AGENDA

MAIDSTONE JOINT TRANSPORTATION BOARD MEETING

Date: Wednesday 24 October 2012
Time: 5.00 pm
Venue: Town Hall, High Street, Maidstone

Membership:

Councillors Ash, Beerling, Mrs Blackmore, Carter, Chell, Chittenden, Cooke (Chairman), Cuming, Daley, English, Hotson, Moriarty, B Mortimer, Moss, Mrs Stockell, Mrs Whittle and J.A. Wilson

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1. Apologies for Absence

2. Notification of Substitute Members

3. Notification of Visiting Members

Continued Over/:

Issued on 16 October 2012

The reports included in Part I of this agenda can be made available in **alternative formats**. For further information about this service, or to arrange for special facilities to be provided at the meeting, **please contact JANET BARNES on 01622 602242**. To find out more about the work of the Committee, please visit www.maidstone.gov.uk

Alison Broom

Alison Broom, Chief Executive, Maidstone Borough Council, Maidstone House, King Street, Maidstone, Kent ME15 6JQ

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Registering for Public Speaking

In order to book a slot to speak at this meeting of the Joint Transportation Board please contact Janet Barnes on 01622 602242 by 3.00pm on the day of the meeting. You will also need to inform us of the topic you wish to speak on. Please note that slots will be allocated on a first come, first served basis up to a maximum of ten speakers.

MAIDSTONE BOROUGH COUNCIL

MAIDSTONE JOINT TRANSPORTATION BOARD

MINUTES OF THE MEETING HELD ON WEDNESDAY 18 JULY 2012

Present: **Councillor Cooke (Chairman), and Councillors Ash, Mrs Blackmore, Chittenden, Daley, English, Moriarty, Moss, Robertson, Mrs Robertson, Mrs Stockell and J.A. Wilson**

Also Present: **Councillor Mrs Gooch and Parish Councillor Scott**

1. APOLOGIES FOR ABSENCE

Apologies for Absence were received from Councillors Beerling, Carter, Cuming, Hotson, Mortimer and Mrs Whittle.

2. NOTIFICATION OF SUBSTITUTE MEMBERS

It was noted that Councillor Mrs Robertson was substituting for Councillor Mortimer.

3. NOTIFICATION OF VISITING MEMBERS

Parish Councillor Scott indicated his wish to speak on Agenda Item 12 – Charlton Lane, West Farleigh – Speed Limit Proposals and Councillor Gooch indicated her wish to speak on Agenda Item 19 – Highway Vegetation Management – Update.

4. DISCLOSURES BY MEMBERS AND OFFICERS

There were no disclosures by Members or Officers.

5. DISCLOSURES OF LOBBYING

Councillor Robertson disclosed that he had been lobbied in respect of Agenda Item 16 – Roadworks Reinstatements and Rights to carry out work plus update on Knightrider Street Gas Works.

Councillor Chittenden disclosed that he had been lobbied in respect of Agenda Item 9 – Tudor Avenue, Maidstone – Parking Restrictions, Agenda Item 11 - Rushmead Drive, Maidstone – Parking Restrictions and Agenda Item 16 – Roadworks Reinstatements and Rights to carry out work plus update on Knightrider Street Gas Works.

6. MINUTES

RESOLVED: That the Minutes of the Meeting held on 18 April 2012 be approved as a correct record and signed.

7. PETITIONS (IF ANY)

There were no petitions.

8. QUESTIONS/STATEMENTS BY MEMBERS OF THE PUBLIC

Mr John Critchell addressed the Board regarding Agenda Item 9 – Tudor Avenue, Maidstone – Parking Restrictions objecting to the proposals.

Mrs Wakeling addressed the Board regarding Agenda Item 9 – Tudor Avenue, Maidstone – Parking Restrictions objecting to the proposals.

9. TUDOR AVENUE, MAIDSTONE - PARKING RESTRICTIONS

The Board considered the report of the Head of Transportation regarding parking restrictions in Tudor Avenue, Maidstone and the comments made by the public speakers.

RESOLVED: That the Cabinet Member for Highways, Environment and Waste be recommended to approve the parking restrictions on Tudor Avenue as set out in the report of the Head of Transportation.

10. EMSWORTH GROVE, MAIDSTONE - PARKING RESTRICTIONS

The Board considered the report of the Head of Transportation regarding parking restrictions in Emsworth Grove, Maidstone.

RESOLVED: That the Cabinet Member for Highways, Environment and Waste be recommended to remove the Double Yellow Line proposals and replace with Single Yellow Line restrictions to eradicate commuter parking and that the proposed time-plate is to read Mon-Sat 10:00am to 11:00am and then again between the hours of 15:00 to 16:00.

11. RUSHMEAD DRIVE, MAIDSTONE - PARKING RESTRICTIONS

The Board considered the report of the Head of Transportation regarding parking restrictions in Rushmead Drive, Maidstone.

RESOLVED: That the Cabinet Member for Highways, Environment and Waste be recommended to approve the installation of Double Yellow Lines on Rushead Drive from its junction with the A229 Loose Road for a distance of 17m.

12. CHARLTON LANE, WEST FARLEIGH - SPEED LIMIT PROPOSALS

The Board considered the report of the Head of Transportation regarding a speed limit proposal on Charlton Lane, West Farleigh.

RESOLVED: That the Cabinet Member for Highways, Environment and Waste be recommended to approve a 30MPH speed restriction on Charlton Lane, West Farleigh.

13. UPDATE ON PETITIONS SUBMITTED TO KENT HIGHWAY SERVICES

The Board considered the report of the Head of Transport & Development regarding an update on petitions submitted to Kent County Council.

RESOLVED: That the report be noted.

14. BOLD STEPS FOR AVIATION

This was an information only item.

RESOLVED: That the report be noted.

15. ROAD CASUALTIES IN THE MAIDSTONE BOROUGH

This was an information only item.

RESOLVED: That the report be noted.

16. ROADWORKS REINSTATEMENTS AND RIGHTS TO CARRY OUT WORK PLUS UPDATE ON KNIGHRIDER STREET GAS WORK

This was an information only item.

RESOLVED: That the report be noted.

17. LOCAL WINTER SERVICE PLAN

This was an information only item.

RESOLVED: That the report be noted.

18. LONDON 2012 OLYMPICS AND PARALYMPICS - HIGHWAYS AND TRANSPORTATION OPERATIONAL PLANS

This was an information only item.

RESOLVED: That the report be noted.

19. HIGHWAY VEGETATION MANAGEMENT - UPDATE

This was an information only item.

RESOLVED: That the report be noted.

20. MAIDSTONE TRACKER UPDATE

This was an information only item.

RESOLVED: That the report be noted.

21. MEMBER HIGHWAY FUND PROGRAMME UPDATE FOR MAIDSTONE BOROUGH

This was an information only item.

RESOLVED: That the report be noted.

22. BOXLEY ROAD AND BEECHEN BANK ROAD - PROPOSED 40MPH SPEED LIMIT

The Board considered the report of the Head of Transportation regarding a proposed 40mph speed limit in Boxley Road and Beechen Bank Road.

RESOLVED: That the Cabinet Member for Environment, Highways and Waste be recommended:-

i) That the 40mph speed limit with additional road markings be implemented, subject to approval from Boxley Parish Council for the additional cost.
ii) If i) above is not approved by Boxley Parish Council, then the 40mph speed limit with no additional measures, and therefore without Police support, be implemented.

23. DURATION OF MEETING

5.00 p.m. to 7.29 p.m.

To: Maidstone Joint Transportation Board

By: Behdad Haratbar: - Head of Programmed Work

Date: **24 October 2012**

Subject: Additional Surfacing Sites for Maidstone

Classification: Information only

Summary: Proposed additional surfacing sites for Maidstone 2012/2013

As part of the ongoing resurfacing programme, please see appendix 1 for the latest Member identified surfacing sites that are included within the current works programme. Please note that the identified schemes may be subject to change, following final design.

Recommendations: To be noted

Background documents:

Appendices 1

Contact officer: Richard Emmett
Tel: 08458 247800

Appendix 1

PROPOSED ADDITIONAL SURFACING SITES FOR MAIDSTONE

District	Electoral Ward	Parish /Town	Road Name	Extents	Proposed Treatmet	Length	Width	Area	Cost £
Maidstone	Maidstone North East	Maidstone	Hope Street	Sandlings Lane - Staceys Street (inc. Alexander Street southern section)	Plane & Resurface	245	7.7	1887	47,163
Maidstone	Maidstone North East	Maidstone	Thornhill Place	John St. - Fisher St.	Plane & Resurface	187	5.3	991	24,778
Maidstone	Maidstone South East	Maidstone	Betsham Road	Woolley Road-110	Micro Asphalt	470	6.4	3008	24,064
Maidstone	Maidstone South East	Maidstone	Shropshire Terrace	Huntingdon Walk-Wiltshire Way	Micro Asphalt	150	4.7	705	5,640
Maidstone	Maidstone South East	Maidstone	Fordcombe Close	Woolley Road for entire length	Footway Resurface	150	2	300	6,000
Maidstone	Maidstone South East	Maidstone	Hartley Close	Woolley Road for entire length	Footway Resurface	115	2	230	4,600
Maidstone	Maidstone South East	Maidstone	Burgess Hall Drive	Upper Street for entire length	Footway Resurface	520	1.8	936	18,720
Maidstone	Maidstone Rural West	Coxheath	Aspian Drive	Park Way for entire length	Plane & Resurface	320	5.3	1696	42,400
Maidstone	Maidstone Rural West	Coxheath	Aspian Drive	Opposite 28-19	Footway resurface	170	2	340	6,800
Maidstone	Maidstone Rural West	West Farleigh	Lower Road (Smiths Hill)	Whole Length	Footway resurface	155	2	310	6,200
Maidstone	Maidstone Central	Allington	Poplar Grove	A20 london Rd for entire length	Plane & Resurface	862	6.7	5775	144,385
Maidstone	Maidstone Central	Allington	A20 London Road	Palmer Rd-Buckland Lane	Plane & Resurface	80	14	1120	28,000
Maidstone	Maidstone South	Maidstone	Grove Road	Sutton Rd to Camp Way	Micro Asphalt	460	9.7	4462	35,696
Maidstone	Maidstone Rural South	Boughton Monchelsea	Chart Corner	Plough Went Rd-Amber Lane	Plane & Resurface	170	6.5	1105	27,625
Maidstone	Maidstone Rural South	Boughton Monchelsea	Plough Wents Road	York house-Lested Lane	Plane & Resurface	150	8.6	1290	32,250
Maidstone	Maidstone Rural North	Bearsted	Greystones Road	Spot lane for entire length	Micro Asphalt	315	5	1575	12,600
Maidstone	Maidstone Rural North	Bearsted	Egremont Road	Cul-de-sac section outside school entrance	Plane & Resurface	72	6.5	468	11,700
Maidstone	Maidstone Rural North	Bredhurst	The Street	Street Rd-Hurstwood Road	Footway resurface	455	2	910	18,200
Maidstone	Maidstone Rural East	Ulcombe	Ulcombe Hill	Lenham Road-Lodge Gardens	Micro Asphalt	1500	5.3	7950	63,600
Maidstone	Maidstone Rural East	Lenham	Warren street	Harrow Inn-Payden Street	Micro Asphalt	250	5.7	1425	11,400
Maidstone	Maidstone Rural East	Ulcombe	Streetfield	The Street for its entire length	Micro Asphalt	70	7	490	3,920
Maidstone	Maidstone Rural East	Headcorn	Tollgate Place	The Street for its entire length	Micro Asphalt	55	5.5	303	2,420

To: Maidstone Joint Transportation Board

By: Tim Read, Head of Transportation

David Edwards, Director of Change, Planning and the Environment

Date: 24th October 2012

Subject: Draft Joint Integrated Transport Strategy

Classification: Information only

Summary: The Integrated Transport Strategy (ITS) sets out the future direction for transport in Maidstone until 2026. Members are invited to consider the ITS and to submit their collective representation as part of the public consultation exercise, which took place between 17th August and 1st October 2012.

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1. DRAFT JOINT INTEGRATED TRANSPORT STRATEGY

1.1 The Integrated Transport Strategy (ITS) sets out the future direction for transport in Maidstone until 2026. It describes the policy context within which the Strategy sits, but also the local context of the existing transport network. It outlines the transport issues arising as a result of the development aspirations of the draft Core Strategy and details how these issues will be addressed through its Vision, its Objectives and its Action Plan.

1.2 The main aim of the ITS is to provide the transport infrastructure necessary to support new development planned to 2026 through the Maidstone Core Strategy. It has been prepared in partnership between Maidstone Borough Council (MBC) and Kent County Council (KCC) and sits beneath KCC's principal transport strategies: the *Local Transport Plan 2011 – 2016* (2011) and *Growth Without Gridlock* (2010).

1.3 Within the ITS, a detailed description has been provided of the process undertaken (or 'Policy Evolution') to develop the Action Plan. There is also a comprehensive Funding and Delivery Plan identifying funding sources for the proposed schemes and an indication of when these schemes are expected to come forward.

1.4 Stakeholder engagement for the ITS included a workshop for local businesses; Maidstone Borough Council Member workshops and

presentations; consultation with the Highways Agency, the principal commercial bus operator Arriva, and representatives of the property development industry.

1.5 The ITS draws on a comprehensive evidence base. Professional transport consultants (JMP Consultants Ltd and Jacobs Engineering Ltd) were commissioned to conduct parking surveys, Park and Ride customer surveys; traffic modelling; cost / benefit analysis; economic impact assessments; environmental impacts assessments; and an overall appraisal of the measures and options available.

1.6 Extensive traffic modelling was undertaken exploring four future scenario options that included major components such as the South East Maidstone Strategic Link (SEMSL) road; expanding Park and Ride services; constructing bus priority measures and enhancing regular bus services. Travel demand measures have also been explored, including the level of car parking tariffs and the supply of town centre car parking.

1.7 Planning considerations have also been considered, covering matters such as landscape and biodiversity impacts. Financial viability has also been explored, as has the land requirements for each of the options.

1.8 The conclusions of the research found that the SEMSL option was not deliverable because it could not be adequately funded by developer contributions and could not be supported by the dispersed development distribution now adopted by the Core Strategy.

1.9 The remaining three options consisted primarily of enhanced Park and Ride services; constructing bus priority measures and enhancing regular bus services. Included as one of these options was also a 'Do minimum' scenario that involved the maintenance of the present Park and Ride offer and a small improvement to bus services. Combining the highest performing components of these options generated a 'Hybrid Park and Ride' option leaving this option and the 'Do minimum' option available for consideration.

1.10 Investigating the 'Hybrid Park and Ride' option further, it was concluded that this option was not deliverable due to the high land acquisition costs and impacts on landscape quality and biodiversity. Consequently, the 'Do minimum' option remained as the only deliverable option, although significant enhancements to this option were available, as some of the components of the other three options are deliverable independently.

1.11 These deliverable components include a northbound only bus lane on the A274 Sutton Road between Willington Street and Wheatsheaf Junctions; a bridge gyratory bypass scheme to assist town centre traffic flow; safety and/or capacity improvements to the M20 Junctions 5, 7 & 8, Coldharbour Roundabout, 20 – 20 Roundabout, Fountain Lane / Tonbridge Road, Hermitage Lane / London Road, Willington Street /

A274 Sutton Road, and Willington Street / A20 Ashford Road junctions; and public realm improvement works within the town centre.

1.12 The components included in the 'Do minimum' option, combined with those included in paragraph 1.11 above, form the basis of the Preferred Option presented in the ITS which has now been consulted on. MBC and KCC will be providing responses to representations made by the public and are yet to make amendments to the ITS accordingly. Further investigation may also need to be undertaken to further develop and refine the above components to ensure the benefits of these schemes are maximised.

Recommendations

Members are invited to consider the ITS and to submit their collective representation as part of the public consultation exercise, which took place between 17th August and 1st October 2012.

Background documents:

Appendices

1. Draft Maidstone Integrated Transport Strategy (2012-2026), KCC and MBC, July 2012
2. Maidstone Option Testing: Model Output, Jacobs, March 2012
3. Maidstone Integrated Parking Strategy Research: Options Appraisal Report, JMP, April 2012
4. Resident Parking Scheme Survey Report, MBC, January 2010
5. Resident Parking Scheme Survey Report: Appendices, MBC, January 2010
6. Maidstone Integrated Parking Strategy Research: Data Report, JMP, December 2011
7. Private Car Parking Spaces Attached to Commercial Premises, MBC, October 2010
8. MBC Town Centre Parking Tariffs, MBC, 2011
9. Draft Cycle Strategy, MBC, June 2012

10. Maidstone VISUM Model: 2017 and 2026 Forecast Models – South East Maidstone Strategic Link Impacts Summary, Jacobs, December 2009

11. Maidstone Transport Strategy: Option Testing Summary Tables, Jacobs, March 2011

12. Maidstone Integrated Parking Strategy Research: Analysis Report, JMP, December 2011

13. Review of Maidstone Modelling and Appraisal Work, JMP, April 2012

14. Maidstone Option Testing: Base and 2026 Option 1 (Do Minimum) Turning Movements, Jacobs, June 2012

15. M20 Maidstone New Growth Point, Highways Agency, March 2008

16. Maidstone Bridge Gyratory: Outline Design Alignment, Jacobs, November 2005

17. Maidstone Town Centre Micro-Simulation Model: Assessment of Maidstone Bridge Gyratory A229 Through Link Option, Jacobs, March 2005

Contact officer:

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Maidstone Integrated Transport Strategy 2012 – 2026

Prepared by

Maidstone Borough Council

in partnership with

Kent County Council

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Executive Summary

E1.0 What is the Maidstone Integrated Transport Strategy?

E1.1 The Maidstone Integrated Transport Strategy (ITS) sets out the future direction for transport in Maidstone until 2026. It describes the policy context or framework within which the strategy sits, but also the local context of the existing transport network. It details the challenges we currently face and how, through the objectives and action plan outlined in this strategy, we propose to address these challenges; the greatest being how we aim to provide the transport infrastructure and initiatives necessary to support new development planned to 2026.

E1.2 The ITS is directly linked to Maidstone's Core Strategy, which is the development plan to deliver 10,080 new homes together with employment growth to 2026. It also sits beneath and complements Kent County Council's (KCC)'s principal transport strategies: the *Local Transport Plan 2011 – 2016* (2011) and *Growth Without Gridlock* (2010).

E2.0 Why do we need a transport strategy?

E2.1 The Local Transport Act (2008) gives local authorities the power to review and propose their own arrangements for local transport governance to support more coherent planning and delivery of local transport. So in order to improve the transport offer of Maidstone, Maidstone Borough Council (MBC) and KCC have developed the strategy set out in this document.

E2.2 The existing traffic situation in Maidstone is one of significant congestion on our roads. Additional housing and employment to be provided during the Core Strategy period will add to this pressure on the transport network across the borough. The ITS is needed to better manage existing traffic congestion and to identify the transport infrastructure and initiatives necessary to support the growth provided for by the Core Strategy.

E2.3 The social and economic costs of transport are increasing as fuel prices rise, and as more vehicles use our roads. It is accepted that traffic congestion will continue to occur as the borough grows, so the ITS is designed to minimise this increase and to

mitigate the associated impacts on the local economy. The ITS is also directed towards improving road user safety and education.

E2.4 The environmental impacts of transport are also becoming increasingly apparent on a local, national and international scale. The ITS will address these issues; in particular poor air quality and emissions generated by vehicles using Maidstone's transport network.

E3.0 How will MBC and KCC address these issues?

E3.1 This strategy includes an action plan for delivery detailing 30 actions to achieve its vision and 8 objectives. These actions are phased for delivery over the short, medium and long term to ensure that the greatest effect is had on mitigating transport issues as the borough's population and economy grows. They include highway improvements at strategic development locations; improvements to infrastructure in the borough's Rural Service Centres (Harrietsham, Headcorn, Staplehurst, Marden and Lenham); a part reorganisation of the Park and Ride service; various initiatives to encourage more public transport use and increase road user safety; initiatives to encourage more walking and cycling through public realm improvement works; and means by which new development can better mitigate their impacts on the transport network.

E4.0 What are the five primary packages of transport infrastructure improvements of the strategy?

E4.1 All measures detailed in this strategy are considered important, however there are five primary packages of infrastructure improvements (or actions) that must be delivered by this strategy and so are given the highest priority. These are detailed in Chapter 6 of this document *An Action Plan for Delivery* and include the following:

- *Action 1: Implementing highway improvement schemes at strategic locations in the north west and south east of Maidstone Urban Area and in the vicinity of M20 Junction 7 and M20 Junction 8*

- *Action 2: Improvements to transport infrastructure at selected Rural Service Centres*
- *Action 15: Build a 'bus only' northbound lane on the A274 Sutton Road between its junction with Willington Street and the Wheatsheaf Junction*
- *Action 16: Facilitate an improvement of bus services to ensure a 7min frequency is achieved on the majority of radial routes to the town centre within the Maidstone Urban Area*
- *Action 17: Maintain the existing P&R provision at the current level of service*

E4.2 These actions form the 'backbone' of the ITS and so are given the highest priority as it is these improvements (or actions) that will play the greatest role in providing the infrastructure and initiatives necessary to support the development aspirations of the Core Strategy and to better manage existing traffic congestion.

E5.0 Where will the funding come from?

E5.1 The 2010 Comprehensive Spending Review confirmed that public sector funding for transport would be significantly reduced in the medium-term, meaning that local authorities cannot continue to rely on existing Government funding streams. The principal funding source currently available to KCC and MBC for the delivery of local transport schemes is developer contributions secured through the Community Infrastructure Levy (CIL) or through legal agreements (Section 106 of the Town & Country Planning Act 1990) attached to planning permissions.

E5.2 In addition to developer contributions, there is the County Council's Integrated Transport Block allocation for the funding of smaller schemes including crash remedial measures, improvements to walking and cycling routes, traffic management schemes and bus priority measures.

E5.3 Revenue funding is used to cover continuous costs, such as concessionary fares and socially necessary bus services. KCC and MBC receive most of their revenue funding for transport through

the wider Formula Grant paid to local authorities by Government and through council tax, although a significant proportion is also secured through parking revenues.

E5.4 The New Homes Bonus (NHB) is a recently introduced Government funding stream which aims to incentivise housing growth by match funding the additional council tax raised from new homes and empty properties brought back into use for the following six years. This can also be used to fund new, or improve transport infrastructure however it must be noted that this funding is not exclusively for transport and can be spent elsewhere if the need dictates.

E6.0 How will we monitor progress of the ITS?

E6.1 The strategy includes a Performance Monitoring Plan that will measure progress against set targets and indicators. These targets are realistic but ambitious and are designed to achieve the vision and objectives of the ITS.

Introduction

1.0 Transport: Part of the Wider Picture

1.0.1 Maidstone Borough faces acute transport challenges, from managing traffic congestion to the growing impacts of climate change. Maidstone's Integrated Transport Strategy (ITS) will address these issues through a range of policies and actions for the Borough Council and its partners to implement. The primary goal for the ITS is to help realise the borough's vision for 2026 captured in the Maidstone Core Strategy of having:

> *"A prosperous and vibrant future for Maidstone's urban and rural communities whilst retaining and enhancing the borough's distinctive heritage, landscape and character...*
>
> *By 2026 prosperity will be achieved through sustainable economic growth across the borough supported by the creation of high quality employment opportunities, the regeneration of key sites, continued investment in the Town Centre and improvements to access...There will be an emphasis on sustainable transport access improvements to the town centre and across the borough through an integrated approach to transport strategy to promote the role of Maidstone as a transport hub with national and regional links. Measures will be sought to achieve the behavioural change that will be required to support the introduction of an integrated approach to sustainable transport solutions....."*

1.0.2 The ITS is written in the context of national and local policies and objectives including the Local Transport Plan for Kent[1] and Growth without Gridlock[2] both prepared by Kent County Council (KCC).

1.0.3 Although the ITS will address the problem of existing traffic congestion, its primary aim is to provide for the necessary transport infrastructure to support the development aspirations of the Core Strategy. In doing so, it will address the issues

[1] KCC (2011) *Local Transport Plan for Kent 2011-16*

[2] KCC (2010) *Growth without Gridlock – A Transport Delivery Plan for Kent*

associated with each transport mode in a holistic way. This strategy adopts an integrated approach which recognises that transport issues are inherently linked to one another, but that they are also part of the wider planning challenge.

1.0.4 Drafted by MBC and KCC in partnership, the ITS will look at how we can begin to encourage a shift in travel behaviour away from the majority of trips being taken by private car – with its particular economic, social and environmental costs - towards using more sustainable modes of transport where appropriate.

1.1 Growth for the Future

1.1.1 Maidstone's proposed Core Strategy provides for 10,080 new homes together with employment growth within the borough by 2026. Approximately 80% of this growth will be accommodated in the Maidstone Urban Area with the remaining 20% provided in the Rural Service Centres of Marden, Staplehurst, Headcorn, Harrietsham and Lenham. Approximately 880 new homes are proposed for the north-west of the urban area with 1075 homes proposed for the south-east. The majority of the remainder are to be provided through existing or proposed planning permissions in the existing built up areas with approximately 1130 new homes spread across the Rural Service Centres (RSCs). In addition, commercial development of 18ha at M20 Junction 8 and a medical campus with replacement retail facilities at M20 Junction 7. Limited further employment floorspace will be provided at the Rural Service Centres and at the urban periphery.

1.2 Roles and Responsibilities

1.2.1 Maidstone Borough Council (MBC) is the Local Planning Authority for the borough and also has delegated responsibility for Civil Parking Enforcement under the Traffic Management Act 2004, Park and Ride services, street cleaning, the licensing of taxis and private hire vehicles, the provision of bus shelters and the monitoring of air quality. Kent County Council (KCC) is the local highway authority for Kent and is responsible for the management and maintenance of all adopted roads in the county other than motorways and trunk roads. KCC is also the local

transport authority for Kent and actively promotes alternatives to car-based travel to improve the accessibility, sustainability and efficiency of the highway network. The ITS has therefore been jointly prepared by MBC and KCC.

1.2.2 Motorways and trunk roads in England are the responsibility of the Highways Agency (HA), which has been actively involved in the development of the ITS.

1.2.3 MBC and KCC have also consulted local bus operators during the development of the ITS. Approximately 80% of bus services in Kent are operated on a wholly commercial basis by these companies and neither the Borough nor County Councils play a direct role in their provision. However, MBC and KCC have signed a Quality Bus Partnership Agreement with the borough's principal commercial bus operator, Arriva, which commits all parties to invest jointly in local bus services and supporting infrastructure. The remaining 20% of services are classified as 'socially necessary' and are procured by KCC to provide access to essential services.

1.2.4 Maidstone's rail services are operated as part of the South Eastern Franchise, which is specified and led by the Department for Transport (DfT). The franchise is currently held by Southeastern. MBC and KCC are closely involved in the specification of DfT franchise contracts and frequently lobby central Government and Southeastern for improvements to rail services.

Policy Context

2.0 Policy Relationship

2.0.1 The ITS is influenced by and interacts with a range of national and local policies and strategies. These include the *National Planning Policy Framework; Vision for Kent 2012-2022; Maidstone Sustainable Community Strategy 2009-2020; Growth without Gridlock: a Transport Delivery Plan for Kent; Local Transport Plan for Kent 2011-16; Countryside Access Improvement Plan; Rail Action Plan for Kent;* and the *Maidstone Air Quality Action Plan*.

2.0.2 This chapter briefly outlines the current policy context within which the ITS has been developed and identifies how it can contribute to the delivery of their key objectives.

2.1 National Policy

2.1.1 National Planning Policy Framework (2012)[3]

2.1.2 The Department for Transport (DfT)'s stated vision is for:

> *"a transport system that is an engine for economic growth, but one that is also greener and safer and improves quality of life in our communities".*

2.1.3 This vision has been carried forward into the Government's new National Planning Policy Framework (NPPF), which has replaced the previous suite of Planning Policy Statements, Planning Policy Guidance notes and certain Circulars. The NPPF emphasises the importance of rebalancing the transport system in favour of sustainable transport modes, whilst encouraging local authorities to plan proactively for the transport infrastructure necessary to support the growth of ports, airports and other major generators of travel demand.

2.1.4 The NPPF recommends that Transport Assessments and Travel Plans should accompany applications for developments that generate significant amounts of movement, although it

[3] Department for Communities and Local Government (2012), *National Planning Policy Framework*

recognises that the opportunities to maximise sustainable transport solutions will vary from urban to rural areas. Paragraph 32 sets out three tests that development plans and decisions should take account of. These are whether:-

a) The opportunities for sustainable transport modes have been taken up depending on the nature and location of the site, to reduce the need for major transport infrastructure;

b) Safe and suitable access to the site can be achieved for all people; and

c) Improvements can be undertaken within the transport network that cost effectively limit the impacts of development. Development should only be prevented or refused on transport grounds where the residual cumulative impacts of development are severe.

