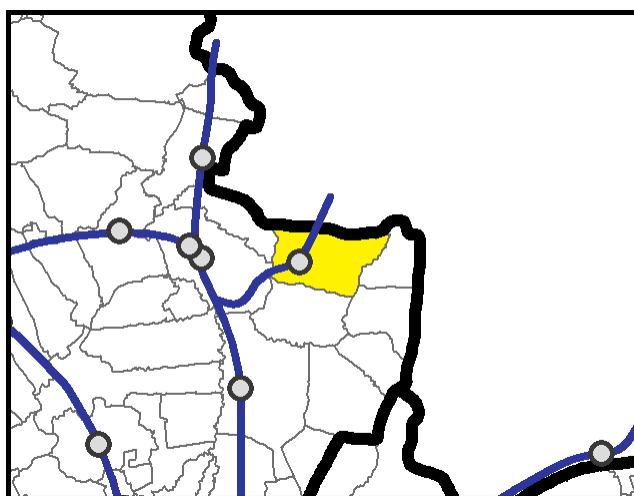
The first effect of the railways on Potton (Bedfordshire; Fig. 50) was when Sandy was placed on the Great Northern Railway in 1850.[83] In 1851 the Sandye Place Estate was split up, the main 'Hill Estate' being purchased by Captain William Peel VC.[84] In 1855 he commenced construction of a private railway to take estate produce to London – the Sandy & Potton Railway (hereafter S&PR). Purchasing all the land required, there was no Act of Parliament.[85] Opening for goods traffic on 23rd June 1857, there was a local call for passenger services, commencing late 1857.[86] Peel died in India in 1858, never seeing his railway, which passed to his brother Arthur Wellesley Peel.[87] When the line was sold in 1861 to the Bedford & Cambridge Railway (hereafter B&CR) for £20,000 it made a profit of £5,000.[88]

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[83] F. Cockman, *The Railway Age in Bedfordshire*, Publications of the Bedfordshire Historical Record Society, 53 (Bedford, 1974), pp.23, 34; D.I. Gordon, *A Regional History of the Railways of Great Britain, Volume 5 The Eastern Counties* (Newton Abbot, 1976), p.147; Leleux, *Regional History*, Vol. 9, p.28.

[84] http://mediafiles.thedms.co.uk/Publication/BH-GO/cms/pdf/PeelWALK%5B1%5D.pdf Third Son of Robert Peel PM (a former head of the Radcliffe Trust (1828-50) controlling Wolverton's land), Captain William Peel won an early Victoria Cross in the Crimea. Later commanding HMS *Shannon*, he served in China and India during the Mutiny, where he contracted smallpox and died on 22nd April 1858 – National Maritime Museum; http://www.bedfordshire.gov.uk/CommunityAndLiving/ArchivesAndRecordOffice/CommunityArchives/Potton/CaptainPeelsRailway.aspx

[85] Awdry, *Encyclopaedia*, pp.100-1; Cockman, *Bedfordshire*, p.34.

[86] http://www.bedfordshire.gov.uk/CommunityAndLiving/ArchivesAndRecordOffice/CommunityArchives/Potton/CaptainPeelsRailway.aspx

[87] Cockman, *Bedfordshire*, p.35.

[88] TNA RAIL 1076/1/2 - Prospectus for the Bedford, Potton and Cambridge Railway, 1859; http://www.bedfordshire.gov.uk/CommunityAndLiving/ArchivesAndRecordOffice/CommunityArchives/Potton/CaptainPeelsRailway.aspx

Fig. 51: 1884 OS Map extract of Potton showing the original terminus site (red) compared to the 1861 B&CR modifications and later station site.
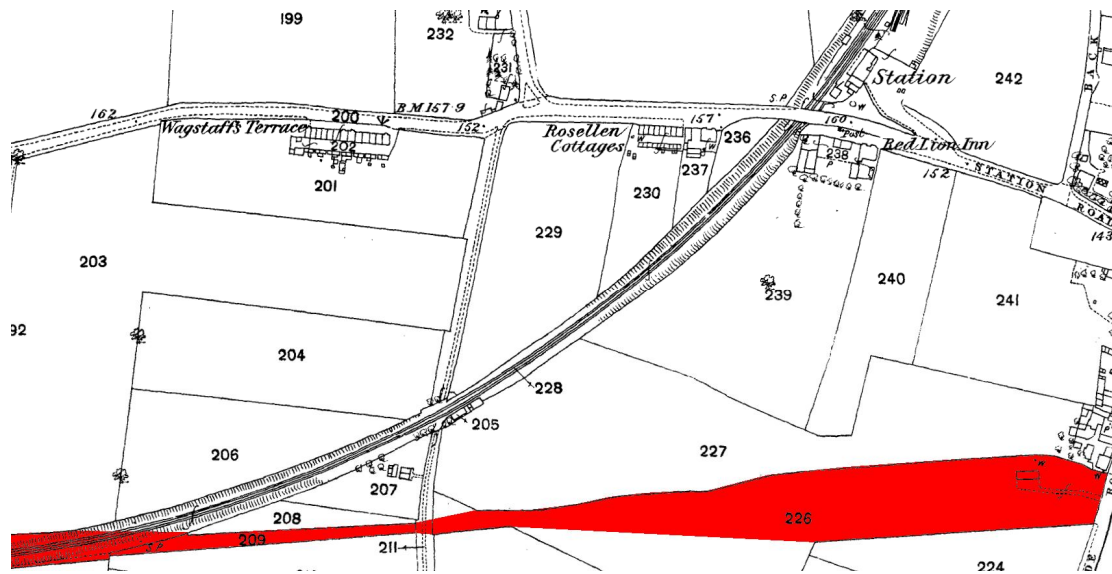
Opened on 4th July 1862, the former S&PR was used as a section of west-east main line between the earlier Bedford-Sandy line and a newly-built Potton-Cambridge section.[89] The original terminus and station were demolished (Fig. 51) and the new line curved to the west with a new station constructed.[90] The line was operated by the LNWR, which purchased it in July 1865.[91] In 1871 the track was doubled.[92]

The only former alternative transport was the Potton to Eynesbury turnpike, founded in 1814.[93] Very minor, its date of cessation is unknown. Being agricultural based, market gardening as demonstrated by Peel's need for a branch, some degree of market transport was required. The numbers of carriers and routes up to the S&PR show that while still small-scale, roads aided in this (Table 17).[94]

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[89] Awdry, *Encyclopaedia*, pp.60, 100-1; Cockman, *Bedfordshire*, p.37; http://www.disused-stations.org.uk/p/potton/
[90] Cockman, *Bedfordshire*, p.38.
[91] Gordon, *Regional History,* Vol. 5, p.147; http://www.bedfordshire.gov.uk/CommunityAndLiving/ArchivesAndRecordOffice/CommunityArchives/Potton/CaptainPeelsRailway.aspx
[92] Cockman, *Bedfordshire*, p.62.
[93] http://www.turnpikes.org.uk/English%20turnpike%20table.htm
[94] http://www.bedfordshire.gov.uk/CommunityAndLiving/ArchivesAndRecordOffice/CommunityArchives/Potton/Introduction.aspx

But from the opening of Peel's S&PR, described even early on as having a 'good freight service', road services fail to be listed.[95] It does not mean there were no carriers at all, but if there were some, they were very small and clearly unprofitable.[96]

Table 17: Number of carrier firms and routes as listed in business directories for Potton 1824-1903.

	ROUTES	CARRIERS
1824	2	2
1830	4	3
1839	2	1
1850	4	2
1862	X	X
1871	X	X
1885	X	X
1890	X	X
1903	X	X

Luton

Fig. 52: Luton parish.
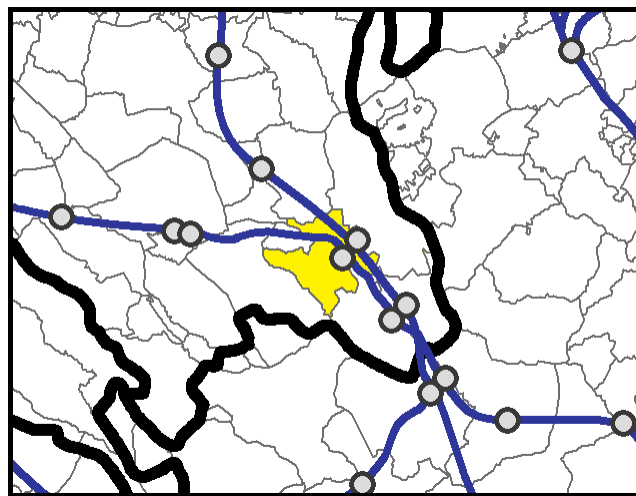
One of Bedfordshire's most significant market towns, Luton (Fig. 52) gained rail access very late, especially considering much of Luton's expansion arose from immigration.[97] By 1854 Luton was credited with being the largest town in Britain with neither rail nor waterway

[95] P. Ibbett, *Potton Bedfordshire: A Brief History* (Potton, 2000), p5; Cockman, *Bedfordshire*, p.39.
[96] M. Drake & R. Finnegan, *Studying Family and Community History Volume 4: Sources and Methods: a Handbook* (Cambridge, 1997), pp.60-2.
[97] *Luton: Market Town 1750-1850* (Luton Museum Education Service), p.8; Wardown Park Museum. See Chapter 11.

access.[98]   Of several failed schemes, the second emphasises initial social wariness of railways.   On 11th May 1844 George Stephenson visited Luton for a public meeting to propose extending the LBR Dunstable branch.[99]   Critical of the plan to cross local common ground (the 'Great Moor'), many opposed the plan, also being against a mere branch line.[100] An angered Stephenson vowed he would never return and Luton would not gain a railway while he lived – coincidentally both ultimately being the case.[101]

Only in 1858 did Luton finally gain a connection, one of the last towns to do so, ironically being in essence the Dunstable-Luton line Stephenson planned.   This was part of a larger development between Dunstable on the LNWR, Luton, Welwyn and Hatfield on the GNR, to be built in sections by the Luton, Dunstable & Welwyn Junction Railway.[102]   Incorporated in 1855, the initial section was opened on 3rd May 1858.[103]   The company merged on 28th June 1858 with the Hertford & Welwyn Junction Railway.[104]   The resultant Hertford, Luton & Dunstable Railway Company constructed the Luton-Welwyn section, which opened on 1st September 1860 after further delays.[105]   The initial Luton-Dunstable section was originally LNWR operated until the full line was completed, when running powers were turned over to the GNR.[106]   The station at Welwyn Junction, where the Hertford branch originally terminated, was closed in 1860 and Hatfield (GNR) Station became the new terminus for the two branches – there was no through-running.[107]

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[98] HALS DE/P/E498 - Prospectus for the Luton, Dunstable & Welwyn Junction Railway; *Luton: Straw Hat Boom Town 1890-1910* (Luton Museum Education Service), p.5; G. Woodward, *The Hatfield, Luton & Dunstable Railway (and on to Leighton Buzzard)* (Usk, 1977), p.7; *Luton's Railways* (Bedford: Shire Hall, 1973), p.1; Eckett, *Signals*, p.84; Leleux, *Regional History*, Vol. 9, p.29; Simmons, *Town and Country*, p.276.
[99] Simpson, *Dunstable Branch*, p.8; *Luton's Railways*, p.1.
[100] Woodward, *Hatfield, Luton & Dunstable,* pp.5-6; Leleux, *Regional History*, Vol. 9, p.30; Eckett, *Signals*, p.198.
[101] Simpson, *Dunstable Branch*, p.8; Woodward, *Hatfield, Luton & Dunstable,* p.6. Stephenson died in 1849; the first line opened 1858.
[102] TNA RAIL 1110/260 – London and Birmingham Railway Shareholders Reports – Report for 15/8/1855; Woodward, *Hatfield, Luton & Dunstable,* pp.7-8; *Luton's Railways*, p.1; Cockman, *Bedfordshire*, p.31.
[103] Awdry, *Encyclopaedia*, pp.145-6; Woodward, *Hatfield, Luton & Dunstable,* p.10; Simpson, *Dunstable Branch*, p.12.
[104] Woodward, *Hatfield, Luton & Dunstable*, p.7; Awdry, *Encyclopaedia*, p.137; Cockman, *Bedfordshire*, p.32; Leleux, *Regional History*, Vol. 9, p.30; Eckett, *Signals*, p.85. See Appendix II.
[105] TNA MT 6/16/42 – Board of Trade minute paper on the inspection of the Luton, Dunstable & Welwyn Junction Railway, 20/3/1858; Woodward, *Hatfield, Luton & Dunstable*, pp.9-11; Cockman, *Bedfordshire*, p.32; Simpson, *Dunstable Branch*, p.12; Oppitz, *Lost Railways*, p.110.
[106] TNA MT 6/16/42 – Board of Trade minute paper on the inspection of the Luton, Dunstable & Welwyn Junction Railway, 20/3/1858; Awdry, *Encyclopaedia*, p.146; Oppitz, *Lost Railways*, p.111; Gordon, *Regional History,* Vol. 5, pp.121-2; Leleux, *Regional History*, Vol. 9, p.30.
[107] Gordon, *Regional History,* Vol. 5, p.122; Simpson, *Dunstable Branch*, p.12; Eckett, *Signals*, p.85.

Early reactions to the new technology reflect claims by Simmons of positive and negative impacts.[108] Thomas Bennett, Steward to the Duke of Bedford's Agent-in-Chief in London said in 1854:

'Luton being the first Town in the County as a place of business, it is needless…to say how much greater it may become…nor, how much the Line of Country between Luton and Dunstable…will improve in value.'[109]

Poorer locals who had never seen a locomotive before were fearful, because 'to their astonishment it could go backwards as well as forwards!', but soon became enthusiastic enough to walk to Ayot village simply to enjoy a ride back by steam.[110] As one yokel surmised:

'Now I woon't [sic] believe but what they're a lot o'little ponies underneath.'[111]

Conversely, the railway triggered underlying concerns over Luton's police force. An 1855 petition calling for increased numbers of constables referenced the proposed railway as enabling 'low' and 'disputable' people to enter Luton thus raising the crime rate.[112] A later petition shows nothing was done, and crime had likely increased due to the railway:

'That since the opening of the railway from Luton to Hatfield, Thieves have much greater facility in disposing of their plunder by taking an early morning Train to London in little more than an hour and before the Police are aware of the Transaction…'[113]

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[108] Simmons, *Town and Country*, p.298; R. Schwartz, I. Gregory & T. Thévenin, 'Spatial History: Railways, Uneven Development, and Population Change in France and Great Britain, 1850-1914', *Journal of Interdisciplinary History*, Volume 42, Number 1 (Summer 2011), pp.56, 58, 70-1, 84.

[109] Cockman, *Bedfordshire*, p.31.

[110] Woodward, *Hatfield, Luton & Dunstable,* p.8; J. Giles, R. Jeavons, M. Martin, D. Smith & R. Smith, *Wheathampstead Railway Recollections* (Wheathampstead, 1995), p.1.

[111] Recollections of T.G. Hobbs - *Luton: Straw Hat*, p.58.

[112] B&LARS QSR1855/4/2/10 – Petition for Constables; http://www.bedfordshire.gov.uk/CommunityAndLiving/ArchivesAndRecordOffice/PathstoCrime/OnTheBeat.aspx

[113] Cockman, *Bedfordshire*, p.102; Woodward, *Hatfield, Luton & Dunstable,* p.8; *Luton's Railways*, p.2; B&LARS QEV3 – Later petition for Constables; http://www.bedfordshire.gov.uk/CommunityAndLiving/ArchivesAndRecordOffice/PathstoCrime/OnTheBeat.aspx

Interestingly, this echoes criminal historiography of middle-class initiated 'moral panics' with increasing fear of crime waves.[114]

Fig. 53: 1901 OS Map extract of Luton, with stations highlighted (GNR to south, MR to north).
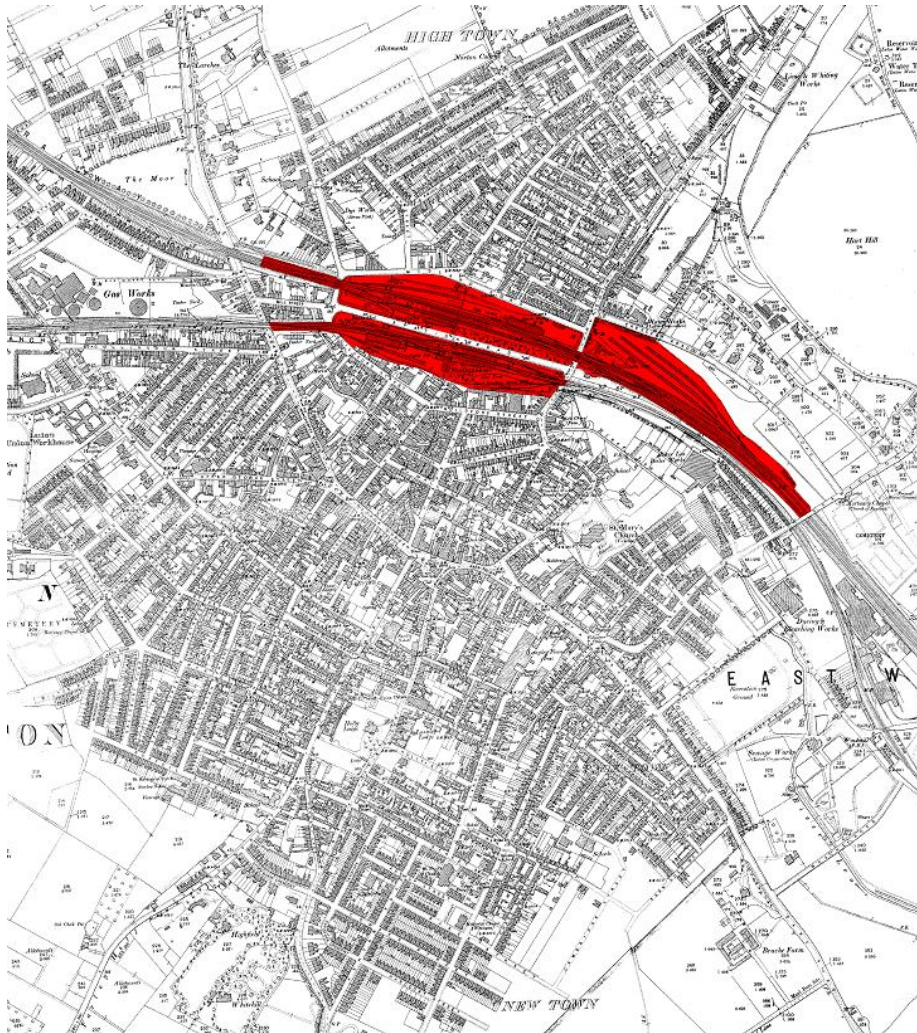
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[114] P. Carter, The Railways as 'Criminal Accomplice', a View from the Archive: The Fear of the Railways as an Aid to Criminal Activity in the Nineteenth Century, TNA 'Railways Change Lives' Conference, 7/9/2013; J. Simmons, *The Victorian Railway* (London, 1991), p.370; P. King, Moral Panics and Violent Street Crime 1750-222: A Comparative Perspective, in B. Godfrey, C. Emsley & G. Dunstall (ed.), *Comparative Histories of Crime* (Oxford, 2003), pp.53-71; T. Gurr, 'Historical Trends in Violent Crime: A Critical Review of the Evidence', *Crime and Justice*, Vol. 3 (1981), pp.295-353; D. Hay, 'Crime and Justice in Eighteenth- and Nineteenth-Century England', *Crime and Justice*, Vol. 2 (1980), pp.45-84; L. McDonald, 'Theory and Evidence of Rising Crime in the Nineteenth Century', *The British Journal of Sociology*, Vol. 33, No. 3 (Sep., 1982), pp.404-420; Leleux, *Regional History*, Vol. 9, p.10; A. & S. Sellwoord, *Death Ride from Fenchurch Street and Other Victorian Railway Murders* (Stroud, 2009).

On 12th June 1861 the HL&DR was taken over by the GNR; according to C. Grinling and Simmons furthering their web of branches radiating from Hatfield, pre-empting the MR expansion.[115] The MR at that point were still using GNR metals to Kings Cross, thus minutely affecting the branch.[116] Gaining a second platform in 1863, in 1899 much of the GNR branch was doubled and several new factories requested sidings.[117] The MR 'London extension' line was opened on 13th July 1868.[118] Luton MR Station was located opposite Luton GNR Station (Fig. 53), connected via a footbridge, becoming Luton's main line connection to London.[119] Provided with a substantial goods yard, the track was doubled in stages between 1875 and 1889.[120]

Considering passenger services, the GNR expanded train numbers by 1864, but this remained constant despite the opening of the MR, increasing further in 1887 – no decline despite main line competition.[121] Commuting was present, but small-scale.[122] For example, while many travelled from Welwyn into Luton for work, Luton was – according to Simmons – some way out from the period's 'suburban limits', although this had altered by 1914.[123] The MR enabled a more direct route, not just to London but also Bedford and St Albans.[124] As a result, their suburban trains were superior to the GNR for commuting, but as their expresses were infrequent and the stoppers slow, the GNR remained viable for passengers.[125]

GNR traffic increased despite the MR, but this appears primarily through goods.[126] Hauling more than the MR – the MR having substantially fewer private sidings in Luton – straw/hats were the main aspect, including straw imports, followed by coal and agricultural

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[115] *Luton's Railways*, p.2; Cockman, *Bedfordshire*, p.32; C. Grinling, *The History of the Great Northern Railway, 1845-1922* (London, 1966), pp.204, 231; Gordon, *Regional History,* Vol. 5, p.122; Woodward, *Hatfield, Luton & Dunstable*, p.11; Simmons, *Town and Country*, p.69.

[116] Woodward, *Hatfield, Luton & Dunstable,* p.12.

[117] Cockman, *Bedfordshire*, p.32; Woodward, *Hatfield, Luton & Dunstable,* pp.12-33, 19, 24, 43; *Luton's Railways*, p.1.

[118] TNA MT 6/53/9 – Statement with reference to the requirements of Col. Hutchinson in respect of the opening of the Railway from St Pauls Junction to St Pancras Station (1868); Hamilton Ellis, *Midland*, p.34; Goslin, *St Pancras*, pp.11-2. See Appendix II.

[119] Hamilton Ellis, *Midland*, p.34; Goslin, *St Pancras*, pp.11-12, 28; *Luton: Straw Hat*, p.5; Grinling, *Great Northern*, p.195; Woodward, *Hatfield, Luton & Dunstable,* pp.12, 19.

[120] Goslin, *St Pancras*, pp.29, 59, 62.

[121] Leleux, *Regional History* Vol. 9, pp.30-1; Eckett, *Signals*, p.86; Oppitz, *Lost Railways*, p.111; Woodward, *Hatfield, Luton & Dunstable,* pp.27, 29.

[122] Scholey, *Bedfordshire's Railways*, p.17.

[123] Simmons, *Town and Country*, pp.59, 69; Giles, Jeavons, Martin, Smith & Smith, *Wheathampstead*, p.vii.

[124] Cockman, *Bedfordshire*, p.61.

[125] Ibid; p.60; Leleux, *Regional History*, Vol. 9, p.30; Oppitz, *Lost Railways*, p.111.

[126] Woodward, *Hatfield, Luton & Dunstable,* p.13; Scholey, *Bedfordshire's Railways*, p.17.

materials/livestock.[127] Nonetheless, MR goods traffic was still noteworthy.[128] Surviving MR
station-by-station traffic records show 'coaching' was substantial, primarily passengers, but
when 'goods debit' was added in 1897 this was even greater, and expanding (Fig. 54).[129]

Fig. 54: Luton MR Finances 1872-1900.
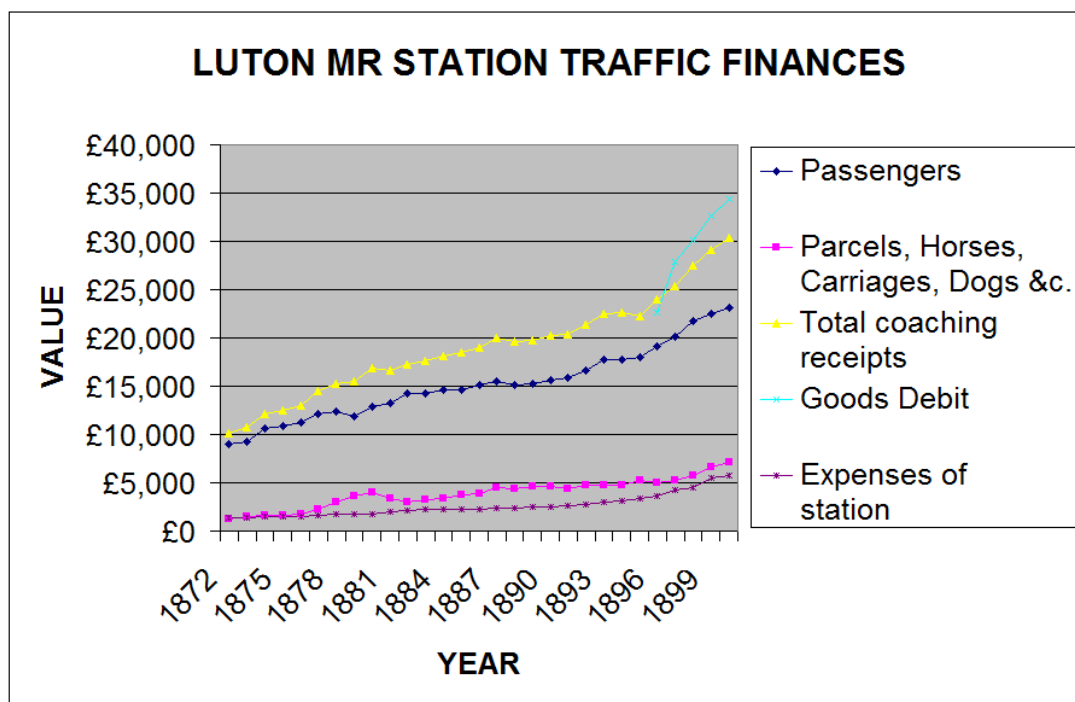
TNA RAIL 491/672, RAIL 491/674, RAIL 491/675 - Midland Railway Company Records,
Traffic and Expenses at Stations.

With rising levels of goods traffic and differing passenger services, the MR main line and
GNR branch in essence traded equally, hence neither saw any distinct decline.[130] Passenger
travel was significant to both, such as commuting, but this was still secondary to commercial
and industrial goods. The GNR had specialist warehouses and nearer factories, taking the
lead on this, but that the MR experienced such high levels itself demonstrates that Luton was
primarily commerce-driven, rather than commuter suburb such as St Albans (Fig. 58), and
that this commerce was intensifying massively.[131]

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[127] Giles, Jeavons, Martin, Smith & Smith, *Wheathampstead*, p.33; Oppitz, *Lost Railways*, p.112; Woodward, *Hatfield, Luton & Dunstable,* p.42; Simmons, *Town and Country*, p.277; *Luton's Railways*, p.2. See Chapter 4.
[128] Woodward, *Hatfield, Luton & Dunstable,* p.42; Goslin, *St Pancras*, pp.28-9.
[129] TNA RAIL 491/672, RAIL 491/674, RAIL 491/675 - Midland Railway Company Records, Traffic and Expenses at Stations. See Chapter 9.
[130] *Luton's Railways*, p.2.
[131] K Scholey, *Bedfordshire's Lost Railways* (Glasgow, 2003), p.17; Woodward, *Hatfield, Luton & Dunstable,* p.42; *Luton's Railways*, p.2. See Chapter 9.

Luton has always depended on road transport, particularly with such a wide area supplying it with plait.[132] Two turnpikes were established in 1727, linking Luton to Bedford and St Albans, both expiring in 1870 – two years after the MR.[133] While the numerous stagecoaches had declined, there was enough commercial traffic for the turnpikes to have continued for longer than elsewhere despite the HL&DR/GNR branch.[134] This traffic included a Luton to Watford Station coach service up to 1858 and others to Wolverton and Dunstable, both providing rail connections (including before the GNR/MR lines).[135] Although with no formal road service, much also went to Hitchin (MR), while coal formerly came via the GJC at Leighton Buzzard.[136] Therefore, while some aspects of road transport were overtaken by rail, the manufacturables being produced in Luton were sufficient to keep road transport substantial even after the railways, although by 1870 occupied mostly in short-distance transport. Furthermore, although the number of carriers slowly decreased after the railways, the number of routes actually increased (Table 18). With Bedfordshire having limited rail coverage, the necessity for road access to the immediate vicinity would have been greater.

Table 18: Number of carrier firms and routes as listed in business directories for Luton 1823-1903. Note: 1903 appears anomalous.

	ROUTES	CARRIERS
1823	4	3
1830	6	4
1839	6	1
1850	11	8
1862	X	1
1871	9	2
1885	10	1
1890	8	1
1903	29	2

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[132] *Luton's Railways*, p.1; WPM.

[133] http://www.turnpikes.org.uk/English%20turnpike%20table.htm

[134] *The Mossman Collection: Horse-Drawn Transport* (Luton), pp.18-9; Woodward, *Hatfield, Luton & Dunstable,* p.5.

[135] *Slaters Royal National and Commercial Directory and Topography (including Bedfordshire)*, 1850, p.28; *Mossman Collection*, p.19; Simpson, *Newport Pagnell*, p.13.

[136] *Luton: Straw Hat*, p.58; Woodward, *Hatfield, Luton & Dunstable,* p.5.

Fig. 55: St Albans parish.
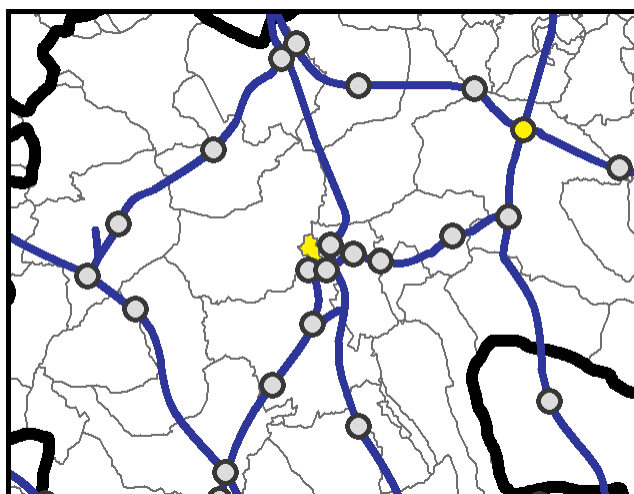
A coaching town since Roman times, the three St Albans railways had a substantial impact (Fig. 55). The first constructed was the LNWR branch to Watford, authorised in 1853.[137] Originally intended to run to Luton (1845), this farther section was not permitted under its Act.[138] The proposed terminus was blocked by Lord Verulam, so was ultimately sited at the bottom of Holywell Hill by the 1826 town gasworks (Fig. 56) – a main user of the line.[139] Construction was delayed, potentially as the original proposal was to counter a failed GNR plan, prompting Council memorials to the LNWR campaigning for swifter action.[140] The delay may also have connected to discussions in 1857 concerning the placement of the Watford end of the branch.[141] Construction ultimately commenced c.1856, taking approximately two years.[142]

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[137] S. Jenkins, *The Watford to St Albans Branch* (Usk, 1990), p.11.

[138] TNA RAIL 1110/260 – London & Birmingham Railway Shareholders Reports – Report for 9/8/1844 and 7/8/1845; Jenkins, *St Albans Branch*, p.11.

[139] TNA RAIL 1110/269 – London & Birmingham Railway Shareholders Reports – Report for 11/6/1858; Jenkins, *St Albans Branch*, pp.12, 14, 89; J. Corbett, *A History of St Albans* (Chichester, 1997), p.95; M. Freeman, *St Albans: A History* (Lancaster, 2008), p.242; Richards & Simpson, *London Birmingham Railway* Vol. 1, p.111.

[140] Jenkins, *St Albans Branch*, p.9; Corbett, *St Albans*, p.95; Memorial from the Mayor to the LNWR, 9th May 1855: 'The early construction of the Branch Railway from Watford to St Albans is of great importance to the town and neighbourhood of St Albans…' - Museum of St Albans.

[141] Jenkins, *St Albans Branch*, p.12; D. Payne, *The Story of Bushey in the Age of the Steam Train* (Bushey, 2011), p.11.

[142] Jenkins, *St Albans Branch*, p.125; Richards & Simpson, *London Birmingham Railway* Vol. 1, p.111.

Fig. 56: 1898 OS Map extract of St Albans, with stations highlighted (LNWR to west, GNR to east & MR to north).
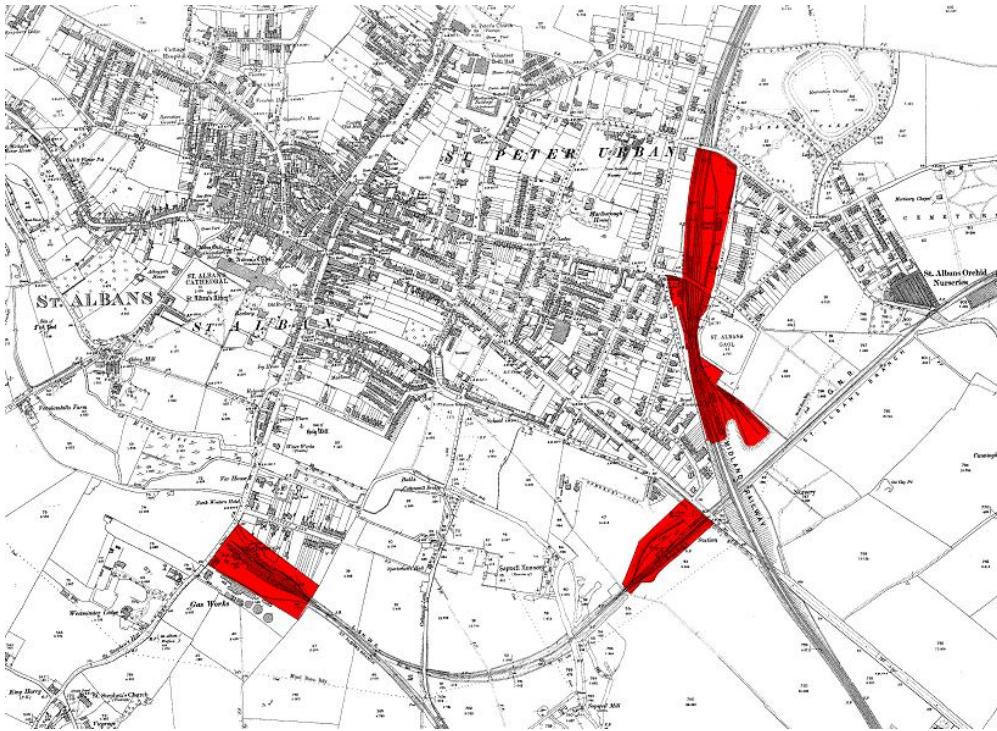
On 5th May 1858 the LNWR branch was opened; the earlier test train in February being noteworthy in conveying Robert Stephenson and nearly being derailed by vandals.[143] Much was made of the opening by the town with a public holiday and local press coverage.[144] The expectations were summarised by former Mayor John Lewis, claiming '…the railway would be of a very great advantage to all', with people 'who would now come to reside in the town and give £200 per year for a house'.[145] As with Luton, Casson's broader analysis of civic pride and regional one-upmanship thus appears vindicated.[146] St Albans LNWR yard gradually expanded providing wider services such as stables and cattle pens, and in 1900 a

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[143] MT 6/16/58 – Watford-St Albans Branch LNWR – 6 miles 56 chains - Inspection ; Jenkins, *St Albans Branch*, p.15.

[144] Corbett, *St Albans*, p.95; MoStA.

[145] Corbett, *St Albans*, p.95.

[146] M. Casson, *The World's First Railway System: Enterprise, Competition and Regulation on the Railway Network in Victorian Britain* (Oxford, 2009), p.324.

bay platform was added for the GNR.[147] Considering the branch effectively an extension of the main line, services included through trains direct to Euston.[148]

The LNWR branch had only been in operation for four years when localised competition began.[149] According to General Manager Seymour Clarke, the GNR had formerly taken two-thirds of the St Albans traffic from their Hatfield Station, 'but we have now lost it all' to the LNWR.[150] The GNR aimed to reclaim traffic by encouraging local landowners to create an independent company to build a line between St Albans and Hatfield, contributing £20,000 to construction costs.[151] Unlikely from the outset to be profitable, this way meant the GNR could potentially buy the line at a later point for barely the cost of construction.[152] Simmons included this line in his GNR 'web' of branches aiming 'to pre-empt territory that might be exploited by the new Midland line'.[153]

Planning of the Hatfield & St Albans Railway predated the MR's St Pancras extension; the Minutes show the MR c.1863 were only considering a potential St Albans branch.[154] By 1864, however, they decided on the 'London extension'; a quicker route than the H&StAR.[155] Construction had not started when the MR extension was passed, and although the H&StA Board were aware of the threat, they continued nonetheless.[156] The line opened on 16th October 1865, with little celebration.[157] The branch had a dedicated St Albans station in London Road (later St Albans GNR Station; Fig. 56) with a small yard and locomotive facilities, although Hatfield MPD was exclusively used after 1877.[158]

Financially, the H&StA was in difficulties almost immediately. Initial traffic was low, worsened by the GNR agreement that for operating the line, they should receive 50% of revenue. The Minutes of 11th May 1866 first record GNR interest in purchasing the line, but

[147] TNA RAIL 1110/270 – London & Birmingham Railway Shareholders Reports – Report for 22/8/1874; Richards & Simpson, *London Birmingham Railway* Vol. 1, p.111-2; Jenkins, *St Albans Branch*, p.18; MoStA.
[148] Jenkins, *St Albans Branch*, p.21; Corbett, *St Albans*, p.95.
[149] Simmons, *Town and Country*, p.69.
[150] GNR General Manager's Report, 1858 - in Taylor & Anderson, *Hatfield St Albans*, p.5.
[151] TNA RAIL 295/1 – Hatfield & St. Albans Railway Minute book – Minutes for 6/5/1863; Taylor & Anderson, *Hatfield St Albans*, pp.6, 47; Eckett, *Signals*, p.63.
[152] Taylor & Anderson, *Hatfield St Albans*, p.6.
[153] Simmons, *Town and Country*, p.69.
[154] TNA RAIL 295/1 – Hatfield & St. Albans Railway Minute book – Minutes for 15/5/1863.
[155] Grinling, *Great Northern*, p.231.
[156] Taylor & Anderson, *Hatfield St Albans*, p.10.
[157] *Hertfordshire Mercury*, 21/10/1865 - in Taylor & Anderson, *Hatfield St Albans*, p.10; Oppitz, *Lost Railways*, p.114.
[158] TNA RAIL 236/1026 - St Albans GNR Station, 1874; Taylor & Anderson, *Hatfield St Albans*, p.31.

the shareholders refused.[159] By 1867 the 'prevailing distrust in railway securities' resulted in increasing loan interest while revenue was rapidly decreasing.[160]

Fig. 57: St Albans H&StAR Finances 1865-1869. Note: the GNR took 50% of profits, so the totals present are only half that made by the line. The competing MR opened in July 1868.
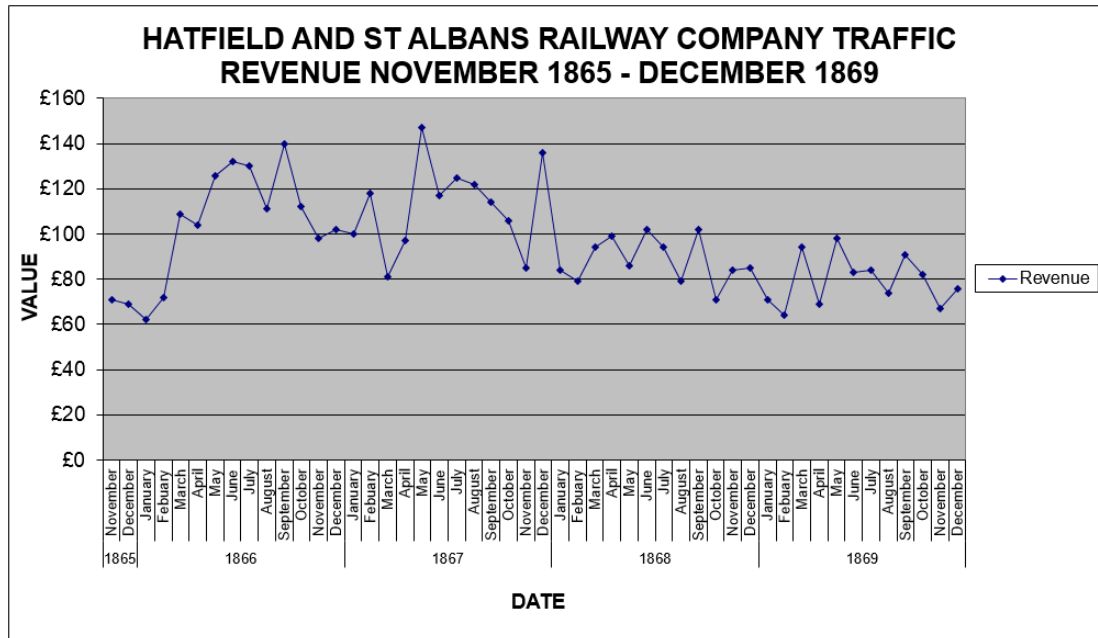
TNA RAIL 295/1 – Hatfield & St. Albans Railway Minute book.

By the December Meeting, company finances were deemed to be in a 'critical position' owing to the competition with the newly-opened St. Albans MR Station.[161] It was estimated approximately £80 was lost monthly to the MR; in effect the H&StA revenue was halved and the GNR had to lend financial assistance.[162] Traffic revenue figures (Fig. 57) recovered slightly in 1869, but in 1870 it was found the Company was insolvent.[163]

A surreptitious meeting between two directors and the GNR in January 1882, causing consternation among the shareholders, preceded an invitation to buy the line, solving the 'present [financial] embarrassment'.[164] On 1st November 1883 the GNR took control.

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[159] TNA RAIL 295/1 – Hatfield & St. Albans Railway Minute book – Minutes for 17/7/1866 Extraordinary General Meeting Report; Minutes for 10/7/1866.
[160] TNA RAIL 295/1 – Hatfield & St. Albans Railway Minute book – Minutes for 28/2/1867; Taylor & Anderson, *Hatfield St Albans*, p.13.
[161] TNA RAIL 295/1 – Hatfield & St. Albans Railway Minute book – Minutes for 30/12/1868.
[162] Taylor & Anderson, *Hatfield St Albans*, p.13.
[163] Ibid; p.13.
[164] TNA RAIL 295/1 – Hatfield & St. Albans Railway Minute book – Minutes for 4/1/1882.

Costing £57,500, the interest on the H&StA's debts was more than the traffic revenue.[165] Under GNR ownership the line remained loss-making, but generally stable.[166] The original Act permitted dual running powers with the LNWR into their St Albans Station, used from 1st November 1866, and in 1900 a LNWR bay platform for GNR trains was built.[167] This mirrors Casson's comments on shared termini as inter-company co-operation.[168] Conversely, his points on competition are highlighted by reports to the GNR Board of the LNWR creating difficulties concerning issuing through tickets, preferring passengers to use their line.[169]

Much of the origin of the MR London extension has been detailed, so need not be repeated.[170] Opened on 13th July 1868, St Albans MR Station was sited to the east of the town (Fig. 56).[171] Gaining an MPD in 1868, in 1894 the track was quadrupled.[172] Providing St Albans with a second direct London route, plus the indirect GNR, intensifying competition presented potential benefits, matching national trends suggested by Casson.[173] With close proximity, acting as a 'hub' (Fig. 56), Gibbs' Handbook declared '…the town now possesses exceptional advantages as a centre of railway communication'.[174]

Conversely, while the lines aided St Albans' development as a commuter settlement, the MR showed lesser interest in this aspect – the extension originally operating akin to terminus-terminus practices, so failed to take the lead, thereby stabilising the other lines.[175] Growing commuting over goods and parcels (Fig. 58), despite MR policy, is shown in their station finances.[176]

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[165] TNA RAIL 295/1 – Hatfield & St. Albans Railway Minute book – Minutes for 15/3/1883; Taylor & Anderson, *Hatfield St Albans*, p.14.

[166] Oppitz, *Lost Railways*, p.116; Taylor & Anderson, *Hatfield St Albans*, p.14.

[167] Taylor & Anderson, *Hatfield St Albans*, p.9; Oppitz, *Lost Railways*, p.114; Leleux, *Regional History*, Vol. 9, p.32.

[168] Taylor & Anderson, *Hatfield St Albans*, p.39; Casson, *First Railway System*, p.22.

[169] Taylor & Anderson, *Hatfield St Albans*, p.39.

[170] See Appendix II.

[171] Richards & Simpson, *London Birmingham Railway* Vol. 1, p.112; Grinling, *Great Northern*, pp.195, 231; Jenkins, *St Albans Branch*, p.18.

[172] Goslin, *St Pancras*, pp.26, 51, 54; Taylor & Anderson, *Hatfield St Albans*, p.36; R. Kirk, *St Albans South Signal Box* (2009), p.10.

[173] Casson, *First Railway System*, pp.19, 22; Jenkins, *St Albans Branch*, p.18; Richards & Simpson, *London Birmingham Railway* Vol. 1, pp.111-2; H. Dyos & D. Aldcroft, *British Transport: An Economic Survey from the Seventeenth Century to the Twentieth* (Leicester, 1971), pp.151, 161.

[174] F. Mason, *Gibbs' Handbook to St Albans* (1884), p.40.

[175] Simmons, *Victorian Railway*, p.83; Jenkins, *St Albans Branch*, p.21; Leleux, *Regional History*, Vol. 9, pp.30, 32; G. Goslin, *The London Extension of the Midland Railway: A History of the St Pancras - Bedford Route* (Caernarfon, 1994), p.28; K Scholey, *Bedfordshire's Lost Railways* (Glasgow, 2003), p.28; MoStA.

[176] TNA RAIL 491/672, RAIL 491/674, RAIL 491/675 - Midland Railway Company Records, Traffic and Expenses at Stations. See Chapter 9.

Fig. 58: St Albans MR Finances 1872-1900.
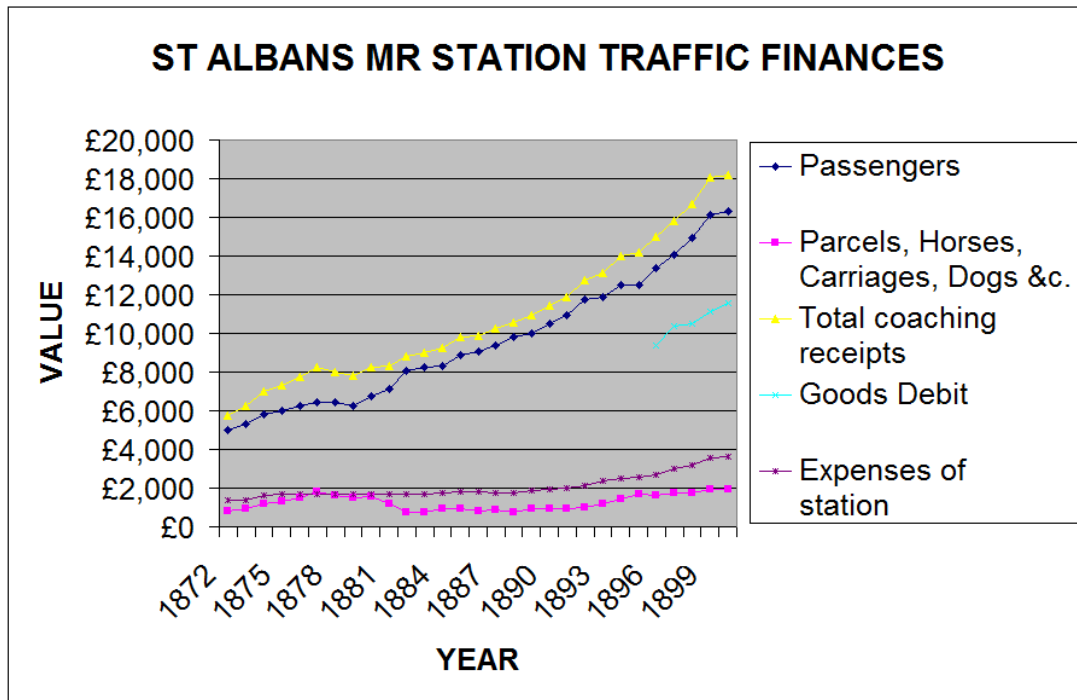
ST ALBANS MR STATION TRAFFIC FINANCES

Legend:
- Passengers
- Parcels, Horses, Carriages, Dogs &c.
- Total coaching receipts
- Goods Debit
- Expenses of station

TNA RAIL 491/672, RAIL 491/674, RAIL 491/675 - Midland Railway Company Records, Traffic and Expenses at Stations.

St Albans' coaching trades changed considerably. A major coaching town from the seventeenth century onwards, there were multiple turnpikes and several new roads improving accessibility, notably the London Road of 1769 bypassing the dangerously steep Holywell Hill and winding Fishpool Street.[177] This was further improved in 1794 by Thomas Telford as part of the main London-Holyhead route.[178] By 1826 St Albans was at its coaching height, with 72 passing daily.[179] The knock-on effects were substantial:

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[177] Freeman, *St Albans*, pp.188-9; Corbett, *St Albans*, pp.70-3; J. Mein, 'The Last Years of the Many Inns of St Albans', *Herts Past & Present*, No. 22 (Autumn 2013), p.15; MoStA.
[178] Freeman, *St Albans*, pp.188-9; MoStA.
[179] Freeman, *St Albans*, p.190; Corbett, *St Albans*, p.73; Leleux, *Regional History*, Vol. 9, p.31; Jenkins, *St Albans Branch*, p.8; Taylor & Anderson, *Hatfield St Albans*, p.5; MoStA.

'The immense and constant traffic through the town, in consequence of the great northwest road lying through it, affords employment to several most respectable posting houses and inns, and also many inferior public houses…'

'…it may be reasonably computed that not less than 1,000 persons pass through this town every day.'[180]

Gibbs' Handbook (1881) declared 'In the good old coaching days this was a first rate postal town', and the cessation of mail coaches in 1840 after the LBR was the first immediate railway impact on the town.[181] Turnpike tolls before the railways had been £3,824 per annum, but by 1839 had already fallen to £2,041.[182] Quoting Pigot's directory:

'The inns of which there are several respectable ones, both posting and commercial, are supported in a considerable degree by the influx of passengers; but their prosperity has suffered a material diminution from the opening of the London and Birmingham Railway – one inn alone it is said, having lost the stabling of two hundred and fifty horses since this modern mode of conveyance has been brought into operation.'[183]

While there was no canal access, some materials were initially brought to St Albans via the GJC at Watford, notably coal, although this was particularly expensive – a complaint that ceased with regular coal trains.[184]

The coaching decline was immediate and sudden, but not as absolute as could be expected, particularly considering that St Albans had no rail or canal access.[185] Furthermore, the railways to a very small degree helped as well as largely hindering. Aside from theoretical LBR trade, with the opening of the GNR main line a dedicated connecting omnibus was established.[186] This monopolised rail traffic until the 1858 LNWR branch – the main reason

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[180] S.G. Shaw, *History of Verulam and St Albans* (St Albans, 1815), p.158; Corbett, *St Albans*, pp.77-8.

[181] F. Mason, *Gibbs' Handbook to St* Albans (1884), pp.38, 40; MoStA; Stockwood Discovery Centre.

[182] HALS TP5/38 Printed Reports of Clerk and Committee on Finances of the St Albans Turnpike Trust - in Mein, 'Inns of St Albans', *Herts Past & Present*, p.17.

[183] *Pigot & Co's Royal National and Commercial Directory and Topography*, 1839; MoStA; http://www.hertfordshire-genealogy.co.uk/data/projects/harpenden-road/hr-22-railways.htm

[184] Shaw, *Verulam*, p.160; Jenkins, *St Albans Branch*, p.8; Taylor & Anderson, *Hatfield St Albans*, p.5; Richards & Simpson, *London Birmingham Railway* Vol. 1, p.111; Corbett, *St Albans*, p.79; MoStA. See Chapter 9.

[185] Corbett, *St Albans*, p.88.

[186] Taylor & Anderson, *Hatfield St Albans*, pp.5, 40; Eckett, *Signals*, p.63.

'that many innkeepers went bankrupt'.[187] Other rail omnibuses were also established, primarily to Watford.[188] While the LNWR branch was the primary reason for 'immediate loss of trade', worsened by subsequent lines, this did not fully obliterate road traffic.[189] For example, the GNR later paid a monthly fee to the London Road toll gate to permit station traffic to move freely - Lord Verulam refusing to relocate the gate to the other side of the station.[190] The gate was abolished in 1871.[191] Watling Street similarly ended tolls in 1875.

Directory carrier/route numbers (Table 19) reflect these impacts, but while R. Leleux claimed St Albans recovered with the MR around the 1880s, this did not match road transport.[192] Rather, once the stagecoach industry was gone and its remnants turned to short-distance travel, additional railways (H&StAR and MR) exhibited no further effect. Railway omnibuses further demonstrate wider rail use in parishes not directly on a line.[193] So while the railways were indeed the main 'blows to the town's coaching trade', the historiography of other factors and changing road-based travel remains true.[194]

Table 19: Number of carrier firms and routes as listed in business directories for St Albans 1823-1902. Note: the 1850s Directories are recognised as extremely poor for carrier information and should be considered anomalous.[195]

	ROUTES	CARRIERS
1823	6	3
1832	26	4
1839	23	11
1850	X	2
1862	5	1
1870	5	2
1882	5	2
1890	5	2
1902	5	2

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[187] Leleux, *Regional History*, Vol. 9, p.31; Mein, 'Inns of St Albans', *Herts Past & Present*, pp.15-21.

[188] *Pigot and Co's Royal National and Commercial Directory and Topography*, 1839; Taylor & Anderson, *Hatfield St Albans*, p.40; http://www.hertfordshire-genealogy.co.uk/data/projects/harpenden-road/hr-22-railways.htm

[189] Corbett, *St Albans*, p.88; Freeman, *St Albans*, p.215.

[190] Taylor & Anderson, *Hatfield St Albans*, p.10.

[191] Corbett, *St Albans*, p.88.

[192] Leleux, *Regional History*, Vol. 9, p.10. See Chapter 9.

[193] As hypothesised by the countywide land use and population data – see Chapters 5 and 6.

[194] Corbett, *St Albans*, p.88; Freeman, *St Albans*, p.253.

[195] Mills, *Trade Directories*, p.81.

Bushey

Fig. 59: Bushey parish.
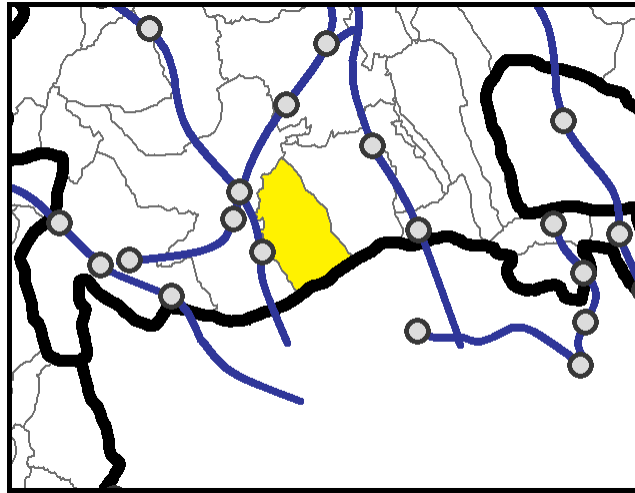
Originally aiming to cross the estates of the Earls of Essex and Clarendon in Watford, refusal forced the LBR to deviate to the east via Bushey (Fig. 59).[196] Prior to completion in 1838, the line was partially worked in sections, with the Euston-Boxmoor part opened on 20th June 1837. As part of the celebration and to allay fears, free rides were given between Watford Station and Bushey, currently without a station.[197] The Sparrows Hearne Turnpike was, however, bridged with a viaduct, portrayed in several early prints of the railway.[198] While many settlements petitioned for a station, Bushey did not. Instead, the LBR independently decided:

'That the Coaching Committee be authorised to appoint a stopping place in charge of a policeman at the south of the Watford Viaduct where passengers may enter and leave the Trains.'[199]

On 4th December 1841 the new station was opened, some distance from Bushey village. It was relocated, under the LNWR, in 1856. However, partially as a result, arguments erupted in 1857. The LNWR St Albans branch was being constructed and it was proposed (but later rejected) closing Watford Station, making the junction at Bushey. Lord Ebury retorted:

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[196] P. Richards, 'Watford and the Railway', *Herts Past & Present*, No. 22 (Autumn 2013), p.11; Watford Museum; http://www.thegrove.co.uk/about-us/history

[197] Leleux, *Regional History*, Vol. 9, p.19.

[198] TNA RAIL 384/163 – Contract LBR & Joseph Nowell, John William Nowell & Jonathan William Nowell (Leeds); Watford Museum.

[199] TNA RAIL 384/4 - LBR/LNWR Board Minutes (Nos 1005-1809) - Minute No. 1663, 9/7/1841.

'…the inhabitants of Bushey, to which third-class station it is proposed to remove them at Watford, have never complained of the accommodation afforded to them; and that Bushey is about the last place on the line where a first-class station should be constructed.'[200]

The number of passenger services rose substantially, from three daily in 1841 to an hourly service by 1900, demonstrating the growth of rail use in the immediate vicinity and the rise of the area as a commuter settlement.[201] In 1864 water troughs were constructed.[202] This was popular with train spotters and people flocked to Bushey – even being included in multiple official LNWR souvenir postcards. This stretch of main line was widened through 1875, with the viaduct extended. Bushey Station was rebuilt for a fourth time, including subway access.[203] With improved road access, several coal merchants established themselves in the vicinity working out of the good yard.[204]

The last noteworthy rail event strangely became an international news sensation.[205] In September 1880, a platelayer found a parcel by some tampered fishplates near the station. It contained four lbs of dynamite, attached to the track via percussion fuses. Although no-one was ever apprehended, it was believed to have been a plot to blow up the Scotch Express, but the train's wheels cut the fuses, preventing an explosion.[206]

Before the station, the only alternative transport was the Sparrows Hearne to Walton (Aylesbury) Turnpike, founded in 1762. A toll gate was established underneath the viaduct, but was dissolved with the Trust in 1872. Considering it initially took four hours to travel from Bushey to London, but by 1900 rail it took only half an hour, the turnpike's collapse is unsurprising, although this was still comparatively late.[207] It was this viaduct gate that was referenced as losing tolls by half despite lowering them even before opening of the railway:[208]

[200] *The Morning Chronicle*, 23/2/1857 - in Payne, *Bushey*, p.11.
[201] See Chapter 10.
[202] Payne, *Bushey*, p.12.
[203] The third rebuilt was in 1867. Payne, *Bushey*, p.16.
[204] TNA RAIL 1110/270 – LNWR Shareholders Reports; TNA RAIL 384/6 LBR/LNWR Board Minutes (Nos 2634-3449).
[205] Payne, *Bushey*, p.37.
[206] *Illustrated London News*, 25/9/1880.
[207] Payne, *Bushey*, p.15; M. March, *The Sparrow Hearnes Turnpike* (Wall Hall College, 1969), pp.17, 26.
[208] March, *Sparrow Hearnes*, pp.17, 26. See Chapter 3.

1838 tolls let at Watford gate: £1,836

1872 tolls let at Watford gate: £1,340

Ultimately the lessee of this Watford gate applied for contract release 'in consequence of the decrease of traffic occasioned by the railway'.[209]

While the Turnpike's decline was expected, the number of carriers shows road transport after the railway actually grew (Table 20). Bushey had been very minor; there were no local carrier firms listed in the earliest directories, and while some coaches/carriers must have passed through, Bushey was not an official stopping point.[210] But 1870 noted three carriers in Bushey, two explicitly to the station, and by 1902 there were five, including a bespoke station omnibus.[211] Long-distance travel was no longer required, but with the station some distance out of Bushey village (notwithstanding 'New Bushey') and increasing amounts of coal being taken to Watford gasworks, short-distance traffic servicing the station was very necessary.[212]

Table 20: Number of carrier firms and routes as listed in business directories for Bushey 1832-1902. Note: the 1850s Directories are recognised as extremely poor for carrier information and should be considered anomalous.[213]

	ROUTES	CARRIERS
1832	X	X
1839	X	1
1850	X	1
1862	2	3
1870	3	3
1882	2	1
1890	2	1
1902	2	5

A final aspect should be raised. In 1873, following a wealthy patron who lived in the area, the artist (later Sir) Hubert von Herkomer moved to Bushey, for both the picturesque rural

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[209] HRO TP4 Book 5 7/8/1837 - in March, *Sparrow Hearnes*, p.26.

[210] *Pigot and Co's London & Provincial New Commercial Directory for 1832-3-4*.

[211] *Post Office Directory of Hertfordshire*, 1870; *Kelly's Directory of Hertfordshire*, 1902.

[212] Payne, *Bushey*, p.17; F.W. Goudie & D. Stuckey, *West of Watford: Watford Metropolitan & the L.M.S. Croxley Green and Rickmansworth Branches* (Bracknall, 1990), p.38; M. Forsyth, *The Railway at Watford Junction* (Watford, 1988), p.10.

[213] Mills, *Trade Directories*, p.81.

nature of the parish and easy access to London.[214] In 1883 he opened an art school that depended for student accessibility and supplies on the railway.[215] Attracting visitors, Herkomer subsequently chartered many special 'Herkomer' trains for friends to attend his plays and parties.[216] Many significant portraits were painted in Bushey with sitters, including LNWR managers and the Krupp armaments firm directors repeatedly using Bushey Station.[217]

Although Bushey was for the most part only a small third class station – 'a little shanty with a porter' as Herkomer first described it – it gained increasing use and had much invested in frequent rebuilding: patently it grew in importance.[218]

Comparison to Hypotheses

To summarise, while great variety existed between these case studies, many of the same trends are present. Even the exceptional Wolverton followed many, with individual small branch and tram companies being taken over by larger conglomerates, stations moved and rebuilt, quadrupling of lines and even the presence of connecting omnibuses.

Considering the countywide transport hypotheses, the decline of early terminus-to-terminus practices was previously shown.[219] The decline of Wolverton's second station with improved locomotion but with later provision of a third station as services improved further supports this changing business strategy, as reflected in the historiography.[220] The region's lines showed the importance of competition between companies, but with simultaneous cases of cooperation.[221] These case studies demonstrate, however, that cooperation was at best wary and prone to breakdown.

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[214] Payne, *Bushey*, pp.18-19.
[215] Ibid; p.21.
[216] Ibid; p.24.
[217] http://www.bbc.co.uk/arts/yourpaintings/paintings/william-cawkwell-general-manager-london-and-north-western-r9548
[218] Payne, *Bushey*, p.26.
[219] See Chapter 7.
[220] Casson, *First Railway System*, p.19; Simmons, *Town and Country*, p.324; Dyos & Aldcroft, *British Transport*, p.150. See Chapters 1 and 3.
[221] T.C. Barker & C.I. Savage, *An Economic History of Transport in Britain* (London, 1974), p.67; T.R. Gourvish, *Railways and the British Economy 1830-1914* (London, 1980), p.27.

Hypothesis 3: Main lines and branch lines had different effects and degrees of influence.

Main lines were generally superior to branch lines, for example the St Albans MR substantially affecting the H&StAR and LNWR branches. Potton's S&PR was upgraded to main line, boosting the connections it went to. Wolverton's tram was the most minor, although the unusually-important second main line station diminished in significance with reducing need for a 'central station'. Luton conversely showed less of a gap between branch and main line significance, owing to slower MR trains negating the mileage advantage, while many factories already surrounded the GNR branch. Initial arguments over having a main or branch line built, particularly the ensuing rivalry with Dunstable, though, show not just the historiographical view on 'civic pride' but that this main/branch significance issue had contemporary social recognition.[222] At the other extreme, the MetR at Quainton Road was modest and distant, only attracting limited passengers, while the erstwhile goods-only tramway ultimately gained regular passenger services, near-constant goods and several extensions. These suggest unusually that the branch was more useful to its vicinity than the main line. Ironically this aid centred around Brill village rather than Quainton itself. Nonetheless, this hypothesis is supported, with their juxtaposition revealed through differing impacts and to differing extents.

Hypothesis 4: Junctions and 'hubs' were important, but in aiding already-rising locations rather than establishing them as urbanising centres.

While rail involvement in the growth of the case studies is examined under population, occupation and land use, it is plain that most 'hubs' were developed settlements first. While St Albans and Luton are the best examples, it also is the case that Wolverton only gained its branch *after* the new town had become established. The main/branch line issue is equally associated with the relative impact of 'hub' connections, while having 'hubs'/junctions of two companies cooperating played on their competition to local advantage.[223] This hypothesis is best supported by its exception, as rural Quainton Road became a junction for the ease of the GCR rather than for the settlement itself. The rural junction came to open

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[222] Casson, *First Railway System*, pp.17, 324; Simmons, *Town and Country*, pp.16, 324; P. O'Brien, *The New Economic History of the Railways* (London, 1977), p.183; Cockman, *Bedfordshire*, p.30; M. Casson, *The Determinants of Local Population Growth: A Study of Oxfordshire in the Nineteenth Century*, EHS Annual Conference 2011, p.19; Gourvish, *Railways Economy*, p.31.

[223] Casson, *First Railway System*, pp.17-20, 22, 317-9, 323; Schwartz, Gregory & Thévenin, 'Spatial History', *Journal of Interdisciplinary History*, p.61.

fields, and rather than develop, it stagnated. Quainton also shows how the relation between railway companies and settlement can be two-way; while Quainton Road Station was from a passenger stance very minor, as a junction and yard between two main lines the location was vital to the companies.[224]

Hypothesis 5: Unlike other effects, railway 'change' near-directly triggered the collapse and decline of stagecoaches and canals, although with roads recovering by turning to shorter-distance journeys.

Considering turnpikes first, most failed around the 1870s, lasting significantly longer than long-distance stagecoach travel. With a need for access, as with St Albans GNR Station, or to reach the wider vicinity, as with Bushey, this is logical – although diminishing financially, the ultimate railway impact was deferred. The same appears true of carriers: route numbers remained stable for significantly longer, even if the number of individual carriers decreased through competition and decreasing clientele. These were compounded when additional lines were completed, so further reducing their need, turnpikes soon failing, as with St Albans. Short-distance service demand remained, as in Luton and Wolverton; confirmed by the presence of station-connected omnibuses. While some goods such as coals to St Albans and Luton ended, Wolverton demonstrated canals still retained some business, and the 'Battle' shows their animosity with the railways.