2.1.5 The wording of the third test is already proving contentious between local authorities and developers, as 'residual cumulative impacts of development' are not clearly defined by the NPPF, although they are widely defined as those impacts that remain following the implementation of mitigation measures. Whilst some are of the opinion that they embrace all development impacts, including those related to highway safety, others argue that they relate only to a development's impact on traffic flows and/or congestion. This matter is likely to be the subject of numerous test cases over the coming months. Nevertheless, KCC Highways and Transportation is currently of the view that, as sustainable transport and highway safety matters are the subject of separate tests in Paragraph 32, local authorities should continue to apply more stringent criteria in assessing a development's impact on highway safety than when assessing its impact on traffic flows. Indeed, congestion in town centres such as Maidstone is often the sign of a successful local economy and it may be unreasonable to require developers to fully mitigate it where the costs involved in doing so would make an otherwise acceptable and beneficial development unviable.

2.2 Local Policy

2.2.1 Vision for Kent 2012-2022 (2012)[4]

2.2.2 The Vision for Kent is a countywide strategy for the social, economic and environmental wellbeing of Kent's communities. It has been written around three major ambitions, which are to:-

a) **Grow the economy** by supporting businesses to be successful, including improvements to the transport network and the provision of high-speed broadband;

b) **Tackle disadvantage** by fostering aspiration rather than dependency, including the provision of comprehensive, reliable and affordable public transport services providing access to education and employment opportunities; and

c) **Put the citizen in control** by involving people in making decisions and working with them to design services that meet their needs and suit them, including the continued provision of KCC's Member Highway Fund and support for community bus and rail schemes.

2.2.3 The Vision for Kent has been endorsed by the Kent Forum, which is made up of the elected leaders of Kent's 13 councils (KCC and the 12 District and Borough Councils), the Chairman of the Fire Authority and – from November 2012 – the county's Police Commissioner. Supporting the Kent Forum is the Joint Kent Chiefs, which comprises the Chief Executives of Kent's councils and Primary Care Trusts, the Chief Constable and the Chief Fire Officer. Ambition Boards, reporting to the Joint Kent Chiefs, will oversee the achievement of the three ambitions, with Locality Boards (including the Maidstone Locality Board), involving representatives from the public, private, voluntary and community sectors, delivering the ambitions at a local level.

2.2.4 Maidstone Sustainable Community Strategy 2009-2020 (2009)[5]

[4] Kent Forum (2012), *Vision for Kent 2012-2022*

[5] MBC (2009), *The Sustainable Community Strategy for Maidstone Borough 2009-2020*

2.2.5 MBC's Sustainable Community Strategy (SCS) sets the overall strategic direction and long-term vision for Maidstone in a way which respects the need for sustainable development. The SCS acknowledges that congestion in the borough has become an increasing problem and that the overriding aim of an integrated transport strategy must be to provide genuine transport choice to the area's residents, businesses and visitors. These driving principles are reflected in the first two objectives of the SCS, which are to:-

a) Develop a vibrant economy, create prosperity and opportunities for all;

b) Develop an efficient, sustainable, integrated transport system.

2.2.6 The SCS identifies a range of transport-related targets which will contribute towards the achievement of these objectives – and which are reflected in the ITS – including those to:-

a) Prevent congestion levels from rising;

b) Seek an annual reduction in the rate of children taken to school by car;

c) Increase the number of journeys taken out of cars by Travel Plans;

d) Promote a long-term solution to the problems caused by Operation Stack;

e) Ensure 100% of new dwellings are within 400 metres of a bus service;

f) Lobby for improved rail services.

2.2.7 Growth without Gridlock: a Transport Delivery Plan for Kent (2010)[6]

2.2.8 *Growth without Gridlock* outlines KCC's high level vision for the transport network needed in Kent to support planned growth in housing and employment over the next 20 years. It responds to

[6] KCC (2010), *Growth without Gridlock – A Transport Delivery Plan for Kent*

the economic and regeneration pressures outlined in the County Council's Framework for Regeneration and identifies how transport interventions can contribute to their alleviation. The strategy requests greater transport funding and delivery powers for local transport authorities and calls upon the Government to progress those schemes of regional and national importance, including a Lower Thames Crossing, a long-term solution to Operation Stack and a scheme of Foreign Lorry Road User Charging. *Growth without Gridlock* also recognises the vital importance of integrating spatial and transport planning at a local level through the preparation of the five-year Local Transport Plan for Kent and integrated transport strategies to accompany local planning authorities' Core Strategies.

2.2.9 Local Transport Plan for Kent 2011-16 (2011)[7]

2.2.10 The preparation and submission of a Local Transport Plan (LTP) is a statutory requirement of all local transport authorities in England outside London under the Transport Act 2000 (as amended by the Local Transport Act 2008). An LTP sets out the authority's policies and delivery plans for the management and improvement of the local transport network. KCC's strategic approach for Kent's third Local Transport Plan (LTP3), covering the period 2011 to 2016, was to develop five LTP3 Themes aligned to the previous government's national transport goals. These themes are:-

a) **Growth Without Gridlock** – covering the objectives of traffic management, unlocking regeneration and housing growth, improving access to jobs and services, and supporting the function of the county's international gateways;

b) **A Safer and Healthier County** – covering the objectives of safer roads, active travel, and a safe and secure network;

[7] KCC (2011), *Local Transport Plan for Kent 2011-16*

c) **Supporting Independence** – covering the objectives of improving access to public transport, walking and cycling, particularly in disadvantaged areas;

d) **Tackling a Changing Climate** – covering the objectives of reducing emissions from transport and smarter travel; and

e) **Enjoying Life in Kent** – covering the objectives of improving access to learning, culture, social networks and the countryside, enhancing the journey experience, protecting Kent's natural and built environment, and providing for sociable streets.

2.2.11 The LTP3 Implementation Plan outlines KCC's approach to allocating the County Council's annual Integrated Transport Block allocation, which supports investment in small scale (i.e. under £5 million) transport schemes such as crash remedial measures, traffic management schemes, bus priority measures and improvements to walking and cycling routes. The first stage of the process allocates the Integrated Transport budget to the LTP3 themes, as illustrated below.

LTP3 Theme	Allocation
Growth Without Gridlock	45%
A Safer and Healthier County	15%
Supporting Independence	15%
Tackling a Changing Climate	15%
Enjoying Life in Kent	10%

2.2.12 Growth Without Gridlock is given the largest allocation primarily on account of the significant economic challenges facing Kent, in common with the rest of the UK, together with the local and sub-regional challenges associated with the substantial housing and

employment growth planned in Kent Thameside, Ashford, Dover and Maidstone.

2.2.13 The second stage of the budget allocation process distributes the funding under each of the LTP3 Themes to those areas of the county where the challenges associated with each theme are most acute, as illustrated below. Maidstone is eligible for funding under four of the five themes, which collectively account for 85% of KCC's annual Integrated Transport budget.

LTP3 Theme	Priority Area(s)
Growth Without Gridlock	Prioritise spending in the **Growth Areas** and **Growth Points** (Kent Thameside, Ashford, Dover and Maidstone) which will be the focus of housing and employment growth during the LTP3 period.
A Safer and Healthier County	Prioritise spending to tackle countywide **problem sites** including Air Quality Management Areas, crash cluster sites, and areas with high levels of health deprivation.
Supporting Independence	Prioritise spending in the **East Kent coastal towns** (from Herne Bay to the Romney Marsh) which exhibit high levels of unemployment, low car ownership and ageing populations.
Tackling a Changing Climate	Prioritise spending in the county's **urban areas**, particularly those with Air Quality Management Areas and congestion hotspots (principally Canterbury, Dartford, Dover, Gravesend, Maidstone, Sevenoaks and Tunbridge Wells).

Enjoying Life in Kent	Mitigate the impact of motorised transport **across the county** in order to reduce the number of people exposed to heavy traffic, to enhance wellbeing and community cohesion and to improve access to the countryside and coast.

2.2.14 The LTP3 budget allocation and spatial distribution methodology enables KCC to attain best value from the limited funding available. Within this framework, the annual long list of Integrated Transport schemes developed by KCC Highways and Transportation in consultation with the county's district and borough councils, is prioritised using a value for money assessment, which takes into account aspects such as their contribution to the local transport strategy.

2.3 Other Plans and Strategies

2.3.1 In addition to the policies and strategies outlined above, the ITS is also aligned with a number of other local plans, including *KCC's Countryside Access Improvement Plan*[8] *and; Rail Action Plan for Kent*[9]*;* and *MBC's Air Quality Action Plan*[10]. The way in which these documents support the delivery of the ITS is considered in detail in forthcoming chapters.

[8] KCC (2007), *Countryside Access Improvement Plan 2007-2017*

[9] KCC (2011), *Rail Action Plan for Kent*

[10] MBC (2010), *Maidstone Town Air Quality Action Plan*

Transport Challenges

3.0 The Challenges

3.0.1 This chapter describes Maidstone Borough's existing transport network and the challenges the Borough faces. It identifies the key economic, social and/or environmental issues associated with each mode, together with the strengths and opportunities on which the ITS can build.

3.1 Local Context

3.1.1 Maidstone is a dynamic borough, set within both an urban and a rural context, which has a vital role to play in the significant growth expected in the South East over the next two decades. The borough currently has a population of 150,000, which is evenly split between the County Town and its rural hinterland, including the five Rural Service Centres of Harrietsham, Headcorn, Lenham, Marden and Staplehurst. Whilst the town's main function is as a centre for business, retail and administration, the rural economy is characterised by pockets of manufacturing, horticulture and farming.

3.1.2 Maidstone has been identified as a regionally important transport hub; however its transport network has come under increasing strain in recent years, principally on account of the configuration of its road and rail networks and the growing demand for travel generally. If the borough is to have an emphasis on sustainable transport access across the borough and accommodate the level of housing and employment growth envisaged by the Core Strategy a comprehensive and deliverable transport strategy must be in place to address these challenges.

3.2 Highway Network

3.2.1 Maidstone has an extensive highway network which provides direct links both within the borough and to neighbouring areas including Ashford, the Medway Towns, Tunbridge Wells and London. Four north-south and east-west 'A' roads pass through the town centre and numerous 'B' roads run in concentric rings

around the town, providing local links to the rural parts of the borough. Maidstone also enjoys good connections to the motorway network, including direct access to four junctions of the M20 (Fig 1).

3.2.2 The principal constraint on the borough's urban road network is the single crossing point of the River Medway at the town centre bridge gyratory, where the A20, A26 and A229 meet. From this point, congestion spreads along the main radial approaches to Maidstone during the morning and evening peaks, leading drivers to seek alternative routes for longer journeys around the periphery of the town, including the B2246 Hermitage Lane and B2163 Heath Road. Other peak time congestion hotspots include the A20 Coldharbour Roundabout at Allington, where cross-boundary journeys between Maidstone and Tonbridge and Malling interact with longer-distance journeys between the A26 Tonbridge Road corridor and the M20 Junction 5 via Hermitage Lane. There is also a level of southbound congestion on the A229 at the Running Horse and Cobtree Roundabouts during the morning peak, as traffic from the Medway Towns attempts to join the westbound M20 at Junction 6. Similar problems are experienced at the M20 Junction 7 and are exacerbated during the afternoon peak by the significant volume of traffic exiting the westbound M20 and seeking to access South East Maidstone via the Bearsted Road Roundabout and New Cut Road, as drivers attempt to avoid the congestion in central Maidstone.

3.2.3 The 2007 traffic survey data used to develop the Maidstone transport model was collected at inner and outer cordon points around the town centre and urban area respectively (Fig 2). The data identified that the number of person trips (including those by car, bus and Park and Ride) made on the highway network during the morning peak hour totalled 38,000, equating to around 8,000 vehicles entering the inner cordon and 8,500 entering the outer cordon. Conversely, 5,000 vehicles exited the inner cordon and 7,000 exited the outer cordon during this period, indicating a high level of in-commuting[11]. These traffic flows are reflected in the average journey speeds on the busiest routes in the morning peak of around 21-22 kilometres per hour,

[11] Appendix A: Jacobs (2012) *Maidstone Option Testing Model Output, March 2012*

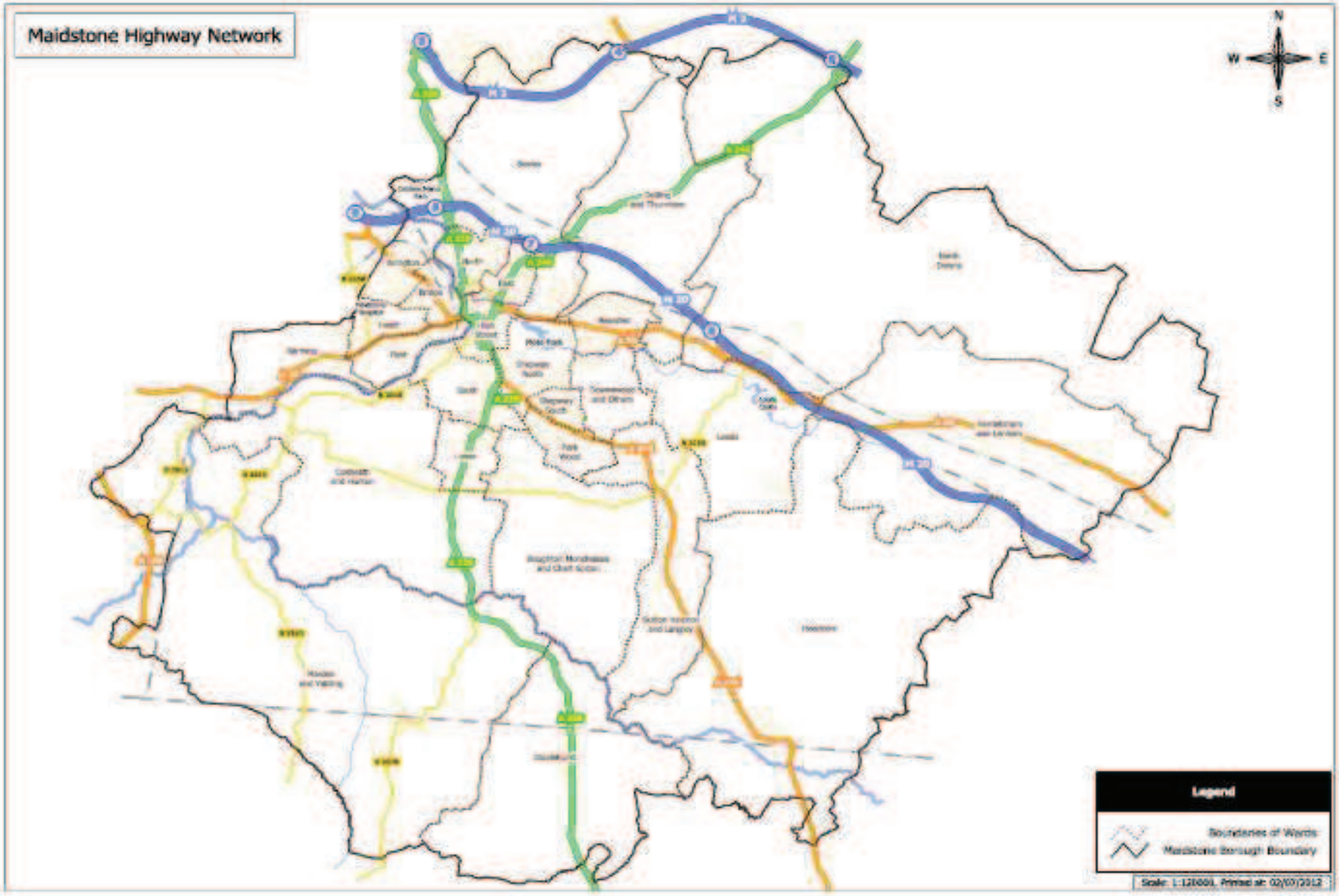

Figure 1: Maidstone Highway Network

Figure 2: Inner and Outer Cordon Link Flow Locations

equating to an average journey time between the outer cordon and the town centre of between 10 and 15 minutes.

3.2.4 The Maidstone transport model conducted in 2012 forecasts that by the end of the Core Strategy period in 2026, a combination of background traffic growth and planned housing and employment development will increase the number of person trips in Maidstone during the morning peak hour from 38,000 to 54,000 (or 21%). This could have the effect of increasing inbound morning peak travel times to between 15 and 28 minutes on the main arterial routes[12]. In this scenario, the level of connectivity across the borough would be significantly reduced and the impacts on the local economy, air quality and the general health and wellbeing of the population would be severe.

3.2.5 Congestion has also been identified as an issue on the M20 within Maidstone Borough. A volume to capacity ratio of 85% is considered the maximum acceptable limit by the Highways Agency[13] and the section of the M20 between Junctions 4 and 5 is already exceeding this threshold during the morning peak[14]. Volume to capacity ratios between Junctions 6 and 7 and Junctions 7 and 8 are also forecast to exceed 90% by 2026, which will have a negative impact on journey time reliability for long-distance traffic[15]. This issue is exacerbated by the widespread use of the M20 for local journeys during peak periods, as commuters seek to avoid the congestion on the main arterial routes into Maidstone.

3.2.6 The survey work undertaken to inform the Maidstone transport model confirmed that, contrary to popular perception, the majority of traffic entering the urban area at peak times is heading for destinations within the town itself, including the town centre, the secondary schools and the Hospital. The relative proportions for the morning peak hour (8am to 9am) are illustrated in Figure 3 and the table below.

[12] Appendix A: Jacobs (2012) *Maidstone Option Testing Model Output, March 2012*

[13] Department for Transport, *Design Manual for Roads and Bridges*

[14] Appendix A: Jacobs (2012) *Maidstone Option Testing Model Output, March 2012*

[15] Appendix A: Jacobs (2012) *Maidstone Option Testing Model Output, March 2012*

Figure 3: Predicted traffic congestion during the morning peak 2026

Approach (cordon point)	% to Maidstone Urban Area	% Through Traffic
A229 Royal Engineers Way (south of M20 Junction 6)	97%	3%
A229 Sittingbourne Road (south of M20 Junction 7)	91%	3%
A20 Ashford Road(west of M20 Junction 8)	96%	4%
A274 Sutton Road (east of Langley)	87%	13%
A229 Linton Hill (south of B2163 junction)	99%	1%
A26 Tonbridge Road(east of North Lane, Barming)	99%	1%
A20 London Road (east of M20 Junction 5)	98%	2%
Total	**97%**	**3%**

3.2.7 Maidstone has average vehicle occupancy of approximately 1.23 persons per car, lower than the UK average of 1.6 persons per car[16]. This results in an inefficient use of road space and hence greater traffic congestion. Whilst it is recognised that the private car will continue to provide the primary means of access in areas where alternative travel choices are not viable; particularly the more rural areas of the borough, the traffic surveys suggest that the ITS should focus on traffic management measures that enable a higher people-moving capacity over the existing road network. Specifically, the strategy should aim for a reduction in the number of car-based trips into Maidstone town centre during

[16] DfT (2011) *Personal Travel Factsheet Commuting and Business Travel*

peak periods, which can be achieved through interventions such as Park and Ride. This would improve the reliability and hence attractiveness of public transport, as well as providing businesses and freight operators with greater journey time reliability[17].

3.3 Urban Traffic Management and Control System

3.3.1 The primary route network in Maidstone town centre is covered by KCC's Urban Traffic Management and Control (UTMC) system. This proactively coordinates and optimises traffic signal timings according to the prevailing conditions to make the highway network run as efficiently as possible. It also allows for direct intervention by the County Council's Traffic Management Centre operators to respond in real time to unexpected incidents such as vehicle breakdowns and accidents. Information about car park occupancies, journey times (based on data captured from Automatic Number Plate Recognition cameras) and incidents can be communicated direct to drivers through a cordon of Variable Message Signs and the system also provides Real Time Passenger Information to bus stops. The UTMC system has been credited with reducing average journey times on Maidstone's highway network by over 10% since 2006.

3.4 Parking

3.4.1 The provision of an adequate supply of well-located and reasonably priced car parking is essential to support the borough's retail economy, to provide a means of access to areas where alternative travel modes are limited or unavailable, and to ensure that mobility impaired persons are able to access key education, employment and leisure opportunities. However, the supply of car parking also drives demand for limited road space and can therefore contribute to traffic congestion and poor air quality, as well as making more sustainable modes of travel less attractive. Therefore it is crucial that MBC and its partners avoid

[17] Appendix B: JMP (2012) *Maidstone Integrated Parking Strategy Research, Option Appraisal Report, April 2012*

an overprovision of parking, particularly in and around Maidstone town centre.

3.4.2 The Borough Council currently manages 12 residents' parking zones (Fig 4), primarily covering the streets surrounding the town centre, for which approximately 7,600 parking permits have been issued to date. The Residents' Parking Scheme was introduced to prevent drivers from outside of the town using these streets as free-all day parking areas, which had been the source of considerable inconvenience to residents and their visitors. Commuters have instead been encouraged to use the Park and Ride service. Nevertheless, the number of permits issued is now approaching the number of parking spaces available and six of the residents' parking zones are approaching 90% capacity during evening hours[18].

3.4.3 There are 17 MBC-owned car parks in Maidstone town centre providing 1,600 publically accessible off-street spaces. Of these, approximately 430 are short stay only and 1,200 are long or short stay spaces. Short stay parking is considered to be any length of stay of less than four hours and hence is primarily used by shoppers – who largely access the town centre during off-peak periods – rather than commuters, who make a significant contribution to peak time congestion. The most recent occupational survey of MBC car parking was conducted in November 2011[19] and found that off-street short and long stay parking in the town centre had an average occupancy of 71%, leaving approximately 125 short stay only and 350 short or long stay spaces unoccupied on average per day.

3.4.4 In addition to Council-owned car parks, there are up to a further 8,000 privately owned parking spaces associated with existing office, retail and leisure uses in the town centre. This includes publically accessible spaces at The Mall Chequers (1,000 spaces), Fremlins Walk (760 spaces) and Sainsbury's (370 spaces) with the remainder being only privately accessible. A 'snapshot' survey conducted in 2010 found that approximately 4,100 in the town centre were non-retail spaces, a third of which

[18] Appendix C: MBC (2010) *Resident Parking Scheme Survey Report*

[19] Appendix D: JMP (2011) *Maidstone Integrated Parking Strategy Research, Data Report, December 2011*

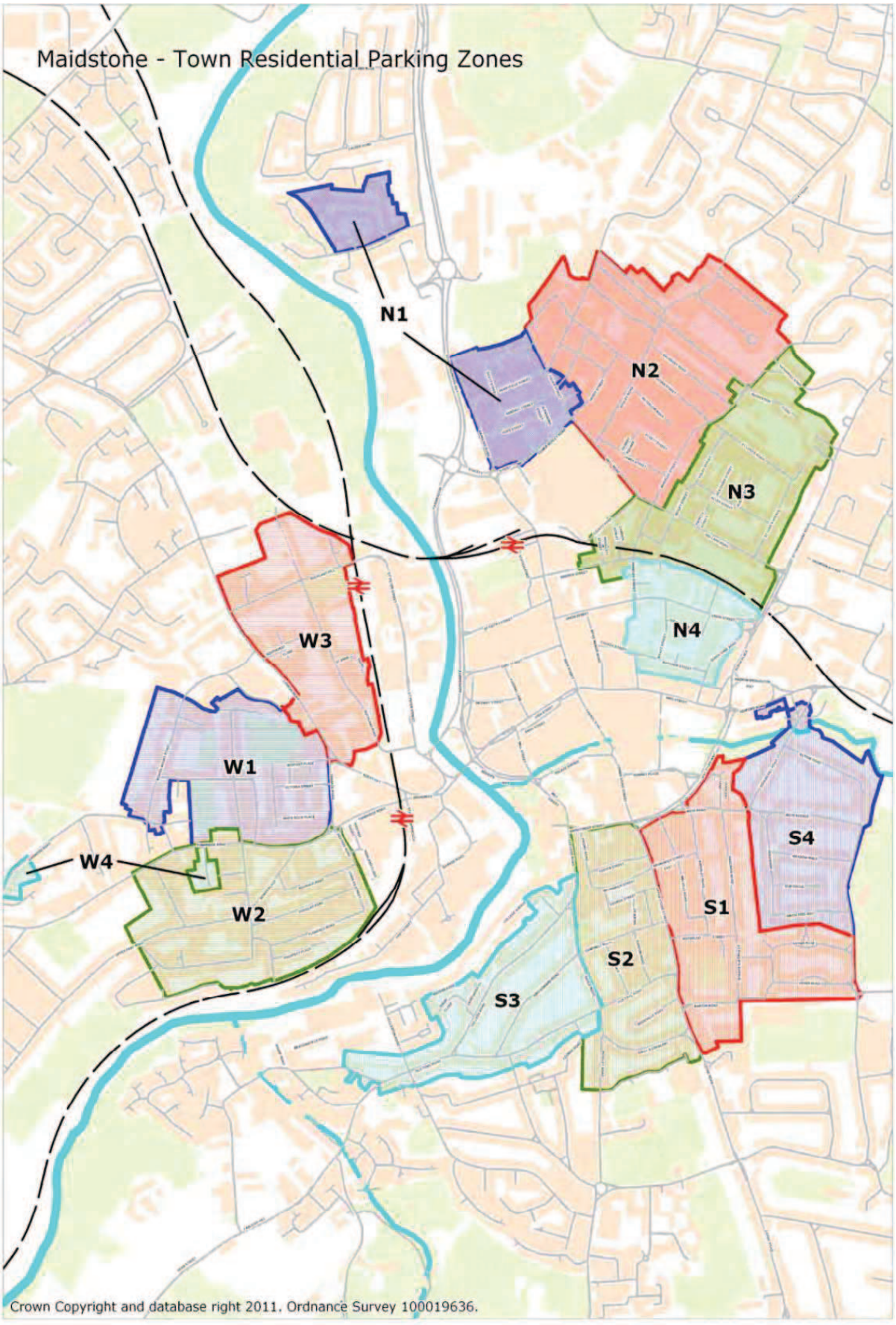

Figure 4: Maidstone Residential Parking Zones

were not occupied[20]. However it must also be noted that this can be partly explained by the significant amount of vacant office space that currently exists within the town.

3.4.5 By national comparison for towns of similar circumstances to Maidstone, parking tariffs in Maidstone are low for both short and long stay parking[21]. The tariffs in MBC-owned car parks are also lower on average than those in the privately-owned commercial car parks. The most noticeable price differential relates to long stay parking, which is charged at £4.50 for four or more hours in MBC car parks and £8.50 in privately-owned car parks. This presents the Borough Council with an opportunity to increase long stay parking charges in the car parks under its control to assist in managing the forecast growth of peak time traffic.

3.4.6 KCC currently applies the parking standards set out in the *Kent Design Guide: Interim Guidance Note 3*[22] for residential developments and the *Kent and Medway Structure Plan: Supplementary Planning Guidance 4*[23] for commercial developments. Government policy no longer requires local authorities to set maximum parking standards[24]; instead, they are encouraged to develop locally appropriate standards taking into account factors such as the availability of public transport and local car ownership levels. MBC's proposed parking standards, which will reflect consideration of all of the issues identified above, will be the subject of a forthcoming Supplementary Planning Document.

3.5 Park and Ride

3.5.1 MBC has been operating Park and Ride services in Maidstone since the early 1980s to address the growing peak time congestion in the town centre and these have met with varying

[20] Appendix E: MBC (2010), *Private Spaces Attached to Commercial Premises, Oct 2010*

[21] Appendix F: MBC (2011), *MBC Town Centre Parking Tariffs 2011*

[22] KCC (2008), *Kent Design Guide Review: Interim Guidance Note 3 Residential Parking*

[23] KCC (2006), *Kent and Medway Structure Plan 2006: Supplementary Planning Guidance 4 – Kent Vehicle Parking Standards*

[24] National Planning Policy Framework, March 2012

levels of success to date. Three sites are currently in operation at London Road (500 spaces), Sittingbourne Road (600 spaces) and Willington Street (400 spaces). A fourth site, Coombe Quarry, was closed in 2007 due to falling patronage. In the financial year 2008/09, 516,000 transactions were recorded on Park and Ride bus services, falling by 17% to 429,000 transactions in 2011/12[25]. The Park and Ride services are also available for use by concessionary pass holders, and indeed approximately half of the trips recorded in 2009/10 were made by this group; however these journeys are wholly subsidised by KCC.

3.5.2 The recent reduction in patronage may be partly explained by the onset of the recession and suppressed economic activity in the town centre. Patronage of the Park and Ride service must also be considered in the context of the supply of town centre car parking (both public and private) and the comparatively low cost of long stay parking tariffs, as discussed above. Nevertheless, the current annual subsidy requirement for the service of approximately £400,000 is a significant concern for the Borough Council at a time of falling public sector funding. This figure includes a large sum for rental of the Sittingbourne Road site.