As for stagecoaches, St Albans most clearly demonstrated the impacts of the railways, not just due to local lines. Any railway to the destination of any stagecoach would have impacted intermediate settlements along the entire route well before gaining their own rail connection. Additionally, with the LNWR branch there was no longer any dependency on getting to St Albans itself by road. Particularly prior to the Railway Regulation Act (1844), the decline of stagecoaches while railway fares remained high would have hampered public mobility.[225] This may further explain the early countywide population data.[226] This suggests distant railways 'facilitated' knock-on effects on intermediate stagecoach stops in the early decline,

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[224] Oppitz, *Lost Railways*, pp.39, 69.
[225] Dunleavy, *Lost Streets*, p.30; Simmons, *Victorian Railway*, p.324; Richards & Simpson, *London Birmingham Railway* Vol. 1, p.36.
[226] See Chapter 6.

only having a more direct role when physically connected to the settlement.[227] This role was thus both negative (stagecoach decline) and subsequently positive (encouraging short-distance road usage).[228]

Despite the variables and differences between railways and parishes, most aspects of the historiography and countywide study are supported.[229] The impact of railways on settlements correlated to the significance of the rail connection. Stagecoaches and canals suffered, while short-distance road service enabled recovery in the railways' wake. Therefore, to varying degrees and with some exceptions, turnpikes, stagecoaches and canals match the hypothesis and railways can be credited with having a direct role in their decline.[230] Directly, indirectly and both positive and negative, the railways were a significant force in local as well as national development.

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[227] W. Johnson, *Industrial Archaeology of Hertfordshire* (Newton Abbot, 1970), pp.23, 109; Corbett, *St Albans*, p.88; Leleux, *Regional History*, Vol. 9, p.31; M. Singleton, *The Stevenage Biggleswade Turnpike Trust: Traffic Flows, Management and Demise 1811-1868* (Kings College London, 2008), p.41.
[228] Mills, *Trade Directories*, p.77.
[229] Barker & Savage, *Transport*, pp.32, 123; Dyos & Aldcroft, *British Transport*, p.69; Gourvish, *Railways Economy*, p.29; Johnson, *Industrial Archaeology*, p.109; Singleton, *Stevenage Turnpike*, p.43.
[230] B.R. Mitchell, 'The Coming of the Railway and United Kingdom Economic Growth', *The Journal of Economic History*, Vol. 24, No. 3 (Sep., 1964), pp.319-20; Gourvish, *Railways Economy,* p.27; Barker & Savage, *Transport*, p.101.

Chapter 9: Occupations in the Case Studies

The countywide study showed railway impacts on occupations were multi-faceted, with general stimulus, specific benefits and some negatives impacts all occurring simultaneously. The main overlying trend identified was the beginning of movement away from agriculture towards more urbanised occupations, although the *Victoria County History* demonstrates that this was by no means a uniform change. The case studies, therefore, present examples of the extent to which this transformation was occurring.

Methodology

One of the most important local history resources are county business directories, providing retail and business data for most settlements.[1] Commonly used, for some regions they present the main source of occupational development.[2] This enables identification of patterns of provision quicker than through census enumerators' books with an acceptable level of accuracy.[3] These were categorised akin to the countywide census tables using the 'Goose Code'.[4] All multiple occupations were counted twice; this was frequent in rural areas and often blurred the roles of production and retail.[5] There are limitations, particularly as directories often 'vary in reliability' and content, notably concerning women and cases of duplication, especially through business partners, while some villages were omitted or merged with larger local centres in earlier editions.[6] Importantly, the data shows businesses or 'master' craftsmen rather than all individuals employed. This affected some sectors which were not proportionately included – agriculture and railways in particular.[7] Conversely,

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[1] W. Stephens, *Sources for English Local History* (Manchester, 1973), pp.14, 39, M. Drake & R. Finnegan, *Studying Family and Community History Volume 4: Sources and Methods: a Handbook* (Cambridge, 1997), pp.27, 58; C.A. Crompton, 'Changes in Rural Service Occupations during the Nineteenth Century: An Evaluation of Two Sources for Hertfordshire, England', *Rural History*, Vol. 6, 2, (1995), pp.193-203; G. Shaw, *British Directories as Sources in Historical Geography* (Norwich, 1982), pp.5-6.

[2] Drake & Finnegan, *Community History*, p.58; Shaw, *British Directories*, pp.47-52.

[3] Crompton, 'Rural Occupations', *Rural History*, pp.194, 198, 201-2.

[4] Drake & Finnegan, *Community History*, pp.61-2; Crompton, 'Rural Occupations', *Rural History*, p.196.

[5] D. Mills, *Rural Community History from Trade Directories* (Aldenham, 2001), pp. 43, 46; Stephens, *Local History*, pp.14, 38-9, 98; Drake & Finnegan, *Community History*, p.61; Crompton, 'Rural Occupations', *Rural History*, p.201; Shaw, *British Directories*, pp.40-1.

[6] Stephens, *Local History*, pp.14, 38; Drake & Finnegan, *Community History*, pp.60-1; Crompton, 'Rural Occupations', *Rural History*, pp.198, 200, 202; Shaw, *British Directories*, pp.29-30, 40-1.

[7] Mills, *Trade Directories*, p.29; Stephens, *Local History*, pp.38-9; Crompton, 'Rural Occupations', *Rural History*, pp.197, 200; Shaw, *British Directories*, pp.31-6.

directories are recognised as particularly useful for carriers and stagecoaches, so can still infer this side of rail impacts.[8]

Beer retailers were particularly prevalent through anti-gin legislation and the popularity of this as a secondary occupation alongside (for example) agriculture.[9] As many were not registered in the census, the difference skews the figures; as the primary agricultural occupations were frequently not listed, the food and drink sector was thus over-represented.[10] Nonetheless, as some occupations were more agricultural-serving than urban-serving, notably blacksmiths versus retailers, it still presents comparative data and alongside the *VCH* helps to locate domestic industry.[11]

As directories generally only listed those businesses which paid to be included, its aim being the promotion of local business, there is an unknown number that refused or were too small-scale to be included, and the disappearance of any names may not have been trade cessation but merely omission.[12] The results thus are more 'general' than that countywide and should accordingly be treated cautiously, but still provide a local 'socio-economic picture'.[13]

Wolverton

As 'New Wolverton' only post-dates c.1839, the original 'Old Wolverton' hamlet is considered first (Table 21). While a small spread of sectors was present in 1830, all level (14%) under the food and drink sector (20%) – primarily alcohol retailers supporting agricultural thirst – this diminished massively after the railway. Only a limited number of sectors were needed, considering the proximity to Stony Stratford. Although merged with 'New Wolverton' for 1839, 1863 and 1903, 'Old Wolverton' shows that while the food sector was paramount (through skewed data and artificially elevated as other sectors declined) and

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[8] Stephens, *Local History*, p.98; Drake & Finnegan, *Community History*, p.58; Shaw, *British Directories*, p21-2.
[9] Georgian fears of gin consumption demonstrated by Hogarth's 'Beer Street' and 'Gin Lane' - http://www.britishmuseum.org/explore/highlights/highlight_objects/pd/w/_william_hogarth,_beer_street.aspx ; J. Nicholls, 'Liberties and licences: Alcohol in Liberal Thought', *International Journal of Cultural Studies* (June 2006), 9, pp.133-4, 139, 145; Crompton, 'Rural Occupations', *Rural History*, p.194; N. Goose, 'Pubs, Inns & Beer Shops: The Retail Liquor Trade in St Albans', *Hertfordshire's Past*, Issue 43/44 (Summer 1998), pp.55-60.
[10] Mills, *Trade Directories*, p.25.
[11] Ibid; pp.18, 21, 24, 29; Stephens, *Local History*, pp.14, 38-9, 98.
[12] Mills, *Trade Directories*, p.44. Drake & Finnegan, *Community History*, pp.58, 60-1; Crompton, 'Rural Occupations', *Rural History*, pp.200-2; Shaw, *British Directories*, p.16.
[13] Mills, *Trade Directories*, p.20; Stephens, *Local History*, p.39; Crompton, 'Rural Occupations', *Rural History*, p.202; E. Wrigley, *The Early English Censuses* (Oxford, 2011), pp.29-30.

some public services remained, the building, wood, transport and retail sectors ceased outright after 1851. The presence of the agriculture sector for 1871-91 in these primarily non-agricultural listings indicates the continuing rurality around the settlement, despite the developing town.[14] Furthermore, the end of the transport and retail sectors after 1851 suggests a correlation with the 1867 Newport Pagnell branch opening access, reducing the necessity for localised road transport and, by knock-on, of retail with fewer people visiting.[15] Market traffic, coal and milk trading were noteworthy on the branch, while the tram aided goods/coal movements to Stony Stratford, all reducing any former importance of 'Old Wolverton'.[16]

Table 21: Percentage total employed per occupation group for 'Old Wolverton', 1830-1903 – based on Buckinghamshire business directories.

	1830	1839	1851	1863	1871	1883	1891	1903
Agriculture	0%		0%		33%	33%	33%	
Textiles	0%		0%		0%	0%	0%	
Misc Manu	0%		0%		0%	0%	0%	
Leather	0%		0%		0%	0%	0%	
Building	14%		0%		0%	0%	0%	
Metal	0%		0%		0%	0%	0%	
Wood	14%		0%		0%	0%	0%	
Food & Drink	29%		40%		67%	33%	33%	
Transport	14%		20%		0%	0%	0%	
Domestic Service	0%		0%		0%	0%	0%	
Public Service/ Professional	14%		20%		0%	33%	33%	
Straw	0%		0%		0%	0%	0%	
Quarry/Mining	0%		0%		0%	0%	0%	
Retail/Distribution	14%		20%		0%	0%	0%	
Misc	0%		0%		0%	0%	0%	
TOTAL:	100%		100%		100%	100%	100%	

[14] Parishes: Wolverton, *A History of the County of Buckingham: Volume 4* (1927), pp.505-509; Milton Keynes Museum.

[15] B. Simpson, *The Wolverton to Newport Pagnell Branch* (Banbury, 1995), pp.24, 28.

[16] K Scholey, *Buckinghamshire's Lost Railways* (Glasgow, 2004), pp.21-2; Simpson, *Newport Pagnell*, pp.39, 65; C. Maggs, *Branch Lines of Buckinghamshire* (Stroud, 2000), p.126; F. Markham, *History of Milton Keynes and District Volume 2* (Luton, 1986), p.70; J. Simmons, *The Railway in Town and Country 1830-1914* (Newton Abbot, 1986), p.50.

Table 22: Percentage total employed per occupation group for 'New Wolverton', 1839-1903 – based on Buckinghamshire business directories.

	1839	1851	1863	1871	1883	1891	1903
Agriculture	0%	0%	8%	4%	3%	1%	3%
Textiles	0%	26%	4%	7%	0%	4%	6%
Misc Manu	0%	0%	0%	0%	1%	1%	2%
Leather	0%	7%	4%	9%	6%	5%	3%
Building	11%	0%	2%	2%	3%	5%	6%
Metal	0%	0%	0%	0%	1%	5%	3%
Wood	11%	0%	2%	0%	1%	1%	1%
Food & Drink	11%	25%	23%	26%	26%	24%	19%
Transport	33%	11%	15%	9%	9%	9%	6%
Domestic Service	0%	0%	4%	4%	3%	2%	2%
Public Service/ Professional	11%	12%	19%	15%	25%	21%	21%
Straw	0%	4%	0%	0%	0%	0%	14%
Quarry/Mining	0%	0%	0%	0%	0%	0%	0%
Retail/Distribution	22%	16%	21%	24%	22%	21%	14%
Misc	0%	0%	0%	0%	0%	1%	1%
TOTAL:	100%	100%	100%	100%	100%	100%	100%

But for 'New Wolverton' (Table 22), the difference is stark. The agriculture sector, although generally understated anyway, is substantially smaller, while the low levels of the miscellaneous manufacture, metal, wood, domestic and miscellaneous sectors highlights its one-industry occupational structure akin to other 'company towns'.[17] The building and wood sectors were greater originally – not merely the comparative lack of other sectors elevating its position, but the necessity to physically construct the town. This diminished over c.1860-1866 when the Radcliffe Trust limited expansion, but later occupational growth and population changes correlate with renewed expansion of the Works and town c.1891-1903.[18]

For serving the residents the provision of textiles (tailors, haberdashers), leather (boots) and food/general retail trades were necessary and expanded, with a market developing.[19] The earliest shops were in the Works itself, later buildings were built/rented from the railway (c.1860s).[20] These were hindered in position as the town centre migrated to the west until

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[17] See Chapter 1.
[18] Simpson, *Newport Pagnell*, p.47. See Chapters 4 and 11.
[19] B. Dunleavy, *The Lost Streets of Wolverton* (2010), p.93; B. West, *The Trainmakers - the Story of Wolverton Works* (Buckingham, 1982), p.17.
[20] Dunleavy, *Lost Streets*, p.34; West, *Trainmakers*, p.39;
http://www.mkheritage.co.uk/wsah/hood/docs/aqueductbook6.html

demolished during Works expansion c.1859.[21]   With the decline of Stony Stratford stagecoaches, on which many businesses depended, several shops moved to Wolverton to recoup trade – railways clearly having a dual effect, with Leleux quoting Stony Stratford as an example of 'loss of trade and stagnant populations'.[22]   However, retail by 1903 decreased, after further transport improvements, supporting the countywide view of improving transport polarising specialist retailers to larger urban centres: demonstrated by Northampton adverts on the tram (see Fig. 14, Chapter 4).

The professional sector included insurance agents, surgeons, and other urban services, and as Wolverton was developing from scratch this shows how quickly these appeared. Importantly, many of these aspects originated directly from the railway: Britain's first 'railway bank' c.1859-94; the 1878 Wolverton Permanent Benefit Building Society a direct consequence of the London & North Western Railway ceasing housing construction, and the Works developed its own private insurance fund for accident benefit.[23]   These indicate railways more as a 'cause' of development, unlike elsewhere, along with declining company 'paternalism'.[24]

Prior to a small number being used for laundry and sewing in relation to carriage production/maintenance, female employment was virtually non-existent.[25]   LNWR Chairman Moon contacted George McCorquodale discussing founding a printers and envelope makers expressly for female employment.[26]   Opened in 1878, the factory was expanded, employees increasing from 12 to 140 by 1890 and being the main reason behind the 1883-1903 recovery of the miscellaneous manufacture sector (Table 22).[27]   Therefore, in this highly exceptional instance even the non-railway work was directly initiated by the railway.

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[21] Dunleavy, *Lost Streets*, p.42. See Chapter 10.

[22] Ibid; pp.1, 37; R. Leleux, *A Regional History of the Railways of Great Britain, Volume 9 The East Midlands* (Newton Abbot, 1976), p.14; http://www.mkheritage.co.uk/wsah/hood/docs/aqueductbook6.html

[23] TNA RAIL 1110/269 – London & Birmingham Railway Shareholders Reports – Report for 11/6/1858; RAIL 791/163 - Rules and regulations of LNWR Savings Bank at Wolverton, 1858; West, *Trainmakers*, p.102.

[24] B. Turton, 'The Railway Towns of Southern England', *Transport History*, 2 (1969), pp.116, 118; D. Drummond, *Crewe: Railway Town, Company and People 1840-1914* (Aldershot, 1995), pp.38, 63, 72. See Chapters 1 and 12.

[25] *Description of the London & North Western Railway Company's Carriage Works at Wolverton* (1906; LNWR Society reprint); F.B. Head, *Stokers and Pokers, or the London and North Western Railway, The Electric Telegraph and The Railway Clearing House* (London, 1849; reprinted Trowbridge, 1968), pp.85-9.

[26] Markham, *Milton Keynes*, p.176; Simmons, *Town and Country*, p.174; Leleux, *Regional History*, Vol. 9, p.25; MKM.

[27] Markham, *Milton Keynes*, p.177; F. Markham, *The Nineteen Hundreds* (Buckingham, 1951), pp.19-20; MKM.

A notable caveat; while the metal sector sharply increased, in actual numbers this was only by four businesses, so was not as great as first appears. Equally, the Works itself was not mentioned in the directories, although select personnel such as Works Superintendent were, alongside the Stationmaster (considered separately). Furthermore, the percentage of transport-based businesses diminished as more sectors developed in the new town but this was an artificial ratio change between sectors. The Works was always central; employing 400 men in 1838 and 4,500 by 1906, it became the 'largest single employer of labour in north Bucks'.[28] Over 85% of the population worked on the railway (including Motive Power Depot) by 1851.[29]

The countywide occupational data demonstrates the Works' wider importance, but many used trade names rather than being listed as strictly 'railway', such as specialist woodworkers.[30] The provision of unskilled 'labourers' further correlates with the historiography of 'railway town' migration, which suggests that non-specialist workers were often local immigrants travelling only short distances (Table 39, Chapter 11).[31]

Credited with an almost 'Bournville idiom' by directors and later enthusiasts, this notion appears somewhat fallacious considering current debate on the managerial side of 'paternalism'.[32] Aside from health issues arising from the poor water supply, the introduction of piece-work wages by McConnell in 1847 was distinctly unpopular, as was the cheaper 4.5 day 'short time' week imposed.[33] Reducing drivers' wages, a strike ensued in 1848 until crushed using 'blacklegs', including some Works fitters.[34] However, by 1862 (when he resigned) McConnell was considered well liked and was very involved in the community.[35]

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[28] Markham, *Milton Keynes*, pp.88, 180; B. West, *The Railwaymen - Wolverton* (Buckingham, 1987), p.16; T.C. Barker & C.I. Savage, *An Economic History of Transport in Britain* (London, 1974), p.111; Steam: the Museum of the Great Western Railway, Swindon; Parishes: Wolverton, *A History of the County of Buckingham: Volume 4* (1927), pp.505-509.

[29] B. Turton, 'The Railway Town: A Problem in Industrial Planning', *The Town Planning Review*, Vol. 32, No. 2 (Jul., 1961), p.102; Turton, 'Southern', *Transport History*, p.113.

[30] Barker & Savage, *Transport*, p.111; P. Richards & B. Simpson, *A History of the London and Birmingham Railway Volume 2* (Witney, 2009), pp.17, 30; Leleux, *Regional History*, Vol. 9, p.24. See Chapter 4 and Appendix IV.

[31] Drummond, *Crewe*, pp.20-1; Turton, 'Southern', *Transport History*, pp.121-3. See Chapters 1 and 11.

[32] Drummond, *Crewe*, pp.63-4, 72, 91, 176. See Chapter 1 (quote by LBR/LNWR Chairman Glyn).

[33] Richards & Simpson, *London Birmingham Railway* Vol. 2, p.39; H. Jack, *Locomotives of the LNWR Southern Division: London & Birmingham Railway, London & North Western Railway and Wolverton Locomotive Works* (Sawtry, 2001), pp.52-3. See Chapter 1.

[34] Jack, *Locomotives LNWR*, p.53.

[35] Ibid; pp.68, 70.

Employment became sufficiently stable that in 1908 a *New York Herald* journalist asking Carriage Superintendent Park about any 'labour troubles', was told:

'[We have] None. Why should we? The men live here in their homes and do not want to go away. Strikes are out of the question with us. We pay everybody for what he does. The better men get the better pay, the less efficient the poorer pay. Everything is piecework. They are contented, happy, well paid, and prosperous.'[36]

Fig. 60: Number of road businesses and railway managerial personnel employed in Wolverton 1830-1903. Note: while not strictly comparable, the rising number of managers presents an indication of Works expansion trends and the growth/decline interaction of rail and non-rail occupations.
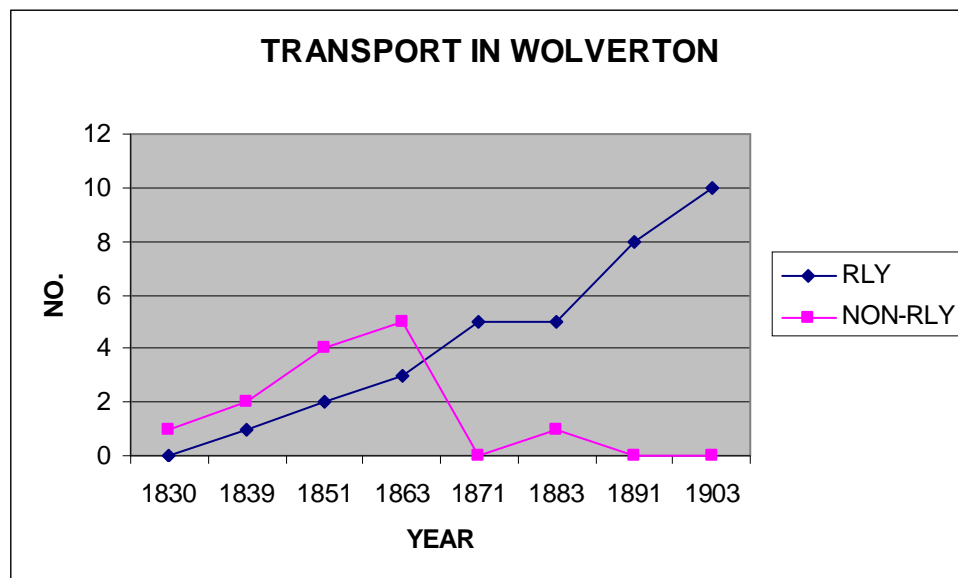
While the directories' railway details are unreliable, comparison of its growth trend (as opposed to actual number) with road-based employment shows a remarkably clear correlation (Fig. 60). Non-rail businesses plummeted in 1871 and dropped again c.1891-1901, while the railways kept expanding, especially with the 1863-77 changeover to carriage manufacture. Employee transport to the Works was vital, hence the initial increase, and the 1867 branch and 1887 tram correlate with the drops exactly - road occupations directly suffering as a consequence.[37]

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[36] Markham, *Nineteen Hundreds*, p.17.
[37] See Chapter 8.

With employment and the railway interdependent, even down to McCorquodale's printers, the former historiography of railway-initiated 'change' appears at times correct, but later the 'facilitator' trend is more appropriate, suggesting major patterns of development that fit neither pattern fully.[38] Wolverton was an extreme case of railway involvement, being far greater than in most villages, which by comparison experienced 'little economic impact'.[39] The Works created a new occupational centre from formerly empty fields, attracting not just craftsmen and artisans but the wider system of shops and services supporting them.[40] Quoting B. Simpson:

'Wolverton became a self contained prosperous town with a firm, sustaining economy.'[41]

Quainton

Some distance from its station and remaining small throughout, Quainton typifies rural development. The village was so minor that directories omitted it until 1854 (14 years before the railway).[42] Primarily agricultural, the food and drink sector was inflated as explained, although some ale was carried on the Wotton Tramway and a 'Railway Arms' pub was built by the station c.1899. These and professional occupations remained prevalent throughout (Table 23).[43] Agriculture was declining, possibly from the 1840 enclosure, until 1883 where it jumped to peak at 23% by 1891.[44] In 1883 the Oxford, Aylesbury & Metropolitan Junction Railway was formed to operate the Wotton Tramway, and with the line increasingly used for transporting produce this is a notable correlation, though suggesting that the tramway had a greater local effect than the main line.[45] Although predating this new company, the number of loads in 1878 (Table 24) show the importance of agriculture to the line, particularly the growth of milk traffic – 5,000 gallons per month c.1880.[46]

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[38] See Chapters 1 and 12.
[39] Dunleavy, *Lost Streets*, p.2.
[40] http://www.mkheritage.co.uk/wsah/hood/docs/aqueductbook4.html
[41] Richards & Simpson, *London Birmingham Railway* Vol. 2, p.39.
[42] *Post Office Directory of Berkshire, Northamptonshire and Oxfordshire; with Bedfordshire, Buckinghamshire and Huntingdonshire*, 1854.
[43] *Kelly's Directory of Buckinghamshire*, 1903; Leleux, *Regional History*, Vol. 9, p.37; Maggs, *Branch Buckinghamshire*, p.87; http://digimap.edina.ac.uk/
[44] Parishes: Quainton with Shipton Lee, *A History of the County of Buckingham: Volume 4* (1927), pp. 92-99.
[45] B. Simpson, *The Brill Tramway* (Oxford, 1985), p.39; K. Jones, *The Wotton Tramway* (Tarrant Hinton, 1974), pp.9-11.
[46] Simpson, *Brill*, pp.36-7; Scholey, *Buckinghamshire's Railways*, pp.13, 22; Simmons, *Town and Country*, p.50; Parishes: Quainton with Shipton Lee, *A History of the County of Buckingham: Volume 4* (1927), pp. 92-99. See Chapter 10.

Table 23: Percentage total employed per occupation group for Quainton, 1854-1903 – based on Buckinghamshire business directories.

	1854	1863	1876	1883	1891	1903
Agriculture	20%	18%	15%	22%	23%	17%
Textiles	8%	6%	7%	2%	5%	4%
Misc Manu	0%	0%	0%	0%	0%	0%
Leather	7%	8%	8%	8%	5%	6%
Building	7%	8%	8%	6%	4%	4%
Metal	3%	4%	2%	0%	2%	4%
Wood	7%	8%	8%	10%	9%	4%
Food & Drink	25%	22%	25%	30%	21%	25%
Transport	5%	6%	7%	8%	9%	6%
Domestic Service	0%	0%	0%	0%	0%	0%
Public Service/Professional	8%	14%	7%	12%	12%	15%
Straw	0%	0%	0%	0%	0%	0%
Quarry/Mining	0%	0%	0%	0%	0%	0%
Retail/Distribution	8%	6%	13%	2%	11%	15%
Misc	0%	0%	0%	0%	0%	0%
TOTAL:	100%	100%	100%	100%	100%	100%

Table 24: Loads and mileages on the Wotton Tramway, 1878.

Vehicle	No. of Loads	Load Mileage
Trucks	7,220	25,676
Milk vans	840	3,396
Horse boxes	28	164
Carriages	2,180	13,374
Total	10,268	42,610

B. Simpson, *The Brill Tramway* (Oxford, 1985), p.37.

Originally built for agricultural traffic, carrying grain, hay, milk, manure and livestock most days, chalk soil treatment was also carried.[47] Some trucks, though, served Waddesdon Manor, Moate Farm coal wharf and Brill's small-scale brickworks, none of which were in Quainton.[48] Much traffic continued to London, particularly milk and by-products from

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[47] M. Eckett, *Signals – A Railway Miscelleny* (Copt Hewick, 2008), p.139; Scholey, *Buckinghamshire's Railways*, p.13; Leleux, *Regional History*, Vol. 9, p.37; Maggs, *Branch Buckinghamshire*, p.87; Buckinghamshire Railway Centre.
[48] Simpson, *Brill*, pp.21, 24, 36, 82; Eckett, *Signals*, p.140; Scholey, *Buckinghamshire's Railways*, pp.13-4; https://ubp.buckscc.gov.uk/SingleResult.aspx?uid=TBC761

Waddesdon Manor's gasworks.[49] Aside from this connection, Quainton Road itself was a 'sleepy backwater' with traffic from the surrounding area 'almost non-existent'.[50]

Reflecting expanding dairy work, the *VCH* mentioned a 'disused windmill'. With five originally in the area (two at Quainton, three at Brill), falling arable acreage reduced business and this mill, near the station, closed c.1881-99.[51] Similarly, the village mill was damaged c.1890 and abandoned while by 1919 only one of Brill's mill was operational.[52] That those farther away, notably on the tramway, survived longer emphasises the limited role of Quainton Road Station itself, while their closure in apparent succession emphasises employment decline with the increase of pasture farming.

Professional occupations primarily consisted of a post office, a church and chapel and a school. In 1863 a police sergeant and land surveyor were listed; intermittently reappearing, the variations thereafter (especially 1876) appear as a result. While there was a need for these services, this sector was massively rural and gained little from the railways. Several sectors, conversely, were wholly absent, such as miscellaneous manufacture. The *VCH* mentioned 'old stone-pits', likely closed with the ability to provide building materials from elsewhere by rail – a negative railway impact.[53]

Building employment demonstrates the opposite of the other case studies' trends, declining after 1876. With fewer painters, plumbers and glaziers, there was clearly no increase in construction – quite the contrary. The 1891 building sector would have been even smaller but for a brickmaker, likely the works by the junction itself (not Brill) marked on OS maps as operative in 1880 and disused by 1899.[54] The sector's trend stabilised by 1903, correlating with the 1899 Great Central Railway; logical considering the dwindling population.[55] The metalwork sector was similar, though as there were never more than two metal-related

[49] BRC.

[50] L. Oppitz, *Lost Railways of the Chilterns* (Newbury, 1991), p.30; Scholey, *Buckinghamshire's Railways*, p.35; BRC.

[51] Simpson, *Brill*, p.68; Parishes: Quainton with Shipton Lee, *A History of the County of Buckingham: Volume 4* (1927), pp. 92-99; http://digimap.edina.ac.uk/ See Chapter 10.

[52] BRC; https://ubp.buckscc.gov.uk/SingleResult.aspx?uid=TBC761 ; http://brillvillage.co.uk/history/windmill.php

[53] B.J. Davey, *Ashwell 1830-1914: The Decline of a Village Community* (Dept Engl Loc Hist Occasional Papers, 3rd series no. 5) (Leicester, 1980), p.37; Parishes: Quainton with Shipton Lee, *A History of the County of Buckingham: Volume 4* (1927), pp. 92-99.

[54] http://digimap.edina.ac.uk/ ; https://ubp.buckscc.gov.uk/SingleResult.aspx?uid=TBC761

[55] Leleux, *Regional History*, Vol. 9, p.32.

businesses at any time the percentages are exaggerated, also showing how small-scale extreme rural businesses could be. Similarly, wood-working occupations were stable until 1903 when two carpenters and a wheelwright ceased – a comparatively large drop that failed to recover with the GCR.

The retail sector saw two distinct peaks in 1876 and 1891-1903, correlating with the railways. Mostly shopkeepers, it is likely these were actually constant but failed to advertise; there being four virtually throughout. The *Imperial Gazetteer* briefly referenced a long-closed market, likely before this period.[56] 1883 appears anomalous, listing only a single draper. The main causes for the peaks were coal merchants and a later general store – railways being pivotal to supplying these businesses. More specialist retailers never appeared and even the first railway-aided coal businesses ceased advertising until the opening of the GCR. Conversely, demand for a tramway passenger service (1872) was specifically to improve access to Aylesbury Market, so supporting Simmons' references to railways negatively impacting on rural retail.[57]

Fig. 61: Number of businesses employed in Quainton transport 1854-1903. Note: the directories only list 'Station Master', so the separate tramway has been essentially conglomerated.

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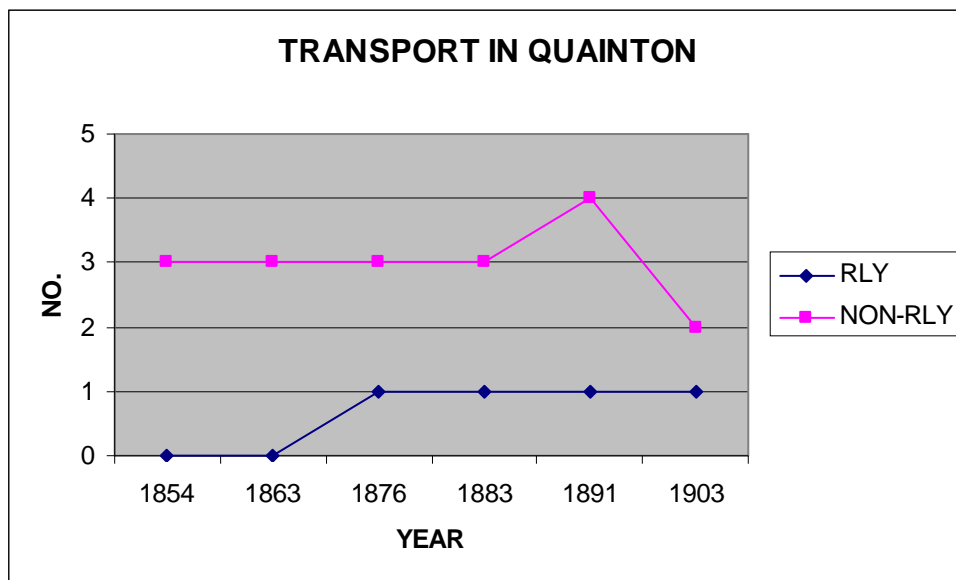
[56] J. Wilson, *Imperial Gazetteer of England and Wales* (1870-72).
[57] Maggs, *Branch Buckinghamshire*, p.87; Simmons, *Town and Country*, p.19; M. Casson, *The World's First Railway System: Enterprise, Competition and Regulation on the Railway Network in Victorian Britain* (Oxford, 2009), p.324; H. Dyos & D. Aldcroft, *British Transport: An Economic Survey from the Seventeenth Century to the Twentieth* (Leicester, 1971), p.198; BRC.

Considering transport occupations (Fig. 61), allowing for railway occupations conglomerated under a 'Station Master', there were three carrier firms up to 1883, four in 1891 but only two in 1903. With the distance between station and village, the need for carriers remained. In 1891 the Metropolitan Railway took over Quainton Road Station, rebuilding it c.1896-7, so explaining the temporary rise.[58] With the GCR yard and coal merchants by 1903 the final decrease is unexpected; possibly a case of local take-over.

Importantly, the number of carriers always exceeded the single Aylesbury-bound route, so their need was primarily accessibility rather than encouraging widespread travel.[59] Furthermore, the low levels of the other sectors is emphasised by the percentage of transport-related businesses. Contrary to shifting ratios identifying diversification as in other case studies, so reducing transportation's percentage, in Quainton the transport sector actually increased in percentage up to 1891 despite the actual number of businesses being virtually unchanged. Varying substantially from the common view of collapsing long-distance road occupations, short-distance carriers were the main transport type well before the railway, and the Station's positioning only supported it.

Quainton exhibited little positive reaction to the railways, with much employment declining where elsewhere it would have been boosted and vice versa. Overall, it remained very rural, small and isolated, despite being a vital junction for the railways.[60]

Potton

As a small market village, Potton was more developed than Quainton, but retained distinct rurality. Formerly of note, the directories reveal pertinent rural-urban occupational development (Table 25).[61]

[58] Oppitz, *Lost Railways*, p.30; Maggs, *Branch Buckinghamshire*, p.57.
[59] See Chapter 8.
[60] Leleux, *Regional History*, Vol. 9, p.32; BRC.
[61] See Chapter 7.

Table 25: Percentage total employed per occupation group for Potton, 1824-1903 – based on Bedfordshire business directories.

	1824	1830	1839	1850	1862
Agriculture	2%	3%	0%	12%	16%
Textiles	8%	9%	6%	7%	4%
Misc Manu	4%	1%	2%	1%	1%
Leather	6%	7%	8%	5%	5%
Building	9%	10%	12%	7%	9%
Metal	6%	6%	6%	4%	6%
Wood	6%	8%	5%	9%	7%
Food & Drink	35%	36%	43%	36%	26%
Transport	2%	3%	2%	2%	1%
Domestic Service	0%	0%	0%	0%	1%
Public Service/Professional	11%	13%	8%	8%	10%
Straw	0%	0%	0%	0%	1%
Quarry/Mining	0%	0%	0%	0%	0%
Retail/Distribution	11%	4%	8%	8%	12%
Misc	0%	0%	0%	0%	1%
TOTAL:	100%	100%	100%	100%	100%

	1871	1885	1890	1903
Agriculture	11%	17%	20%	18%
Textiles	5%	5%	4%	4%
Misc Manu	1%	1%	1%	0%
Leather	7%	6%	5%	5%
Building	2%	2%	2%	5%
Metal	5%	7%	6%	6%
Wood	4%	4%	3%	2%
Food & Drink	39%	30%	33%	31%
Transport	1%	1%	1%	0%
Domestic Service	1%	2%	1%	1%
Public Service/Professional	10%	12%	11%	11%
Straw	1%	0%	0%	0%
Quarry/Mining	0%	1%	1%	0%
Retail/Distribution	14%	14%	9%	12%
Misc	0%	2%	4%	4%
TOTAL:	100%	100%	100%	100%

While alcohol retailers were prevalent across the case studies, those in Potton decreased, most sharply by 1862, coinciding with the opening of the Bedford & Cambridge Railway, although recovering slightly by 1903.[62] Exaggerated through derestricted alcohol licencing,

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[62] F. Cockman, *The Railway Age in Bedfordshire*, Publications of the Bedfordshire Historical Record Society, 53 (Bedford, 1974), p.37.

1890s Potton nonetheless had a large 'Skeleton Army' suggesting drink was very major.[63] Railways played a direct role in a small way, aside from carrying beer, in the names of 'The Locomotive', 'The Shannon' and 'The Railway Inn' pubs; the lattermost located by the B&CR station.[64]

Agriculture was the most noteworthy sector, increasing massively. Initially very minor in the directories, it was obviously present and prevalent but not sufficiently commercialised to warranting directory advertising. In 1850 the sector rose to 12% and grew thereafter, showing the rise of market gardening (this term being more common than 'farmer'). Vitally, while the first peak was in 1862 (five years after the railway opened), the largest single growth predated the Sandy & Potton Railway, which was built specifically for moving agricultural produce.[65] From the outset having a 'good freight service', if initially limited for passengers, the line was credited with 'significantly (and very positively) affecting the estate's profits'.[66] Therefore, in this instance railway establishment unusually was caused by agricultural practice rather than established railways acting as a beneficial influence on subsequent market garden positioning.[67] There was a temporary decrease in the number of agricultural advertisements in 1871, actively demonstrating the agricultural decline of that decade as profits dropped.[68]

The professional sector was mostly stable, the drop in 1839 apparently through chapel omissions, but while post office, church, school, surgeon and fire officer continued

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[63] The 'Skeleton Army' was a pro-alcohol mocking opposition to Salvation Army Barracks - http://www.bedfordshire.gov.uk/CommunityAndLiving/ArchivesAndRecordOffice/CommunityArchives/Potton/PottonSalvationArmy.aspx

[64] 'Shannon' was the first S&PR locomotive, now preserved at Didcot Railway Centre - http://www.bedfordshire.gov.uk/CommunityAndLiving/ArchivesAndRecordOffice/CommunityArchives/Potton/ShannonPublicHouse.aspx ;
http://www.bedfordshire.gov.uk/CommunityAndLiving/ArchivesAndRecordOffice/CommunityArchives/Potton/LocomotivePublicHouse.aspx ;
http://www.bedfordshire.gov.uk/CommunityAndLiving/ArchivesAndRecordOffice/CommunityArchives/Potton/RailwayInn.aspx

[65] Eckett, *Signals*, p.211; D.I. Gordon, *A Regional History of the Railways of Great Britain, Volume 5 The Eastern Counties* (Newton Abbot, 1976), p.147; Simpson, *Brill*, p.7. See Chapter 8.

[66] Oppitz, *Lost Railways*, p.144; P. Ibbett, *Potton Bedfordshire: A Brief History* (Potton, 2000), p.5; B. Gwynne, 'Shannon: Steaming through History', *Steam Railway*, No. 391 (August 2011), pp.72-3;
http://www.bedfordshire.gov.uk/CommunityAndLiving/ArchivesAndRecordOffice/CommunityArchives/Potton/CaptainPeelsRailway.aspx

[67] K Scholey, *Bedfordshire's Lost Railways* (Glasgow, 2003), p.10; Cockman, *Bedfordshire*, p.39; Oppitz, *Lost Railways*, p.145; Ibbett, *Potton*, p.5.

[68] R. Schwartz, I. Gregory & T. Thévenin, 'Spatial History: Railways, Uneven Development, and Population Change in France and Great Britain, 1850-1914', *Journal of Interdisciplinary History*, Volume 42, Number 1 (Summer 2011), pp.56, 70, 71.

throughout, there was increasing diversification. Gaining a banker, chemist, library and police, by 1903 there was a physical increase in businesses, indicating some degree of urbanisation, with the main upsurge occurring after 1862, thus after the railway.

The retail sector equally expanded. While ratio changes exaggerate the importance of pre-1839 retail businesses and 1830 appears anomalous, they rose in number and variety in 1862 and in percentage of total businesses became the largest after agriculture and victuals. Again, the continuing growth correlates with the railway, though close dates prevent identifying whether the private S&PR or the improved B&CR aided more.[69] By 1885 the sector peaked at 14% with 23 business in 17 different types. While there was a slight decrease in variety by 1903 the overall number was stable, demonstrating that after the railway there was similarly urban retail development. However, other sectors grew larger (particularly agriculture), showing that rather than distinct urbanisation as insinuated by the professional and retail sectors, the settlement was instead gaining a more balanced economy based on both rural and urban sectors. This matches Leleux's claim that with 'thin' traffic on the line 'only Sandy and Potton really developed as a result'.[70]

While in proportional terms the retail sector was growing through shop businesses, the market was declining.[71] Not included in the directories, the market was dominated by butchers, grocers and fishmongers, but railway access to Bedford and Biggleswade markets was blamed for its ultimate cessation after 1900, compounded by the ease of taking local perishables to London by rail.[72] Again, Simmons is supported by this, along with commenting on beneficial market gardens.[73] Fairs also fell in number, though the horse fair benefitted from special trains and continued until the 1930s.[74]

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[69] C. Awdry, *Encyclopaedia of British Railway Companies* (Frome, 1990), pp.60, 100-1.

[70] Leleux, *Regional History*, Vol. 9, p.28.

[71] G. Bradshaw, *Bradshaw's Tours, Section III, Through the Counties of Hertford, Buckingham, Northampton, Warwick, Stafford, Chester, Lancaster, York, Cumberland, Westmorland, Northumberland, Dumfries, Lanark, Ayr and the Northern Counties of Scotland* (c.1860s; reprinted Midhurst, 2011), p.9; Parishes: Potton, *A History of the County of Bedford: Volume 2* (1908), pp.237-242.

[72] P. Ibbett, *Potton Market Square* (Potton, 1986), p.19; http://www.pottonhistorysociety.com/history.html ; http://www.bedfordshire.gov.uk/CommunityAndLiving/ArchivesAndRecordOffice/CommunityArchives/Potton/Introduction.aspx

[73] Simmons, *Town and Country*, pp.19-20, 48.

[74] Ibid; pp.18, 24; http://www.bedfordshire.gov.uk/CommunityAndLiving/ArchivesAndRecordOffice/CommunityArchives/Potton/Introduction.aspx

Building firms conversely were very different. Far from the urbanisation of other sectors the building sector showed major decline after 1850, even when allowing for a minor upsurge by 1862, likely connected to the B&CR. Similar to Quainton, there was clearly insufficient trade at the least to warrant advertising, if not folding outright, and the railway did not initiate any major expansion.[75]

Despite being incredibly minor in this region, excavation in Potton warrants investigation. Only referenced in 1885 and 1890, coprolite digging was a noteworthy 'industry' for the settlement, despite being a single business.[76] It employed many children to sort the dug fossils, causing education issues through low attendance - high wages boosted labouring families.[77] Apparently listed as 'Sand Pit' under two locations on OS Maps (there being no other marked excavations), both had direct rail access.[78] Similarly, a 'parchment works' (1885) was present, but remote from the station.[79] Wood-working occupations experienced a sudden percentage drop after 1850, but this was again changing ratios amid broadening varieties of specific businesses. As for the remaining sectors, bar metal which stayed constant, the others saw slow steady decline.

The percentages for transport businesses show a decline as other sectors diversified. The actual figures (Fig. 62), though, reveal a later but major drop directly matching the advent of the railway. Although with variations between years, initially there were circa four carrier firms, but in 1862 these ceased and no road-based businesses were listed thereafter. As the S&PR was requested to provide a passenger service in 1857, this fall is corroborated.[80] While the railway was solely listed as 'Station Master', 1862 also included a Great Northern Railway coal agent. Only referenced that year, this business opportunity appears unsuccessful in the face of competition – four coal agents by 1903. Here the railway unequivocally took over long-distance road travel, reflecting the national trend, but while

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[75] See Chapters 10 and 11.
[76] *A History of the County of Bedford: Volume 2* (1908), p.117.
[77] http://www.bedfordshire.gov.uk/CommunityAndLiving/ArchivesAndRecordOffice/CommunityArchives/Potton/EducationInPotton.aspx ;
http://www.bernardoconnor.org.uk/Everton/19th%20CENTURY%20COPROLITE%20DIGGING%20IN%20EVERTON2.htm
[78] http://digimap.edina.ac.uk/
[79] *Kelly's Directory of Bedfordshire*, 1885; http://digimap.edina.ac.uk/
[80] http://www.bedfordshire.gov.uk/CommunityAndLiving/ArchivesAndRecordOffice/CommunityArchives/Potton/CaptainPeelsRailway.aspx

there may have been nearby carriers, in Potton itself short-distance road travel failed to recover, railways being primary.[81]

Fig. 62: Number of businesses employed in Potton transport 1824-1903.
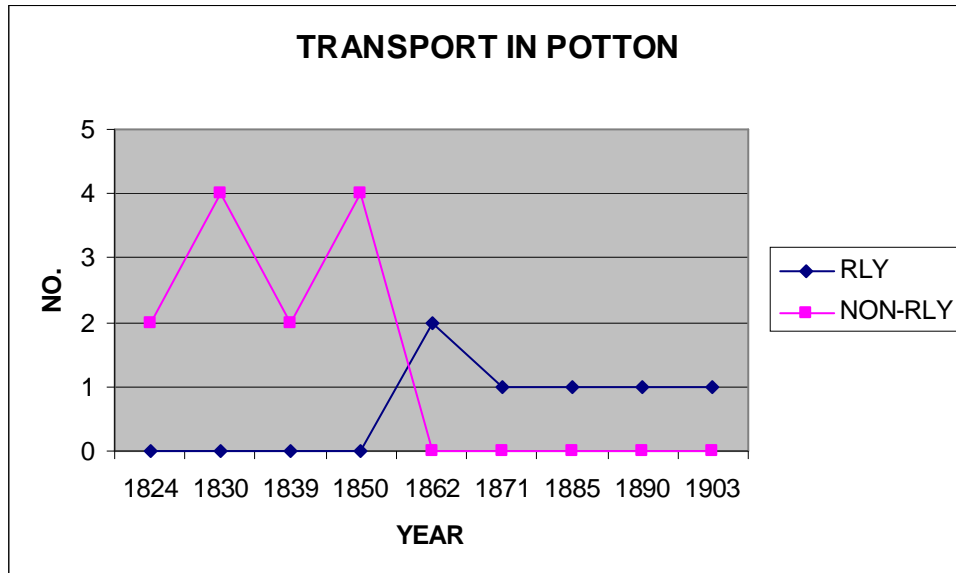
Potton was decimated by the 1783 fire and never really recovered.[82] Nonetheless, the data presents a settlement that, while increasingly dependent on market gardening, was developing in retail and professional sectors so gaining a more complex rural-urban occupational structure.

Luton

As the area's most central urban settlement and one of its most industrialised, through straw production, Luton's occupational development was ever-decreasingly agricultural, with few such businesses listed in the directories compared with the smaller case studies (Table 26).

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[81] W. Johnson, *Industrial Archaeology of Hertfordshire* (Newton Abbot, 1970), p.109; Leleux, *Regional History*, Vol. 9, p.31; Simmons, *Town and Country*, p.19; Barker & Savage, *Transport*, p.123.

[82] P. Ibbett, *The Great Fire of Potton 1783*, Potton History Society Research Report No. 2 (Potton, 1983).

Table 26: Percentage total employed per occupation group for Luton, 1823-1903 – based on Bedfordshire business directories.

	1823	1830	1839	1850	1862
Agriculture	1%	0%	0%	3%	2%
Textiles	4%	4%	6%	8%	6%
Misc Manu	0%	0%	0%	1%	0%
Leather	6%	4%	6%	4%	5%
Building	10%	9%	4%	7%	8%
Metal	5%	7%	5%	4%	4%
Wood	11%	6%	4%	5%	4%
Food & Drink	36%	33%	47%	30%	28%
Transport	2%	2%	3%	1%	0%
Domestic Service	0%	0%	0%	0%	0%
Public Service/Professional	11%	9%	12%	11%	14%
Straw	6%	12%	6%	9%	15%
Quarry/Mining	0%	0%	0%	0%	0%
Retail/Distribution	9%	12%	7%	16%	12%
Misc	0%	0%	0%	0%	0%
TOTAL:	100%	100%	100%	100%	100%

	1871	1885	1890	1903
Agriculture	0%	1%	1%	1%
Textiles	8%	7%	7%	7%
Misc Manu	1%	1%	1%	1%
Leather	6%	3%	4%	3%
Building	3%	4%	4%	4%
Metal	4%	3%	4%	4%
Wood	4%	5%	6%	2%
Food & Drink	36%	17%	16%	20%
Transport	2%	1%	1%	2%
Domestic Service	0%	2%	2%	2%
Public Service/Professional	10%	8%	8%	12%
Straw	11%	35%	31%	25%
Quarry/Mining	0%	0%	0%	0%
Retail/Distribution	14%	13%	15%	16%
Misc	0%	0%	0%	1%
TOTAL:	100%	100%	100%	100%

The victualing sector was far greater than any other until 1885, although declining as in the other case studies. Primarily comprising inns/taverns and to a lesser extent bakers, there were many beer retailers but not to the same extent as the more rural examples, despite being a

location for brewing.[83] Often a centre for social activities, much of the 1870s decline was blamed on regional temperance movements attempting to close licensed premises.[84] The slight spike in 1871 does, however, correlate with the 1868 Midland Railway main line station and several premises adopted railway-based names.[85]

While the other case studies had no straw-based businesses, for Luton it was paramount.[86] The data, however, presents an interesting perspective. Luton's straw sector began growing after 1850, wresting control from Dunstable despite it gaining a station in 1848.[87] Early railways thus had some impact on the straw trade in both towns, having clear prestige rivalry as proposed generally by Casson.[88] The development of the industry was outlined with the countywide data so need not be repeated, but it summarised the peak of the industry was c.1871 and decline commenced from c.1881 with foreign straw imports wrecking plait production.[89]

Yet the directories show a decrease for Luton in 1871 and a substantial increase in 1885 (24%), rather than the expected countywide collapse. Luton was central for hats as much as plait, so with plait production peaking countywide in 1871 there was less need for this side of production within Luton itself.

As for the 1885 boom, this was primarily hat and associated businesses.[90] The cessation of import duties was the primary cause of the countywide decline, but the demand for plait that led to this was from hatting, so Luton's straw trade was not only stable but grew as a result,

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[83] Leleux, *Regional History*, Vol. 9, p.27; Parishes: Luton, *A History of the County of Bedford: Volume 2* (1908), pp.348-375; Wardown Park Museum.
[84] WPM.
[85] C. Hamilton Ellis, *The Midland Railway* (London, 1953), p.34; http://www.bedfordshire.gov.uk/CommunityAndLiving/ArchivesAndRecordOffice/CommunityArchives/Luton/LicensedinLuton/LicensedPremisesInLuton.aspx
[86] *A History of the County of Bedford: Volume 2* (1908), pp.117-127; Leleux, *Regional History*, Vol. 9, p.27; Simmons, *Town and Country*, p.277; WPM.
[87] *A History of the County of Bedford: Volume 2* (1908), p.121.
[88] Simmons, *Town and Country*, p.277; Casson, *First Railway System*, p.324.
[89] T. Austin, *The Straw Plaitting and Straw Hat and Bonnet Trade* (Luton, 1871), p.20; G. Woodward, *The Hatfield, Luton & Dunstable Railway (and on to Leighton Buzzard)* (Usk, 1977), p.42; G. Goslin, *The London Extension of the Midland Railway: the History of the St Pancras - Bedford Route,* (Caernarfon, 1994), p.28; Parishes: Luton, *A History of the County of Bedford: Volume 2* (1908), pp.121-2, 256, 348-375; WPM. See Chapter 4.
[90] *Kelly's Directory of Bedfordshire*, 1885.

likely attracting many to the sector.[91] The directories show, however, 1862 growth after the GNR and slight decline after the MR, matching the wider results from the census and other sources.[92] As fashion turned to fancy-work hats c.1890, so straw business diminished.[93] Railways had a role in straw market enlargement, but abolished tariffs were a far greater factor.[94]

Textile-based businesses also grew, but at a lesser rate. Despite the later growth of fabric hats, the majority listed by 1900 were tailors and milliners, indicating growing population (as was the case) and diversification among previously-established hat manufacturers, rather than the formation of fabric-only hatting.[95] Any railway involvement would have been secondary and mostly through general economic stimulus.

The retail sector grew steadily, ultimately being only below straw trades and inns in rank. Its scale (c.15%) was equivalent to the other case studies, as expected from an important non-agricultural sector, but as with the census data this does not include food or drink sale nor, in the case of Luton, straw.[96] The town had two fairs (only one by c.1870), and two markets by 1903.[97] Interestingly, the first peak was 1850, decreasing with the GNR and only recovering gradually after the MR. Simmons' view of growing railway-instigated accessibility to other markets and shops has to be considered for the GNR, whereas growth after the MR main line matches a subsequently-expanding population.[98] Likewise, professional businesses grew in percentage up to 1862, but fell thereafter till a slight recovery in 1903. The actual numbers, however, show overall growth, rising from 81 in 1871 to 276 by 1903. So while there was expansion in professional businesses, reflecting urbanisation, the development of other sectors forced the ratio down. 1862 did record actual decline, though, following the 1858

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[91] Johnson, *Industrial Archaeology*, p.73; Leleux, *Regional History*, Vol. 9, p.30; *Luton: Hat Industry 1750-2000* (Luton Museum Education Service), pp.5-6; *Luton: Straw Hat Boom Town 1890-1910* (Luton Museum Education Service), p.9; *A History of the County of Buckingham: Volume 2* (1908), pp.103-129.

[92] Scholey, *Bedfordshire's Railways*, p.17; Woodward, *Hatfield, Luton & Dunstable,* p.42; Goslin, *St Pancras*, p.28; *Luton's Railways* (Bedford: Shire Hall, 1973); P. Bunce, 'The Luton Hat Vans', *Journal of the Great Northern Railway Society*, No 114 (November 2000), pp.20-21; census summary tables via www.histpop.org See Chapter 4.

[93] *Luton: Hat Boom*, p.57.

[94] Simmons, *Town and Country*, p.277; Woodward, *Hatfield, Luton & Dunstable,* p.42; Johnson, *Industrial Archaeology*, p.73; *Luton: Hat Industry*, pp.5-6.

[95] *Luton: Hat Industry*, p.61; Goslin, *St Pancras*, p.28; WPM. See Chapter 11.

[96] Mills, *Trade Directories*, pp.21-2. See Chapter 4.

[97] *Luton: Market Town 1750-1850* (Luton Museum Education Service), p.8; Parishes: Luton, *A History of the County of Bedford: Volume 2* (1908), pp.348-375; WPM.

[98] Simmons, *Town and Country*, pp.19, 276-7; Casson, *First Railway System*, p.324; Dyos & Aldcroft, *British Transport*, p.198; Census summary tables via www.histpop.org See Chapter 4.

GNR opening. Akin to the retail sector, this decline is explained by improved accessibility to services elsewhere, only later recovering with the requisites of a growing population.

Continuing the theme of urbanisation, the building sector saw general decline, aside from a brief respite (8%) in 1862 between the GNR and MR openings. Thereafter, it remained small (4%), but this again appears to be a ratio issue, as after 1871 there was a steady growth in the numbers of businesses and in urban expansion.[99]

With an early 1830 peak (7%), metalworking businesses were stable, if not substantial. The 1889 'New Industries Committee' was a qualified success, boosting numbers of businesses to some degree, but industry did not develop rapidly, reaching only 105 listed in 1890.[100] Straw-work, even when declining, remained dominant and explains other sectors' deflated ratios. Additionally, many sectors (notably professional, building and metal) revealed increasing variety in the physical types of work, showing diversification with development.[101]

While the wood sector was becoming less rural in nature, those businesses were overshadowed by hat block makers (99 by 1890). But their fall to only 18 by 1903 correlates with changing fashions concerning straw hats, which this sector was dependent on before fabric hats developed fully (after 1900).[102]

As for rail involvement with metal and wood trades, this was most apparent in siding connections, such as box, brick and hydraulics makers.[103] Along with close proximity to lines (as with straw factories), railways were used for transportation so had direct, if secondary, involvement in attracting and supporting semi-industrial development.[104]

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[99] See Chapter 10.
[100] Simmons, *Town and Country*, p.277; Leleux, *Regional History*, Vol. 9, p.29; Goslin, *St Pancras*, p.28; Parishes: Luton, *A History of the County of Bedford: Volume 2* (1908), pp.348-375; WPM.
[101] Mills, *Trade Directories*, p.29; Parishes: Luton, *A History of the County of Bedford: Volume 2* (1908), pp.348-375.
[102] *Luton: Hat Boom*, p.57; WPM.
[103] TNA RAIL 1167/117 - MR Agreements for siding construction to Luton Brick and Lime Company and B.J. Forder & Son, 1884; TNA RAIL 1167/159 - GNR Agreements for siding construction to Luton Brick and Lime Company, 1886; TNA RAIL 1167/151 – GNR Agreements for siding construction to hydraulics manufacturer Hayward, Tyler and Company, Luton, 1873; TNA RAIL 236/1076 and RAIL 236/1127 – GNR Agreements for siding construction to box and packing case manufacturer George Noah Gathard, 1889 and 1899; TNA RAIL 1167/157 - Luton, Dunstable & Welwyn Junction Railway Company and Luton Gas Company, 1857; Scholey, *Bedfordshire's Railways*, p.18; Woodward, *Hatfield, Luton & Dunstable,* pp.43-4. See Chapter 4.
[104] Simmons, *Town and Country*, p.277; Cockman, *Bedfordshire*, p.115; *Luton: Hat Boom*, p.5; Scholey, *Bedfordshire's Railways*, p.18; Leleux, *Regional History*, Vol. 9, p.29; WPM.

Fig. 63: Number of businesses employed in Luton transport 1823-1903. Note: 1862 and 1903 are anomalous.
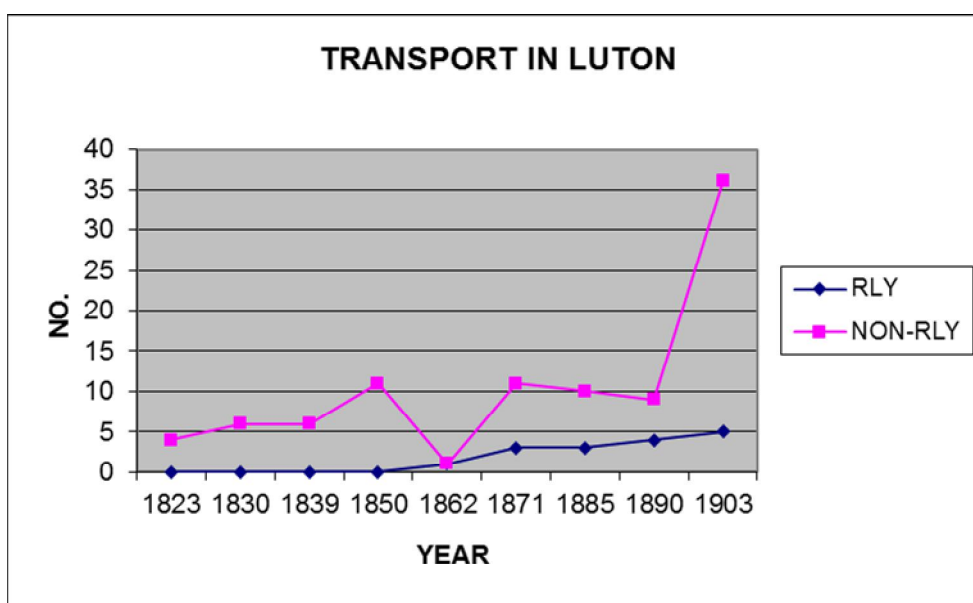
Transport services remained a proportionally small sector, but with the daily need to move large amounts of consumables to and from stations/yards there remained a constant need for road carriers, unlike more usually where this diminished before recovering (Fig. 63).

Luton's railway services were not just via the two stations, though. After 1862 there was an LNWR carrier's agent, by 1903 there being three. The results for 1862 are anomalous; transport references were virtually omitted, while 1903 suddenly included 29 carrier routes rather than the previous eight, so is also suspicious. Road transport did expand, though, ultimately leading to the 'Luton' design of commercial motor van body after 1900. Interestingly, there was a reference to an omnibus to Dunstable station in the 1850 directory, supporting the countywide research showing railway interaction on the wider area.[105]

Luton, therefore, was a distinctly urban settlement, but over-dependant on an industry linked to agriculture (straw).[106] Through this it became equally dependent on the rurality of the surrounding region, and improved transport communication with it as shown by the Dunstable Station omnibus. This local dependency diminished, though, in preference of the railways themselves as a transport medium enabling cheaper straw imports, whereas the

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[105] *Slaters Royal National and Commercial Directory and Topography (including Bedfordshire)*, 1850, p.28. See Chapter 11.
[106] *Luton: Hat Boom*, p.57; Leleux, *Regional History*, Vol. 9, pp.29-30; Goslin, *St Pancras*, p.28.

wider area increasingly grew dependent on Luton as a commercial centre and a major regional 'hub'.[107]

Importantly, changing numbers of businesses in directories can only act as an indicator of economic success, as outside of individual company papers or the few surviving transport records it cannot be fully known how much was actually being produced. As the Luton, Dunstable & Welwyn Junction Railway prospectus outlined, matching Simmons and Grinling's views on the later MR competition, railways were built as much for theorised future traffic as for what was already present, anticipating business attraction with decreasing export costs.[108] It was this awareness of *potential* economic impacts that led to public calls for a main line rather than Stephenson's proposed 1844 branch, fearing Luton's positioning between the LNWR and GNR might dissuade business if merely on a branch.[109] This ironically ultimately delayed Luton's connection with the system.

With the railways only coming late in Luton's development, their limited involvement in occupational change is understandable, suggesting that the relative timing of the coming of the railways to a settlement may have been vital to their significance as a formative factor rather than being merely supportive.[110] This further connects with wider railway development as they moved away from their original terminus-terminus business format.[111] But while the early railways 'had done nothing for the town at all' in initiating development, in a supportive role and attracting later industrial businesses they became very significant.[112] To quote Simmons on Luton in the 1900s:

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[107] Mills, *Trade Directories*, p.53; Cockman, *Bedfordshire*, p.61; B. Simpson, *The Dunstable Branch* (Banbury, 1998), p.8; Scholey, *Bedfordshire's Railways*, p.18; Woodward, *Hatfield, Luton & Dunstable,* p.42; Oppitz, *Lost Railways*, p.112; Goslin, *St Pancras*, p.28; WPM.

[108] HALS DE/P/E498 – Prospectus for the Luton, Dunstable & Welwyn Junction Railway; Simmons, *Town and Country*, p.69; C. Grinling, *The History of the Great Northern Railway, 1845-1922* (London, 1966), p.231; *Luton: Hat Boom*, p.5; Leleux, *Regional History*, Vol. 9, p.29; Simpson, *Dunstable Branch*, p.8; Woodward, *Hatfield, Luton & Dunstable,* p.7.

[109] Woodward, *Hatfield, Luton & Dunstable,* p.6.

[110] Simmons, *Town and Country*, p.277; Schwartz, Gregory & Thévenin, 'Spatial History', *Journal of Interdisciplinary History*, pp.58, 61.

[111] Casson, *First Railway System*, p.17; T.R. Gourvish, *Railways and the British Economy 1830-1914* (London, 1980), p.27.

[112] Simmons, *Town and Country*, p.277; Cockman, *Bedfordshire*, p.115; Leleux, *Regional History*, Vol. 9, p.13.

'Luton had secured this [c.1890s industrialising] development largely through its own initiative. It was now decisively released from its thraldom to the straw-plait industry. If the railways had reached the town late, they grew to be one of its principal assets.'[113]

St Albans

As an archetypal coaching town, occupational changes in St Albans show the wider effects transport developments possessed. As with Luton, agriculture was under-represented here, central St Albans constituting an urban environment. The agricultural sector was growing in percentage and actual numbers after 1850, with a slight decline c.1882, which was most likely the result of an increase in adverts as a sign of social status amongst farmers, rather than any economic growth (Table 27).[114] Conversely, there was the introduction of minor market gardening to the surrounding area.[115]

The food and drink trades were typically large, which is partially to be expected with the necessities of coaching inns and taverns, although beer retailers were significant in the latter half of the century (Table 28).[116] The figures show that while beer retailers were only accurately recorded after 1850, inns experienced a major decline in number by 1850, only recovering by 1870. Grocers, by comparison, saw a similar 1850 decrease, slowly recovering thereafter, demonstrating that coaching impacts were not solely on alcohol.

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[113] Simmons, *Town and Country*, p.277.
[114] Drake & Finnegan, *Community History*, p.61; M. Freeman, *St Albans: A History* (Lancaster, 2008), p.229.
[115] Simmons, *Town and Country*, p.330.
[116] Freeman, *St Albans*, p.190; J. Corbett, *A History of St Albans* (Chichester, 1997), pp.77-8; S.G. Shaw, *History of Verulam and St Albans* (St Albans, 1815), p.158; J. Mein, 'The Last Years of the Many Inns of St Albans', *Herts Past & Present*, No. 22 (Autumn 2013), p.17; Goose, 'Liquor Trade', *Hertfordshire's Past*, pp.55-60; Museum of St Albans.

Table 27: Percentage total employed per occupation group for St Albans, 1823-1902 – based on Hertfordshire business directories.

	1823	1832	1839	1850	1862
Agriculture	1%	0%	0%	3%	6%
Textiles	5%	8%	6%	8%	5%
Misc Manu	1%	1%	4%	2%	2%
Leather	5%	5%	5%	5%	5%
Building	7%	5%	7%	7%	5%
Metal	5%	5%	3%	5%	3%
Wood	6%	4%	4%	4%	3%
Food & Drink	37%	32%	32%	34%	31%
Transport	2%	5%	4%	0%	2%
Domestic Service	0%	0%	0%	0%	1%
Public Service/Professional	14%	13%	13%	16%	19%
Straw	0%	2%	3%	4%	6%
Quarry/Mining	0%	0%	0%	0%	0%
Retail/Distribution	17%	19%	19%	13%	12%
Misc	0%	0%	0%	0%	0%
TOTAL:	100%	100%	100%	100%	100%

	1870	1882	1890	1902
Agriculture	4%	2%	2%	2%
Textiles	5%	6%	7%	7%
Misc Manu	2%	2%	2%	1%
Leather	5%	4%	3%	3%
Building	7%	6%	7%	7%
Metal	5%	4%	5%	3%
Wood	4%	4%	3%	3%
Food & Drink	27%	27%	25%	22%
Transport	2%	2%	4%	3%
Domestic Service	1%	2%	2%	6%
Public Service/Professional	18%	19%	17%	21%
Straw	6%	7%	2%	2%
Quarry/Mining	0%	0%	0%	0%
Retail/Distribution	13%	15%	20%	18%
Misc	0%	0%	1%	1%
TOTAL:	100%	100%	100%	100%

Table 28: Numbers of the three highest food and drink sector businesses in St Albans, 1823-1902.

	Inns/Taverns/Pubs	Beer Retailers	Grocers
1823	31	X	30
1832	45	8	29
1839	56	X	36
1850	29	39	15
1862	39	40	18
1870	54	33	20
1882	52	33	24
1890	51	31	24
1902	52	29	37

Leleux described the 1858 LNWR branch as the main reason 'that many innkeepers went bankrupt' as coaching collapsed, but these figures show that the largest decrease was after the London & Birmingham Railway (1839), while the LNWR branch actually correlates with a slight increase.[117] This matches the contemporary view:

'Those who were able to contrast what St Albans once was with what is now, must feel that the evils by the adoption of the Birmingham Railway have been extensive in character and minute in bearing, for not an inhabitant but must have felt its influence.'[118]

Similarly, Leleux claimed St Albans recovered with the MR in the 1870-90s, Corbett adding that it transformed St Albans 'from not much more than a bustling village into a booming town'.[119] While the growth rate of grocers is slower than expected for this claim, recovery to above stagecoach-era levels for inns and other sectors correlates, supporting Leleux and wider views of greater main line impacts over branches.

Nonetheless, the food and drink sector as an overall percentage decreased by almost half after coaching fell to railways – a direct negative knock-on impact also showing that railways affected much wider geographically than just the individual connected settlement.[120] In this case, 1839 Watford (LBR) negatively affected St Albans as coaching declined, but when St

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[117] Leleux, *Regional History*, Vol. 9, p.31.
[118] *Reformer* Newspaper 22/8/1840 – in Mein, 'Inns of St Albans', *Herts Past & Present*, p.18.
[119] Leleux, *Regional History*, Vol. 9, pp.10, 32; Corbett, *St Albans*, p.88.
[120] Mein, 'Inns of St Albans', *Herts Past & Present*, pp.15-21.

Albans gained its own lines the number of businesses began to recover.[121] More broadly, the view of localised benefits and wider rural negatives as suggested by the countywide population data appears justified.[122] Some inn bankruptcies did pre-date the LBR, though, showing that while important, the railways were not the only factor.[123]

Table 29: Numbers of professional businesses in St Albans, 1823-1902.

Year	No.
1823	45
1832	67
1839	81
1850	67
1862	101
1870	114
1882	129
1890	138
1902	226

The professional sector was significant throughout the period, understandable in such a long-established town. The percentages show continual growth after 1839 up to 21% by 1902, but the actual numbers are very different (Table 29). Almost doubling c.1823-39, it suggests the ratio was suppressed. 1850 percentages were equally skewed in ratio, but artificially elevated by the post-coaching depression – actually falling.[124] The remainder of the period (after the railways) saw a steadily growing professional sector, before a final surge after 1890. While railways correlate with the dates, suggesting some connection, the earlier lines appear primarily as a general stimulus rather than having specific involvement. The 1868 MR, however, more directly coincides with the 1890-1902 growth.[125] Despite the MR being originally less concerned with commuter traffic, and being rather late in Leleux's claim of post-1870s recovery, the impact of the 'Cheap Trains Act' of 1883 on this policy suggests railways were a noteworthy long-term factor, not just in enabling commuting but through the

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[121] Johnson, *Industrial Archaeology*, pp.141-5; P. Richards & B. Simpson, *A History of the London and Birmingham Railway Volume 1* (Witney, 2004), pp.99, 111; Corbett, *St Albans*, p.88; Freeman, *St Albans*, pp.230-1, 247; Leleux, *Regional History*, Vol. 9, pp.10, 31-2; Mein, 'Inns of St Albans', *Herts Past & Present*, p.16; MoStA.

[122] Schwartz, Gregory & Thévenin, 'Spatial History', *Journal of Interdisciplinary History*, pp.56, 61, 70, 84.

[123] Mein, 'Inns of St Albans', *Herts Past & Present*, pp.16, 20; Goose, 'Liquor Trade', *Hertfordshire's Past*, pp.55-60.

[124] Corbett, *St Albans*, p.88; Cockman, *Bedfordshire*, pp.45-6; MoStA.

[125] Cockman, *Bedfordshire*, p.60; Goslin, *St Pancras*, p.26.

accessibility given by a new main line.[126]   A new suburban area consequently developed around the station, requiring professional (and other) businesses, hence the time lag shown.[127]

Retail was important in St Albans since the Celts, and the data again shows the effects of coaching.[128] The 1823-39 retail sector was second only to victualing (19%), likely pushing down the ratio of professional businesses, but dropped after the LBR to 12%, only recovering in the 1880/90s after the MR (late in Leleux's claim).[129] For example, the *VCH* referred to two markets with one 'apparently abandoned' around the early nineteenth century (only later reinstated), while the number of fairs decreased at the same time until all were abolished by 1873.[130]

Table 30: Numbers of retail businesses in St Albans, 1823-1902.

Year	No.
1823	54
1832	97
1839	119
1850	54
1862	66
1870	86
1882	107
1890	166
1902	195

Considering actual numbers (Table 30), this is mostly supported (falling by half c.1839-50), but the greatest decadal growth was 1890 (166 businesses) which the percentages strangely show as a decrease. Showing increasing variety throughout, initially rail-connected Watford (particularly its market and retail) grew in importance as St Albans businesses declined. Later, St Albans' recovery and growth was contemporary with urban expansion after the railways (mostly MR), as demonstrated by the 1877 City Charter.[131] Retail thus suffered with

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[126] See Chapter 8.
[127] F. Mason, *Gibbs' Handbook to St Albans*, (1884), p.42; Leleux, *Regional History*, Vol. 9, p.32; Johnson, *Industrial Archaeology*, p.24; Dyos & Aldcroft, *British Transport*, p.197; MoStA. See Chapter 10.
[128] Verulamium Museum.
[129] Leleux, *Regional History*, Vol. 9, pp.10, 32; MoStA.
[130] The City of St Albans: The Borough, *A History of the County of Hertford: Volume 2* (1908), pp.477-483; MoStA.
[131] Johnson, *Industrial Archaeology*, pp.24, 138-52; Leleux, *Regional History*, Vol. 9, pp.10, 32; Freeman, *St Albans*, pp.215-6, 221, 227-8, 231; Corbett, *St Albans*, pp.88, 107; Mein, 'Inns of St Albans', *Herts Past & Present*, p.16; MoStA.

the end of stagecoaches but regenerated with improving railway accessibility attracting businesses and people; overall being a major factor, both positive and negative.[132]

While Luton was the national centre for straw and hats, St Albans was the equivalent for the trade in Hertfordshire.[133] Originally with a substantial plait market, straw-work grew to be the primary 'industrial development' of the town, to the extent that the opening procession for the LNWR branch included new bonnet styles entitled 'The St Albans Railway Opening', while the first MR train was itself decorated with plait.[134]

Growing in importance up to 1862 (6%), this expansion stopped virtually outright thereafter, then falling from 7% in 1882 to 2% in 1890. These later dates correlate with the opening of the Hatfield & St Albans Railway (1865) and MR (1868). Indirectly and directly linking St Albans and Luton, the latter growing massively in this sector, this business decline matches the introduction of mechanised stitching (1875), so increasing output with fewer numbers required.[135]

The majority of the actual businesses were in hatting throughout, rather than plait, although unusually there was a sharp increase in the number of plait dealers listed in 1890.[136] A small number of businesses also specialised in 'Brazilian hats' made from imported palms.[137] The percentages mirror the number of actual jobs closely, with 1882-1890 experiencing a fall in number of businesses from 47 to 20. The decline that Luton delayed is demonstrated, as is competition within the sector, but the timing of this major St Albans straw sector decrease shows that whether through business acumen, machinery, fashion or other factors, the

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[132] Freeman, *St Albans*, pp.215-6, 218, 231, 252-3; Corbett, *St Albans*, pp.78, 117; Dyos & Aldcroft, *British Transport*, p.197.

[133] Shaw, *Verulam*, p.162; Wilson, *Imperial Gazetteer*; Freeman, *St Albans*, pp.176-180; Corbett, *St Albans*, p.79; Leleux, *Regional History*, Vol. 9, p.31; N. Goose & D. Short, *An Historical Atlas of Hertfordshire* (Hatfield, 2011), pp.90-2; Johnson, *Industrial Archaeology*, pp.70-6; *A History of the County of Hertford: Volume 4* (1971), pp.251-6; The City of St Albans: The Borough, *A History of the County of Hertford: Volume 2* (1908), pp.477-483.

[134] Bradshaw, *Tours, Section III*, p.4; Shaw, *Verulam*, p.161; Corbett, *St Albans*, pp.78-9, 95, 110; Freeman, *St Albans*, p.216; N. Goose, 'Cottage Industry, Migration, and Marriage in Nineteenth-Century England', *Economic History Review*, 61:4 (2008), p.802.

[135] *A History of the County of Hertford: Volume 4* (1971), p.255; ; *Luton: Hat Industry*, p.6; Mills, *Trade Directories*, p.28; Freeman, *St Albans*, p.177, 215; Corbett, *St Albans*, p.118; WPM. See Chapter 4.

[136] Goose, 'Cottage Industry', *Economic History Review*, pp.10-11, 17, 23; *A History of the County of Hertford: Volume 4* (1971), pp.254-5; http://www.hertfordshire-genealogy.co.uk/data/topics/t012-strawhats.htm

[137] N. Goose, The Straw Plait and Hat Trades in Nineteenth-Century Hertfordshire, in N. Goose (ed.), *Women's Work in Industrial England: Regional and Local Perspectives* (Hatfield: Local Population Studies, 2007), p.116; *A History of the County of Hertford: Volume 4* (1971), p.256; Freeman, *St Albans*, p.211; MoStA.

provision of quicker transport between St Albans and Luton was significant in enabling these factors to rapidly take effect and to the extent they did.[138] St Albans straw trade suffered from the railways as much as Luton benefited from it.[139] While St Albans' stations were not as central as Luton's and there were fewer dedicated sidings, the 'facilitator' historiography of indirect railway involvement is supported, as is the issue of railways as a factor in the history of straw manufacture.[140]

Table 31: Numbers of building-related businesses in St Albans, 1823-1902.

Year	No.
1823	21
1832	26
1839	46
1850	28
1862	25
1870	42
1882	39
1890	60
1902	77

As the countywide data suggested a connection between commuting, urban sprawl and thus building, these businesses are particularly significant considering the nature of town growth around the railways.[141] The building sector was comparatively stable at 5-7%, but the numbers (Table 31) reveal unexpected trends.

It would be simple to correlate the drop after 1839 with the decline following stagecoaches, but this appears fallacious, the figures for 1839 appearing higher than usual, so possibly anomalous.[142] Conversely, akin to straw-work, the 1868 MR main line preceded the 1870-1902 expansion of building businesses, and with the growth of commuting and suburban expansion in the direction of the MR station the railways undoubtedly played a substantial

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[138] Freeman, *St Albans*, p.215; Corbett, *St Albans*, p.118; *A History of the County of Hertford: Volume 4* (1971), p.255; Johnson, *Industrial Archaeology*, pp.75-6.

[139] 'The manufacture of straw plait was for long the staple industry in the town, but is now decayed.' – The City of St Albans: The Borough, *A History of the County of Hertford: Volume 2* (1908), pp.477-483; Johnson, *Industrial Archaeology*, pp.75-6.

[140] TNA RAIL 1167/246 - LNWR and St Albans Gas Company, 1894-1934; Simmons, *Town and Country*, p.298; *A History of the County of Bedford: Volume 2* (1908), p.122; Barker & Savage, *Transport*, p.68. See Chapter 4.

[141] See Chapters 4 and 10.

[142] *Robson's Commercial Directory of the Six Counties Forming the Norfolk Circuit*, 1839; Crompton, 'Rural Occupations', *Rural History*, p.199.

role.[143] There was some commuting on all three lines from the outset, but unlike previously with just the branches it appears the MR main line ultimately triggered sufficient commuting to exhibit a wider impact on occupations, supporting Leleux's comment and encouraging further inter-company competition.[144]

Yet it could be expected for the 1858 and 1865 branches to experience some similar effects, but this is not apparent in these figures or in physical sprawl. With falling town prospects after stagecoaching declined and improved access to alternate retail (Watford) – but not quite the direct commuting ease the MR main line provided – it appears that main lines were more influential than branches in encouraging population-led building. This depended on the location, though, as there were other notable factors (considering Quainton as a counter-example).

The textile sector demonstrates the importance of transport to rival retail centres, along with the above main line trend. While there was an important silk mill, the majority of businesses were tailors, milliners and dressmakers.[145] With the sector around 8% up to 1850, after the branch lines it fell to 5% c.1862-70. This only recovered after the MR opened (7% by 1890).

Metalwork, by comparison, exhibited less correlation with railways and developed little in the period.[146] Blacksmiths and ironmongers remained significant throughout, with some diversification towards more urban types such as watchmakers and sewing machine repairs. These did not increase greatly, though, supporting the view of St Albans as an urbanising

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[143] Bradshaw, *Tours, Section III*, p.4; G. Measom, *The Official Illustrated Guide to the Great Northern, Manchester, Sheffield, and Lincolnshire, and Midland Railways* (London, 1861), pp.17-25; H.G. Clarke, *Railway Excursion Guide: A Concise Account of the Principal Cathedral Cities, Most Remarkable Towns, Fashionable Watering Places and Picturesque Villages Accessible by Rail* (London, 1859), p.77; 1883 Official MR Guide – in R. Kirk, *St Albans South Signal Box* (2009), p.8; Johnson, *Industrial Archaeology*, p.24; Leleux, *Regional History*, Vol. 9, p.10; J. Simmons, *The Victorian Railway* (London, 1991), p.324; Freeman, *St Albans*, pp.231, 252. See Chapter 10.

[144] S. Jenkins, *The Watford to St Albans Branch* (Usk, 1990), pp.18, 21; R. Taylor & B. Anderson, *The Hatfield & St Albans Branch* (Oxford, 1988), pp.47, 55; Casson, *First Railway System*, pp.16, 18-19, 324; Simmons, *Victorian Railway*, p.83; Leleux, *Regional History*, Vol. 9, p.32.

[145] Shaw, *Verulam*, p.159; Corbett, *St Albans*, p.79; Goose & Short, *Historical Atlas*, pp.96-7; Johnson, *Industrial Archaeology*, p.66; Wilson, *Imperial Gazetteer*; *A History of the County of Hertford: Volume 4* (1971), p.251; The City of St Albans: The Borough, *A History of the County of Hertford: Volume 2* (1908), pp.477-483.

[146] Shaw, *Verulam*, p.161; Corbett, *St Albans*, p.110; Freeman, *St Albans*, p.225.

settlement but primarily serving a rural area. This only began to alter in the later decades with the onset of commuting and reformation as a city.[147]

Lastly, transport was highly important throughout St Albans' history as the first main coaching point outside London, thus encouraging wider employment and commerce.[148] Comparing road and rail 'businesses' (Fig. 64), the extent of railway impact on stagecoaches, (thus indirectly on much of the above), is obvious; to quote a contemporary coachman:[149]

'Them as 'ave seen coaches afore rails came into fashion 'ave seen something worth rememberin'! Them was 'appy days for old England, afore reform and rails turned everything upside down.'[150]

Fig. 64: Number of businesses employed in St Albans transport 1823-1902. Note: 1823 and 1850 are anomalous while the variation under railways consists of parcel offices in the town.
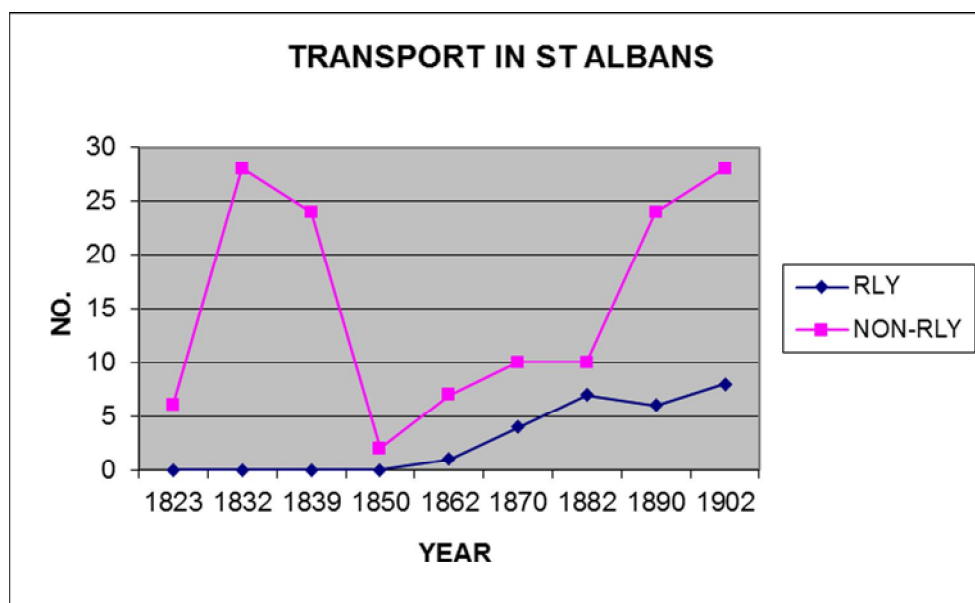
The first fall in the transport sector (1839) matches the LBR affecting long-distance road services, rather than those serving St Albans specifically or non-rail connected destinations. As the other sectors showed, this had immediate effects on the town's general economy. The

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[147] Leleux, *Regional History*, Vol. 9, p.32; Parishes: St Stephen's, *A History of the County of Hertford: Volume 2* (1908), pp.424-432; MoStA.

[148] Freeman, *St Albans*, pp.190, 208, 210, 225, 253; Corbett, *St Albans*, p.73; The City of St Albans: The Borough, *A History of the County of Hertford: Volume 2* (1908), pp.477-483; MoStA.

[149] Leleux, *Regional History*, Vol. 9, p.10; Corbett, *St Albans*, p.88; Cockman, *Bedfordshire*, pp.45-6.

[150] 'Recollections of a Coachman', *St Martin's-le-Grand Magazine* – MoStA; http://postalheritage.org.uk/page/movingthemail-postboys

1850 directory failed to include carrier details, so is anomalous, but that for 1862 indicates the extent of the collapse after the LNWR branch (1858) and nearby GNR through Hatfield (1850).

Although substantial, some road hauliers survived serving the immediate locale and railway, so there was not a total decimation of the former trade.[151] With the stations on the outskirts, roads and omnibuses remained necessary to serve them, as suggested nationally by Savage and represented with the slow non-railway growth to 1882.[152] Considering each company; the LNWR branch was at the bottom of Holywell Hill, while the H&StAR paid the London Road toll gate for continual access.[153] The MR station, until sprawl filled the gap, was equally remote from the town centre and as the main station for the town with MPD and goods yard (Fig. 56, Chapter 8), this distance combined with growing trade (Fig. 58, Chapter 8) is a likely factor in the rapid growth of non-railway transport businesses c.1890-1902.[154] As with Luton's railway 'carrier agents', there were several parcel offices in St Albans inns, further interconnecting railways and other sectors.[155]

Of the case studies, St Albans had the greatest concentration of railways, and aside from Wolverton was the most dependent on transportation generally. With the changeover from road to rail the entire occupational structure was affected, but differently from Luton, which industrialised, or Potton, where market gardening developed. Straw-work was important, but 'heavy industry' failed to grow – M. Freeman saying the 'single most significant industrial development' was the railway itself.[156] The vicinity remained 'entirely agricultural', with some market gardening, but St Albans itself had been urban for centuries.[157] Instead, it developed into a town for shopping, tourism and commuting.

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[151] *Pigot and Co's Royal National and Commercial Directory and Topography*, 1839; Eckett, *Signals*, p.63; Taylor & Anderson, *Hatfield St Albans*, p.5.

[152] *Post Office Directory of Hertfordshire*, 1862; Barker & Savage, *Transport*, p.123.

[153] Taylor & Anderson, *Hatfield St Albans*, p.10. See Chapter 8.

[154] Johnson, *Industrial Archaeology*, p.24; MoStA; http://digimap.edina.ac.uk/

[155] *Post Office Directory of Hertfordshire*, 1882; Taylor & Anderson, *Hatfield St Albans*, p.40. See Chapter 8.

[156] Freeman, *St Albans*, p215.

[157] Taylor & Anderson, *Hatfield St Albans*, p.51; Freeman, *St Albans*, p.229; Parishes: St Stephen's, *A History of the County of Hertford: Volume 2* (1908), pp.424-432; MoStA.

The railway's role in these developments was twofold and illustrates Simmons' point about the presence of potential negative railway impacts.[158] The earliest lines, even when not directly serving St Albans, directly affected stagecoaching, so were a factor in the decline of inns and businesses catering to those passing visitors. Later railways granted improved accessibility, encouraging migration to this new commuter area, although easy access to nearby Luton and Bedford simultaneously limited any industrialisation in St Albans.[159] But businesses serving the settlement's new commuter-led demands – retail, professionals and building – were encouraged, in turn regenerating St Albans, making it attractive to visitors for its antiquities.[160]

Written before the LNWR branch, aiming to muster support for a proposed Bedford-St Albans line, a letter to the *Reformer* newspaper in 1840 summarised the transfer from coach to train, predicting (reasonably accurately) its occupational and commuter effects (albeit with railways as the main 'cause'):

'Previous to the opening of the London & Birmingham Railway nearly 100 coaches passed through that town daily and there was also a considerable business doing in posting. Large sums of money were expended in the town and consequently it was in a flourishing state. After the opening of the railway [at Watford], business vanished.'

'…what has previously prevented St Albans from becoming a manufacturing town but the want of a railroad?' [Ultimately the railway was only minor in this respect, although some printers moved from London c.1890-1914, 'encouraged by the railway and other factors'.[161]]

'With such advantages [historical buildings, 'salubrious' air, scenery] there would doubtless be a great increase in the inhabitants, for when it is brought within an hour's ride of the Metropolis the man of business will eagerly embrace the opportunity to remove to such a delightful spot.'

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[158] Simmons, *Town and Country*, pp.19, 21, 58; Simmons, *Victorian Railway*, p.376; Schwartz, Gregory & Thévenin, 'Spatial History', *Journal of Interdisciplinary History*, pp.55-6.
[159] Johnson, *Industrial Archaeology*, pp.75-6; Freeman, *St Albans*, p.227-8, 231; Corbett, *St Albans*, p.110; Leleux, *Regional History*, Vol. 9, p.32; MoStA.
[160] Bradshaw, *Tours, Section III*, p.4; Measom, *Guide to the Great Northern*, pp.17-25; Clarke, *Excursion Guide*, p.77; 1883 Official MR Guide – in Kirk, *Signal Box*, p.8; Leleux, *Regional History*, Vol. 9, p.10; Dyos & Aldcroft, *British Transport*, p.197.
[161] Freeman, *St Albans*, pp.216, 224-5; TNA RAIL 1167/251 – Agreement between GNR and Orford Smith Ltd, for construction and use of siding at St Albans, July 1897.

'If they do not [accept a railway] they will have themselves to thank for the loss of the only opportunity of retrieving their fortunes that ever can be and will occur.' [162]

<u>Luton and St Albans MR Traffic</u>

Rare surviving documents, the MR station traffic figures reveal the extent of occupational impacts on rail traffic, as opposed to vice versa.[163] Luton's MR passenger numbers (Fig. 65) saw the first fluctuation c.1878-82, the time when mechanised stitching increased output, followed rapidly by the collapse of local plait.[164] The latter would have massively impacted on the number of plait manufacturers and sellers coming to Luton from the wider area, explaining the drop in number.[165] But with such widespread loss of work, many would have needed new employment, Luton's hat factories being ideal. Recovering and having a subsequent great increase c.1882-8, this passenger growth is not reflected by the population data, suggesting commuting to Luton.[166] Yet as fashions changed in the 1890s there was less demand and fewer jobs, which correlates with a fall with only slow recovery of passenger levels.[167] The 1899 'New Industries Committee' attempted to encourage alternate employment but was slow in initiating it; only by 1900 gaining substantial firms.[168] This and growing London commuting explains the final passenger rise.

St Albans' MR passenger numbers (Fig. 65) equally demonstrate the effects of the straw industry, but very differently to Luton. The rise of Luton in this sector negatively affected St Albans, so the introduction of mechanised stitching (c.1878) matches a decrease in numbers, likely from market visitors. Declining plait levels had less of a resulting impact but prolonged this dip in passenger levels. The 1880s saw greater decline in straw manufacture, but St Albans was recovering from the end of coaching and traffic was growing through

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[162] *Reformer* Newspaper 1/8/1840 – in Cockman, *Bedfordshire*, pp.45-6.
[163] TNA RAIL 491/672, RAIL 491/674, RAIL 491/675 - Midland Railway Company Records, Traffic and Expenses at Stations.
[164] *A History of the County of Hertford: Volume 4* (1971), p.256; Parishes: Luton, *A History of the County of Bedford: Volume 2* (1908), pp.121-2, 348-375; WPM. See Chapter 4.
[165] K. Snell & P. Ell, *Rival Jerusalems: The Geography of Victorian Religion* (Cambridge, 2000), p.216; *A History of the County of Hertford: Volume 4* (1971), p.253; Parishes: Luton, *A History of the County of Bedford: Volume 2* (1908), pp.121-2, 348-375.
[166] J. Giles, R. Jeavons, M. Martin, D. Smith & R. Smith, *Wheathampstead Railway Recollections* (Wheathampstead, 1995), p.vii.
[167] *Luton: Straw Hat* p.57; WPM.
[168] *Luton: Straw Hat* p.5; WPM.

commuting.[169]   The 1890-1900s saw a faster increase in passengers, correlating with higher numbers of building firms and the expansion of suburbs around the MR station.[170]   It appears likely that around this time MR services improved and St Albans turned to being primarily a commuter settlement.[171]

Fig. 65: Luton and St Albans MR passenger numbers 1872-1900.
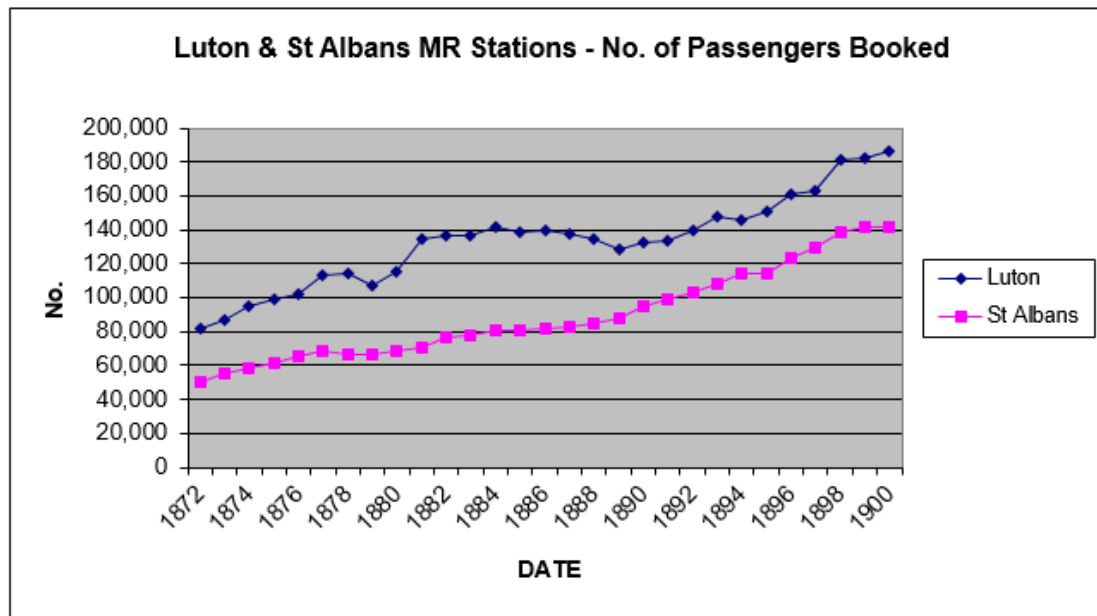
TNA RAIL 491/672, RAIL 491/674, RAIL 491/675 - Midland Railway Company Records, Traffic and Expenses at Stations.

Considering goods traffic, Luton's railways exhibited some developmental effects, but aside from small direct issues of sidings or transport occupations, for most sectors it was one factor among many, albeit still important.[172]   To some extent railways themselves were dictated to by the changing needs of straw businesses. As the MR finances revealed (Fig. 54, Chapter 8), parcels were very minor compared to passengers. But goods levels, despite only being recorded after 1896, were greater than parcels and passengers combined, rising dramatically

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[169] Freeman, *St Albans*, pp.215-6, 227, 231; Corbett, *St Albans*, p.118; Leleux, *Regional History*, Vol. 9, pp.13, 31-2; The City of St Albans: The Borough, A History of the County of Hertford: Volume 2 (1908), pp.477-483; MoStA.
[170] See Chapter 10.
[171] Leleux, *Regional History*, Vol. 9, pp.10, 30; Simmons, *Victorian Railway*, p.83; Jenkins, *St Albans Branch*, p.21; Johnson, *Industrial Archaeology*, p.24; Goslin, *St Pancras*, p.28; Scholey, *Bedfordshire's Railways*, p.28; Oppitz, *Lost Railways*, p.111; MoStA; http://digimap.edina.ac.uk/
[172] *Luton's Railways*; Leleux, *Regional History*, Vol. 9, p.13; Simmons, *Town and Country*, pp.276-7; Cockman, *Bedfordshire*, p.115; *Luton: Hat Boom*, p.5.

even with decreasing numbers of straw businesses and limited alternate industry.[173] This appears even greater for the GNR (Fig. 15 Chapter 4), also serving the immediate rural vicinity.[174] Compared to the rest of the region, the significance of Luton to the straw sector (as opposed to the straw industry's effects on Luton) is revealed, with Luton's fashionable status keeping straw-work a major part of railway traffic and delaying the collapse of local plait where elsewhere it was declining rapidly. In a cyclical manner the railways, their traffic boosted by fashion, further encouraged this by enabling widespread distribution, so fuelling straw's popularity.

Contrary to Luton, St Albans' MR finances (Fig. 58, Chapter 8) were around half the level, while passengers were the primary revenue-earner.[175] Goods and parcels were less important than at Luton, showing the great difference between the settlements – one commercial, the other commuting. Along with supporting the countywide claim of 'London influence', especially for commuters, this also shows how locations comparatively close geographically can vary wildly even when served by the same railway company.[176]

Yet considering the brief H&StAR traffic/finance records (Fig. 66), passenger growth predated the MR and was the case for branch as well as main lines, albeit at a lower level. Similarly, branch goods traffic grew over time, but was initially low as alternatives were well-established. Interestingly, the low level of minerals (coal) suggests while railways reduced its cost, the LNWR had most of the local trade – particularly considering the gasworks adjoining their branch.[177]

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[173] TNA RAIL 491/672, RAIL 491/674, RAIL 491/675 - Midland Railway Company Records, Traffic and Expenses at Stations.
[174] Scholey, *Bedfordshire's Railways*, p.18; Woodward, *Hatfield, Luton & Dunstable,* p.42; Goslin, *St Pancras*, p.28; Oppitz, *Lost Railways*, p.112; Cockman, *Bedfordshire*, illustration 12.
[175] TNA RAIL 491/672, RAIL 491/674, RAIL 491/675 - Midland Railway Company Records, Traffic and Expenses at Stations.
[176] Simmons, *Town and Country*, pp.15, 17, 23, 26; Freeman, *St Albans*, pp.210, 225, 227, 231; Corbett, *St Albans*, p.78; J. Moore, *The Impact of Agricultural Depression and Land Ownership Change on the County of Hertfordshire, c.1870-1914* (University of Hertfordshire, 2010), pp.49, 53.
[177] TNA RAIL 1167/246 - LNWR and St Albans Gas Company, 1894-1934; Shaw, *Verulam*, p.160; Corbett, *St Albans*, p.79; Jenkins, *St Albans Branch*, pp.8, 18, 89; Richards & Simpson, *London Birmingham Railway* Vol. 1, p.112; MoStA.

Fig. 66: St Albans H&StAR Finances 1865-1866 – TNA RAIL 295/1 – Hatfield & St. Albans Railway Minute book.
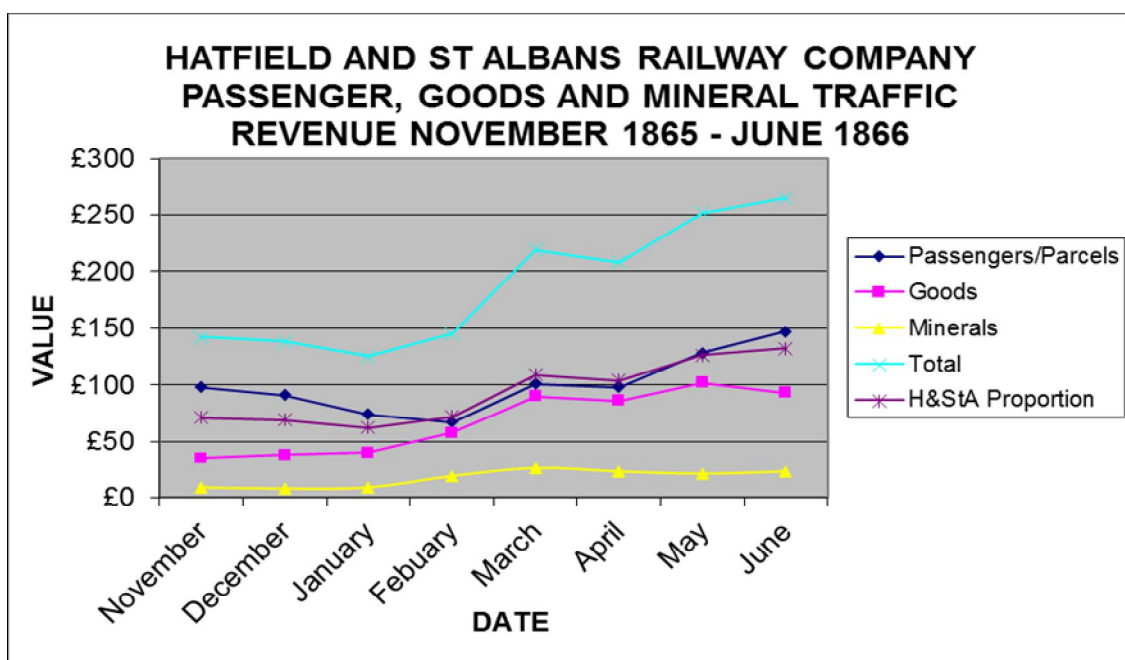
The H&StAR had a weak financial position (Fig. 57, Chapter 8); the impact of the MR main line on the failing branch being substantial. But this began some months before actually opening, suggesting businesses and commuters started switching early in anticipation of the more direct main line.[178] Although the GNR took over the H&StAR in 1883 it remained loss-making, demonstrating that railways did not simply act as a factor on local occupations – occupational requirements equally affected the railways.[179] Where tailored to suit local needs, lines could be highly successful; where overtaken, they subsequently declined.[180]

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[178] Casson, *First Railway System*, pp.16, 18-19, 324; Simmons, *Victorian Railway*, p.83.
[179] Simmons, *Town and Country*, pp.19, 298; Schwartz, Gregory & Thévenin, 'Spatial History', *Journal of Interdisciplinary History*, pp.55-6.
[180] Casson, *First Railway System*, pp.24, 317; Simmons, *Victorian Railway*, pp.83-4, 260, 285, 356, 376; Simmons, *Town and Country*, p.324; Gourvish, *Railways Economy,* p.27; Schwartz, Gregory & Thévenin, 'Spatial History', *Journal of Interdisciplinary History*, pp.61, 70.

Bushey:

Table 32: Percentage total employed per occupation group for Bushey, 1832-1902 – based on Hertfordshire business directories.

	1832	1839	1850	1862
Agriculture	0%	3%	1%	11%
Textiles	1%	3%	3%	3%
Misc Manu	0%	1%	1%	0%
Leather	7%	4%	7%	7%
Building	11%	9%	7%	7%
Metal	6%	5%	4%	3%
Wood	13%	4%	8%	7%
Food & Drink	45%	30%	36%	33%
Transport	0%	1%	3%	3%
Domestic Service	0%	0%	0%	0%
Public Service/Professional	11%	21%	18%	13%
Straw	0%	1%	0%	1%
Quarry/Mining	0%	0%	0%	0%
Retail/Distribution	6%	17%	12%	14%
Misc	0%	0%	0%	0%
TOTAL:	100%	100%	100%	100%

	1870	1882	1890	1902
Agriculture	11%	10%	7%	7%
Textiles	3%	5%	5%	2%
Misc Manu	1%	3%	2%	1%
Leather	6%	7%	5%	4%
Building	8%	8%	9%	9%
Metal	2%	1%	2%	1%
Wood	2%	1%	3%	1%
Food & Drink	38%	29%	28%	31%
Transport	3%	5%	5%	6%
Domestic Service	0%	2%	3%	2%
Public Service/Professional	12%	11%	12%	18%
Straw	1%	0%	0%	0%
Quarry/Mining	0%	0%	0%	0%
Retail/Distribution	14%	19%	20%	18%
Misc	0%	0%	0%	1%
TOTAL:	100%	100%	100%	100%

The LBR had been in operation for two years before Bushey Station was built, lying remote from the rural village.[181]   Contrary to the experience of Quainton, development was

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[181] TNA RAIL 384/4 - LBR/LNWR Board Minutes (Nos 1005-1809) - Minute No. 1663, 9/7/1841.

substantial with 'New Bushey' growing around the Station.[182] By 1902 Bushey had begun a transformation encapsulating many aspects of the other case studies. Agriculture was important but, as with St Albans, only saw greater advertisements in 1862, more likely as demonstrations of social standing and association with the growing commercial class than overtly commercial motives.[183] Thereafter there was a slight decline in ranking, logically due to the commuting nature of 'New Bushey'.[184]

Fig. 67: An approximation of period Bushey pub locations.

Based on T. Groves, E. Longman & B. Wood, *From the Wheatsheaf to the Windmill: The Story of Bushey and Oxhey Pubs* (Bushey, 1984), pp.132-5; 1899 OS Map http://digimap.edina.ac.uk/ © Crown Copyright and Landmark Information Group Limited (2015). All rights reserved. (1899)

Pubs were particularly prolific, as shown in the food and drink sector, and while increasing in number, they decreased overall as retail and professional businesses rose in importance. 1870 saw a particular boom with 26 alcohol retailers, and their positioning shows an equal divide between Bushey (rural) and 'Bushey Urban' (Fig. 67).[185] While the decline of coaching generally affected beer retailers, particularly as drinking did not increase in quantity after the 1830 Act, local population growth and the railway bolstered the trade, along with agricultural labourers' need for sustenance, with 23 alcohol retailers remaining in 1902.[186]

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[182] D. Payne, *The Story of Bushey in the Age of the Steam Train* (Bushey, 2011), pp.15, 17; I. Mackay, Bushey's History - Lecture for Oxhey Village Environment Group, 11th March 2010; Parishes: Bushey, *A History of the County of Hertford: Volume 2* (1908), pp.179-186; Bushey Museum; http://digimap.edina.ac.uk/
[183] Drake & Finnegan, *Community History*, p.61.
[184] Richards & Simpson, *London Birmingham Railway* Vol. 1, p.39; G. Longman, *Bushey Then & Now: Introduction* (Bushey, 1997), p.13; Parishes: Bushey, *A History of the County of Hertford: Volume 2* (1908), pp.179-186.
[185] *Post Office Directory of Hertfordshire*, 1870; H. Poole, *Here for the Beer: A Gazetteer of the Brewers of Hertfordshire* (Watford, 1984), pp.53-4; T. Groves, E. Longman & B. Wood, *From the Wheatsheaf to the Windmill: The Story of Bushey and Oxhey Pubs* (Bushey, 1984), pp.15-27, 132-5; Watford Museum.
[186] *Kelly's Directory of Hertfordshire*, 1902; Groves, Longman & Wood, *Bushey Pubs*, pp.8, 31.

Partly due to these high numbers, the area had a temperance society founded in 1869.[187] Railway-based pub names were fewer than in other areas despite the overall numbers.[188]

Once having a long-closed market, retail trades showed an initial peak in 1839 (Table 32), primarily in auctioneers and shopkeepers.[189] Although short-lasting, shopkeepers correlated with a large population growth occurring before the station.[190] Potential factors in attracting the LNWR to create Bushey Station, this was a case of population/occupation directly affecting railway development rather than vice versa. With a proper connection and easier accessibility to Watford and London, railways equally match the 1850-70 decrease in retail businesses. This was not solely down to rail accessibility, although significant, but also through only needing a limited number of shops. The first Bushey-based coal dealers post-date the station.[191] All used the railway for import, one even having private owner wagons.[192] Watford gasworks depended on coal from Bushey Station, which in turn boosted short-distance road transport for the final distance.[193]

Professional businesses showed very similar patterns to the retail sector; the sector was largest in 1839 but rapidly diminished afterwards, most likely for similar reasons, until the retail sector overtook in rank after 1862. However, there was a resurgence c.1882-1902 as the professional sector almost doubled in percentage (1890-1902), becoming level in rank with retail businesses and second only to victualing at around 18%. These sudden changes primarily match the development of Herkomer's Art School. This attracted many students, supported by village businesses and railway access to London.[194] Herkomer credited the School with being worth £10,000 per annum to the village, so as the biggest single impact on the settlement, aside from the railway itself (which it depended on), the correlation is marked.[195]

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[187] Groves, Longman & Wood, *Bushey Pubs*, pp.87-8.
[188] Poole, *Brewers of Hertfordshire*, pp.13-14; Groves, Longman & Wood, *Bushey Pubs*, pp.132-5.
[189] *Pigot and Co's Royal National and Commercial Directory and Topography*, 1839; Wilson, *Imperial Gazetteer*.
[190] Census summary tables via www.histpop.org See Chapter 11.
[191] *William's Directory of the Principal Market Towns in Hertfordshire &c*, 1850; *Kelly's Directory of Hertfordshire*, 1890.
[192] Payne, *Bushey*, p.17; Bushey Museum; http://www.steamindex.com/carrwagon/powindex.htm
[193] TNA BT 31/471/1825 - No. of Company: 1825; Watford Gas and Coke Company 1860; TNA RAIL 384/6 - LBR/LNWR Board Minutes (Nos 2634-3449) - Minute No. 2789, 11/2/1845; Mackay, Bushey Lecture; Payne, *Bushey*, p.10.
[194] Payne, *Bushey*, pp.20-1; G. Longman, *Sir Hubert Von Herkomer RA, A Biographical Note* (Bushey, 1993), p.1; Parishes: Bushey, *A History of the County of Hertford: Volume 2* (1908), pp.179-186; Bushey Museum.
[195] Payne, *Bushey*, p.21.

Although the Art School had little bearing on population change, the creation of 'New Bushey' in itself demonstrates the railway's impact on building work.[196] The number of building firms rose overall (from eight to 22), but this growth was gradual and mostly after 1882. As by 1902 there were only six specialist builders, clearly the earlier 'New Bushey' development was primarily constructed by outside firms; the railway being a positive and negative through providing materials (such as imported stone for Herkomer's 1888-94 mock-Bavarian castle 'Lululaund') but also competing firms.[197] Despite actual growth the building sector diminished in percentage, but this was likely ratio changes through increasing diversity in the slowly-suburbanising settlement.

Importantly though, most directories failed to mention lime kiln and brick works in the immediate area, despite OS maps showing several large sites.[198] As railways frequently used local resources for construction, it is likely that the viaducts may have used these resources.[199] Similarly, some chalk/gravel excavation site were omitted from the *VCH*, but these were marked as closed c.1871.[200]

Metal and wood-working in Bushey were the two most rapidly declining sectors, falling by 5% and 12% respectively. Mostly blacksmiths and carpenters, their numbers were level throughout. Having decreasing agricultural needs with the growth of suburbia and commuting, these primarily agricultural occupations would have been decreasingly needed. This is even more the case with close proximity to commercial Watford businesses.[201]

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[196] See Chapter 11.
[197] *Kelly's Directory of Hertfordshire*, 1902; Payne, *Bushey*, p.23; Longman, *Herkomer*, p.2; Bushey Museum.
[198] TNA BT 31/3434/20707 - No. of Company: 20707; Bushey Colliery and Brickworks Company Ltd, 1885; C. Cooling & I. Mackay, *Oxhey in Pictures* (Watford, 2000), pp.13-14; Payne, *Bushey*, p.7; Mackay, Bushey Lecture; http://digimap.edina.ac.uk/
[199] Simmons, *Victorian Railway*, p.26; Payne, *Bushey*, p.7; Cooling & Mackay, *Oxhey*, p.79.
[200] http://digimap.edina.ac.uk/
[201] Johnson, *Industrial Archaeology*, pp.25, 142, 145; Watford: Introduction, *A History of the County of Hertford: Volume 2* (1908), pp.446-451; http://digimap.edina.ac.uk/

Fig. 68: Number of businesses employed in Bushey transport 1832-1902.
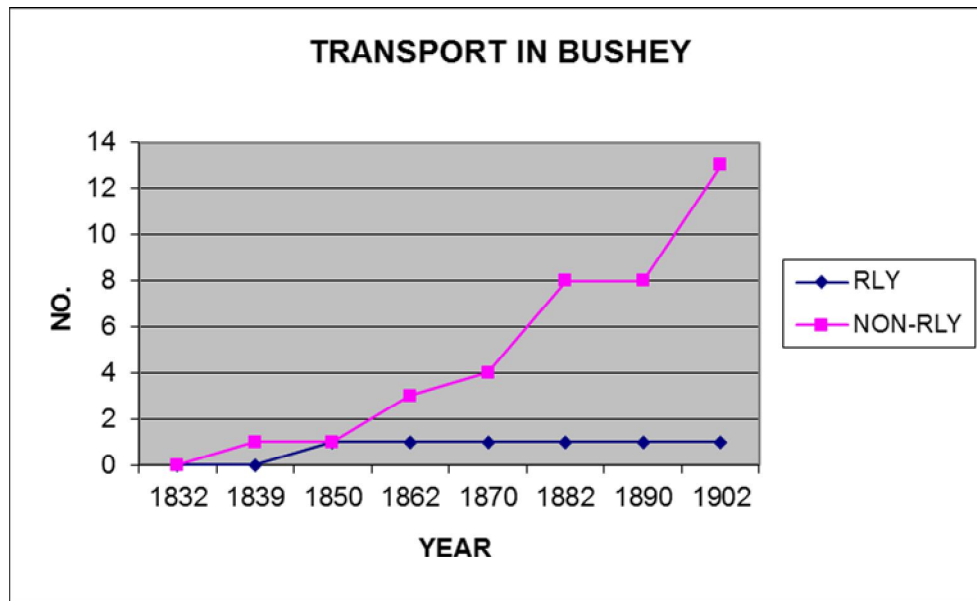
Transport businesses grew in number and percentage throughout the period (Fig. 68). Originally Bushey possessed very few road carriers and with no routes initially listed, the proximity of Watford's coaches removed any need for Bushey's own connection.[202] When the station was opened the wider area still needed connecting road transport, hence the single 1839-50 carrier remaining in business. But after 1862 numbers rose substantially with 12 different carriers/cab proprietors by 1902. With the distance between station and village, the growing coal trade and rising passenger usage, short-distance connecting travel increased.[203] 'New Bushey' raised the profile of the area, but located by the station it is unlikely to have needed coaches as much as those farther away.

Bushey showed changing trends matching many of the other case studies.[204] As with Luton, this was not initiated by the railway, instead being the factor attracting a station. With ever-faster connections to London, commuting was able to flourish, consequently creating a new suburban area around the station akin to St Albans, equally replacing an older occupational form. With growing rail-based traffic the number of connecting carriers benefitted, like at

[202] *Pigot and Co's London & Provincial New Commercial Directory for 1832-3-4*; *Pigot and Co's Royal National and Commercial Directory and Topography*, 1839. See Chapter 8.
[203] Payne, *Bushey*, p.24; M. Forsyth, *The Railway at Watford Junction* (Watford, 1988), p.10; Parishes: Bushey, *A History of the County of Hertford: Volume 2* (1908), pp.179-186; Bushey Museum. See Chapter 8.
[204] Payne, *Bushey*, p.31; Richards & Simpson, *London Birmingham Railway* Vol. 1, p.39; Longman, *Bushey Introduction*, p.13; Parishes: Bushey, *A History of the County of Hertford: Volume 2* (1908), pp.179-186.

Quainton, although without negative coaching impacts owing to the village's initially-unimportant nature.[205]

Ironically, this picturesque rural 'unimportance' was key to development, attracting Herkomer and building a reputation which in turn attracted migrants. Its position near Watford was equally important; a 'rural idyll' with urban benefits.[206] The same became true of London but solely due to the railway, which in turn was a factor for commuting, Herkomer's Art School and most other suburbanising developments. Quainton revealed a village remote from its station that failed to change, but Bushey shows how such a settlement could develop and flourish.

<u>Comparison to Hypotheses</u>

Despite differences between the case studies, many common trends are apparent, albeit with exceptions. Railways had positive and negative occupational effects but these changed over time, even being simultaneous as one sector developed over another. The sectors themselves showed little uniformity between settlements, such as the declining straw industry in St Albans versus prosperous Luton, while increasing variety of businesses within each sector showed continual development. Lastly, differences in the extent of sector diversification between urban, rural and urbanising settlements emphasises the importance of local factors.

Considering the wider historiography, Simmons' and Schwartz's views on varying positive and negative effects are supported, as are claims of industrial rail involvement, decreasing settlement self-sufficiency (particularly in retail) and more specific aspects such as pub names.[207] Occupation and population are closely related through industry and commuting acting as migratory 'pull' factors, being further sustained by the lack of mechanisation in rural-based industries.[208] But this still depended on labour mobilisation and market demand

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[205] See Chapter 8.
[206] J. Little & P. Austin, 'Women and the Rural Idyll', *Journal of Rural Studies*, Volume 12, Issue 2 (April 1996), pp.101–111; Bushey Museum.
[207] Simmons, *Town and Country*, pp.19, 69, 276-7, 298; Schwartz, Gregory & Thévenin, 'Spatial History', *Journal of Interdisciplinary History*, pp.55-6, 58, 61, 70-1, 77, 84-6; G. Hawke, *Railway and Economic Growth in England and Wales 1840-1870* (Oxford, 1970), p.411; Johnson, *Industrial Archaeology*, p.24; Mills, *Trade Directories*, p.53; Simmons, *Victorian Railway*, p.192, Dyos & Aldcroft, *British Transport*, p.197; MoStA.
[208] Simmons, *Town and Country*, pp.60, 286; Mills, *Trade Directories*, pp.28-9, 30-1, 45; Goose & Short, *Historical Atlas*, p.56.

which, as the example of the straw industry showed, increasingly relied on transportation as a factor.[209]

Evaluating the hypotheses, road businesses and those associated with it were decimated by the railways, which in turn encouraged short-distance transportation, such as indirectly through distant stations or directly through railway omnibuses.[210] While the region showed the rise of transport-related employment, there was substantial variation between the case study locations. Local needs meant road travel never completely failed (barring Potton), while its extent before the coming of the railway meant that for the most rural locations with the fewest coaches, railways boosted road travel with little negative effect. So in this aspect railways benefitted rural settlements more than equivalent urban settlements until later in the period. Despite these variations, most case studies ultimately included growing numbers of transport businesses, often connecting distant stations or with settlements not directly connected to the railways.[211]

Hypothesis 7: Industries in the region generally pre-dated the railways so were not dependent on them for initial establishment. Once the railways were in place, though, industry was aided with material accessibility and migratory effects (for both employment and retail/marketing) in larger settlements.

Most case studies did not show the sudden creation of new primary business correlating with railway development - industrialising settlements generally attracted railways rather than vice versa.[212] The only cases where major change occurred were St Albans and Wolverton. The former lost its coaching trade and later straw-work, while Wolverton gained its railway works – not railway 'facilitation' but directly connected.[213] Growth in the coal trade was one of the most universal effects aiding industrialisation, but Quainton showed that this and rail

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[209] Johnson, *Industrial Archaeology*, p.24; *A History of the County of Buckingham: Volume 2* (1908), p.127; E. Wrigley, 'Men on the Land and Men in the Countryside: Employment in Agriculture in Early-Nineteenth Century England', in L. Bonfield, R. Smith & K. Wrightson (eds.), *The World We Have Gained: Histories of Population and Social Structure* (Oxford, 1986), p.296; Casson, *First Railway System*, p.317; *A History of the County of Buckingham: Volume 2* (1908), pp.113-4; *A History of the County of Hertford: Volume 4* (1971), pp.254-5; *A History of the County of Bedford: Volume 2* (1908), pp.121-2; Wrigley, *Early Censuses*, pp.29-30.
[210] Simmons, *Town and Country*, p.285; Mills, *Trade Directories*, p.77; Barker & Savage, *Transport*, p.63; Leleux, *Regional History*, Vol. 9, p.10. See Chapter 8.
[211] See the stagecoach hypothesis: Regional Summary and Chapter 8.
[212] HALS DE/P/E498 - Prospectus for the Luton, Dunstable & Welwyn Junction Railway ; Casson, *First Railway System*, p.17; Dyos & Aldcroft, *British Transport*, p.183.
[213] See Chapters 1 and 12.

provision alone did not always alter rural occupational form.[214] Therefore, railways were not central to the start of industrialisation.

However, the evidence suggests railways, often built specifically to tap into and encourage trade, did exhibit a range of subsequent effects. Luton and St Albans both saw declining levels of agricultural-based occupations in preference to straw-work. But with the MR connecting them, the straw industry decreased in St Albans in favour of Luton, as railways enabled easier movement of materials and makers so eliminating the need for two large straw centres in close proximity.[215] The difference between main and branch lines was itself a factor, but the start of development before the railways meant there were many different forces initiating and later affecting expansion. So despite not triggering the beginning of industrial work, railways showed varying degrees of both positive and negative effects, but primarily through 'facilitating' localised non-railway factors.

Hypothesis 8: The period saw the first vestiges of commuting and the very beginnings of suburbanisation.

With most commuting developing after the 1880s, well after most lines were complete, the timing owes much to the 'Cheap Trains Act' (1883), while its positioning required three primary factors. As with industry, a difference between branch and main lines was found, with commuting only really growing with direct services. Secondly, local geography was vital; greater commuting the closer to London or a major settlement with growing urban jobs (such as Watford/Bushey). Lastly, it was dependent on the main occupations of the settlement; whether sufficient employment was already present or, conversely, declining. For example, St Albans' straw industry diminished, but the direct MR also allowed easier and faster commuting.[216] Luton was farther away and with a substantial industry, the MR finances showing primarily goods traffic, so had less.[217] This limits Leleux's view of commuting aiding Luton's late railways, but supports his other claim of Luton being 'over-

[214] Simmons, *Town and Country*, p.41; Hawke, *Economic Growth*, p.411.
[215] Leleux, *Regional History*, Vol. 9, pp.13, 30.
[216] Freeman, *St Albans*, pp.227, 231. See Chapter 10.
[217] TNA RAIL 491/672, RAIL 491/674, RAIL 491/675 - Midland Railway Company Records, Traffic and Expenses at Stations.

dependent' on straw-work.[218] While both towns had some commuting with their early branch lines, this was limited by indirectness and pre-1883 fares.[219]

Concerning suburbanisation, the number of building trades present varied decisively; the rural villages (Quainton, Potton, Bushey) decreased while the towns (Wolverton, Luton, St Albans) grew. This shows that larger urban settlements were more likely to expand, especially considering growing retail and professional businesses that would serve new suburbs.[220] Eastern St Albans most plainly developed through commuting as the straw industry declined and London became more accessible, while 'New Bushey' became a commuter suburb around its station as agriculture diminished. Although a slight exception as a small village, Bushey's 'scenic' appeal is similar to opinions of St Albans, while access to Watford as well as London gave urban benefits as well as job opportunities, hence the lower number of Bushey builders.[221] Railways were highly important, and while the popularity of Bushey was much due to Herkomer, he was himself attracted by direct access by rail to London.[222] Therefore, not only is the hypothesis supported but the wider historiographical view of facilitating 'chains of consequence' is defended.[223]

Hypothesis 9: Parts of the region saw the beginning of a shift from agricultural to urbanised occupations, correlating with improvements in railway services. Equally, the most rural areas with no prior industrial activities saw greater decline, especially in population.

Commuting already demonstrated rising urbanisation with rail development, coupled with general decline in agriculture, but growing directory references (c.1850s) to farmers through social awareness, before falling away, complicates the issue.[224] Railways had more involvement in industry than agriculture, allowing for market gardens where they actively

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[218] Leleux, *Regional History*, Vol. 9, pp.13, 30.
[219] K Scholey, *Hertfordshire's Lost Railways* (Glasgow, 2003), p.43; Jenkins, *St Albans Branch*, p.21.
[220] Dyos & Aldcroft, *British Transport*, p.197.
[221] Bradshaw, *Tours, Section III*, p.4.
[222] Payne, *Bushey*, pp.15, 19, 21; Forsyth, *Watford Junction*, p.10; Watford Museum.
[223] Hawke, *Economic Growth*, p.411; Simmons, *Victorian Railway*, p.324; Dyos & Aldcroft, *British Transport*, p.215; Gourvish, *Railways Economy,* p.33; B.R. Mitchell, 'The Coming of the Railway and United Kingdom Economic Growth', *The Journal of Economic History*, Vol. 24, No. 3 (Sep., 1964), p.316; P. O'Brien, *The New Economic History of the Railways* (London, 1977), p.100; Schwartz, Gregory & Thévenin, 'Spatial History', *Journal of Interdisciplinary History*, p.70.
[224] Drake & Finnegan, *Community History*, p.61.

encouraged agriculture with more traffic than other rural areas.[225] But the metal and wood-working sectors revealed falling levels of rural trades, being replaced – where the sectors were not falling – with urban businesses.

Similarly, retail and professional businesses in rural settlements diminished where more urban alternatives were accessible; these urban examples expanding. Wolverton and St Albans, however, initially showed lower levels than expected for towns – examples of accessibility reducing local dependency. But as railways grew in number and relative importance, so retail and professional businesses served a wider area. Bushey revealed a falling percentage of professional businesses (pre-1882), as expected near Watford, but the retail sector continually expanded despite being a rural village – Herkomer and commuting the explanation. Potton also demonstrated stability, likely through its market gardening. Illustrating Simmons' view on shifting market influences, these also enforce the importance of local geography.[226] Comparing the case studies' urban occupations with population, the most rural experienced dropping population growth, excluding Bushey, and limited jobs coupled with rail access to urban areas supports the migration explanation.[227]

The case studies showed examples of occupational change towards more 'urban' sectors and there was a correlation with population change. But as the industrialising sectors showed, this began before the railways and while there was urbanisation (shown at a countywide level) this seldom represented continual advancement. For example, St Albans' stagecoaches demonstrated a major negative impact with railways actively harming semi-urban occupations before assisting through commuting. While there were connections with railway development, they were not always beneficial, and most changes followed other more important factors with their own rail involvement, notably market gardens, commuting and the decline of coaching. So while the facilitator historiography is supported, this hypothesis of rail-led urbanisation has only limited application and the railways for the most part had only a general economic effect alongside other more important factors. This relatively inconclusive statement mirrors many studies; noting railway impacts in this sphere are easy to 'underestimate' or 'exaggerate', railways did 'little more than cement existing patterns'

[225] Hawke, *Economic Growth*, p.411.
[226] Simmons, *Town and Country*, p.19; Casson, *First Railway System*, p.324; Dyos & Aldcroft, *British Transport*, p.198. See the commuting hypothesis: above and Regional Summary.
[227] Simmons, *Town and Country*, p.298; Schwartz, Gregory & Thévenin, 'Spatial History', *Journal of Interdisciplinary History*, p.56; Drummond, *Crewe*, p.21. See Chapter 11.

rather than 'lead to a wavelike profusion of new enterprises' as once thought.[228] As Simmons concluded, outside 'railway towns' 'it is much harder to isolate the part played by railways', so being 'unanswerable' to give exact contributions considering national and local factors.[229] But as Gourvish, Church and Schwartz concluded, railways were still important, 'propelling' the economy rather than forging its own.[230]

Although the case studies' urbanisation was the result of a myriad of factors, the contribution of the railways being of varying importance, they were a major component of industrial and commuter activity. Due to what was in some cases limited rail contribution, the lack of uniform effects shows how settlements were capable of exhibiting wildly differing experiences, even acting both negatively and beneficially within only a short period. But these variations emphasise that for all the effects that railways could have, particularly in helping damaged economies to regenerate, local occupations could equally affect the railway, being the difference between their commercial success and failure.[231] Quoting Schwartz:

'However modest was the impact of railways on the performance of the economy or the agrarian sector as a whole, their effects on rural communities and farmers appear highly significant.'[232]

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[228] Gourvish, *Railways Economy,* pp.31, 57; O'Brien, *New Economic History*, p.100; Mitchell, 'Railway Growth', *Journal of Economic History*, p.316; R. Baxter, 'Railway Expansion and its Results', *Journal of the Statistical Society*, XXIX (1866), p.566; Barker & Savage, *Transport*, p.79; R. Church, *The Victorian Boom 1850-1875* (Economic History Society, 1975), p.31.
[229] Simmons, *Town and Country*, p.17; M. Casson, *The Determinants of Local Population Growth: A Study of Oxfordshire in the Nineteenth Century*, EHS Annual Conference 2011, p.5.
[230] Gourvish, *Railways Economy,* p.40; Church, *Victorian Boom*, p.34; Schwartz, Gregory & Thévenin, 'Spatial History', *Journal of Interdisciplinary History*, p.58; Mitchell, 'Railway Growth', *Journal of Economic History*, p.316.
[231] Simmons, *Town and Country*, pp.20, 298; Casson, *First Railway System*, pp.17, 324; Dyos & Aldcroft, *British Transport*, p.163.
[232] Schwartz, Gregory & Thévenin, 'Spatial History', *Journal of Interdisciplinary History*, p.57.

Chapter 10: Land Use in the Case Studies

As Britain became more industrial and urban, greater need was placed on rural areas to supply food, but in the process towns within these areas became less provincial as they grew. Transport was central to this – without it, modern views of 'urban' life were simply not possible. Although not begun by railways, the speed they later enabled plus ever-growing accessibility with rising mileage due to the manias, quickened the process, resulting in overall regional development being substantially affected by this catalyst. But with rail-connected urban markets encouraging rural agriculture as much as industrial urbanisation (such as market gardens until the introduction of cheaper imports) and the contrary issues of agricultural depression and rising employment mobility, did land use change in rural areas through railway development or, conversely, did it solidify their position as Britain's 'breadbasket'?[1]

Methodology

Akin to the countywide *Land of Britain* Surveys, agricultural returns were collated to show arable and pasture development for the case studies.[2] Commencing in 1866 (previously being unreliable), they are 'not strictly comparable' in their raw form so were retabulated to present an overview.[3] OS Maps were merged to show the extent and direction of sprawl, but particularly with differing dates of railway construction, only the later decades were mapped so allowing for stations to become established and any resultant time lag with building.[4] Major industry areas were also identified, being compared to the *Victoria County History*,

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[1] J. Simmons, *The Victorian Railway* (London, 1991), pp.354-5; R. Schwartz, I. Gregory & T. Thévenin, 'Spatial History: Railways, Uneven Development, and Population Change in France and Great Britain, 1850-1914', *Journal of Interdisciplinary History*, Volume 42, Number 1 (Summer 2011), pp.71, 84-6; T.C. Barker & C.I. Savage, *An Economic History of Transport in Britain* (London, 1974), p.81; W. Ashworth, *An Economic History of England 1870-1939* (London, 1960), p.128; H. Dyos & D. Aldcroft, *British Transport: An Economic Survey from the Seventeenth Century to the Twentieth* (Leicester, 1971), pp.22-4, 214; J. Moore, *The Impact of Agricultural Depression and Land Ownership Change on the County of Hertfordshire, c.1870-1914* (University of Hertfordshire, 2010), pp.15, 62.

[2] For example: TNA MAF 68/6, MAF 68/231, MAF 68/687, MAF 68/1257, MAF 68/1827 - Parish Summaries of Agricultural Returns, Buckinghamshire.

[3] W. Stephens, *Sources for English Local History* (Manchester, 1973), pp.123, 126-7.

[4] M. Casson, *The Determinants of Local Population Growth: A Study of Oxfordshire in the Nineteenth Century*, EHS Annual Conference 2011, p.5.

and the Bartholomew and Wilson *Gazetteers* were utilised to identify whether land ownership was as significant as suggested.[5]

<u>Wolverton</u>

Always the exception, 'New Wolverton' depended on industry. The wider parish, however, remained wholly agricultural; the new town itself formerly being fields.[6] Summarised as 'mixed' agriculture in the *Land of Britain* Survey and *VCH*, agricultural returns show pasture was more prevalent, although there was much arable working (Table 33), both increasing slightly 1866-70.[7] This correlates with the wider region (Fig 19, Chapter 5), although growth is probably due to 'increased accuracy in the returns rather than an increase in the area cropped'.[8]

Table 33: Acreage under arable cultivation or pasture in Wolverton, 1866-1900.

	ARABLE	PASTURE	TOTAL
1866	598	1,089.75	1,687.75
1870	793	1319	2112
1880	795.75	1,308.25	2104
1890	690.5	1,382.25	2,072.75
1900	469.75	1,262	1,731.75

TNA MAF 68/6, MAF 68/231, MAF 68/687, MAF 68/1257, MAF 68/1827 - Parish Summaries of Agricultural Returns, Buckinghamshire.

With slight growth c.1866-70 and stable during the 1870s Depression, arable acreage (primarily wheat) decreased after 1880 in preference of pasture, most commonly for sheep.[9] Soil data correlates (Fig 20, Chapter 5), as it does for each case study, so need not be repeated.

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[5] J. Wilson, *Imperial Gazetteer of England and Wales* (1870-72); J. Bartholomew, *Gazetteer of the British Isles* (1887); D. Mills, *Rural Community History from Trade Directories* (Aldenham, 2001), pp.90-1; K. Snell & P. Ell, *Rival Jerusalems: The Geography of Victorian Religion* (Cambridge, 2000), pp.440-8; www.visionofbritain.org.uk

[6] B. Dunleavy, *The Lost Streets of Wolverton* (2010), p.4; B. West, *The Railwaymen - Wolverton* (Buckingham, 1987), inner map; Milton Keynes Museum.

[7] D. Fryer, Part 54 Buckinghamshire, in L. Dudley Stamp, *The Land of Britain: The Report of the Land Utilisation Survey of Britain* (London, 1942); Parishes: Wolverton, *A History of the County of Buckingham: Volume 4* (1927), pp.505-509.

[8] Stephens, *Local History*, pp.126-7.

[9] Schwartz, Gregory & Thévenin, 'Spatial History', *Journal of Interdisciplinary History*, pp.56, 70-1.

These results show no direct railway correlation, any rail involvement in these aspects likely being at a regional level rather than changing in individual parishes. Increasing housing and Works expansion after 1866 could explain the later decreasing total acreage under cultivation, though similarities with other towns suggests this was general urbanisation, not a specific 'railway town' issue. The *VCH* stated 'only a fifth of the area of the parish is under cultivation', so despite around 2,000 acres of agriculture the parish was primarily industrial.[10]

Fig. 69: Development in Wolverton, 1881 (white) to 1900 (red).

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[10] Parishes: Wolverton, *A History of the County of Buckingham: Volume 4* (1927), pp. 505-509.

Urban development was plainly vital and railway-centric; some 'railway towns' did not build housing but for those that did, Wolverton was the blueprint.[11] Housing concentrated to the south, originally alongside the line. With expansion, it developed block by block east-west away from the railway (Fig. 69), closely matching Hoyt's geographic model, while 'New Bradwell' expanded east-west towards Wolverton and the main line, though not along the branch line.[12] The direction of expansion was directly due to the land the Radcliffe Trust was prepared to sell.[13]

Demonstrating the increasingly urbanising nature of the settlement, along with direct railway involvement therein, railway-supported schools were created rather than depending on Stony Stratford.[14] Similarly, 'Old Wolverton' church was not used and the original room in the Works deemed insufficient so the first ever railway-built church was erected in 1844.[15] The workers initiated other facilities such as chapels. Found in many towns, even referenced by Gilbert & Sullivan, Mechanics' Institutes were significant in providing a library (here supplementing an earlier reading room), social activities and the first adult education.[16] In Wolverton it was a centre of urban life, but was important nationally as one of the earliest (1840), established before many companies began improving staff education. While a dedicated building (known as the Science & Art Institute) was only completed in 1864, funding began with a nationally-publicised engine shed soiree in 1849.[17] Supported by the

[11] A. Peck, *The Great Western at Swindon Works* (Royston, 1998), p.10; B. Turton, 'The Railway Towns of Southern England', *Transport History*, 2 (1969), pp.108, 111-2, 117-8.