3.5.3 The Park and Ride service is used by both commuters and shoppers; however it accounts for just 2% of all person trips into the town centre during peak periods[26], compared to 12% for bus and 77% for private car[27]. If it is to fulfil its potential as an integral part of the borough's traffic management strategy, it must be better utilised to target an increasing share of commuters.

3.5.4 Another important constraint on the development of the service is the fact that it is currently charged for on a 'per passenger' rather than 'per car' basis. This discourages its use by car sharers, for whom it is often more cost effective to pay the long stay parking tariff in the town centre. Canterbury City Council already charges on a 'per car' basis for its successful Park and Ride operation, which not only attracts multiple occupancy car trips to the service

[25] MBC (2012) Data extraction from MBC Parking Services

[26] Excluding walking and cycling

[27] Appendix A: Jacobs (2012) *Maidstone Option Testing Model Output, March 2012*

but also yields a payment from concessionary pass holders. However this policy has VAT implications which require thorough investigation by MBC.

3.6 Air Quality

3.6.1 MBC has a statutory duty to undertake local air quality management under the Environment Act 1995, including the conduct of regular reviews and assessments. Where it is found that the objectives set out in the national Air Quality Strategy are unlikely to be met, it must designate an Air Quality Management Area (AQMA) to tackle the problem and produce an Air Quality Action Plan (AQAP) setting out the measures that will be taken to reduce pollution levels. Monitoring carried out by the Borough Council[28] has previously identified areas of exceedence of acceptable Nitrogen Dioxide levels within the town and in 2008 it declared the entire built up area of Maidstone, together with Junctions 6 to 7 of the M20, as an AQMA.

3.6.2 The AQMA is primarily related to road traffic emissions; therefore it is vital that the ITS is aligned with MBC's AQAP. The principle aim of the AQAP is to minimise the effects of air pollution on human health using all reasonable means. It includes a range of measures to reduce emissions at various 'hotspots' around the town, including the six areas that exceed the Nitrogen Dioxide Annual Objective of 40 micrograms per kilogram:-

- Town Centre (including High Street and Upper Stone Street);
- A229 Loose Road / A274 Sutton Road (Wheatsheaf) junction;
- A26 Tonbridge Road / Fountain Lane junction;
- Well Road / Boxley Road junction;
- M20 Junctions 6 to 7; and
- Forstal Road.

[28] MBC (2010), *Maidstone Town Air Quality Action Plan*

3.6.3 The Upper Stone Street and Wheatsheaf sections of the A229 require the greatest reductions in Nitrogen Dioxide and are under investigation for hourly exceedence of the EU Objective.

3.7 Climate Change

3.7.1 It is now generally accepted that human-induced climate change is having a detrimental impact on the global environment. It is caused by the cumulative effect of excess carbon dioxide trapping heat in the atmosphere, which has prompted a significant shift in the Earth's weather patterns[29]. A large percentage of this excess carbon dioxide is derived from vehicle exhausts, which further underlines the importance of transport policies promoting cleaner fuels and modal shift. The Department of Energy and Climate Change has stated that action by local authorities will be critical to the achievement of the legally binding carbon dioxide reduction targets set out in the Climate Change Act – which stipulates a 34% reduction in emissions by 2020 and an 80% reduction by 2050 from a 1990 baseline – as through their powers and responsibilities, including those for land-use planning and local transport, they can have a significant influence over emissions in their area.

3.7.2 In 2008, MBC adopted a 3% annual carbon dioxide reduction target for its own operations[30], with the aim of cutting emissions from its buildings and vehicles by 20% by 2015 and over 30% by 2020. KCC has also sought to reduce its carbon dioxide emissions by 20% by 2015[31]. Additionally, MBC is a member of the Low Emissions Strategies Partnership, which provides a package of measures to accelerate the uptake of cleaner fuels and technologies in and around new development, thereby complementing other mitigation measures such as travel planning and public transport infrastructure.

3.8 Road Safety

[29] KCC (2010) *Climate Change – A guide for Kent's decision makers*

[30] MBC (2011) *Maidstone Carbon Management Plan 2011*

[31] KCC (2010), *The Kent Environment Strategy 2010-13*

3.8.1 The safety of road users is of paramount importance to both the Borough and County Councils. However, although the total number of injury accidents has reduced significantly throughout the county over the last 10 years[32], the number of crashes involving death or serious injury in Maidstone Borough has been consistently above the Kent District average[33]. This is partly attributable to the large urban population and busy road network. Nevertheless, there are specific areas of concern, both in terms of the concentration of crashes at certain locations and the category of road users involved, including 17 to 24 year old car drivers, motorcyclists and pedestrians.

3.8.2 Of the 20 'crash cluster sites' in Kent with the highest number of crashes in the period 2007 to 2010, five are in Maidstone Borough, namely:-

- A229 Running Horse Roundabout;
- A229 Mill Street / Palace Avenue;
- A229 Royal Engineers Road Roundabout;
- A20 Broadway (North of St Peters Street); and
- A20 Ashford Road / King Street.

3.8.3 Inevitably, these locations are also those with some of the highest traffic volumes and most complex vehicle manoeuvres in the county.

3.8.4 KCC has a statutory duty to record injury crash data from Police records and to take any appropriate remedial action. Its road safety education programme targets vulnerable road users in particular, including children and motorcyclists, while enforcement is carried out by Kent Police and the Kent and Medway Safety Camera Partnership. Schemes to tackle identifiable patterns of crashes at specific locations are drawn up and promoted through the Local Transport Plan and are reported to the Maidstone Joint Transportation Board.

[32] KCC (2011), *Local Transport Plan for Kent 2011-16*

[33] Kent Police (2012) Killed and Seriously Injured Surveys and Data Extraction

3.9 Rail

3.9.1 Three railway lines cross Maidstone Borough, serving a total of 14 stations (Fig 5). The operator of the vast majority of rail services in the area is the South Eastern Franchise holder, Southeastern. The franchise was let by the Department for Transport in 2006 for an initial six year period, which has subsequently been extended by an additional two years to March 2014.

3.9.2 The principal rail route serving Maidstone town is the London Victoria to Ashford International line (also referred to as the Maidstone East Line), which includes stations at Maidstone East, Bearsted, Hollingbourne, Harrietsham and Lenham. The average journey time between Maidstone East and London Victoria is one hour. In December 2009, the shoulder-peak services from Maidstone East to London Charing Cross and Cannon Street were replaced by the present half-hourly service to Victoria. This has led to the loss of direct rail services between Maidstone and the City of London, prompting many commuters to travel by road to stations in Ashford, Tonbridge and Malling and Sevenoaks which have retained these services.

3.9.3 The London Charing Cross/Cannon Street to Dover and Ramsgate line passes through the south of the borough, with stations at Marden, Staplehurst and Headcorn. Charing Cross and Cannon Street stations are located in close proximity to the City of London and hence services on this line are heavily used by commuters.

3.9.4 The Medway Valley Line, connecting Strood and Paddock Wood, runs from north to south across the borough, including stations at Maidstone Barracks, Maidstone West, East Farleigh, Wateringbury, Yalding and Beltring. The line operates as part of the Kent Community Rail Partnership, which has successfully delivered improvements to the stations and promoted the service widely. In May 2011, Southeastern commenced the operation of direct peak-time services between London St Pancras and Maidstone West via Strood and High Speed 1 on a trial basis. This has reduced rail journey times between Maidstone and London to 48 minutes and provided commuters from the town with the option of travelling to an alternative London terminus closer to the City. Collectively, these improvements have contributed to a

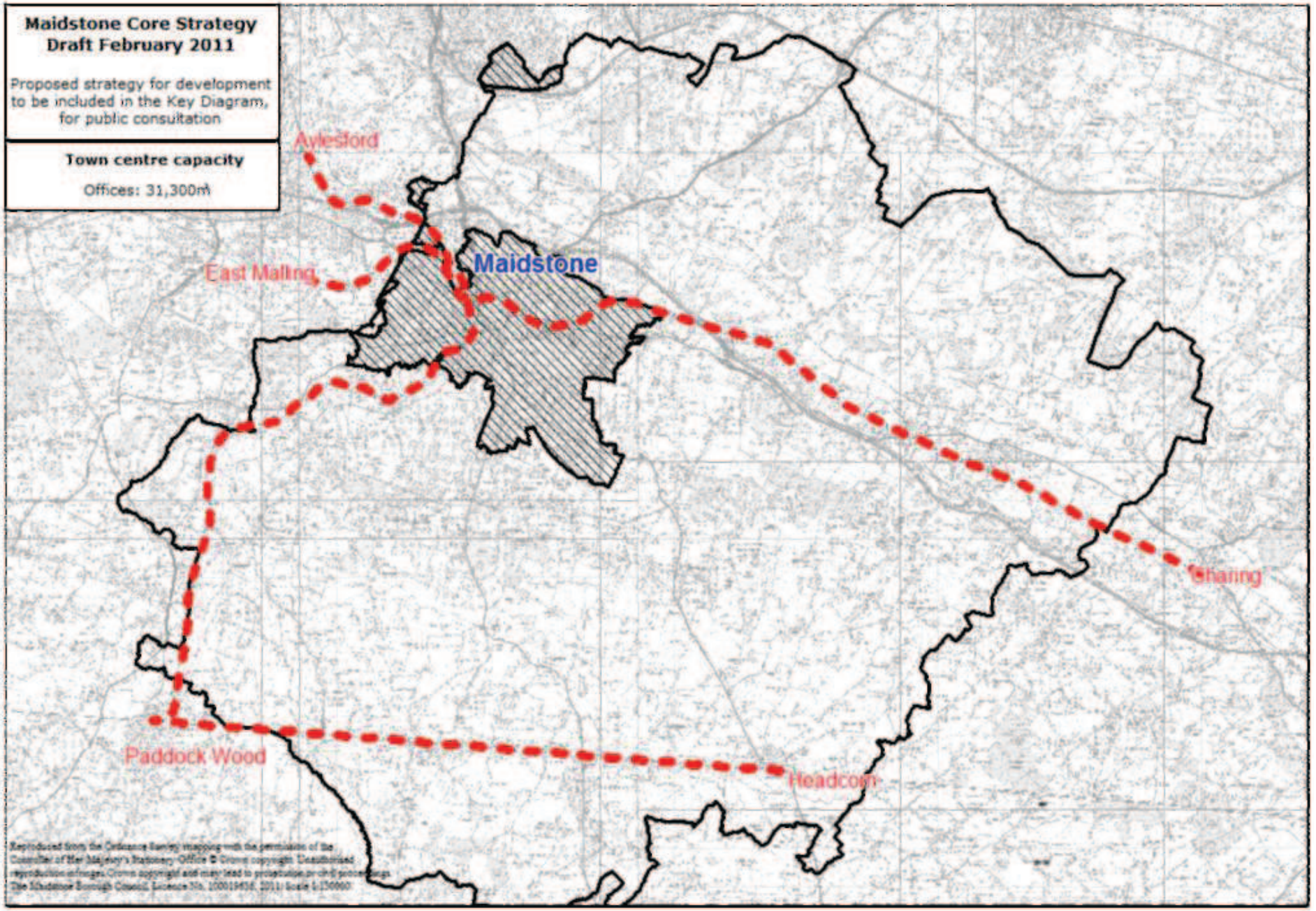

Figure 5: Maidstone Rail Services

25% increase in passenger numbers on the Medway Valley Line since 2007[34], putting it in the top 10 lines nationally for ridership growth according to the Association of Train Operating Companies.

3.9.5 KCC published the Rail Action Plan for Kent in 2011 setting out the County Council's objectives for the new South Eastern Franchise, which is due to commence in April 2014. The reinstatement of services between Maidstone and the City of London is the Plan's top priority. It also recognises the need for the level of rail fares charged in Kent to offer better value for money and for the roll out of Smartcard ticketing offering combined bus and rail travel, similar to the London Oyster card[35].

3.10 Bus

3.10.1 Experience across the UK has shown that bus services of sufficient quality and frequency have the potential to capture a significant proportion of short- and medium-distance trips and to make a strong contribution to the alleviation of peak-time congestion in urban areas. Maidstone has a well established bus network provided principally by Arriva, together with a number of smaller independent operators. The network is centred on Maidstone town centre and combines high frequency routes serving the suburban estates and longer distance services providing connections to many of the outlying villages and neighbouring towns, including Ashford, Sittingbourne, Tonbridge, Tunbridge Wells and the Medway Towns.

3.10.2 Approximately 80% of bus services in Maidstone Borough are operated on a wholly commercial basis. The remainder cannot be provided commercially and are classed as socially necessary services that require subsidy from KCC. They primarily consist of school, rural, evening and weekend services. The County Council has a clearly established policy for the financial support of socially necessary public transport services. This states that the service should provide access to education, employment, healthcare, or

[34] http://www.atoc.org/media-centre/latest-press-releases/many-small-rural-lines-see-resurgence-in-popularity-100613

[35] KCC (2011), *Rail Action Plan for Kent*

essential food shopping which could not otherwise be attained and that the cost of the service should not exceed £3 per passenger journey.

3.10.3 Some of the smaller rural settlements in Maidstone have no conventional bus service. However, these areas benefit from KCC's 'Kent Karrier' service, which provides a combination of demand-responsive and fixed routes for disabled people and those who live more than 500 metres from an established bus route. Due to the significant financial constraints facing the County Council, as well as rising tender prices, socially necessary services – like all non-statutory KCC functions – are currently under review. These routes will be retained in their current form wherever possible; however there is clearly scope for community-based solutions to play a greater role in the public transport network. KCC has already supported Lenham and Stockbury Parish Councils to establish community minibus schemes and is prepared to investigate the feasibility of similar schemes in other rural communities as funds allow.

3.10.4 Although KCC and MBC do not directly influence the provision of commercial bus services, both authorities work closely with the bus operators to improve the quality of services and to ensure that the highway network is planned and managed in a way that facilitates the passage of buses. This relationship has been formalised through the signing of a voluntary Quality Bus Partnership (QBP) agreement, which includes commitments by Arriva, KCC and MBC to work collectively to improve all aspects of bus travel and to increase passenger numbers.

3.10.5 KCC completed the countywide roll out of the Kent Freedom Pass during 2009. The County Council now provides free travel on almost all public bus services in Kent for an annual fee of £100 for young people living in the county and in academic years 7 to 11. This innovative scheme has achieved national recognition and resulted in a significant increase in bus passenger journeys by young people. There is evidence of a 2.6% improvement in journey times outside schools[36] with a high take-up of passes – which is of particular benefit in major education centres such as Maidstone – and there are clear social inclusion benefits for

[36] KCC (2011), *Local Transport Plan for Kent 2011-16*

young people. The scheme receives substantial revenue support from KCC, which amounted to over £10 million net in 2010/11 and options are under consideration for the continuing support of the scheme.

3.10.6 The County Council assumed responsibility from MBC for the administration and funding of the statutory Kent and Medway Concessionary Travel Scheme for disabled people, their companions and those aged over 60, in April 2011. The scheme currently entitles all pass holders to free bus travel between 0930 and 2300 on Monday to Friday, and at any time on Saturdays, Sundays and public holidays. The Scheme has significantly improved access to essential services for older people and the disabled and supports independent living for those who might otherwise be unable to access the public transport network.

3.10.7 As the Local Education Authority, KCC also provides free or subsidised home-to-school transport to children who attend the 'nearest appropriate school for transport purposes', live more than two miles from the school using the shortest available walking route (if they are under eight years old), or live more than three miles from the school using the shortest available walking route (if they are over eight years old). The County Council makes further provision, such as escorts, if this is necessary to ensure school attendance. The statutory home to school transport service will continue during the period of the ITS and KCC will continue to ensure that it is integrated with rural and social services transport wherever possible.

3.11 Taxis

3.11.1 Taxis and Private Hire Vehicles (PHVs) can assist in tackling congestion and encourage sustainable travel by reducing the need for car ownership. They can also play an important role in providing access to services for rural residents and those who are unable to use conventional bus services. Maidstone town centre's main taxi ranks are located on the High Street and at Maidstone East and West stations. The recently completed public realm enhancement scheme has allowed for direct taxi access to the top of the High Street from the A229 Fairmeadow (a route previously only permissible for buses); thereby avoiding the circuitous route

via Earl Street. However, there is a need for the taxi ranks at the two railway stations to be similarly improved as part of any future redevelopment of these sites.

3.12 Walking and Public Realm

3.12.1 Nationally, the number of trips made by foot has declined by 24% between 1995 and 2008, from 292 to 221 trips per person per year[37]. In Maidstone town centre, levels of walking appear to have fluctuated in recent years. KCC counts of pedestrian movements across the town's inner cordon during a single 12-hour period indicated a fall of 2% between 2006 and 2008, followed by an increase of 9.6% in 2009 and a further fall of 6.8% in 2010. It should be noted in this respect that pedestrian flows are highly sensitive to weather conditions. Nevertheless, both the County and Borough Councils recognise that attractive and accessible town centre streets can make a vital contribution to the regeneration of local communities by supporting businesses and retailers. To this end, high streets should be viewed not simply as market places but also as meeting places and venues for civic functions and performances.

3.12.2 One of the most important ways of making streets more attractive is to reduce the dominance of vehicles. This can be achieved by restricting traffic, slowing it down and making drivers more aware of other road users by changing the carriageway/pavement distinction to a 'shared space', where no user has priority. Ideally, people should be able to walk wherever they want to, by the most direct route, with as little conflict with traffic as possible. Unfortunately, the edges of Maidstone town centre can be a particularly hostile area for pedestrians in this respect. The gyratory system and River Medway often present themselves as barriers to pedestrians, who are presently required to traverse one of the two bridges and cross several lanes of traffic. A delicate balance must therefore be struck between the competing needs of maintaining capacity on the strategic road network and creating a safe and attractive environment for pedestrians.

[37] KCC (2011), *Local Transport Plan for Kent 2011-16*

3.12.3 The recently completed Maidstone High Street Public Realm Project (Fig 6) has sought to incorporate all of the elements of good street design in improving how the High Street looks, feels and works. The scheme sees less road space given over to vehicles and incorporates high quality surfaces and a new public space outside the Town Hall. The wider pavements and new crossing points, including the shared space feature at the Week Street/Gabriel's Hill crossroads, make the street more pedestrian-friendly, whilst maintaining access for buses, taxis, loading vehicles and Blue Badge holders. It is hoped that the scheme will attract more shoppers and tourists and encourage them to relax and spend time in the area.

3.12.4 The rural parts of Maidstone Borough are an important part of its tourism 'offer'; yet it is also a valuable asset for existing residents to enjoy. Being able to access the countryside is important to health and wellbeing and the extensive network of rural lanes and Public Rights of Way (PRoW) act to facilitate this. The PRoW network accounts for 42% of Kent's highway network by length and is managed by KCC's Countryside Access Service. In 2007, the County Council published its Countryside Access Improvement Plan (CAIP); a ten year strategy which sets out KCC's proposed approach to accommodating the present and future demands on the PRoW network. Amongst the priorities identified within the CAIP is improved maintenance of the network, greater off-road access for equestrians and cyclists, and the removal of limitations such as stiles[38].

3.13 Cycling

3.13.1 Undertaking a four mile commute to and from work by bicycle rather than by car reduces congestion, brings numerous health benefits and saves half a tonne of Carbon Dioxide a year[39]. Both KCC and MBC are therefore committed to

[38] KCC (2007), *Countryside Access Improvement Plan 2007-2017*

[39] KCC (2011), *Local Transport Plan for Kent 2011-16*

Figure 6: High Street Public Realm Scheme

the provision of a comprehensive cycle network for residents and visitors to Maidstone. The borough currently has a number of cycle routes that link the town centre to the suburban areas; however connections within the town and further afield are limited and there is a lack of cycle parking at key destinations. Consequently, cycle use in Maidstone is very low, with the 12-hour (7am to 7pm) inner cordon counts in 2009 recording 718 cyclists compared to the 24-hour vehicle count of over 90,000 cars. This number of cycle movements represented an increase from previous years (567 in 2007 and 605 in 2008) but still accounted for less than 1% of the number of cars. The challenges and opportunities related to cycling, together with the County and Borough Councils' objectives for the development of the cycle network, are considered in detail in the Maidstone Cycling Strategy[40].

3.14 Travel Plans

3.14.1 A Travel Plan for a site or organisation is a package of measures and initiatives aimed at encouraging more sustainable travel, with an emphasis on reducing single occupancy car use. They are especially suitable for large employers with high levels of car commuting and business travel, where reducing car parking provision and incentivising walking, cycling, public transport and car sharing can both reduce their overheads and alleviate peak-time congestion. Aside from having their own corporate Travel Plans, KCC and MBC have a strong track record in securing Travel Plans for new developments. The County Council also has a very successful School Travel Plans team, which has supported the preparation and implementation of Travel Plans for the majority of schools in Maidstone Borough.

3.14.2 MBC is a founding member of the 'New Ways 2 Work' Partnership managed by KCC. The Partnership brings together public and private sector organisations on a voluntary and informal basis to assist with the delivery of quality Workplace Travel Plans that are good for businesses, good for their employees and good for the

[40] Appendix G: MBC (2012) *Maidstone Cycling Strategy*

environment through practical solutions aimed at resolving the real and perceived obstacles to sustainable commuting. KCC also promotes membership of the kentcarshare website which links drivers and passengers who make similar journeys and encourages them to share their trip. Travel Plans are managed using the County Council's iTRACE system, which creates a database through which targets for individual sites can be regularly monitored and developers can be encouraged to fulfil their conditions. Inevitably, the resources available to KCC and MBC for these activities has reduced in recent years; therefore both Councils will increasingly seek to secure sustainable travel improvements and incentives at the commencement of new development, to lock in the benefits at the outset.

3.15 Freight and Operation Stack

3.15.1 The road haulage industry is crucial to the efficient functioning of the local and national economy. However, Heavy Goods Vehicle (HGV) traffic has been identified as having an impact on the main routes between Maidstone town centre and the Rural Service Centres to the south of the borough. Indeed, the only permitted route for HGV traffic seeking to access Headcorn, Marden and Staplehurst from the M20 is the A229 through the town. Whilst this serves to exacerbate the congestion, safety and air quality issues associated with the Maidstone gyratory system, it is recognised that the principal alternative route – the B2163 through the villages of Leeds and Langley – is wholly unsuitable for HGVs and hence is subject to a weight restriction. There is nevertheless scope for KCC and MBC to work more closely in partnership with the road haulage industry to agree suitable lorry route networks, to concentrate deliveries outside of peak periods where possible and to reduce the environmental impact of freight. The *Freight Action Plan for Kent 2012 – 16* is primarily aimed at dealing with these issues and is also tasked with finding a long-term solution to Operation Stack (see below).

3.15.2 Operation Stack comes into effect when cross-Channel traffic is disrupted by the weather, mechanical problems or industrial action. The procedure, which is managed by Kent Police, involves closing sections of the M20 and using them to park HGVs until they can be accommodated on ferry and/or Channel Tunnel

services. Stage 2 of Operation Stack requires the closure of the eastbound M20 between Junctions 8 and 9, with non-HGV traffic being diverted on to the A20. This can result in long delays on both the motorway and the local road network through Maidstone, which has a profound impact on the local economy. KCC has identified a site for a large off-carriageway lorry park to accommodate Operation Stack traffic at Aldington, between Junctions 10 and 11 of the M20; however there is as yet no confirmed source of funding for this. Nevertheless, the County Council has welcomed the Government's commitment to introduce a scheme of Lorry Road User Charging during this Parliament, which will level the playing field for UK hauliers vis-à-vis their foreign counterparts, and is lobbying the Department for Transport to apportion part of the revenue raised to deliver the Operation Stack lorry park.

3.16 Relationship with other Authorities

3.16.1 It is vital that MBC and KCC carefully consider the potential impacts of the housing and employment growth proposed for Maidstone on the wider sub-region, particularly in respect of transport. The growth aspirations of neighbouring authorities will also have an impact on Maidstone's transport network which must be quantified as far as possible. Special Workplace Statistics data collected in 2001 showed that the primary destination for out-of-district trips was Tonbridge and Malling, with over 4,400 trips per day. Of these, some 82% were made by car[41]. This was followed by Medway, which attracted 2,000 trips per day; 90% of which were made by car. It should be noted, however, that the high-frequency Route 101 bus service between Maidstone and the Medway Towns has been substantially upgraded in recent years and now captures a significant proportion of commuter trips. Tonbridge and Malling and Medway also generate the largest numbers of trips to Maidstone, at 5,700 (75% by car) and 4,100 (81% by car) respectively.

3.16.2 There is particularly strong interaction between Maidstone and the Medway Valley settlements in Tonbridge and Malling via the

[41] Office for National Statistics (2001) *2001 Census: Special Workplace Statistics*

M20/A20 corridor, which suffers from severe peak-time congestion and includes five AQMAs. Tonbridge and Malling Borough Council adopted its Local Development Framework Core Strategy in 2007 and there are existing and planned major development sites at Kings Hill, Leybourne Chase (West Malling), Holborough Valley and Peters Pit (north and north east of Snodland respectively). As the development of these sites continues, the M20 and A20 between Leybourne and Maidstone will come under increasing pressure as the County Town is likely to act as the primary education, employment and retail centre for their residents. Financial contributions have therefore been sought from the developers of these sites for improvements to sustainable transport provision on the A20 corridor and at West Malling Station to enhance the people-moving capacity of the network and discourage short-distance car trips on the M20.

3.16.3 Swale is part of the Thames Gateway Growth Area and already generates a significant number of peak-time trips to and from Maidstone, primarily via the A249. This places pressure on the capacity of M20 Junction 7, which in turn causes congestion on the southbound A249 in the morning peak. Bus services on the A249 corridor are relatively infrequent; however the Sittingbourne Road Park and Ride site is well-positioned to capture a proportion of these trips. Lengthy inbound queues also form on the A26 Tonbridge Road as commuters from Tonbridge and Tunbridge Wells access the town centre in the morning peak. Following the recent opening of the new Tunbridge Wells Hospital at Pembury, the A26/A228 corridor has taken on greater strategic significance and the frequency of bus services between Maidstone and Tunbridge Wells have been increased accordingly.

3.16.4 KCC enjoys a close working relationship with the Highways Agency (HA) in managing the road network. The UTMC exchanges information with the HA's traffic management system to provide drivers with coordinated journey information via Variable Message Signs and to enable the joint management of incidents. The M20 is a Controlled Motorway between Junctions 4 and 7, which enables the HA to set variable speed limits using overhead gantry signage according to the prevailing traffic conditions. This can assist in easing congestion and, in turn, restricting air pollution.

Transport Vision and Objectives

4.0 A Transport Vision for Maidstone

4.0.1 By 2026, Maidstone will have a transport network that supports a prosperous economy which is less reliant on the private car, and more proportionately shared among other travel modes such as walking, cycling and public transport. The transport network will promote Maidstone town centre as a regionally important transport hub and will have sufficient people and goods moving capacity to support the growth projected by the Core Strategy for 2026. The borough will have a safer environment for pedestrians, cyclists and motorists and its air will be cleaner with more low carbon vehicles travelling on our roads. Both the borough's Rural Service Centres and Maidstone town centre will be better connected to facilities and employment within the borough. Strategic links to locations outside of the borough will be improved, and destinations such as London will be more accessible and convenient to travel to. Overall, Maidstone borough will be a better place to live with an enhanced quality of life supported by an improved transport network.

4.1 Transport Objectives

The transport objectives for the borough and how these will be achieved are as follows:

4.1.1 ***Objective 1: Ensure the transport system supports the growth projected by Maidstone's Core Strategy and facilitates economic prosperity***

This will be achieved by:

- Integrating transport and land use planning to support sustainable growth, particularly for growth areas identified in the Core Strategy
- Securing Transport Assessments for new development in order to sufficiently identify and mitigate the impacts of development on the transport network

- Directing new development to locations that have greater access to public transport and can minimise the impact on the transport network
- Securing developer contributions to ensure transport improvements mitigate the impacts of new development
- Investing in better public transport provision
- Enhancing the public realm for both walking and cycling
- Improving the accessibility and safety of the Borough's transport network

4.1.2 ***Objective 2: Effectively manage and enhance the Borough's transport infrastructure including its road network, parking facilities, bus routes and the Park and Ride service to increase the people moving capacity of the existing road network, help manage traffic congestion, improve reliability of transport and ensure a more efficient movement of goods and people***

This will be achieved by:

- Investing in enhanced public transport provision
- Lobbying Central Government to improve public transport policy and funding, including bus and rail services
- Reducing the demand for road space by enhancing the public realm, facilities for walking, cycling, and public transport
- Encouraging a greater use of car clubs
- Minimising the impact of road works on the highway network
- Reviewing the need for traffic signals where appropriate
- Securing Construction Management Plans to minimise impacts from new developments during construction
- Implementing freight initiatives and partnership working to improve the reliability and efficiency of deliveries

4.1.3 *Objective 3: Promote the enhancement of strategic transport links to and from Maidstone, and improve the safety of pedestrians, cyclists and all other road users*

This will be achieved by:

- Working with bus operators through the Maidstone Quality Bus Partnership to increase bus frequencies across the borough.
- Working with Government to confirm Maidstone East's status as the principal Kent terminus for Thameslink rail services from 2019 and to secure all-day High Speed rail services between Maidstone West and London St Pancras
- Improving pedestrian crossing facilities
- Creating new and improved cycle routes for cyclists and advanced stop lines at signalised junctions
- Creating attractive streets to encourage more pedestrian activity and natural surveillance, using 'Design Against Crime' initiatives
- Implementing targeted speed reduction, including the creation of 20mph speed limits and zones where appropriate
- Providing road safety education and awareness campaigns including a programme of annual initiatives

4.1.4 *Objective 4: Encourage sustainable travel choices by prioritising walking, cycling and public transport use*

This will be achieved by:

- Working with bus operators through the Maidstone Quality Bus Partnership to increase bus frequencies across the borough.
- Implementing the Maidstone Cycling Strategy (Appendix G)

- Campaigns and Travel Plan development with schools, businesses and other organisations
- Improving the pedestrian environment including better paving, crossing facilities, seating and signage
- Cycle training for both adults and children as well as more secure cycle parking
- Improving existing cycle routes and creating new cycle routes with better signage and road markings
- Working with transport providers to improve public transport integration, facilities and passenger information
- Expanding the Kent Freedom Pass scheme to 16-19 year olds

4.1.5 *Objective 5: Develop, maintain and promote a high quality and accessible pedestrian environment*

This will be achieved by:

- Improving the look and feel of the street to create places where people interact, play, shop, live, work and socialise
- Removing unnecessary street clutter such as guard-railing and redundant poles
- Road and footway maintenance
- Maintenance of bridges, structures and highway assets
- Delivering public realm improvement schemes as resources allow to enhance the pedestrian environment

4.1.6 *Objective 6: Address the air quality impacts of transport*

This will be achieved by:

- Implementing the Maidstone Air Quality Action Plan
- Encouraging the development of car clubs and low carbon vehicle technology

- Managing the forecast increase in traffic flows and encouraging a shift towards more sustainable travel
- Implementing a road user hierarchy that prioritises walking and cycling
- Encouraging better driver behaviour to reduce vehicle emissions
- Organising events and campaigns that promote sustainable travel
- Planting more street trees and urban greening
- Where necessary, using travel demand measures such as parking tariff levels to manage demand for vehicle trips

4.1.7 *Objective 7: Ensure the transport network provides inclusive access for all users*

This will be achieved by:

- Reducing traffic dominance and severance
- Improving road user safety
- Encouraging inclusive modes of transport that are affordable and easily available to everyone, such as walking, cycling and public transport
- Improving the provision of transport information
- Removing physical obstacles and introducing more accessible elements to the pedestrian environment such as dropped kerbs and wider footways

4.1.8 *Objective 8: Ensure that the provision of parking is fair and proportionate by considering the needs of all users, whilst also encouraging sustainable travel choices.*

This will be achieved by:

- Reviewing the Residents' Parking Zones to ensure they are fair, simple and meet the needs of all road users

- Ensuring that parking enforcement is fair and proportionate
- Avoiding an overprovision of parking provision that would otherwise undermine the use of more sustainable modes of travel
- Where necessary, using parking tariffs to encourage a shift to more sustainable modes of travel when one is available

Policy Evolution Narrative

5.0 The South East Urban Extension

5.0.1 Initially in 2007, the Core Strategy advocated a Preferred Option (known as Option 7C) for an urban extension of approximately 4,000 to 5,000 houses to the south east of Maidstone within the Park Wood / Langley area. In terms of transport infrastructure, it was planned to support this growth with the provision of a new bypass road between the A20 Ashford Road / M20 Junction 8 and the A274 Sutton Road, to the north of the Five Wents junction.

5.0.2 Several variations of a route for the bypass were investigated and priced to identify an option that would be acceptable in planning terms. This meant a route that minimised the impacts on both the landscape character of the area and on local biodiversity. The preferred route devised was one that avoided directly cutting through the countryside by incorporating two sweeping curves with a contra-flow single carriageway with a 60mph speed limit. This option was known as the South East Maidstone Strategic Link (SEMSL) and was priced at approximately £75million.

5.0.3 The preferred route option was modelled by Jacobs in 2009 for the future years of both 2017 and 2026[42]; the end of the Core Strategy period. It was concluded that SEMSL had strong potential for handling traffic from the south and east of Maidstone and the urban extension. Unfortunately however, it is not forecast to significantly reduce town centre congestion, which was one of its key objectives.

5.1 Departure to a Dispersed Development Pattern

5.1.1 MBC has since taken the decision not to pursue the South East Urban Extension due to concerns regarding the deliverability of this option[43]. The onset of the economic downturn in 2008 influenced this decision and MBC concluded that the £75million estimated cost of the SEMSL could not be viably funded from

[42] Appendix H: Jacobs (2009) *Maidstone Visum Model 2017 & 2026 Forecast Models South East Maidstone Strategic Link Impacts Summary, December 2009*

[43] MBC (2012) *Maidstone Sustainability Appraisal Report*

developer contributions within the Core Strategy period to 2026. If MBC were to proceed with implementing the South East Urban Extension without a strategic link road, it would have an unacceptable impact on congestion and subsequent air quality[44]. This would also incur other negative impacts on the historic and wildlife-rich landscape in this vicinity[45].

5.1.2 This now meant that the south east urban extension (Option 7C) was no longer deliverable and so a Core Strategy containing this approach would not be judged sound. Mindful of the need to balance housing and employment development with adequate transport infrastructure, and to develop local policies that are in general conformity with all South East Plan policies including the protection of natural assets, supporting the character of rural areas, and reducing transport congestion, MBC subsequently developed a dispersed development distribution pattern including several strategic development areas.

5.1.3 Transport modelling was undertaken for several option variations to the total number of homes and differing development patterns[46] and the decision was taken by MBC to approve for consultation a Core Strategy development distribution of 10,080 homes alongside strategic employment locations. As a result, the transport infrastructure solutions had to be reconsidered accordingly.

5.2 Options Reconsidered

5.2.1 Maidstone has a constrained transport network with limited opportunities to increase road capacity (or 'vehicle moving' capacity) within the existing development pattern of the urban area. This presents several challenges when attempting to provide for a dispersed development pattern which focuses new housing and employment on the fringes of the Maidstone Urban Area. Therefore an approach to increase the 'people moving'

[44] Appendix H: Jacobs (2009) *Maidstone Visum Model 2017 & 2026 Forecast Models South East Maidstone Strategic Link Impacts Summary, December 2009*

[45] MBC (2012) *Maidstone Sustainability Appraisal Report*

[46] Appendix I: Jacobs (2011) *Maidstone Option Testing Summary Tables, March 2011*

capacity of the transport network has been adopted, which focuses on increasing the uptake of sustainable modes of transport including more of a focus on public transport such as Park and Ride, commercial bus services, walking and cycling.

5.2.2 Modelling undertaken in 2011[47] included one option (Option S) for 10,080 homes alongside strategic employment locations with accompanying transport measures including improvements to Park and Ride and commercial bus services. A transport strategy focussed on these modes was considered the most cost effective means of accommodating the dispersed development distribution proposed whilst continuing to manage congestion in and around Maidstone town centre. Three variations to this strategy were subsequently modelled, including a 'Do minimum' option that essentially maintained the existing Park and Ride network with a few small-scale improvements; a 'Radial Park and Ride Sites' option that increased the number of sites to six at various satellite locations around the town centre with some bus priority improvements; and a 'North / South Park and Ride spine' option which closed all existing Park and Ride sites and built two new large sites; one to the north and one to the south of the town. The two Park and Ride sites in this latter option were linked to the town centre with significant bus priority measures, including dedicated bus lanes. In addition, detailed research and analysis was undertaken into[48] the town centre parking supply and tariffs, to determine what travel demand measures could be implemented; the performance of the current Park and Ride service; and the infrastructure required to implement these options.

5.2.3 Using the 'Do Minimum' option as a baseline, the remaining two options 'Radial P&R sites' and 'North / South P&R spine' were assessed in terms of scheme costs and benefits to the wider borough[49]. Both of these options recorded positive cost / benefit ratios, with the 'North / South Park and Ride spine' providing the greatest benefits. The capital costs for these schemes included a

[47] Appendix I: Jacobs (2011) *Maidstone Option Testing Summary Tables, March 2011*

[48] Appendix D & J: JMP (2011) *Maidstone Integrated Parking Strategy Research, Data Report, December 2011* & JMP (2011) *Maidstone Integrated Parking Strategy Research, Analysis Report, December 2011*

[49] Appendix B: JMP (2012) *Maidstone Integrated Parking Strategy Research Options Appraisal Report 2012*

cost of between £41million to £56million for Option 2 'Radial Park and Ride sites' and between £53million to £68million for Option 3 'North / South Park and Ride spine'.

5.3 Selecting an Option

5.3.1 The modelling results indicated that the principle of Option 3 of developing two large Park and Ride sites on a 'north/south spine' was correct; however the location of these sites was equally important. It was suggested that the two locations for Park and Ride with the greatest potential demand were within the vicinity of the M20 Junction 7 / Newnham Court in the north and adjacent to Linton Crossroads in the south[50]. This stood in contrast to the Option 3 'North / South Park and Ride Spine' option that included one large site near the M20 Junction 6 at Cobtree Roundabout and the other near Langley on the A274 Sutton Road. Therefore the way in which to progress this option would be to develop a 'hybrid' scheme including the 'North/South Park and Ride Spine' principle but to have large Park and Ride sites at both the M20 Junction 7 / Newnham Court and near Linton Crossroads.

5.3.2 A 'Call for P&R Sites' was issued to the public from 18th May 2012 to 22nd June 2012 to identify if land would be available at these locations and to seek expressions of interest for developing park and ride sites at the above locations. Two sites were forthcoming from the public; one near the M20 Junction 7 / Newnham Court and the other near Linton Crossroads. However, an assessment of the relevant planning issues relating to landscape and biodiversity impacts meant that neither of these sites could proceed. The M20 Junction 7 is constrained in large parts due to the setting of the Kent Downs AONB, as well as a number of designated Sites of Special Scientific Interest (SSSI) and local wildlife sites (LWS). The location at Linton crossroads is primarily constrained due to the setting of the countryside south of the Greensand Ridge escarpment and issues relating to the inter-visibility with the Linton conservation area. If the site at Linton Crossroads were developed it would also lead to unacceptable

[50] Appendix K: JMP (2012) *Review of Maidstone Modelling and Appraisal Work, April 2012*

coalescence in an area where the character is primarily one of only loosely related settlements.

5.3.3 Although increased congestion was identified in the traffic modelling results for Option 1 'Do Minimum', this remained at acceptable levels throughout the Core Strategy period and the likelihood of gridlock was very low. Therefore in light of this and of the planning issues raised in 5.3.2; MBC felt that it was unable to establish an 'over-riding need' in order to justify the development of the 'North South Park and Ride Spine' scheme.

5.3.4 The significant cost of the 'hybrid' option was also considered unaffordable for the plan period and would require a significant CIL contribution from developers. The scale of contributions required would make development in the Borough very expensive and beyond what is considered appropriate and viable to charge for new developments. This issue in addition to the remaining planning issues identified in 5.3.2 brings into question the deliverability of this 'hybrid' scheme. This in itself jeopardises the soundness of the Core Strategy in accordance with the National Planning Policy Framework 2012. MBC does not expect this 'hybrid' scheme can be delivered for the reasons outlined above.

5.4 The Preferred Option

5.4.1 The remaining deliverable alternative left available to MBC was to implement an option that included only those components of the options modelled that are affordable and are able to best target areas of congestion. This essentially uses the 'Do Minimum' option as a base to then continue with and improve the existing Park and Ride Service; improving commercial bus services to better than 10min frequency intervals; building a new northbound bus lane on A274 Sutton Road; and improving various key junctions around the borough, in particular in the strategic development areas to the north west and south east of the Maidstone Urban Area and also within the vicinity of the M20 Junction 8. An action plan for implementing this option is included in Chapter 5 *An Action Plan for Delivery*. At a total capital expenditure cost of some £38 million this option is considered affordable and deliverable and able to provide the

transport infrastructure necessary to support the development proposed by the Core Strategy.

An Action Plan for Delivery

6.0 An Integrated Approach to Delivery

6.0.1 An integrated approach needs to be taken to address the transport issues the borough faces. This is because transport issues are inherently linked to one another and by tackling one; there will inevitably be a positive or negative impact on another.

6.0.2 It is also important to recognise that transport itself forms part of the wider planning challenge. Indeed, it is land use that ultimately generates trips on the transport network and if these components are considered and addressed as a collective whole, then greater value will be delivered than if each were dealt with in isolation.

6.1 Action Plan

6.1.1 The action plan below attempts to link the components of the transport network both with each other and with land use as a whole.

6.1.2 Actions will be phased so that they will be implemented either over the short, medium or long term (see para 7.6 *Funding and Delivery Plan*). These actions will be crucial to ensuring that Maidstone functions effectively both as the County Town of Kent and as a regionally important transport hub.

6.1.3 All the measures detailed in this strategy are considered important, however there are five primary infrastructure improvements (or actions) that must be delivered by this strategy and so are given the highest priority. These include Actions 1, 2, 15, 16, and 17 as detailed in the action plan below.

6.1.4 Actions relating to transport infrastructure provision have been identified in the Draft Infrastructure Delivery Plan (IDP) that accompanies the Draft Core Strategy. The IDP also identifies capital funding required and potential funding sources to satisfy these requirements. In total the IDP identifies some £38 million worth of capital investment in transport and public realm improvement measures also detailed in the ITS.

6.1.4 The actions are as follows:

6.2.1 *Action 1 (2012 – 2015): Implement highway improvement schemes at strategic development locations in the north west and south east of Maidstone Urban Area and in the vicinity of M20 Junction 7 and M20 Junction 8 to enable development at strategic site allocations*

6.2.2 The development proposed by the Core Strategy will result in a significant increase in the number of private vehicle movements across the borough[51]. These will inevitably have an impact on road junctions within the vicinity of new development by increasing the volume of vehicles that use them. Therefore improvements have been identified as being required at the following key locations:

a) M20, Junction 7. This includes converting the M20 eastbound approach and the two A249 approaches to the roundabout to traffic signals, whilst leaving the M20 westbound approach as a give way; to prevent traffic tailing back on to the motorway during peak periods. In addition, road markings will be rearranged to improve visibility on the roundabout[52].

b) Bearsted Roundabout / New Cut Roundabout. This includes capacity improvements and provision of a pedestrian crossing at Bearsted Roundabout and at New Cut Roundabout.

c) Bearsted Rd, between Bearsted Roundabout and New Cut Roundabout. This includes the upgrading of the road to a dual carriageway in both directions.

d) Constructing bus priority measures on New Cut Road

[51] Appendix A & L: Jacobs (2012) *Maidstone Option Testing Model Output, March 2012* & Jacobs (2012) *Technical Note Base & 2026 Option 1 (Do minimum) Turning Movements*

[52] Appendix M: Highways Agency (2008) *M20 Maidstone New Growth Point, 2008*

e) Signalising bus priority measures at the junction of New Cut Road and A20 Ashford Road

f) M20, Junction 5. This will include providing additional capacity on the M20 link roads to Coldharbour Roundabout; Coldharbour Roundabout itself; the 20/20 roundabout and the Hermitage Lane / London Road junction.

g) Queens Rd / St Andrews Rd / Tonbridge Rd / Fountain Lane junctions. This includes an opening up of the eastern end of St Andrews Road onto the Queens Road / Tonbridge Road junction. The direction of traffic between each of these junctions would be made one way in a clockwise direction.

h) Hermitage Lane in the vicinity of Barming Rail Station. This would include a new pedestrian crossing near the vehicle access to the rail station. To accommodate this, there will be a requirement to reorganise the existing bus stop layout

i) Constructing a new access road between Gore Court Road and Bicknor Wood to provide sufficient access to the new strategic site north of Bicknor Wood

j) Widening Gore Court Road between Bicknor Wood and White Horse Lane

k) Willington St / Sutton Rd junction. This includes a widening of the approaches from Willington St to create an additional left turning lane into A274 Sutton Road and provision for entry into a new bus lane

l) Constructing a new footway on the north side of Sutton Road

m) Constructing a new northbound dedicated bus lane on the A274 Sutton Road

n) Signalising the A20 Ashford Rd / Penford Hill Roundabout

o) Signalising the A20 Ashford Rd / Eyhorne Street / Great Danes Hotel Access

p) Improving the A20 Ashford Rd / M20 Link road Roundabout

q) A20 Ashford Rd / Willington Street junction. This includes a widening of the left turning movement from Ashford Road into Willington Street

r) M20 Junction 8. This includes building a two lane dedicated left slip to the westbound M20 slip road, and a reorganisation of the westbound merge[53].

6.2.3 Projects (a) – (r) are priority schemes to support the housing and employment growth proposed by the Core Strategy and will primarily be funded by the Community Infrastructure Levy (CIL) and developer contributions secured under Section 106 of the Town and Country Planning Act 1990. Locations (s) to (w) (below) are identified 'crash cluster sites' which are being monitored by KCC on an annual basis for changes to the crash patterns and to identify potential crash remedial measures to be delivered using the County Council's Integrated Transport Block funding:

s) Running Horse Roundabout

t) Mill Street / Palace Avenue

u) Royal Engineers Rd Roundabout

v) A20 Broadway (north of St Peters St Maidstone)

w) A20 Ashford Rd / King Street junction

6.2.4 It should be noted that no improvements have been identified for M20 Junction 6 because land constraints mean that improvements would be very expensive compared with the level of benefit

[53] Appendix M: Highways Agency (2008) *M20 Maidstone New Growth Point*

provided[54], so these funds will be better spent elsewhere on the network.

6.2.3 The following table shows the cost range of these strategic junction improvements:

Cost Estimates for Highway Improvements at Strategic Locations			
Strategic Development Location	***Scheme Location***	***Minimum Cost (£££) 000s***	***Maximum Cost (£££) 000s***
M20, Junction 7	M20 Junction 7	200	200
M20, Junction 7	Bearsted Roundabout / New Cut Roundabout	500	700
M20, Junction 7	Bearsted Rd, between Bearsted Roundabout and New Cut Roundabout	1300	1600
M20, Junction 7	New Cut Rd / A20 Ashford Rd	600	800
NW	M20 Junction 5 / Coldharbour Roundabout / 20-20 Roundabout /Hermitage Lane / London Rd junction	3,800	5,400
NW	Queens Rd / St Andrews Rd / Tonbridge Rd / Fountain Lane junctions	670	1060

[54] Appendix M: Parsons Brinckerhoff (2008) *Highways Agency M20 Maidstone New Growth Point*

NW	New pedestrian crossing Hermitage Lane near Barming Rail Station	91	95
SE	New road between Gore Court Road and Bicknor Wood	800	970
SE	Widening of Gore Court Road between Bicknor Wood and White Horse Lane	860	1,040
SE	Willington St / A274 Sutton Rd junction	630	820
SE	New footway on north side of Sutton Rd	180	220
SE	A274 Sutton Road northbound bus lane between Willington Street and Wheatsheaf Junction	5,910	7,260
M20, Junction 8	Ashford Rd / Penford Hill junction	281	562
M20, Junction 8	Ashford Rd / Eyhorne Street / Great Danes Hotel Access	324	691
M20, Junction 8	Ashford Rd (A20) / M20 Link road Roundabout	148	182
M20, Junction 8	Ashford Rd (A20) / Willington Street Junction	52	98
M20, Junction 8	M20 J8 Westbound slip lane and merge	1,950	1,950

6.3.1 *Action 2 (2012 – 2015): Improvements to transport infrastructure at selected Rural Service Centres*

6.3.2 Harrietsham:

a) New pedestrian and cycling link between Harrietsham Primary School and Harrietsham railway station.

6.3.3 Headcorn:

a) Footway, carriageway and street-lighting improvements on Grigg Lane and Oak Lane. Improved pedestrian access to the railway station from the east will also be investigated and implemented if viable.

6.3.4 Staplehurst:

a) An increase of approximately 100 car parking spaces at Staplehurst Railway Station to accommodate the additional movements expected as a result of new development in the village;

b) A new pedestrian and cycling link between the railway station and the residential area to the south of the Lodge Road Industrial Estate;

c) Improvements to the ease and quality of bus/rail interchange within the vicinity of the railway station;

d) Construction of a new pedestrian crossing of Marden Road in the vicinity of its junction with Limetrees

6.3.5 Investigations of suitable CIL-funded transport schemes in Marden and Lenham with the respective Parish Councils are ongoing and will be considered for implementation when funding becomes available.

6.4.1 *Action 3 (2012 – 2015): Enlarge car park at Barming Rail Station by 200 spaces*

6.4.2 Barming Railway Station is likely to be increasingly used by patrons from the proposed new developments in the North West of the borough, particularly following the introduction of the new Thameslink service in 2019, which will effectively increase the frequency of London-bound trains to one every 15mins during peak periods. The station also has the potential to serve as an informal 'Park and Ride' service into Maidstone town centre. Whilst pedestrian and cycle routes will be improved for access to the station, the capacity for vehicles to access the station may also need to be enhanced. Therefore it is planned to explore the feasibility of expanding the station car park by approximately 200 spaces to accommodate the expected increase in demand.

6.5.1 *Action 4 (2012 – 2015): Introduce a 16+ Travel Pass for bus travel*

6.5.2 KCC has committed to introduce a new bus pass for 16-19 year olds, to make travel more affordable for sixth formers, college students and apprentices. It will cost £10 per week and provide unlimited bus travel 7 days a week, promoting modal shift and providing significant social inclusion benefits.

6.6.1 *Action 5 (2012 – 2015): Investigate a reorganisation of the Park and Ride fare structure to target private vehicles rather than passengers only*

6.6.2 Currently the Park and Ride fare structure is such that it does not encourage car sharing as one car load of passengers is expected to pay multiple fares to use the service. This issue conflicts with the objective of reducing the number of vehicles on the road network and has also contributed towards the Park and Ride Service's annual subsidy requirement. This is clearly not sustainable in the current financial climate and puts the future of the service at risk. Therefore MBC will explore the feasibility of shifting the fare structure for the Park and Ride Service from 'Pay-to-ride' to 'Pay-to-Park' by 2013.

6.7.1 ***Action 6 (2012 – 2015): Introduce Parking Standards to ensure a means by which development can ensure an appropriate amount of parking is provided and reduce its overall demand for car parking***

6.7.2 The new Parking Standards will ensure that the needs of car users are reasonably met but also that the agreed level of provision does not undermine more sustainable modes of travel where these are readily available. However, where there is no alternative to use of the private car, the Standards will enable a fair and appropriate amount of parking to be provided. The Standards will also provide for developments' cycle parking requirements, as well as ensuring that they incorporate electric vehicle charging infrastructure where appropriate. It is anticipated that the Parking Standards will be introduced by MBC during 2013-2014.

6.8.1 ***Action 7 (2012 – 2015): Increase long stay parking tariffs (4+ hours) and season ticket tariffs for Council owned car parks by 50% (excluding inflation)***

6.8.2 This action will contribute towards the management of demand for private vehicle trips into the town centre and is directed at encouraging car commuters to consider walking, cycling or using public transport as an alternative. This will have the effect of better managing traffic congestion and related problems in the town centre during peak periods.

6.9.1 ***Action 8 (2012 – 2015): Increase short stay parking tariffs (<4 hours) for Council owned car parks by 20% (excluding inflation)***

6.9.2 As with Action 8 above, this action is also for the purpose of managing the demand for private vehicle trips into the town centre and encouraging modal shift. However, it is recognised that short stay town centre car parking plays a vital role in supporting businesses in the town centre and so this is reflected in the lower level of tariff increase proposed when compared with the Council's long stay parking tariff increase. This is considered reasonable by the Council as the new parking tariff levels will still

remain competitive with the private town centre car parking market[55].

6.10.1 *Action 9 (2012 – 2015): Implement MBC and KCC travel plans to more efficiently manage our own travel behaviours*

6.10.2 The objectives of MBC's Maidstone House Travel Plan are as follows:

1. Reduce employee single occupancy travel to and from work
2. Increase cycling as an employee mode of travel to and from work
3. Increase public transport usage as an employee mode of travel to and from work
4. Reduce business related transport emissions year on year
5. Increase marketing activity around travel planning
6. Implement a travel plan monitoring strategy
7. Update travel related policies to fully support the travel plan objectives

6.10.3 The MBC Workplace Travel Plan includes a range of measures to achieve these objectives, including measures to encourage more walking and cycling, car sharing and use of public transport. Full details can be found in the Travel Plan itself[56].

6.10.4 KCC's County Hall Travel Plan has been in place since 1999. Its primary objective is to support the consolidation of the wider KCC estate and sustainable expansion of staff numbers at the site whilst maintaining the pre-existing number of car parking spaces. It also supports the County Council's Environment Strategy which seeks to reduce carbon emissions and the number of business miles travelled by employees[57]. The plan has been successful in enabling the expansion of the site with a proportionate decrease

[55] Appendix F: MBC (2011) *Maidstone Council Parking Tariffs 2011*

[56] MBC (2012) *Maidstone Borough Council Workplace Travel Plan, Maidstone House and Gateway*

[57] KCC (2010), *The Kent Environment Strategy 2010-13*

in the level of commuting by car, as well as a decrease in the number of business miles claimed. Key initiatives include:

1. management of car-parking spaces, allocated according to business need;
2. car sharing database in partnership with Liftshare.com;
3. pool car scheme operated by Zipcar;
4. Cycle2Work salary sacrifice scheme in partnership with Halfords;
5. discounted bus season tickets with Arriva secured through the New Ways 2 Work initiative;
6. promotion of the BTMeet Me tele-conferencing facility, video conferencing and webinars.

6.11.1 *Action 10 (2012 – 2015): Establish A20 Corridor Statutory Quality Bus Partnership Scheme*

6.11.2 As part of the Medway Valley Sustainable Transport Strategy – which has been developed by KCC to mitigate the combined transport impacts of six major developments in the Kings Hill, West Malling and Snodland areas of Tonbridge and Malling – a significant upgrade of bus services and related infrastructure is proposed on the A20 between West Malling and Maidstone during 2013. This will involve the delivery of new, low-emission vehicles for Route 71, enhanced bus stop facilities and information, and the coordinated management of traffic signals to improve journey time reliability. In order to lock in the benefits of this package of improvements for the longer-term, KCC will establish Kent's first Statutory Quality Partnership Scheme (SQPS) using powers introduced by the Transport Act 2000. Under an SQPS, the local transport authority agrees to implement improved infrastructure or 'facilities' at particular locations along specified bus routes. Operators wishing to use these facilities are then required to commit to providing services to an agreed standard. Only those operators which are prepared to meet the quality standards specified in the Scheme are permitted to use the facilities. Under the A20 Corridor SQPS Agreement (which would be subject to a

full public consultation) it is envisaged that bus services using the specified Scheme facilities would be required, as a minimum:-

- to operate to a clock face timetable with an even headway between departures;
- to be operated by low-floor, easy access buses;
- to meet a specified minimum vehicle emission standard which would be increased incrementally over time;
- to display the agreed scheme branding;
- to accept ITSO Smartcards and to provide Real-Time Information; and
- to provide at least one ticket available for use on all other services using the Scheme facilities and priced at a level agreed with KCC.

6.11.3 The performance of the SQPS will be closely monitored by KCC, in terms of its impact on bus patronage, congestion and air quality. If successful, this model may be rolled out to other inter-urban bus corridors serving Maidstone during the period of the ITS.

6.12.1 *Action 11 (2012 – 2015): Lobby Government for improved rail services to Maidstone in the new South Eastern Franchise*

6.12.2 The Rail Action Plan for Kent (RAPK) sets out KCC's principal recommendations to Government for the specification of the new South Eastern Kent Franchise, which will commence in April 2014 for a period of six years[58]. It describes the present level of service on the Maidstone East Line as "completely unacceptable" and calls for the new franchise to "address this omission above all else"; initially by providing an hourly service all day between Maidstone East and Blackfriars, to reintroduce direct rail services to the City of London, and then replacing this with an all day half-hourly Thameslink service to Blackfriars, Farringdon, St Pancras and north from 2019. Amongst its other 'key requirements' are:-

[58] KCC (2011), *Rail Action Plan for Kent*

- There should be a regular peak-period Mainline service to designated West End and City stations on each principal rail route in Kent. There should also be a regular off-peak period service to a designated West End station from each major town in Kent;
- The peak-period High Speed service on the Medway Valley Line between Maidstone West and St Pancras via Strood should be included in the new franchise and extended to provide an all day service, with an additional stop at Maidstone Barracks; and
- The Government should include a requirement for Smartcard ticketing in the new franchise, which would provide the potential for integrated bus/rail ticketing.