[12] http://geographyfieldwork.com/UrbanModelsMEDCs.htm

[13] TNA RAIL 384/6 LBR/LNWR Board Minutes (Nos 2634-3449) - Minute No. 3225, 8/5/1846; Dunleavy, *Lost Streets*, p.149.

[14] TNA RAIL 384/4 - LBR/LNWR Board Minutes (Nos 1005-1809) - Minutes No. 1311, 12/6/1840 and 1398, 7/8/1840; TNA RAIL 1110/260 – London & Birmingham Railway Shareholders Reports – Report for 12/2/1847, TNA RAIL 1110/269 – London & Birmingham Railway Shareholders Reports – Report for 17/2/1860; P. Kingsford, *Victorian Railwaymen: The Emergence and Growth of Railway Labour, 1830-1870* (London, 1970), p.73; P. Richards, 'The Influence of the Railways on the Growth of Wolverton, Buckinghamshire', *Records of Buckinghamshire*, XVII, 2 (1962), p.117; M. Robbins, *The Railway Age* (London, 1962), p.46; Simmons, *Victorian Railway*, p.189; J. Simmons, *The Railway in Town and Country 1830-1914* (Newton Abbot, 1986), p.172; West, *Railwaymen*, p.107.

[15] TNA RAIL 384/4 - LBR/LNWR Board Minutes (Nos 1005-1809) - Minute No. 1336, 26/6/1840; TNA RAIL 1110/260 – London & Birmingham Railway Shareholders Reports – Report for 7/8/1840; TNA RAIL 1110/269 – London & Birmingham Railway Shareholders Reports – Report for 17/2/1860; Kingsford, *Victorian Railwaymen*, p.75; Simmons, *Town and Country*, pp.172, 194; Dunleavy, *Lost Streets*, p.120; F. Markham, *History of Milton Keynes and District Volume 2* (Luton, 1986), p.84; *A Brief Tour of St George the Martyr Wolverton*, http://www.mkheritage.co.uk/wsah/hood/docs/aqueductbook6.html

[16] 'The Sorcerer', in *The Complete Plays of Gilbert and Sullivan* (London, 1997), p.62; Stephens, *Local History*, p.159.

[17] F. Hyde, *Wolverton: A Short History of its Economic and Social Development* (Wolverton, 1946), pp.33-4; Markham, *Milton Keynes*, p.84; Dunleavy, *Lost Streets*, pp.15, 124-6; West, *Railwaymen*, pp.29, 38, 108; Simmons, *Victorian Railway*, p.189; MKM.

Company, these urban facilities highlight the debated 'paternal' historiography of civic duty and social control railway companies attempted to enforce on their workers.[18]

The mapped 1881-1901 period (Fig. 69) saw the construction of the loop line but Works and envelope factory expansion shows industry concentrating to the north of the town, subdivided by the Stratford Road, and between the old and new main lines.[19] The few exceptions to this north-south industry-housing divide demonstrate the extreme control of the landowners. Bury, Gas, Walker, Cooke & Garnett Streets were built around the original engine shed, but were encircled by Works expansion (Figs. 43&44, Chapter 8) and demolished piecemeal (1855-c.1890).[20] Similarly, the managers' villas (a common railway town feature) were located away from the line to the east, but blocked the planned loop; they were subsequently demolished.[21] This shows the power of the landowning railway, as even the highest echelon of the Works had to bend to the Company. The *Gazetteers* showed Wolverton was a 'close' parish, and the difficulties between the Radcliffe Trust and London & Birmingham Railway/London & North Western Railway, leading to the development of 'New Bradwell', prove the tremendous impact these landowners had on the area.[22]

The town developed based on the needs of the railway it served. Originally only houses sufficient for the number of workers were built; its siting was purely for the railway's convenience.[23] But as more rolling stock was needed, the Works expanded regularly and new workers needed housing and public amenities.[24] 'Gaining a pool of skilled labour' was their primary concern, and until 1878 everything needed was financed by the Company, thereafter

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[18] Simmons, *Town and Country*, p.194; D. Drummond, *Crewe: Railway Town, Company and People 1840-1914* (Aldershot, 1995), p.16; B. Barber, 'The Concept of the Railway Town and the Growth of Darlington 1801-1911: A Note', *Transport History*, 2, 3 (1970), p.284; http://www.lnwrs.org.uk/Members/Jour0308/jour030818.php

[19] Dunleavy, *Lost Streets*, pp.42, 149; B. West, *The Trainmakers - the Story of Wolverton Works* (Buckingham, 1982), p.55; Markham, *Milton Keynes*, pp.177-8, 188; F. Markham, *The Nineteen Hundreds* (Buckingham, 1951), pp.19-20; Parishes: Wolverton, *A History of the County of Buckingham: Volume 4* (1927), pp. 505-509; MKM. See Chapter 9.

[20] Dunleavy, *Lost Streets*, pp.5, 34, 42-3; Markham, *Milton Keynes*, p.187; P. Richards & B. Simpson, *A History of the London and Birmingham Railway Volume 2* (Witney, 2009), p.38; Markham, *Nineteen Hundreds*, p.20.

[21] Dunleavy, *Lost Streets*, p.97; West, *Railwaymen*, p.112; http://wolvertonpast.blogspot.co.uk/search/label/Villas ; http://www.wolvertonsecretgarden.co.uk.btck.co.uk/News

[22] Bartholomew, *Gazetteer*; Wilson, *Imperial Gazetteer*; Parishes: Bradwell, *A History of the County of Buckingham: Volume 4* (1927), pp.283-288.

[23] Drummond, *Crewe*, pp.10, 119; Barber, 'Darlington', *Transport History*, p.283; Turton, 'Southern', *Transport History*, p.110.

[24] Drummond, *Crewe*, p.10; Simmons, *Town and Country*, p.172 ; MKM.

by worker-established local building societies.[25]   A landowner in its own right, the railway was the centre of local urban and industrial development directly and indirectly; the initial 'change' as proposed in the new model, impacting and interconnecting land use, population and occupation.

Quainton

Isolated but for the railway, Quainton Road became an important rail centre, but the village saw little benefit. As the *VCH* emphasised and matching the regional trend, pasture was the primary parish land use (Table 34) and although mostly sheep, cattle was rising in number as the area became known for milk to London.[26] Dependant on the railway, pasture acreage grew after the 1868 station but by substantially more in 1870-80 (over 890 acres). While much was due to improving accuracy in the returns, pasture was nonetheless expanding – 1880-90 greater than the misleading total growth.[27] Matching the 1871 opening of the Wotton Tramway, this line had a great milk traffic, with 840 vans of milk churns transported in 1878 alone.[28] Considering to the 1870s depression, arable land diminished throughout (temporarily recovering circa 1880) while pasture continually grew, impacting on the number of cattle in London and aiding urban diet.[29] The abandoned windmill further shows this change; the railway encouraging pasture but hindering arable as a result.

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[25] Drummond, *Crewe*, p.10; West, *Trainmakers*, pp.55, 102; Markham, *Milton Keynes*, p.190; Markham, *Nineteen Hundreds*, p.14; http://www.mkheritage.co.uk/wsah/hood/docs/aqueductbook6.html

[26] K Scholey, *Buckinghamshire's Lost Railways* (Glasgow, 2004), pp.13, 22; Simmons, *Victorian Railway*, pp.325-3; Fryer, *Buckinghamshire Survey*, pp.48, 93; Schwartz, Gregory & Thévenin, 'Spatial History', *Journal of Interdisciplinary History*, pp.73, 84; Parishes: Quainton with Shipton Lee, *A History of the County of Buckingham: Volume 4* (1927), pp.92-99.

[27] Stephens, *Local History*, pp.126-7.

[28] TNA MAF 68/231 & MAF 68/687 - Parish Summaries of Agricultural Returns, Buckinghamshire, 1870 & 1880; J. Blackman, 'The Cattle Trade and Agrarian Change on the Eve of the Railway Age', *The Agricultural History Review*, Vol. 23, No.1 (1975), pp.49, 61; B. Simpson, *The Brill Tramway* (Oxford, 1985), pp.18, 37; Scholey, *Buckinghamshire's Railways*, pp.13, 22; K. Jones, *The Wotton Tramway* (Tarrant Hinton, 1974), pp.9, 59; Buckinghamshire Railway Centre.

[29] Dyos & Aldcroft, *British Transport*, p.215; Simmons, *Town and Country*, pp.50-1; Simmons, *Victorian Railway*, pp.352-4; P. Atkins, 'The Growth of London's Railway Milk Trade, c. 1845-1914', *Journal of Transport History*, New Series 4 (1978), p.220; P. Atkins, 'The Retail Milk Trade in London, c.1790-1914', *Economic History Review*, New Series, Vol. 33, No. 4 (Nov., 1980), pp.529, 533.

Table 34: Acreage under arable cultivation or pasture in Quainton, 1866-1900.

	ARABLE	PASTURE	TOTAL
1866	1,162.75	2,569.75	3,732.5
1870	1,007	2,895	3902
1880	1,116.5	3,791.75	4,908.25
1890	748.25	3,960.5	4,708.75
1900	549.5	4,349.5	4,899

Fig. 70: Development in Quainton, 1880 (white) to 1899 (red).
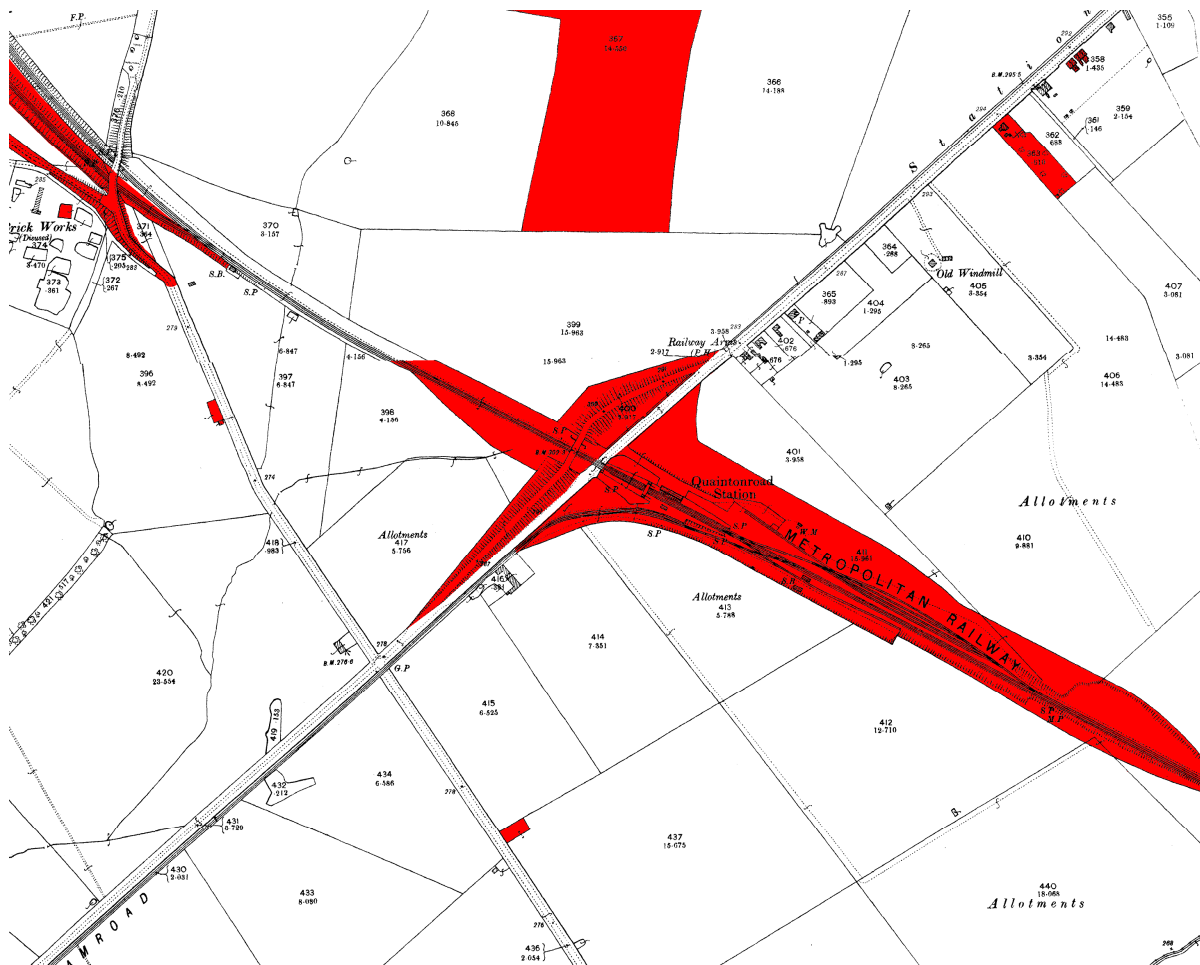
Stations usually became the centre of settlement development, in some cases gravitating distant development towards it.[30] However, Quainton Road did not (Fig. 70). Discounting

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[30] Dyos & Aldcroft, *British Transport*, p.229; Simmons, *Victorian Railway*, p.331; Simmons, *Town and Country*, pp.68, 144; T.R. Gourvish, *Railways and the British Economy 1830-1914* (London, 1980), p.31; M.

the GCR junction and associated yard/station/bridge developments, the only changes were a few new houses, two barns and the abandonment of the windmill. While there was some earlier development, the 'Railway Arms' pub name showing rail influence on it, this too was minimal.[31]

Even today being sparsely built-upon, a brickworks was the sole nearby 'industry', not rail connected, correlating with the lack of industrial businesses in the directories and the unstable population.[32] The only noteworthy development was the railway itself, particularly improving the Brill connection so benefitting local links to London markets. Amenities listed in the *Gazetteers* and *VCH* were few, although church/chapels, almshouses and a small school were present.[33] The *Imperial Gazetteer* stated 'the property is divided among a few', suggesting, however limited, that the parish was 'open'.[34] Minor expansion by the station supports this, though the close proximity to Stowe House and Waddesdon Manor suggests some landowner intervention, likely outside the village itself (where the railway lies).[35] Demonstrated by the rejection of an LBR route via Quainton by the First Duke of Buckingham, his grandson conversely became LNWR Chairman and built the Wotton Tramway privately – a major change in stance.[36]

The Metropolitan Railway had little effect on Quainton; there was no industrialisation nor urbanisation and the village remained untouched. Landowner and Aylesbury MP Sir Harry Verney claimed that local development 'would depend on the building of a railway'.[37] Although he would appear to have been wrong, the rurality that remained around Quainton was actually bolstered by rail transport of perishables, but the tramway had a greater local impact combined with the MetR than the latter formerly showed alone. In opening up the

Casson, *The World's First Railway System: Enterprise, Competition and Regulation on the Railway Network in Victorian Britain* (Oxford, 2009), p.324; M. Forsyth, 'Watford's Railway Housing', *The L&NWR Society Journal*, Vol. 6 No. 9, June 2011 pp.3-5; M. Forsyth, *The Railway at Watford Junction* (Watford, 1988), p.10.

[31] *Kelly's Directory of Buckinghamshire*, 1903; http://digimap.edina.ac.uk/

[32] See Chapters 9 and 11.

[33] Bartholomew, *Gazetteer*; Wilson, *Imperial Gazetteer*; Parishes: Quainton with Shipton Lee, *A History of the County of Buckingham: Volume 4* (1927), pp.92-99.

[34] Wilson, *Imperial Gazetteer*.

[35] Simpson, *Brill*, pp.7, 15; R. Schofield, *Along Rothschild Lines: The Story of Rothschild & Railways Across the World* (London, 2010), p.21.

[36] TNA RAIL 1110/269 – LNWR Reports; B. Simpson, *The Dunstable Branch* (Banbury, 1998), p.34; L. Oppitz, *Lost Railways of the Chilterns* (Newbury, 1991), pp.73-82; Jones, *Wotton Tramway*, p.3; http://www.dukesofbuckingham.org.uk/dukes/first_duke.htm ; http://www.dukesofbuckingham.org.uk/dukes/third_duke.htm

[37] B. Simpson, 'Rails through Buckingham', *Steam Days*, August 2011, pp.499-509; Jones, *Wotton Tramway*, p.3.

London milk market, railways aided pasture land use, so contrary to other extreme rural areas that suffered heavily, the railway acted as a stabilising agent entrenching the area in its agriculture.[38] The MetR takeover of the Aylesbury & Buckingham Railway was hoped to extend commuting to Verney Junction, but despite rising importance as a junction, rural pasture life remained unchallenged.[39] Ultimately the line closed in 1966.[40] To quote John Betjeman:

'The houses of Metroland never got as far as Verney Junction. Grass triumphs, and I must say, I'm rather glad.'[41]

Potton

Developing as a market garden, Potton's railway origin was through agriculture and land ownership. Predominantly arable, acreage was stable (Table 35) bar a short-lived increase in 1890 when the main produce was listed as 'market gardens'.[42] As the level in 1900 decreased and was predominantly 'potatoes', slight format variations might explain this, but nonetheless pasture was always minor.[43] The railway predated the returns (1857, 1862), but as it was explicitly constructed to transport produce, it undoubtedly aided market gardening in an area with elsewise-limited transport – unusually for a small branch line with few passengers actually making a profit.[44] Again there was little evidence for changing land usage through the 1870s agricultural depression.

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[38] Simmons, *Town and Country*, pp.50-1, 298; Simmons, *Victorian Railway*, pp.325-3; Blackman, 'Cattle Trade', *The Agricultural History Review*, pp.49, 61; Atkins, 'London Milk', *Journal of Transport History*, p.220; Jones, *Wotton Tramway*, p.9.
[39] See Chapter 8.
[40] BRC; https://ubp.buckscc.gov.uk/SingleResult.aspx?uid=MBC24866
[41] J. Betjeman, *Metroland.*
[42] *Kelly's Directory of Bedfordshire*, 1890; Parishes: Potton, *A History of the County of Bedford: Volume 2* (1908), pp.237-242.
[43] TNA MAF 68/1825 - Parish Summaries of Agricultural Returns, Bedfordshire, 1900; Stephens, *Local History*, pp.126-7.
[44] C. Awdry, *Encyclopaedia of British Railway Companies* (Frome, 1990), pp.60, 100-1; F. Cockman, *The Railway Age in Bedfordshire*, Publications of the Bedfordshire Historical Record Society, 53 (Bedford, 1974), pp.34-5, 37; L. Oppitz, *Lost Railways of the Chilterns* (Newbury, 1991), p.144; B. Simpson, *The Brill Tramway* (Oxford, 1985), p.7; B. Gwynne, 'Shannon: Steaming through History', *Steam Railway*, No. 391 (August 2011), pp.72-3; http://www.disused-stations.org.uk/p/potton/ See Chapter 8 and Appendix II.

Table 35: Acreage under arable cultivation or pasture in Potton, 1866-1900.

	ARABLE	PASTURE	TOTAL
1866	1,668.75	158.5	1,827.25
1870	1,783.34	225.75	2,009.09
1880	1,769.5	285.25	2,054.75
1890	2,349.25	193	2,542.25
1900	1,693.75	240.75	1,934.5

TNA MAF 68/2, MAF 68/229, MAF 68/685, MAF 68/1255, MAF 68/1825 - Parish Summaries of Agricultural Returns, Bedfordshire.

Fig. 71: Development in Potton, 1884 (white) to 1901 (red). Note: The northern pit was operational in 1884 but closed by 1901.

The first station was on private land to the south with few surrounding buildings, but moved to the west with the Bedford & Cambridge Railway.[45] Rather than a branch terminus Potton became a main line through-station, but while some buildings were constructed around the station, this was limited in extent. In the following decades there was only a small amount of development around it (Fig. 71), the largest being 'sand pits' (likely coprolite digging) and some housing to the north.[46]

But the town as a whole had virtually no expansion at this time, showing that what little change occurred had still gravitated towards the station.[47] Furthermore, claims of Potton failing to recover economically following the 1783 fire are supported. Allowing for developing a more diverse occupational structure through retail, market gardening was central - the railway stabilising rather than weakening agriculture.[48] Considering industry, the maps reveal only the pits (one exhausted) and a parchment works, the latter being the other side of the town.[49] Industry was thus both limited and not dependant on the railway for its geography. As a market town there were schools and chapels pre-railway, plus a fire station.[50]

Captain Peel was instrumental to the coming of Potton's railway, so land ownership was intrinsically connected, although here encouraging from the outset.[51] An 'open' parish by the 1870s, this is supported by the redirection of the line by the B&CR with no local

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[45] TNA RAIL 1076/1/2 - Prospectus for the Bedford, Potton and Cambridge Railway, 1859; Oppitz, *Lost Railways*, p.144; M. Eckett, *Signals – A Railway Miscelleny* (Copt Hewick, 2008), p.212; http://www.disused-stations.org.uk/p/potton/
[46] *A History of the County of Bedford: Volume 2* (1908), pp.117; http://digimap.edina.ac.uk ; http://www.bedfordshire.gov.uk/CommunityAndLiving/ArchivesAndRecordOffice/CommunityArchives/Potton/EducationInPotton.aspx
[47] R. Leleux, *A Regional History of the Railways of Great Britain, Volume 9 The East Midlands* (Newton Abbot, 1976), p.28.
[48] Wilson, *Imperial Gazetteer*; P. Ibbett, *The Great Fire of Potton 1783*, Potton History Society Research Report No. 2 (Potton, 1983); P. Ibbett, *Potton Bedfordshire: A Brief History* (Potton, 2000), p5; K. Scholey, *Bedfordshire's Lost Railways* (Glasgow, 2003), p.10; Eckett, *Signals*, p.211; Oppitz, *Lost Railways*, p.144; Cockman, *Bedfordshire*, pp.39, illustration 11 – market gardeners at Potton Station.
[49] *Kelly's Directory of Bedfordshire*, 1885; http://digimap.edina.ac.uk
[50] Wilson, *Imperial Gazetteer*; Cockman, *Bedfordshire*, pp.112-3; Parishes: Potton, *A History of the County of Bedford: Volume 2* (1908), pp.237-242; http://www.bedfordshire.gov.uk/CommunityAndLiving/ArchivesAndRecordOffice/CommunityArchives/Potton/EducationInPotton.aspx ; http://www.bedfordshire.gov.uk/CommunityAndLiving/ArchivesAndRecordOffice/CommunityArchives/Potton/PottonFireStations.aspx
[51] Eckett, *Signals*, p.210; http://www.bedfordshire.gov.uk/CommunityAndLiving/ArchivesAndRecordOffice/CommunityArchives/Potton/CaptainPeelsRailway.aspx

opposition.[52] But the Sandy & Potton Railway was built entirely on Peel's land, so earlier ownership of surrounding lands must have been more limited, especially considering Peel's estate was originally part of the much larger Sandye Place Estate.[53] Therefore, rail development was connected to broadening land ownership while – quite independently – the settlement saw a transformation from comparatively 'close' to more 'open' parish control.

Potton was foremost agricultural, and the railway aided its expansion. Industry was limited, but present and growing, as was some initial building expansion with wider land ownership. As suggested by the occupational data, the results show that while Potton remained distinctly rural the period saw the development of urban aspects, creating a rural-urban structure benefitting from the railway factor.

Luton

Although a major town, Luton had yet to reach its modern size so the parish contained much agricultural land (Table 36), notwithstanding the neighbouring parishes often amalgamated under Luton.[54] The immediate area was arable, mostly growing wheat, as was Luton, but many nearby Hertfordshire parishes practiced 'mixed' farming.[55] This variation showed some impact; 1870-80 pasture increased slightly while arable acreages dipped.[56] Total acreage 1880-90 subsequently fell by 975 acres, mostly in arable, while pasture remained stable.[57] With rapid urban expansion (Fig. 73) this was likely due to urbanisation/sprawl, rather than the earlier agricultural depression.[58] Although decreasing agriculture in the 1870s follows the 1868 MR opening this is probably coincidence – the 1858 Hertford, Luton & Dunstable Railway was followed by growth (likely errors in earlier returns).[59]

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[52] Although Gamlingay village's turnpike trust forced their station (north of Potton) to be 1.5 miles away - Cockman, *Bedfordshire*, p.38; Bartholomew, *Gazetteer*; Wilson, *Imperial Gazetteer*.

[53] http://mediafiles.thedms.co.uk/Publication/BH-GO/cms/pdf/PeelWALK%5B1%5D.pdf

[54] TNA MAF 68/2, MAF 68/229, MAF 68/685, MAF 68/1255, MAF 68/1825 - Parish Summaries of Agricultural Returns, Bedfordshire; http://www.bedfordshire.gov.uk/CommunityAndLiving/ArchivesAndRecordOffice/CommunityArchives/Luton/LutonIntroduction/LutonAdministrativeHistory.aspx

[55] E. Doubleday, *Hertfordshire: Survey Report and Analysis of County Development Plan, 1951* (Hertford, 1951), p.61; Parishes: Luton, *A History of the County of Bedford: Volume 2* (1908), pp.348-375

[56] TNA MAF 68/229, MAF 68/685 - Parish Summaries of Agricultural Returns, Bedfordshire, 1870 & 1880.

[57] TNA MAF 68/685, MAF 68/1255 - Parish Summaries of Agricultural Returns, Bedfordshire 1880 & 1890.

[58] ; Bartholomew, *Gazetteer*; *Luton: Straw Hat Boom Town 1890-1910* (Luton Museum Education Service), p.9; Wardown Park Museum.

[59] Stephens, *Local History*, pp.126-7.

Table 36: Acreage under arable cultivation or pasture in Luton, 1866-1900.

	ARABLE	PASTURE	TOTAL
1866	1,656	453.25	2,109.25
1870	2,510.34	643.5	3,153.84
1880	2,304.25	801.5	3,105.75
1890	1,324.25	806.5	2,130.75
1900	1,582.75	787	2,369.75

TNA MAF 68/2, MAF 68/229, MAF 68/685, MAF 68/1255, MAF 68/1825 - Parish Summaries of Agricultural Returns, Bedfordshire.

The MR finances present further details on livestock transportation.[60] Pasture was less important than arable in Luton, but the surrounding area was 'mixed' with many animals even in Luton.[61] Considering the traffic would have included this wider vicinity, the number of trucks grew overall (Fig. 72), demonstrating that although known for industry there was much pasture usage of Luton's MR station, so the railway had a wider sphere of influence on land use than just the immediate parish.[62]

Fig. 72: Luton and St Albans MR livestock truck numbers 1872-1900.
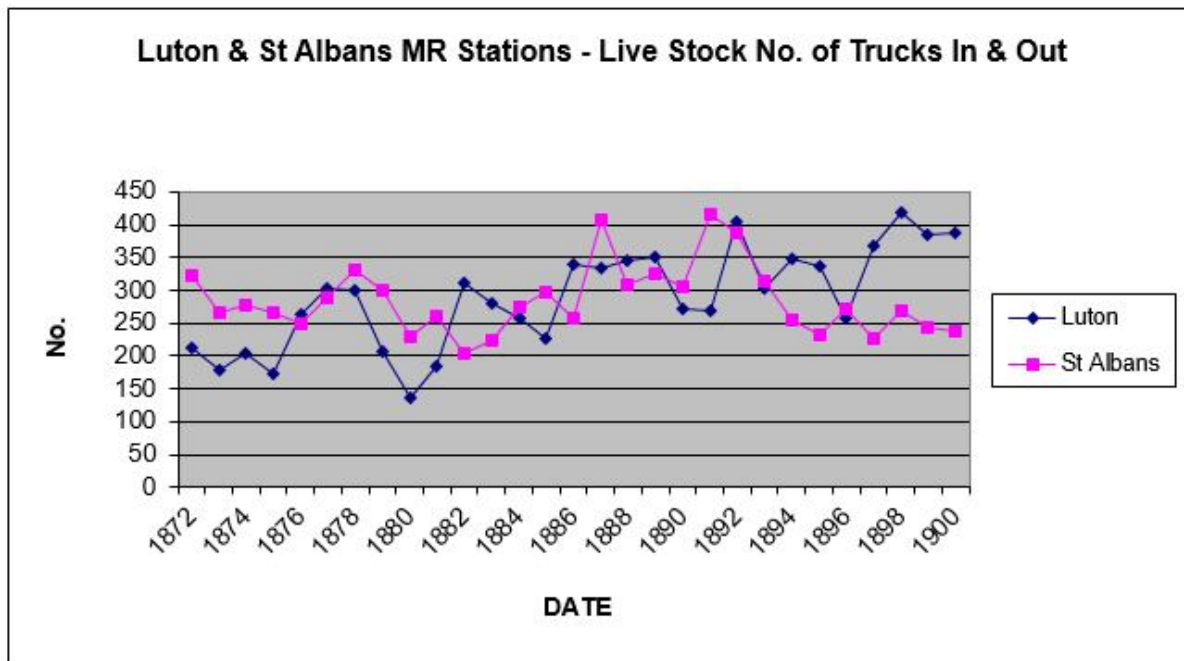
TNA RAIL 491/672, RAIL 491/674, RAIL 491/675 - Midland Railway Company Records, Traffic and Expenses at Stations.

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[60] TNA RAIL 491/672, RAIL 491/674, RAIL 491/675 - Midland Railway Company Records, Traffic and Expenses at Stations.
[61] Parishes: Luton, *A History of the County of Bedford: Volume 2* (1908), pp.348-375.
[62] G. Goslin, *The London Extension of the Midland Railway: the History of the St Pancras - Bedford Route* (Caernarfon, 1994), p.28; Scholey, *Bedfordshire's Railways*, p.28.

Urban sprawl occurred throughout the period in Luton and the near-central situation of the stations was very different to more rural locations.[63] The HL&DR/GNR Station was established 10 years before the MR, so the southern area by it was under a longer railway influence than the MR on the northern part. The railways arrived late though, so much development was already completed.[64] Nonetheless, by 1901 their effects on sprawl were clear. Around the GNR station by 1880 (Fig. 73), much was already built with little open land. However, empty spaces were being built up, with increasing sizes of construction area with distance from the station. They also followed the lines as much as possible.

Fig. 73: Development in Luton, 1880 (white) to 1901 (red). Note: The upper station is the MR and the lower the HL&DR /GNR.

The area north of the MR Station showed similar tendencies, but earlier in the process. Immediately by the station had already been built on, with expansion developing outwards on either side hugging the line. Interestingly, the spacing between houses (such as garden size) increased with distance in this northern area, akin to later suburban settlements.[65] The

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[63] Bartholomew, *Gazetteer*; Wilson, *Imperial Gazetteer*; WPM, Museum of St Albans; http://www.disused-stations.org.uk/l/luton_bute_street/

[64] Simmons, *Town and Country*, p.277; G. Woodward, *The Hatfield, Luton & Dunstable Railway (and on to Leighton Buzzard)* (Usk, 1977), p.7.

[65] D. Levinson, 'The Orderliness Hypothesis: The Correlation of Rail and Housing Development in London', *The Journal of Transport History*, Volume 29, Number 1, (March 2008), pp.98-114; Simmons, *Town and Country*, pp.59-60; Simmons, *Victorian Railway*, pp.324, 332.

farthest out experienced the least sprawl (such as the northern remainder of 'Great Moor' common land – once defended against Stephenson), while the space between the two lines (the other part of the 'Great Moor') was completely built over.[66] Therefore, decreasing building density with increasing distance and construction utilising land near the stations as efficiently as possible show geographic correlation to station positioning. As one of the main towns in Bedfordshire there were chapels, schools, a workhouse and other expected facilities, but the expansion of the MR goods yard facility (Fig. 73 right) raises an occupational issue.[67] Sources showed the GNR remained very active after the MR opened, especially for goods traffic as the MR originally concentrated on passengers.[68] Later MR services improved and goods competition grew as seen in the station finances (Fig. 54, Chapter 8) - when the new yard was built.[69] Growing non-agricultural occupational output (but also some agricultural - the cattle pens) and the rise of competitive railway service can thus be seen represented in the land use.[70]

Industrially, larger sites concentrated the around the lines, particularly the GNR-connected gasworks and boiler works. Smaller semi-industrial businesses were farther away, notably straw/dye works which did not require such immediate access – bulkiness of manufacture thus related to the level of rail access required.[71] The extent of sprawl is also highlighted by the growth of the main gasworks as further facilities were needed. Considering MR mineral tonnage, essentially fuel (for industry and housing but unlikely to be the gasworks as this was linked to the GNR) and straw bleaching agents (Fig. 74), the 1872-1900 growth of the town

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[66] Leleux, *Regional History*, Vol. 9, p.30; Simpson, *Dunstable Branch*, p.8; Woodward, *Hatfield, Luton & Dunstable,* p.6; Eckett, *Signals*, p.198; *Luton's Railways* (Bedford: Shire Hall, 1973), p.1.
[67] Bartholomew, *Gazetteer*; Wilson, *Imperial Gazetteer*; Parishes: Luton, *A History of the County of Bedford: Volume 2* (1908), pp.348-375;
http://www.bedfordshire.gov.uk/CommunityAndLiving/ArchivesAndRecordOffice/CommunityArchives/Luton/NonconformityinLuton/NonconformityInLuton.aspx ;
http://www.bedfordshire.gov.uk/CommunityAndLiving/ArchivesAndRecordOffice/CommunityArchives/Luton/EducationinLuton/EducationInLuton.aspx ; http://digimap.edina.ac.uk/
[68] Leleux, *Regional History*, Vol. 9, p.30; Woodward, *Hatfield, Luton & Dunstable,* p.42; Goslin, *St Pancras*, p.28. See Chapter 4.
[69] TNA RAIL 491/672, RAIL 491/674, RAIL 491/675 - Midland Railway Company Records, Traffic and Expenses at Stations; Goslin, *St Pancras*, pp.28-9; Oppitz, *Lost Railways*, p.111; MoStA.
[70] Gourvish, *Railways Economy*, p.27; Schwartz, Gregory & Thévenin, 'Spatial History', *Journal of Interdisciplinary History*, p.61; Casson, *First Railway System*, p.325.
[71] For example TNA RAIL 1167/117 - Midland Railway Company and Luton Brick and Lime Company and B.J. Forder and Son, 1884; 1892; RAIL 1167/157 - Luton, Dunstable & Welwyn Junction Railway Company and Luton Gas Company, 1857; RAIL 1167/151 Great Northern Railway Company and Hayward, Tyler and Company 1873-1898; 1946-1962; Simmons, *Town and Country*, pp.164, 167; *A History of the County of Buckingham: Volume 2* (1908), p.127; *A History of the County of Bedford: Volume 2* (1908), p.117; *A History of the County of Hertford: Volume 4* (1971), p.257; Goslin, *St Pancras*, p.28; Scholey, *Bedfordshire's Railways*, p.28; http://digimap.edina.ac.uk/ ; http://geographyfieldwork.com/UrbanModelsMEDCs.htm

and industry continued at a substantial level, regionally becoming a major industrial centre.[72] The 1890-3 drop in tonnage also matches hat fashions changing from straw to fancywork, so reflects the need for the 1889 'New Industries Committee' created to diversify manufacturing.[73]   The interaction between straw and rail was, therefore, two-way, and economic difficulties directly impacted on rail use.

Fig. 74: Luton and St Albans MR mineral tonnage 1872-1900.
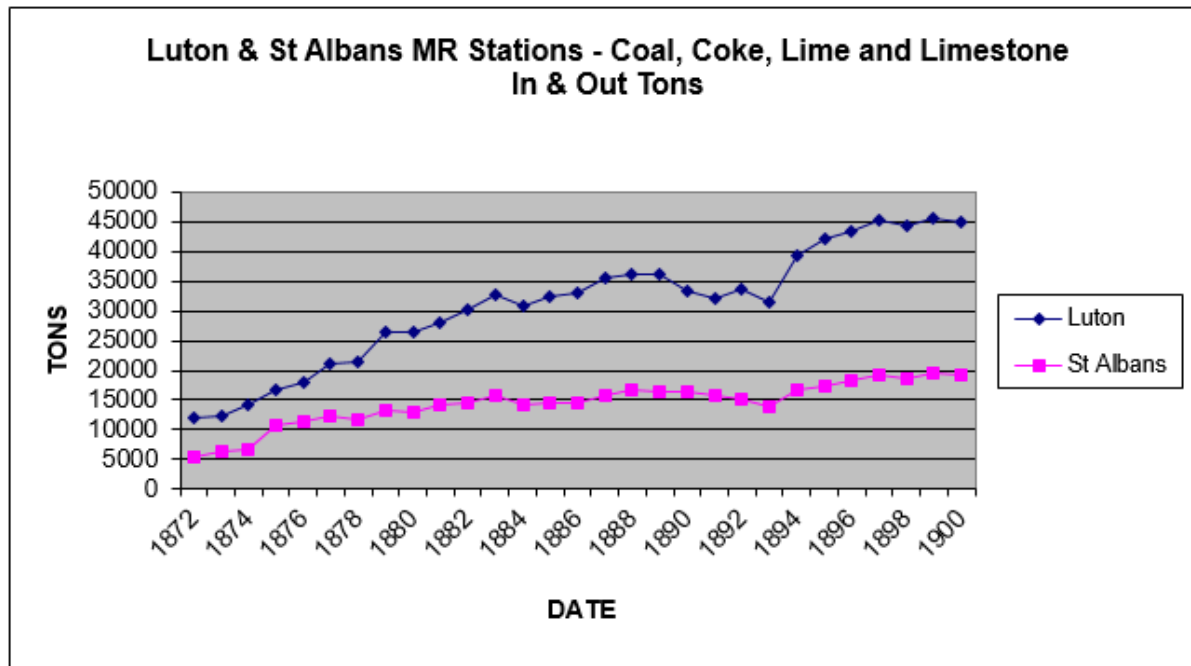
TNA RAIL 491/672, RAIL 491/674, RAIL 491/675 - Midland Railway Company Records, Traffic and Expenses at Stations.

As a diverse town, parish land use was 'open', but as Stephenson discovered this was not always a benefit to proposed railways.[74]   John Sambrook Crawley (1823-95), owner of Stockwood House, had little involvement with railways so neither promoted nor lampooned

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[72] TNA RAIL 491/672, RAIL 491/674, RAIL 491/675 - Midland Railway Company Records, Traffic and Expenses at Stations; TNA RAIL 1167/157 - Luton, Dunstable and Welwyn Junction Railway Company and Luton Gas Company, 1857; B&LARS CCE 5309/1 - 12 Nov 1857, Agreement between John Cass Birkinshaw of 22 Abingdon St., (23 Mar 1989) Westminster, civil engineer on behalf of the Luton Dunstable and Welwyn Junction Railway Co., and William Phillips of Luton, gas engineer on behalf of Luton Gas Company, whereby LDWJR agreed to sell to LGC a triangular piece of land and construction of a siding from the railway on to, over and into the works of LGC; C. Grinling, *The History of the Great Northern Railway, 1845-1922* (London, 1966), p.231.
[73] Simmons, *Town and Country*, pp.172, 277; West, *Railwaymen*, p.277; Leleux, *Regional History*, Vol. 9, p.30; *Luton: Hat Boom*, pp.5, 57; Woodward, *Hatfield, Luton & Dunstable,* p.42; Parishes: Luton, *A History of the County of Bedford: Volume 2* (1908), pp.348-375; WPM.
[74] Bartholomew, *Gazetteer*; Wilson, *Imperial Gazetteer*; Leleux, *Regional History*, Vol. 9, p.30; Simpson, *Dunstable Branch*, p.8; Woodward, *Hatfield, Luton & Dunstable,* p.6; Eckett, *Signals*, p.198; *Luton's Railways*, p.1.

it.[75] Unusually he purchased 12 acres from the MR (gravel extraction) in 1868 for agricultural use.[76] The Marquis of Bute similarly had limited involvement, but sold land for the HL&DR/GNR Station (hence 'Bute Street') partly so surrounding land would grow in value.[77] 'Open' land ownership thus could be positive or negative for railways, also on population or occupation, dependant on local opinion of the general populus as opposed to a small body of people.

As the most industrialised town studied, Luton exhibited many railway-associated impacts reflected in its land use.[78] Mostly arable in the parish, the railways aided surrounding pasture, while the stations became an influencing landmark on sprawl and industrial placement.[79] But, as the development of the straw industry and land ownership revealed, aspects that railways impacted on could equally affect the railways themselves.

St Albans

Surrounded by three arable parishes, St Albans possessed little agricultural land – under 100 acres at its height (Table 37). Mostly pasture, this contrasts with the wider region.[80] The Municipal Boundary was enlarged in 1879, explaining the substantial increase in total/pasture acreage by 1880, whereas urban expansion was the primary cause of subsequent decreases.[81] Therefore, the 1870s depression was not reflected, but the urbanising impacts of the MR in particular meant the railways had an indirect knock-on effect on decreasing acreage.[82]

[75] J. Bateman, *The Great Landowners Of Great Britain & Ireland* (London, 1883); Parishes: Luton, *A History of the County of Bedford: Volume 2* (1908), pp.348-375; WPM; http://www.historyofparliamentonline.org/volume/1790-1820/member/crawley-samuel-1790-1852 ; http://www.lutonculture.com/stockwood-discovery-centre/about/the-estate/
[76] W. Austin, *The History of a Bedfordshire Family: Being a History of the Crawleys of Nether Crawley, Stockwood, Thurleigh and Yelden in the County of Bedford* (London, 1911), p.291.
[77] Cockman, *Bedfordshire*, p.32; *Luton's Railways*, p.1; WPM.
[78] C. Fitchett, Part 55 Bedfordshire, in L. Dudley Stamp, *The Land of Britain: Land Utilisation Survey of Britain* (1943), p.151.
[79] Cockman, *Bedfordshire*, p.115; *Luton's Railways*, p.3.
[80] TNA MAF 68/32, MAF 68/244, MAF 68/700, MAF 68/1270, MAF 68/1840 - Parish Summaries of Agricultural Returns, Hertfordshire; Stephens, *Local History*, pp.126-7; R. Scola, *Feeding the Victorian City: The Food Supply of Manchester, 1770-1870* (Manchester, 1992), pp.43, 51.
[81] M. Freeman, *St Albans: A History* (Lancaster, 2008), pp.210, 227-8, 245; J. Corbett, *A History of St Albans* (Chichester, 1997), p.89; The City of St Albans: Introduction, *A History of the County of Hertford: Volume 2* (1908), pp.469-477; MoStA.
[82] F. Mason, *Gibb's Handbook to St Albans* (1884), p.43; Schwartz, Gregory & Thévenin, 'Spatial History', *Journal of Interdisciplinary History*, pp.56, 70-1; Moore, *Agricultural Hertfordshire* (University of Hertfordshire, 2010), pp.15, 62; MoStA.

Table 37: Acreage under arable cultivation or pasture in St Albans, 1866-1900.

	ARABLE	PASTURE	TOTAL
1866	0	39	39
1870	6.5	43	49.5
1880	12.5	80.75	93.25
1890	1.75	67.25	69
1900	13.75	20.25	34

TNA MAF 68/32, MAF 68/244, MAF 68/700, MAF 68/1270, MAF 68/1840 - Parish Summaries of Agricultural Returns, Hertfordshire.

As with Luton, St Albans' Stations served the wider area, so while primarily arable (unlike Luton) there was much livestock traffic (Fig. 72).[83] With an 1880s peak, loosely matching the boundary change, the overall number of livestock vans decreased, not only confirming the decreasing St Albans pasture acreage but also similar decrease occurring across the wider area.

Fig. 75: Development in St Albans, LNWR, 1878-80 (white) to 1898 (red).
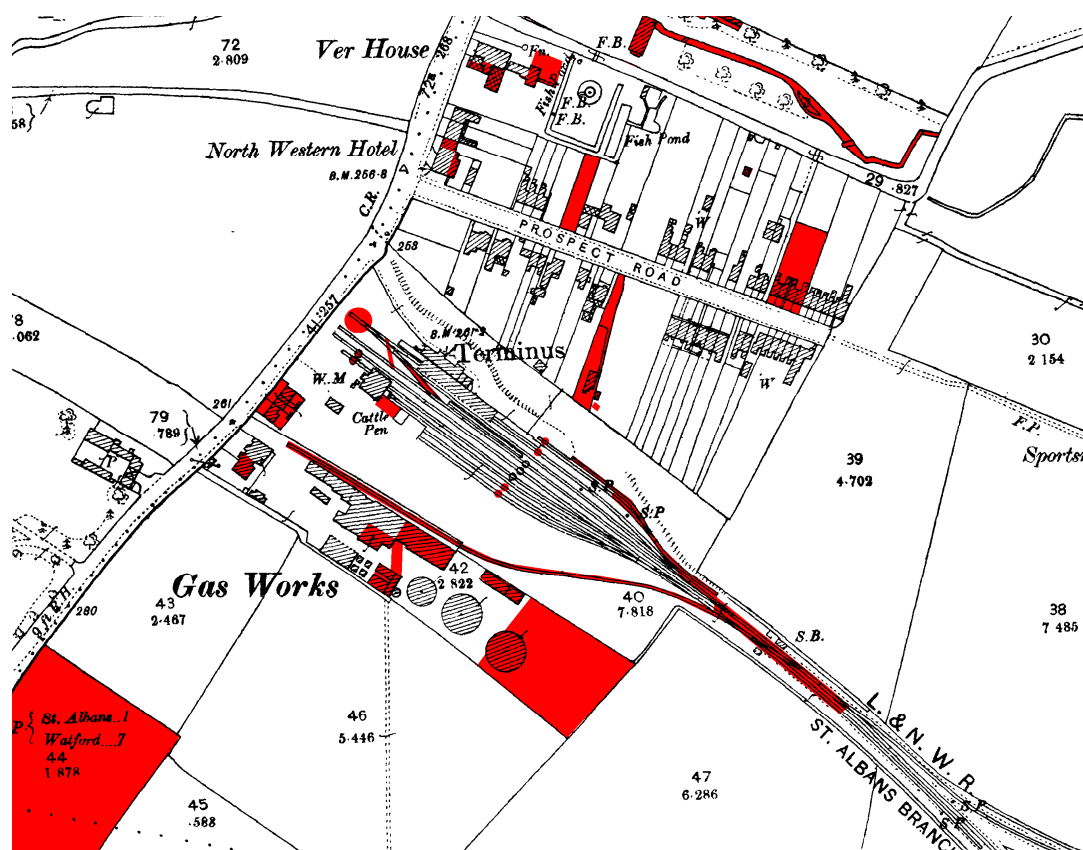
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[83] TNA RAIL 491/672, RAIL 491/674, RAIL 491/675 - Midland Railway Company Records, Traffic and Expenses at Stations.

Considering urban expansion, the difference between branch and main line is shown unequivocally. Completed first and some way out of the centre, the LNWR had the longest development time by c.1900 (Fig. 75). Yet while some development was present, allowing for the gasworks predating the line, it was not extensive. While regularly used (even surviving the 1963 'Beeching Axe'), the town failed to develop in this direction.[84]

The GNR Station (Fig. 76, lower) fared even worse, with no buildings constructed in the immediate vicinity c.1865-1880. The MR main line, however, was very different. Between opening in 1868 and 1880 the town expanded eastwards until it met the station; this expansion continued c.1880-1898 (Fig. 76, upper) utilising all available land.[85] The preparation of Ramsbury Road in anticipation of construction reveals the continuance of this growth – sprawl reaching down to the GNR Station which gained some traffic from this growth (not initiating it).[86] A fledgling suburb, new facilities included several schools and chapels, adding to those previously present in the town.[87] Interestingly, the first Catholic Church in St Albans (1851) was on the site of the former Verulam Arms Hotel, 'ruined by the railways' as stagecoaches ended.[88] The far eastern side of the line experienced less development, originally only the 1866 gaol, but what was built centred on the MR Station.[89] As in Luton, these new suburban houses had larger plots with increasing distance from the station as land prices decreased. Therefore, railways were an important factor in the direction of urban sprawl, along with land values and associated plot size. But the main commuting suburbs concentrated on the quickest and/or most direct means (noting Luton's GNR was longer but usually quicker than the MR); in St Albans, the main line over the branches.

[84] *The Reshaping of British Railways Part 1: Report* (London, 1963), p.105; S. Jenkins, *The Watford to St Albans Branch* (Usk, 1990), pp.50-1; http://www.abbeyline.org.uk/routehistory.htm

[85] F. Mason, *Gibb's Handbook to St Albans* (1884), p.43; Freeman, *St Albans*, pp.227-8; W. Johnson, *Industrial Archaeology of Hertfordshire* (Newton Abbot, 1970), p.24; MoStA; http://digimap.edina.ac.uk/

[86] R. Taylor & B. Anderson, *The Hatfield & St Albans Branch* (Oxford, 1988), p.47; http://digimap.edina.ac.uk/

[87] Freeman, *St Albans*, pp.246-7; Corbett, *St Albans*, pp.76, 93, 116; Wilson, *Imperial Gazetteer*; The City of St Albans: The Borough, *A History of the County of Hertford: Volume 2* (1908), pp.477-483; MoStA; http://www.hertfordshire-genealogy.co.uk/data/education/stalbans-schools.htm ; http://www.trinitystalbans.org.uk/page19.html; http://www.albanstephen.com/history.shtml ; http://www.nationalarchives.gov.uk/a2a/records.aspx?cat=046-nr4&cid=0#0 ; http://www.stalbansmuseums.org.uk/content/view/full/13473

[88] Freeman, *St Albans*, p.190; Corbett, *St Albans*, pp.84, 92, 107; http://www.ccstalbans.org.uk/index.php/our-history.php ; http://www.stalbansmuseums.org.uk/Media/Museum-Images/Plan-of-the-Verulam-Arms-Hotel-Grounds-c.1830

[89] Corbett, *St Albans*, pp.88, 105; MoStA; http://digimap.edina.ac.uk/

Fig. 76: Development in St Albans, GNR (lower) & MR (upper), 1878-80 (white) to 1898 (red).

Occupationally, St Albans concentrated on straw production, a growing printing trade (many establishing c.1890-1914) and serving the growing commuter population in this new suburb.[90] Although printers in particular were credited with taking 'advantage of the city's close proximity to London', the few industrial firms present had little physical railway connection, being scattered across the town.[91] Many pre-dated the lines but others were equally distant, for example tallow and brickworks to the far north.[92] Similarly, an iron foundry in the 1878-80 OS map was located by the MR and near the H&StAR, but had no siding connection. It failed, becoming a brush works by the 1898 OS map.[93] As housing and, to a much lesser extent, industry expanded so did coal traffic (Fig. 74) – far from the former 'scarce and rather expensive commodity'.[94] Not including LNWR gasworks coal traffic, the MR tonnage shows St Albans developing, but compared to Luton its industrial limitations are emphasised.[95]

Considered 'open' in the *Gazetteers*, the population appears more enthusiastic for railways than the companies themselves; the LNWR receiving Council memorials querying construction delays.[96] Dealing with individual landowners did cause difficulties, though, particularly the Second Earl of Verulam hindering the LNWR, H&StAR, and only permitted a MR siding after lengthy discussion.[97] So amid positivity from some, there was still animosity and although 'open', some individual landowners could still influence development.

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[90] *Langley's Directory of St Albans*, 1900; Freeman, *St Albans*, pp.216, 224-7, 230-1; Johnson, *Industrial Archaeology*, pp.19, 75; Leleux, *Regional History*, Vol. 9, pp.31-2; Corbett, *St Albans*, pp.79, 110; *A History of the County of Hertford: Volume 4* (1971), pp.254-5; The City of St Albans: The Borough, *A History of the County of Hertford: Volume 2* (1908), pp.477-483; MoStA.

[91] Freeman, *St Albans*, pp.215-6, 224-5.

[92] Ibid; p.226; Corbett, *St Albans*, p.106; MoStA.

[93] Freeman, *St Albans*, p.225; The City of St Albans: The Borough, *A History of the County of Hertford: Volume 2* (1908), pp.477-483; http://digimap.edina.ac.uk/

[94] Corbett, *St Albans*, p.79; R. Kirk, *St Albans South Signal Box* (2009), p.9; MoStA.

[95] TNA RAIL 491/672, RAIL 491/674, RAIL 491/675 - Midland Railway Company Records, Traffic and Expenses at Stations; Freeman, *St Albans*, p.242; Corbett, *St Albans*, p.110; Jenkins, *St Albans Branch*, p.89; Richards & Simpson, *London Birmingham Railway* Vol. 1, p.112; Johnson, *Industrial Archaeology*, pp.174-5.

[96] Bartholomew, *Gazetteer*; Wilson, *Imperial Gazetteer*; Jenkins, *St Albans Branch*, pp.9, 12; Corbett, *St Albans*, pp.92, 95; MoStA. See Chapter 8.

[97] TNA RAIL 384/10 – LBR Index to Board Minutes - Minute No. 2954; RAIL 1110/260 – London & Birmingham Railway Shareholders Reports – Report for 13/2/1846; RAIL 1110/269 – London & Birmingham Railway Shareholders Reports – Report for 11/6/1858; RAIL 295/1 – Hatfield & St. Albans Railway Minute book – Minutes for 29/4/1864; RAIL 1167/177 – Midland Railway Arrangement with Lord Verulam, 30/7/1869; Wilson, *Imperial Gazetteer*; Jenkins, *St Albans Branch*, p.12; Richards & Simpson, *London Birmingham Railway* Vol. 1, p.111; Taylor & Anderson, *Hatfield St Albans*, p.10; Parishes: St Michael's, *A History of the County of Hertford: Volume 2* (1908), pp.392-405.

St Albans always depended on transport, originally road, for its economy and development.[98] Railways originally damaged this, and while the branches offered stability they did little to encourage urban expansion. The MR main line, however, more directly impacted on the town and through a more direct and fast service provided a means for recovery and growth.[99]

Bushey

Transforming from agriculture to commuter suburb, Bushey village was distant from the railway but still saw major change.[100] Mainly pasture, as was this southernmost part of Hertfordshire, 1870-1900 saw agricultural acreage decreasing by half (Table 38).[101] As with Luton's arable land, while occurring during the 1870s depression it is unlikely this was a cause, instead resulting from the growth of 'New Bushey' (or 'Bushey New Town') in former fields by the Station.[102] This decrease was further compounded by part of this area becoming the new district of Oxhey in 1897 (ecclesiastically separated in 1879).[103]

Table 38: Acreage under arable cultivation or pasture in Bushey, 1866-1900.

	ARABLE	PASTURE	TOTAL
1866	801.25	1,982.5	2,783.75
1870	823	2,111.5	2,934.5
1880	732.25	1,896.25	2,628.5
1890	474	1,433.5	1,907.5
1900	252.25	1,214	1,466.25

TNA MAF 68/32, MAF 68/244, MAF 68/700, MAF 68/1270, MAF 68/1840 - Parish Summaries of Agricultural Returns, Hertfordshire.

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[98] Doubleday, *Hertfordshire Survey*, p.20; Freeman, *St Albans*, pp.187-9, 215-6, 253; Corbett, *St Albans*, pp.73, 77-8; MoStA.

[99] Freeman, *St Albans*, pp.215-6, 227-8, 231, 252-3; Corbett, *St Albans*, p.88; Jenkins, *St Albans Branch*, pp.19, 21; Leleux, *Regional History*, Vol. 9, p.10.

[100] Wilson, *Imperial Gazetteer*; D. Payne, *The Story of Bushey in the Age of the Steam Train* (Bushey, 2011), pp.15, 25; Richards & Simpson, *London Birmingham Railway* Vol. 1, p.39; G. Longman, *Bushey Then & Now: Introduction* (Bushey, 1997), p.13; C. Cooling & I. Mackay, *Oxhey in Pictures* (Watford, 2000), p.79; Parishes: Bushey, *A History of the County of Hertford: Volume 2* (1908), pp.179-186; http://digimap.edina.ac.uk/

[101] TNA MAF 68/32, MAF 68/244, MAF 68/700, MAF 68/1270, MAF 68/1840 - Parish Summaries of Agricultural Returns, Hertfordshire; Parishes: Bushey, *A History of the County of Hertford: Volume 2* (1908), pp.179-186.

[102] Bartholomew, *Gazetteer*; Payne, *Bushey*, p.17; I. Mackay, Bushey's History - Lecture for Oxhey Village Environment Group, 11th March 2010; Parishes: Bushey, *A History of the County of Hertford: Volume 2* (1908), pp.179-186.

[103] Longman, *Bushey Introduction*, p.13; Mackay, Bushey Lecture; Parishes: Bushey, *A History of the County of Hertford: Volume 2* (1908), pp.179-186; Watford: Introduction, *A History of the County of Hertford: Volume 2* (1908), pp.446-451; http://www.stmatthewsoxhey.org.uk/oxhey.html

Fig. 77: Development in 'New Bushey', 1871 (white) to 1898 (red).
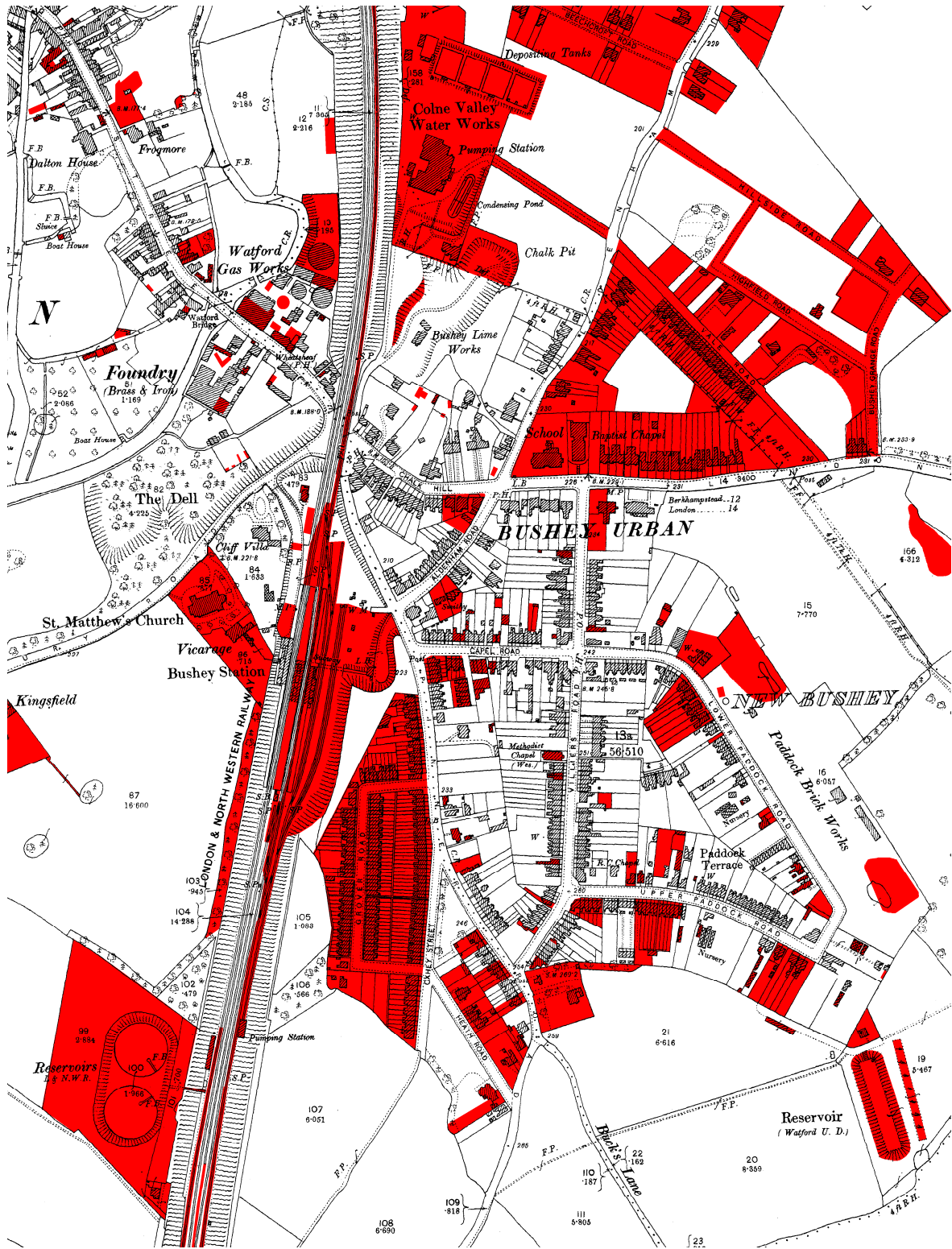
The creation and development of 'New Bushey' itself shows the impact of Bushey Station on land use and the direction of sprawl. Closer inspection (Fig. 77) further demonstrates the

station's centrality to new building – expanding along the line close to the station instead of outwards towards Bushey Village.[104] Free season tickets with certain house purchases confirm the involvement railways had in this aspect, while arguments over relocating Watford Station to Bushey demonstrate just how much the parish grew in importance.[105]

With a growing semi-independent settlement, St Matthew's Church, chapels and a school were built as a consequence; themselves effects of railway development.[106] This is particularly so considering St Michaels was proposed in the 1860s due to rail-led population growth and constructed in 1880 – matching the 1861-71 population growth.[107] Interestingly, the Watford side of the line showed little bordering development despite station access.[108] The village itself also expanded c.1872-98, but was more limited in size and extent.[109]

Occupationally the parish was agricultural but turning towards commuting as reflected in the land use. Contrary to Quainton, a new urban area grew around the station despite distance from the actual village; the only real formative difference between them being proximity to London and other major centres. Often referenced to for the region as a whole, this town interaction is important when considering the extent railways impacted on expansion in intrinsically rural areas; also supporting the historiography of railways as one factor amongst many rather than a 'cause' of development.[110] Some industry was present though. A waterworks, gasworks and lime kilns congregated around the line (Fig. 77), using Bushey Station yard rather than having dedicated sidings.[111] Another brickworks was further away, but these were dependent on geology and would have been for local use (possibly including the viaduct) so rail access was unnecessary.[112] The village itself had no industry; the largest non-agricultural facet was the Art School, benefitting from the railway and likely the primary

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[104] http://digimap.edina.ac.uk/
[105] Payne, *Bushey*, pp.11-2, 15; Forsyth, *Watford Junction*, p.10; Dyos & Aldcroft, *British Transport*, p.219; Moore, *Agricultural Hertfordshire* (University of Hertfordshire, 2010), p.53; Levinson, 'Orderliness Hypothesis', *The Journal of Transport History*, p.102; Watford Museum.
[106] Wilson, *Imperial Gazetteer*; Payne, *Bushey*, p.20; Richards & Simpson, *London Birmingham Railway* Vol. 1, p.39; T. Groves, E. Longman & B. Wood, *From the Wheatsheaf to the Windmill: The Story of Bushey and Oxhey Pubs* (Bushey, 1984), p.31; Parishes: Bushey, *A History of the County of Hertford: Volume 2* (1908), pp.179-186; Bushey Museum.
[107] Richards & Simpson, *London Birmingham Railway* Vol. 1, p.39; Mackay, Bushey Lecture; Bushey Museum; http://www.stmatthewsoxhey.org.uk/building.html See Chapter 11.
[108] Payne, *Bushey*, pp.7, 14; http://digimap.edina.ac.uk/
[109] http://digimap.edina.ac.uk/
[110] Longman, *Bushey Introduction*, p.13; Cooling & Mackay, *Oxhey*, p.79.
[111] TNA RAIL 384/6 - LBR/LNWR Board Minutes (Nos 2634-3449) - Minute No. 2789, 11/2/1845; Payne, *Bushey*, p.10; Cooling & Mackay, *Oxhey*, p.13; Mackay, Bushey Lecture; http://digimap.edina.ac.uk/
[112] Payne, *Bushey*, p.7; Cooling & Mackay, *Oxhey*, p.14; Mackay, Bushey Lecture; http://digimap.edina.ac.uk/

cause of the village's separate expansion.[113]   Therefore, industry centred on Bushey Station as much as suburban housing. The LNWR water trough reservoirs show that railways could also directly change land use aside from in the case of 'railway towns' and the lines themselves.[114]

Fig. 78: 1877-83 OS Map showing the LNWR main line (blue) and alternate route (red) bypassing Bushey.
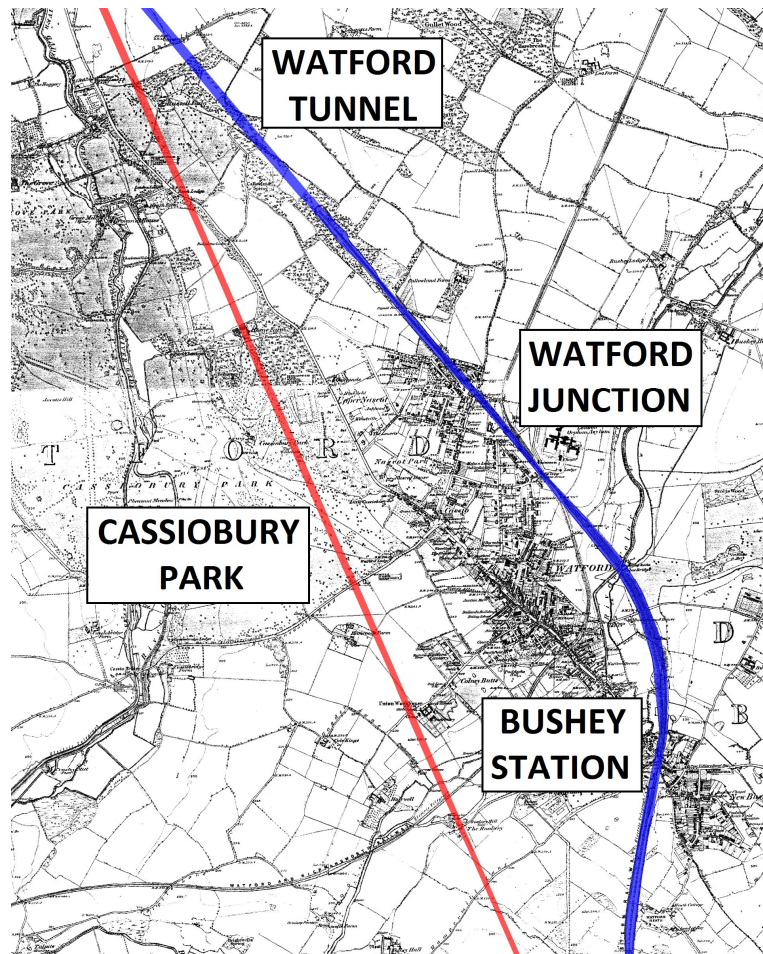
Land ownership in Bushey by 1870-87 was 'open' but opinions were divided, with the Sparrows Hearne Turnpike Trust supporting LBR protestors.[115] Watford, though, had more notable, and highly influential discontent directly affecting Bushey. Aside from tenant

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[113] Payne, *Bushey*, p.21; G. Longman, *Sir Hubert Von Herkomer RA, A Biographical Note* (Bushey, 1993), p.1; Parishes: Bushey, *A History of the County of Hertford: Volume 2* (1908), pp.179-186; Bushey Museum.
[114] Payne, *Bushey*, p.12; Richards & Simpson, *London Birmingham Railway* Vol. 1, pp.102-3; O.S. Nock, *LNWR Pre-Grouping Scene No 3* (Shepperton, 1980), p.50; Mackay, Bushey Lecture.
[115] Bartholomew, *Gazetteer*; Wilson, *Imperial Gazetteer*; M. March, *The Sparrow Hearnes Turnpike* (Wall Hall College, 1969), p.25.

farmers, bypassing the estates of the Earls of Leicester (Grove House) and Essex (Cassiobury House) resulted in the Watford tunnel and a substantial deviation (Fig. 78).[116] Had they agreed then the LBR would have been far from Bushey, so having none of these effects.[117] Furthermore, Watford Junction would have been elsewhere, hindering the later St Albans LNWR branch, so having even wider consequences. While the area revealed 'open' land ownership, the power wielded by a minority to protect their comparatively small landholdings changed the railway's route so greatly that a different parish that should have been wholly unaffected gained major rail access and all the effects that ultimately stemmed from it.