6.12.3 The RAPK builds on the excellent partnership working that exists between the County Council, Southeastern and Network Rail and fully takes into account the views expressed at KCC's regular Rail Summits involving MBC, MPs and Rail User Groups. The Plan has been formally presented to the Rail Minister and has formed the basis of positive discussions with senior officials at the Department for Transport.

6.13.1 ***Action 12 (2012 – 2015): Introduce a subsidised shuttle bus between the Strategic Development Location at M20 Junction 7 and the town centre, to be funded by development coming forward at this location***

6.13.2 Development at this location will need to be sufficiently linked to the town centre in order to complement the land uses in the town centre. This will be achieved by providing a shuttle bus linking the site to the town centre via New Cut Road and A20 Ashford Road.

6.14.1 ***Action 13 (Ongoing): Maintain and develop Maidstone's Intelligent Transport Systems and the proactive sharing of real time traffic and transport information with road users to manage congestion***

6.14.2 KCC is committed to building on the success of the Maidstone Urban Traffic Management and Control (UTMC) system during the period of the ITS to continue enabling the County and Borough Councils to maximise the capacity of the existing road network and to respond proactively to incidents. In doing so, both Councils will seek to make use of new and emerging technology to share real-time traffic and travel information with road users and facilitate informed journey choices. KCC will also continue to work closely with the Highways Agency to ensure that the management of the strategic and local road networks is fully integrated. As part of its efforts to improve journey time reliability, the County Council is seeking to become the first local transport authority outside London to introduce a Lane Rental Scheme. If approved by the Department for Transport, the Scheme would enable KCC to impose daily charges on streetworks and roadworks undertaken on the most congested parts of the county's road network during the busiest times of day. The revenue raised from the Scheme would be used to implement further traffic management measures in these areas.

6.15.1 ***Action 14 (2016 – 2021): Implement public realm improvement schemes within the town centre including on upper Week Street, Gabriel's Hill, the River Medway Towpath and Lower High Street***

6.15.2 MBC has recently completed its High Street Public Realm Scheme successfully (Fig 6). This has revitalised the High Street and now supports future growth in nearby businesses. Building on this success, MBC also has aspirations to upgrade the upper half of Week Street (further towards Maidstone East Station), Gabriel's Hill and the lower section of the High Street with links to the riverside towpath (Fig 7). It is hoped that funding to implement these schemes will be secured both through CIL and external sources during the ITS period.

6.15.3 Ongoing improvements will continue to be made to the River Medway towpath to improve both the pedestrian and cyclist experience. An investigation of the benefits of building a pedestrian bridge to improve connectivity over the River Medway between Earl Street and St Peter's Street is also currently ongoing.

6.15.4 Outside of the town centre, Maidstone has a rich rural pedestrian environment, provided for by its footpaths and bridleways through the countryside. MBC will work with KCC to improve both the public realm of Maidstone's outlying villages and its rural pedestrian routes through the borough.

6.16.1 ***Action 15 (2022 – 2026): Build a 'bus only' northbound lane on the A274 Sutton Road between its junction with Willington Street and the Wheatsheaf Junction***

6.16.2 Land on the public highway on A274 Sutton Road has been identified as capable of accommodating a bus lane (northbound only) between Willington Street and the Wheatsheaf Junction (Fig 8). This would make a significant contribution to improving the speed and reliability of buses operating on this busy corridor and would directly serve the South East Maidstone strategic housing allocation proposed in the Core Strategy.

6.17.1 ***Action 16 (Ongoing): Facilitate an improvement of bus services to ensure a 7min frequency is achieved on the majority of radial routes to the town centre within the Maidstone Urban Area***

6.17.2 MBC and KCC are currently working with the borough's principal commercial bus operator, Arriva, to meet this objective as part of the Maidstone Quality Bus Partnership. This service frequency has already been achieved on some of the existing radial routes; notably the A20 London Road and the A274 Sutton Road. However, there remains potential to improve the collective frequency of services to 7mins on the A229 Royal Engineers Way (to and from the Medway Towns) and the A26 Tonbridge Road (to and from Maidstone Hospital, Tonbridge and Tunbridge Wells).

6.17.3 In addition to the above, there is potential to improve existing service frequencies on other radial routes into Maidstone town centre. There are aspirations to provide a 10min frequency on the A229 Loose Road; a 15min frequency on the A249 Sittingbourne Road; and a 20min frequency on the A20 Ashford Road within the Maidstone Urban Area.

6.17.4 As part of the Kings Hill development in Tonbridge and Malling, the developer is required to enhance the Route 72 bus service between Kings Hill and Maidstone to a 15min daytime frequency, including the routing of two buses per hour via the M20 to improve the speed and reliability of the service.

6.17.5 Service improvements to the Rural Service Centres have also been investigated; however the subsidy requirement to increase the frequency of these relatively lightly used routes is prohibitively high and so improvements to these services are not currently cost effective. Therefore efforts will be concentrated on maintaining these services at the present level of frequency.

6.18.1 ***Action 17 (Ongoing): Maintain existing P&R provision at the current level of service***

6.18.2 Park and Ride has been identified as a primary contributor to minimising the growth of traffic congestion in Maidstone town centre and so it is vital that the service is continued into the future. MBC has made a commitment to maintain the Park and Ride Service at its current level of service for the plan period on the basis that measures will be undertaken to significantly reduce the current approximate £400,000 subsidy requirement.

6.19.1 ***Action 18 (Ongoing): Ensure the objectives, management and budgets for both P&R and Parking Services remain combined and integrated***

6.19.2 A local authority's parking service can often have conflicting objectives with the same authority's Park and Ride service; the former is to primarily provide town centre car parking and an associated revenue stream; the latter is to reduce town centre congestion. Therefore these services must be planned and managed collectively if they are to make a full and effective contribution to the ITS objectives.

6.20.1 ***Action 19 (Ongoing): Fund and implement a strong marketing campaign for P&R to encourage modal shift to P&R by 2012 and continue indefinitely***

6.20.2 MBC has already commissioned the drafting of a marketing campaign for the re-launch of the Park and Ride Service. This will be implemented this year and will continue indefinitely into the future.

6.21.1 ***Action 20 (Ongoing): Facilitate the expansion of the County Hall Car Club service to meet any identified increase in demand on an annual basis***

6.21.2 MBC is working with KCC and the car club operator, Zipcar, to develop the County Hall Car Club service. This currently includes three cars – two located outside County Hall and one on Church Street – which can be reserved for use by any local Zipcar member. It is also available for use by KCC staff for travel during the course of work. Membership and usage of the car club is low relative to similar schemes elsewhere in the UK. MBC has therefore committed to promote the scheme as a business travel option for its own employees and to work with KCC to market it more widely within Maidstone.

6.22.1 ***Action 21 (Ongoing): Implement the Maidstone Cycling Strategy***

6.22.2 The Maidstone Cycling Strategy (Appendix G) has earmarked a number of cycle routes for improvement that will provide significant benefits for both cyclists and pedestrians and good value for money. An expansion of the cycling infrastructure of the town is also included, such as the installation of new cycle stands and lockers at strategic locations.

6.22.3 The Maidstone Cycling Strategy includes a number of objectives including:

- Create new routes and linkages
- Maintain the existing cycle route network
- Improve cycle security and parking

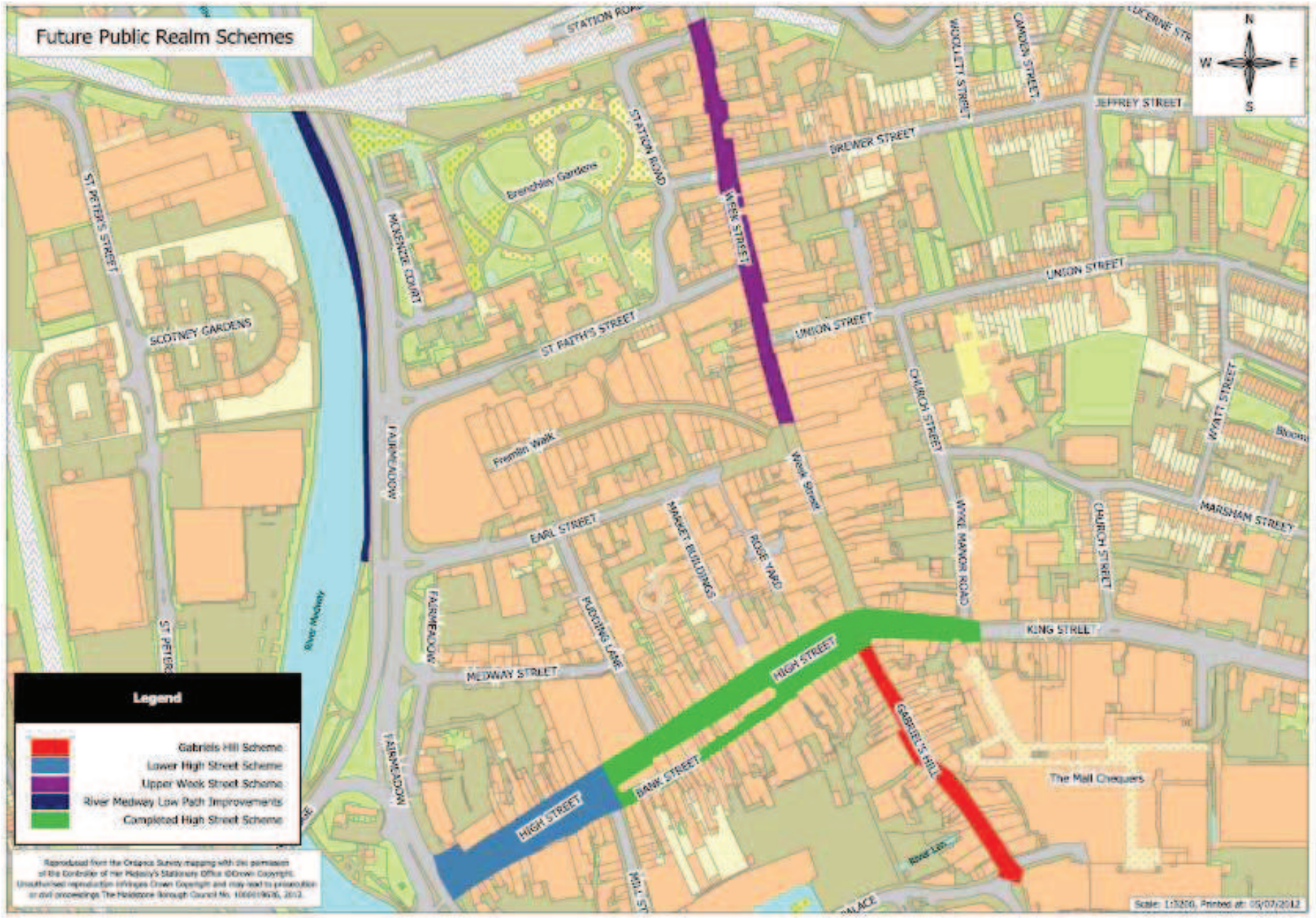

Figure 7: Future Public Realm Improvement Schemes

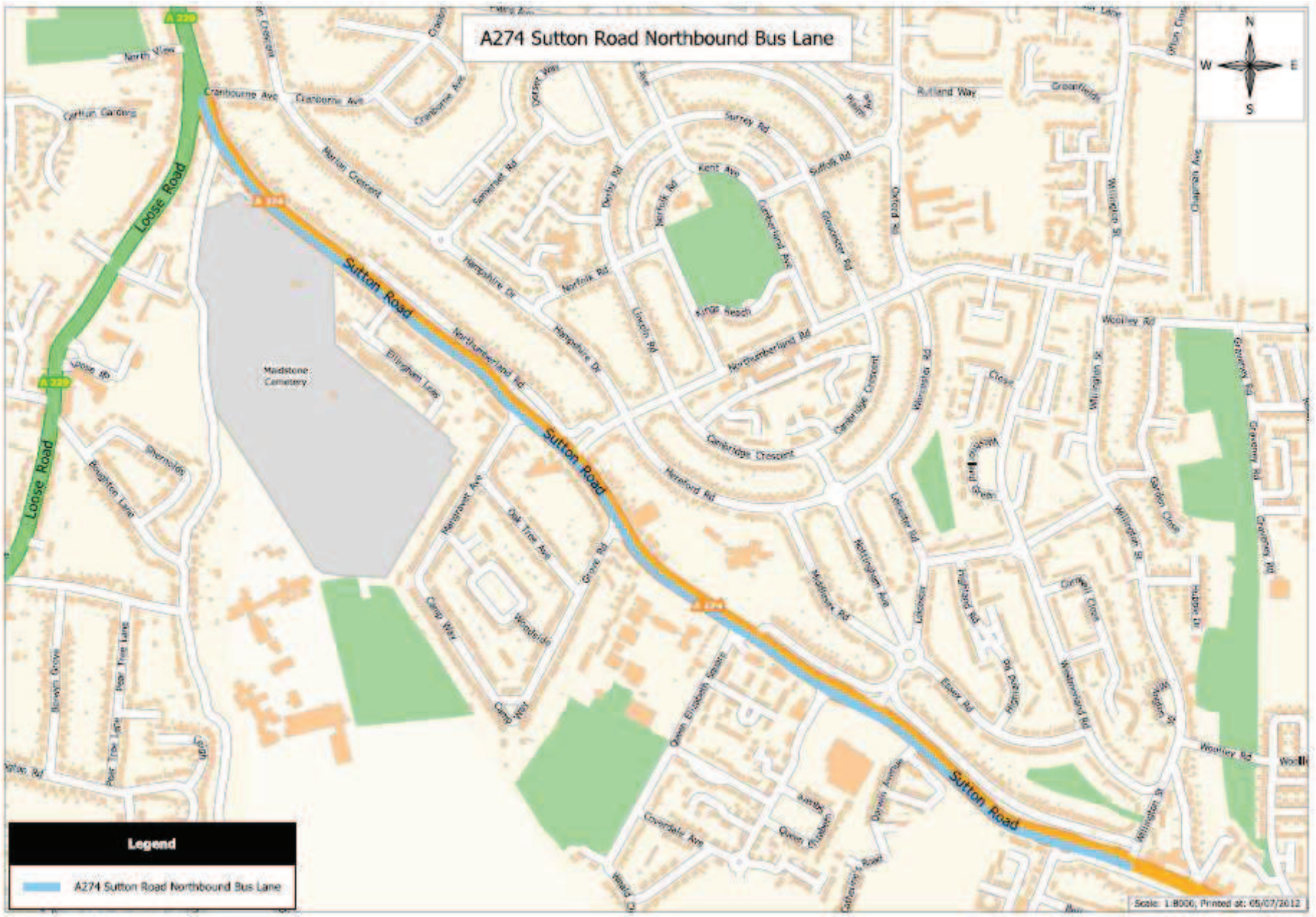

Figure 8: A274 Sutton Rd Northbound Bus Lane proposal

- Promote a cycling culture

6.22.4 As part of measures to achieve these objectives, MBC has already secured funding to build 25 new cycle stands at the junction of Brewer Street / Week Street; junction of Union Street / Week Street; Brenchley Gardens adjacent to the Museum; Earl Street adjacent to the entrance of Fremlins Walk and Gabriel's Hill adjacent to the entrance of The Mall Chequers. MBC also has funding to build further stands at other strategic locations within the town centre.

6.23.1 ***Action 22 (Ongoing): Implement Maidstone's Air Quality Action Plan to minimise the impact of transport on air quality and facilitate the delivery of low carbon vehicle infrastructure***

6.23.2 Acceptable limits of Nitrogen Dioxide dictated by EU law have been exceeded in six locations within the Maidstone Urban Area, (Fig. 9) including Lower Stone Street and the Wheatsheaf Junction. Maidstone's Air Quality Action Plan (MAQAP) has been introduced to address this and to improve the borough's air quality more generally.

6.23.3 Great potential now exists for low carbon vehicles to play a major role in the way we travel and it is increasingly likely that they will replace the existing fossil fuelled fleet in the future. Therefore Government both at a central and local level must be prepared to facilitate this shift, which has been identified as an action objective in KCC's Environment Strategy[59].

6.23.4 The following initiatives will be employed by MBC and KCC to deliver the objectives of the MAQAP and to enable a shift to low carbon vehicle use:

a) Investigate the re-routing of vehicles to avoid designated Air Quality Management Areas

b) Provide incentives to encourage the uptake of low carbon vehicle use at no revenue loss to MBC or KCC

[59] KCC (2011) *Growing the Garden of England: A strategy for environment and economy in Kent July 2011*

c) Maintain an active role in the Freight, Taxi and Bus Quality Partnerships to ensure the uptake of the European Emission Standards for vehicles

d) Facilitate the introduction of low carbon vehicle charging/fuelling points and to ensure this infrastructure is compatible across Sussex, Surrey, Kent and Greater London by participating in the 'South East Electric Vehicle Network Partnership'. This will support local car dealerships selling low carbon vehicles and the development of low carbon technology. It will also be achieved by a requirement to provide an appropriate percentage of low carbon vehicle compatible parking spaces through supplementary planning guidance such as parking standards for development.

e) Investigate, and seek to create a public sector run low carbon vehicle refuelling infrastructure. This will be developed by working in partnership with other public sector bodies and funded by the public sector and/or grant funding. A reciprocal public sector refuelling infrastructure would enable the public sector to champion low carbon vehicle procurement for their own fleets in order to realise the longer term carbon and potential financial savings this technology can offer

f) Investigate and support public/private partnerships for low carbon refuelling stations in the borough to help businesses gain access to low carbon fleets and the potential longer term financial savings that low carbon vehicles may provide

g) Develop a greener MBC fleet through the inclusion of a sustainable transport procurement policy in the MBC Procurement Strategy

6.23.5 The MAQAP will be updated at a minimum of every 5 years in accordance with Local Air Quality Management best practice to ensure it is a living document that evolves with a changing traffic environment and advancements in green technology.

6.24.1 ***Action 23 (Ongoing): Maintain and promote KCC's car share website*** (www.kentjourneyshare.com)

6.24.2 Maidstone has one of the highest rates of single occupancy car use in the county with 52% of vehicle trips having only single occupants. The Kent average is 48%, with some major employers in Kent managing 42%[60]. In order to lower this rate and to incentivise higher car occupancy KCC manages kentjourneyshare; a free web-based service which links drivers, passengers, walkers, cyclists and taxi users who make similar journeys and encourages them to share their trip. In July 2010, there were 3,400 members equating to an approximate saving of 360 tonnes of Carbon Dioxide per annum. The County Council aims to increase membership by 25% each year during the current Local Transport Plan period (2011-16), with a target of 8,500 members by 2014/15.

6.25.1 ***Action 24 (Ongoing): Install real-time / up-to-date travel information in selected bus shelters across the borough***

6.25.2 Real-time / up-to-date travel information boards in targeted locations provide the travelling public with greater confidence and reassurance in the public transport network. It can often make the difference between whether an individual chooses to use bus or rail.

[60] KCC (2012) Data extraction from Kent Travel Plans

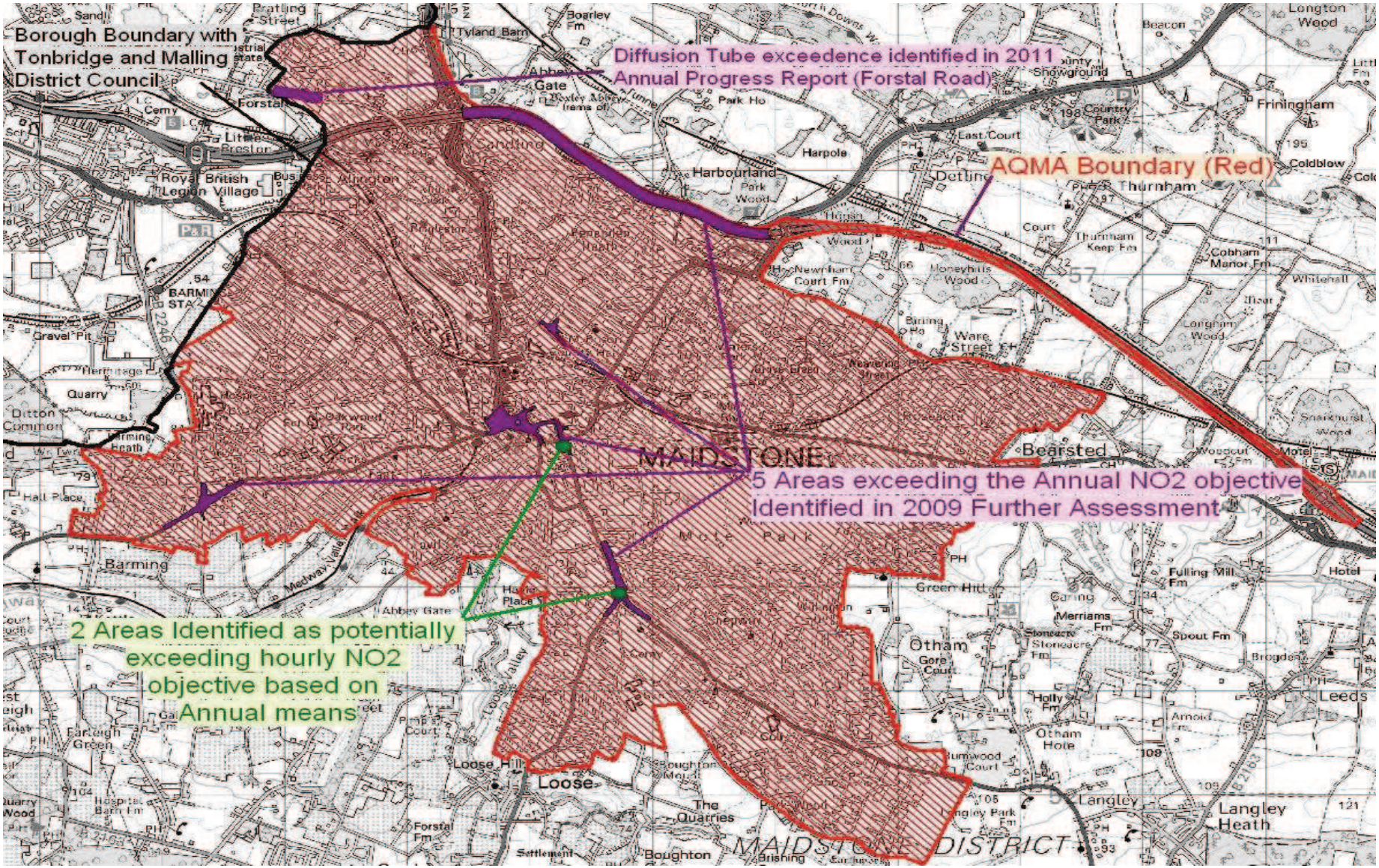

Figure 9: Maidstone Air Quality Management Areas of Exceedence

services or not. For the most part, Maidstone's railway stations now benefit from prominent customer information screens providing live train running information. Real-time information screens have also been installed at key bus stops on Maidstone High Street and at other strategic locations; however there is scope to expand the coverage of this technology.

6.25.3 With this in mind, KCC will target the provision of new passenger information boards on the core public transport routes linking Maidstone town centre with both the Rural Service Centres and the strategic housing development areas to the North West and South East of the town in particular to encourage modal shift. The County Council will also promote the use of 'smart phones' as a means of accessing up-to-date travel information.

6.26.1 ***Action 25 (Ongoing): Secure Travel Plans for new development coming forward***

6.26.2 Travel Plans will be secured by MBC and KCC on a case-by-case basis for planning applications where appropriate. They will need to be prepared in accordance with KCC's *Revised Guidance on Securing, Monitoring and Enforcing Travel Plans in Kent, January 2012*, which sets out two different levels of Travel Plan depending on the size, type and local sensitivity of development.

6.26.4 Level 1 is a 'Measures-Based Travel Plan', setting out key baseline interventions to facilitate and encourage sustainable travel choices, which will generally be secured by way of a planning condition. Level 1 Travel Plans are considered suitable for most small to medium residential sites and smaller commercial developments within areas where cumulative traffic increase is seriously impacting the environment, economic vitality and/or quality of life.

6.26.5 Level 2 is an 'Outcomes-Based Travel Plan', which may involve ongoing monitoring, targets and sanctions. They are considered suitable for large commercial and mixed-use developments with potential for significant trip generation; some medium commercial and mixed-use developments in areas where cumulative traffic increase is seriously impacting the environment, economic vitality and/or quality of life; and some larger residential developments depending on the local context.

6.26.6 Travel Plans can also be used to manage construction vehicles accessing a development during its construction, but also servicing vehicles to the development once it is built. It is often the case that both construction and servicing arrangements can have a significant impact on the highway by causing disruption and traffic congestion, therefore travel plans to manage these vehicles will be secured where necessary.

6.27.1 ***Action 26 (Ongoing): Ensure road safety education continues to be provided for across the borough***

6.27.2 Since the vast majority of road accidents result from the actions of one or more road users, improving road user behaviour continues to be the main priority within KCC's approach to further reducing crash casualties. The priority concerns and challenges that have been identified through the analysis of crash and casualty data and wider research findings are: speed, road user impairment, and anti-social values. For the period 2010-2020, KCC has therefore committed to preparing a three-year rolling programme of activities that uses the individual and combined effects of education, training and publicity in an intelligence-led manner. Accident data and research findings will be used to guide priorities, to identify key target groups and to determine the most effective ways of communicating with them. The County Council will lead collective partnership working through the Kent and Medway Casualty Reduction Group (CaRe Group) to improve road user behaviour through public education activities including publicity campaigns, public engagement projects and public relations strategies.

6.27.3 It is also recognised that people are deterred from cycling as a result of safety concerns associated with speeding traffic and busy, hostile road conditions. In addition to activities and interventions aimed at tackling these issues, cycle training can improve confidence and skills to enable people to cycle safety. Cycle instruction in Kent is formed of two separate courses – Kent Rider and Bikeability – both of which provide school pupils with valuable cycle training. During the LTP3 period, a common set of processes will be developed to deliver a standard programme of cycle training across the county, to include adult cycle training programmes.

6.28.1 *Action 27 (Ongoing): Construct the Romney Place Bus Lane*

6.28.2 Romney Place provides a shorter and more convenient route by which vehicles travelling southbound on Lower Stone Street can access Watt Tyler Way without negotiating the Lower Stone Street/Upper Stone Street/Mote Road/Knightrider Street crossroads. However, Romney Place is not designed as a major through route and its heavy use during peak periods causes significant congestion on Lower Stone Street as well as delay to buses seeking to access The Mall Chequers Bus Station. It also causes hazards to pedestrians seeking to cross Romney Place at its junction with Lower Stone Street. It is therefore proposed to limit access to Romney Place from the west to buses only and to encourage vehicle movement to Wat Tyler Way via Lower Stone Street and Mote Road. This will be achieved through the creation of an eastbound bus lane in place of the existing carriageway lane (Fig. 10).

6.29.1 *Action 28 (Ongoing): Maintain the Kent Messenger 'Walk to School' Charity and 'New Ways 2 Work' Initiatives*

6.29.2 MBC is a sponsor of the KM Charity Group 'Walk to School' which seeks to encourage more parents and children to walk to school. As school induced traffic has a significant impact on the road network during peak times, schemes such as these contribute greatly to managing traffic congestion.

6.29.3 Additionally, KCC manages the 'New Ways 2 Work' scheme (of which MBC is a founding member) which is a collaborative partnership of Kent businesses, local authorities, transport providers and other organisations for encouraging sustainable travel choices. This scheme essentially promotes sensible and efficient use of vehicles and road space to enable traffic to keep moving. This will be maintained indefinitely and can be accessed at http://newways2work.org.uk/

6.30.1 *Action 29 (Ongoing): Improve street signage with better pedestrian wayfinding and reduce footway clutter, in particular in town and rural centres*

6.30.2 Numerous columns for street signs and street furniture in general present themselves as hazards to pedestrian movement and in some cases pedestrian safety. There is scope to rationalise street signage and street furniture to reduce the number of columns and general street clutter to provide more footway space. This can be achieved by positioning more than one sign on street columns and in some cases on buildings rather than single signs on columns that take up footway space. This will have the effect of making it easier to navigate public spaces and will also add to the overall experience of these public places.

6.31.1 *Action 30 (2016 – 2021): Implement the Maidstone Bridge Gyratory Bypass Scheme to improve traffic flow through the town centre*

6.31.2 One of the greatest constraints on the Maidstone town centre transport network is the St Peter's Bridge / Broadway Bridge gyratory. Currently, northbound traffic on the A229 has to enter the bridge gyratory travelling in a clockwise direction; cross over to the west bank of the River Medway via Broadway Bridge and then back to the east bank via St Peter's Bridge before continuing on northbound. This convoluted route adds significant pressure to the gyratory system and has an impact on other traffic using the gyratory, particularly motorists seeking to exit St Peter's Street.

6.31.3 The Bridge Gyratory Bypass Scheme (Appendix N) proposes to build a new northbound link on the east bank of the River Medway which circumvents the need for northbound traffic to cross the river. This would add significant additional capacity to the gyratory and would help manage existing congestion through the town centre[61]. It will require the relocation of an electricity substation and is therefore expected to cost some £4.8 million.

[61] Appendix O: Jacobs (2005), *Maidstone Town Centre Micro Simulation Model: Assessment of Maidstone Bridge Gyratory A229 Through Link Option*

Figure 10: Romney Place Bus Lane proposal

This scheme will be funded only by KCC through its Integrated Transport Block Funding Allocation but will not be required to be contributed towards by new development coming forward.

ITS Action Plan		
Action	***Description***	***Capital Cost***
1*	Implement highway improvement schemes at strategic locations in the north west and south east of Maidstone Urban Area and in the vicinity of M20 Junction 7 and M20 Junction 8	£24m
2*	Improvements to transport infrastructure at selected Rural Service Centres including Harrietsham, Heacorn and Staplehurst	£500k
3	Enlarge car park at Barming Rail Station by 200 spaces	£2.1m
4	Introduce a 16+ Travel Pass for bus travel	nil
5	Investigate a reorganisation of the Park and Ride fare structure to target private vehicles rather than passengers only	nil
6	Introduce Parking Standards to ensure a means by which development can ensure an appropriate amount of parking is provided and reduce its overall demand for car parking	nil
7	Increase long stay parking tariffs (4+ hours) and season ticket tariffs for Council owned car parks by 50% (excluding inflation)	nil
8	Increase short stay parking tariffs (<4 hours) for Council owned car parks by 20% (excluding inflation)	nil
9	Implement MBC and KCC travel plans to more efficiently manage our own travel behaviours	nil
10	Establish A20 Corridor Statutory Quality Bus Partnership Scheme	nil
11	Lobby Government for improved rail services to Maidstone in the new Kent Franchise	nil

12	Introduce a subsidised shuttle bus between the Strategic Development Location at M20 Junction 7 and the town centre, to be funded by development coming forward at this location	nil
13	Maintain and develop Maidstone's Intelligent Transport Systems and the proactive sharing of real time traffic and transport information with road users to manage congestion	nil
14	Implement public realm improvement schemes within the town centre including on upper Week Street, Gabriel's Hill and the River Medway Towpath and Lower High Street	£5.5m
15*	Build a 'bus only' northbound lane on the A274 Sutton Road between the junction with Willington Street and Wheatsheaf Junction	(£7.3m included in action 1)
16*	Facilitate an improvement of bus services to ensure a 7min frequency is achieved on the majority of radial routes to the town centre within the Maidstone Urban Area	nil
17*	Maintain existing P&R provision at the current level of service	nil
18	Ensure the objectives, management and budgets for both P&R and Parking Services remain combined and integrated	nil
19	Fund and implement a strong marketing campaign for P&R to encourage modal shift to P&R by 2012 and continue indefinitely	nil
20	Facilitate the expansion of the County Hall Car Club service to meet any identified increase in demand on an annual basis	nil
21	Implement the Maidstone Cycling Strategy	£750k

22	Implement Maidstone's Air Quality Action Plan to minimise the impact of transport on air quality and facilitate the delivery of low carbon vehicle infrastructure	nil
23	Maintain and promote KCC's car share website	nil
24	Install real-time / up-to-date travel information in selected bus shelters	£100k
25	Secure Travel Plans for new development coming forward	nil
26	Ensure road safety education continues to be provided for across the borough	nil
27	Construct the Romney Place Bus Lane	£60k
28	Maintain the Kent Messenger 'Walk to School' Charity and 'New Ways 2 Work' Initiatives	nil
29	Improve street signage with better pedestrian wayfinding and reduce footway clutter, in particular in town and rural centres	£200k
30	Implement the Maidstone Bridge Gyratory Bypass Scheme to improve traffic flow through the town centre	£4.8m
	TOTAL	**£38m**

Considered as one of the five primary infrastructure improvement measures to be given the highest priority

Funding and Investment

7.0 Comprehensive Spending Review 2010

7.0.1 The 2010 Comprehensive Spending Review confirmed that public sector funding for transport would be significantly reduced in the medium-term, meaning that local authorities cannot continue to rely on existing Government funding streams. The principal funding sources currently available to KCC and MBC for the delivery of local transport schemes are documented in detail below.

7.1 Major Scheme Funding

7.1.1 Under the previous Government, the Regional Funding Allocation (RFA) was the mechanism by which local authorities bid for funding for transport schemes costing in excess of £5 million. In order to secure funding, schemes were appraised and ranked by the South East England Partnership Board according to their alignment with the objectives of the Regional Spatial Strategy (the South East Plan). Periodically, the Government asked each Regional Authority for advice on its priority schemes, within an indicative RFA. Its response to this advice included a list for each English region of the schemes that it expected to fund, pending the submission of a Major Scheme Business Case to the Department for Transport (DfT).

7.1.2 In June 2010, the Government announced that the RFA process was to be suspended with immediate effect pending the Comprehensive Spending Review. The Spending Review confirmed that no new Major Schemes would be considered for funding before 2015/16 at the earliest. The DfT is currently undertaking a review of the strategic framework for the funding and prioritisation of local authority Major Schemes following the abolition of the regional tier of government. It is likely that the RFA process will be replaced by a sub-regional procedure involving Local Transport Bodies – consisting of Local Enterprise Partnerships and local authorities – which will agree, manage and oversee the delivery of a prioritised programme of transport schemes largely independently from Government from 2015 onwards.

7.2 Integrated Transport Block Funding

7.2.1 The Integrated Transport (IT) Block is a capital funding allocation paid to KCC on an annual basis by the DfT. It is the mechanism by which the majority of measures in the Local Transport Plan (LTP) have traditionally been funded. The IT Block supports investment in small-scale transport infrastructure projects costing less than £5 million, including crash remedial measures, improvements to walking and cycling routes, traffic management schemes such as UTMC and bus priority measures.

7.2.2 KCC's Cabinet Member for Environment, Highways and Waste has recently taken the decision to continue to prioritise crash remedial measures and to retain the successful Member Highway Fund (MHF) during the current Local Transport Plan (LTP) period (2011-16). The MHF provides each Member of the County Council with £25,000 per year to spend on small transport improvements that have strong local support. It therefore aligns closely with the Government's localism agenda. Following the 2010 Comprehensive Spending Review, the £2.2 million a year total cost of the MHF accounts for a significantly increased share of KCC's IT Block allocation, which in 2012/13 stood at £5.2 million. The number of new IT schemes that can be delivered across Kent during this Spending Period is therefore strictly limited. As outlined in the Policy Context chapter, the County Council's IT Block prioritisation methodology splits funding between the five LTP3 Themes (budget allocation) and then focuses the investment under each Theme to those areas and locations were the challenges are most acute (spatial distribution).

7.3 Revenue Funding

7.3.1 Whilst capital funding is used by local authorities to construct and maintain highway assets, revenue funding is used to cover continuous costs, such as concessionary fares and socially necessary bus services. KCC and MBC receive most of their revenue funding for transport through the wider Formula Grant paid to local authorities by Government and through council tax. The Formula Grant covers all areas of local government spending

and is not 'ring-fenced' to specified policy areas, providing authorities with the flexibility to distribute the grant according to local priorities.

7.3.2 The 2010 Comprehensive Spending Review confirmed that the Formula Grant would be reduced by 28% over the period 2011/12 to 2014/15. The County and Borough Councils must therefore seek to limit the ongoing revenue liability of their activities. This can be achieved through investment in assets with low maintenance requirements and strengthened partnerships with public transport operators aimed at improving the commercial viability of services (not least Park and Ride). KCC and MBC will also continue to work closely together to ensure that developers make a fair contribution to the cost of providing transport infrastructure and services to new developments (see below).

7.4 New Homes Bonus

7.4.1 The New Homes Bonus (NHB) is a recently introduced Government funding stream which aims to incentivise housing growth by match funding the additional council tax raised from new homes and empty properties brought back into use for the following six years. The NHB is a flexible, un-ringfenced fund based on past increases in housing supply, which in Maidstone have been particularly strong relative to other Kent Districts, with MBC receiving a total of £1.79 million in 2011/12 and 2012/13.

7.5 Developer Contributions

7.5.1 New development can place pressure on both the transport system and the environment. It is therefore important to ensure that not only the land-use strategy set out in Local Plans, but also each individual development for which planning consent is granted, is as sustainable as possible. If development does not make a fair and proportionate contribution to the mitigation of its impact on the transport network, there could be safety and capacity consequences which could prejudice the delivery of subsequent developments identified as being necessary to meet adopted housing and employment targets.

7.5.2 Developer contributions are likely to take two main forms during the period of the ITS – those negotiated under Section 106 of the Town and Country Planning Act (known as Section 106 Agreements), to mitigate the direct impacts of development, and the Community Infrastructure Levy (CIL), to mitigate its cumulative impacts across Maidstone Borough. KCC requires that the direct transport impact of all but the smallest development proposals should be assessed at planning application stage, either through the submission of a Transport Statement or, if the transport impact is likely to be significant, a Transport Assessment, to provide a basis for identifying and agreeing any required mitigation measures. These will then be conditioned on the development by MBC and delivered either directly by the developer through a Section 278 Agreement (Highways Act 1980) or by KCC through a Section 106 Agreement. Section 106 contributions may include revenue subsidies for new or existing bus services, the construction of walking and cycling routes or improvements to local road capacity.

7.5.3 CIL, by contrast, is a tariff-based approach which will be charged per square metre of additional floorspace and used to fund the strategic transport infrastructure needed to accommodate planned growth across Maidstone, as identified in the ITS. It will partially replace the existing system of planning obligations, which often causes delay as a result of lengthy negotiations. The Levy will create a fairer system, with all but the smallest projects making a contribution towards the additional infrastructure that is needed as a result of their development. MBC is currently in the early stages of developing its CIL Charging Schedule, which will be implemented by April 2014 following public consultation.

7.6 Funding and Delivery Plan

7.6.1 A Funding and Delivery Plan is essential for ensuring that a strategy is delivered cost effectively and delivers maximum benefit to its end users. It provides direction on how and when funding may become available for schemes and this in itself will assist with obtaining funding from external sources, such as central Government.

7.6.2 The Plan is set out in three columns; the first providing the action number; the second demonstrating the delivery period (split into four or five year periods); and the third providing an indication of where funding may come from to deliver these actions within their subsequent deliver periods.

Funding & Delivery Plan		
Action	***Delivery Period***	***Funding Source***
1*	Short Term (2012 – 2015)	Section 106 / CIL / IT Block
2*	Short Term (2012 – 2015)	Section 106 / CIL
3	Short Term (2012 – 2015)	Section 106 / CIL
4	Short Term (2012 – 2015)	KCC Revenue
5	Short Term (2012 – 2015)	MBC Revenue
6	Short Term (2012 – 2015)	N/A
7	Short Term (2012 – 2015)	N/A
8	Short Term (2012 – 2015)	N/A
9	Short Term (2012 – 2015)	N/A
10	Short Term (2012 – 2015)	Section 106 / IT Block
11	Short Term (2012 – 2015)	N/A

12	Short Term (2012 – 2015)	Section 106 / CIL
13	Ongoing	IT Block / KCC Revenue
14	Medium Term (2016 – 2021)	CIL / IT Block
15*	Long Term (2022 – 2026)	Section 106 / CIL
16*	Ongoing	IT Block / Bus operators
17*	Ongoing	MBC Revenue
18	Ongoing	N/A
19	Ongoing	MBC Revenue
20	Ongoing	KCC and MBC Revenue
21	Ongoing	Section 106 / CIL / IT Block
22	Ongoing	Section 106 / CIL / IT Block / Govt Grants
23	Ongoing	KCC Revenue
24	Ongoing	Section 106 / IT Block
25	Ongoing	Section 106
26	Ongoing	KCC Revenue

27	Ongoing	CIL
28	Ongoing	KCC and MBC Revenue
29	Ongoing	Section 106 / IT Block
30	Medium Term (2016 – 2021)	IT Block

Considered as one of the five primary infrastructure improvement measures to be given the highest priority

Performance Monitoring Plan

8.0 What is a Performance Monitoring Plan?

8.0.1 The purpose of any strategy is to have a means of achieving desired results. However, given the complexities and scale of the issues this strategy deals with it is often difficult to identify if the desired results are being achieved. A performance monitoring plan provides the tools to create a 'window' into the success of the strategy as the implementation of the strategy progresses.

8.0.2 The below monitoring plan is primarily made up of key targets with target dates to achieve these by. These will help to contribute to meeting the objectives of the ITS and the wider Core Strategy as a whole. In setting these targets, every effort has been made to ensure they are both realistic but also ambitious, ensuring the best possible level of service is provided to those living within the borough with the indicative funding levels.

8.1 Targets

8.1.1 **Target 1**: Increase the proportion of walking and cycling trips from 12% to 20% by 2026; an increase of 0.5% per year

8.2.1 **Target 2**: Increase car occupancy from 1.23 persons per car to 1.45 persons per car during peak periods by 2026; an increase of 1.5% per year

8.3.1 **Target 3**: Increase Park and Ride patronage from 1000 cars per weekday to 1300 cars per weekday by 2026, an increase of 2% per year or a total increase of 30% by 2026

8.4.1 **Target 4**: Reduce the number of people killed and seriously injured (KSI) in Maidstone by 33% by 2020 and the number of children KSI by 40% by 2020 based on 2008 figures.

8.5.1 **Target 5**: Achieve a 50% reduction on vehicle based carbon emissions (based on 1990 levels) by 2025 (EU directive)

8.6.1 **Target 6**: Reduce NO_2 levels to below an annual average of 40µg/m^3 to comply with EU directive on air quality

8.7.1 **Target 7**: Ensure that an average concentration of 200µg is not exceeded more than 18 times in a year at air quality management areas identified in the MAQAP

8.8.1 **Target 8:** Ensure all vehicles in the MBC run pool car are low emission vehicles by 2020

8.9.1 **Target 9**: Sustain a 10% bus modal share of all trips undertaken on the transport network excluding walking, cycling and Park and Ride over the planned period

8.10.1 **Target 10**: Decrease the number of journeys to schools by car for children aged 5-18 years by 10% by 2026

8.11.1 **Target 11**: Decrease the total number of journeys to school by car by 5% over the planned period

8.12.1 **Target 12**: Increase membership of the kentjourneyshare.com website by 25% each year during the LTP3 period, with a target of 8,500 members by 2014/15.

8.2 Monitoring Data

8.2.1 Data to monitor the above will be sourced from Urban Traffic Management Updates; School and Workplace Travel Plans; future modelling of traffic scenarios; bus patronage data from bus operators; data from the Police regarding KSIs and footfall surveys conducted by KCC

List of Appendices

Appendix A: Jacobs (2012), *Maidstone Option Testing Model Output, March 2012*

Appendix B: JMP (2012), *Maidstone Integrated Parking Strategy Research, Option Appraisal Report, April 2012*

Appendix C: MBC (2010), *Resident Parking Scheme Survey Report*

Appendix D: JMP (2011), *Maidstone Integrated Parking Strategy Research, Data Report, December 2011*

Appendix E: MBC (2010), *Private Spaces Attached to Commercial Premises, Oct 2010*

Appendix F: MBC (2011), *MBC Town Centre Parking Tariffs 2011*

Appendix G: MBC (2012), *Maidstone Cycling Strategy 2012 - 2026*

Appendix H: Jacobs (2009), *Maidstone Visum Model 2017 & 2026 Forecast Models South East Maidstone Strategic Link Impacts Summary, December 2009*

Appendix I: Jacobs (2011), *Maidstone Option Testing Summary Tables, March 2011*

Appendix J: JMP (2011), *Maidstone Integrated Parking Strategy Analysis Report, December 2011*

Appendix K: JMP (2012), *Review of Maidstone Modelling and Appraisal Work, April 2012*

Appendix L: Jacobs (2012), *Technical Note: Base & 2026 Option 1 (Do minimum) Turning Movements, June 2012*

Appendix M: Parsons Brinckerhoff (2008), *Highways Agency M20 Maidstone New Growth Point, 2008*

Appendix N: Jacobs Babtie (2005), *Maidstone Bridge Gyratory Outline Design Alignment*

Appendix O: Jacobs (2005), *Maidstone Town Centre Micro Simulation Model: Assessment of Maidstone Bridge Gyratory A229 Through Link Option*

Maidstone Integrated Parking Strategy Research

Option Appraisal Report

Draft Final Report

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Maidstone Integrated Parking Strategy Research

Option Appraisal Report

Report

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1 Introduction

Overview

1.1 Maidstone Borough Council (MBC) appointed JMP Consultants Ltd (JMP) to undertake a series of research tasks to support the development of the Council's Integrated Transport Strategy. The strategy aims to assess the current and future demand for travel and the infrastructure required to support the development growth outlined within the Maidstone Core Strategy (2011).

Content

1.2 This report is the third output of the research study and presents the appraisal work that has been undertaken of a series of potential scheme options to be included within the Integrated Transport Strategy. This includes a discussion of:

- Stakeholder engagement;
- Establishing the appraisal objectives;
- Scenario specification;
- Transport modelling outputs;
- Park & Ride demand and revenue forecasting
- Assessment of Town Centre Car Park impacts
- Economic impacts
- Cost benefit analysis
- The performance of packages against objectives
- Assessment of individual measures

1.3 A summary of the analysis undertaken for each of these elements is presented in the following sections.

2 Stakeholder Engagement

Overview

2.1 An important aspect of the development of the Integrated Transport Strategy is to understand the issues and views of local stakeholders. MBC have an on-going process of stakeholder engagement that has collected and collated initial views and will continue with further consultation as the draft strategy emerges.

2.2 A key aspect of the engagement process has been to understand the views of local businesses in Maidstone. To aid this process to forms of consultation have been undertaken:

- A business workshop
- A business questionnaire

2.3 In addition, consultation has also recently been undertaken with the Highway Agency to understand their views and concerns.

Business Workshop

2.4 A Business Workshop was undertaken on Wednesday 7th March 2012. Invitations were sent out to businesses across the borough of Maidstone via business forums, including the Town Centre Management group and the Chamber of Commerce.

2.5 The purpose of the workshop was to seek to understand the views of businesses in relation to current transport provision in the borough of Maidstone and how it affects the way they operate their business. Looking further forward, the impact of growth on transport demand was also presented leading on to a discussion of potential solutions to identified problems.

2.6 The feedback received helps form part of the context for developing the scheme options to be incorporated within the draft Integrated Transport Strategy. It will also help inform the appraisal of the economic impact of the packages of measures.

2.7 The feedback received has been summarised in a Meeting Note that is included in **Appendix A**. A summary of the key issues and outputs is provided below

Issues

2.8 The first part of the workshop focused on businesses views of existing transport provision in Maidstone and the impact that it has upon business operations. The key issues that were identified are as follows:

- Highway network congestion is a major concern to business both currently and in the future
- Rail links, particularly to London, need improving
- Bus interchange and service provision requires improving
- There is a general acceptance that there is, at least, sufficient town centre car parking, if not an over-provision
- It is acknowledged that town centre car parking charges impact upon individuals travel decisions and, in particular, affects the attractiveness of Park & Ride

2.9 The second part of the workshop focused on potential solutions to the identified issues. The main solutions put forward by businesses at the workshop included:

- South East Maidstone Strategic Link (SEMSL)
- Local road improvements, including the gyratory and motorway junctions, and expansion of the existing Urban Traffic Management & Control (UTMC)
- Improved rail services to London and other major centres
- Improved park & ride, including rail park & ride
- Improved bus service provision, including school services
- Measures to encourage walking & cycling to school
- Improved integration between modes
- Measures to reduce the need to travel, including business travel plans for large companies

Business Survey

2.10 As part of the business engagement process a questionnaire was designed and sent out to businesses in order to collection direct information about the operations of business, how transport affects these operations, and potential improvements to transport that would create an enhanced business operational environment.

2.11 A copy of the survey form can be found within **Appendix B**. This section provides a summary of the survey responses.

Business Respondents

2.12 Surveys were sent out to businesses across the borough of Maidstone via business forums, including the Town Centre Management group and the Chamber of Commerce.

2.13 In total, only eight surveys were returned. A breakdown of the type of firms is provided in table 2.1.

Table 2.1 Type of business

Employees	Respondents	Percentage
Retail	2	25.0%
Property	2	25.0%
Construction/Property	1	12.5%
Publishing	1	12.5%
Consultant	1	12.5%
Business Support	1	12.5%
Total	**8**	**100.0%**

2.14 Most of the businesses that replied were small in size, employing less than 10 individuals. A breakdown of business size is provided in Table 6.2.

Table 2.2 Size of business

Employees	Respondents	Percentage
0 to 10	5	62.5%
11 to 50	3	37.5%
51 plus	0	0.0%
Total	**8**	**100.0%**

2.15 Businesses were asked to identify what type of operations they undertake, in order to gauge the importance of transport in their day-to-day business.

2.16 Table 2.3 provides a breakdown of the types of operations.

Table 2.3 Business operational activities

Employees	Respondents	Percentage of all respondents
Office Work	8	100.0%
Site Work	7	87.5%
Deliveries	6	75.0%
Sales visits	3	37.5%

2.17 All businesses that responded involved office work, with the majority also conducting site work, of some form. Three quarters of the companies also relied heavily upon deliveries either to or from their office location.

2.18 Businesses were also asked to identify the general area in which their business is located in order to provide context for the impact that transport has on their operations.

2.19 Table 2.4 provides the breakdown of the location of businesses.

Table 2.4 Location of business

Employees	Respondents	Percentage of all respondents
Town centre	2	25.0%
North West	1	12.5%
North East	3	37.5%
South East	0	0.0%
South West	0	0.0%
Other	1	12.5%
Multi-locations	1	12.5%

2.20 Two of the businesses were located in the core town centre, with a further three in the North East Sector. One business had multiple business locations across Maidstone.

2.21 Businesses were also asked about the availability of parking at their sites for both their staff and their customers.

2.22 Table 2.5 provides a breakdown of parking provision.

Table 2.5 Availability of parking

Employees	Respondents	Percentage of all respondents
Parking for all staff	4	50.0%
Parking for some staff	2	25.0%
Parking for customers	3	37.5%
No car parking	1	12.5%

2.23 Half of the businesses had adequate parking provision for all their staff. A further 25% had limited parking available for staff. Notably, both businesses located within the town centre had adequate parking for all staff members.

2.24 Three businesses had car parking for customers. Only one business had no available car parking.

Current Transport Provision

2.25 Businesses were asked to rate current transport provision within Maidstone on a scale of 1 to 5, with 1 indicting poor performance and five high performance.

2.26 Table 2.6 provides a breakdown of the minimum, maximum and average rating from respondents.

Table 2.6 Ratings of Current Transport Provision within Maidstone

Transport Provision	Minimum Rating	Maximum Rating	Average Rating
Vehicle access on main roads into/across town	2	4	3.0
Vehicle circulation around town centre	2	4	2.9
Parking in town centre	2	5	3.6
Bus service provision	2	4	3.0
Rail service provision	2	3	2.7
Walking & cycling provision	3	3	3.0

2.27 The overall results suggest that transport provision is considered to be average, with most of the average ratings around the value 3.

2.28 Parking in the town centre scored highest, on average, at 3.6, and also had the most variation in scoring with a low score of 2 and a high score of 5.

2.29 Rail service provision scored lowest, on average, at 2.7. Walking & cycling had the most consistent scoring with all those who rated it scoring a 3.

Impact of transport upon business operations

2.30 Business respondents were also asked to rate the impact of current transport congestion upon their business operations, again on a scale of 1 to 5, with 1 indicting little impact and five a large impact.

2.31 Table 2.7 provides a breakdown of the minimum, maximum and average rating from respondents

Table 2.7 Impact of current transport congestion upon business operations

Aspect of Business	Minimum Rating	Maximum Rating	Average Rating
Business travel to or from your premises	2	5	3.3
Deliveries to or from your premises	1	4	2.4
Customer travel to your premises	1	5	2.6
Employee commuter travel to work	1	4	2.4

2.32 Transport congestion was considered to have the largest impact upon business travel to and from business premises, with an average score of 3.3 and a highest rating of 5.

2.33 Customer travel was considered to be the next most important, with an average of 2.6, and again, a highest score of 5.

2.34 Business respondents were also asked to rate the impact of parking charges upon their business operations, again on a scale of 1 to 5, with 1 indicting little impact and five a large impact.

2.35 Table 2.8 provides a breakdown of the minimum, maximum and average rating from respondents

Table 2.8 Impact of parking charges upon business operations

Aspect of Business	Minimum Rating	Maximum Rating	Average Rating
Customers accessing your premises	1	4	1.6
Employees travelling to work	1	4	1.7
Business travel to or from your premises	1	4	1.6

2.36 There was considerable variation in the scoring with all three aspects of business operations scoring both 1's and 4's. Overall, however, the results suggest that parking charges are less of an impact upon business operations than transport congestion, with average scores of between 1.6 to1.7 rather than 2.4 to 3.3.

Benefits of improvements

2.37 Business respondents were also asked to rate how beneficial various transport improvements would be to their business operations, again on a scale of 1 to 5, with 1 indicting little impact and five a large impact.

2.38 Table 2.9 provides a breakdown of the minimum, maximum and average rating from respondents

Table 2.9 Benefits of transport improvements on business operations

Potential Improvement	Minimum Rating	Maximum Rating	Average Rating
Reduce vehicle journey times into town	2	5	3.4
Reduce vehicle journey times across town	3	5	3.9
Improve vehicle circulation around town centre	3	5	3.9
Improve bus service provision	1	5	2.5
Improve rail service provision	1	5	3.4
Improve walking and cycling provision	1	5	2.5

2.39 The results suggest that the business respondents view vehicle journey times across town and vehicle circulation around town as the most important improvements, both scoring 3.9 on average.

2.40 Reduced vehicle journey times into town and improved rail services also scored, on average, above 3.

2.41 Improved bus services and walking & cycling provision were rated the less important improvements.

2.42 Businesses were also given the opportunity to highlight what they deem to be the single most important transport improvement that could be implemented across Maidstone.

2.43 Three businesses indicated that the South East Maidstone Strategic Link (SEMSL) was the most important as it would increase connectivity to the motorway from the south of the borough and would relieve town centre congestion.

2.44 One other business indicated that improved rail links to London were the most important improvement.

Summary

2.45 The sample sizes collected from the survey mean that it is difficult to draw any strong conclusions from the questionnaire results in terms of the overall views of business across Maidstone.

2.46 The results suggest, however, that rail services and vehicle circulation around the town are the major areas where improvements are required in order to support business activity.

2.47 Parking provision is currently considered to be more than adequate and businesses were, generally, not significantly concerned about the impact of parking charges upon business operations. Instead it is transport congestion, and the effect upon business travel, that has the greatest impact upon business operations.

2.48 The focus of preferred improvements is an improved rail service, in particular to London, and improved vehicle circulation across and around the town, with specific support for SEMSL as a way of relieving town centre congestions.

Highways Agency

Overview

2.49 As part of the stakeholder engagement process MBC established a meeting with the Highways Agency (HA) in order to discuss the potential impacts of the Core Strategy development on the strategic road network (SRN) and how the potential impact of proposed transport mitigation measures.

2.50 Full details of this meeting are available from MBC Council Officers; however, the clear focus of discussions related to capacity constraints along the M20 motorway and access to and from the motorway through Junction 5, 6, 7 and 8.

2.51 It is a clear requirement of the HA to ensure efficient operation of the SRN and so it is important that the emerging Integrated Transport Strategy takes dues consideration of potential traffic generation that could utilise the M20 during peak periods and ensure that it does not have a significant detrimental impact on congestion through appropriate mitigation.

3 Establishing the Appraisal Objectives

Overview

3.1 An important aspect of any appraisal process is to establish a set of key objectives against which to both develop scheme options, as well as to subsequently assess potential performance. These objectives need to be based upon a detailed understanding of the issues and opportunities that need to be addressed.

3.2 A summary of the identified issues and opportunities is provided below, drawing upon baseline transport modelling outputs, the stakeholder engagement process, as well as the data collected and collated within the previous Data and Analysis Reports from this study.

Issues and Opportunities

Core Strategy Development Assumptions

3.3 The previous 'Analysis Report' set out a summary of the proposed development strategy within the MBCs Core Strategy. The overall borough-wide strategy is to deliver 10,080 homes and around 10,000 additional jobs within this period.