Bushey Station had not been originally intended by the LBR, but once opened it led to many changes in the parish.[118] Through easy rail access, they facilitated the creation and expansion of a new suburb whilst the picturesque agriculture encouraged commuter and artist alike.[119] Equally, demand led to changing rail services, having an hourly commuter service by the 1880s.[120] Bushey shows the potential railways could provide to rural areas with the right external factors, such as urban proximity, and reveals a middle point between stagnation as in Quainton and urban sprawl like Luton or St Albans.

Comparison to Hypotheses

Agriculture did not change in type or location and railways mostly had no impact upon it.[121] Conversely, the extent of farming varied according to local factors such as sprawl, particularly where affecting parish boundaries according to Casson, which involved indirect railway interaction.[122] Furthermore, agriculture exhibited a clear impact on the railways themselves. Aside from market gardening, the MR revenue figures show substantial traffic and livestock being taken some distance to stations, with livestock traffic even in arable

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[116] F.R. Conder, *The Men who Built Railways* (1868; reprinted Trowbridge, 1983), pp.9-10; Simmons, *Victorian Railway*, pp.14-15; P. Richards, 'Watford and the Railway', *Herts Past & Present*, No. 22 (Autumn 2013), p.11; Mackay, Bushey Lecture; Watford Museum; http://www.thegrove.co.uk/about-us/history

[117] Simpson, *Dunstable Branch*, p.34.

[118] TNA RAIL 384/4 - LBR/LNWR Board Minutes (Nos 1005-1809) - Minute No. 1663, 9/7/1841; Payne, *Bushey*, p.8; Richards & Simpson, *London Birmingham Railway* Vol. 1, p.39; Mackay, Bushey Lecture.

[119] Richards & Simpson, *London Birmingham Railway* Vol. 1, p.39; Payne, *Bushey*, pp.17, 21, 25; Longman, *Herkomer*, p.1; Parishes: Bushey, *A History of the County of Hertford: Volume 2* (1908), pp.179-186.

[120] Forsyth, *Watford Junction*, p.10; Payne, *Bushey*, p.12.

[121] P. O'Brien, *The New Economic History of the Railways* (London, 1977), p.78; Dyos & Aldcroft, *British Transport*, p.22.

[122] Casson, O*xfordshire*, p.6.

parishes.[123]   The 1870s agricultural depression was major across the country but did not impact on farmed acreages or cause any changes in land usage.[124]

Considering the hypotheses, the countywide data suggested urban settlements had a wide and ever-increasing sphere of influence; in the case of London, matching the historiography of its national rail significance.[125] Supported by the MR livestock figures, comparison between the similar villages of Bushey and Quainton further emphasises this; Bushey grew and became more urbanised, under the influence of Watford and London whereas Quainton deteriorated, far from Buckingham or Aylesbury.

Hypothesis 11: Land ownership was a factor in early railway development – placing limitations on route availability. Where rural 'close' parishes, it was also a factor in population decline and the lack of any notable urbanisation.

In early rail development land ownership was a major factor capable of impacting far beyond its own parish, as demonstrated by the Watford deviation via Bushey.[126] Insufficient case studies were 'close' to accurately confirm or deny the role of ownership on population and urbanisation, but this generalisation appears to be dubious. Under the Radcliffe Trust 'Old Wolverton' barely developed ('New Wolverton' the exception), but neither did Quainton which was 'divided among a few'.[127] This wording suggests some parishes may fall between the accepted 'open' and 'close' definitions.[128] More likely is that the individual landowners themselves were key. Social standing and opinions changing with generations and popular feeling, and the rise of compulsory purchase powers were sufficient to block railways even if an 'open' parish, or construct them despite being 'close', mirroring the historiography of changing public opinions as railways became established.[129]

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[123] TNA RAIL 491/672, RAIL 491/674, RAIL 491/675 - Midland Railway Company Records, Traffic and Expenses at Stations; N. Goose & D. Short, *An Historical Atlas of Hertfordshire* (Hatfield, 2011), p.82.
[124] Schwartz, Gregory & Thévenin, 'Spatial History', *Journal of Interdisciplinary History*, pp.56, 70-1.
[125] Simmons, *Town and Country*, pp.26, 67; Casson, *First Railway System*, pp.27-8; Moore, *Agricultural Hertfordshire* (University of Hertfordshire, 2010), p.49; Doubleday, *Hertfordshire Survey*, p.18.
[126] Moore, *Agricultural Hertfordshire* (University of Hertfordshire, 2010), p.56.
[127] Bartholomew, *Gazetteer*; Wilson, *Imperial Gazetteer*; Parishes: Wolverton, *A History of the County of Buckingham: Volume 4* (1927), pp.505-509.
[128] Casson, O*xfordshire*, p.11.
[129] Ibid; pp.3, 15; Casson, *First Railway System*, p.324; Simmons, *Town and Country*, pp.23, 270; Simmons, *Victorian Railway*, pp.14-15.

Hypothesis 12: The urbanising expansion of settlements occurred relative to local railway development. Considering the rise of commuting, some industry and the building trade, much of this expansion would centre geographically on railway lines, yards and/or stations.

Housing usually gravitated to stations, pulling sprawl in that direction particularly with the rise of commuting – this via rail being the prime historiographical explanation.[130] Rail development was itself an aspect, as shown by differing extents of building between St Albans' branch and main line stations, with increasing inter-company competition resulting.[131] Major variation between the case studies show other factors, though, controlled its extent and origin such as London/urban proximity. Bushey's growth led to the station which in turn boosted 'New Bushey'; Potton's Stations were always on the outskirts; Quainton failed to expand; St Albans, Wolverton and to a lesser extent Luton (gaining a connection much later) developed geographically primarily due to railways. Suburbs pre-dated and were not dependent on the railways, but nonetheless railways became an important strengthening aspect.[132]

Industrially, transport is a central need with businesses locating to suit.[133] Debate continues on the extent to which transport impacted national industrial levels, now seen as a supporting influence to pre-existing industry rather than as a wide-spread originator in its own right, but its positioning is mostly agreed, whether near turnpike, canal, or railway.[134] Tying in sprawl direction, Simmons stated:

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[130] Moore, *Agricultural Hertfordshire* (University of Hertfordshire, 2010), p.53-4, 188, 227, 241; A. Harris, Changes in the Early Railway Age: 1800-1850, in H. Darby (ed.), *A New Historical Geography of England* (Cambridge, 1973), pp.222-4; Dyos & Aldcroft, *British Transport*, pp.149-50, 181, 219; Simmons, *Victorian Railway*, pp.330-2, 324; Casson, O*xfordshire*, p.12.

[131] Simmons, *Victorian Railway*, p.83.

[132] Dyos & Aldcroft, *British Transport*, p.219; Simmons, *Town and Country*, pp.59-60; N. Goose, 'Cottage Industry, Migration, and Marriage in Nineteenth-Century England', *Economic History Review*, 61:4 (2008), p.22; O'Brien, *New Economic History*, p.93; Schwartz, Gregory & Thévenin, 'Spatial History', *Journal of Interdisciplinary History*, p.58; Gourvish, *Railways Economy*, p31.

[133] Fryer, *Buckinghamshire Survey*, p.74; http://geographyfieldwork.com/UrbanModelsMEDCs.htm

[134] Dyos & Aldcroft, *British Transport*, p.72; Barker & Savage, *Transport*, p.32; B.R. Mitchell, 'The Coming of the Railway and United Kingdom Economic Growth', *The Journal of Economic History*, Vol. 24, No. 3 (Sep., 1964), pp.325-9; Gourvish, *Railways Economy*, pp.22-3, 31; R. Church, *The Victorian Boom 1850-1875* (Economic History Society, 1975), p.32; Doubleday, *Hertfordshire Survey*, pp.21, 40; Fryer, *Buckinghamshire Survey*, p.74.

'What happened in many coaching towns was that business moved away from the centre to the station, which might become the focal point of a whole new quarter…'[135]

Never an 'industrial' region, the *VCH* detailed small-scale industry in parishes (excluding Bushey), but OS maps showed variation to the historiography. Industries linked to geology, such as bricks, were limited in choice of position, while those pre-dating railways or solely for local use showed little correlation.[136] But Luton in particular showed that differing types had increasing distance, with heavy industry (boilermakers) much closer than others (straw dying).[137] Therefore, while industry was drawn to stations as claimed, their physical closeness depended heavily on the scale and size of goods being produced and transported.

To conclude, Dyos declared that although the railway factor alone was an insufficient reason for town growth, railways 'were a necessary one' - a 'facilitator' rather than creator of development.[138] Through broadening the 'area of supply' they enabled 'men, materials and social ideas' to merge, and with other factors such as excess rural population they helped progress a more industrialised urban economy.[139] The case studies show these effects were far from uniform and not applicable to everywhere; where feeding urban areas railways could even strengthen provincial rurality.[140] Nonetheless, urban growth and the potential urbanising influence of railways remain 'one of the most conspicuous products of railway development'.[141]

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[135] Simmons, *Town and Country*, p.285.
[136] Doubleday, *Hertfordshire Survey*, p.40.
[137] *Kelly's Directory of Bedfordshire, Hunts and Northamptonshire*, 1903; http://digimap.edina.ac.uk/
[138] Dyos & Aldcroft, *British Transport*, p.215; Harris, Early Railway Age, in Darby, *Historical Geography*, pp.222-4; Gourvish, *Railways Economy*, p.31; Simmons, *Town and Country*, pp.59-60; O'Brien, *New Economic History*, p.93; Schwartz, Gregory & Thévenin, 'Spatial History', *Journal of Interdisciplinary History*, p.58.
[139] Dyos & Aldcroft, *British Transport*, p.215; John Langton, 'The Industrial Revolution and the Regional Geography of England', *Transactions of the Institute of British Geographers*, New Series, Vol. 9, No. 2 (1984), p.163.
[140] Moore, *Agricultural Hertfordshire* (University of Hertfordshire, 2010), pp.66, 68; Dyos & Aldcroft, *British Transport*, pp.22, 163; Casson, O*xfordshire*, p.18.
[141] Dyos & Aldcroft, *British Transport*, p.215.

Chapter 11: Population in the Case Studies

As the countywide study showed, railway development increasingly coincided with population change as more people gained the ability to travel because of decreasing prices, increasing services, growing lines and the creation of commuting, amongst many factors.[1] Clear trends were identified in the region, notably 'corridors' of growth following lines, while the rural-urban divide suggests railways acted both positively and negatively as they drew away/brought in people. As many trends affected multiple parishes simultaneously, or the region as a whole, the case studies are somewhat limited. Nonetheless they demonstrate certain aspects and occurrences.

Wolverton

Always the exception, migration to 'New Wolverton', plus its resident population, was primarily rail workers servicing the London & Birmingham Railway.[2] Birthplaces (Table 39) reveal particular concentrations migrating from London, Lancashire, and Scotland, along with nearby Northamptonshire and Buckinghamshire itself. Hertfordshire and Bedfordshire levels were lower than expected, but as the historiography demonstrates, many 'railway towns' attracted new skilled populations from these industrial locations, while unskilled workers commonly came from nearer in 'step migration', logically Buckinghamshire and Northamptonshire in this case.[3] As railways were not merely the means but the motive, they were the central 'cause' of Wolverton-bound immigration.

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[1] J. Simmons, *The Railway in Town and Country 1830-1914* (Newton Abbot, 1986), p.17; J. Simmons, *The Victorian Railway* (London, 2009), p.319; P. O'Brien, *The New Economic History of the Railways*, (London, 1977) pp.97, 100; R. Schwartz, I. Gregory & T. Thévenin, 'Spatial History: Railways, Uneven Development, and Population Change in France and Great Britain, 1850-1914', *Journal of Interdisciplinary History*, Volume 42, Number 1 (Summer 2011), pp.57-8, 70, 77; J. Moore, *The Impact of Agricultural Depression and Land Ownership Change on the County of Hertfordshire, c.1870-1914* (University of Hertfordshire, 2010), p.53.

[2] H. Jack, *Locomotives of the LNWR Southern Division: London & Birmingham Railway, London & North Western Railway and Wolverton Locomotive Works* (Sawtry, 2001), p.29.

[3] B.J. Turton, 'The Railway Towns of Southern England', *Transport History*, 2 (1969), p.123; D. Drummond, *Crewe: Railway Town, Company and People 1840-1914* (Aldershot, 1995), pp.20-3. See Chapter 1.

Table 39: Birthplaces of Wolverton residents 1851 and comparative results for Northamptonshire (Pottersbury Registration District is officially part of Northamptonshire).

	Nos born in:	Nos per 1,000 of population in Wolverton	Relative Proportion for Northamptonshire
London	106	69	13
Surrey	5	3	1
Kent	15	9	2
Sussex	5	3	1
Hampshire	6	3	1
Berkshire	4	2	1
Middlesex	5	3	X
Hertford	17	10	2
Buckingham	123	78	30
Oxford	29	18	13
Northampton	568	320	760
Huntingdon	X	X	51
Bedford	18	5	15
Cambridge	1	X	13
Essex	5	3	2
Suffolk	11	7	2
Norfolk	6	4	3
Wiltshire	3	2	1
Dorset	5	3	X
Devon	9	6	X
Cornwall	1	X	X
Somerset	1	X	1
Gloucester	26	16	2
Hereford	7	4	X
Shropshire	2	1	X
Stafford	48	30	3
Worcester	38	24	1
Warwick	57	36	12
Leicester	22	14	12
Rutland	X	X	3
Lincoln	9	5	25
Nottingham	42	26	2
Derby	34	22	1
Cheshire	14	9	X
Lancashire	119	75	3
Yorkshire	28	18	3
Durham	47	30	X
Northumberland	27	17	X
Cumberland	3	2	X
Westmore	5	2	X
Wales	24	15	X
Scotland	125	80	3
Ireland	24	15	8

B.J. Turton, 'The Railway Towns of Southern England', *Transport History*, 2 (1969), p.123.

Wolverton's population data (Table 40 & Fig. 79), naturally fits railway development closely. In 1801-31 'New Wolverton' did not exist; 'Old Wolverton's population growth being no different from general regional levels (0-32% growth). 1831-41 covered the initial formation of the Works and town which, although small-scale in land mass, was still markedly larger than the former hamlet and occurred very rapidly (200-499%). This matches other 'railway towns' in needing an immediate workforce.[4] Considering the actual numbers, this decade grew from 417 in 1831 to 1,261 by 1841.[5] There was also growth in neighbouring Bradwell (33-49%) – likely the start of the satellite town 'New Bradwell' as the Radcliff Trust began limiting expansion.[6] This initial surge steadied by 1851, although still substantial (50-99%). The Radcliff Trust refused to sell land to the London & North Western Railway c.1860-66; clearly noticeable in 1851-61 as growth suddenly dropped (only 0-32% growth). Neighbouring parishes, however, notably Bradwell grew up to c.1871, then again after 1891. These correlate with Works expansions, thus additional workers, the 1867 branch line and the rise of 'New Bradwell'.[7]

Table 40: Population figures (actual numbers, not percentage growth) for Wolverton 1801-1901.

	WOLVERTON
1801	238
1811	258
1821	335
1831	417
1841	1,261
1851	2,070
1861	2,370
1871	2,804
1881	3,611
1891	4,147
1901	5,323

Based on census summary tables via www.histpop.org

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[4] Drummond, *Crewe*, p.20.

[5] Census summary tables via www.histpop.org

[6] B. Dunleavy, *The Lost Streets of Wolverton* (2010), pp.4, 149; B. Simpson, *The Wolverton to Newport Pagnell Branch* (Banbury, 1995), p.47; B. West, *The Trainmakers - the Story of Wolverton Works* (Buckingham, 1982), p.33.

[7] West, *Trainmakers*, p.34; F. Markham, *History of Milton Keynes and District Volume 2* (Luton, 1986), pp.90, 193; Simpson, *Newport Pagnell*, pp.13, 47; Parishes: Bradwell, *A History of the County of Buckingham: Volume 4* (1927), pp.283-288.

Fig. 79: Decadal population change in Wolverton compared to extant railway lines (and roads/canal 1801-41).
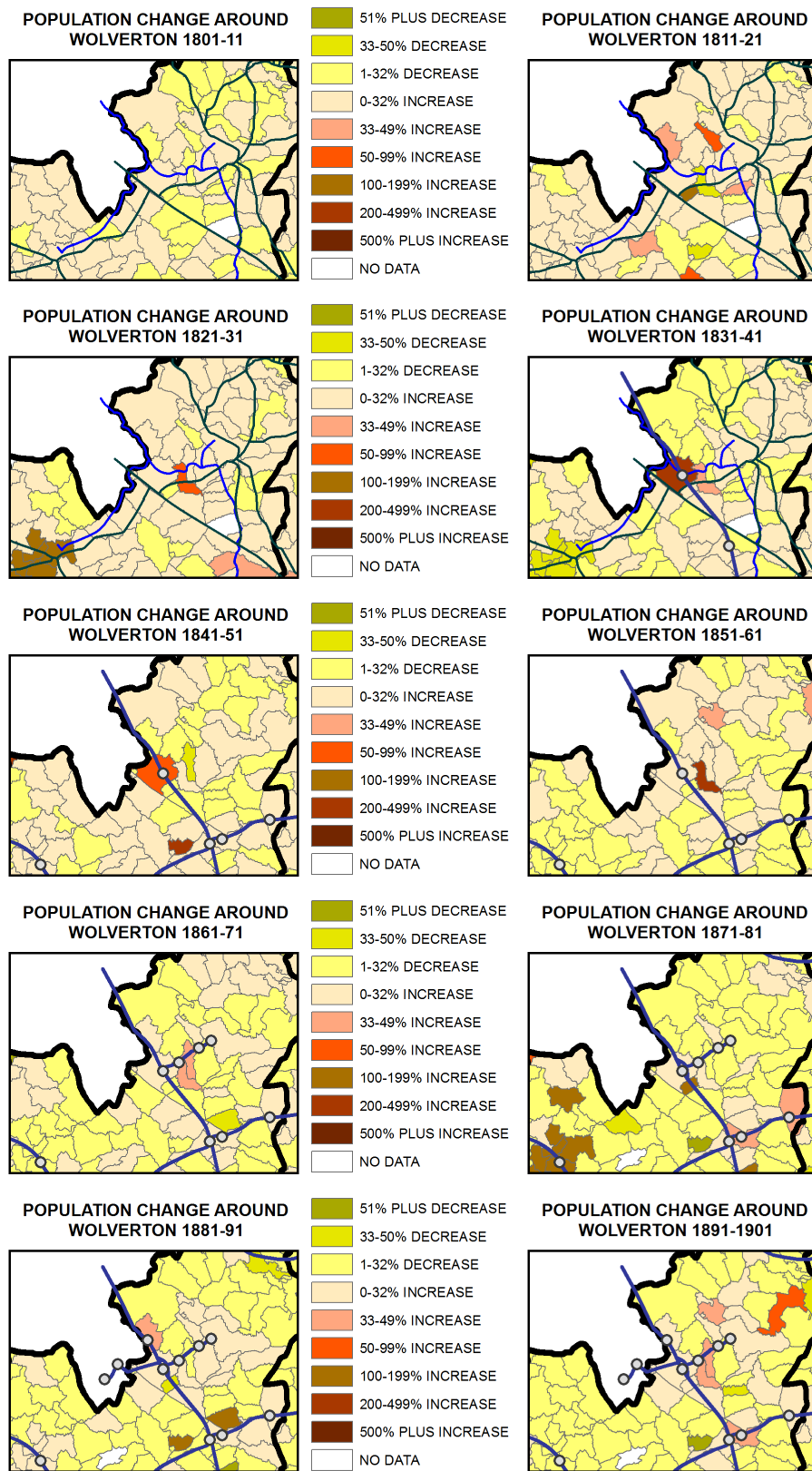
Based on census summary tables via www.histpop.org

The low growth level in Wolverton (0-32%) remained constant throughout the rest of the period, matching two historical points. There was no additional land for housing c.1871, hence 'New Bradwell', and with the slow replacement of out-going locomotive manufacturers with in-coming carriage builders', levels remained remarkably stable.[8] That the last period Works expansions (1890s), matches Bradwell rather than Wolverton significantly fits the cessation of LNWR-built housing c.1878, matching growing 'independence' of 'railway towns' from their company.[9] As the local building society now had to finance construction, in this last period worker influx would have been too sudden, so alternate accommodation would have been needed outside of Wolverton itself, as demonstrated by Stony Stratford lodgers increasingly using the tram.[10]

Table 41: Population growth change for Wolverton, Buckinghamshire and nationally.

	NATIONAL	BUCKINGHAMSHIRE	WOLVERTON
% difference 1801-11	15%	9%	8%
% difference 1811-21	18%	14%	30%
% difference 1821-31	16%	10%	24%
% difference 1831-41	14%	6%	202%
% difference 1841-51	13%	5%	64%
% difference 1851-61	12%	1%	14%
% difference 1861-71	13%	7%	18%
% difference 1871-81	15%	4%	29%
% difference 1881-91	12%	2%	15%
% difference 1891-1901	12%	5%	28%
% difference 1801-51	101%	52%	770%
% difference 1851-1901	82%	16%	157%
% difference 1801-1901	265%	82%	2137%

Based on census summary tables via www.histpop.org and national figures via
http://www.tacitus.nu/historical-atlas/population/british.htm

Population thus matched railway development unusually directly and clearly, and comparison with county and national averages emphasise these periods of rail involvement (Table 41).

[8] Drummond, *Crewe*, p.32; Dunleavy, *Lost Streets*, p.61; Jack, *Locomotives LNWR*, pp32-4; R. Leleux, *A Regional History of the Railways of Great Britain, Volume 9 The East Midlands* (Newton Abbot, 1976), p.25.
[9] TNA RAIL 1110/270 – LNWR Shareholders Reports – Report for 19/8/1876 (last to contain Wolverton building expenditure); West, *Trainmakers*, p.55; Markham, *Milton Keynes*, p.190; Drummond, *Crewe*, pp. 91, 154, 177, 208, 211. See Chapter 1.
[10] F. Hyde, *Wolverton: A Short History of its Economic and Social Development* (Wolverton, 1946), p.35; West, *Trainmakers*, p.102; F. Simpson, *The Wolverton & Stony Stratford Steam Trams* (Bromley Common, 1981), pp.5-6, p.6; L. Oppitz, *Lost Railways of the Chilterns* (Newbury, 1991), p.89; Simpson, *Newport Pagnell*, p.134; Milton Keynes Museum; http://www.mkheritage.co.uk/wsah/hood/docs/aqueductbook6.html

While the slightly higher levels c.1811-31 may be due to railway/town construction, the remainder clearly shows the elevated levels railways fostered, being higher than county and national averages. As the overall 1801-1901 percentage growth (2,137%) shows, Wolverton was the greatest single parish growth in the region across the period.

Quainton

The most rural of the case studies, Quainton Road Station was outside the village, and much more limited in its effects. From 1801-1841 its population was the typical 0-32% growth seen region-wide, dipping into a 1-32% decrease for 1841-51 (Table 42 & Fig. 80). As Quainton reverted to its former growth level by 1851-61, this temporary decrease was not substantial. Its timing, though, fits the wider 1850s Buckinghamshire trend of spreading rural decline in the north and fewer 'corridors' of growth following lines.[11] The Aylesbury & Buckingham Railway opened in 1868, the Wotton Tramway in 1871, but the parish was in its longest period of decline – 1861-81, as were many of its neighbours.[12] Lasting well past the line's opening, there was no initial resulting population boost, while its subsequent decline spreading across Quainton and its neighbouring parishes supports the countywide claim of railways acting as a rural emigration route, especially in northern Buckinghamshire.[13]

Table 42: Population figures (actual numbers, not percentage growth) for Quainton 1801-1901.

	QUAINTON
1801	750
1811	848
1821	911
1831	952
1841	966
1851	854
1861	864
1871	858
1881	804
1891	835
1901	838

Based on census summary tables via www.histpop.org

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[11] See Chapter 6.

[12] F. Cockman, *The Railways of Buckinghamshire from the 1830's* (Aylesbury County Record Office, 1971), pp.70-1; B. Simpson, *The Brill Tramway* (Oxford, 1985), pp.7, 15; Buckinghamshire Railway Centre.

[13] Simmons, *Town and Country*, pp.16-7; Simmons, *Victorian Railway*, p.319; H. Dyos & D. Aldcroft, *British Transport: An Economic Survey from the Seventeenth Century to the Twentieth* (Leicester, 1971), pp.198-9.

In 1881-91 Quainton and its surroundings recovered slightly (0-32% growth), appearing to follow the lines. The only notable local action in this period was the construction of Waddesdon Manor by Baron Ferdinand de Rothschild (1874-89); this correlates, so its workers using the tram/railway explains the population stability around the lines.[14] For the vicinity this stability only lasted the decade, while Quainton itself remained at a 0-32% growth up to 1901. As the Metropolitan Railway took over the A&BR in 1891 (subsequently the tramway in 1899) and the Great Central Railway extension was granted permission in 1893 to join the MetR at Quainton Road (opened 1899), these improved connections and necessary construction – including rebuilding the station/yard c.1896-7 – would likely have had some stabilising effect; this well-paid employment reducing the need for migration.[15]

While some correlations exist, railways were no great boon to Quainton's population, if anything acting as a negative by facilitating emigration. The few times when there were definite cases of local employment, not solely rail-based but some connected, population returned to slow growth.[16] Comparison with county and national figures (Table 43) shows no national correlation but some county connections as levels decreased with a minor recovery by 1901. Yet the extent of Quainton's decline was substantially greater, commencing well before the railways, which for the most part had no major trend-changing effect. Interestingly, the biggest single drop was 1841-51 (-12%) – double that of the 1870s (-6%), suggesting a localised predecessor to the later agricultural depression. Most pertinent, though, is that contrary to other growing settlements that gained railways, Quainton gained its lines before any population growth, which failed to materialise afterwards. It emphasises how population expansion and junctions were associated, but only with the initial presence of the former.

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[14] R. Schofield, *Along Rothschild Lines: The Story of Rothschild & Railways Across the World* (London, 2010), p.21.
[15] M. Robbins, *The Railway Age* (London, 1962), p.68; C. Maggs, *Branch Lines of Buckinghamshire* (Stroud, 2000), pp.57, 87; M. Eckett, *Signals – A Railway Miscelleny* (Copt Hewick, 2008), p.140; Simpson, *Brill*, p.47; Cockman, *Buckinghamshire*, p.133.
[16] See Chapter 9.

Fig. 80: Decadal population change in Quainton compared to extant railway lines (and roads/canal 1801-41).
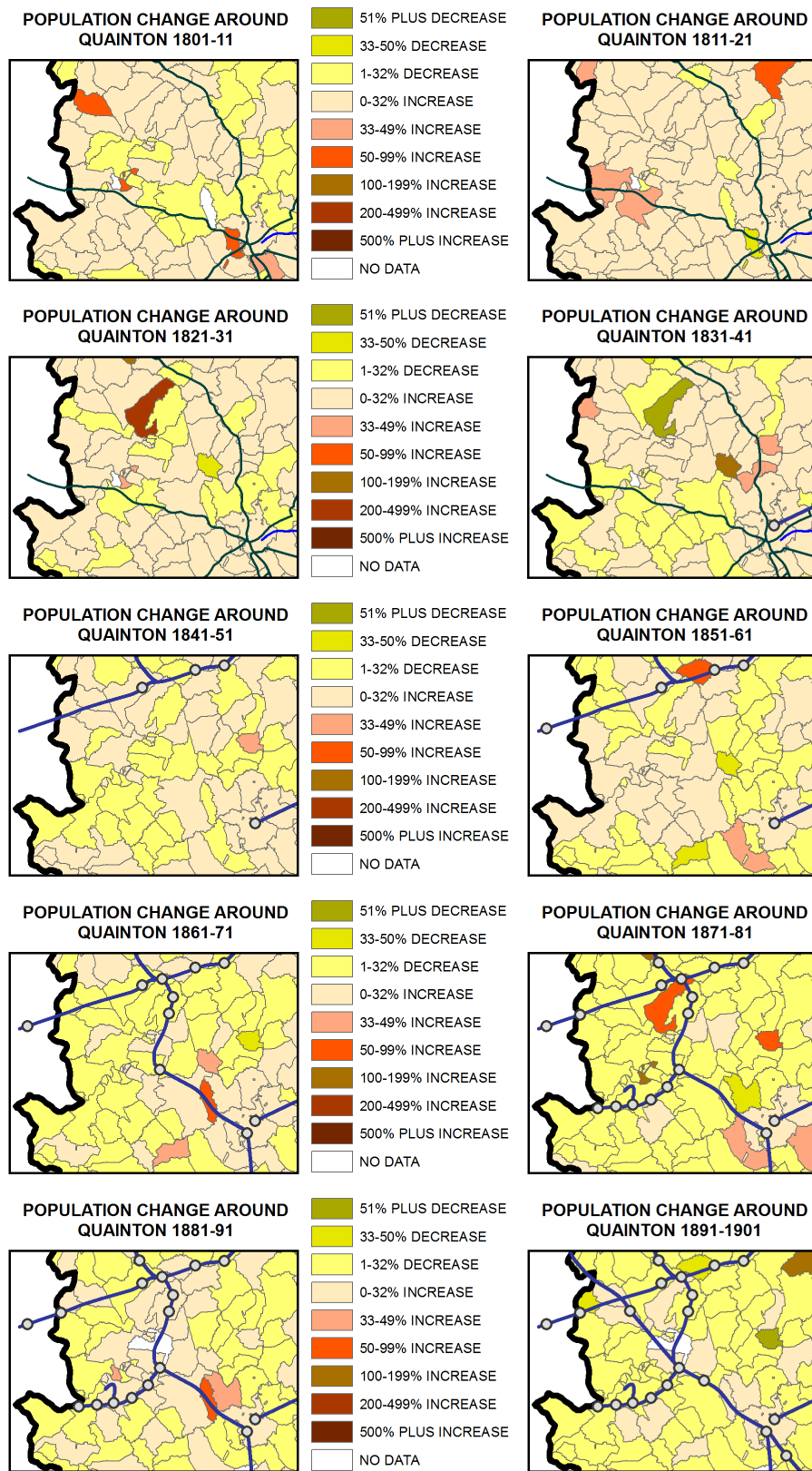
Table 43: Population growth change for Quainton, Buckinghamshire and nationally.

	NATIONAL	BUCKINGHAMSHIRE	QUAINTON
% difference 1801-11	15%	9%	13%
% difference 1811-21	18%	14%	7%
% difference 1821-31	16%	10%	5%
% difference 1831-41	14%	6%	1%
% difference 1841-51	13%	5%	-12%
% difference 1851-61	12%	1%	1%
% difference 1861-71	13%	7%	-1%
% difference 1871-81	15%	4%	-6%
% difference 1881-91	12%	2%	4%
% difference 1891-1901	12%	5%	0%
% difference 1801-51	101%	52%	14%
% difference 1851-1901	82%	16%	-2%
% difference 1801-1901	265%	82%	12%

Based on census summary tables via www.histpop.org and national figures via
http://www.tacitus.nu/historical-atlas/population/british.htm

Potton

Rising as a market gardening area, its railway (1857) was important for this.[17] However, the population remained relatively static in growth (0-32%) for 1801-71 (Table 44 & Fig. 81), suggesting that despite the proven worth of the line as a business concern, it failed to impact on population growth even when upgraded to a main line in 1861.[18] As neighbouring parishes were similar, this equally cannot be considered railways aiding stabilisation, especially as 1871-91 saw a 1-32% decline of the entire local area (bar Sandy on the main line). 1891-1901 saw recovery to the initial growth level, suggesting the former decline was part of the wider agricultural depression.

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[17] P. Ibbett, *Potton Bedfordshire: A Brief History* (Potton, 2000), p5; K Scholey, *Bedfordshire's Lost Railways* (Glasgow, 2003), p.10; http://www.pottonhistorysociety.com/history.html
[18] F. Cockman, *The Railway Age in Bedfordshire*, Publications of the Bedfordshire Historical Record Society, 53 (Bedford, 1974), p.37; http://www.disused-stations.org.uk/p/potton/

Table 44: Population figures (actual numbers, not percentage growth) for Potton 1801-1901.

	POTTON
1801	1,103
1811	1,154
1821	1,498
1831	1,768
1841	1,781
1851	1,922
1861	1,944
1871	2,072
1881	2,006
1891	1,907
1901	2,033

Based on census summary tables via www.histpop.org

Comparison with national and country levels (Table 45) reveal that while there was some correlation, the greatest increase was well before the railway. Although the main line upgrade may have aided the 1861-71 increase, the period after the railway was much lesser in impact and not an overwhelming factor. Overall, Potton shared similar characteristics to Quainton, particularly in that the railway demonstrated no real immigration benefits, while conversely acting as a potential emigration source in times of hardship.

Table 45: Population growth change for Potton, Bedfordshire and nationally.

	NATIONAL	BEDFORDSHIRES	POTTON
% difference 1801-11	15%	11%	5%
% difference 1811-21	18%	19%	30%
% difference 1821-31	16%	14%	18%
% difference 1831-41	14%	13%	1%
% difference 1841-51	13%	15%	8%
% difference 1851-61	12%	9%	1%
% difference 1861-71	13%	8%	7%
% difference 1871-81	15%	2%	-3%
% difference 1881-91	12%	7%	-5%
% difference 1891-1901	12%	4%	7%
% difference 1801-51	101%	96%	74%
% difference 1851-1901	82%	35%	6%
% difference 1801-1901	265%	164%	84%

Based on census summary tables via www.histpop.org and national figures via
http://www.tacitus.nu/historical-atlas/population/british.htm

Fig. 81: Decadal population change in Potton compared to extant railway lines (and roads/canal 1801-41).
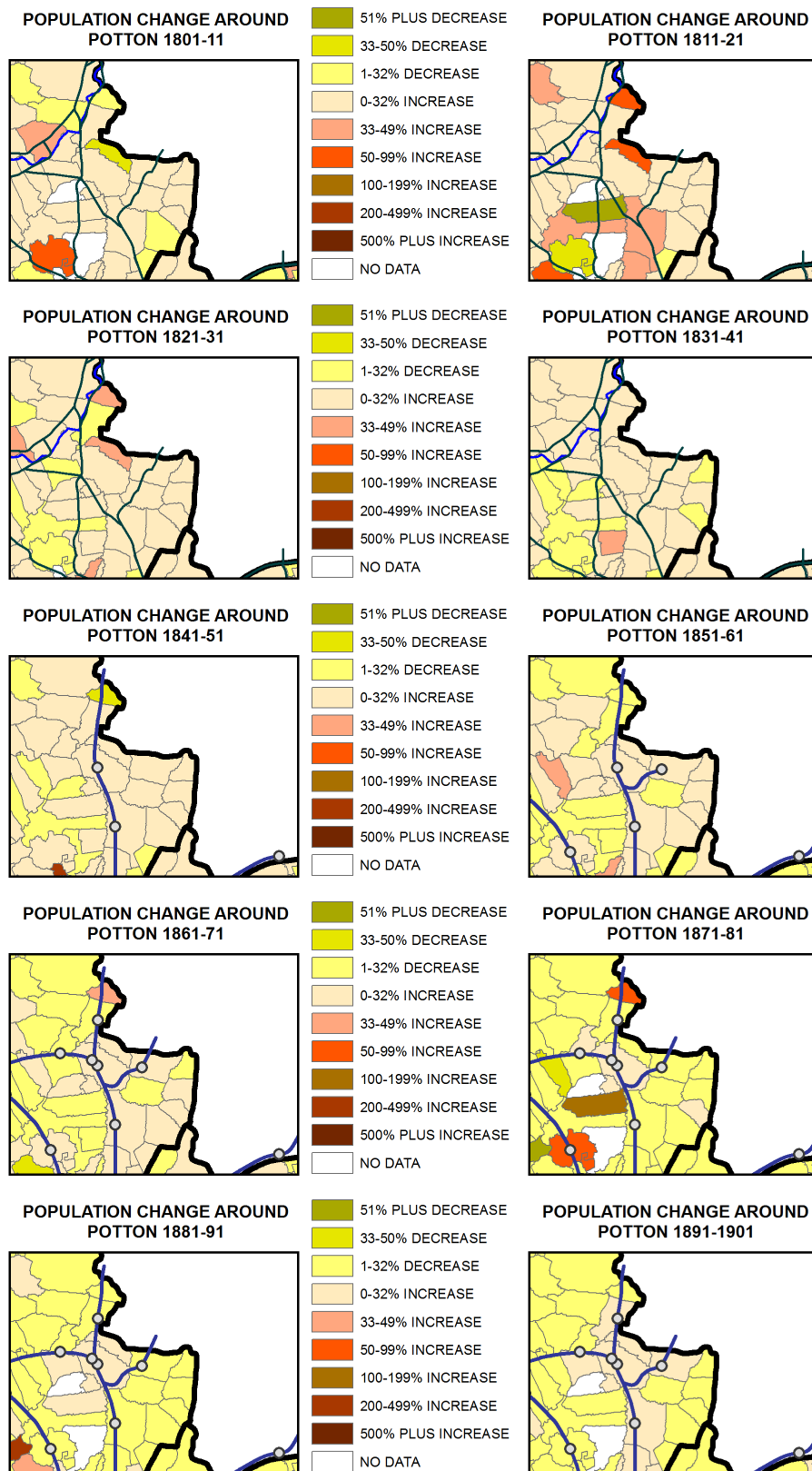
Based on census summary tables via www.histpop.org

Luton

A noteworthy urban settlement well before the period, the population data shows it remained influential (Table 46 & Fig. 82).[19] Most censuses grouped Luton and its surrounding parishes (formerly hamlets), so here Luton, East Hyde, Leagrave, Limbury and Biscot, Stopsley and West Hyde are considered together.[20]

Originally, Luton was at the common low growth level (0-32%) until 1831 when it rose to 33-49%. Peaking in 1841-51 (50-99%), it remained expanding, but at a lesser level by 1861. When the Hertford, Luton & Dunstable Railway was completed c.1858-60 it was too late for any marked influence on the 1851-61 results.[21] But for 1861-71, growth had returned to the original 0-32% level, despite this and the Midland Railway main line of 1868.[22] This level remained constant thereafter, but parish by parish its neighbours fell into decline, until the immediate vicinity of Luton was effectively the sole stable/growing area amid mass decline. Luton became stable through the broader Bedfordshire decline and the railways undoubtedly were a factor.

Yet Luton experienced less railway benefit than expected for a town.[23] The late railway construction date meant they were not an initiator of development, growth actually slowing afterwards, but they did aid later stability during the wider decline. As with the other case studies, railways were thus not the central reason for population 'change', nor were even a significant *initial* factor, but later gained importance when properly established.[24] Conversely, the decade of largest growth (1841-51) saw the construction of the Leighton-Dunstable branch, suggesting a modicum of indirect rail facilitation.[25]

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[19] See Chapter 6.

[20] Parishes: Luton, A History of the County of Bedford: Volume 2 (1908), pp. 348-375; census summary tables via www.histpop.org

[21] G. Woodward, *The Hatfield, Luton & Dunstable Railway (and on to Leighton Buzzard)* (Usk, 1977), pp.9-11; Cockman, *Bedfordshire*, p.32; Oppitz, *Lost Railways*, p.110.

[22] C. Hamilton Ellis, *The Midland Railway* (London, 1953), p.34; G. Goslin, *The London Extension of the Midland Railway: A History of the St Pancras - Bedford Route* (Caernarfon, 1994), pp.11-2.

[23] See Chapter 6.

[24] Simmons, *Town and Country*, p.276.

[25] See Appendix II.

Table 46: Population figures (actual numbers, not percentage growth) for Luton 1801-1901.

	LUTON
1801	3,095
1811	3,716
1821	3,929
1831	5,693
1841	7,748
1851	12,787
1861	17,821
1871	20,733
1881	26,140
1891	34,755
1901	38,926

Based on census summary tables via www.histpop.org

The countywide research suggests Luton had some wider influence, akin to London on the south of the region, and comparison with national and county averages demonstrates the extent of this (Table 47). Excepting an unusual drop c.1811-21, Luton was continually above national averages and even more so over Bedfordshire's. One of Bedfordshire's leading urban centres, the figures reveal the growth that resulted from straw, hats, industry and railways – growing by 1,158% in the century, even with only late railway development.

Table 47: Population growth change for Luton, Bedfordshire and nationally.

	NATIONAL	BEDFORDSHIRE	LUTON
% difference 1801-11	15%	11%	20%
% difference 1811-21	18%	19%	6%
% difference 1821-31	16%	14%	45%
% difference 1831-41	14%	13%	36%
% difference 1841-51	13%	15%	65%
% difference 1851-61	12%	9%	39%
% difference 1861-71	13%	8%	16%
% difference 1871-81	15%	2%	26%
% difference 1881-91	12%	7%	33%
% difference 1891-1901	12%	4%	12%
% difference 1801-51	101%	96%	313%
% difference 1851-1901	82%	35%	204%
% difference 1801-1901	265%	164%	1158%

Based on census summary tables via www.histpop.org and national figures via
http://www.tacitus.nu/historical-atlas/population/british.htm

Fig. 82: Decadal population change in Luton compared to extant railway lines (and roads 1801-41).
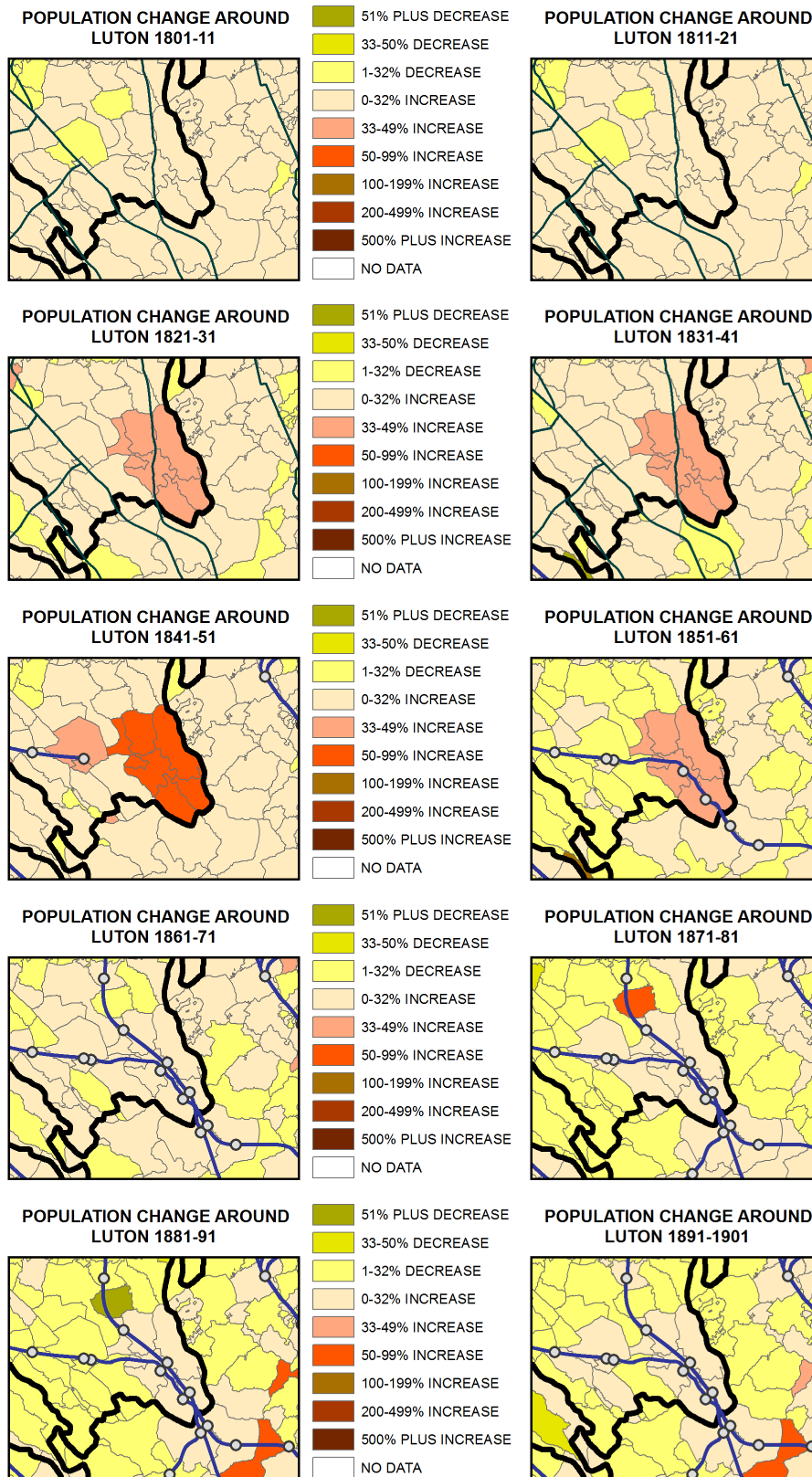
Based on census summary tables via www.histpop.org

St Albans

Hertfordshire's most famed town, St Albans sported the most stations of the case studies and their chronology allows comparison of branch and main line effects. Commencing at the typical 0-32% growth level (Table 48 & Fig. 83), St Albans remained at this level throughout, baring a 1-32% decrease c.1831-41 – when the LBR decimating stagecoaches.[26] As this parish around the former Abbey was primarily commercial rather than residential this static nature is understandable, as is the decline of coaching inns affecting population slightly in the late 1830s.[27] The surrounding residential parishes, St Michaels, St Peters and St Stephens, also saw initial low levels, with temporary growth (33-49%) c.1811-21.

Thereafter, there was fluctuating low decline until 1871. This was worst c.1851-61 in St Stephens, matching the opening of the LNWR branch (1858).[28] The parish's rural nature (as opposed to St Albans itself) may have been a factor. By comparison, this trend was not repeated for the Hatfield & St Albans branch (1865) or MR (1868); of these parishes, the only one declining c.1861-71 was St Michaels, with no railway.[29] This stabilising rail effect is more noticeable later, as they remained stable/growing when the broader area fell into decline. As this covered 1871-91, the agricultural depression appears a key factor, although in this case with urban immigration as opposed to rural emigration - the opposite of Potton.[30] For 1891-1901 one final change occurred, as population diminished in St Stephens on the LNWR branch but actively rose (33-49%) in St Peters on the MR main line, with some nearby parishes along the H&StAR similarly affected (akin to 1811-21). This not only shows the branch/main line dichotomy but also the commuting suburb forming around the MR. The final population effects were still slower that might be expected.[31]

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[26] J. Corbett, *A History of St Albans* (Chichester, 1997), pp.77-8, Leleux, *Regional History*, Vol. 9, p.31; Museum of St Albans.

[27] Pigot & Co's Royal National and Commercial Directory and Topography of the Counties of Essex, Herts, Middlesex, September 1839 - http://www.hertfordshire-genealogy.co.uk/data/projects/harpenden-road/hr-22-railways.htm ; Corbett, *St Albans*, p.88; MoStA.

[28] S. Jenkins, *The Watford to St Albans Branch* (Usk, 1990), p.15; Corbett, *St Albans*, p.95; M. Freeman, *St Albans: A History* (Lancaster, 2008), p.215.

[29] R. Taylor & B. Anderson, *The Hatfield & St Albans Branch* (Oxford, 1988), p.10; Oppitz, *Lost Railways*, p.114; P. Richards & B. Simpson, *A History of the London and Birmingham Railway Volume 1* (Witney, 2004), p.112; C. Grinling, *The History of the Great Northern Railway, 1845-1922* (London, 1966), pp.195, 231.

[30] Schwartz, Gregory & Thévenin, 'Spatial History', *Journal of Interdisciplinary History*, pp.56, 70, 71, 77.

[31] F. Mason, *Gibb's Handbook to St Albans* (1884), p.43; Corbett, *St Albans*, p.104; Freeman, *St Albans*, pp.227-8; MoStA.

Fig. 83: Decadal population change in St Albans compared to extant railway lines (and roads 1801-41).
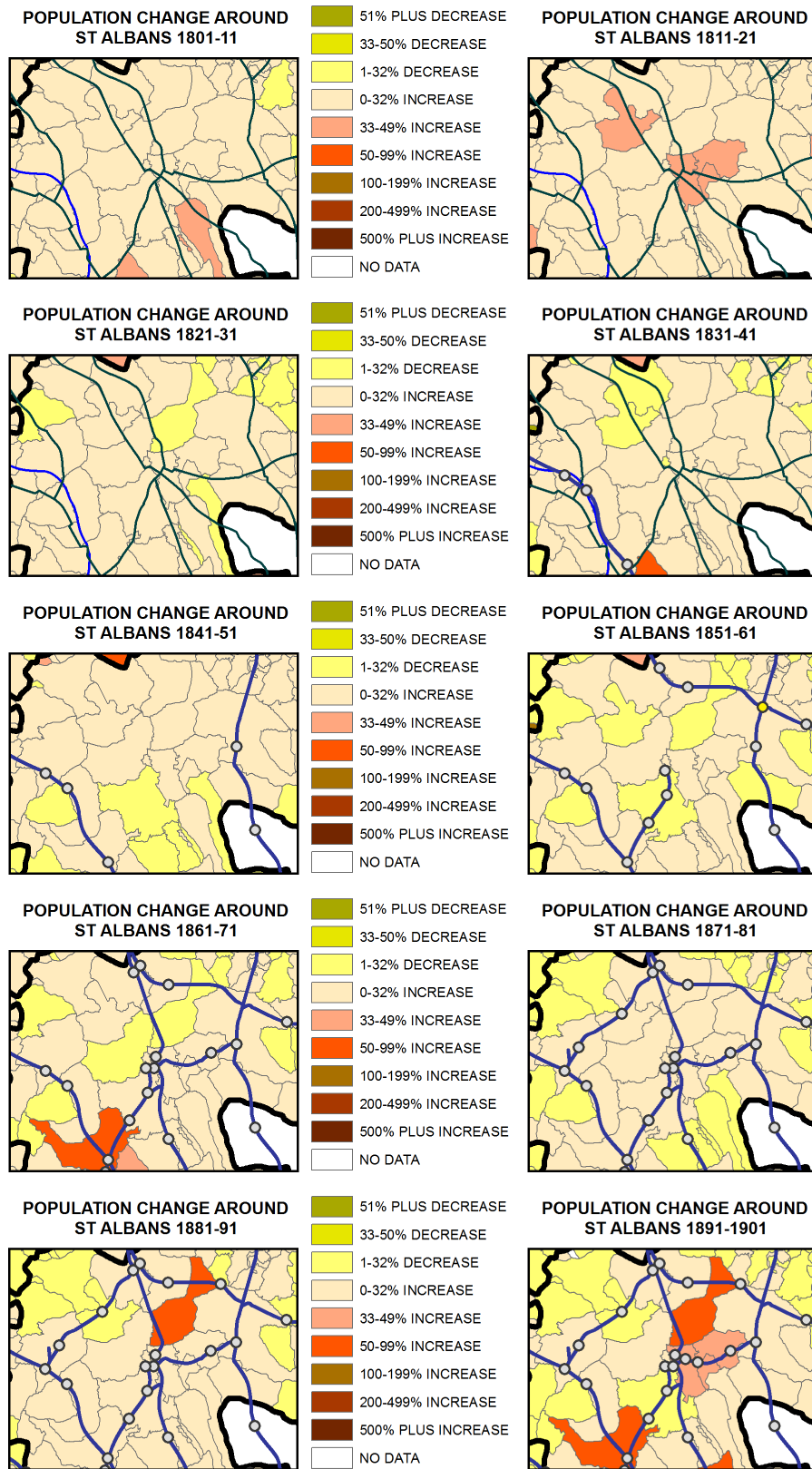
Based on census summary tables via www.histpop.org

Table 48: Population figures (actual numbers, not percentage growth) for St Albans and surrounding parishes 1801-1901.

	ST ALBANS	ST MICHAEL	ST PETERS	ST STEPHENS
1801	1,911	1,094	1,674	1,266
1811	2,152	1,222	1,828	1,394
1821	2,819	1,370	2,461	1,580
1831	3,092	1,527	2,973	1,746
1841	2,904	1,999	3,701	1,826
1851	3,371	2,248	3,746	1,802
1861	3,679	2,303	4,158	1,786
1871	3,946	2,115	5,261	1,979
1881	4,097	2,256	6,562	1,980
1891	4,434	2,437	8,044	2,196
1901	4,467	3,088	11,714	2,085

Based on census summary tables via www.histpop.org

While not having the growth patterns or scale of Luton, St Albans was still important during the broader county-wide population decline and shows the positive and negative variety that stagecoach collapse, branch railways, main lines and the agricultural depression itself could have on a provincial market town.

Table 49: Population growth change for St Albans, St Peters, Hertfordshire and nationally.

	NATIONAL	HERTFORDSHIRE	ST ALBANS	ST PETERS
% difference 1801-11	15%	11%	13%	9%
% difference 1811-21	18%	19%	31%	35%
% difference 1821-31	16%	10%	10%	21%
% difference 1831-41	14%	10%	-6%	24%
% difference 1841-51	13%	7%	16%	1%
% difference 1851-61	12%	4%	9%	11%
% difference 1861-71	13%	11%	7%	27%
% difference 1871-81	15%	6%	4%	25%
% difference 1881-91	12%	8%	8%	23%
% difference 1891-1901	12%	14%	1%	46%
% difference 1801-51	101%	72%	76%	124%
% difference 1851-1901	82%	49%	33%	213%
% difference 1801-1901	265%	157%	134%	600%

Based on census summary tables via www.histpop.org and national figures via
http://www.tacitus.nu/historical-atlas/population/british.htm

Comparison of St Albans parish with county and national averages (Table 49) shows that despite the banding being effectively static, there were still some variations. Initially St

Albans' growth was greater than the county average, as expected akin to Luton, although the 1838 LBR impact is plain. Yet from 1851 onwards the town's population growth rate substantially diminished. Conversely, while the actual numbers (Table 48) show that the parishes of St Michaels and St Stephens were smaller in population, St Peters increased massively – by 600% (1801-1901) compared to just 134% for St Albans itself. As the parish crossed by the H&StAR and MR, gaining associated commuter sprawl, it clearly shows a population shift away from the town centre, along with rising importance of the settlement as a commuter area.

Bushey

Never originally intended to have a station; that Bushey rose as a commuter suburb shows the capacity railways had for medium-distance daily mobility.[32] It and Watford's significance in this is proven by the necessity to build the Watford-Euston suburban 'new line' c.1912.[33] But the population data (Table 50 & Fig. 84) suggests this importance may not have been as direct as first appearances insinuate.

1801-11 saw a 33-49% increase, larger than its surroundings, with no obvious explanation aside from some popularity of Bushey Heath as a Georgian location for 'healthy' air.[34] Its growth diminished thereafter (to 0-32%) until c.1831-41, when the largest individual expansion occurred (50-99%). The LBR was opened in 1839, but the station only opened in December 1841.[35] Particularly as the LBR records note no memorial asking for a station but rather decided for themselves to create one, the station almost certainly resulted from this population growth - not vice versa.[36] As for why, Watford Station opened in 1838, and while this does not appear to have had much effect on that parish, Bushey being within easy walking access may have led to it slowly becoming an early suburb of Watford. This is supported by the provision of a dedicated police house in 1840.[37]

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[32] D. Payne, *The Story of Bushey in the Age of the Steam Train* (Bushey, 2011), p.15, 19, 25.
[33] Leleux, *Regional History*, Vol. 9, p.21; http://www.disused-stations.org.uk/w/watford_high_street/index.shtml
[34] Payne, *Bushey*, p.6.
[35] Ibid; p.4; Richards & Simpson, *London Birmingham Railway* Vol. 1, p.39.
[36] TNA RAIL 384/4 - LBR/LNWR Board Minutes (Nos 1005-1809) - Minute No. 1663, 9/7/1841; *Railway Times* 4/12/1841 – in Payne, *Bushey*, p.9.
[37] Bushey Museum.

The final growth point was 1861-71 (33-49%), following the Watford & Rickmansworth Railway, and clearly is a wider result of Watford's expansion. Bushey Station is likely to have been a factor, both for Watford and London commuting, but the railway was equally a factor in Watford's growth with the separate knock-on for Bushey. This also correlates with the agricultural depression, so urban Watford attracting rural migration. The 1860s saw the rise of 'New Bushey' specifically around the station.[38] Watford showed another similar growth in 1891-1901, rising as a 'dormitory town', but Bushey elsewise remained constant at 0-32%, even when other neighbouring parishes went into slight decline.[39] The opening of Herkomer's Art School in 1883 (aided by rail access) led to no major population impact.[40]

Table 50: Population figures (actual numbers, not percentage growth) for Bushey and surrounding parishes 1801-1901.

	BUSHEY
1801	856
1811	1,264
1821	1,507
1831	1,586
1841	2,675
1851	2,750
1861	3,159
1871	4,543
1881	4,788
1891	5,652
1901	6,686

Based on census summary tables via www.histpop.org

Considering county and national averages (Table 51), Bushey revealed six atypical growth points, but considering its proximity to Watford - influencing the immediate area - and later commuting, these are rational and with railway connections. Elsewise, Bushey matched most small villages, being well within county averages. The railway factor, although not acting alone, was, therefore, significant in affecting Bushey's population development over that of villages without the direct links to both London and a major urban centre.

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[38] Parishes: Bushey, *A History of the County of Hertford: Volume 2* (1908), pp. 179-186; Payne, *Bushey*, p.17; G. Longman, *Bushey Then & Now: Introduction* (Bushey, 1997), p.13; Richards & Simpson, *London Birmingham Railway* Vol. 1, p.39; Longman, *Bushey Introduction*, p.13; I. Mackay, Bushey's History - Lecture for Oxhey Village Environment Group, 11th March 2010.
[39] J. Rannard, The Location and Economic Growth of the Watford Paper and Printing Industries (University of Bristol, 1963), p.3.
[40] Payne, *Bushey*, p.20, Bushey Museum.

Fig. 84: Decadal population change in Bushey compared to extant railway lines (and roads/canal 1801-41).
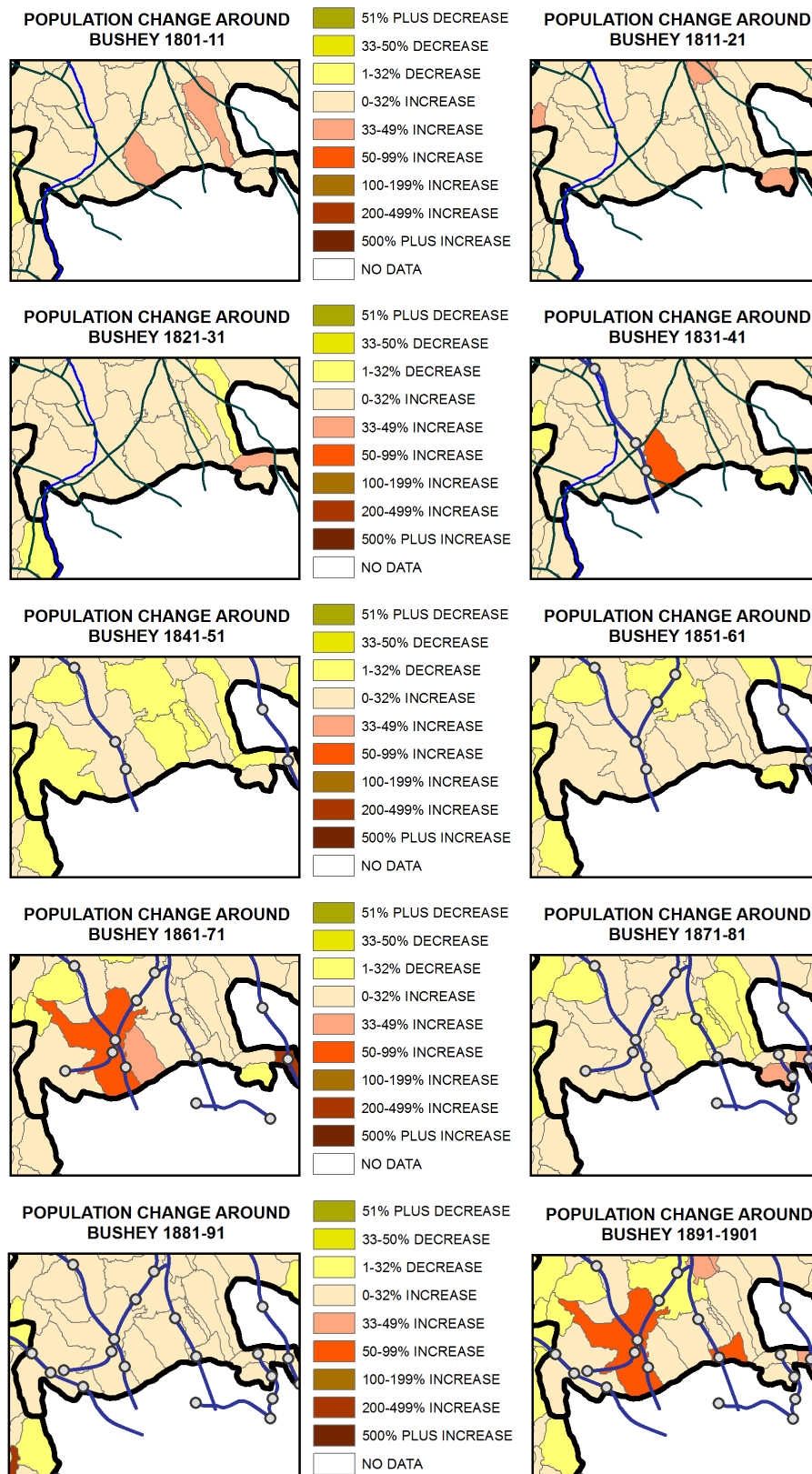
Based on census summary tables via www.histpop.org

Table 51: Population growth change for Bushey, Hertfordshire and nationally.

	NATIONAL	HERTFORDSHIRE	BUSHEY
% difference 1801-11	15%	11%	48%
% difference 1811-21	18%	19%	19%
% difference 1821-31	16%	10%	5%
% difference 1831-41	14%	10%	69%
% difference 1841-51	13%	7%	3%
% difference 1851-61	12%	4%	15%
% difference 1861-71	13%	11%	44%
% difference 1871-81	15%	6%	5%
% difference 1881-91	12%	8%	18%
% difference 1891-1901	12%	14%	18%
% difference 1801-51	101%	72%	221%
% difference 1851-1901	82%	49%	143%
% difference 1801-1901	265%	157%	681%

Based on census summary tables via www.histpop.org and national figures via
http://www.tacitus.nu/historical-atlas/population/british.htm

Comparison to Hypotheses

The case studies show tendencies matching the countywide trends, particularly early northern rural decline and urban stability. Many of these correlate with railway development, along with other factors such as the 1870s agricultural depression. Nonetheless, there was little uniformity in extent, with substantial variations. Rural Quainton showed the least effect, Luton's late railways only began impacting after the main urban growth was past, while Wolverton was exceptional in railway involvement. In the cases of urbanising development, especially St Albans and Bushey, commuting was a major facet of population growth with its own railway aspect. But the lack of exceptional variation post-1883 suggests the local impacts of the 'Cheap Trains Act' came from encouraging prior commuting rather than actively changing population growth. Therefore, the historiography of railways being a notable aspect in mobility, and of the 'swarming' effect railways could have on urban population are supported, even if shown to vary according to settlement size, previous development (especially for attracting said railways) and other external factors.[41]

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[41] Rannard, *Watford Paper and Printing*, p.3; Robbins, *Railway Age*, p.21; Simmons, *Victorian Railway*, p.319; Simmons, *Town and Country*, pp.17, 298; M. Casson, *The World's First Railway System: Enterprise, Competition and Regulation on the Railway Network in Victorian Britain* (Oxford, 2009), pp.17-20, 322-4; O'Brien, *New Economic History*, pp.97, 100.

Considering the hypotheses, the case studies demonstrate within the countywide rural-urban population shift how some retained higher growth despite nearby decline as in the 'corridor' theory. However, the countywide claim of reductions in short-distance migration between parishes is only clearly visible when considering the full region; these case studies show little sign. This suggests cases of short-distance leaching were not substantially wide-spread before the railways; thereafter becoming ever-more sporadic.[42] The necessity for small-scale regional analysis alongside a parish-by-parish study, therefore, aids the identification of trends amid micro-variations.

Hypothesis 16: Railways were generally attracted to rising urban/industrial towns, rather than the provision of a railway triggering the town's mass urbanisation or industrialisation.

This is closely associated with the transport hypothesis of junctions and 'hubs' not initiating urbanisation, being primarily attracted to already-growing areas, but later aiding in their development.[43] Population growth strongly indicates urbanisation and the case studies emphatically demonstrate this hypothesis. Luton and St Albans were well-established and growing before the railways, attracting several lines, while Bushey only warranted a station after development commenced. Quainton stagnated as a rural junction with no positive development. Potton and Wolverton, however, are exceptions. Wolverton town post-dated the railway, but only expanded through company necessity – when blocked by the Radcliffe Trust and later housing limitations, Bradwell rose in its place. Equally, Potton's line was only built due to Captain Peel's wishes, and upgraded solely due to its geographic positioning; population neither benefiting nor triggering rail construction/upgrading.

To conclude, population and rail development were closely correlated, with each affecting the other. But while Simmons was apt in saying that negatives were comparable with the Dissolution in significance, other factors such as the agricultural depression, combined with growing urban employment, were just as significant in facilitating both positive and negative change.[44]

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[42] Simmons, *Victorian Railway*, p.319. See Chapter 6.
[43] See Chapters 3, 7 and 8.
[44] Simmons, *Town and Country*, p.298; Schwartz, Gregory & Thévenin, 'Spatial History', *Journal of Interdisciplinary History*, p.56; Moore, *Agricultural Hertfordshire* (University of Hertfordshire, 2010), pp.15, 62.

Part 4: Conclusions
Chapter 12

The case studies were selected to show a wide spread of railway developments – on towns and villages, agricultural and semi-industrialising economies, early and late rail connection, junctions and through-stations and with differing levels of direct railway control, with the 'railway town' at the most extreme. The results demonstrate that railways were a factor in each of their development, but the extent of this varied considerably from parish to parish and across the period as the railways themselves developed. The initial finding, therefore, is that despite their great variety the case studies support the newer historiography on railways as a 'facilitator' to development with other factors, unrelated to the railways, often being more prevalent, rather than the contemporary and early historical view of railways as the primary and direct initiator of progress.[1] More broadly, it also shows that the hypotheses presented are an accurate overview of general rural railway impacts, and that it and the dual-methodology used throughout this study have a wider applicability that can be reproduced in future studies.

Railways and Rurality

Of the countywide hypotheses tested on the case studies, some were only applicable at a regional level, and all revealed exceptions, but nonetheless all bar one were found to be valid to some extent. Importantly, while most showed railway construction as a reaction to factors rather than triggering them, railways could still help or hinder later progress; just as the case studies' development was not static, neither were the influences on them over time.

Transportation
Growing competition forced the development of superior services in order to maintain profits, long-distance stagecoaches and canals declining and turning to short-distance travel, but most junctions and 'hubs' merely supported prior growth rather than actively creating urbanised centres.

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[1] T.R. Gourvish, *Railways and the British Economy 1830-1914* (London, 1980), p.40; P. O'Brien, *The New Economic History of the Railways* (London, 1977), p.100; R. Church, *The Victorian Boom 1850-1875* (Economic History Society, 1975), p.34; J. Simmons, *The Railway in Town and Country 1830-1914* (Newton Abbot, 1986), p.17.

Occupation

The counties demonstrated growing transport-based occupations, particularly in short-distance road travel. Industry was not triggered by railways, but was later supported, whereas the period saw the beginnings of rail-led commuting and suburbia.[2] The one faulty hypothesis showed that despite a developing rural-urban structure, railways only 'cemented' this aspect rather than actively shaping it.[3]

Land Use

As railway communication improved, urban influence on their wider vicinity increased, while industry, suburbs and sprawl gravitated towards major stations. Landowners and local opinion held substantial power over railway construction, but ultimately with more distant parishes ever-increasingly stagnating.

Population

Railways facilitated swifter movement, in turn accentuating a rural-urban shift and aiding the decline of short-distance migration. While urbanising settlements usually attracted lines, rather than vice versa, parishes along railway lines saw greater population stability than those farther away, excepting in the most rural of areas.

In addition to the hypotheses, other trends became apparent. Smaller lines mostly originated from local companies which were later taken over by national conglomerates. Gladstone's Railway Acts had wide impacts, particularly on encouraging commuting, while changing demands on railways occasionally led to stations being resited – having its own effects on land use.[4] Midland Railway finances suggest that livestock was ever-increasingly transported by rail even if the station used was not in a pasture area.[5] This point also supports the general trend of decreasing settlement self-sufficiency, as alternate markets and occupations became accessible. From arguments for and against line construction to excursions and even the renaming of pubs, the railways had a far-reaching social and cultural impact that is still felt today.

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[2] M. Freeman, *St Albans: A History*, (Lancaster, 2008), pp.225, 231, 253.
[3] Gourvish, *Railways Economy*, p.31.
[4] T.C. Barker & C.I. Savage, *An Economic History of Transport in Britain* (London, 1974), p.83; J. Simmons, *The Victorian Railway* (London, 1991), p.274.
[5] TNA RAIL 491/672, RAIL 491/674, RAIL 491/675 - Midland Railway Company Records, Traffic and Expenses at Stations.

The case studies, however, reveal the complexity of rail involvement across history. Despite many similar trends, between them there was much variety in overall effect: Wolverton depended near-entirely on the railway, while Bushey benefitted and grew substantially as a result of its station. Potton gained stability as its line boosted market gardening. Luton had to change economic function, but the replacement was strengthened in turn. St Albans nearly collapsed with the railway but recovered with rail commuting. Lastly, Quainton itself stagnated, but milk traffic aided the wider vicinity.

Whether positive, negative, or both, all experienced some degree of rail impact, so the railways were undoubtedly an important aspect in rural development. But that similar points could lead to such differing results shows that none of the changes that occurred were solely due to the railways themselves. Even Wolverton, the veritable progeny of the railways, was subject to external factors; while the town served the railway, this was only because other locations (and thus factors) made demands on the railway that had to be met to retain business. The historiography supports this, both in general with railways as a 'facilitator' for these factors, and with many of the specific trends identified correlating with other studies, whether migratory, industrial or the social opinions that dictated the railways' own history.[6]

Developing the Historiography

When considering this region in terms of contribution to the overall national historiography, three findings appear most significant: the development of the historiography itself, the importance of variation to this, and the issue of 'railway towns'. This study has revealed limitations in the current historiography, but equally presents new ideas building upon the issues raised. Intended for wider use in the field, developmental structures on rural rail impacts and 'railway towns' are proposed, intended to aid continuing research and understanding, plus a new methodology designed to be replicable in future studies of other regions, not only compensating for previous historiographical limitations but ultimately enabling cross-country comparison.

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[6] For example: Gourvish, *Railways Economy*; R. Schwartz, I. Gregory & T. Thévenin, 'Spatial History: Railways, Uneven Development, and Population Change in France and Great Britain, 1850-1914', *Journal of Interdisciplinary History*, Volume 42, Number 1 (Summer 2011), pp.53-88; B.R. Mitchell, The Coming of the Railway and United Kingdom Economic Growth, *The Journal of Economic History*, Vol. 24, No. 3 (Sep., 1964), pp.315-336; Simmons, *Town and Country*, pp.16, 19-20, 298; Simmons, *Victorian Railway*, pp.369-76.

Historiographical Development

From Baxter (1866) to Casson (2009), the theoretical framework behind perceived railway significance has developed greatly, and this research supports the latest view in this chain.[7] Arguably the widest issue in the historiography, the contemporary view of railways as the essential central element to always-positive advancement, is, for the overwhelming majority of the counties and case studies, false.[8] Its origins are understandable; timings coincided and many early writers were actively aiming to boost the railways' image, while the drop in academic interest until the 1950/60s delayed revision.[9] But railways were actually one factor amongst many, and their significance lay through 'facilitating' to varying degrees the speed and extent of existing factors, and potentially introducing new factors.[10] This was often the case even where railways were directly involved, as the railways themselves developed to suit the changing demands placed upon it.[11] Similarly, the aforementioned factors developed themselves, so 'facilitation' was itself variable – further reinforcing the complexity of historical investigation; Simmons concluding that it was 'unanswerable' to give their exact contribution.[12] The case studies conversely revealed that while 'facilitation' was predominant, there were rare occurrences when the earlier – now defunct – 'change' notion was more appropriate (such as with stagecoaches), showing a noteworthy limitation with the premise of a single-answer historiography.

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[7] R. Baxter, 'Railway Expansion and its Results', *Journal of the Statistical Society*, XXIX (1866), pp.549-595; M. Casson, *The World's First Railway System: Enterprise, Competition and Regulation on the Railway Network in Victorian Britain* (Oxford, 2009).

[8] Baxter, 'Railway Expansion', *Journal of the Statistical Society*, p.566; M. Robbins, *The Railway Age* (London, 1962), pp.11, 21, 54, 156; G. Hawke & M. Reed, 'Railway Capital in the United Kingdom in the Nineteenth Century', *The Economic History Review*, New Series, Vol. 22, No. 2 (Aug., 1969), p.269; John Langton, 'The Industrial Revolution and the Regional Geography of England', *Transactions of the Institute of British Geographers*, New Series, Vol. 9, No. 2 (1984), p.163; O'Brien, *New Economic History*, pp.27, 100; Simmons, *Town and Country*, pp.16-17; Simmons, *Victorian Railway*, p.373; R. Fogel, *Railroads and American Economic Growth* (Baltimore, 1964), pp.1-13, 207-8, 224; A. Fishlow, *American Railroads and the Transformation of the Ante-Bellum Economy* (Harvard, 1965), pp.13-14, 34, 55, 62, 236, 260.

[9] Fogel, *Railroad Growth*, pp.1-10. For example: Mitchell, 'Railway Growth', *Journal of Economic History*, pp.315-336; Ashworth, *Economic History*; Robbins, *Railway Age*; Hawke & Reed, 'Railway Capital', *The Economic History Review*, pp.269-286; Barker & Savage, *Transport*, p.79; Simmons, *Town and Country*, p.20; F. Andrews, *The effect of the coming of the railway on the towns and villages of East Kent, 1841-1919* (University of Kent, 1993), pp.4-6.

[10] Gourvish, *Railways Economy*, pp.9, 14, 31; Dyos & Aldcroft, *British Transport*, p.215; Schwartz, Gregory & Thévenin, 'Spatial History', *Journal of Interdisciplinary History*, pp.56-7; Simmons, *Town and Country*, pp.17, 20-1; Casson, *First Railway System*, pp.17, 327; O'Brien, *New Economic History*, p.19.

[11] For example the decline of terminus-terminus business practices as rising competition forced a more widespread service to retain revenue. Gourvish, *Railways Economy*, p.15.

[12] Simmons, *Town and Country*, p.17.

Variation

Almost all aspects of railway and regional development reflected in the counties were shown occurring among the case studies, yet varying in degree between parishes and across the period. The effects could be positive, negative or even both simultaneously and were equally fluid. While this variation is recognised in individual factors and examples, a logical aspect of 'facilitating' other non-rail elements, its role within historiographical thinking itself has not been sufficiently emphasised. The research completed here shows there is a risk of exceptionally broad national (or even international) analysis being erroneous through averaging and thus of questionable applicability to individual settlements.[13] This complexity and variation thus demonstrates the course of historiographical debate and the reason for continuing discussion, as supporting *and* opposing examples can be found for virtually every generalisation.[14] It also shows how important historical investigation is in revealing and understanding the many facets behind otherwise-oversimplified occurrences.

The dual-methodology used in this study, however, mitigates averaging through cross-examination of regional trends using individual parishes. By using a spread of case studies these trends can be confirmed or disproved, even when considering cases of exceptions, and also demonstrate the variation in extent that can occur. The result are broader conclusions that for the most part remain applicable at different scales of study, whether local or regional. Intended to be easily duplicated for different counties and regions, multiple studies of this type would enable comparison between them, and with sufficient studies could form national-level statements of railway impact but at a parish level. This would offer the prospect not only of confirming aspects in which railways did (or did not) interact overall, but enable wider national analysis of similar regions, or areas of substantial difference, and their relative geographic positioning. This methodology is not only beneficial in this manner: should it be desired, it could be inverted to identify if a single location demonstrated 'typical' impacts compared to its locale, or if exceptional (such as with Wolverton).

Furthermore, while there are detailed econometric methods that can provide some of this information, these are more limited when considering the social aspect. More importantly,

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[13] Schwartz, Gregory & Thévenin, 'Spatial History', *Journal of Interdisciplinary History*, pp.53-88; W. Ashworth, *An Economic History of England 1870-1939* (London, 1960), pp.109-137; H. Dyos & D. Aldcroft, *British Transport: An Economic Survey from the Seventeenth Century to the Twentieth* (Leicester, 1971), pp.178, 182.
[14] Simmons, *Town and Country*, pp.17, 19.

this proposed new method obviates the need for such complex mathematics, so being more approachable for all levels of researcher while still providing detailed material. It should be added that, independently or combined with this system, the hypotheses presented form a prediction of rail impacts on rural areas generally, that can be tested against other regions and settlements. Their veracity or otherwise would in itself further the national historiography through encouraging wider rural-based study and revealing any cases of broader variation.

'Railway Towns'

The historiography of 'railway towns' correlates with Wolverton in many ways, but raises a wider issue. Referencing Simmons; railway impacts were never more apparent than in 'railway towns', but as a result the issues analysed here have been all but overlooked in their study.[15] Some aspects, such as percentage of total employed, have been covered but with distinctly different aims. While railway impacts were 'obvious', this does not mean they were identical or uniform between 'railway towns'; analysis of this nature is thus still valuable. Furthermore, when considering the broader railway historiography these views mostly ignored 'railway towns', consequently appearing at loggerheads with their development; neither being entirely appropriate.

The 'facilitation' model holds for most settlements, for two key reasons. First is the time lag between the coming of the railway and its potential effects.[16] Secondly, the theoretical long-term impacts, while having connections to the railways, were not dependent on railways to flourish, having other influencing factors.[17] The mostly discredited 'change' model conflicts with 'facilitation' in terms of how directly railways were involved, but still references time lag and – importantly – developments were still a chain reaction.[18]

But early 'railway towns' saw virtually no time lags and the railways affected everything directly with few external factors – little was the result of knock-on effects. For example, if additional workers were deemed necessary, then housing was built by the company; there was no delay as initial development was planned, as opposed to occurring naturally. Equally, occupation centred on the works as virtual one-industry towns, while facilities were provided

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[15] Simmons, *Town and Country*, p.17.
[16] Ibid; p.16; Gourvish, *Railways Economy*, p.14; M. Casson, *The Determinants of Local Population Growth: A Study of Oxfordshire in the Nineteenth Century*, EHS Annual Conference 2011.
[17] O'Brien, *New Economic History*, p.100; Simmons, *Town and Country*, p.17.
[18] G. Hawke, *Railways and Economic Growth in England and Wales 1840-1870* (Oxford, 1970), p.410; Gourvish, *Railways Economy,* p.35; Baxter, 'Railway Expansion', *Journal of the Statistical Society*, p.594.

as much to control the town as to be philanthropic. Migration, occupation and initial expansion were essentially dependent on the needs of the company at any given point. As the towns developed, however, the power of the company over the settlement relaxed, such as turning housing over to speculators and amenities to local Boards, while rising non-conformity and alternate industry simultaneously reduced the control of companies over their workforce.[19]

Therefore, a new development theory is proposed, adding a third tier to the historiographical models, creating a theoretical structure for comparative analysis. Simply put, railways did not 'change' or 'facilitate' early 'railways town' development because far from *bringing* change, for these settlements the coming of the railways *was* the change – a founding 'cause', so to speak. As the requirements of the Companies altered, works were expanded and the town adjusted to suit by the railway itself. These expansions were only necessary due to the increasing competition between the many railway companies: had there been no need for continual expansion and development of each railway to retain its position as a leading company, there would have been no need to invest in works expansion, and thus in the towns.[20] This is aptly demonstrated with the 1860s standardisation of London & North Western Railway locomotives - construction was withdrawn from Wolverton, forcing migration to other locomotive works such as Crewe.[21] Unlike in most towns, railways did not merely enable migration or encourage the establishing of industry but was the central founding 'cause' of them. This also demonstrates Casson's description of the increasing specialisation of industrial areas, 'railway towns' becoming new examples, albeit with much of the initial population coming from other well-established industrial centres.[22] By comparison, less-immediate changes were often delayed; with stable wages and generally-secure employment, Simmons noted many 'railway towns' ultimately became static or even backward in terms of self-government.[23]

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[19] R. Willcocks, 'Town Planning', *Journal of the Society of Comparative Legislation*, New Series, Vol. 11, No. 2 (1911), p.215.
[20] Casson, *First Railway System*, pp.16-19, 316.
[21] However, only after attempting to reduce Wolverton repair wages by building more employee accommodation, thereby reducing the necessary transport allowance - TNA RAIL 1110/260 – London & Birmingham Railway Shareholders Reports – Report for 22/2/1854.
[22] Casson, *First Railway System*, p.3; B. Turton, 'The Railway Towns of Southern England', *Transport History*, 2 (1969), pp.121-3; E. Vollans, 'Derby: A Railway Town and Regional Centre', *Transactions and Papers* (Institute of British Geographers), No. 15 (1949), p.94.
[23] Simmons, *Town and Country*, pp.194-5.

Once the towns became established, though, this founding 'cause' model becomes less appropriate. Instead, during this middle phase the railways acted more as an initiator of 'change' as in the wider early historiography. Railways still controlled development, but unlike before did not actively make all the changes themselves. For example, housing and facility construction was initiated by most companies, but by c.1870 this had ceased. With the advent of building societies and chapel groups, this relaxed railway control enabled previously-stifled development to be redressed. Houses were still built on railway land to their dictate, but by now it was speculative contractors doing the actual work at the companies' behest. Finally, with the decline of paternalistic control and the rise of nonconformity, the 'railway towns' became credited with gaining 'independence' from their companies.[24] No longer politically, socially or developmentally under corporate control, they became akin to most other towns. Their development henceforth best matches the general 'facilitator' model, along with Casson's description of industrial specialisation of rail-connected settlements.[25] Concluding their separation, by this point speculative housing was being constructed to encourage migration rather than specifically for railway use.

As Wolverton demonstrates, each theory on its own is not wholly appropriate, especially as 'railway town' development, as with all towns, was in perpetual flux, changing as other factors were introduced. But considered together, prefaced with a new theory of railways as a direct founding 'cause' of development, even the distinct variations between settlements can be explained as town development progressed from one model to the next. To give industry as an example summing up the three tiers of development:

Stage 1 – 'Founder'. Railways as a 'direct cause' were the presiding industrial business of the settlement; they did not draw industry because they themselves were it.

Stage 2 - 'Foster'. Railway provision as a source of 'change' directly attracted industrial businesses in coming to the area, such as McCorquodale's to Wolverton or Compton's uniforms to Crewe.[26]

Stage 3 - 'Facilitator'. Railway provision was a beneficial factor (though not the sole one) in industrial businesses deciding where to locate, such as Rolls Royce to Derby.[27]

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[24] J.D. Porteous, 'The Nature of the Company Town', *Transactions of the Institute of British Geographers*, No. 51 (Nov., 1970), p.140; D. Drummond, *Crewe: Railway Town, Company and People 1840-1914* (Aldershot, 1995), pp.91, 132, 203, 213; P. Bonner & K. Shapiro, 'Company Town, Company Estate: Pilgrim's Rest, 1910-1932', *Journal of Southern African Studies*, Vol. 19, No. 2 (Jun., 1993), p.177.
[25] Casson, *First Railway System*, p.3.
[26] Drummond, *Crewe*, p.28; Milton Keynes Museum.

Although the same historiographical terms have been used throughout for clarity ('change' and 'facilitator'), the introduction of this new stage in 'railway towns' suggests that these terms are somewhat limited - the potential similarity between the words 'cause' and 'change' could be a source of possible confusion. Instead, it would be prudent to consider new, less ambiguous, titles for the stages, hence the above use of 'foster' as a suitable replacement for the early historiographical view of railways encouraging 'change', compared to railways actively being the 'founder' (a direct 'cause') of development as in early 'railway towns'. 'Facilitator' as a term, however, remains appropriate, aptly covering the role of railways in assisting other factors.

Since the 1960s, much more has been accomplished on 'railway towns', but Simmons' comments on incompleteness and the lack of a 'comprehensive study of these towns as a whole' remain.[28] Its paucity extends beyond comparative study of varied 'railway towns'. Their difference to more ordinary settlements has resulted in few studies including them in the main historiographical debates, isolating them and masking shared trends that would place 'railway towns' in a general urban context. This new model reveals that there is benefit in investigating the under-studied aspects covered here, and similar research on other railway towns would enable useful cross-comparison. It also demonstrates that despite major differences on the surface, these settlements do nonetheless fit the broader historiography, so do not have to be always treated independently as in prior studies. As the structure of 'railway towns' closely matches 'model villages' and other variants, while some parishes owed their occupational development directly to the railways, this new approach may also prove beneficial to wider industrial town research, where communities evolved away from a founding company or industry.

While the nation was developing with railway assistance, so too were the railways themselves - in mileage, technology, service and, most importantly, in public perception. Nowhere in this region was this more visible than Wolverton. While the later development of Wolverton follows the two historiographical views in turn, insomuch as the competitive need for rail improvements and technological advancement forced the town to develop or else stagnate,

27 Vollans, 'Derby Town ', *Transactions and Papers* (Institute of British Geographers), p.99.
28 B. Barber, 'The Concept of the Railway Town and the Growth of Darlington 1801-1911: A Note', *Transport History*, 2, 3 (1970), p.283; Simmons, *Town and Country*, p.172.

the initial creation of the town from scratch by the LBR, and continual investment in virtually all town construction throughout the period, was entirely for the Company's own needs. So instead of any knock-on effect of the initial development, the town's progress and the Company's requirements became inexorably linked - the 'railway town' was completely dependent on its company until such a point as it became truly established. In the interim, though, wider railway changes affected the railway company controlling it; these resulting effects heavily influencing the town's early development.[29]

As a new way of considering how 'railway towns' evolved it is hoped this proposed model will encourage future research in this area, but it should be remembered that even once in the 'facilitator' stage the railways were still important to 'railway towns'. In their later stages, railways retained transport and occupational importance, while architecturally and socially railways were their foundation. As the 2013 takeover of Wolverton Works demonstrates, railways are not just their heritage but even today remain of distinct importance.[30]

Future Research

This study completed various aims as set out in the introduction.[31] Of primary importance was to identify the forms and extent of railway impact in this region, adding a new geographic area to this field. It presented a detailed investigation into their more rural effects covering almost a century, but also how this rurality changed with improved internal communication and with increasing expansion of London's influence. The historiography saw its biggest change with the rise of the 'facilitator' view of rail involvement, but while shown to be generally more applicable than the former view of direct causation, there are cases where this differentiation is not as clear as may be expected. As with the 'railway town' development outlined above, for some factors either the older 'change' idea, or both it and the later 'facilitator' premise together, are more appropriate than the current historiography of a single uniform answer disregarding the issue of variation. The conclusions presented, therefore, offer a different perspective, encapsulated in new tools to help better place both case studies and the national historiography.

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[29] For example, passenger numbers led to increasingly heavy Wolverton-built carriages, in turn affecting Crewe Works as larger locomotives needed to be built - D. Jenkinson, *LNWR Carriages – a Consise History* (York, 1978), p.14.

[30] http://www.bbc.co.uk/news/uk-england-beds-bucks-herts-23851793

[31] See Chapter 2.

While the research and conclusions concerning this region are useful and provide an insight into an under-studied area, the primary significance of this study is through demonstrating what can be achieved with the proposed methodology and structures, and by showing limitations and extensions to the current historiography – issues far wider than just these three counties. It can only be hoped that with three new formats to help contextualise what occurred nationally, regionally and at a parish level, future work in the field will be encouraged and a detailed national picture can be created.

The benefits that a combined county-level and parish dual methodology provide centre on the ability to look at a wide area with simultaneous micro-analysis, creating regional conclusions that remain applicable to actual places rather than being generalisations.[32] In addition to these historiographical advantages, through using formats simpler than econometrics it offers a viable alternative, opening up the field to potential researchers. Resulting from this approach, 15 hypotheses have been created and tested to explain rural railway impacts in this region. They may not necessarily fit all British rural areas, but in confirming or disproving their national applicability can offer a useful starting point for continued study, at the least through discussion of their pertinence.[33] Lastly, the new 'railway town' theory appears simple in basis but presents a different angle for analysing these settlements – an aspect still requiring further investigation.[34] It should thus be useful for future studies, not only of 'railway towns' but potentially for similar non-rail company settlements, to understand how they developed over time, but within the national historiographical structure.

Epilogue

When the railways came to Hertfordshire, Bedfordshire and Buckinghamshire, local opinions as to their value were divided, but by 1900 railways were accepted and trusted.[35] The case studies showed that railways had varying effects, both positive and negative, and these were never identical - even in settlements with great similarities. Nonetheless, there were visible trends allowing the hypotheses to be credited as a theoretical framework, and this comparison

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[32] Andrews, *East Kent* (University of Kent, 1993), p.13; Dyos & Aldcroft, *British Transport*, pp.178, 182.
[33] Dyos & Aldcroft, *British Transport*, p.182.
[34] Simmons, *Town and Country*, p.172.
[35] Ibid; pp.15; Simmons, *Victorian Railway*, pp.14-15, 126; Dyos & Aldcroft, *British Transport*, p.122; Robbins, *Railway Age*, pp.17, 55.

between case studies and countywide research demonstrates not just that the findings are appropriate, but that case studies can provide a fair representation of wider macro level trends and issues.

The coming of the railways was a stage in development rather than its initiator; a catalyst speeding up processes rather than the central reason for these changes. But even in this manner they were still highly important - with other aspects and superior speed they nonetheless enabled great change.[36] However large or small, the railways impacted on this region, and it would be unwise to underestimate their role.[37] Furthermore, the current debate on the potential impacts on this region of the proposed 2026 London-Birmingham 'HS2' line demonstrates the continuing importance of the railways, and the ongoing significance of these counties on the railways themselves.[38] To quote George Carr Glyn, First Baronet of Wolverton and LNWR Chairman:

> *'I hope…it will not be forgotten that it is due to the Railway interest that this great social improvement and boon of modern times has been carried out.'*[39]

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[36] Gourvish, *Railways Economy*, p.9; Schwartz, Gregory & Thévenin, 'Spatial History', *Journal of Interdisciplinary History*, p.57.

[37] Simmons, *Town and Country*, pp.20-1, 335; Simmons, *Victorian Railway*, p.376; Gourvish, *Railways Economy*, pp.9, 40, 57; Schwartz, Gregory & Thévenin, 'Spatial History', *Journal of Interdisciplinary History*, pp.56-7; Barker & Savage, *Transport*, p.82; Robbins, *Railway Age*, p.156; B. Simpson, *Verney Junction to Baker Street* (Oxford, 2013), p13; J. Rannard, *The Location and Economic Growth of the Watford Paper and Printing Industries* (University of Bristol, 1963), p.3.

[38] C. Bowlby, 'Can HS2's Advocates Draw Any Comfort from the Past?', *BBC History Magazine* (December 2013), pp.10-11; http://hs2.org.uk/about-hs2/key-dates

[39] TNA RAIL 1110/260 – LNWR Shareholders Reports – Report for 22/2/1850.

Appendix I:

National Railway Chronology

C.1600s:	The first recorded use of tracked 'plateway' transport.
1802:	Trevithick's Coalbrookdale Engine – the first railway locomotive.
1804:	Trevithick's Pen-y-Darren locomotive – the first goods haulage.
1808:	Trevithick's 'Catch Me Who Can' – the first passenger haulage.
1810:	Increases in horse feed prices – the first time steam was seen as a viable alternative.
1812:	The first commercial use of locomotives (Middleton Railway, Leeds).
1813:	Construction of William Hedley's 'Puffing Billy' (Wylam Colliery).
1825:	Opening of the Stockton & Darlington Railway (27 September).
1829:	The Rainhill Trials led to Stephenson's 'Rocket' being chosen as the best locomotive design for the nearly-complete Liverpool & Manchester Railway.
1830:	Opening of the Canterbury and Whitstable Railway (3 May), engineered by George Stephenson.
1830:	Robert Stephenson's 'Planet' 2-2-0 designed (the first with inside cylinders).
1830:	Opening of the LMR (15 September) – the first inter-urban Trunk line.
1830:	The first Post Office train (on the LMR).
1833:	The London & Birmingham Railway Bill was passed (its third attempt; the first was as two companies and the second when unified).
1837:	Opening of the Grand Junction Railway (4 July).
1838:	Opening of the final section of the LBR (17 September). Costing £5.5 million (over double the estimate), it was 112 miles long.
1838:	Introduction of the Edmondson railway ticket – the first ready-printed ticket with a validating date-stamp.
1838:	The invention of Travelling Post Office pick-up gear.
1839:	Prince Albert first used the railways.
1839-40:	**THE FIRST MANIA.**
1839-40:	*The first rail investment peak (lag after 1836: first economic activity peak)*
1840:	Opening of the final section of the London & South Western Railway (11 May).
1841:	Opening of the final section of the Great Western Railway (30 June).
1841:	Publication of George Bradshaw's first Railway Guide (December).

1841:	The first use of 'semaphore' signalling; previously only flags and lamps were used.
1841:	Thomas Cook organised a Leicester-Loughborough temperance rally excusion (5 July).
1841:	The Sonning Cutting Disaster (Oxfordshire near Buckinghamshire on the GWR) – eight were killed. It resulted in Parliament forcing the introduction of proper carriages under Gladstone's 1844 Act.
1842:	Formation of the 'Railway Clearing House' (by the LBR) to set passenger and goods standards and fairly divide cross-company fares.
1842:	Queen Victoria first used the railways (13 June, Slough-Paddington).
1843:	Opening of Swindon Works (GWR, 2 January).
1843:	The GJR locomotive Works at Liverpool (Edge Hill) moved to Crewe.
1844:	The Midland Railway was formed under George Hudson with the amalgamation of the North Midland Railway; the Midland Counties Railway, and the Birmingham and Derby Junction Railway (10th May). It was the principal long-distance cross-country line pre 1860.
1844:	The Railway Regulation Act was passed by Gladstone, forcing penny-a-mile fares, proper coaches and a minimum of one Third Class train daily.
1844:	A universal signalling bell code system was agreed; previously it varied between companies.
1845:	Crewe Works built its first locomotive, 'Columbine'.
1845:	The Royal Commission on Railway Gauges was created to choose between Stephenson's and Brunel's gauges.

1845-7: THE SECOND MANIA (START).

1846:	Formation of the London & North Western Railway from the LBR, GJR and Manchester & Birmingham Railway (16 July).
1846:	The Gauge Commission finds against broad gauge.
1846:	James McConnell, George Stephenson and Archibald Slate created the idea for the Institution of Mechanical Engineers.
1846:	Formation of the Great Northern Railway with the amalgamation of two rival schemes: the London and York Railway and the Direct Northern Railway (5 May).
1847:	The peak of national railway construction (250,000 men).

1847:   *The second rail investment peak (lag after 1845: second economic activity peak).*

1845-7:   **THE SECOND MANIA (END).**

1848:   Introduction of W.H. Smiths platform bookstalls.

1848:   The LNWR and Caledonian Railway agreed to operate London-Scotland expresses (creating specialist joint rolling stock in 1862).

1848:   The completion of Dickens novel *Dombey & Son* (October 1846 to April 1848).

1851:   Introduction of McConnell's LNWR 'Bloomer' Class.

1851:   The Great Exhibition – 'the railway's social revolution'.[1]

1852:   Opening of the GNR's Kings Cross Station (14 October) – Euston was no longer the sole London station.

1852:   Construction of the telegraph system commenced –time signals could be sent so starting the standardisation of Greenwich Mean Time (there had been some previous attempts such as the GWR 1840).

1853:   Opening of Doncaster Works (GNR).

1855:   The introduction of special dedicated mail trains.

1856:   LNWR Engineer John Ramsbottom designed the 'foolproof' safety valve and the screw reverser.

1857:   Opening of the MR Leicester-Hitchin extension line to connect to the GNR into Kings Cross (7 May).

1859:   Henri Giffard invented the steam injector.

1860:   Ramsbottom invented the water trough (Chester-Holyhead).

1862:   The 'Bloomer' Class became the fastest locomotives in the world – a US civil war despatch bound for London (the 'Trent Affair') was initially hauled by a Ramsbottom 'Lady of the Lake' Class (attaining 54.3 mph), then for the second part by a 'Bloomer' at 57.2 mph.

1862:   Formation of the Great Eastern Railway by amalgamation of the Eastern Counties Railway with smaller railways: the Norfolk Railway, the Eastern Union Railway, the Newmarket and Chesterford Railway, the East Norfolk Railway, the Harwich Railway, the East Anglian Railway and the East Suffolk Railway, among others (1 July).

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[1] M. Robbins, *The Railway Age* (London, 1962), p.33.

1863:	Opening of the Metropolitan Railway - the first underground railway (11 January).
1864:	The installation at Crewe Works of a Bessemer Converter – the first in the country.
1865:	The Stapelhurst Disaster, survived by Dickens (9 June).
1865-6:	**THE THIRD MANIA.**
1866:	*Mugby Junction* was published by Dickens, also including the ghost story *The Signalman*.
1868:	Opening of the MR's St Pancras Station (1 October) – it replaced both former traffic via the LNWR at Rugby (a proposed amalgamation was blocked) and later (from 1857) trains over the GNR from Hitchen.
1870:	Introduction of Patrick Stirling's GNR 'Single' Class.
1871:	Formation of the Amalgamated Society of Railway Servants.
1872:	The MR first provided 3rd Class on all trains (April).
1874:	Opening of the GER's Liverpool St Station (2 February).
1874:	Introduction of Francis Webb's 'Jumbo' 2-4-0 Class (later renamed the 'Precedent' Class).
1875:	The MR introduced eight and 12-wheeled bogie coaches.
1875:	The MR first abolished Second Class (1 January; technically they abolished First Class with the new First Class fares being those formerly for Second Class).
1876:	Crewe Works built its 2,000th locomotive.
1876:	The first use (at Crewe) of Walshaerts valve gear.
1879:	The Tay Bridge Disaster (28 December).
1880:	Introduction of Webb's LNWR 'Cauliflour' 0-6-0 Class.
1883:	The Cheap Trains Act was passed, abolishing passenger duties on fares under 1d/mile so initiating greater commuting services.
1887:	Crewe Works built its 3,000th locomotive.
1888:	The first 'Race to the North' (London-Edinburgh - the duration reduced to seven hours 45 minutes).
1888:	The Railway and Canal Traffic Act revised maximum charging powers.
1889:	The Armagh Disaster (12 June), leading to the first major piece of railway legislation in 1889.

1889:   The Regulation of Railways Act was passed, enforcing the 'absolute block' signalling system (replacing the pre-telegraph 'time-interval' system), interlocking between signals and points, and continuous brakes (previously experimented with; taking three years to subsequently fit, most used vacuum systems or Westinghouse air braking).

1890:   The first electric underground railway opened in London.

1892:   The end of the broad gauge and conversion to standard gauge.

1895:   Virtually all lines by now were using the 'absolute block' system.

1895:   The second 'Race to the North' (London-Aberdeen, 22 August; the West Coast Main Line lasted eight hours 38 minutes and the East Coast Main Line eight hours, 32 minutes).

1898:   Introduction of Henry Ivatt's GNR C1 Class, Britain's first 4-4-2 'Atlantic' (named 'Henry Oakley' after the GNR's General Manager).

1899:   Opening of the Great Central Railway's Manchester Sheffield to Marylebone extension – the last London trunk line built (The Company was previously called the Manchester, Sheffield and Lincolnshire Railway, opened 1849).

1900:   Introduction of James Holden's GER 'Claud Hamilton' Class.

1901:   The Taff Vale Railway successfully sued the Amalgamated Society of Railway Servants (Trade Union) for losses due to a strike, leading to the Trade Disputes Act of 1906.

1901:   Introduction of Ivatt's first large-boilered C1 'Atlantic' (No. 251).

1902:   Introduction of Samuel Johnson's '1000' Class of compound locomotives.

1904:   GWR 3440 'City of Truro' became the first locomotive to exceed 100mph (9 May).

1905:   End of steam on the underground tunnel portions of the London Underground.

Appendix II:

Regional Line Developments

In outlining the line-by-line development of this region, its haphazard development causes particular complexity. Therefore for clarity the following maps and summaries are subdivided into decadal bands; the region's lines grouped up to 1850 (many significant lines covering more than one county), then county by county thereafter. The number given to each line in the text refers to those included in the chronology maps.

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Railways long predate the modern definition, with the earliest British tracked systems dating to Elizabethan times. Worthy of reference, the first 'railway' in Hertfordshire was technically not the 1838 London & Birmingham Railway but rather a small-scale system of 1825. It has not been included below, however, as it was an industrial freight suspension monorail lasting only a few years, therefore an extreme exception.[1] Unusually, it was only the second such example built, and as a stunt on the opening day became the world's first passenger-carrying monorail.

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[1] J. Ashby, 'The First Suspension Railway', *The Railway Magazine* (April, 1950), pp.270-2; H. Hilton, 'The First Railway in Hertfordshire', *The Locomotive* (May 1945), pp.75-7; W. Johnson, *Industrial Archaeology of Hertfordshire* (Newton About, 1970), p.127; *A History of the County of Hertford: Volume 4* (1971), p.266; http://www.albury-field.demon.co.uk/bxind.htm

Appendix IIA: Railway lines and stations opened in the region, 1838-40, coloured by owning company at the end of this time-span.
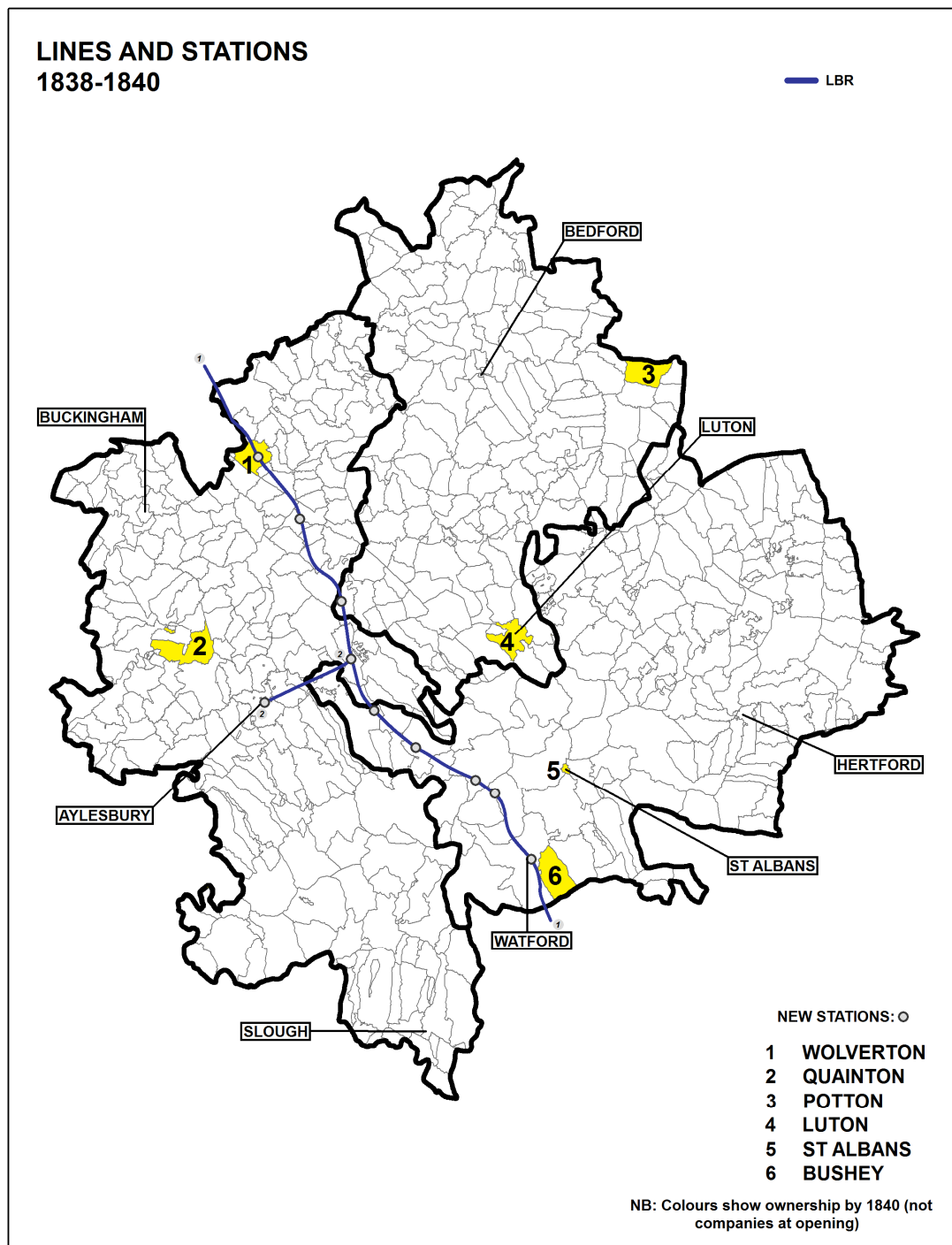
1) 1838: The 'London & Birmingham Railway':[2]

The world's first 'trunk line', it was designed by Robert Stephenson and originally intended for terminus-terminus trade between the two metropolises. Its route was heavily modified

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[2] P. Richards & B. Simpson, *A History of the London and Birmingham Railway Volume 1* (Witney, 2004), pp.7-27, 36.

many times in planning due to unfavourable landowners, ultimately (being opened in stages) passing north-south from Euston through Bushey (opened 1841; later relocated), Watford, Kings Langley (opened 1839), Hemel Hempstead (later LNWR Station; actually Boxmoor), Berkhampstead, Tring, Cheddington, Leighton (actually Linslade), Bletchley, Wolverton (site of their main locomotive works; later relocated) and Castlethorpe (opened 1882) on towards Rugby and Birmingham New Street. This route led it through the west Hertfordshire registration districts of Watford, Hemel Hempstead and Berkhampstead and the east Buckinghamshire registration districts of Leighton Buzzard, Winslow, Newport Pagnell and Potterspury. Passing through Linslade, later boundary changes mean initially it only bordered Bedfordshire. The LBR, the Grand Junction Railway and the Manchester & Birmingham Railway amalgamated in 1846 into the 'London & North Western Railway Company'.[3] Self-dubbed the 'Premier Line', stretching from London to Holyhead, Swansea, Leeds and Carlisle, it rapidly became the largest railway company in Britain prior to the Grouping Act of 1924.

2) 1839: The 'Aylesbury & Cheddington Railway':[4]

The world's first 'branch line', this company financed a line from the LBR main line at Cheddington (Leighton Buzzard registration district, Buckinghamshire), south-west across the north-western tip of Hertfordshire to Aylesbury (later LNWR Station), Buckinghamshire. Initially these were the only two stations, however after being taken over by the LNWR in 1846 the Hertfordshire station of Marston Gate was opened in 1863.

[3] C. Awdry, *Encyclopaedia of British Railway Companies* (Frome, 1990), p.88; O.S. Nock, *The London and North Western Railway* (1960).
[4] C. Maggs, *Branch Lines of Buckinghamshire* (Stroud, 2000), pp.136-41.

Appendix IIB: Railway lines and stations opened in the region, 1841-50, coloured by owning company at the end of this time-span.
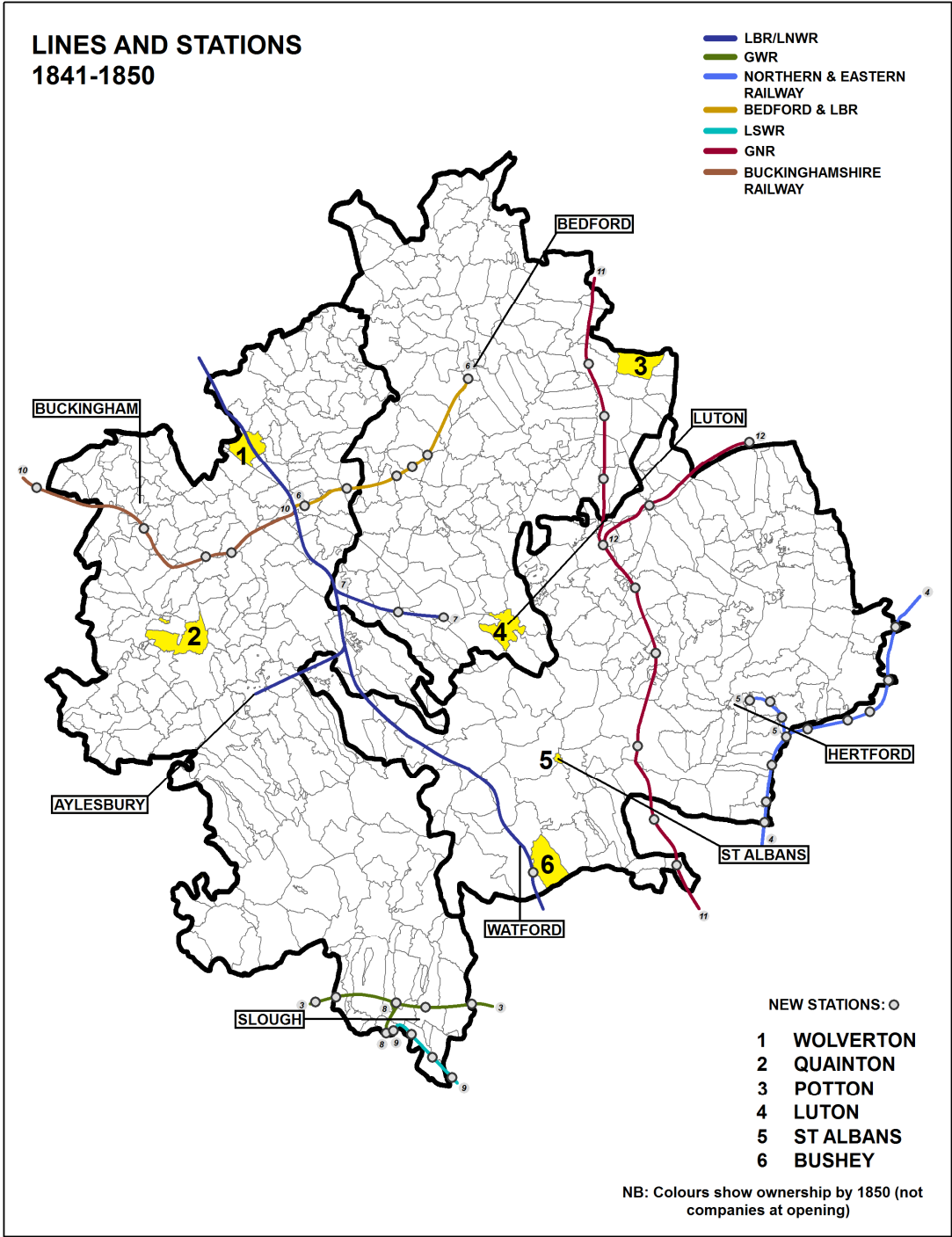
3) 1841: The London-Bristol 'Great Western Railway':[5]

Designed by Isambard Kingdom Brunel to the unique seven foot 0.25 inch 'broad' gauge, it initially (being opened in stages) operated between Paddington and Bristol, crossing the southernmost tip of Buckinghamshire (Eton Registration District) west-east, with stations at

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[5] Awdry, *Encyclopaedia*, p.13.

West Drayton (just outside Buckinghamshire), Langley (opened 1845), Slough, Burnham (opened 1899), Taplow (opened 1872) and Maidenhead (just outside Buckinghamshire). One of Britain's most influential railway companies, it eventually expanded connecting with Cardiff, Gloucester and Truro, amongst many others. 'Broad gauge' gave the operational difficulty of incompatibility with the rest of the railways (even with mixed-gauge track), resulting in fierce arguments over which gauge was superior, popularly known as the 'Battle of the Gauges'.[6] Ultimately Parliament limited the number of broad-gauge proposals (from the outset having less mileage than standard four foot 8.5 inch gauge) and a Committee found in favour of standard gauge. By 1892 the whole GWR had been relaid in the narrower 'standard' gauge.[7]

4) 1842: The London-Norwich 'Northern & Eastern Railway':[8]

Operating from Liverpool Street (1875; previously from Bishopsgate) to Norwich, it skirted the south-eastern border of Hertfordshire, just within Edmonton, Ware and Bishop's Stortford registration districts. This stretch had eight stations: Bishop's Stortford, Sawbridgeworth, Harlow (just outside Hertfordshire), Burnt Mill (just outside Hertfordshire), Roydon (just outside Hertfordshire), Broxbourne, Cheshunt, and Waltham Cross. It was amalgamated into the Great Eastern Railway in 1862, ultimately stretching to Colchester, Yarmouth, Hunstanton and Kings Lynn.[9]

5) 1843: The 'Northern & Eastern Railway' Broxbourne-Ware-Hertford branch:[10]

Built by the N&ER entirely in Ware registration district, Hertfordshire, it curved from Hertford (later GER Station) via Ware, St Margarets and Rye House, connecting with their main line at Broxbourne. A minor extension was built in 1858 to compete with the Great Northern Railway, and it became part of the 1865 GER takeover.

6) 1846: The Bletchley-Bedford 'Bedford & London & Birmingham Railway':[11]

Funded by the above company but operated by the LBR/LNWR, it stretched west-east from Bletchley through Fenny Stratford (both Winslow registration district, Buckinghamshire), Woburn Sands, then passed in Bedfordshire via Ridgemont (Woburn registration district),

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[6] TNA RAIL 1110/260 – LNWR Shareholders Reports – Report for 7/8/1845.
[7] C. Hamilton Ellis, *Four Main Lines* (London, 1950), pp.129, 147-8.
[8] Awdry, *Encyclopaedia*, pp.153-4.
[9] Although the company was not formally dissolved until 1902. (Ibid; pp.153-4.)
[10] Ibid; pp.153-4.
[11] Awdry, *Encyclopaedia*, p.60.

Lidlington, Marston (renamed 'Ampthill (Marston)' in 1847; both in Ampthill registration district) and Bedford (later LNWR Station, Bedford registration district). It was part of a large-scale regional takeover by the LNWR in 1879.

7) 1848: The LNWR Leighton-Dunstable branch:[12]

From Linslade (Leighton Buzzard registration district, Buckinghamshire) on the LNWR main line it ran west-east to Dunstable (once part of its own registration district but for ease noted here under Luton registration district). Having only three stations - Leighton on the main line, Stanbridgeford and Dunstable (LNWR Station), it remained under the LNWR throughout the period.

8) 1849: The GWR Slough-Windsor branch:[13]

Built near-solely to compete with the Windsor, Staines & South Western Railway branch (No. 9) it ran north-south from a triangle at Slough station to Windsor Station (just outside Buckinghamshire). Eton College strongly fought construction, ultimately forcing a deviation making the line take a vast loop avoiding Eton High Street and the College. Its proximity to Windsor Castle (opened to visitors in 1845) made the line popular with Queen Victoria and it was converted from broad to dual-gauge in 1862.

9) 1849: The Staines-Datchet-Windsor 'Windsor, Staines & South Western Railway':[14]

Taken over by the 'London & South Western Railway' in 1848 while only part-completed, it opened only a few weeks after the competing GWR branch (No. 8). Running mostly south-east from Windsor & Eton Riverside Station (just outside Buckinghamshire) via Datchet and Wraysbury to Staines (outside Buckinghamshire), it connected here with the rest of the LSWR system towards Richmond.

10) 1850: The Bletchley-Banbury 'Buckinghamshire Railway':[15]

Before 1847 called the 'Buckingham and Brackley Junction Railway', it passed east-west through Winslow, Buckingham and Brackley registrations districts, north Buckinghamshire, from the LNWR main line at Bletchley via Swanbourne, Winslow, Verney Junction (opened

[12] B. Simpson, *The Dunstable Branch* (Banbury, 1998).
[13] F. Cockman, *The Railways of Buckinghamshire from the 1830's* (Aylesbury County Record Office, 1971), p.48.
[14] Awdry, *Encyclopaedia*, p.202.
[15] Ibid; p.63; Cockman, *Buckinghamshire*, pp.49-51.

1868 connecting with the 'Aylesbury & Buckingham Railway' – No. 40 [1868]), Padbury (opened 1878), Buckingham, Fulwell & Westbury (opened 1879) to Brackley (later LNWR Station; outside Buckinghamshire). Essentially relegated to a branch, it was taken over by the LNWR in 1879, the Bletchley-Verney section becoming part of the Oxford-Cambridge 'Varsity Line' by the end of the period (No. 18 [1862]).

11) 1850: The York-London 'Great Northern Railway':[16]

From Kings Cross to York, it passed north-south though the central Hertfordshire registration districts of Barnet, Hatfield, and Hitchin and the eastern Bedfordshire registration districts of Biggleswade and (very briefly) Bedford. This stretch had stations at Barnet, Potters Bar (just outside Hertfordshire), Hatfield, Welwyn Junction (opened 1858, closed 1860; No. 23 [1858]), Welwyn (post-1926 called Welwyn North), Knebworth (opened 1884), Stevenage, Hitchin, Three Counties (opened 1866; for the first three months named Arlesey Siding), Arlesey, Biggleswade, Sandy GNR Station and Tempsford (opened 1863).

12) 1850: The 'Royston & Hitchin Railway':[17]

Passing through Hitchin and Royston registration districts, Hertfordshire, initially it ran from Hitchin (on the GNR main line) via Baldock to Royston. Run by the 'Eastern Counties Railway' until 1866, thereafter it was operated by the GNR who purchased the branch in 1898.

By 1850, eight companies had built 12 railways in the area. Continuing the maps and summaries for 1851 to 1900, this period have been subdivided and the lines listed by county for clarity. It should be noted that various stations were relocated by short distances; only where relevant have they been referenced here.

[16] C. Grinling, *The History of the Great Northern Railway, 1845-1922* (London, 1966).
[17] F. Cockman, *The Railways of Hertfordshire* (Hertford, 1978), p.5; Awdry, *Encyclopaedia*, p.158.

Appendix IIC: Railway lines and stations opened in the region, 1851-60, coloured by owning company at the end of this time-span.

LINES AND STATIONS 1851-1860

WYCOMBE RAILWAY
SANDY & POTTON RAILWAY
MR
HERTFORD, LUTON & DUNSTABLE RAILWAY

BEDFORD
BUCKINGHAM
LUTON
HERTFORD
AYLESBURY
ST ALBANS
WATFORD
SLOUGH

LBR/LNWR
GWR
NORTHERN & EASTERN RAILWAY (GER 1862)
BEDFORD & LBR
LSWR
GNR
BUCKINGHAMSHIRE RAILWAY

WELWYN JCT 1858-60:
NEW STATIONS:

1 WOLVERTON
2 QUAINTON
3 POTTON
4 LUTON
5 ST ALBANS
6 BUSHEY

NB: Colours show ownership by 1860 (not companies at opening)

Bedfordshire, 1851-60:

14) 1857: 'The Sandy & Potton Railway':[18]

Built privately (requiring no Act of Parliament) by Captain Sir William Peel, third son of Sir Robert Peel PM, it ran from Sandy (GNR main line) to Potton as a branch line, entirely on Peel's land in Biggleswade registration district, Bedfordshire. Taken over by the 'Bedford & Cambridge Railway' in 1861, it became a through-station on the Oxford-Cambridge 'Varsity' main line (No. 18 [1862]). Its first steam locomotive, 'Shannon' is preserved at Didcot Railway Centre.[19]

15) 1857: The 'Midland Railway' Leicester-Hitchen extension:[20]

The Midland Railway was founded in 1844, building a network around Derby and the East Midlands, but with no London access of its own, instead running via Rugby to Euston on the LNWR.[21] Ending this arrangement, an agreement with the (competing) GNR led to this extension, enabling MR trains to operate out of the GNR's Kings Cross terminus.[22] Running north-south, stations were located at Irchester (just outside Bedfordshire), Sharnbrook, Oakley, Bedford Midland Station (the town's second station), Cardington, Southill, Shefford, Henlow Camp, (all located in Bedford and Biggleswade registration districts), entering Hertfordshire and connecting to the GNR main line at Hitchin station. Inter-company difficulties led to the construction of a dedicated MR London line (No. 19 [1868]) and the Hitchin MR line was relegated to a terminating branch line in 1868.

16) 1858: The 'Luton, Dunstable & Welwyn Junction Railway':[23]

Despite the company's name, only the section from Dunstable to Luton was opened before being amalgamated into the 'Hertford, Luton & Dunstable Railway' later the same year (No. 17).

[18] Awdry, *Encyclopaedia*, pp.100-1;
http://www.bedfordshire.gov.uk/CommunityAndLiving/ArchivesAndRecordOffice/CommunityArchives/Potton/CaptainPeelsRailway.aspx
[19] http://www.didcotrailwaycentre.org.uk/locos/5/5.html
[20] G. Goslin, *The London Extension of the Midland Railway: A History of the St Pancras - Bedford Route* (Caernarfon, 1994), pp.1-4.
[21] C. Hamilton Ellis, *The Midland Railway* (London, 1953), p.26.
[22] R. Leleux, *A Regional History of the Railways of Great Britain, Volume 9 The East Midlands* (1976), pp.32-3.
[23] G. Woodward, *The Hatfield, Luton & Dunstable Railway (and on to Leighton Buzzard)* (Usk, 1977), pp.7-8.

17) 1860: The 'Hertford, Luton & Dunstable Railway':[24]

Taking over the already-completed 1858 Dunstable-Luton line (No. 16), they constructed the Luton-Welwyn section, stretching west-east across Luton (Bedfordshire), St Albans and Hatfield (Hertfordshire) registration districts. Stations, including those on the earlier section, were at Dunstable (later GNR Station; the town's second station), Luton (later GNR Station), New Mill end (renamed Luton Hoo in 1891), then in Hertfordshire at Harpenden (later GNR Station), Wheathampstead, Ayott St Peters (opened 1877, renamed Ayot in 1878), connecting with Welwyn Junction (opened 1858, closed 1860 – No. 23 [1858]) on the GNR main line. Taken over by the GNR in 1861, trains terminated at Hatfield Station after the closing of Welwyn Junction.

Hertfordshire, 1851-60:

21) 1852: The GNR Hitchin-Royston branch extension:[25]

The 1850-built Royston branch was extended to Cambridge by the 'Eastern Counties Railway'; no additional stations were built in the region, but Royston became a through-station. As with the rest of the branch (No. 12), it was operated by the GNR after 1866 and taken over by them in 1898.

- 1857: The MR Leicester-Hitchin extension (see under Bedfordshire 1851-60).

22) 1858: The LNWR Watford-St Albans branch:[26]

Located in Watford and St Albans registration districts, Hertfordshire, it ran north-south from St Albans LNWR Station via Park Street and Bricket Wood, terminating at Watford Junction (relocated and renamed from the original LBR station).

23) 1858: The Welwyn-Hertford 'Hertford & Welwyn Junction Railway':[27]

Running west-east from Welwyn Junction (1858-60) via Cole Green and Hertingfordbury to Hertford (later GNR Station; the town's second station) it crossed Hatfield and Hertford registration districts. It was amalgamated into the 'Hertford, Luton & Dunstable Railway'

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[24] Woodward, *Hatfield, Luton & Dunstable,* pp.9-11; Awdry, *Encyclopaedia*, p.137.
[25] Cockman, *Hertfordshire*, p.5; Awdry, *Encyclopaedia*, p.158.
[26] S. Jenkins, *The Watford to St Albans Branch* (Usk, 1990).
[27] Woodward, *Hatfield, Luton & Dunstable*, p.7.

later the same year (No. 17) which itself became part of the GNR in 1861. As with the HL&DR, after Welwyn Junction closed trains terminated at Hatfield station.

Buckinghamshire, 1851-60:

13) 1851: The Bletchley-Oxford 'Buckinghamshire Railway':[28]
Before 1847 called the 'Oxford and Bletchley Railway', it ran from Bletchley to Verney Junction (only so named, with a station, in 1868) over the Bletchley-Banbury 'Buckinghamshire Railway' (No. 10 [1850]), continuing east-west on its own line to Oxford. Following Verney Junction were three stations: Claydon, Marsh Gibbon & Poundon (opened 1880) and Launton (just outside Buckinghamshire, opened 1852). Taken over by the LNWR in 1879, it became part of the Oxford-Cambridge 'Varsity Line' by the end of the period (No. 18 [1862]) and its Oxford Rewley Road terminus is now preserved at Quainton.[29]

34) 1854: The Maidenhead-High Wycombe 'Wycombe Railway':[30]
Built to Brunel's broad gauge, running north from the GWR main line it passed through Cookham (outside Buckinghamshire), Marlow Road (renamed Bourne End in 1874), Wooburn Green and Loudwater to High Wycombe, all within Wycombe registration district. Several extensions were completed by the end of the period (No's 36 [1859], 37 [1862] and 38 [1863]).

35) 1856: The West Drayton-Uxbridge 'Great Western & Uxbridge Railway':[31]
Entirely outside Buckinghamshire, but terminating at Uxbridge (later GWR Station) just outside the border, it connected to the GWR main line at West Drayton. Built to Brunel's broad gauge, it was taken over by the GWR in 1857.

36) 1859: The 'Wycombe Railway' extension to Princes Risborough:[32]
The first extension to the Maidenhead-High Wycombe line, it added the stations of West Wycombe and Princes Risborough.

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[28] Awdry, *Encyclopaedia*, p.63; Cockman, *Buckinghamshire*, pp.49-51.
[29] http://www.disused-stations.org.uk/o/oxford_rewley_road/
[30] Awdry, *Encyclopaedia*, pp.53-4; Cockman, *Buckinghamshire*, p.54.
[31] Awdry, *Encyclopaedia*, p.28; Cockman, *Buckinghamshire*, p.55.
[32] Awdry, *Encyclopaedia*, pp.53-4; Cockman, *Buckinghamshire*, p.59.

Appendix IID: Railway lines and stations opened in the region, 1861-70, coloured by owning company at the end of this time-span.

LINES AND STATIONS 1861-1870

(The Bletchley-Bedford line was LNWR operated, connecting to their Bedford-Cambridge line [ex B&CR]; the former was only bought in 1879.)

Legend (lines):
- ▬ BEDFORD & CAMBRIDGE RAILWAY
- ▬ WATFORD & RICKMANSWORTH RAILWAY
- ▬ HATFIELD & ST ALBANS RAILWAY
- ▬ NEWPORT PAGNELL RAILWAY
- ▬ AYLESBURY & BUCKINGHAM RAILWAY

Legend (lower left):
- ▬ LNWR
- ▬ GWR
- ▬ GER
- ▬ BEDFORD & LBR
- ▬ LSWR
- ▬ GNR
- ▬ BUCKINGHAMSHIRE RAILWAY
- ▬ MR

NEW STATIONS: ○

1	WOLVERTON
2	QUAINTON
3	POTTON
4	LUTON
5	ST ALBANS
6	BUSHEY

NB: Colours show ownership by 1870 (except the Bedford & Cambridge line for clarity)

Map labels: BEDFORD, BUCKINGHAM, LUTON, HERTFORD, AYLESBURY, ST ALBANS, WATFORD, SLOUGH

372

Bedfordshire, 1861-70:

18) 1862: The Bletchley-Cambridge 'Bedford & Cambridge Railway':[33]

Purchasing the Sandy & Potton Railway (No. 14 [1857]), this route ran west-east, extending from the Bedford & London & Birmingham Railway (No. 6 [1846]), through Sandy and Potton, on towards Cambridge. In Bedford and Biggleswade registration districts, after the previously-constructed Bedford LBR/LNWR Station were Blunham, Sandy (later LNWR Station; the town's second station) and Potton (becoming a through-station, also being relocated). Taken over by the LNWR in 1865, this line was the final piece in the Oxford-Cambridge 'Varsity line'; a scarce example of west-east, rather than north-south main line.

19) 1868: The MR Bedford-St Pancras London extension:[34]

After the collapse of the agreement between the MR and GNR over running trains into the latter's Kings Cross terminus, the 'London extension' was constructed through Bedford, Ampthill, Luton (Bedfordshire), St Albans, Watford and Barnet (Hertfordshire) registration districts. Running north-south from Bedford Midland Station (No. 15 [1857]) it passed via Ampthill, Flitwick, Harlington, Leagrave, Luton Midland Road Station (the town's second station), Chiltern Green, then in Hertfordshire Harpenden Midland Station (the town's second station), St Albans Midland Station (the town's third station), Radlett and Elstree, continuing to St Pancras.

Hertfordshire, 1861-70:

- 1861: The Great Northern London Cemetery Necropolis Railway:[35]

The Great Northern London Cemetery Company made an agreement with the GNR to operate funeral trains from a specialist station at Kings Cross to a short spur line and private station in their cemetery at Colney Hatch, Barnet. Opened in 1861, the railway venture proved to be highly unprofitable, and excepting a possible temporary reprieve of the line during a cholera outbreak in 1866, the service was permanently suspended in 1863.[36] Being

[33] L. Oppitz, *Lost Railways of the Chilterns* (Newbury, 1991), pp.143-8;
http://www.bedfordshire.gov.uk/CommunityAndLiving/ArchivesAndRecordOffice/NewslettersandArticles/BedfordCambridgeRailway.aspx
[34] Goslin, *St Pancras*, pp.5-12.
[35] M. Dawes, *The End of the Line: the Story of the Railway Service to the Great Northern London Cemetery* (Barnet, 2003), p.28.
[36] Dawes, *End of the Line,* pp.31, 35-6, 50.

only very minor, short-lived and with its station not used for public mobility, it has been omitted from the maps.

24) 1862: The 'Watford & Rickmansworth Railway':[37]

Spearheaded by LNWR shareholder Lord Ebury (of Moor Park, Hertfordshire), it ran from Watford Junction via Watford High Street to Rickmansworth (later LNWR Station), entirely within Watford registration district. It was taken over by the LNWR in 1881.

25) 1863: The St Margarets-Buntingford 'Ware, Hadham & Buntingford Railway':[38]

Diverging north from the N&ER Broxbourne-Ware-Hertford branch (St Margarets Station) it passed through Ware and Bishop's Stortford registration districts, Hertfordshire. Stations were located at Mardock, Widford, Hadham, Standon, Braughing and Westmill, terminating at Buntingford. It was taken over by the GER in 1869.

26) 1865: The 'Hatfield & St Albans Railway':[39]

Passing between St Albans and Hatfield registration districts, the line travelled west-east from St Albans LNWR Station (which was shared) through St Albans (later GNR Station; the town's second station), Salvation Army Halt (opened 1897), Hill End (opened 1899) and Springfield (renamed Smallford in 1879) to Hatfield Station on the GNR main line. It was taken over by the GNR in 1883.

27) 1867: The Edgeware-Finsbury Park 'Edgeware, Highgate & London Railway':[40]

Taken over by the GNR in 1867 while only part-completed, it was mostly outside Hertfordshire. Ultimately forking at Finchley (outside Hertfordshire; No. 29 [1872]), this first spur led to Edgeware (just outside Hertfordshire).

- 1868: The MR Bedford-St Pancras London extension (No. 19 under Bedfordshire 1863-73).

Note: while under construction there was a small spur built connecting south of St Albans Midland Station (the town's third station) to the LNWR St Albans branch near Park Street;

[37] F.W. Goudie & D. Stuckey, *West of Watford: Watford Metropolitan & the L.M.S. Croxley Green and Rickmansworth Branches* (Bracknall, 1990), pp.19-21.

[38] Oppitz, *Lost Railways*, pp.126-32; http://www.disused-stations.org.uk/b/buntingford/index.shtml

[39] TNA RAIL 295/1 – Hatfield & St Albans Railway Minute book; Oppitz, *Lost Railways*, pp.114-8.

[40] Awdry, *Encyclopaedia*, p.128.

this never carried commercial passengers or goods and was dismantled on completion of the MR line.[41]

28) 1869: The GER Bishops Stortford-Braintree branch:[42]

Almost entirely in Essex, it branched off the GER main line in Bishop's Stortford registration district; there were no new stations in the region.

Buckinghamshire, 1861-70:

37) 1862: The 'Wycombe Railway' extension to Thame:[43]

The second extension to the WR, running from Princes Risborough via Bledlow (the only new station on this line in the region) towards Thame. This line was extended in 1864 to Oxford.

38) 1863: The 'Wycombe Railway' extension to Aylesbury:[44]

The final extension of the WR, from Princes Risborough via Little Kimble to Aylesbury (the town's second station; later GWR/Metropolitan Railway). Built to Brunel's broad gauge, there was no connection with the LNWR branch. The WR (including all extensions) was taken over by the GWR in 1867; this Aylesbury branch was the first GWR line rebuilt to standard gauge, in 1868 (well before the official end of broad gauge in 1892).[45]

39) 1867: The Wolverton-Newport Pagnell 'Newport Pagnell Railway':[46]

Running from Wolverton on the LNWR main line via Bradwell and Great Linford, terminating at Newport Pagnell (Potterspury and Newport Pagnell registration districts, Buckinghamshire), the branch was significant not only for bringing workers to Wolverton Works, but for its route. In 1845 the LNWR offered to purchase the Newport Pagnell Canal, but were refused. In 1862, however, the canal was sold to the 'Newport Pagnell Railway' for £9,000 (in spite of protest from other canal operators). Filled in, much of the route was used as the trackbed, with warehouses and wharf structures reused at the terminus. It was taken over by the LNWR in 1875.

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[41] Cockman, *Hertfordshire*, p.9.
[42] Ibid; p.4.
[43] Cockman, *Buckinghamshire*, p.59; Maggs, *Branch Buckinghamshire*, pp.44-5.
[44] Awdry, *Encyclopaedia*, pp.53-4.
[45] Cockman, *Buckinghamshire,* p.59.
[46] B. Simpson, *The Wolverton to Newport Pagnell Branch* (Banbury, 1995).