3.4 The residential development is spread across the town centre and urban fridge, but with a specific focus upon the southeast of the town centre and the northwest. Residential development is also outlined for more rural parts of the borough including Staplehurst, Marden, Headcorn, Lenham, and Harrietsham.

3.5 Allocations for employment development are also spread across the town but with a specific focus around the east/southeast/south of the town, as well as to the north. There are also development opportunities outlined in Staplehurst and Marden.

3.6 Retail development growth is mainly focused upon the core town centre.

Transport Model Outputs

3.7 The Maidstone Visum Model provides a useful tool with which to translate the future year development assumptions into forecasts for transport movements across the borough. Section 5 provides a detailed overview of the specification of the transport model along with the main outputs; however, the following summary outputs detail the predicted impact of future year growth on the performance of the transport network in and around Maidstone:

- 43% increase in transport movements during the AM peak hour from 2007 travel patterns
- 42% increase in transport movements during the PM peak hour from 2007 travel patterns
- 87% transport movements are undertaken by car in the AM peak (90% in the PM peak)
- There is a forecast reduction in mode share for bus, rail and park & ride.
- Significant congestion on major routes leading into Maidstone Town Centre, specifically along the A229 Royal Engineers Road / Gyratory / Loose Road corridor.
- Notable capacity constraints along sections of the M20 between Junctions 4 and 8 in the AM peak.

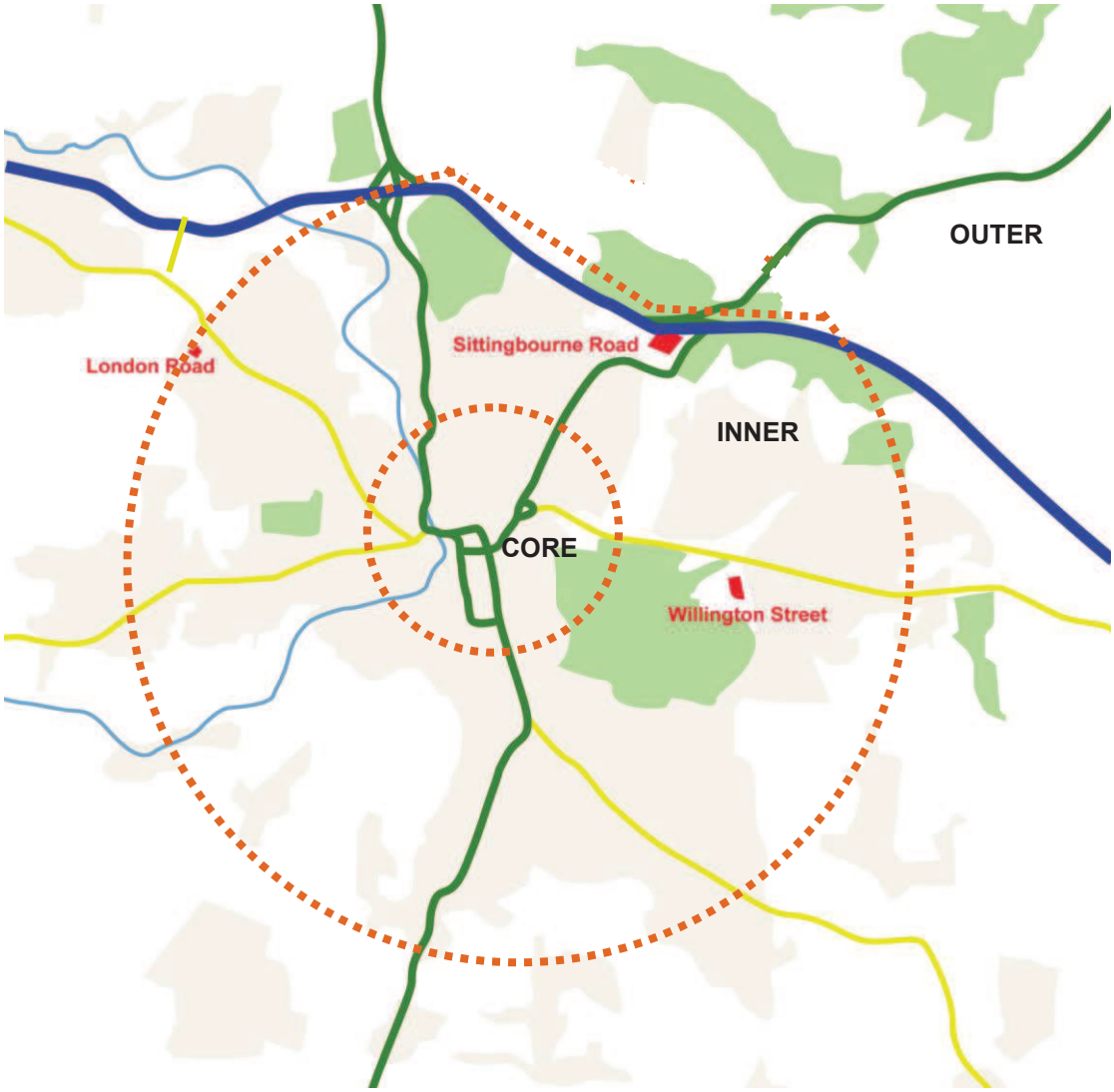
3.8 The transport model also provides the opportunity to assess broad patterns of travel for trips either originating or terminating within the borough of Maidstone.

3.9 To assist in such travel pattern analysis the model outputs have been disaggregated into five broad sectors, reflecting the special proximity to Maidstone Town Centre, as follows:

- Core Maidstone Sector (representing the core town centre retail and employment area)
- Inner Maidstone Sector (representing the rest of the Maidstone Town urban area)
- Outer Maidstone Sector (representing all other areas within the borough)
- Rest of Kent
- London and rest of the South

3.10 Figure 3.1 provides a geographical representation of the Core and Inner sectors.

Figure 3.1 Model Output Sectors (within Borough of Maidstone)



3.11 The model forecasts that there will be in the region of 52,000 transport movements within the AM peak hour in 2026. This excludes all walking and cycling trips that are not explicitly modelled within the software.

3.12 The transport movements have the following breakdown in origins:

- 13% of movements originate in the Core Maidstone Sector
- 26% of movements originate in the Inner Maidstone Sector
- 25% of movements originate in the Outer Maidstone Sector (within Borough of Maidstone)
- 29% of movements originate in the rest of Kent
- 7% of movements originate in London and the rest of the South of England

3.13 The breakdown in destinations is as follows:

- 20% of trips are to the Maidstone Core Sector
- 25% of trips are to the Inner Maidstone Sector
- 25% of trips are to the Outer Maidstone Sector (within Borough of Maidstone)
- 22% of trips are to the rest of Kent
- 7% of trips are to London and the rest of the South of England

3.14 The largest movements between each of the five sectors are as follows:

- 10.7% of trips are from the rest of Kent to Outer Maidstone Sector
- 9.6% of trips are from the rest of Kent to Inner Maidstone Sector
- 9.4% of trips are from the Outer Maidstone Sector to the rest of Kent
- 8.6% of trips are from the Inner Maidstone Sector to the rest of Kent
- 8.4% of trips are from the rest of Kent to Core Maidstone Sector

3.15 At least three quarters of all transport movements are considered to be medium/long distance (>5 miles). Around a third of these long distance trips (25% of all movements) either originate or terminate in the Core Maidstone Sector and so could, theoretically, be served by a rail service, depending upon the proximity to a rail station.

3.16 Just over a third of all transport movements have both an origin and a destination in the Borough of Maidstone. These trips could, theoretically, be served by an urban and rural bus network across the borough.

3.17 The number of movements with originating and terminating within the Core and Inner Maidstone Sectors represents around 14.5%. Many of these trips will be relatively short in distance and so have the potential to be undertaken by walking or cycling, depending upon the precise origins and destinations.

3.18 The number of movements originating in the Outer Maidstone Sector, Kent or London and terminating in the Core Maidstone Sector represents around 14.5% of total transport movements in the AM peak. Many of these trips could, theoretically, be targeted to travel by park & ride.

Summary

3.19 Based upon the analysed data the key issues and opportunities for current and future travel in Maidstone are summarised as follows:

- A significant increase in transport movements is forecast by 2026 resulting from both underlying growth as well as the core strategy development proposals. This growth is spread across the borough.

- The majority of these transport movements are over medium/long distance with over a third travelling from the rest of Kent or the London area into the borough of Maidstone during the AM peak.
- One fifth of movements have a destination within the Core Maidstone Town Centre, whilst half of all movements terminate in the Inner and Outer Maidstone areas in the AM peak.
- The overwhelming majority of future transport movements are forecast to be undertaken by car.
- Vehicular congestion in the town centre is the primary issue affecting both current and future travel in Maidstone. The capacity of the gyratory system and single road bridge over the River Medway affects both vehicle flows to the town centre, as well as those travelling across town and on through trips.
- Large vehicle movements in the town centre will also affect local air quality, whilst increased vehicle trips across the whole borough will affect carbon emissions.
- Connectivity to the strategic road network is a key element for the current and future prosperity of the town and this is considered to be constrained from the south of the borough
- Despite being served by two rail lines, rail services are considered inadequate by many stakeholders, in particular in terms of connections to London and other major centres.
- Existing bus services are considered to be reasonable, with, in particular, a good service offered to the south of the town centre. None-the-less bus mode share remains low and is forecast to fall further, indicating that an improved service is required in order to encourage greater use of bus services.
- Of the existing park & ride sites, only Sittingbourne Road has significant utilisation during the AM peak period, with the other primarily serving the inter-peak market. This reduces the effectiveness of the service to reduce peak period congestion and also severely affects the ability for the operations to break-even financially
- Whilst the Sittingbourne Road site currently offers the best operational performance, it is still considered to have relatively poor access and facilities that affect utilisation of the site.
- There is currently considered to be an over-supply of town centre car parking, with survey work indicating around 40% spare capacity across all car parks, and around 33% spare capacity within MBC operated car parks.
- Town centre car parking charges are considered to competitive in comparison to other urban centres; however, the current pricing structure is considered, by some stakeholders, to undermine the competiveness of the existing park & ride services.
- There are considered to be major barriers to pedestrian and cycle movements leading into the town centre, resulting from the nature of the road network, the rail network and the River Medway. Whilst the town centre itself is currently in the process of a major urban realm improvement project that will provide significant benefits to pedestrians and cyclists, access to and from the core centre remains challenging, and often imposing, by non-vehicular modes.
- School travel is considered to be a major contributor to peak period car travel across the town centre, with a perception that there is little alternative to dropping school children off by car.

Appraisal Objectives

3.20 Based upon the issues and opportunities summarised above, the following appraisal objectives are proposed as the basis for appraising the packages of measures proposed as part of the Integrated Transport Strategy:

i. Support the proposed Core Strategy development through appropriate provision of transport network capacity

ii. Maintain and enhance the operation of the primary road network in and around Maidstone Town Centre

iii. Maintain and enhance connectivity to the Strategic Road Network and ensure no detrimental impacts to the operation of the Strategic Road Network

iv. Encourage travel by public transport through appropriate provision

v. Encourage travel by walking and cycling for short distance trips

vi. Increase the level of high occupancy vehicle trips

vii. Reduce the overall need to travel

viii. Maintain and enhance local air quality and reduce carbon emissions

ix. Ensure transport investment represents high value for money in terms of economic and social returns

x. Ensure on-going operating and maintenance costs are sustainable and minimise the requirement for public subsidy

4 Package Specification

Overview

4.1 Based upon the principles established within the outline objectives, a series of scheme options were developed that seek to address the issues and opportunities identified. These scheme options are summarised by mode in the sections below.

Highways

4.2 The baseline analysis work is clear that by 2026 there will be significant pressure upon the highway network within Maidstone, but in particular in the Town Centre and the existing gyratory system and bridge. Direct measures to improve the capacity are limited due to both spatial and financial implications; however, a series of highway schemes have been proposed to improve capacity of the network in general, including:

- South East Maidstone Strategic Link (SEMSL)
- M20 junction enhancements
- Small-scale highway capacity improvements
- Expansion of UTMC network

Public Transport

4.3 The baseline analysis work identified various perceived issues with the current rail service provision, in particularly with links to London and other major centres. Bus services are generally considered to be reasonable, although some areas are much better served than others. Park & Ride services are identified as an area that requires improvement, in particular it is not well used in the peak periods.

4.4 Potential public transport measures include:

- Improved rail services
- Enhanced bus service frequencies
- Additional bus routes connecting with future development areas, as well as School Bus service provision
- Bus priority measures, including bus lanes and signal priorities
- Improved Park & Ride services
- New Park & Ride sites
- Improved public transport interchange facilities

Walking & Cycling

4.5 Walking & cycling measures can play an important part in helping to relieve transport congestion, as well as to promote active forms of travel. Potential scheme measures include:

- Cycle routes, lanes and priority at junctions
- Cycle storage facilities
- Walking & cycling signage and navigation measures
- Pedestrian priority measures at junctions
- Pedestrianisation

Behavioural Change

4.6 Measures to encourage travel by different forms of transport (generally non-car-based) are another tool with which to impact upon transport congestion. Potential scheme measures include:

- School travel plans
- Travel plans for new development sites
- Business travel plans
- Walking & cycling promotional activities
- Car clubs and car share schemes

Package development

4.7 The Integrated transport Strategy will form a package of transport measures to support the Core Strategy. In order to be able to assess the potential impact of different measures a series of packages have been developed.

4.8 Four packages have been created as follows:

- Option 1 - Reference Case
- Option 2 – Bus and Radial Park & Ride
- Option 3 – Bus and North/South Spine Park & Ride
- Option 4 – SEMSL

4.9 Each is described in details in the sections that follow.

Option 1 – Reference Case

4.10 Option 1 represents what is considered to be the minimum required provision of transport services that will be required by 2026. It includes all existing transport infrastructure provision and services, some additional committed schemes, as well as some significant improvement to public transport and walking & cycling provision.

Scheme measures

4.11 A series of measures have been identified that are either committed schemes in the future, or that offer high value for money against objectives and so should be incorporated into the Transport Strategy. These include:

- Thameslink rail services to London
- M20 traffic signals
- Increased bus frequencies on all main radial routes into Town Centre to 10 minute frequencies
- Romney Place bus lane
- Upgrade existing Park & Ride site facilities
- Walking & cycling infrastructure
- Travel plans for new development sites

4.12 All other transport provision within the reference case scenario is assumed to remain as it is currently provided.

Costings

4.13 Since all the elements of the reference case are common to all options they have not been costed as part of this relative appraisal exercise. The exception is the upgrade and operation of the existing Park & Ride site facilities which is not common to all options.

4.14 The unique capital costs associated with the Option 1 package, relative to the other packages, are presented in Table 4.1.

Table 4.1 Option 1 Capital Costs - Outline Estimates (2011 prices)

Infrastructure Element	Minimum Cost Estimate (£'000)	Maximum Cost Estimate (£'000)
Upgrade London Road Park & Ride Site	1,430	1,780
Upgrade Sittingbourne Road Park & Ride Site	2,060	2,910
Upgrade Willington Street Park & Ride Site	1,390	1,740
Total Capital Costs Estimates	**4,880**	**6,430**

4.15 In addition, to the outlined capital costs, it is also assumed that there will be renewal costs for the three park & ride sites across the 60 year lifetime of the appraisal assessment. These are assumed to occur every 20 years.

4.16 The unique operating costs associated with the Option 1 package, relative to the other packages, are presented in Table 4.2.

Table 4.2 Option 1 Annual Operating Costs - Outline Estimates (2011 prices)

Infrastructure Element	Minimum Cost Estimate (£'000)	Maximum Cost Estimate (£'000)
Land Rental London Road Park & Ride Site	10	10
Land Rental Sittingbourne Road Park & Ride Site	100	100
Park & Ride Site Operating Costs	140	150
London Road Bus Operating Costs	250	290
Sittingbourne Road Bus Operating Costs	310	350
Willington Street Bus Operating Costs	250	290
Total Annual Operating Costs Estimates	**1,060**	**1,190**

Option 2 – Bus and Radial Park & Ride

Overview

4.17 Option 2 is based around the enhancement of all bus provision across the network alongside improvement to park & ride facilities and services on all approaches to Maidstone.

4.18 The option includes all elements of the reference case, as well as the following infrastructure and public transport service enhancements.

Additional Infrastructure provision

4.19 The additional transport infrastructure measures included in Option 2 are as follows:

- A229 Inbound Bus Lane / High Occupancy Vehicle Lane (Gibraltar lane to Southfield Roundabout)
- A274 Inbound Bus Lane / High Occupancy Vehicle Lane (Willington Street to Wheatsheaf Junction)
- Bus priority measures (Huntsman Lane / Ashford road Junction and Willington Road / Ashford Road Junction)
- St. Andrew's Bus Gate
- Bluebell Hill Park & Ride Site
- Sutton Road Park & Ride Site
- Linton Corner Park & Ride Site
- Replacement of Sittingbourne Road Park & Ride Site with Newnham Court Park & Ride Site

Additional Public Transport service provision

4.20 The additional public transport measures included in Option 2 are as follows:

- Through bus service from Bluebell Hill to Sutton Road at 10 minute frequency
- Through bus service from London Road to Willington Street at 10 minute frequency
- Through bus service from Linton Corner to Newnham Court at 10 minute frequency
- Increased Park & Ride fares (£3.00 peak / £2.00 off-peak)

Revised Parking provision

4.21 The changes in parking provision included in Option 2 are as follows:

- Reduction in Town Centre car parking supply (by 366 spaces)
- Increase in long-stay (>4+ hours) car parking tariff (+150%)
- Increase in short-stay (<4+ hours) car parking tariff (+20%)

Capital Costs

4.22 The additional capital costs associated with the Option 2 package, relative to Option 1, are presented in Table 4.3.

Table 4.3 Option 2 Capital Costs - Outline Estimates (2011 prices)

Infrastructure Element	Minimum Cost Estimate (£'000)	Maximum Cost Estimate (£'000)
A229 Inbound bus / HOV lane	3,260	4,100
A274 Inbound bus / HOV lane	8,560	10,870
Bus priority measures (Ashford Road junctions)	1,160	1,660
St. Andrew's bus gate	630	990
Bluebell Hill Park & Ride Site	9,720	13,740
Sutton Road Park & Ride Site	1,340	1,950
Linton Corner Park & Ride Site	4,600	6,520
Newnham Court Park & Ride Site	8,860	12,490
Upgrade London Road Park & Ride Site	1,430	1,780
Upgrade Willington Street Park & Ride Site	1,390	1,740
Total Capital Costs Estimates	**40,950**	**55,840**

4.23 In addition, to the outlined capital costs, it is also assumed that there will be renewal costs for the bus lanes, bus priority and the six park & ride sites across the 60 year lifetime of the appraisal assessment. Maintenance of the bus / HOV lanes is assumed to occur every five years and every 20 years for the park & ride sites.

Operating and Maintenance Costs

4.24 The additional operating costs associated with the Option 2 package, relative to Option 1, are presented in Table 4.4.

Table 4.4 Option 2 Annual Operating Costs - Outline Estimates (2011 prices)

Infrastructure Element	Minimum Cost Estimate (£'000)	Maximum Cost Estimate (£'000)
Park & Ride Site Operating Costs	220	240
Bluebell Hill / Sutton Rd Bus Operating Costs	910	1,050
London Rd/Willington Str. Bus Operating Costs	620	720
Linton Corner / Newnham Crt. Bus Operating Costs	810	940
Total Annual Operating Costs Estimates	**2,560**	**2,950**

Option 3 – Bus and North/South Spine Park & Ride

Overview

4.25 Option 3 is also based around the enhancement of all bus provision across the network along with improvements to park & ride facilities and services along the north / south spine corridor (A229/A274).

4.26 The option includes all elements of the reference case, as well as the following infrastructure and public transport service enhancements.

Additional Infrastructure provision

4.27 The additional transport infrastructure measures included in Option 3 are as follows:

- A229 Inbound Bus Lane / High Occupancy Vehicle Lane (Gibraltar lane to Southfield Roundabout)
- A229 Outbound Bus Lane / High Occupancy Vehicle Lane (White Rabbit Roundabout to Southfield Roundabout and Gibraltar lane to Running Horse Roundabout)
- A229 Gyratory Bus Lane / High Occupancy Vehicle Lane (both directions south from town centre)
- A274 Inbound Bus Lane / High Occupancy Vehicle Lane (Willington Street to Wheatsheaf Junction)
- Bus priority measures at Coldharbour Roundabout
- Romney Place Bus Lane
- St. Andrew's Bus Gate
- Cobtree Park & Ride Site
- Sutton Road Park & Ride Site
- Closure of existing three Park & Ride Sites (London Road / Sittingbourne Road / Willington Street)
- Upgrade link between Bircholt Road and Heath Road (B2163)
- Upgrade of Heath Road

Additional Public Transport service provision

4.28 The additional public transport measures included in Option 3 are as follows:

- New NorthEast Express Loop bus service (10 minute frequency)
- Through bus service from Cobtree to Sutton Road at 10 minute frequency
- Circular route from Cobtree to Town Centre at 5 minute peak frequency / 10 minute inter-peak
- Increased Park & Ride fares (£3.00 peak / £2.00 off-peak)

Revised Parking provision

4.29 The changes in parking provision included in Option 3 are as follows:

- Reduction in Town Centre car parking supply (by 366 spaces)
- Increase in long-stay (>4+ hours) car parking tariff (+150%)
- Increase in short-stay (<4+ hours) car parking tariff (+20%)

Capital Costs

4.30 The additional capital costs associated with the Option 3 package, relative to Option 1, are presented in Table 4.5.

Table 4.5 Option 3 Capital Costs - Outline Estimates (2011 prices)

Infrastructure Element	Minimum Cost Estimate (£'000)	Maximum Cost Estimate (£'000)
A229 Inbound bus / HOV lane	3,260	4,100
A229 Outbound bus / HOV lane	3,050	3,840
A229 Gyratory bus / HOV lane	480	640
A274 Inbound bus / HOV lane	8,560	10,870
Coldharbour Roundabout bus priority	10,760	12,830
St. Andrew's bus gate	630	990
Cobtree Park & Ride Site	14,010	18,840
Sutton Road Park & Ride Site	4,060	5,760
Traffic Enforcement Cameras	900	1,500
Live Traffic Information Board	120	200
Bircholt Rd to Heath Rd Upgrade	7,010	8,550
Total Capital Costs Estimates	**52,840**	**68,120**

4.31 In addition, to the outlined capital costs, it is also assumed that there will be renewal costs for the bus lanes, bus priority and the two park & ride sites across the 60 year lifetime of the appraisal assessment. Maintenance of the bus / HOV lanes is assumed to occur every five years and every 20 years for the park & ride sites.

Operating and Maintenance Costs

4.32 The additional operating costs associated with the Option 2 package, relative to Option 1, are presented in Table 4.6.

Table 4.6 Option 3 Annual Operating Costs - Outline Estimates (2011 prices)

Infrastructure Element	Minimum Cost Estimate (£'000)	Maximum Cost Estimate (£'000)
Park & Ride Site Operating Costs	120	130
Cobtree / Sutton Rd Bus Operating Costs	840	980
Cobtree to Town Loop Bus Operating Costs	120	135
NW Express Loop Bus Operating Costs	910	1,050
Total Annual Operating Costs Estimates	**1,990**	**2,295**

Option 4 – SEMSL

Overview

4.33 The final option for consideration relates to the provision of the South East Maidstone Strategic Link (SEMSL).

Infrastructure provision

4.34 SEMSL is a proposed highway link that would connect the M20 Junction 8 through to the A274 north of Langley Heath. Outline proposals also include a link forming a bypass of the A274 from west of Langley to just north of the Five Wents junction with the B2163.

4.35 The scheme would be a single carriageway link with a 60mph speed limit that would provide direct access to the M20 motorway from the south east of Maidstone Borough.

Capital Costs

4.36 The capital costs of the scheme have not been fully costed as part of this work; however, previous quantification work estimated that it would be in the region of £76million. This included up to £13 million for a grade separated junction connecting SEMSL to the A20.

4.37 The preliminary designs for the SEMSL route and associated junctions have been reviewed and it has been concluded that the outline costs are considered to be appropriate.

5 Transport Modelling Results

Overview

5.1 To support the appraisal work of the packages of transport measures, MBC commissioned Jacobs to undertake a transport modelling exercise.

5.2 The details of the model specification, operation and results are all outlined within the Maidstone Option Testing – Model Output Report (Jacobs 2012), referred to throughout the rest of this document as the 'Jacobs Report'.

5.3 This section provides a brief overview of the model and presents the key outputs relevant to the appraisal process.

Maidstone Multi-modal Transport Model

5.4 A multi-modal model has previously been developed by Jacobs on behalf of Kent County Council using the VISUM modelling software package. The original model was built, calibrated and validated using 2007 survey data. The model encompasses Maidstone Borough and the immediate surrounding area in detail, whilst the wider network extends to include major transport routes across Kent and into London to reflect long distance travel. The model is based upon a single AM peak hour and a single PM peak hour.

5.5 The Jacobs report provides a detailed summary of the operation of the model; however, it is useful to highlight some of the core elements of the process. The main functions of the model are that it is able to:

- Forecast future year trips between different land-uses
- Assess the mode of transport that will be used to travel between individual origins and destinations
- Distribute these trips across the transport network to show levels of demand and capacity constraints

5.6 The process of forecasting travel by different modes is undertaken via the comparative assessment of average cost (e.g. vehicle operating costs, public transport fares) and journey times by different modes. Note: the model excludes walking and cycling trips from this assessment.

5.7 The distribution of trips across the network takes into account further travel parameters, such as the amount of interchange and waiting time for public transport, and walk times to and from public transport or car parks

5.8 It is also important to understand that the model allows peak spreading to occur. If the model considers that the network is becoming too congested to travel in the peak hour then it will reallocate some trips to the shoulders of the peaks. Since the model only encompasses a single AM and PM peak hour these trips do not appear in the model output. As a result of this the total trips presented by each model option vary.

2026 Model

5.9 A 2026 model has been developed that takes into account both forecast underlying growth in travel across the South East (as detailed in TEMPRO) as well as the impact of the additional, residential housing, employment and retail growth planned within the Core Strategy. The relative impact of each type of trip growth is roughly as follows:

- 13,500 underlying growth in trips
- 8,250 Core Strategy development growth in trips

5.10 This demonstrates that the underlying growth actually has a larger impact on trip generation in the model than the Core Strategy development growth.

5.11 It is important to note that the model is able to replicate future growth more accurately within the borough of Maidstone External and surrounding area, than it does for the wider, external zones. This has implications for when assessing trips to and from the external zones, which is discussed later in the report.

Reference Model (Option 1)

5.12 The reference model (Option 1) is based upon the original 2007 model data but incorporates that additional growth in underlying trips and Core Strategy development assumptions. In addition, it incorporates changes to the transport network to reflect the committed schemes and scheme measures outlined in Section 4.11.

Alternative Models (Options 2 and 3)

5.13 The Option 2 and 3 models build directly upon the Option 1 model but incorporate the changes to bus and Park & Ride provision outlined from Section 4.18 and 4.26, respectively.

5.14 It should be noted that the trip distribution element of the model was not providing credible results for Option 2 and 3 bus and rail and so the same profile as Option 1 was applied by Jacobs.

Reference Case - Option 1

5.15 This section provides a summary of the key outputs from the Option 1 modelling work. A more detailed assessment is presented with the Jacobs Report.

Mode Share

5.16 The model provides an overall assessment of the number of trips that are forecast to be undertaken by each mode of transport. The results for the reference case model are presented in Table 5.1.

Table 5.1 Reference Case (Option 1) Mode Share

Mode	AM Peak		PM Peak	
Bus	3,590	7%	2,197	5%
Rail	2,611	5%	1,777	4%
Car	46,860	87%	43,129	90%
P&R	590	1%	857	2%
Total	**53,651**	**100%**	**47,960**	**100%**

Maidstone Visum Model

5.17 This indicates that car trips are by far the most dominant mode share with around 90% of trips undertaken by this mode.

5.18 This same mode share data is available for the more disaggregate sectoral analysis, as presented in Figure 3.1. **Appendix C** provides a full spatial presentation of the origins and destinations of trips by each mode for Option 1.

5.19 The sectoral analysis provides the following information for the AM peak hour movements:

- A third of trips either between the Inner Maidstone and Core Maidstone Sectors (and vice versa), or solely within the Core Maidstone Sector, are undertaken by bus.
- Overall, 12% of trips originating in the Core Maidstone Sector, and 15% terminating, are by bus.
- 40% of trips from the Inner Maidstone Sector to London are by rail. In total, 23% of all trips to London are by rail.
- 17.5% of trips from London to the Core Maidstone Sector are by rail, with a further 6% by park & ride.
- 76% of trips terminating in the Core Maidstone Sector are by car
- 96% of trips terminating in the Outer Maidstone Sector are by car

Link Flows

5.20 The Transport Model outputs have assessed vehicle flows along key routes across the Maidstone highway network. A total of 27 locations have been assessed across Maidstone, along with flows along the M20 Motorway. Jacobs Report provides full details of all locations, along with the forecast flows for Options 1, 2, and 3.