40) 1868: The Aylesbury-Verney Junction 'Aylesbury & Buckingham Railway':[47]
Passing north-south through Aylesbury and Buckingham registration districts, it connected the Bletchley-Brackley/Oxford-Cambridge lines to the former 'Wycombe Railway' at Aylesbury. Creating a station at Verney Junction (in East Claydon, the branching point of the earlier Bletchley lines but previously un-named), it continued through Winslow Road, Granborough Road and Quainton Road, connecting with the alredy-completed ex-WR Aylesbury Station (making this a through-station). It was taken over by the 'Metropolitan Railway' in 1891 (No. 48 [1892]) who built a station at Waddesdon (just south of Quainton Road) in 1897.

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[47] Awdry, *Encyclopaedia*, p.206; Cockman, *Buckinghamshire,* pp.70-1.

Appendix IIE: Railway lines and stations opened in the region, 1871-80, coloured by owning company at the end of this time-span.

LINES AND STATIONS
1871-1880

WOTTON TRAMWAY
BEDFORD & NORTHAMPTON RAILWAY
WATLINGTON & PRINCES RISBOROUGH RAILWAY
HEMEL HEMPSTEAD & LNWR (MR OPERATED)

BEDFORD

BUCKINGHAM

1

3

LUTON

2

4

AYLESBURY

5

HERTFORD

6

ST ALBANS

WATFORD

LBR/LNWR
GWR
GER
LSWR
GNR
MR
WATFORD & RICKMANSWORTH RAILWAY
HATFIELD & ST ALBANS RAILWAY
AYLESBURY & BUCKINGHAM RAILWAY

SLOUGH

NEW STATIONS:

1   WOLVERTON
2   QUAINTON
3   POTTON
4   LUTON
5   ST ALBANS
6   BUSHEY

NB: Colours show ownership by 1880 (not companies at opening)

Bedfordshire, 1871-80:

20) 1872: The 'Bedford & Northampton Railway':[48]

Only briefly running through Bedfordshire and Buckinghamshire, it passed west-east from Northampton through Newport Pagnell (Buckinghamshire) and Bedford (Bedfordshire) registration districts. There were only two stations in the region; branching just north of Bedford Midland Station it ran through Turvey (Bedfordshire) and Olney (Buckinghamshire). It was taken over by the MR in 1885.

Hertfordshire, 1871-80:

29) 1872: The GNR Edgeware-Finsbury Park extension to High Barnet:[49]

Taken over by the GNR in 1867 while only part-completed, it was mostly outside Hertfordshire. Forking at Finchley (outside Hertfordshire), this second spur (No. 27 [1867]) led to Torrington Park (just outside Hertfordshire) and Whetstone & Totteridge, terminating at High Barnet (Barnet registration district).

30) 1877: The Harpenden-Hemel Hempstead 'Hemel Hempstead and London & North Western Railway':[50]

Intended to connect to the LNWR main line at Boxmoor, the project met financial difficulties. The MR completed the line running through Hemel Hempstead and St Albans registration districts, with stations at Hemel Hempstead (later Midland Station; technically the town's second station, although the earlier LNWR at Boxmoor is far from the actual town) and Redbourn to Harpenden Midland Station. The MR operated the line from the outset, taking it over in 1886. No passenger trains ever ran over the previously-completed link to Boxmoor, which was dismantled in 1916.

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[48] Awdry, *Encyclopaedia*, p.60.
[49] Ibid; p.128.
[50] Oppitz, *Lost Railways*, pp.119-125.

Buckinghamshire, 1871-80:

41) 1871: The Quainton-Wotton 'Wotton Tramway':[51]

Built privately (requiring no Act of Parliament) by the Duke of Buckingham and Chandos (a Chairman of the LNWR) on his land (Aylesbury registration district), this horse-drawn tramway was built for goods. It was rebuilt for steam propulsion and passengers, being extended to Brill in 1872; a spur to Kingswood was added in 1873 (the largest of several small stubs). Thereafter it was unofficially and more commonly called the 'Brill Tramway'. Entirely in Aylesbury registration district it ran west-east from the Brill terminus via Wood Siding, Wotton (the original terminus), Westcott and Waddesdon Road (not to be confused with the later Metropolitan station), to Quainton Road on the 'Aylesbury & Buckingham Railway' (No. 40 [1868]). It was taken over by the 'Oxford, Aylesbury & Metropolitan Junction Railway' in 1883, renamed the 'Oxford & Aylesbury Tramway' in 1894. Initially having only a turntable connection to the yard at Quainton Road, the Metropolitan station (and tramway access) was relocated and rebuilt in 1897. The tramway was subsequently leased to the 'Metropolitan Railway' in 1899.

42) 1872: The GWR Marlow-Bourne End branch:[52]

Built to standard gauge, it ran from Marlow Road on the initial section of the ex-WR (in the parish of Wooburn, renamed Bourne End in 1874) to Marlow (in the parish of Great Marlow, Wycombe registration district).

- 1872: The 'Bedford & Northampton Railway' (No. 20 under Bedfordshire 1871-80).

43) 1872: The 'Watlington & Princes Risborough Railway':[53]

Branching from the ex-WR just north of Princes Risborough towards Watlington, it had no stations in the region. It was taken over by the GWR in 1883.

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[51] Maggs, *Branch Buckinghamshire*, pp.87-95; Oppitz, *Lost Railways*, pp.73-82.
[52] Cockman, *Buckinghamshire*, p.72.
[53] Maggs, *Branch Buckinghamshire*, pp.38-43.

Appendix IIF: Railway lines and stations opened in the region, 1881-90, coloured by owning company at the end of this time-span.

LINES AND STATIONS 1881-1890

Legend (right, top):
- STAINES & WEST DRAYTON RAILWAY
- METROPOLITAN RAILWAY
- WOLVERTON & STONY STRATFORD DISTRICT LIGHT RAILWAY

Legend (lower left):
- LBR/LNWR
- GWR
- GER
- LSWR
- GNR
- MR
- AYLESBURY & BUCKINGHAM RAILWAY
- OXFORD, AYLESBURY & METROPOLITAN JUNCTION RAILWAY

Map labels: BEDFORD, BUCKINGHAM, LUTON, AYLESBURY, HERTFORD, ST ALBANS, WATFORD, SLOUGH

NEW STATIONS: ○

1 WOLVERTON
2 QUAINTON
3 POTTON
4 LUTON
5 ST ALBANS
6 BUSHEY

NB: Colours show ownership by 1890 (not companies at opening)

No additional lines were constructed in Bedfordshire, 1881-90.

Hertfordshire, 1881-90:

31) 1887: The 'Metropolitan Railway' extension to Rickmansworth:[54]
The first underground railway in London, the MetR had many extensions since its opening in 1863. The first affecting this region entered Watford registration district, passing from Harrow (the previous terminus, outside Hertfordshire) via Moor Park to Rickmansworth (Metropolitan Station; the village's second station - there was no connection with the LNWR branch).

- 1889: The 'Metropolitan Railway' extension to Chesham (No. 46 under Buckinghamshire, 1881-90).

Buckinghamshire, 1881-90:

- 1881: Opening of the 'Wolverton Bend':[55]
An LNWR deviation line running east from the former LBR main line, redirected around Wolverton Works (the former line running through it). A replacement station (the third in the town's history) was built on it.

44) 1885: The 'Staines & West Drayton Railway':[56]
Running mostly outside Buckinghamshire, it operated between the LSWR at Staines (the town's second station; later GWR) via Runnymead Range Halt (both just outside Buckinghamshire) and Colnbrook (on the Buckinghamshire border) to West Drayton on the GWR main line. Entirely within Eton registration district, it was taken over by the GWR in 1900.

45) 1887: The 'Wolverton & Stony Stratford District Light Railway':[57]
In Potterpury registration district (Buckinghamshire), extending into Northamptonshire, this line was technically a roadway steam tram, boasting the largest tram cars ever to run in Britain (one preserved in Milton Keynes Museum).[58] From Wolverton Station to Stony

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[54] Cockman, *Hertfordshire*, pp.10-12.
[55] B. West, *The Trainmakers - the Story of Wolverton Works* (Buckingham, 1982), p.55.
[56] Cockman, *Buckinghamshire*, p.85; http://www.abandonedstations.org.uk/Staines_West_line.html
[57] F. Simpson, *The Wolverton & Stony Stratford Steam Trams* (Bromley Common, 1981).
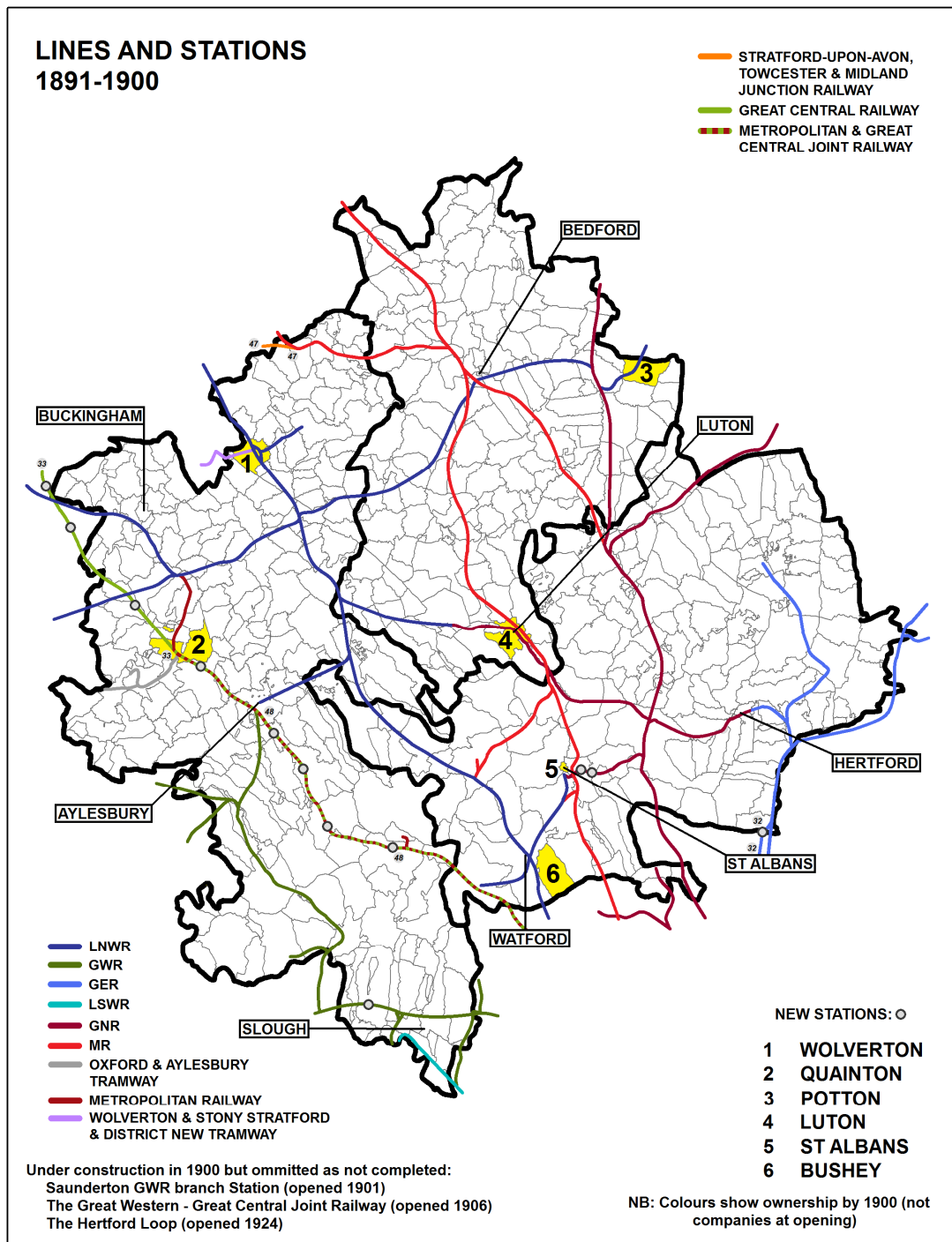[58] http://www.mkmuseum.org.uk/exhibit/tram.htm

Stratford, extended to Deanshanger in 1888, it was commonly used by staff at Wolverton Works, but was generally unsuccessful. Changing names and companies multiple times, and inoperative through bankruptcy for most of 1891, by 1900 it was operated by the 'Wolverton & Stony Stratford & District New Tramway'. After the period, it was taken over by the LNWR in 1919 and closed after the General Strikes of 1926.

46) 1889: The 'Metropolitan Railway' extension to Chesham:[59]

The second MetR extension, it ran from Rickmansworth to Chesham (actually Chesham Bois) in Amersham registration district (Buckinghamshire). Stations were constructed at Chorelywood (Hertfordshire), Chalfont Road and Chesham. The lattermost became a short branch spur after the 1892 MetR extension (No. 48).

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[59] Maggs, *Branch Buckinghamshire*, p.61.

Appendix IIG: Railway lines and stations opened in the region, 1891-1900, coloured by owning company at the end of this time-span.

LINES AND STATIONS 1891-1900

STRATFORD-UPON-AVON, TOWCESTER & MIDLAND JUNCTION RAILWAY
GREAT CENTRAL RAILWAY
METROPOLITAN & GREAT CENTRAL JOINT RAILWAY

LNWR
GWR
GER
LSWR
GNR
MR
OXFORD & AYLESBURY TRAMWAY
METROPOLITAN RAILWAY
WOLVERTON & STONY STRATFORD & DISTRICT NEW TRAMWAY

Under construction in 1900 but ommitted as not completed:
Saunderton GWR branch Station (opened 1901)
The Great Western - Great Central Joint Railway (opened 1906)
The Hertford Loop (opened 1924)

NEW STATIONS: ○

1   WOLVERTON
2   QUAINTON
3   POTTON
4   LUTON
5   ST ALBANS
6   BUSHEY

NB: Colours show ownership by 1900 (not companies at opening)

No additional lines were constructed in Bedfordshire, 1891-1900.

Hertfordshire, 1891-1900:

32) 1891: The GER Edmonton-Cheshunt branch:[60]

Mostly in Enfield Borough, it branched off the GER main line just north of Waltham Cross towards Edmonton. Theobalds Grove was the only station on this line in this region, which closed to passengers in 1909 (reopening in 1960).

33) 1899: The Annesley-London 'Great Central Railway' extension:[61]

Formed by amalgamation in 1847, the Manchester, Sheffield and Lincolnshire Railway changed its name in 1897 prior to opening its north-south London extension. Passing through Brackley and Buckingham registriation districts, their dedicated line joined the MetR immediately north of Quainton Road Station (Aylesbury registration district). The MetR line was then co-used (under the name of the 'Metropolitan & Great Central Joint Railway') through Buckinghamshire and Hertfordshire, deviating towards Marylebone outside the region (south of Harrow). Excluding MetR stations served (listed above), GCR stations were at Brackley Central Station (the town's second station, just outside Buckinghamshire), Finmere (just outside Buckinghamshire) and Calvert, Buckinghamshire.

Buckinghamshire, 1891-1900:

47) 1891: The Olney-Towcester, Northamptonshire, 'Stratford-upon-Avon, Towcester & Midland Junction Railway':[62]

Mostly in Northamptonshire, the MR granted running powers into Olney (on the former Bedford & Northampton Railway in Newport Pagnell registration district; No. 20 [1872]). Having no station in the region, it ultimately was amalgamated into the 'Stratford Upon Avon & Midland Junction Railway' in 1909.

48) 1892: The 'Metropolitan Railway' extension to Aylesbury:[63]

The third MetR extension, turning Chesham station into a branch spur, it passed through Amersham, Wycombe and Aylesbury registration districts. Connecting with the former 'Aylesbury & Buckingham Railway' (taken over in 1891, with Waddesdon Station built

[60] Cockman, *Hertfordshire*, p.4.
[61] Ibid; pp.12-13; Cockman, *Buckinghamshire*, p.133; Awdry, *Encyclopaedia*, p.206.
[62] Awdry, *Encyclopaedia*, p.105.
[63] Cockman, *Buckinghamshire*, pp.94-6.

south of Quainton Road in 1897; No. 40 [1868]) it had running powers up to Verney Junction. Excluding stations on the previously-mentioned sections, north-south from Aylesbury (originally WR) Station it passed through Stoke Mandeville, Wendover, Great Missenden and Amersham to Chalfont Road (on the previous extension). From Quainton Road south, this completed line became the joint-operated 'Metropolitan & Great Central Joint Railway' in 1899 (No. 33 [1899]).

- 1899: The Annesley-London 'Great Central Railway' extension (No. 33 under Hertfordshire, 1874-1900).

By 1901, 27 companies had operated 33 inter-connected lines in the region, though it should be noted that barely a third of lines initially proposed were actually built. In total the region had 148 stations (excluding those immediately outside the region, but including the short-lived Welwyn Junction), with 29 of these having connections to other lines (including branches). Construction did not cease in 1900, as stations and lines such as the Buckinghamshire GWR-GCR Joint Committee were still being designed and built until the 1920s and beyond.

Appendix III:

Turnpike Trusts and Act Dates

Appendix IIIA: Bedfordshire Turnpike Trusts (in opening chronology):

NAME	FIRST ACT	EXPIRED
Hockliffe and Woburn	1706	1877
Biggleswade to Alconbury Hill	1725	1867
Bedford and Luton	1727	1870
Luton to Westwood Gate and Luton to St Albans	1727	1870
Bedford and Newport Pagnell	1754	1870
Hitchin and Bedford	1757	1870
Cardington to Temsford Bridge	1772	?
Bedford and Woburn	1777	1872
Bedford to Great North Road through Willington and Bedford to Great Barford through Goldington	1792	1870
Black Bull, Dunstable to King's Arms, Hockliffe	1792	1873
Bedford and Kimbolton	1795	1874
Great Staughton to Lavendon (Odell District)	1802	1877
Great Staughton to Lavendon (Riseley District)	1802	1877
Bedford to Sherrington	1814	?
Potton to Eynesbury (near St Neot's)	1814	?

Appendix IIIB: Buckinghamshire Turnpike Trusts (in opening chronology):

NAME	FIRST ACT	EXPIRED
Beaconsfield and Stokenchurch	1719	1867
Wendover and Buckingham	1721	?
Maidenhead to Cranford Bridge	1727	1872
Holyhead Road (Hockliffe Division)	1740	1867
Buckingham to Hanwell (Upper Division)	1743	1871
Bicester and Aylesbury	1770	1875
Bromham to Lavendon near Olney Olney and Wellingborough (and Bromham)	1790	1874
Great Marlow and Stokenchurch	1791	?
Ellsborough to West Wycombe	1795	?
Aylesbury and Hockliffe	1810	1868
Buckingham and Newport Pagnell	1815	1876
Aylesbury to West Wycombe	1822	?
Buckingham and Towcester	1824	?
Princes Risborough and Thame	1825	?
Red Hill and Beaconsfield	1828	?
Wendover to Oak Lane and from River Colne for half a mile towards Beaconsfield	1833	?

The Stratford to Dunchurch Turnpike (1706-1876) through Wolverton was officially a Northamptonshire Turnpike, hence not included above.

Appendix IIIC: Hertfordshire Turnpike Trusts (in opening chronology):

NAME	FIRST ACT	EXPIRED
Wadesmill to Stilton	1663	?
Pondyards (St Albans) and Barnet	1715	?
Stevenage and Biggleswade and branch from Radwell Corner to Arlesley	1720	1868
Dunstable to Near St Alban's (Pondyards)	1723	1877
Cheshunt	1725?	?
Enfield to Ware	1725	?
Hockerill	?	[18]27
Galley Corner to Lemsford	1730	?
Watton	1757	?
Sparrows Herne to Walton (Aylesbury)	1762	1872
Welwyn	1763	?
Reading and Hatfield	1768	1880
Baldock to Royston and Tring to Bournbridge	1769	?

Based on the table of national turnpike trusts (including dates and mileage) from

http://www.turnpikes.org.uk/English%20turnpike%20table.htm

Appendix IV:

Locomotive and Carriage Construction at Wolverton

<u>Locomotives at Wolverton c.1838-1877.</u>

When opened, the London & Birmingham Railway used Bury 2-2-0 locomotives (Appendix IVA) – the principle sheds being at Camden, Birmingham and Wolverton for mid-way refuelling.[1] Initially only intended as a maintenance and stabling area, a shortage of motive power led to the first locomotives being built on-site in 1845, to Bury designs (Nos. 92 and 95).[2]

Appendix IVA: LBR Bury 2-2-0 locomotive No. 7.
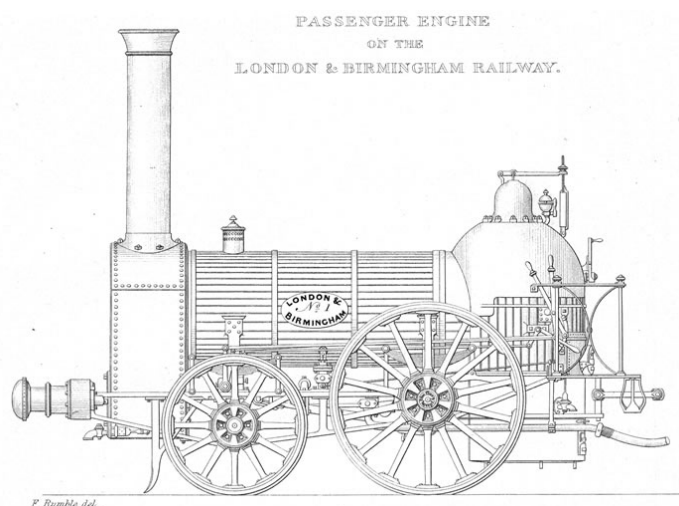
F. Whishaw, *The Railways of Great Britain and Ireland: Practically described and illustrated* (London, 1840), p.614.

Upon amalgamation, the London & North Western Railway had two locomotive works, the other at Crewe. Edward Bury, located at Wolverton, resigned on amalgamation; Crewe's Francis Trevithick (son of Richard Trevithick) continued until 1857. Their replacements were James McConnell for the southern division (1846) and John Ramsbottom for the northern division (1857).[3] Ramsbottom's most famous design was the 2-2-2 'Problem' (or

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[1] TNA RAIL 1110/260 – London and Birmingham Railway Shareholders Reports – Report for 21/8/1838; H. Jack, *Locomotives of the LNWR Southern Division: London & Birmingham Railway, London & North Western Railway and Wolverton Locomotive Works* (Sawtry, 2001), pp. 26, 82-9; C. Hamilton Ellis, *Four Main Lines* (London, 1950), p.25; B. West, *The Railwaymen - Wolverton* (Buckingham, 1987), p.13.

[2] Jack, *Locomotives LNWR*, p.32.

[3] O.S. Nock, *Premier Line: The Story of London & North Western Locomotives* (London, 1952), pp.32, 51.

'Lady of the Lake') Class, 60 of which were built.[4] McConnell contested the merits of these 'small' engines, claiming that larger designs were more powerful.[5] Their vastly different opinions, even down to engine livery, ultimately created problems when locomotives went between the two divisions. Costs increased due to the lack of uniformity in construction, there being no Company-wide standardisation, part blamed on 'the want of proper space for the Works at Wolverton'.[6] This was a continual problem and throughout the period both Crewe and Wolverton were repeatedly enlarged.

Although having initial gauging problems with his first design, 'Mac's Mangle', which demolished several platforms as it was built too wide, McConnell's designs were highly successful, such as his 'Wolverton Goods'. Most significant was his 1851 2-2-2 'Bloomer' Class (Appendix IVB-C) that became synonymous with Wolverton.[7] These engines, considered 'among the finest and most powerful standard gauge engines of the day'[8], were highly efficient and very popular, the last only being scrapped in 1888.[9]

Appendix IVB-C: McConnell 'Bloomer' Class; Wolverton drawing, 1861 and replica at Wolverton Works.

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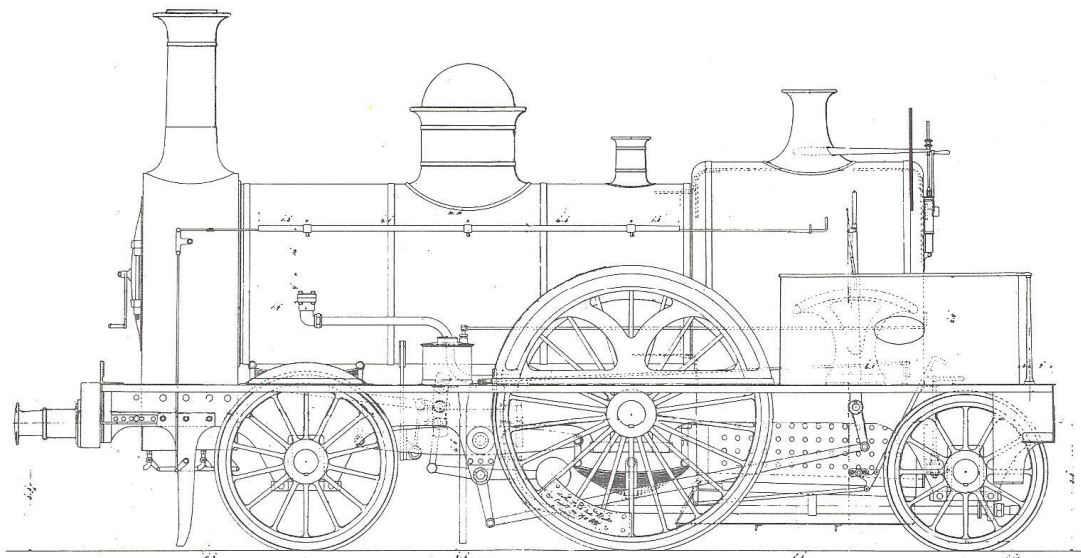
[4] Nock, *Premier Line*, pp.53-8.
[5] Nock, *Premier Line*, p.57.
[6] TNA RAIL 1110/260 – LNWR Shareholders Reports – Report for 22/2/1854.
[7] H. Jack, *The L.N.W.R. Bloomers Wolverton's 7ft Singles* (Crewe, 1987).
[8] Nock, *Premier Line*, p.39.
[9] Jack, *Bloomers*, pp.5, 7, 17.

H. Jack, *The L.N.W.R. Bloomers Wolverton's 7ft Singles* (Crewe, 1987), p.19; Author, with permission from Railcare Ltd.

On 7th January 1862 a despatch informing of the American Civil War was landed at Holyhead – it being vital to arrive in London as quickly as possible (the 'Trent Affair'). A Ramsbottom 'Lady of the Lake' locomotive took the train to Stafford; running at top speed, but allowing for deteriorating weather, it took 144 minutes to travel the 130.5 miles at an average speed of 54.3mph. On arrival, a McConnell 'Extra Large Bloomer' Class took the train to Euston. Around Rugby was heavy fog, forcing a reduction in speed, but on arrival it was found that the 133.1 mile journey had taken 134.5 minutes, averaging 57.2mph. Demonstrating the superiority of the 'Bloomers', the run was great publicity not only for the LNWR but for Wolverton Works. Chairman Richard Moon's dislike for McConnell, however, led to attempts to quieten the success of his design[10].

On McConnell's resignation on 20th February 1862, Ramsbottom took over Wolverton Works. The two divisions were shortly merged and locomotive production at Wolverton ceased in 1862, repairs continuing. The final locomotive-specific workshops were handed

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[10] Nock, *Premier Line*, pp.47-8.

over to carriage production in 1877.[11] In the 1845-63 period, 166 locomotives were built at the Works to 24 classes, including crack express engines, such as the Burys and Bloomers, goods and tank engines.[12] While locomotive designs dramatically increased in size by the end of the period under Francis Webb (1871, Crewe), McConnell's 'bigger is better' approach gave way to lighter engines with comparatively smaller boilers and grates[13]. Ultimately Webb produced 35 different locomotive designs, ranging from express compound engines to tank engines (ultimately leading to the 0-6-2 'Watford Tanks').[14]

Turning to the physical work undertaken in Wolverton Works, the earliest engines were constructed from spare parts in stock from the maintenance stores. But by its peak in locomotive-construction, it was able to build engines virtually from scratch, thus employing draughtsmen and engineers, foundrymen, boilersmiths, metalworkers of numerous kinds from copper and brass to iron and later steel, riveters, machinists, carpenters for brake blocks, buffer beams and other wooden items and many other occupations, alongside the drivers, firemen, lighters and suchlike from the motive power depot. These were exceedingly specialist-trained individuals, having to make complex parts such as high-pressure boilers and fireboxes. While referring mostly to repairs, and being somewhat Awdry-esque in language, George Bradshaw gave one of the best summaries of the work undertaken, paying Wolverton more attention than either Crewe or Swindon Works:

WOLVERTON, near the river Ouse, has an increasing population of 2,370, chiefly dependent on the London and North Western Railway Company, who have a depot and extensive factories here. It is also a refreshment station. A new church and market house, and hundreds of model cottages, have been built by the Company, whose Works cover 12 acres of ground. While Crewe is the nursery, Wolverton is the hospital for locomotives. There are the worn-out, the rickety, the accidents, and sundry other wards, in all of which locomotives are to be seen undergoing cure. Red hot pieces of iron are being forcibly administered; holes probed and nuts screwed on them; steam lathes are facing down callosities; hundreds of locomotive surgeons – stalwart and iron-fisted – dress and bind up cases in their wards with a tremendous energy. Sickly-looking locomotives are fitted up with bran new outsides; several in the last stages of collapse have strong doses of copper rivets forced into their systems.

[11] Jack, *Locomotives LNWR*, pp.32-4.
[12] Ibid; pp.257-260.
[13] Nock, *Premier Line*, pp.40-3, 63.
[14] http://www.lnwrs.org.uk/Glossary/locoClasst.php

Metal giants, shaky about the knees, are furnished with new sets of joints. In the most desperate cases a cure is effected. Ninety-nine out of every hundred of these battered patients come out perfectly restored to their bereaved stokers. By the help of a blast furnace and steam hammer, even the most incurable is beaten young again, and reproduced as a new locomotive, called perhaps the "Phoenix."- (Household Words, l853.) Nothing is wasted here, for the scraps are welded together in the furnace, for axles or cranks, or any other duty requiring temper and strength. The metal cutting and planing works deserve notice.[15]

Carriages at Wolverton c.1864-1900.

With the decline of locomotive construction in 1862 more space became available, and the main carriage production was relocated from Saltley (Birmingham, taken over by the MetR) in 1864, commencing with light repairs before beginning manufacture in earnest from June.[16] The last locomotive-specific workshops handed over to carriage production in 1877 and the Works underwent one of its largest expansions as it was converted for its new purpose, notably with new carriage sheds and body shops – becoming the largest carriage Works in Britain and one of the largest in Europe.[17] Ironically, Crewe was chosen for locomotive production as their engines were smaller and more economic, but weaker. Ever-more substantial Wolverton carriages, however, forced Crewe to enlarge their locomotive designs to cope, so negating the Company's move away from McConnell's big engine policy.[18]

Carriages initially used by the LBR varied in comfort - first class consisted of four-wheel stock with bodies originally built by road coach-builders Joseph Wright & Sons (who turned to railway coach production at Saltley), second class in open-bodied 'coaches' with seats and third class standing open to the elements (Appendix IVD).[19] After Gladstone's 1844 Act, open-bodied stock was banned from general use, although still commonly used on excursion trains, and enclosed coaches had to be constructed. It should be noted that the very early

[15] G. Bradshaw, *Bradshaw's Tours, Section III, Through the Counties of Hertford, Buckingham, Northampton, Warwick, Stafford, Chester, Lancaster, York, Cumberland, Westmorland, Northumberland, Dumfries, Lanark, Ayr and the Northern Counties of Scotland* (c.1860s; reprinted Midhurst, 2011), p.10.
[16] B. West, *The Trainmakers - the Story of Wolverton Works* (Buckingham, 1982), p.52; Jack, *Locomotives LNWR*, pp.32-4.
[17] West, *Railwaymen*, pp.25-6; J. Simmons, *The Railway in Town and Country 1830-1914* (Newton Abbot, 1986), p.173.
[18] O.S. Nock, 'Competitive Testing', *Railway Magazine* (May 1980), pp.231-5; Jack, *Locomotives LNWR*, pp.57-62; West, *Trainmakers*, p.33.
[19] West, *Railwaymen*, pp.25-6.

period also saw the use of 'carriage trucks' for aristocrats who preferred to use their own horse-drawn coaches instead of railway-owned equivalents (Appendix IVD).

Appendix IVD: An LNWR advertisement postcard (c.1904) showing the development of passenger trains. Note the decreasing levels of shelter per class, the mail coach and the 'carriage truck'.
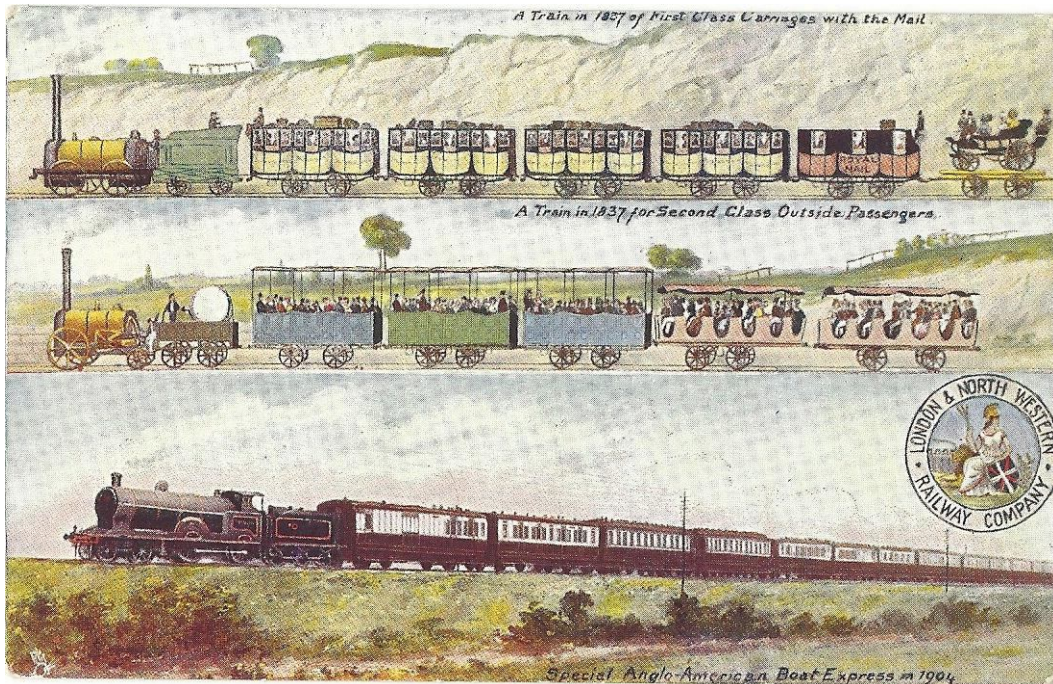
Author's collection.

The MR was the first company to abolish second class (1875), quickly followed by others; former second class carriages becoming third class, improving conditions for passengers. However, from 1882 onwards Chairman Moon insisted on the LNWR retaining it to the great chagrin of some of the shareholders. Decreases in the number of first and second class passengers were noted in 1891 (second class dropping more), but it was claimed the MR had similar losses in spite of abolishing second class and providing new 'long traffic to Scotland' services.[20] The numbers in second class did not quickly recover, as while 13 new second class carriages were built in 1893, they were constructed 'with a view to their being easily and cheaply converted into third class'.[21] Inter-company second class services were also dropped, but even so in the first half of 1893 some 1.5 million second class passengers were recorded. By the end of the period, the Company's stance was that:

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[20] TNA RAIL 1110/271 – LNWR Shareholders Reports – Report for 20/2/1891.
[21] TNA RAIL 1110/271 – LNWR Shareholders Reports – Report for 15/8/1893.

'Between Watford and London, Kensington and Bond Street stations, we have a very good second class traffic, and the moment it does not pay on other parts of the system we shall abolish it.'[22]

Initial design developments were slow, most being of the many variants of short four or six-wheel compartments, but by the end of the period new technologies were being rapidly adopted.[23] Under Webb in the 1880s, the LNWR resisted fitting bogies to increasingly long carriages – questioning their safety, thus criticising their competitors.[24] Additionally, their preferred 'chain brake' only worked with rigid wheelbases, leading to six and eight-wheel vehicles with 'radial trucks' (axles capable of lateral movement).[25] This type of brake was only finally replaced in 1892 after legislation enforcing automatic continuous brakes.[26] The company generally disliked new technologies – they criticised the near-universally adopted Westinghouse locomotive brake pump and were even slow in creating the safe 'absolute block' signalling system.[27] While the MR introduced bogie stock in the 1870s, the LNWR would only do so in the late 1880s; by 1897 standardising at a 50ft length (Appendix IVE), mostly using the 'Wolverton truss rod bogie' (1890 onwards).[28] Ultimately their size and weight led to changes in Crewe's approach to locomotive design in order to pull them.[29] It should be noted that Wolverton was not solely building carriages; to quote Carriage Superintendant Charles Archibald Park in 1897:

'We include brake-vans for passenger trains, horse-boxes, fruit, milk, and luggage vans, and also all the omnibuses, parcel carts and vans, broughams, gigs and so on are made and repaired by us'.[30]

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[22] TNA RAIL 1110/271 – LNWR Shareholders Reports – Report for 16/2/1894.
[23] D. Jenkinson, *LNWR Carriages – a Concise History* (York, 1978), pp.1-2.
[24] O.S. Nock, *The London and North Western Railway* (1960), p.106.
[25] Jenkinson, *Carriages*, p.2.
[26] West, *Trainmakers*, p.73.
[27] TNA RAIL 1110/270 – LNWR Shareholders Reports – Report for 19/2/1870.
[28] R. Ball & P. Chatham, LNWR 34ft Twin Day Saloons, Diagram P15, *The L&NWR Society Journal*, Vol. 6 No. 7 (December 2010), p.20.
[29] Ibid; p.14; West, *Railwaymen*, p.30.
[30] West, *Railwaymen*, pp.27-30.

Appendix IVE: Blueprint for a wooden 50 foot first class Wolverton-built Euston-Watford suburban compartment carriage c.1896/7.
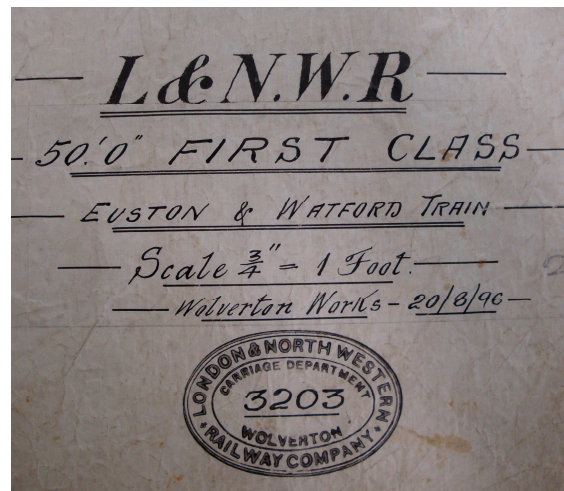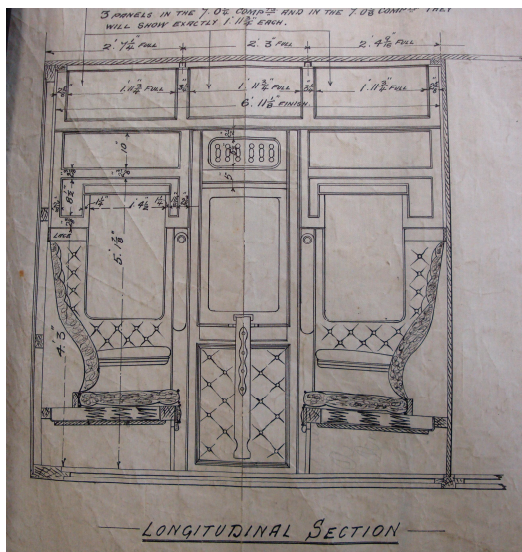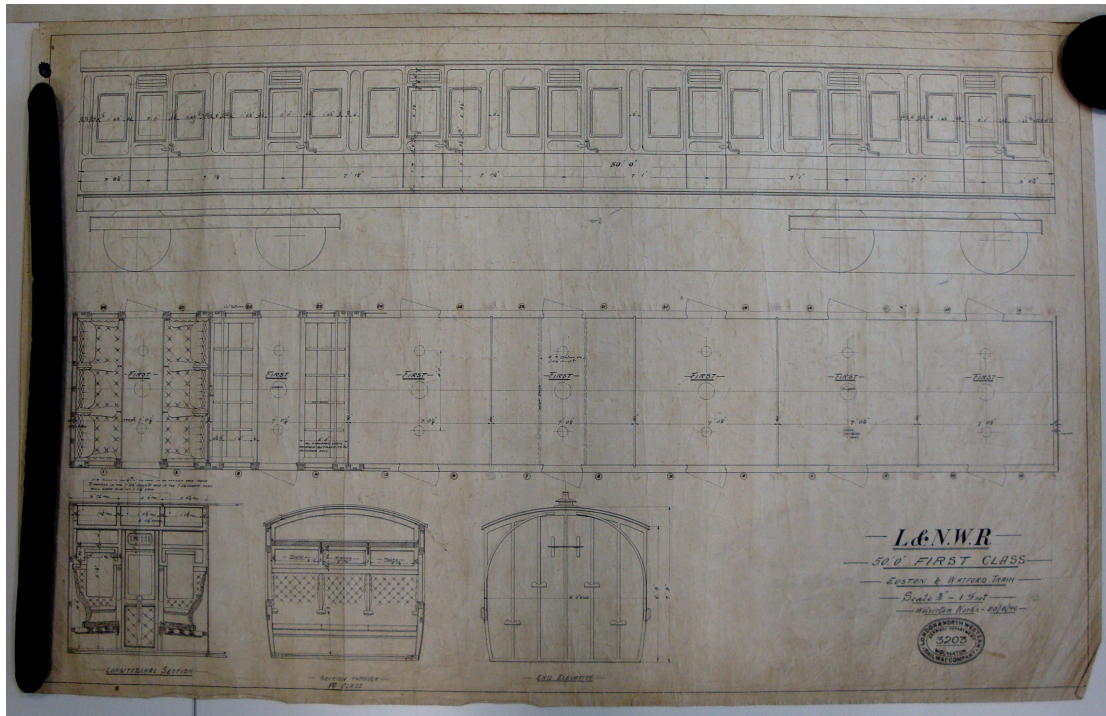
NRM Box 315, Location 39D, No. Suffix 3203.

In spite of such hesitancy to new technology, continual improvements in carriage design were made. These included early changes such as introducing oil axle boxes in 1860-1 (formerly grease, which froze in winter) and by 1879 fitting Mansell-type wooden-centred wheels for improved running.[31] The early 1870s also saw the introduction of 'sleeping cars' for the first

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[31] TNA RAIL 1110/270 – LNWR Shareholders Reports – Report for 22/2/1879.

time.[32] Heating for the most part was via foot-warmers using acetate of soda; Wolverton's own version of steam heating was introduced in 1897.[33] Communication cords were slowly introduced, although they could be unreliable and initially passengers were in the habit of 'pulling up' trains between stations.[34] Corridor carriages were introduced in 1893 to much acclaim, along with more specialist stock, such as dining and sleeping cars and even 'picnic saloons' for hire.[35] Carriage lighting initially used oil lamps, then from 1875 an oil-gas system (highly hazardous, frequently worsening accidents) which by 1912 saw mass use of the 'Wolverton system'.[36] To ignite the gas it is claimed the Works invented the 'pilot light'.[37] However, the 1897 batch of 65 foot six inch Diners built at Wolverton were the first to be lit via electricity; one winning the 1900 French 'Grand Prix' competition.[38] While not in general use by the end of the period (only post 1902, using the battery and dynamo 'Wolverton train lighting system'), it is significant as just one example of many cases where Wolverton Works devised new innovations that would ultimately become standard worldwide.[39]

The changes in passenger comfort and carriage technology in the LNWR across the period were near revolutionary and solely down to Wolverton, which gained a reputation for quality.[40] This reputation was greatly aided by Queen Victoria on her first journey on the LBR from Watford to Tamworth to visit Robert Peel on 28th November 1843.[41] Pausing at Wolverton, she was sufficiently impressed to commission the Works to build and maintain her Royal Train (Appendix IVF). Victoria's Saloon is still seen as the finest carriage to emerge from the Works.[42] Almost every Royal Train thereafter was built and stabled at Wolverton, thereby bringing the Royal seal of approval and further publicity.[43]

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[32] Nock, *North Western*, p.111.
[33] West, *Trainmakers*, p.71.
[34] TNA RAIL 1110/270 – LNWR Shareholders Reports – Report for 22/2/1877.
[35] Buckinghamshire Railway Centre; http://www.brc-stockbook.co.uk/LNWR_No182.htm
[36] West, *Railwaymen*, p.27.
[37] West, *Trainmakers*, p.75.
[38] D. Hilliard, Wolverton Works visit; BRC; http://www.brc-stockbook.co.uk/LNWR_No77.HTM
[39] West, *Trainmakers*, p.75.
[40] Jenkinson, *Carriages*, p13.
[41] TNA RAIL 1014/10 – Queen Victoria's first journey on the London & Birmingham Railway.
[42] *Description of the London & North Western Railway Company's Carriage Works at Wolverton* (1906; LNWR Society reprint), p.34; West, *Railwaymen*, p.98.
[43] *Carriage Works at Wolverton.*

Appendix IVF: Queen Victoria's Royal Saloon, built 1869 and rebuilt on bogie frames 1895; the finest (and her favourite) part of her Wolverton-built Royal Train.
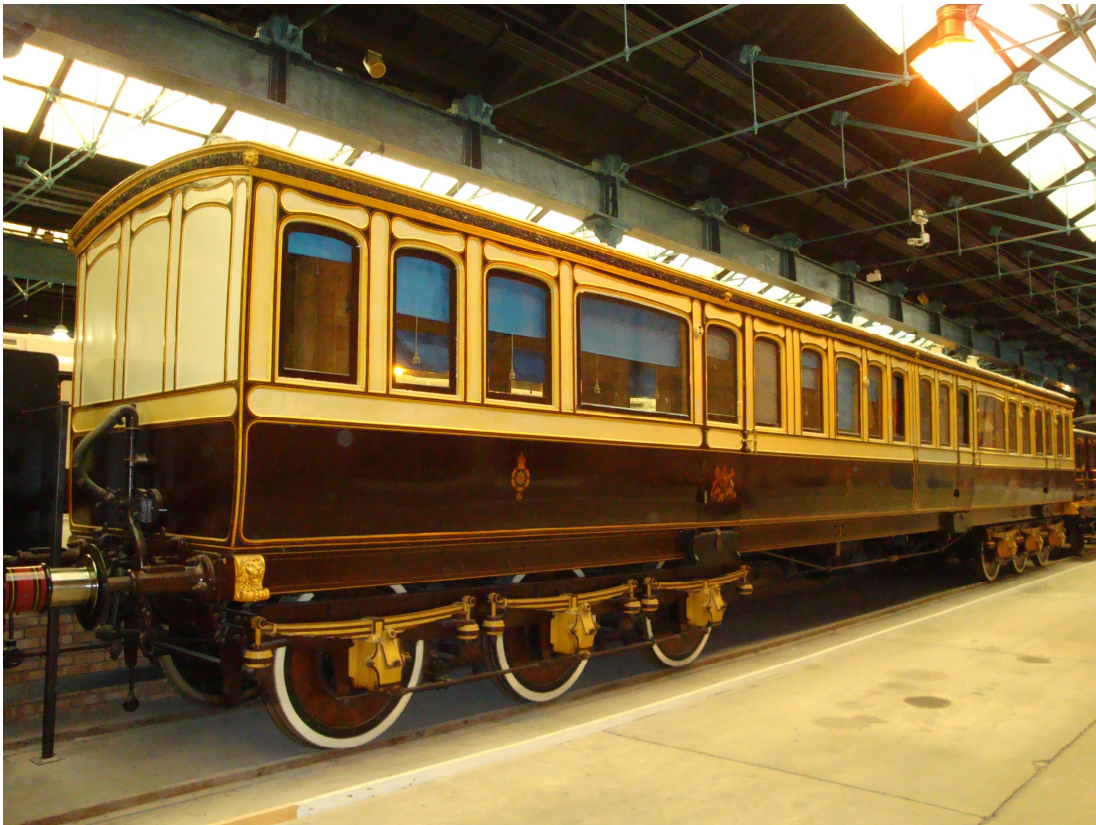
NRM_CT_937401.

Considering the physical work involved, throughout the period (and up to the 1950s), rolling stock was primarily made from wood; carriages being no exception. While obvious parts were made from various metals (bogies/W irons, brake gear, gas reservoirs, piping and fittings such as locks and handles) the main structure and frames were timber. This had the side-effect of allowing 'telescoping' in many accidents. Strangely, thin mahogany was commonly used to panel carriages in spite of non-stop replacing due to splitting.[44] The large amounts of wood, paint and varnish were a major fire hazard, and there were several major fires at the Works.[45] Many occupations were necessary in the Works, ranging from designers, foundrymen and numerous types of metal-workers (some of these distinctly different from with locomotives) to sawmill workers, carpenters, joiners, cabinet makers, gasfitters, upholsterers, leather-workers, sewing, machinists, netting-makers, polishers and painters.[46] With so many operative components and the high need for exceptional quality, the

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[44] T. Lyster, BRC - tour of restoration workshops; Jenkinson, *Carriages*, p.9.
[45] West, *Trainmakers*, p.56-7.
[46] Wolverton Works booklet (LNWR Society reprint); Steam: the Museum of the Great Western Railway, Swindon.

transfer from locomotives to carriages at Wolverton was by no means a demotion in the importance of the site.

As a summary of but a few facets of the jobs involved, V.L. Whitechurch of the *Railway Magazine* visited the Works in 1897, recording the following:[47]

Entering the body shop, I speedily saw the beginning of the erection of the coach itself. The steel frames are sent down from Crewe [earlier carriages had wooden frames built on-site]. Those for the new carriages, which I shall describe presently, are fifty feet in length. We entered the "body" of a corridor coach that was in a state of semi-completion… different woods used in various parts of the construction. The framing was of teak… the cantrails were oak, and the partitions, roof, and floor of yellow deal. The panels were mahogany, strengthened on the outside with stout canvas glued to the back, and supported to the angles of the framing by glued blocks. Deal was the wood used for seats, with oak for the seat rails. The roof was spanned by curved ribs of channel steel [earlier, wood], with an internal lining of wood, for screwing the roof outside and the panels within.

…one shop where a group of female polishers and varnishers were rubbing seat-arms and panels... the upholstery department... a room above, where was a row of sewing machines, worked by steam, and an army of fifty women and girls stitching busily at cushions, and cordings and hand-rests, and the like, while in another room were more of the gentle sex preparing strips of leather for window straps. Next came the "stuffing" department, where seats and backs were being fitted with horsehair.

In the paint shops each coach received no less than sixteen coats of paint. These included three coats of white priming, four coats of filling up, and one coat of red staining; three coats of lead, one coat of Kremnitz white, one coat of enamel and three coats of varnish on the white panels and on the chocolate body, two coats of lead, one coat of brown, one coat of lake (carmine, a very expensive colour), one coat of enamel and three coats of varnish.

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[47] West, *Railwaymen*, pp.27-30.

Shown around by Chief Draughsman G. Coker, various finished carriages were described; for this study the following being most appropriate (the same Watford carriage design as blueprint Appendix IVE):

"Now", said my guide, "you've seen about the finest thing in corridors and new main line coaches, so come and have a look at our new Watford locals - the best locals, bar none, in the Kingdom [a claim made of virtually all the carriage stock by Coker]". The L & NW may be justly proud of these exquisitely finished trains. They are not corridors, as, of course, the exigencies of local traffic scarcely render that sort of coach desirable, but are built specially for the service between Watford and Euston, and Watford and Broad Street. They are fifty foot frames on four wheel bogies. Three are already running and three more will shortly be turned out of Wolverton. Two of those that are now running are fitted up with electric light, more as an experiment than anything else. "Just look inside this third-class compartment", I was asked. "I could mention several local lines that haven't a first to equal it. And you must notice in this new first smoker the seats and backs are fitted with embossed crimson leather. Isn't that good enough for anyone?"

Appendix V:

Maps of population growth 1801-1901, 1801-51 and 1851-1901.

Appendix VA: Population change in the region 1801-1901 compared to extant railway lines.
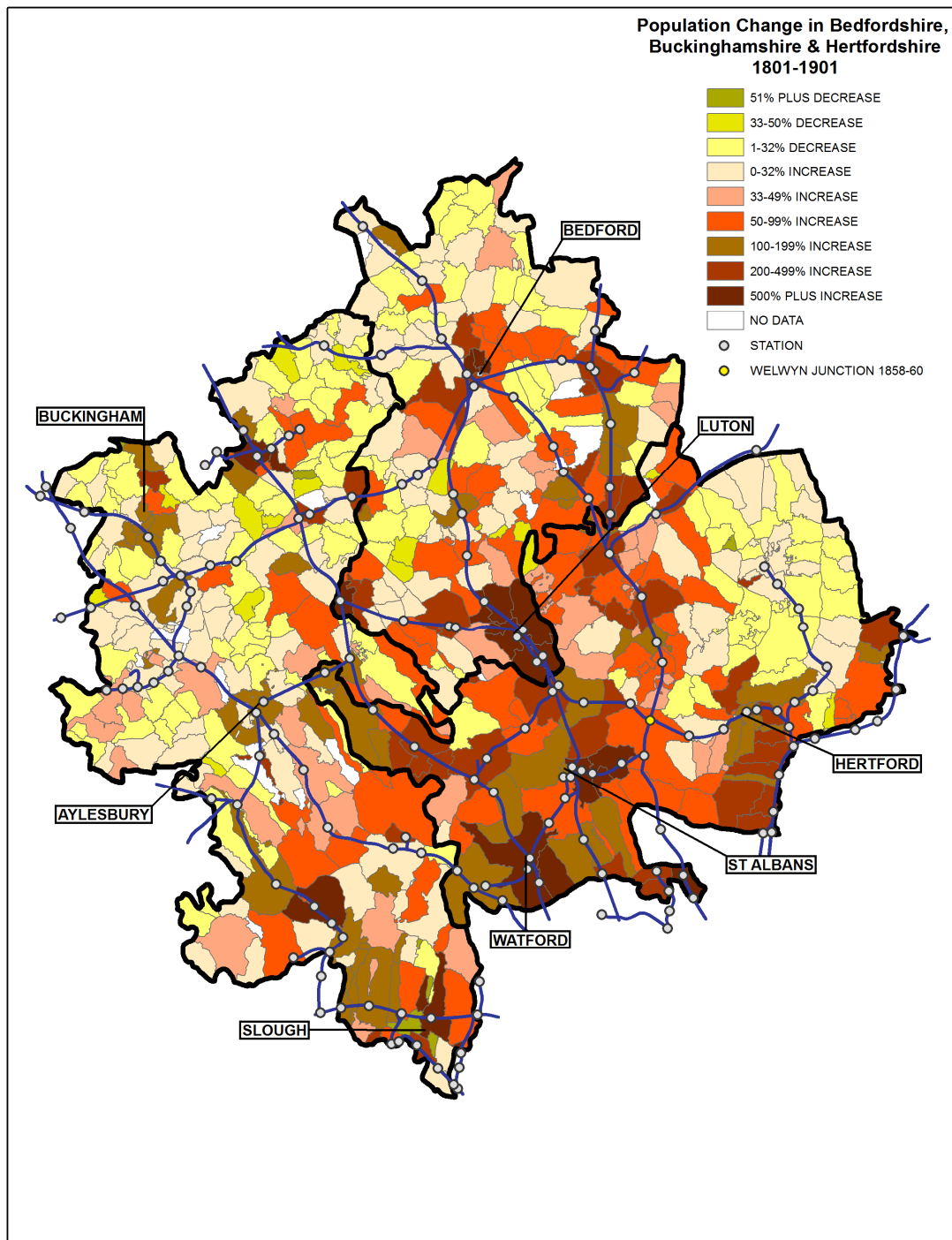
Based on census summary tables via www.histpop.org

Appendix VB: Population change in the region 1801-1851 compared to extant railway lines.

Population Change in Bedfordshire, Buckinghamshire & Hertfordshire 1801-1851

- 51% PLUS DECREASE
- 33-50% DECREASE
- 1-32% DECREASE
- 0-32% INCREASE
- 33-49% INCREASE
- 50-99% INCREASE
- 100-199% INCREASE
- 200-499% INCREASE
- 500% PLUS INCREASE
- NO DATA
- STATION

BEDFORD

BUCKINGHAM

LUTON

AYLESBURY

HERTFORD

ST ALBANS

WATFORD

SLOUGH
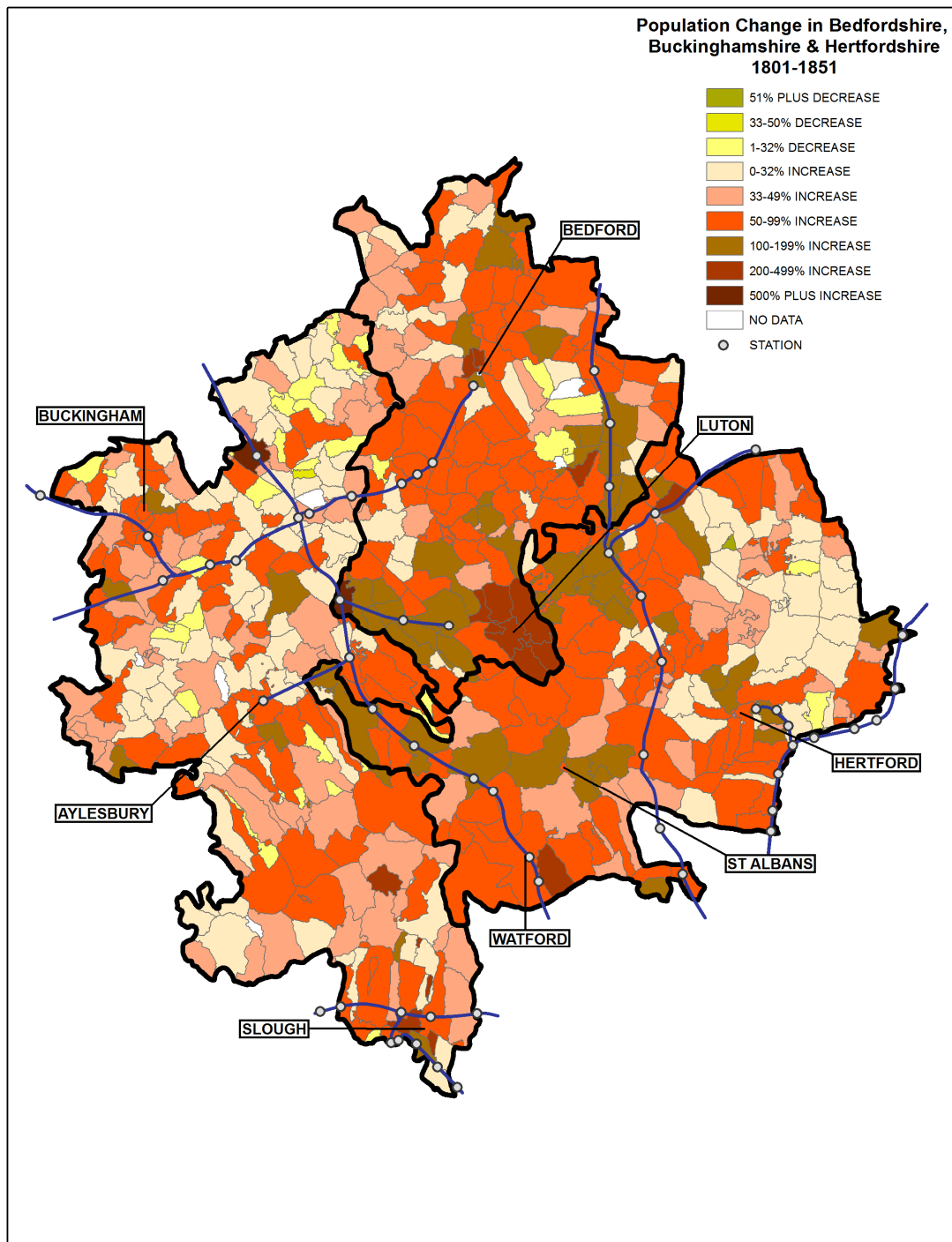
Based on census summary tables via www.histpop.org
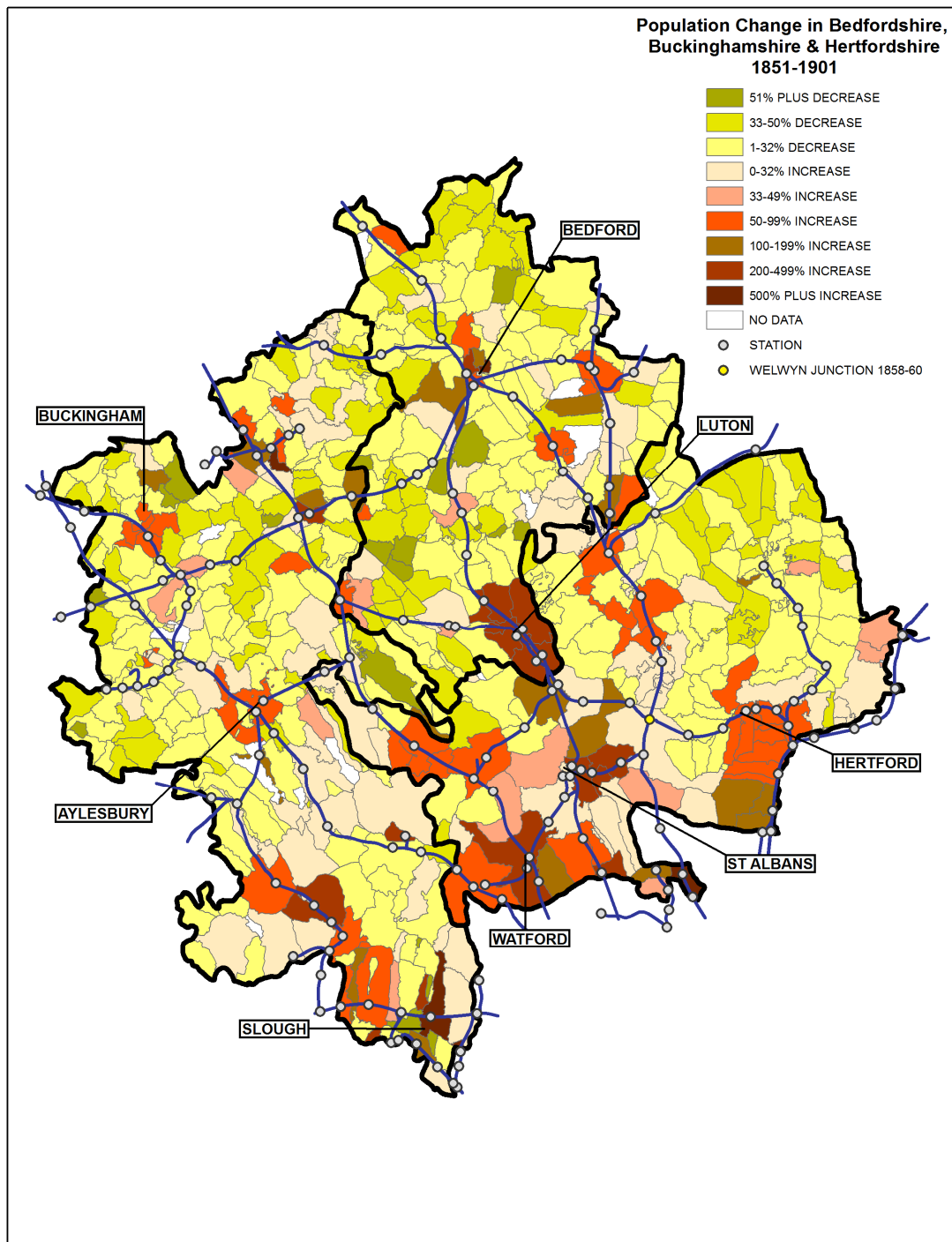
Appendix VC: Population change in the region 1851-1901 compared to extant railway lines.

Population Change in Bedfordshire, Buckinghamshire & Hertfordshire 1851-1901

- 51% PLUS DECREASE
- 33-50% DECREASE
- 1-32% DECREASE
- 0-32% INCREASE
- 33-49% INCREASE
- 50-99% INCREASE
- 100-199% INCREASE
- 200-499% INCREASE
- 500% PLUS INCREASE
- NO DATA
- STATION
- WELWYN JUNCTION 1858-60

Based on census summary tables via www.histpop.org

Appendix VI:

Map of Registration Districts

Registration Districts in Bedfordshire, Buckinghamshire & Hertfordshire

- AMPTHILL
- BEDFORD
- BIGGLESWADE
- LEIGHTON BUZZARD
- LUTON
- WOBURN

- AMERSHAM
- AYLESBURY
- BRACKLEY
- BUCKINGHAM
- ETON
- NEWPORT PAGNELL
- POTTERSPURY
- WINSLOW
- WYCOMBE

- BARNET
- BERKHAMPSTEAD
- BISHOPS STORTFORD
- EDMONTON
- HEMEL HEMPSTEAD
- HERTFORD
- HITCHIN
- HATFIELD
- ROYSTON
- ST. ALBANS
- WARE
- WATFORD
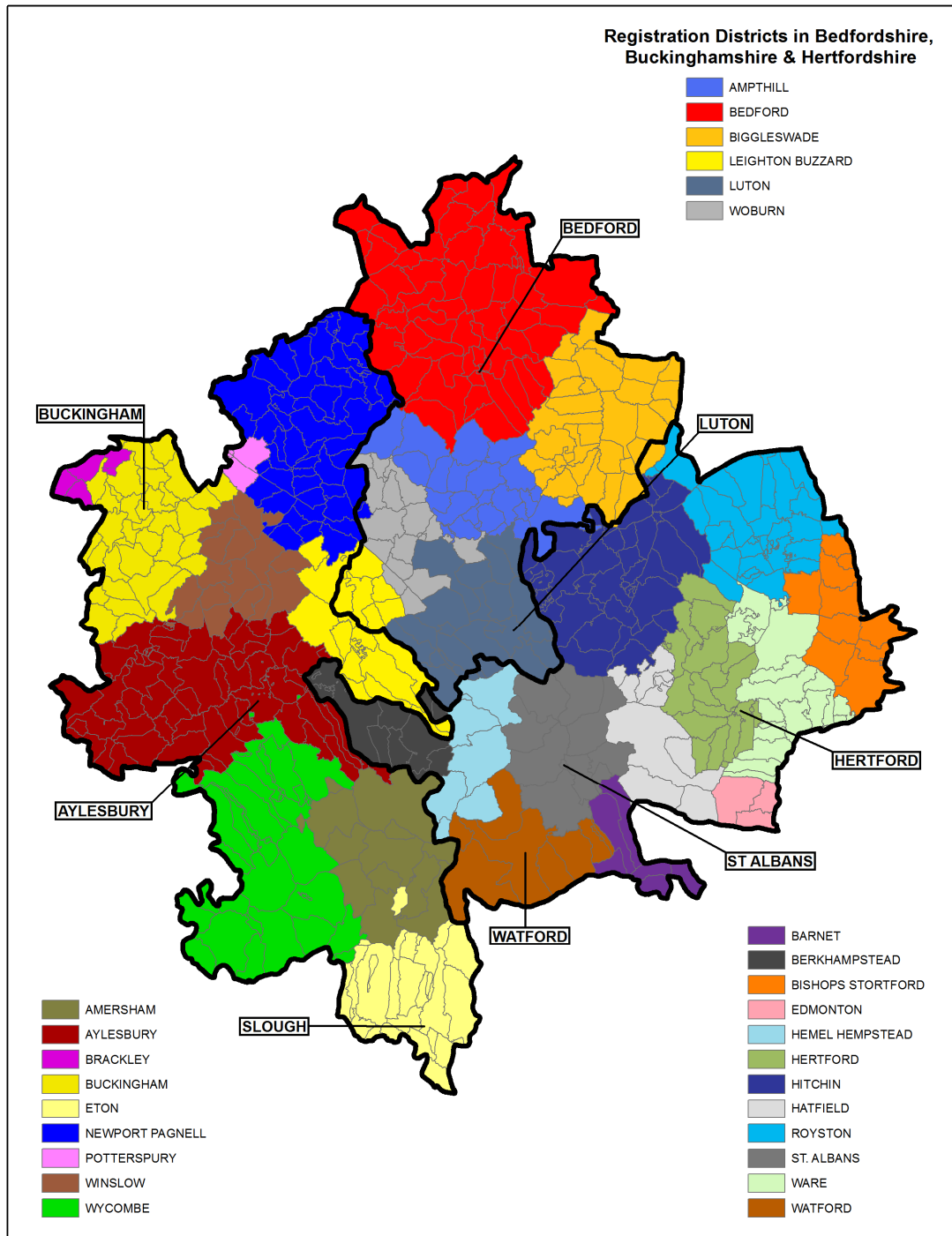
Glossary:

'Absolute Block' Signalling

> This signalling method subdivided the track between signal boxes into 'blocks' which were only allowed to contain one train at any time, so preventing collisions by forcing trains to wait until the line ahead was clear. Introduced with technological advancements in signals and the telegraph, this replaced the former 'time interval working' method of signalling, whereby trains would only be halted for a set period of time as opposed to whether the track was actually clear.

'Blacklegs'

> A derogatory term for workers brought in during, or who do not participate, in strikes.

'Bloomer'

> A class of 2-2-2 express locomotive designed by James McConnell (Appendix IVB-C). They were so named as the term was applied to anything unusual, rather than the popular myth of them having 'exposed' wheels (with inside frames). Hugely successful, several variants and upgrades were constructed such as the 'Extra Large Bloomers' (originally a joke name) and 'Patent' Classes.

Bogie

> A pivoting truck (four or more wheels) under a carriage or long item of rolling stock to enable it to articulate around curves. Prior to their adoption stock had rigid wheelbases (axleboxes held in place by fixed 'W irons'), occasionally with 'radial trucks' to allow some lateral movement on curves.

Bury engines

> Locomotives designed by Edward Bury of Liverpool, notably his 2-2-0 express and 0-4-0 goods locomotives for the LBR and Furness Railway. Also known as 'Haystacks' owing to the shape of the copper firebox/dome (Appendix IVA).

Compound

Unlike 'simple' locomotives where steam is only used once before exhausting, 'compounding' was the practice of passing steam in succession between high and low pressure cylinders, using its energy twice so increasing efficiency.

Continuous Brakes

Railway braking originally was manually operated and independent for each item of rolling stock; only the locomotive and guard's brakes being useable when in motion. After the Armagh Disaster of 1889, legislation was passed forcing companies to provide braking systems that operated on every carriage in a train. The two most common systems were using either a vacuum or pressurised air.

Fishplates

Metal strips bolted to the sides of rails to connect sections of track together.

Gauge

The distance between the rails of railway track. Comprising broad, standard and narrow, standard gauge (4 foot 8.5 inches) is prevalent in Britain. Brunel's broad gauge (7 foot 0.25 inch) was used exclusively on Great Western Railway and its subsidiary lines until abolished in 1892 after an investigation commonly referred to as the 'Battle of the Gauges'. There are varying widths of narrow gauge; the sole example in this region in the period was the three foot six inch Wolverton tram.

'Hub'

A term often used by M. Casson, this refers to locations with multiple stations, lines and/or companies, enabling a change of trains to other destinations but without the physical track connection of a 'junction'.[1]

Injector

A steam-operated fitting designed to overcome boiler pressure and enable water to be added, permitting locomotives to operate for longer and with greater safety.

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[1] M. Casson, *The World's First Railway System: Enterprise, Competition and Regulation on the Railway Network in Victorian Britain* (Oxford, 2009), pp.21-2.

Interlocking Signals and Points

Numerous accidents reveal operative dangers were points and signals were independently operated, allowing either to be accidentally changed. 'Interlocking' manually linked the two so, for example, setting points to a siding would automatically set opposing signals to danger.

The 'Intimidation Affairs'

Occurring in Crewe in 1884-5 and 1889, increases in the number of railway workers entitled to vote in local elections led to accusations of coercion and threatened sackings of liberal employees who failed to vote for the local Company-supported Conservative candidate. Believed initiated by Francis Webb, it escalated until Gladstone intervened. Similar coercion reoccurred in relation to the 1889 Liability Act. In retaliation, several liberals bought shares and denounced Webb at the shareholders' meeting. The Company removed all involvement in local politics thereafter.[2]

'Metals'

A common parlance for the physical track of a railway line under the ownership of a particular company.

Motion

Term referring to the complete assembly of piston rods, connecting rods, coupling rods, valves, eccentrics and reversing gear converting lateral motion from the cylinders into controllable rotational propulsion.

Motive Power Depot

(MPD) A large locomotive yard comprising sheds and refuelling facilities, often undertaking some limited maintenance. Not involved with rolling stock construction, they provided locomotives for all company lines in the vicinity.

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[2] D. Drummond, Living in a Railway Town, TNA 'Railways Change Lives' Conference, 7/9/2013.

Piece-work

> Replacing the 'piece master' system, whereby one worker would arrange a team paid out of his wage, each worker was given a particular job to complete personally and was paid a wage for each job completed, immaterial of the length of time taken.

The 'Railway Clearing House'

> An independent organisation founded by London & Birmingham Railway to subdivide revenue between member railway companies for journeys taken over multiple companies' lines.

Reverser

> Varying in forms (lever, screw), this mechanism controlled the amount of steam entering the cylinders of a locomotive, controlling efficiency akin to the gears on a car, and similarly dictating the direction of travel.

'Road' (railway use of)

> The term 'Road' was commonly added as a station name suffix in the later period when a station was located well outside the settlement it was constructed for; in other words being located on the road to it. As with 'line' and 'metals', the word when not in a station context could also refer to the physical track.

Running Powers:

> An agreement between two or more railway companies permitting joint use of railway lines. This had two main variations; firstly there were pre-existing lines that granted another company access, for example the Great Central Railway over Metropolitan Railway lines south of Quainton Road. Secondly, there were local railway companies formed to construct a line that had no rolling stock or operating knowledge so would tender running powers to a larger, usually national, company to operate the line on their behalf, for example the Great Northern Railway running trains on the Hatfield & St Albans Railway.

Telescoping

A common occurrence with timber-bodied coaches in accidents; the sudden stopping of a train from speed, such as in a collision, could cause some coaches to crumple inside each other, akin to a collapsible telescope.

Travelling Post Office

A carriage specifically designed for the transportation and simultaneous sorting of Royal Mail letters. First introduced in 1830, in 1838 pick-up gear was invented to collect letters without stopping.

Water Trough

First devised in 1860, this was a mechanism enabling a suitably-fitted locomotive to replenish its water tank without stopping. Comprising a 'scoop' under the tender, the fireman would lower this into a long trough filled with water and the forward movement of the train would force water upwards into the tank.

The 'Whyte' Notation

Named after Belgian Frederick Whyte, this was used to categorise locomotives based on wheel number and layout - leading, driving and trailing. Therefore, for example, a Bury express engine (Appendix IVA) having two leading wheels, two driving wheels and no trailing wheels is categorised as a '2-2-0', while a G Class tank engine (built as a response to Board of Trade calls for tank engines after the opening of the St Albans LNWR branch) having no leading wheels, four driving wheels and two trailing wheels is categorised as a '0-4-2'.[3] Some wheel layouts also had names, notably in this period the 4-4-2 'Atlantics'. This system of locomotive classification is used throughout the study.

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[3] H. Jack, *Locomotives of the LNWR Southern Division: London & Birmingham Railway, London & North Western Railway and Wolverton Locomotive Works* (Sawtry, 2001), p.233.

Bibliography

Primary Sources:

TNA

TNA BT 31/471/1825 - No. of Company: 1825; Watford Gas and Coke Company 1860.

TNA BT 31/3434/20707 - No. of Company: 20707; Bushey Colliery and Brickworks Company Ltd, 1885.

TNA BT 31/14696/16175 - No. of Company: 16175; Bushey Hydrotherapeutic Company Ltd, 1881.

TNA BT 31/15338/39586 – Wolverton and Stony Stratford District New Tramway Co. Ltd.

TNA MAF 68/2 - Parish Summaries of Agricultural Returns, Bedfordshire, 1866.

TNA MAF 68/6 - Parish Summaries of Agricultural Returns, Buckinghamshire, 1866.

TNA MAF 68/32 - Parish Summaries of Agricultural Returns, Hertfordshire, 1866.

TNA MAF 68/229 - Parish Summaries of Agricultural Returns, Bedfordshire, 1870.

TNA MAF 68/231 - Parish Summaries of Agricultural Returns, Buckinghamshire, 1870.

TNA MAF 68/244 - Parish Summaries of Agricultural Returns, Hertfordshire, 1870.

TNA MAF 68/685 - Parish Summaries of Agricultural Returns, Bedfordshire, 1880.

TNA MAF 68/687 - Parish Summaries of Agricultural Returns, Buckinghamshire, 1880.

TNA MAF 68/700 - Parish Summaries of Agricultural Returns, Hertfordshire, 1880.

TNA MAF 68/1255 - Parish Summaries of Agricultural Returns, Bedfordshire, 1890.

TNA MAF 68/1257 - Parish Summaries of Agricultural Returns, Buckinghamshire, 1890.

TNA MAF 68/1270 - Parish Summaries of Agricultural Returns, Hertfordshire, 1890.

TNA MAF 68/1825 - Parish Summaries of Agricultural Returns, Bedfordshire, 1900.

TNA MAF 68/1827 - Parish Summaries of Agricultural Returns, Buckinghamshire, 1900.

TNA MAF 68/1840 - Parish Summaries of Agricultural Returns, Hertfordshire, 1900.

TNA MT 6/16/42 – Board of Trade minute paper on the inspection of the Luton, Dunstable & Welwyn Junction Railway, 20/3/1858.

TNA MT 6/16/58 – Watford-St Albans Branch LNWR – 6 miles 56 chains – Inspection.

TNA MT 6/53/9 – Statement with reference to the requirements of Col. Hutchinson in respect of the opening of the Railway from St Pauls Junction to St Pancras Station (1868).

TNA MT 6/348/11 - London & North Western Railway: Bletchley. Top File No: R10135.

TNA RAIL 236/1026 - St Albans GNR Station, 1874.

TNA RAIL 236/1076 - Agreement between GNR and George Noah Gathard (box and packing case manufacturer, Luton) for construction and use of siding, timber stage and coal shoot at Luton, January 1889.

TNA RAIL 236/1119 - Agreement between GNR and Joseph Fenwick Owen, Arthur Edward Ekins & Francis Alfred Giffen (brickmakers, St Albans, Herts trading as Joseph Fenwick Owen & Co) for siding at Hill End and purchase of land by GNR; with agreement dated 12 Dec 1901 between GNR and Joseph Fenwick Owen for extension siding attached and correspondence, October 1899; December 1901.

TNA RAIL 236/1127 - Supplemental agreement between Jermina Gathard (widow, Luton), GNR and Arthur Rowe (box and packing case manufacturer, Luton) to agreement dated Jan 1889 between GNR and G.N. Gathard, March 1891.

TNA RAIL 295/1 – Hatfield & St Albans Railway Minute book.

TNA RAIL 384/4 - LBR/LNWR Board Minutes (Nos 1005-1809).

TNA RAIL 384/5 - LBR/LNWR Board Minutes (Nos 1810-2633).

TNA RAIL 384/6 - LBR/LNWR Board Minutes (Nos 2634-3449).

TNA RAIL 384/10 – LBR Index to Board Minutes.

TNA RAIL 384/153 – Articles of Covenant and Agreement between Robert Stephenson and the London & Birmingham Railway, 21/9/1833.

TNA RAIL 384/163 – Contract LBR & Joseph Nowell, John William Nowell & Jonathan William Nowell (Leeds).

TNA RAIL 410/2231 - Agreement between LNWR and Grand Junction Canal Company to construction of Wolverton Deviation Railway.

TNA RAIL 491/672 - Midland Railway Company Records, Traffic and Expenses at Stations 1872-83.

TNA RAIL 491/674 - Midland Railway Company Records, Traffic and Expenses at Stations 1884-95.

TNA RAIL 491/675 - Midland Railway Company Records, Traffic and Expenses at Stations 1896-1907.

TNA RAIL 791/163 - Rules and regulations of LNWR Savings Bank at Wolverton, 1858.

TNA RAIL 1014/10 – Queen Victoria's first journey on the London & Birmingham Railway.

TNA RAIL 1076/1/2 - Prospectus for the Bedford, Potton and Cambridge Railway, 1859.

TNA RAIL 1110/260 – London & Birmingham Railway Shareholders Reports.

TNA RAIL 1110/269 – London & Birmingham Railway Shareholders Reports.

TNA RAIL 1110/270 – LNWR Shareholders Reports.

TNA RAIL 1110/271 – LNWR Shareholders Reports.

TNA RAIL 1110/275 - London & North Western Railway Shareholders Reports.

TNA RAIL 1167/117 - Midland Railway Company and Luton Brick and Lime Company and B.J. Forder and Son, 1884; 1892.

TNA RAIL 1167/140 - LNWR and Leighton Buzzard Sand Co Ltd, 1897-1920.

TNA RAIL 1167/151 Great Northern Railway Company and Hayward, Tyler and Company 1873-1898; 1946-1962.

TNA RAIL 1167/157 - Luton, Dunstable & Welwyn Junction Railway Company and Luton Gas Company, 1857.

TNA RAIL 1167/159 - Great Northern Railway Company and Luton Brick and Lime Company, 1886-1891.

TNA RAIL 1167/177 – Midland Railway Arrangement with Lord Verulam, 30/7/1869.

TNA RAIL 1167/246 - LNWR and St Albans Gas Company, 1894-1934.

TNA RAIL 1167/251 – Agreement between GNR and Orford Smith Ltd, for construction and use of siding at St Albans, July 1897.

TNA RAIL 1167/284 - LNWR and Benskins Watford Brewery Ltd, 1887-1961.

TNA RAIL 1189/134 - GNR exchange of land and siding agreement; F Sander & Company (importers and growers of orchids, St Albans), 1890.

TNA ZPER 34/10 - Illustrated London News return for the half-year ended Dec 1846: Bedford & London & Birmingham Railway causes cessation of old coach service, p.35.

Guildhall Library

Pigot and Co's London & Provincial New Commercial Directory for 1823-4.

Pigot and Co's National Commercial Directory, 1830-1.

Pigot and Co's London & Provincial New Commercial Directory for 1832-3-4.

Pigot and Co's Royal National and Commercial Directory and Topography, 1839.

Robson's Commercial Directory of the Six Counties Forming the Norfolk Circuit, 1839.

William's Directory of the Principal Market Towns in Hertfordshire &c, 1850.

Slaters Royal National and Commercial Directory and Topography (including Bedfordshire), 1850.

Slaters Royal National and Commercial Directory and Topography (including Buckinghamshire), 1851.

Post Office Directory of Berkshire, Northamptonshire and Oxfordshire; with Bedfordshire, Buckinghamshire and Huntingdonshire, 1854.

Cassey and Co's Directory of Huntingdonshire and Bedfordshire, 1862.

Post Office Directory of Hertfordshire, 1862.

Dutton, Allen, & Co.'s Directory & Gazetteer of the Counties of Oxon, Berks & Bucks, 1863.

Post Office Directory of Hertfordshire, 1870.

Mercer & Crocker's General Topographical and Historical Directory for Hampshire, Dorsetshire, &c, 1871.

J.G. Harrod & Co.'s Royal County Directory of Bedfordshire, Buckinghamshire, Berkshire, Oxfordshire, Huntingdonshire, and Northamptonshire, 1876.

Post Office Directory of Hertfordshire, 1882.

Kelly's Directory of Buckinghamshire, 1883.

Kelly's Directory of Bedfordshire, 1885.

Kelly's Directory of Bedfordshire, 1890.

Kelly's Directory of Hertfordshire, 1890.

Kelly's Directory of Buckinghamshire, 1891.

Kelly's Directory of Hertfordshire, 1902.

Kelly's Directory of Bedfordshire, Hunts and Northamptonshire, 1903.

Kelly's Directory of Buckinghamshire, 1903.

British Library

'Bradshaw's Guide' by Fred Albert & Henry S. Leigh (London, 1876). British Library Shelfmark: Music Collections H.1778. (35.)

F. Mason, *Gibb's Handbook to St Albans* (1884).

S.G. Shaw, *History of Verulam and St Albans* (St Albans, 1815).

J. Rogers (ed.), *Public Addresses by John Bright M.P.* (London, 1879), p.419.

Hertfordshire Archives and Local Studies

HALS DE/P/E498 – Prospectus for the Luton, Dunstable & Welwyn Junction Railway.

HALS DE/P/E498-508 – 1855-61, Papers relating to the Luton, Dunstable & Welwyn Junction Railway.

T. Austin, *The Straw Plaitting and Straw Hat and Bonnet Trade* (Luton, 1871).

Bedfordshire and Luton Archives and Records Service

B&LARS CCE 5309/1 - 12 Nov 1857, Agreement between John Cass Birkinshaw of 22 Abingdon St., (23 Mar 1989) Westminster, civil engineer on behalf of the Luton Dunstable and Welwyn Junction Railway Co., and William Phillips of Luton, gas engineer on behalf of Luton Gas Company, whereby LDWJR agreed to sell to LGC a triangular piece of land and construction of a siding from the railway on to, over and into the works of LGC.

B&LARS QSR1855/4/2/10 – Petition for Constables, 1855 –

http://www.bedfordshire.gov.uk/CommunityAndLiving/ArchivesAndRecordOffice/PathstoCrime/OnTheBeat.aspx

B&LARS QEV3 – A second later petition for Constables –

http://www.bedfordshire.gov.uk/CommunityAndLiving/ArchivesAndRecordOffice/PathstoCrime/OnTheBeat.aspx

National Railway Museum 'Search Engine'

NRM Box 315, Location 39D, No. Suffix 3203 – 50 foot first class Euston-Watford suburban compartment carriage blueprint, Wolverton.

NRM photo ref. DON 28L.

NRM Roll No210, Drawing Number 1808, Office Code N, Date 27/5/1913, Bearing spring for Luton covered goods.

NRM 1977-737/2 - Isambard Kingdom Brunel's collection of geological specimens.

The National Gallery

The National Gallery, NG538 Turner Bequest, 1856 - *Rain, Steam, and Speed - The Great Western Railway*, (painted 1844).

Wellcome Trust

G. Corfe, 'Sanitary Questions, Observations, and Suggestions on the Wolverton Well-water, as Supplied to the Inhabitants', *The Pharmaceutical Journal and Transactions* (1 July 1848), pp.30-36.

University of Hertfordshire

Punch, 26 July 1845 (IX).

Punch, 15 August 1868 (LV).

Author's Collection

Illustrated London News, 25/9/1880.

LNWR advertisement postcard (c.1904) showing the development of passenger trains.

Mugby Junction, the Extra Christmas Number of All the Year Round (London, 1866), featuring C. Dickens, 'The Boy at Mugby', pp.20-25; C. Dickens, 'The Signalman', pp.17-20.

Reprinted and Online

J. Bartholomew, *Gazetteer of the British Isles* (1887). (via www.visionofbritain.org.uk)

J. Bateman, *The Great Landowners Of Great Britain & Ireland* (London, 1883).

R. Baxter, 'Railway Expansion and its Results', *Journal of the Statistical Society*, XXIX (1866), pp.549-595.

Bradshaw's Railway Map 1907 Great Britain & Ireland (reprinted Moretonhampstead, 2005).

G. Bradshaw, *Bradshaw's Tours, Section III, Through the Counties of Hertford, Buckingham, Northampton, Warwick, Stafford, Chester, Lancaster, York, Cumberland, Westmorland, Northumberland, Dumfries, Lanark, Ayr and the Northern Counties of Scotland* (c.1860s; reprinted Midhurst, 2011).

Census summary tables 1801-1901 (via www.histpop.org)

H.G. Clarke, *Railway Excursion Guide: A Concise Account of the Principal Cathedral Cities, Most Remarkable Towns, Fashionable Watering Places and Picturesque Villages Accessible by Rail*, (London, 1859). http://www.jstor.org/stable/60240650

F.R. Conder, *The Men who Built Railways* (1868; reprinted Trowbridge, 1983).

Description of the London & North Western Railway Company's Carriage Works at Wolverton (1906; LNWR Society reprint).

J. Douglas, *A Run through South Wales via the London and North Western Railway* (1868). http://www.jstor.org/stable/60240708

C.G. Harper, *Stage-Coach and Mail in Days of Yore Volume II* (London, 1903).

A. Hart-Davis, 'Isambard Kingdom Brunel and the Engineers of the Nineteenth Century', *Oxford Dictionary of National Biography* (Oxford University Press); http://www.oxforddnb.com/public/themes/95/95272.html

F.B. Head, *Stokers and Pokers, or the London and North Western Railway, The Electric Telegraph and The Railway Clearing House* (London, 1849; reprinted Trowbridge, 1968).

D. Lardner, *Railway Economics* (1850; reprinted New York, 1968).

G. Measom, *The Official Illustrated Guide to the Great Northern, Manchester, Sheffield, and Lincolnshire, and Midland Railways* (London, 1861).

Railway Commissioners' Bill, *HL Deb 27 August 1846 vol 88 c.1057*; http://hansard.millbanksystems.com/lords/1846/aug/27/railway-commissioners-bill

C. Read, 'Report on the Farming of Buckinghamshire', *The Journal of the Royal Agricultural Society of England*, Volume 16, (1856).

The Complete Plays of Gilbert and Sullivan (London, 1997).

The Reshaping of British Railways Part 1: Report (London, 1963).

J. Wilson, *Imperial Gazetteer of England and Wales* (1870-72). (via www.visionofbritain.org.uk)

Books:

1873-1973 The Colne Valley Water Company (Watford, 1973).

A Brief Tour of St George the Martyr Wolverton.

A History of the County of Bedford: Volume 2 (1908).

A History of the County of Bedford: Volume 3 (1912).

A History of the County of Buckingham: Volume 2 (1908).

A History of the County of Buckingham: Volume 3 (1925).

A History of the County of Buckingham: Volume 4 (1927).

A History of the County of Hertford: Volume 2 (1908).

A History of the County of Hertford: Volume 3 (1912).

A History of the County of Hertford: Volume 4 (1971).

W. Acworth, *The Railways of England* (London, 1900).

G. Alderman, *The Railway Interest* (Leicester, 1973).

J. Allen, *The Company Town in the American West* (Oklahoma, 1967).

R. Altick, *The English Common Reader* (Ohio, 1957).

W. Ashworth, *An Economic History of England 1870-1939* (London, 1960).

W. Austin, *The History of a Bedfordshire Family: Being a History of the Crawleys of Nether Crawley, Stockwood, Thurleigh and Yelden in the County of Bedford* (London, 1911).

C. Awdry, *Encyclopaedia of British Railway Companies* (Frome, 1990).

K. Bailey, *Aylesbury: A County Town and its Station 1877-1905 – An Examination of the Goods Statistics of the Aylesbury Branch of the London & North Western Railway and the Characteristics of Railwaymen from the Censuses 1881-1901* (Buckingham, 2008).

M. Bailey & J, Glithero, *The Engineering and History of Rocket: A Survey Report* (London, 2001).

P. Bagwell, P. Lyth, *Transport in Britain from Canal Lock to Gridlock* (London, 2002).

T.C. Barker & C.I. Savage, *An Economic History of Transport in Britain* (London, 1974).

B. Beveridge, S. Andrews, S. Hall, D Klistorner & A. Braunschweiger, *Titanic: The Ship Magnificent: Vol. 1* (Stroud, 2008).

J. Boyes & R. Russell, *The Canals of Eastern England* (Newton Abbot, 1977).

J. Brown, *Steeped in Tradition – the Malting Industry in England Since the Railway Age* (Reading, 1983).

M. Casson, *The World's First Railway System: Enterprise, Competition and Regulation on the Railway Network in Victorian Britain* (Oxford, 2009).

R. Church, *The Victorian Boom 1850-1875* (Economic History Society, 1975).

F. Cockman, *The Railway Age in Bedfordshire*, Publications of the Bedfordshire Historical Record Society, 53 (Ampthill, 1974).

F. Cockman, *The Railways of Buckinghamshire from the 1830's* (Aylesbury County Record Office, 1971).

F. Cockman, *The Railways of Hertfordshire* (Hertford, 1978).

C. Cooling & I. Mackay, *Oxhey in Pictures* (Watford, 2000).

J. Corbett, *A History of St Albans* (Chichester, 1997).

J. Currie, *The Runaway Train: Armagh 1889* (Newton Abbot, 1971).

B.J. Davey, *Ashwell 1830-1914: The Decline of a Village Community* (Dept Engl Loc Hist Occasional Papers, 3rd series no. 5), (Leicester, 1980).

H. Davies, *Roads in Roman Britain*, (Stroud, 2002).

M. Dawes, *The End of the Line: the Story of the Railway Service to the Great Northern London Cemetery* (Barnet, 2003).

E. Doubleday, *Hertfordshire: Survey Report and Analysis of County Development Plan, 1951* (Hertford, 1951).

M. Drake & R. Finnegan, *Studying Family and Community History Volume 4: Sources and Methods: a Handbook* (Cambridge, 1997).

D. Drummond, *Crewe: Railway Town, Company and People 1840-1914* (Aldershot, 1995).

B. Dunleavy, *The Lost Streets of Wolverton* (2010).

H. Dyos & D. Aldcroft, *British Transport: An Economic Survey from the Seventeenth Century to the Twentieth* (Leicester, 1971).

M. Eckett, *Signals – A Railway Miscelleny* (Copt Hewick, 2008).

B. Elliot, *Piano & Herrings: Autobiography of a Wolverton Railway Worker* (Stantonbury, 1986).

J. Evans, *The Endless Webb: John Dickinson and Co Ltd 1804-1954* (London, 1955).

L. Evans, *The Firm of John Dickinson and Company Limited* (London, 1896).

M. Fell, *London & North Western Railway Garston Docks* (Rothbury, 2012).

A. Fishlow, *American Railroads and the Transformation of the Ante-Bellum Economy* (Harvard, 1965).

C. Fitchett, Part 55 Bedfordshire, in L. Dudley Stamp, *The Land of Britain: Land Utilisation Survey of Britain* (1943).

R. Fogel, *Railroads and American Economic Growth* (Baltimore, 1964).

L. Ford, *Wickham of Ware – a History of D. Wickham and Company Ltd Railcar Manufacturers* (Ware, 2003).

J. Fordham, *The Crisis in Agriculture: 1880 and Beyond* (Odsey Park, 2011).

M. Forsyth, *The Railway at Watford Junction* (Watford, 1988).

M. Freeman, *St Albans: A History* (Lancaster, 2008).

D. Fryer, Part 54 Buckinghamshire, in L. Dudley Stamp, *The Land of Britain: The Report of the Land Utilisation Survey of Britain* (London, 1942).

S. Garfield, *The Last Journey of William Huskisson* (London, 2002).

E. Garrett, The Dawning of a New Era? Women's Work in England and Wales at the Turn of the Twentieth Century, N Goose (ed.), *Women's Work in Industrial England* (Hatfield, 2007), pp.314-359.

J. Giles, R. Jeavons, M. Martin, D. Smith & R. Smith, *Wheathampstead Railway Recollections* (Wheathampstead, 1995).

N. Goose & D. Short, *An Historical Atlas of Hertfordshire* (Hatfield, 2011).

N. Goose, *Population, Economy and Family Structure in Herts in 1851: The Berkhamsted Region* (Hatfield, 1996).

N. Goose, *Population, Economy and Family Structure in Herts in 1851: St Albans and its Region* (Hatfield, 2000).

N. Goose, The Straw Plait and Hat Trades in Nineteenth-Century Hertfordshire, in N. Goose (ed.), *Women's work in Industrial England: regional and local perspectives* (Hatfield: Local Population Studies, 2007), pp.97-137.

D.I. Gordon, *A Regional History of the Railways of Great Britain, Volume 5 The Eastern Counties* (Newton Abbot, 1976).

G. Goslin, *The London Extension of the Midland Railway: A History of the St Pancras - Bedford Route* (Caernarfon, 1994).

F.W. Goudie & D. Stuckey, *West of Watford: Watford Metropolitan & the L.M.S. Croxley Green and Rickmansworth Branches* (Bracknall, 1990).

T.R. Gourvish, *Railways and the British Economy 1830-1914* (London, 1980).

P. Greenhill & B. Reynolds, *The Way of the Sun – The Story of Sun Engraving and Sun Printers* (Exeter, 2010).

C. Grinling, *The History of the Great Northern Railway, 1845-1922* (London, 1966).

T. Groves, E. Longman & B. Wood, *From the Wheatsheaf to the Windmill: The Story of Bushey and Oxhey Pubs* (Bushey, 1984).

C. Hadfield (J. Boughy ed.), *Hadfield's British Canals* (Stroud, 1998).

C. Hamilton Ellis, *Four Main Lines* (London, 1950).

C. Hamilton Ellis, *The Midland Railway* (London, 1953).

A. Harris, Changes in the Early Railway Age: 1800-1850, in H. Darby (ed.), *A New Historical Geography of England* (Cambridge, 1973), pp.465-526.

G. Hawke, *Railway and Economic Growth in England and Wales 1840-1870* (Oxford, 1970).

E. Higgs, *A Clearer Sense of the Census* (London, 1996).

E. Higgs, *Making Sense of the Census* (London, 1989).

F. Hyde, *Wolverton: A Short History of its Economic and Social Development* (Wolverton, 1946).

P. Ibbett, *Potton Bedfordshire: A Brief History* (Potton, 2000).

P. Ibbett, *Potton Market Square* (Potton, 1986).

P. Ibbett, *The Great Fire of Potton 1783* (Potton, 1983).

H. Jack, *Locomotives of the LNWR Southern Division: London & Birmingham Railway, London & North Western Railway and Wolverton Locomotive Works* (Sawtry, 2001).

H. Jack, *The L.N.W.R Bloomers Wolverton's 7ft Singles* (Crewe, 1987).

S. Jenkins, *The Watford to St Albans Branch* (Usk, 1990).

D. Jenkinson, *LNWR Carriages – a Concise History* (York, 1978).

W. Johnson, *Industrial Archaeology of Hertfordshire* (Newton Abbot, 1970).

W. Johnson, *Industrial Monuments in Hertfordshire* (Hertford, 1967).

K. Jones, *The Wotton Tramway* (Tarrant Hinton, 1974).

P. King, Moral Panics and Violent Street Crime 1750-222: A Comparative Perspective, in B. Godfrey, C. Emsley & G. Dunstall (eds.), *Comparative Histories of Crime* (Oxford, 2003), pp.53-71.

P. Kingsford, *Victorian Railwaymen: The Emergence and Growth of Railway Labour, 1830-1870* (London, 1970).

R. Kirk, *St Albans South Signal Box* (2009).

E. Larkin, *British Railway's Workshops* (Royston, 2009).

R. Leleux, *A Regional History of the Railways of Great Britain, Vol. 9 The East Midlands* (Newton Abbot, 1976).

G. Longman, *Bushey Then & Now: Introduction* (Bushey, 1997).

G. Longman, *Sir Hubert Von Herkomer RA, A Biographical Note* (Bushey, 1993).

Luton: Hat Industry 1750-2000 (Luton Museum Education Service).

Luton: Market Town 1750-1850 (Luton Museum Education Service).

Luton: Straw Hat Boom Town 1890-1910, (Luton Museum Education Service).

C. Maggs, *Branch Lines of Buckinghamshire* (Stroud, 2000).

I. Margary, *Roman Roads in Britain Volume 1* (London, 1955).

F. Markham, *History of Milton Keynes and District Volume 2* (Luton, 1986).

F. Markham, *The Nineteen Hundreds* (Buckingham, 1951).

R. Matthews, *A Study in Trade Cycle History: Economic Fluctuations in Great Britain 1833-1842*, Cambridge (1954).

P. Maw, Transport and the Industrial City: Manchester and the Canal Age, 1750-1850 (Manchester, 2013).

D. Mills, *Rural Community History from Trade Directories* (Aldenham, 2001).

B.R. Mitchell, *British Historical Statistics* (Cambridge, 1988).

O.S. Nock, *LNWR Pre-Grouping Scene No 3* (Shepperton, 1980).

O.S. Nock, *Premier Line: The Story of London & North Western Locomotives* (London, 1952).

O.S. Nock, *The London and North Western Railway* (London, 1960).

P. O'Brien, *The New Economic History of the Railways* (London, 1977).

L. Oppitz, *Lost Railways of the Chilterns* (Newbury, 1991).

D. Payne, *The Story of Bushey in the Age of the Steam Train* (Bushey, 2011).

A. Peck, *The Great Western at Swindon Works* (Royston, 1998).

H. Poole, *Here for the Beer: A Gazetteer of the Brewers of Hertfordshire* (Watford, 1984).

M. Reed, *Investment in Railways in Britain 1820-1844* (Oxford, 1975).

P. Richards & B. Simpson, *A History of the London and Birmingham Railway Volume 1* (Witney, 2004).

P. Richards & B. Simpson, *A History of the London and Birmingham Railway Volume 2* (Witney, 2004).

M. Robbins, *The Railway Age* (London, 1962).

D. Ross, *The Illustrated History of British Steam Railways* (Bath, 2010).

W. Rostow, *The Process of Economic Growth* (Oxford, 1960).

O. Roucoux, *The Roman Watling Street From London to High Cross* (Dunstable, 1984).

R. Schofield, *Along Rothschild Lines: The Story of Rothschild & Railways Across the World* (London, 2010).

R. Scola, *Feeding the Victorian City: The Food Supply of Manchester, 1770-1870* (Manchester, 1992).

K. Scholey, *Bedfordshire's Lost Railways* (Glasgow, 2003).

K. Scholey, *Buckinghamshire's Lost Railways* (Glasgow, 2004).

K. Scholey, *Hertfordshire's Lost Railways* (Glasgow, 2003).

A. & S. Sellwoord, *Death Ride from Fenchurch Street and Other Victorian Railway Murders* (Stroud, 2009).

H. Shannon, 'The Coming of General Limited Liability', in E. Carus-Wilson (ed.), *Essays in Economic History*, Volume 1 (London, 1966), pp.358-379.

G. Shaw, *British Directories as Sources in Historical Geography* (Norwich, 1982).

J. Simmons (ed.), *Rail 150: The Stockton & Darlington Railway and What Followed* (London, 1975).

J. Simmons, *The Railway in Town and Country 1830-1914* (Newton Abbot, 1986).

J. Simmons, *The Victorian Railway* (London, 1991).

B. Simpson, *A History of the Metropolitan Railway Volume 3* (Witney, 2005).

B. Simpson, *The Brill Tramway* (Oxford, 1985).

B. Simpson, *The Dunstable Branch* (Banbury, 1998).

B. Simpson, *The Wolverton to Newport Pagnell Branch* (Banbury, 1995).

B. Simpson, *Verney Junction to Baker Street* (Oxford, 2013).

F. Simpson, *The Wolverton & Stony Stratford Steam Trams* (Bromley Common, 1981).

K. Snell & P. Ell, *Rival Jerusalems: The Geography of Victorian Religion* (Cambridge, 2000).

W. Stephens, *Sources for English Local History* (Manchester, 1973).

R. Taylor & B. Anderson, *The Hatfield & St Albans Branch* (Oxford, 1988).

The Mossman Collection: Horse-Drawn Transport (Luton).

C. Torr, *Small Talk at Wreyland* (1918).

D. Turnock, *An Historical Geography of Railways in Great Britain and Ireland*, (Aldershot 1998).

M. Vernon & D. Bonner, *Buckingham: A History of a Country Market Town* (Milton Keynes, 1984).

P. Waller, *Town, City and Nation* (Oxford, 1983).

N. Webster, *The Great North Road* (Bath, 1974).

B. West, *The Railwaymen - Wolverton*, (Buckingham 1987).

B. West, *The Trainmakers - the Story of Wolverton Works* (Buckingham, 1982).

F. Whishaw, *The Railways of Great Britain and Ireland: Practically Described and Illustrated* (London, 1840).

R. Woods, *The Population of Britain in the Nineteenth Century: New Studies in Economic and Social History* (Cambridge, 1995).

G. Woodward, *The Hatfield, Luton & Dunstable Railway (and on to Leighton Buzzard)*, (Usk, 1977).

E. Wrigley, 'Men on the Land and Men in the Countryside: Employment in Agriculture in Early-Nineteenth Century England', in L. Bonfield, R. Smith & K. Wrightson (eds.), *The World We Have Gained: Histories of Population and Social Structure* (Oxford, 1986), pp.295-336.

E. Wrigley, *The Early English Censuses* (Oxford, 2011).

Articles:

G. Alderman, 'The Railway Companies and the Growth of Trade Unionism in the Late Nineteenth and Early Twentieth Centuries', *The Historical Journal*, Vol. 14, No. 1 (Mar., 1971), pp.129-152.

J. Ashby, 'The First Suspension Railway', *The Railway Magazine* (April, 1950), pp.270-2.

P. Atkins, 'The Growth of London's Railway Milk Trade, c. 1845-1914', *Journal of Transport History*, New Series 4 (1978), pp.208-26.

P. Atkins, 'The Retail Milk Trade in London, c.1790-1914', *Economic History Review*, New Series, Vol. 33, No. 4 (Nov., 1980), pp.522-537.

R. Ball & P. Chatham, 'LNWR 34ft Twin Day Saloons, Diagram P15', *The L&NWR Society Journal*, Vol. 6 No. 7 (December 2010), pp.14-22.

S. Banks, 'Nineteenth-Century Scandal or Twentieth-Century Model? A New Look at 'Open' and 'Close' Parishes', *The Economic History Review*, Vol. 41, No. 1 (Feb., 1988), pp.51-73.

B. Barber, 'The Concept of the Railway Town and the Growth of Darlington 1801-1911: A Note', *Transport History*, 2, 3 (1970), pp.283-92.

M. Berg & P. Hudson, 'Rehabilitating the Industrial Revolution', *The Economic History Review*, New Series, Vol. 45, No. 1 (Feb., 1992), pp.24-50.

J. Blackman, 'The Cattle Trade and Agrarian Change on the Eve of the Railway Age', *The Agricultural History Review*, Vol. 23, No.1 (1975), pp.48-62.

P. Bonner & K. Shapiro, 'Company Town, Company Estate: Pilgrim's Rest, 1910-1932', *Journal of Southern African Studies*, Vol. 19, No. 2 (Jun., 1993), pp.171-200.

C. Bowlby, 'Can HS2's Advocates Draw Any Comfort from the Past?', *BBC History Magazine* (December 2013), pp.10-11.

I. Bowley, 'Light Rail to Lighthouse', *Chaloner: The Magazine for the Leighton Buzzard Narrow Gauge Railway*, No. 153 (Summer 2011), pp.42-5.

G. Boyer, 'Labour Migration in Southern and Eastern England, 1861-1901', *European Review of Economic History,* I (1997), pp.191-215.

P. Bunce, 'The Luton Hat Vans', *Journal of the Great Northern Railway Society*, No 114 (November 2000), pp.20-21.

I. Carter, 'Rain, Steam and What?', *Oxford Art Journal*, Vol. 20, No. 2 (1997), pp.3-12.

M. Casson, 'The Determinants of Local Population Growth: A Study of Oxfordshire in the Nineteenth Century', *Explorations in Economic History* 50 (2013) pp.28-45.

M. Crawford, 'The 'New' Company Town', *Perspecta*, Vol. 30, Settlement Patterns (1999), pp.48-57.

C.A. Crompton, 'Changes in Rural Service Occupations during the Nineteenth Century: An Evaluation of Two Sources for Hertfordshire, England', *Rural History*, Vol. 6, 2 (1995), pp.193-203.

J. Cutler, 'Neglected Historical Sources: The Railway Inspectors' Reports', *History Workshop*, No. 27 (Spring, 1989), pp.174-5.

A. Davison, 'Try the Alternative': the Built Heritage of the Temperance Movement', *The Journal of the Brewery History Society*, 123 (2006), pp.92-109.

http://breweryhistory.com/journal/archive/123/Temperance.pdf

P. Deane, 'New Estimates of Gross National Product for the United Kingdom 1830-1914', *Review of Income and Wealth*, XIV (1968), pp.95-112.

J. De Vries, 'The Industrial Revolution and the Industrious Revolution', *The Journal of Economic History*, Vol. 54, No. 2, Papers Presented at the Fifty-Third Annual Meeting of the Economic History Association (Jun., 1994), pp.249-270.

M. Forsyth, 'Watford's Railway Housing', *The L&NWR Society Journal*, Vol. 6 No. 9 (June 2011), pp.3-5.

N. Goose, 'Cottage Industry, Migration, and Marriage in Nineteenth-Century England', *Economic History Review*, 61:4 (2008), pp.798-819.

N. Goose, 'Farm Service, Seasonal Unemployment and Casual Labour in Mid Nineteenth-Century England', *Agricultural History Review* (vol. 54, part II, 2006), p.274-303.

N. Goose, 'How Saucy did it Make the Poor? The Straw Plait and Hat Trades, Illegitimate Fertility and the Family in Nineteenth-Century Hertfordshire', *History*, Vol. 91, No. 304 (2006), pp.530-556.

N. Goose, 'Pubs, Inns & Beer Shops: The Retail Liquor Trade in St Albans', *Hertfordshire's Past*, Issue 43/44 (Summer 1998), pp.55-60.

T.R. Gourvish & M. Reed, 'The Financing of Scottish Railways before 1860 – a Comment', *Scottish Journal of Political Economy*, XVIII (1971), pp.209-220.

T. Gurr, 'Historical Trends in Violent Crime: A Critical Review of the Evidence', *Crime and Justice*, Vol. 3 (1981), pp.295-353.

B. Gwynne, 'Shannon: Steaming through History', *Steam Railway*, No. 391 (August 2011), pp.72-3.

G. Hawke & M. Reed, 'Railway Capital in the United Kingdom in the Nineteenth Century', *The Economic History Review*, New Series, Vol. 22, No. 2 (Aug., 1969), pp.269-286.

D. Hay, 'Crime and Justice in Eighteenth- and Nineteenth-Century England', *Crime and Justice*, Vol. 2 (1980), pp.45-84.

H. Hilton, 'The First Railway in Hertfordshire', *The Locomotive* (May 1945), pp.75-7.

B. Holderness, '"Open" and "Close" Parishes in the Eighteenth and Nineteenth Centuries', *Agricultural History Review*, Vol. 20, 2 (1972), pp.126-139.

D. Hooson, 'The Recent Growth of Population and Industry in Hertfordshire', *Transactions and Papers (Institute of British Geographers)*, No. 25 (1958), pp.197-208.

K. Hudson, 'The Early Years of the Railway Community in Swindon', *Transport History*, 1 (1968), pp.130-52.

L. Jenks, 'Railroads as an Economic Force in American Development', *Journal of Economic History*, IV (1944), pp.1-20.

J. Langton, 'The Industrial Revolution and the Regional Geography of England', *Transactions of the Institute of British Geographers*, New Series, Vol. 9, No. 2 (1984), pp.145-167.

C. Leigh, 'Quainton Road', *Steam Railway*, No. 390 (July 2011), pp.72-5.

D. Levinson, 'The Orderliness Hypothesis: The Correlation of Rail and Housing Development in London', *The Journal of Transport History*, Volume 29, Number 1 (March 2008), pp.98-114.

J. Little & P. Austin, 'Women and the Rural Idyll', *Journal of Rural Studies*, Volume 12, Issue 2 (April 1996), pp.101–111.

J. Matus, 'Trauma, Memory, and Railway Disaster: The Dickensian Connection', *Victorian Studies*, Vol. 43, No. 3 (Spring, 2001), pp.413-436.

J. Mein, 'The Last Years of the Many Inns of St Albans', *Herts Past & Present*, No. 22 (Autumn 2013), pp.15-21.

D. McCloskey, 'Did Victorian Britain Fail?', *The Economic History Review*, New Series, Vol. 23, No. 3 (Dec., 1970), pp.446-459.

L. McDonald, 'Theory and Evidence of Rising Crime in the Nineteenth Century', *The British Journal of Sociology*, Vol. 33, No. 3 (Sep., 1982), pp.404-420.

P. Merlin, 'The New Town Movement in Europe', *Annals of the American Academy of Political and Social Science*, Vol. 451, Changing Cities: A Challenge to Planning (Sep., 1980), pp.76-85.

B.R. Mitchell, 'The Coming of the Railway and United Kingdom Economic Growth', *Journal of Economic History*, Vol. 24, No. 3 (Sep., 1964), pp.315-336.

K. Navickas, 'Captain Swing in the North: the Carlisle Riots of 1830', *History Workshop Journal*, 71 (2011), pp.5-28.

K. Navickas, 'What Happened to Class? New Histories of Labour and Collective Action in Britain', *Social History*, 36: 2 (2011), pp.192-204.

J. Nicholls, 'Liberties and licences: Alcohol in Liberal Thought', *International Journal of Cultural Studies* (June 2006), 9, pp.131-151.

O.S. Nock, 'Competitive Testing', *Railway Magazine* (May 1980), pp.231-5.

J.D. Porteous, 'The Nature of the Company Town', *Transactions of the Institute of British Geographers*, No. 51 (Nov., 1970), pp. 127-142.

G. Revill, 'Railway Derby': Occupational Community, Paternalism and Corporate Culture' 1850-1890', *Urban History*, 28 (3), (2001), pp.378–404.

P. Richards, 'The Influence of the Railways on the Growth of Wolverton, Buckinghamshire', *Records of Buckinghamshire*, XVII, 2 (1962), pp.115-26.

P. Richards, 'Watford and the Railway', *Herts Past & Present*, No. 22 (Autumn 2013), pp.9-14.

B. Ricks, 'New Town Development and the Theory of Location', *Land Economics*, Vol. 46, No. 1 (Feb., 1970), pp.5-11.

L. Rodwin, 'The Theory of Residential Growth and Structure', *Appraisal Journal*, 18 (1950), pp.295-317.

M. Rosenfeld, 'It was a Hard Life': Class and Gender in the Work and Family Rhythms of a Railway Town, 1920-1950', *Historical Papers/Communications Historiques*, Vol. 23, no. 1 (1988), pp.237-279.

R. Sarti, 'Domestic Service: Past and Present in Southern and Northern Europe', *Gender & History*, Vol.18 No.2 (August 2006), pp.222–245.

R. Schwartz, I. Gregory & T. Thévenin, 'Spatial History: Railways, Uneven Development, and Population Change in France and Great Britain, 1850-1914', *Journal of Interdisciplinary History*, Volume 42, Number 1 (Summer 2011), pp.53-88.

J. Simmons, 'Railways, Hotels, and Tourism in Great Britain 1839-1914', *Journal of Contemporary History*, Vol. 19, No. 2 (Apr., 1984), p.201-222.

B. Simpson, 'Rails through Buckingham', *Steam Days*, August 2011, pp.499-509.

B. Turton, 'The Railway Town: A Problem in Industrial Planning', *The Town Planning Review*, Vol. 32, No. 2 (Jul., 1961), pp.97-115.

B. Turton, 'The Railway Towns of Southern England', *Transport History*, 2 (1969), pp.105-35.

E. Vollans, 'Derby: A Railway Town and Regional Centre', *Transactions and Papers* (Institute of British Geographers), No. 15 (1949), pp.93-112.

R. Willcocks, 'Town Planning', *Journal of the Society of Comparative Legislation*, New Series, Vol. 11, No. 2 (1911), pp.211-219.

Websites:

http://www.abandonedstations.org.uk/Staines_West_line.html

An enthusiast website chronicling abandoned lines and stations; here the history of the Staines branch.

http://www.abbeyline.org.uk/routehistory.htm

The Abbey Line Community Rail Partnership website on the history of the St Albans LNWR branch.

http://www.albanstephen.com/history.shtml

Parish website detailing the history of St Alban and Stephen Catholic Church.

http://www.albury-field.demon.co.uk/bxind.htm

The Industrial History of Broxbourne, referencing the Cheshunt Suspension Railway.

http://www.bbc.co.uk/ahistoryoftheworld/objects/HQur3W6ZQQ2YlO2Ikqityg

A Luton straw 'boater' hat in the BBC's History of the World web-series.

http://www.bbc.co.uk/arts/yourpaintings/paintings/william-cawkwell-general-manager-london-and-north-western-r9548

BBC Art catalogue entry for a portrait of LNWR Manager William Cawkwell, by Hubert von Herkomer (1889).

http://www.bbc.co.uk/news/uk-england-beds-bucks-herts-23851793

BBC News website on the takeover of Wolverton Works, 27/8/2013.

http://www.bbc.co.uk/threecounties/community/vauxhall/milestones.shtml

BBC Three Counties chronology of the Luton Vauxhall factory.

http://www.bedfordshire.gov.uk/CommunityAndLiving/ArchivesAndRecordOffice/CommunityArchives/Luton/LutonIntroduction/LutonAdministrativeHistory.aspx

http://www.bedfordshire.gov.uk/CommunityAndLiving/ArchivesAndRecordOffice/CommunityArchives/Luton/EducationinLuton/EducationInLuton.aspx

http://www.bedfordshire.gov.uk/CommunityAndLiving/ArchivesAndRecordOffice/CommunityArchives/Luton/NonconformityinLuton/NonconformityInLuton.aspx

http://www.bedfordshire.gov.uk/CommunityAndLiving/ArchivesAndRecordOffice/CommunityArchives/Luton/LicensedinLuton/LicensedPremisesInLuton.aspx

Bedfordshire Archive's website on the history of Luton.

http://www.bedfordshire.gov.uk/CommunityAndLiving/ArchivesAndRecordOffice/CommunityArchives/Potton/Introduction.aspx

http://www.bedfordshire.gov.uk/CommunityAndLiving/ArchivesAndRecordOffice/CommunityArchives/Potton/CaptainPeelsRailway.aspx

http://www.bedfordshire.gov.uk/CommunityAndLiving/ArchivesAndRecordOffice/NewslettersandArticles/BedfordCambridgeRailway.aspx

http://www.bedfordshire.gov.uk/CommunityAndLiving/ArchivesAndRecordOffice/CommunityArchives/Potton/EducationInPotton.aspx

http://www.bedfordshire.gov.uk/CommunityAndLiving/ArchivesAndRecordOffice/CommunityArchives/Potton/PottonFireStations.aspx

http://www.bedfordshire.gov.uk/CommunityAndLiving/ArchivesAndRecordOffice/CommunityArchives/Potton/PottonSalvationArmy.aspx

http://www.bedfordshire.gov.uk/CommunityAndLiving/ArchivesAndRecordOffice/CommunityArchives/Potton/PottonWindmill.aspx

http://www.bedfordshire.gov.uk/CommunityAndLiving/ArchivesAndRecordOffice/CommunityArchives/Potton/LocomotivePublicHouse.aspx

http://www.bedfordshire.gov.uk/CommunityAndLiving/ArchivesAndRecordOffice/CommunityArchives/Potton/ShannonPublicHouse.aspx

http://www.bedfordshire.gov.uk/CommunityAndLiving/ArchivesAndRecordOffice/CommunityArchives/Potton/RailwayInn.aspx

Bedfordshire Archive's website on the history of Potton.

http://www.bedfordshire.gov.uk/CommunityAndLiving/ArchivesAndRecordOffice/GuidesToCollections/TransportRecordsWaterwaysandAirTransport.aspx

Bedfordshire Archive's webpage on canals and turnpike records.

http://www.bernardoconnor.org.uk/Everton/19th%20CENTURY%20COPROLITE%20DIGGING%20IN%20EVERTON2.htm

An enthusiast website on the history of coprolite digging.

http://brillvillage.co.uk/history/windmill.php

The Brill Village website on the history of Brill Mill.

http://www.british-history.ac.uk/

An online repository of the *Victoria County History*.

http://www.britishmuseum.org/explore/highlights/highlight_objects/pd/w/william_hogarth,_beer_street.aspx

Illustrations of Hogarth's 'Beer Street' and 'Gin Lane' at the British Museum.

https://ubp.buckscc.gov.uk/SingleResult.aspx?uid=MBC24866

https://ubp.buckscc.gov.uk/SingleResult.aspx?uid=TBC761

Buckinghamshire Archive's website on the history of Quainton.

http://www.buzzrail.co.uk/history.html

A history of the Leighton Buzzard narrow-gauge industrial railway.

http://www.canalmuseum.org.uk/history/lee.htm

London Canal Museum's webpage on the history of the Lee Navigation.

http://www.ccstalbans.org.uk/index.php/our-history.php

Parish website detailing the history of Christ Church, St Alban.

http://www.dacorumhistory.bravehost.com/RailDickinsons.html

Dacorum history website on railways and John Dickinson & Company.

http://digimap.edina.ac.uk/

University of Edinburgh online repository of historic OS map.

http://www.disused-stations.org.uk/b/buntingford/index.shtml

http://www.disused-stations.org.uk/l/luton_bute_street/

http://www.disused-stations.org.uk/o/oxford_rewley_road/

http://www.disused-stations.org.uk/p/potton/

http://www.disused-stations.org.uk/w/watford_high_street/index.shtml

An enthusiast website covering every closed station in Britain; here the Buntingford branch, Luton GNR Station, Oxford Rewley Road Station, Potton Station and Watford High Street Station.

http://www.dukesofbuckingham.org.uk/dukes/first_duke.htm

http://www.dukesofbuckingham.org.uk/dukes/third_duke.htm

A history of the Dukes of Buckinghamshire.

http://www.english-heritage.org.uk/discover/people-and-places/womens-history/womenhatplaitluton/

English Heritage webpage on Luton's straw industries.

http://freepages.genealogy.rootsweb.ancestry.com/~genmaps/genfiles/COU_files/ENG/BDF/cary_bdf_1814.html

http://freepages.genealogy.rootsweb.ancestry.com/~genmaps/genfiles/COU_files/ENG/BKM/cary_bkm_1814.html

http://freepages.genealogy.rootsweb.ancestry.com/~genmaps/genfiles/COU_files/ENG/HRT/cary_hrt_1814.html

A genealogy website containing scans of historic maps over a wide time-frame for every British county.

http://www.genuki.org.uk/contents/

A UK & Ireland genealogy resource with lists of parish names.

http://www.geog.port.ac.uk/webmap/hantsmap/hantsmap/turnpike.htm

A website connected to Portsmouth University Geography Department, mapping Hampshire's turnpikes.

http://geographyfieldwork.com/UrbanModelsMEDCs.htm

Barcelona Field Studies Centre webpage on Urban Land Use Patterns: MEDCs.

http://www.hertfordshire-genealogy.co.uk/data/education/stalbans-schools.htm

http://www.hertfordshire-genealogy.co.uk/data/places/places-s/st-albans/st-albans-public-houses.htm

http://www.hertfordshire-genealogy.co.uk/data/projects/harpenden-road/hr-22-railways.htm

A Hertfordshire genealogy website containing historic directory references; here to St Albans pubs and schools and the railways.

http://www.histpop.org/

A collection of British historical population reports (including census summary documents), 1801-1937.

http://www.historyofparliamentonline.org/volume/1790-1820/member/crawley-samuel-1790-1852

A Parliamentary history of Samuel Crawley of Luton.

http://hs2.org.uk/about-hs2/key-dates

The project timeline webpage for HS2 Ltd – the Government-owned company behind the proposed 2026 London-Birmingham line.

http://www.jim-shead.com/waterways/Locks-distances.php?ty=GY&gr=3

http://www.jim-shead.com/waterways/Locks-distances.php?ty=GY&gr=4

http://www.jim-shead.com/waterways/History.php?wpage=STRT

http://www.jim-shead.com/waterways/History.php?wpage=LEE

An enthusiast website outlining every navigable waterway in Britain, with some digitised primary sources; here the national mileage built during the years of the canal mania and the history of the Lee and Stort Navigations.

http://www.lnwrs.org.uk/Glossary/locoClasst.php

The LNWR Society online glossary of company locomotives, referencing the 'Watford Tanks'.

http://www.lnwrs.org.uk/Members/Jour0308/jour030818.php

The LNWR Society webpage on the Wolverton Mechanics' Institute.

http://www.lutonculture.com/stockwood-discovery-centre/about/the-estate/

Luton Council's webpage on the history of the Stockwood Park estate.

http://mediafiles.thedms.co.uk/Publication/BH-GO/cms/pdf/PeelWALK%5B1%5D.pdf

An online copy of a Potton information brochure - *The Captain Peel Walk*.

http://www.mkmuseum.org.uk/exhibit/tram.htm

Milton Keynes Museum's webpage on the Wolverton-Stony Stratford tram

http://www.mkheritage.co.uk/mkm/tram-page.html

http://www.mkheritage.co.uk/mkm/adverts.html

The Milton Keynes Heritage Association website on the Wolverton-Stony Stratford tram.

http://www.mkheritage.co.uk/wsah/hood/docs/aqueductbook1.html

http://www.mkheritage.co.uk/wsah/hood/docs/aqueductbook2.html

http://www.mkheritage.co.uk/wsah/hood/docs/aqueductbook4.html

http://www.mkheritage.co.uk/wsah/hood/docs/aqueductbook5.html

http://www.mkheritage.co.uk/wsah/hood/docs/aqueductbook6.html

http://www.mkheritage.co.uk/wsah/hood/docs/aqueductbook7.html

An introduction to the industrial archaeology of Wolverton by the Milton Keynes Heritage Association.

http://www.mrt.org.uk/simplex

An outline of the Company history behind the Bedford-built Simplex narrow-gauge locomotives.

http://www.nationalarchives.gov.uk/a2a/records.aspx?cat=046-nr4&cid=0#0

The National Archives 'Access to Archives' catalogue references for Trinity United Reformed Church, St Albans.

http://www.nationaltrust.org.uk/ashridge-estate/history/

The National Trust webpage on the Ashridge Estate and the Monument to the Duke of Bridgewater.

https://www.nationaltrust.org.uk/hughenden/

The National Trust webpage on Hughenden Manor and Disraeli.

http://ngrams.googlelabs.com/

A graphing tool for analyzing the frequency of word use in now-digitised publications since 1800.

http://www.pottonhistorysociety.com/history.html

A timeline of Potton's history by the Potton History Society.

http://www.railwaysarchive.co.uk/documents/BoT_Staple1865.pdf

An online copy of the report into the Stapelhurst Disaster of 1865.

http://www.railwaysarchive.co.uk/documents/HMG_Act_Reg1844.pdf

An online copy of the Railway Regulation Act of 1844.

http://www.stalbanscathedral.org/history/monastic-site

St Albans Cathedral webpage on the history of the monastery.

http://www.stalbansmuseums.org.uk/content/view/full/13473

St Albans Museums' record for Trinity United Reformed Church.

http://www.stalbansmuseums.org.uk/Media/Museum-Images/Plan-of-the-Verulam-Arms-Hotel-Grounds-c.1830

St Albans Museums' plan for the Verulam Arms Hotel.

http://www.steamindex.com/carrwagon/powindex.htm

Bibliographic details of private owner railway wagons.

http://www.stmatthewsoxhey.org.uk/building.html

http://www.stmatthewsoxhey.org.uk/oxhey.html

Parish website detailing the history of St Matthew's Church, Oxhey.

http://www.stortfordhistory.co.uk/guide11/river_stort.html

A local history website for Bishop's Stortford and Thorley; here the Stort Navigation.

http://www.stowe.co.uk/house/about-stowe-house/history/

The official history webpage for Stowe House.

http://www.tacitus.nu/historical-atlas/population/british.htm

An historical atlas with national population totals.

http://www.thameswater.co.uk/about-us/17250.htm?source=newriver

Thames Water webpage on the 'New River'.

http://www.thegrove.co.uk/about-us/history/

The official history webpage for the Earl of Clarendon's Grove House, now a hotel.

http://www.thesandmuseum.org/sites/presentPits2.html

A website chronicling sand excavation around Leighton Buzzard; here a map of sand pits.

http://www.trinitystalbans.org.uk/page19.html

Parish website detailing the history of Trinity United Reformed Church, St Alban.

http://www.turnpikes.org.uk/English%20turnpike%20table.htm

http://www.turnpikes.org.uk/Turnpike%20details.htm

http://www.turnpikes.org.uk/The%20Turnpike%20Roads.htm

An enthusiast site with many digitised primary sources and quantitative data on Turnpike evolution in selected counties; here a table of all turnpike trusts nationally, turnpike mileage by county and an outline of their national development.

http://venetianred.net/2009/09/09/a-history-of-lace-in-seven-portraits-gloria-swanson/

An enthusiast webpage on the history of lace production.

www.visionofbritain.org.uk

A geographic, statistical and historical webpage on British parishes 1801-2001, including extracts from the Bartholomew and Wilson *Gazetteers*.

http://www.whallenengasn.org.uk/whaeaweb_005.htm

A webpage outlining the history of industrial manufacturer W.H. Allen & Son of Bedford, 1893-1914.

http://wolvertonpast.blogspot.co.uk/2010/12/third-station.html#!/2010/12/third-station.html

http://wolvertonpast.blogspot.co.uk/search/label/Villas

An enthusiast website on Wolverton history; here the third station and the Managers' villas.

http://www.wolvertonsecretgarden.co.uk.btck.co.uk/News

A community website detailing the history of the Managers' villas, Wolverton.

http://www.wycombe.gov.uk/council-services/leisure-and-culture/local-history/furniture-making-in-high-wycombe.aspx

Wycombe Museum's webpage on local furniture manufacture.

Rolling Stock and Coaches:

Aveling & Porter locomotive No. 807 – London Transport Museum Collection 1981/536.

'Bloomer' (mock-up) locomotive - Railcare Ltd.

'Bloomer' No. 670 (replica under construction) - Tyseley Locomotive Works.

Furness Railway 'Coppernob' – National Railway Museum 1975-7015.

Queen Victoria's Royal Saloon - NRM_CT_937401.

S&PR 'Shannon' – National Railway Museum 1978-7013;

http://www.didcotrailwaycentre.org.uk/locos/5/5.html

LNWR First Class Diner No. 77 - Buckinghamshire Railway Centre;

http://www.brc-stockbook.co.uk/LNWR_No77.HTM

LNWR Full Brake - Buckinghamshire Railway Centre;

http://www.brc-stockbook.co.uk/LNWR_FullBrake.htm

LNWR Third Class Picnic Saloon No 182 - Buckinghamshire Railway Centre;

http://www.brc-stockbook.co.uk/LNWR_No182.htm

'Station Ominbus' - Mossman Collection, Stockwood Discovery Centre, Luton.

Mail Coach c.1840 - Mossman Collection, Stockwood Discovery Centre, Luton.

Reviews

W. Ashworth, 'Reviewed work: The Social and Economic Development of Crewe 1780-1923 by W. Chaloner', *The Economic History Review*, New Series, Vol. 4, No. 1 (1951), p.121.

D.R. Green, 'Reviewed work: D. Drummond, Crewe: Railway Town, Company and People, 1840-1914', *Labour/Le Travail*, Vol. 40 (Fall, 1997), p.314.

J.A. Jaffe, 'Reviewed work: Crewe: Railway Town, Company and People, 1840-1914 by Diane Drummond', *Albion: A Quarterly Journal Concerned with British Studies*, Vol. 28, No. 1 (Spring, 1996), p.137.

J. Willis, 'Reviewed work: A. Sikainga, Transport Workers' Town 'City of Steel and Fire': A Social History of Atbara, Sudan's Railway Town, 1906-84', *The Journal of African History*, Vol. 45, No. 1 (2004), pp.134-135.

Theses:

F. Andrews, *The Effect of the Coming of the Railway on the Towns and Villages of East Kent, 1841-1919*, (University of Kent, 1993).

J. Moore, *The Impact of Agricultural Depression and Land Ownership Change on the County of Hertfordshire, c.1870-1914*, (University of Hertfordshire, 2010).

R. Stewart-Beardsley, *After the Railway. A Study of Socio-Economic Change in Five Rural Parishes in the Upper Thames Valley, 1830-1901*, (Reading University, 2008).

Located at HALS:

D.C. Hughes, *The Historical Development of the Printing Industry of Watford*, (1961).

J. Rannard, *The Location and Economic Growth of the Watford Paper and Printing Industries*, (University of Bristol, 1963).

M. March, *The Sparrow Hearnes Turnpike*, (Wall Hall College, 1969).

M. Singleton, *The Stevenage Biggleswade Turnpike Trust: Traffic Flows, Management and Demise 1811-1868*, (Kings College London, 2008).

Museums, Organisations and Exhibitions:

Biggleswade History Society.

Buckinghamshire Railway Centre, Quainton.

Bushey Museum.

Wycombe Museum.

Didcot Railway Centre.

Hatfield House.

Lost Rails: Remembering Hertfordshire's Branch Lines, Museum of St Albans Exhibition, November 2010.

Luton's Railways, (Bedford: Shire Hall, 1973). Details deposited at the NRM.

Milton Keynes Museum.

Museum of St Albans.

National Maritime Museum, Greenwich.

National Railway Museum.

St Michael's Church, St Albans.

Steam: The Museum of the Great Western Railway, Swindon.

Stockwood Discovery Centre, Luton.

The Science Museum, London.

Verulamium Museum, St Albans.

Wardown Park Museum, Luton.

Watford Museum.

Lectures:

P. Carter, *The Railways as 'Criminal Accomplice', a View from the Archive: The Fear of the Railways as an Aid to Criminal Activity in the Nineteenth Century*, TNA 'Railways Change Lives' Conference, 7/9/2013.

M. Casson, *The Determinants of Local Population Growth: A Study of Oxfordshire in the Nineteenth Century*, EHS Annual Conference 2011.

D. Drummond, *Living in a Railway Town*, TNA 'Railways Change Lives' Conference, 7/9/2013.

D. Hilliard, Railcare Ltd Works Tour, Wolverton Works.

T. Lyster, tour of restoration workshops, Buckinghamshire Railway Centre.

I. Mackay, *Bushey's History*, Lecture for Oxhey Village Environment Group, 11th March 2010.

Marc Meltonville, Historic Royal Palaces – Hampton Court.

T. Williams*, Dickens and 'The Moving Age'*, Gresham College, 13 November 2006, http://www.gresham.ac.uk/lectures-and-events/dickens-and-the-moving-age

Documentaries:

Great British Railway Journeys, Series 3, Episode 6, 2012.

Great British Railway Journeys, Series 3, Episode 7, 2012.

J. Betjeman, *Metroland*, 1973,

http://bobnational.net/programme.php?archive=132835&view=flash_player