5.21 For Option 1, the results indicate that the A229 Royal Engineers Road is forecast to be the busiest road corridor leading into Maidstone Town Centre with the highest inbound and outbound flows in both the AM and PM peak hours. The A249 Sittingbourne Road is the next busiest corridor, followed by the A229 Loose Road.

5.22 Comparative analysis is also available that demonstrates the forecast increase in vehicle flows between the 2007 base model and 2026 Option 1 model. This indicates that overall vehicle flows, along the reported corridors, will increase by around 50% in the AM peak and 20% in the PM peak.

5.23 Flows along the A229 Royal Engineers Road are predicted to increase between 70% to 80%, and between 70% to 110% along the A249 Sittingbourne Road, in the AM peak.

Travel Times

5.24 The model provides an assessment of selection of travel times for key routes leading to and from Maidstone Town Centre. Full details are provided within the Jacobs Report.

5.25 In summary, the journey times along all routes represent a significant increase above free-flow time. They are also considered to be considerably higher than the baseline 2007 journey times, although this direct comparison is not available. The impact in terms of congestion is considered further in the network congestion section below.

Network Congestion

5.26 The model is able to provide an assessment of overall network congestion in terms of volume of traffic against highway capacity.

5.27 Figure 5.1 replicates the output presented within the report and demonstrates the areas of congestion.

5.28 The links in green are operating within capacity, those highlighted in orange are heavily trafficked (volume to capacity ratio up to 95%) but are just below their operating capacity, while the links in red (volume to capacity ratio over 95%) are already close to or over capacity.

Figure 5.1 Network Congestion (AM Peak) - Reference Case (Option 1)

Maidstone Visum Model

5.29 The network congestion map highlights a number of road links where demand is forecast to be very close or exceeding operating capacity in the AM peak and so result in significant congestion. This includes north and southbound sections of the A229 Royal Engineers Road, as well as the A229 Gyratory System. Sections of the A249 Sittingbourne Road inbound and the A20 London Road inbound.

5.30 Many of the other main arterial roads leading into Maidstone are forecast to be heavily trafficked (up to 95% of capacity).

5.31 The congestion map also indicates capacity constraints along the M20. The Jacobs Report presents flow data for the M20 as a percentage of overall link flow capacity along each section of the motorway. The results for Option 1 indicate that vehicle flows are forecast to exceed link capacity for three links in the AM peak, as follows:

- M20 J6 to J7 (Eastbound) = 108% (volume/capacity)
- M20 J5 to Jn 4 (Westbound) = 129% (volume/capacity)
- M20 J8 to Jn 7 (Westbound) = 102% (volume/capacity)

5.32 In addition, vehicle flows are forecast to exceed link capacity for one link in the PM peak, as follows:

- M20 J5 to Jn 4 (Westbound) = 102% (volume/capacity)

Option 2 – Bus & Radial Park & Ride

5.33 This section provides a summary of the key outputs from the Option 2 modelling work. A more detailed assessment is presented with the Jacobs Report.

Mode Share

5.34 The breakdown in mode share for Option 2 is presented in Table 5.2, followed by the relative change in mode share between Option 2 and the reference case (Option 1) in Table 5.3.

Table 5.2 Option 2 Peak Hour Mode Share

Mode	AM Peak		PM Peak	
Bus	4,471	8%	5,075	10%
Rail	2,018	4%	1,938	4%
Car	44,671	83%	39,719	81%
P&R	2,380	4%	2,406	5%
Total	**53,540**	**100%**	**49,138**	**100%**

Maidstone Visum Model

Table 5.3 Change in Peak Hour Mode Share – Option 2 vs Reference Case (Option 1)

Mode	AM Peak		PM Peak	
Bus	+881	+25%	+2,878	+131%
Rail	-593	-23%	+161	+9%
Car	-2,189	-5%	-3,410	-8%
P&R	+1,790	+303%	+1,549	+181%
Total	**-111**	**0%**	**+1,178**	**2%**

Maidstone Visum Model

5.35 The outputs indicate that car remains the dominant mode but that there is forecast to be a reduction of 5% in AM peak car trips and 8% of PM peak car trips. The majority of these trips switch to either bus or park & ride.

5.36 This same mode share data is available for the more disaggregate sectoral analysis, as presented in Figure 3.1. **Appendix D** provides a full spatial presentation of the origins and destinations of trips by each mode for Option 2.

5.37 The sectoral analysis provides the following information for the AM peak hour movements:

- 38% of trips either between the Inner Maidstone and Core Maidstone Sectors (and vice versa), or solely within the Core Maidstone Sector, are undertaken by bus, a 5% increase from Option 1.
- Overall, 15% of trips originating in the Core Maidstone Sector, and 16% terminating, are by bus, a 3% and 1% increase from Option 1, respectively.
- 35% of trips from the Inner Maidstone Sector to London are by rail, a 5% reduction from Option 1. In total, 20% of all trips to London are by rail, a 3% reduction from Option 1.
- 12.5% of trips from London to the Core Maidstone Sector are by rail, a 5% reduction from Option 1, but a further 20% by park & ride, a 14% increase from Option 1.
- 60% of trips terminating in the Core Maidstone Sector are by car, a reduction of 16% from Option 1.
- 95% of trips terminating in the Outer Maidstone Sector are by car, a reduction of 1% from Option 1.

Link Flows

5.38 The link flow data provided within the Jacobs Report indicates that there is a marginal increase (4%) in movements along the main arterial corridors leading in Maidstone in the AM peak. This would appear to be in slight contrast to the overall origin – destination data from the Visum Model (described above) which forecasts that car trips into Maidstone will decrease.

5.39 Table 5.4 provides a summary of the predicted change in AM peak vehicle flows, for a selection of links, between the Option 2 model outputs and the reference case (Option 1).

Table 5.4 Change in AM Peak Hour Vehicle Flows – Option 2 vs Reference Case (Option 1)

Mode	Inbound		Outbound	
A229 Royal Engineers Road	-451	-14%	+102	+4%
A249 Sittingbourne Road	+176	+12%	+47	+4%
A20 London Road	+308	+37%	-348	-35%
A20 Ashford Road	+294	+19%	+135	+38%
A229 Loose Road (nrth of Wheatsheaf)	+57	+5%	+93	+8%

Maidstone Visum Model

5.40 The results indicate that there will be a notable reduction in inbound flows along the A229 Royal Engineers Road and Outbound along the A20 London Road. All other links show an increase in vehicle flows.

5.41 A full list of vehicle flows on each link, along with the PM peak data, is presented within the Jacobs Report.

Travel Times

5.42 The travel time data presented in the Jacobs report indicates that travel times are forecast to be higher under the Option 2 scenario along all corridors leading into Maidstone Town Centre than for Option 1. This is not the intuitive result that might be anticipated from the Option 2 measures. The increased town centre car parking charges, supported by the additional park & ride measures, might be envisaged to help to alleviate town centre congestion. The origin – destination data appears to support this view with the volume of car trips terminating in the core town centre reducing; however, this does not appear to translate to a reduction in journey times, with some corridors forecast to see increases. It is recommended that the reasons for this are investigated further by the modelling team.

5.43 The following key comparisons between the Option 2 and Option 1 outputs can be made:

- Inbound AM peak travel times into Maidstone are predicted to increase by over 2 minutes for vehicle trips along the A229 Royal Engineers Road, A249 Sittingbourne Road and A20 London Road.
- Outbound PM peak travel times from Maidstone are predicted to increase by over 3 minutes for vehicle trips along the A229 Royal Engineers Road, A274 Sutton Road and A20 London Road.
- Inbound PM peak travel times from Maidstone are predicted to increase by over 3½ minutes for vehicle trips along the A229 Royal Engineers Road, A249 Sittingbourne Road and A20 Ashford Road.

- Outbound PM peak travel times from Maidstone are predicted to increase by over 3 minutes for vehicle trips along the A229 Royal Engineers Road, A274 Sutton Road and A26 Tonbridge Road.
- Travel times along the M20 in the AM peak either remain broadly constant or are reduced, with the exception of an increase between Junctions 7 and 8
- Travel times along the M20 in the PM peak are reduced for all movements.

Network Congestion

5.44 Figure 5.2 presents the forecast areas of congestion in Option 2.

Figure 5.2 Network Congestion (AM Peak) - Option 2

Maidstone Visum Model

5.45 The network congestion map highlights a number of road links where demand is forecast to be close to or exceeding operating capacity in the AM peak and so results in significant congestion. This includes the whole of the north and southbound sections of the A229 Royal Engineers Road. Whilst some parts of A229 Gyratory System remain very close to capacity, generally congestion is much reduced in comparison to Option 1.

5.46 Sections of the A249 Sittingbourne Road and A20 Ashford Road inbound are also heavily congested.

5.47 Many of the other main arterial roads leading into Maidstone are forecast to be heavily trafficked (up to 95% of capacity), although the A20 London Road shows reduced inbound congestion, along with the M20 Junction 5.

5.48 The congestion map also indicates capacity constraints along the M20, although less than for Option 1. The Jacobs Report presents flow data for the M20 as a percentage of overall link flow capacity along each section of the motorway. The results for Option 2 indicate that two vehicle flows are forecast to exceed link capacity for the AM peak, as follows:

- M20 J5 to Jn 4 (Westbound) = 124% (volume/capacity)
- M20 J8 to Jn 7 (Westbound) = 107% (volume/capacity)

5.49 The volume to capacity value for Jn 5 to Jn 4 represents a marginal improvement to the reference case (Option 1); however, the opposite is true for Jn 8 to Jn 7.

5.50 No vehicle flows are forecast to exceed link capacity for the PM peak.

Option 3 – Bus & North/South Spine Park & Ride

5.51 This section provides a summary of the key outputs from the Option 3 modelling work. A more detailed assessment is presented with the Jacobs Report.

Mode Share

5.52 The breakdown in mode share for Option 3 is presented in Table 5.5, followed by the relative change in mode share between Option 3 and the reference case (Option 1) in Table 5.6.

Table 5.5 Option 3 Peak Hour Mode Share

Mode	AM Peak		PM Peak	
Bus	4,522	9%	5,108	11%
Rail	2,919	6%	1,975	4%
Car	44,252	84%	39,686	83%
P&R	1,239	2%	1,297	3%
Total	**52,932**	**100%**	**48,066**	**100%**

Maidstone Visum Model

Table 5.6 Change in Peak Hour Mode Share – Option 3 vs Reference Case (Option 1)

Mode	AM Peak		PM Peak	
Bus	+932	+26%	+2,911	+132%
Rail	+309	+12	+198	+11%
Car	-2,608	-6%	-3,443	-8%
P&R	+649	+110%	+1,549	+51%
Total	**-719**	**-1%**	**106**	**0%**

Maidstone Visum Model

5.53 A similar pattern is found with the Option 3 results with car remaining the dominant mode but with a forecast reduction of 6% in AM peak car trips and 8% of PM peak car trips. Again the majority of these trips switch to either bus or park & ride.

5.54 This same mode share data is available for the more disaggregate sectoral analysis, as presented in Figure 3.1. **Appendix E** provides a full spatial presentation of the origins and destinations of trips by each mode for Option 3.

5.55 The sectoral analysis provides the following information for the AM peak hour movements:

- 39% of trips either between the Inner Maidstone and Core Maidstone Sectors (and vice versa), or solely within the Core Maidstone Sector, are undertaken by bus, a 6% increase from Option 1.
- Overall, 15% of trips originating in the Core Maidstone Sector, and 18% terminating, are by bus, a 3% increase from Option 1 for both, respectively.
- 44% of trips from the Inner Maidstone Sector to London are by rail, a 4% increase from Option 1. In total, 27% of all trips to London are by rail, a 4% increase from Option 1.
- 18.5% of trips from London to the Core Maidstone Sector are by rail, a 1% increase from Option 1, with a further 12% by park & ride, a 6% increase from Option 1.
- 64% of trips terminating in the Core Maidstone Sector are by car, a reduction of 12% from Option 1.
- 94% of trips terminating in the Outer Maidstone Sector are by car, a reduction of 2% from Option 1.

Link Flows

5.56 The link flow data provided within the Jacobs Report indicates that there is a marginal increase (3%) in movements along the main arterial corridors leading into Maidstone in the AM peak. This would appear to be in slight contrast to the overall origin – destination data from the Visum Model (described above) which forecasts that car trips into Maidstone will decrease.

5.57 Table 5.7 provides a summary of the predicted change in AM peak vehicle flows, for a selection of links, between the Option 3 model outputs and the reference case (Option 1).

Table 5.7 Change in AM Peak Hour Vehicle Flows – Option 3 vs Reference Case (Option 1)

Mode	Inbound		Outbound	
A229 Royal Engineers Road	-219	-7%	+2	0%
A249 Sittingbourne Road	+72	+5%	-202	+16%
A20 London Road	-76	-9%	-14	-1%
A20 Ashford Road	+135	+9%	+109	+31%
A229 Loose Road (nrth of Wheatsheaf)	+173	+14%	+272	+22%

Maidstone Visum Model

5.58 The results indicate that there will be a reduction in inbound flows along the A229 Royal Engineers Road, although not as significant as for Option 2. There will also be reductions inbound and outbound on the A20 London Road, and outbound on the A249 Sittingbourne Road.

5.59 A full list of vehicle flows on each link, along with the PM peak data, is presented within the Jacobs Report.

Travel Times

5.60 The travel time data presented in the Jacobs report indicates that a large proportion of travel times in the AM peak are forecast to be lower under the Option 3 scenario along the corridors leading into Maidstone Town Centre than for Option 1.

5.61 The following key comparisons between the Option 3 and Option 1 outputs can be made:

- Inbound AM peak travel times into Maidstone are predicted to reduce by over 3 ½ minutes for vehicle trips along the A229 Royal Engineers Road, A249 Sittingbourne Road, A20 London Road and A20 Ashford Road.
- Outbound PM peak travel times from Maidstone are predicted to reduce by over 4 minutes for vehicle trips along the A26 Tonbridge Road and A20 London Road.
- Inbound PM peak travel times from Maidstone are predicted to increase by over 1½ minutes for vehicle trips along the A249 Sittingbourne Road, A229 Loose Road and A20 London Road.
- Outbound PM peak travel times from Maidstone are predicted to increase by over 3 minutes for vehicle trips along the A274 Sutton Road and A229 Loose Road but to decrease by over 4 minutes along the A26 Tonbridge Road and A20 London Road.
- Travel times along the M20 in the AM peak increase between Jn 5 and Jn 6 eastbound and between Jn 8 and 5 westbound.
- Travel times along the M20 in the PM peak are reduced for all movements.

Network Congestion

5.62 Figure 5.3 presents the forecast areas of congestion in Option 3.

Figure 5.3 Network Congestion (AM Peak) - Option 3

Maidstone Visum Model

5.63 The network congestion map highlights a number of road links where demand is forecast to be close to or exceeding operating capacity in the AM peak and so result in significant congestion. This includes the whole of the north and southbound sections of the A229 Royal Engineers Road. Whilst some parts of A229 Gyratory System remain very close to capacity, generally congestion is much reduced in comparison to Option 1.

5.64 Sections of the A249 Sittingbourne Road and A20 Ashford Road inbound and the A229 Loose Road outbound up to the Wheatsheaf Junction are also heavily congested.

5.65 Many of the other main arterial roads leading into Maidstone are forecast to be heavily trafficked (up to 95% of capacity), although the A20 London Road shows reduced inbound congestion, along with the M20 Junction 5.

5.66 The congestion map also indicates capacity constraints along the M20, although less than for Option 1. The Jacobs Report presents flow data for the M20 as a percentage of overall link flow capacity along each section of the motorway. The results for Option 3 indicate that two vehicle flows are forecast to exceed link capacity for the AM peak, as follows:

- M20 J4 to Jn 5 (Eastbound) = 130% (volume/capacity)
- M20 J6 to Jn 7 (Westbound) = 102% (volume/capacity)
- M20 J5 to Jn 4 (Westbound) = 138% (volume/capacity)
- M20 J7 to Jn 6 (Westbound) = 106% (volume/capacity)
- M20 J8 to Jn 7 (Westbound) = 107% (volume/capacity)

5.67 The data indicates that there is forecast to be a significant increase in traffic flow between Junctions 2 and 5, but particularly in the eastbound direction.

5.68 No vehicle flows are forecast to exceed link capacity for the PM peak.

North West Express Loop Bus

5.69 The Option 3 modelling incorporates an express bus service that travels in a loop around the A229 Royal Engineers Road, the M20 (Junction 6 to 5), Hermitage Lane, and back to town along the A26.

5.70 The service would operate in both directions with a service frequency of 10 minutes. This would mean a total of 6 buses per hour in each direction throughout the day.

5.71 Table 5.8 provides the forecast patronage levels during the peak periods.

Table 5.8 North West Express Loop Bus Service Patronage Forecasts – Option 3

Time Period	Clockwise	Anti-Clockwise	Total
AM Peak	12	64	76
PM Peak	171	115	286

Maidstone Visum Model

5.72 The results suggest that patronage for the service is relatively low, particularly in the AM peak period. Whilst much higher in the PM peak the loadings per bus would still remain relatively low, with an average of 24 passengers per bus per loop.

Option 4 – SEMSL

5.73 There are two sets of modelling outputs that help provide an insight into the potential impact of SEMSL in delivering against the primary objectives of the Integrated Transport Strategy. The SEMSL scheme was modelled directly as part of the assessment of the South East Urban Extension. The more up-to-date modelling exercise also provides information regarding the potential demand for SEMSL through the assessment of future trips patterns.

5.74 Both sets of outputs are reviewed in the sections below.

Original Modelling Work

5.75 The SEMSL scheme option has previously been modelled in December 2009 as part of preliminary work to assess the impact of the then proposed South East Urban Extension (SEUE) and potential measures to support the associated growth in person and vehicle trips. The SEUE included 4,000 residential units located near Parkwood off the A274. Whilst the land-use assumptions within this modelling work no longer remain valid, as the SEUE is no longer planned, the work does potentially provide some insight into the impact of the SEMSL scheme.

5.76 It is difficult to draw strong conclusions from this modelling work as the analysis work compared with and without SEMSL scenarios from different modelled year. An initial 2017 model run did not include SEMSEL, and only 1,000 additional residential units at Parkwood, whilst the second model year was 2026 that included SEMSL and the full SEUE at Parkwood.

5.77 The results demonstrate that, even with the introduction of SEMSL, the level of traffic movements in Maidstone would continue to increase with some key routes in the town centre remaining over capacity. It is clear, however, that SEMSL would provide significant capacity relief to the overall impact of growth in trips from the SEUE, even if the modelling report does not allow the precise volume to be assessed.

5.78 The 2009 modelling report concludes:

> *The additional capacity provided by the SEMSL in 2026 has assisted in improving the traffic pressure from South and East of Maidstone and hence mitigating the congestion in Maidstone as a whole. However, the overcapacity is still flagged on some of the key routes as well as the minor routes in the town. The general traffic congestion in Maidstone is greater in the PM than in the AM peak. Supplementary traffic management strategies for both AM and PM are essential to an overall approach in tackling the growth in traffic level for Maidstone.*

5.79 This suggests that whilst SEMSL clearly has the ability to help relieve some of the future capacity constraints across the highway network in Maidstone it is not a measure that would resolve all of the predicted issues and would require supplementary schemes alongside it.

Forecast Demand for SEMSL from latest Modelling Work

5.80 The more recent modelling work incorporates the revised land-use assumptions and so provides a more accurate assessment of the future demand and profile of travel across Maidstone. Whilst the SEMSL scheme has not been directly modelled as part of this work, it is still feasible to use the reference case model to assess the potential demand for SEMSL through the assessment of future trips patterns.

5.81 The analysis work extracted the overall matrix of forecast 2026 vehicle trips in order to assess where individuals will be travelling to and from based on the future Core Strategy land-use

assumptions. A detailed assessment of all potential movements that could potentially use the SEMSL scheme was then undertaken. These trips were then in turn extracted from the matrix to provide an overall forecast of maximum trips that would utilise SEMSL. **Appendix F** provides a more detailed assessment of the approach undertaken.

5.82 The results indicate that a maximum of around 5,360 two-way movements may use SEMSL in an AM peak hour. This breaks down into 2,585 movements in a south-westerly direction and 2,775 in a north-easterly direction.

5.83 To put this into context, the 5,360 AM peak movements represent around 11.5% of total movement within the model.

5.84 Around two-thirds of these trips are forecast to route through the town centre in a scenario without SEMSL. This suggests that the SEMSL scheme has the potential to reduce AM peak hour movements through the town centre by up to 3,500 journeys. Again, to put this into context, the latest model outputs predict that around 22,000 vehicle movements occur on the main routes leading into Maidstone in the AM peak. The two-way vehicle trips that could potentially use the SEMSL link would therefore represent a 16% reduction in traffic on the major town centre north-south corridors. It should be reiterated that this analysis of town trip reduction from SEMSL represents the maximum potential scale of reduction. It does, however, provide an indication of the level of benefits that could be derived from the scheme.

6 Park & Ride Demand and Revenue Forecasting

Introduction

6.1 A key potential element of the Integrated Transport Strategy is the on-going use and expansion of park & ride services. This section summarises the current operation of park & ride and goes on to examine the proposed future year operations and forecasts of potential demand and operating revenue.

Existing Park & Ride

6.2 There are currently three park & ride sites around Maidstone at London Road, Sittingbourne Road, and Willington Street. All of these have been operating since 1989. The sites operate between 07:00 and 18:45 Monday to Fridays, with a later opening time of 08:00 on Saturdays.

6.3 The current park & ride bus operations are contracted out to Arriva, who operate services to and from each site to the town centre at a frequency of at least every 15 minutes. The current tariffs for travel are as follows:

- Peak Return (up to 9am Monday to Friday) = £2.50
- Off-peak return = £1.50
- Ten single trip tickets = £10
- Twelve week season ticket = £100
- Annual season ticket = £400

6.4 The latest revenue data available for the park & ride sites indicates that the service requires a subsidy from MBC over and above the farebox revenue in order to cover the costs of the Arriva operating contract. This position is considered to be unsustainable in the long term.

Demand

Existing demand (2011)

6.5 Ticket sales data provides a detailed analysis of the level of demand for each of the three existing park & ride sites. In November 2011, considered a neutral month, the total level of demand across the month at each of the three sites was as follows:

- London Road = 25,519
- Sittingbourne Road = 22,664
- Willington Street = 26,309

6.6 This data would suggest that Willington Street is the most successful site, followed by London Road and Sittingbourne Road. Whilst this is true in terms of absolute demand, the profile of demand is quite different between the sites and reveals a more complex appraisal.

6.7 Translating the monthly data into an estimate of an average weekday daily demand provides the following breakdown:

- London Road = 1,046
- Sittingbourne Road = 931
- Willington Street = 1,053

6.8 Further analysis of ticket types and application of the park & ride site utilisation surveys (reported within the previous Data Report) allows an assessment of AM peak hour 2011 demand:

- London Road = 86
- Sittingbourne Road = 143
- Willington Street = 90

6.9 It can now bee seen that a completely different outcome is presented with Sittingbourne Road displaying the highest AM peak hour demand followed by London Road and Willington Street.

6.10 AM peak period demand is considered to be an important metric for park & ride for two reasons:

i. It is during the peak periods, when traffic congestion is at its highest, that park & ride demand has the greatest impact in reducing vehicles on the network and, hence, congestion

ii. Average fares are higher during the peak periods and so higher demand increases the opportunity for the park & ride scheme to be financially self-sufficient

Forecast future year demand (AM Peak 2026)

6.11 Future year forecasts of peak period demand have been developed for Options 1, 2 and 3. These forecasts have utilised the mode share outputs from the AM peak hour Maidstone Visum Model.

Option 1

6.12 The Maidstone Visum Model produced the following AM peak forecasts of demand for each park & ride site for Option 1:

- London Road = 68
- Sittingbourne Road = 508
- Willington Street = 13

6.13 The outputs predict a substantial increase in AM peak hour demand at the Sittingbourne Road site as a result of both the increase in underlying demand for travel and the prevailing transport network conditions. Demand at London Road is forecast to remain broadly similar, with Willington Street demand decreasing to a minimal level.

6.14 Within the context of the wider analysis, detailed in Section 5, it is considered likely that the level of congestion forecast to occur around Junction 5 of the M20 and along the A20 London Road is likely to reduce the attractiveness of the London Road site in the AM peak. Furthermore, constraints on east-west movements across the River Medway also mean that park & ride bus journey times into Maidstone Town Centre are also slow in comparison to some other corridors.

6.15 In contrast, access to Sittingbourne Road from Junction 7 of the M20 is less congested and the journey times into the Town Centre by bus park & ride are much shorter.

6.16 Access to the Willington Street site from the strategic road network is more convoluted and it would appear that the Sittingbourne Road site is preferential for travellers coming along the M20 westbound. The data also suggests that the site is in direct competition with both Bearsted Rail Station, as well as urban bus services travelling along the A20 Ashford Road.

Option 2

6.17 The corresponding AM peak forecasts of demand for each park & ride site for Option 2 are as follows:

- London Road = 90
- Newnham Court = 1,203
- Willington Street = 77
- Bluebell Hill = 329
- Sutton Road = 130
- Linton Corner = 551

6.18 Again, the London Road site is forecast to retain a broadly similar level of demand as existing; however, in this option Willington Street is also predicted to maintain similar levels of demand to 2011. The Newnham Court site, that would replace Sittingbourne Road, is predicted to have a significant AM peak hour demand.

6.19 At the other new sites, there is predicted to be relatively strong demand at Linton Corner, as well as Bluebell Hill, well in excess of previous expectations for these sites. The Sutton Road site, however, is forecast to have relatively low AM peak hour demand.

6.20 Newnham Court is predicted to attract across Kent and along the M20 corridor, accounting for 90% of the demand. In particular substantial volumes of trips are predicted to originate from Swale, Ashford, and Medway.

6.21 The model also predicts that Bluebell Hill will attract trips from along the M20 corridor, although it is felt in reality that access to this site is likely to deter this type of activity. Trips are considered more likely to be derived from north of the site from Medway, Gravesham and Dartford.

6.22 The Linton Corner site is predicted to attract a substantial number of trips originating from the eastern side of the borough of Tunbridge Wells (along the A229 corridor) and from East Sussex, as well as from Yalding, Marden and residential areas on the urban fringe to the south and south west of Maidstone.

6.23 The Sutton Road demand originates primarily from the close local vicinity, with some trips from further to the South East of the site. There are very few longer distance trips from further south in the borough.

Option 3

6.24 The corresponding AM peak forecasts of demand for each park & ride site for Option 3 are as follows:

- Cobtree = 766
- Sutton Road = 473

6.25 Both sites are forecast to perform well, with the Cobtree site in particular having high demand, with trips forecast to be attracted from across Kent and along the M20 corridor.

6.26 The Sutton Road site is predicted to generate significantly more demand than in Option 2 with many trips that would use the Linton Corner site instead diverting to Sutton Road, including trips from the east of the borough of Tunbridge Wells, Yalding and Marden.

Forecast future year daily demand (2026)

6.27 Full forecasts of future year daily demand have been produced based upon the AM peak hour forecasts, presented above, along with the profiles of daily demand provided by the existing park & ride revenue data.

6.28 The AM peak hour forecasts have been factored by 1.85 in order to produce an estimate of the AM peak 2-hour period.

6.29 The inter-peak demand for the London Road, Sittingbourne Road, and Willington Street has been based upon the November 2011 profile of demand at each of these sites. The Sittingbourne Road profile data has also been applied for Newnham Court, given that it should serve an almost identical market.

6.30 The demand profiles for the three existing sites fall into two categories. The London Road and Willington Street sites have very similar profiles, with limited AM peak hour demand but a considerable amount of inter-peak OAP demand. The Sittingbourne Road site follows a different profile with considerably greater AM peak period demand. In order to provide a basis with which to forecast inter-peak demand at the four other new sites (Bluebell Hill, Cobtree, Sutton Road and Linton Corner) an averaged demand profile has been created between the London Road / Willington Street profile and the Sittingbourne Road profile. This averaged profile provides the basis for predicting inter-peak demand at the new sites.

6.31 Tables 6.1, 6.2 and 6.3 provide a summary of the forecasts levels of daily demand for each of the options.

Table 6.1 Daily Park & Ride Demand Forecasts – Option 1

Park & Ride Site	AM Peak Demand	Inter-peak Demand	Daily Demand
London Road	127	1,024	1,151
Sittingbourne Road	940	776	1,716
Willington Street	24	1,041	1,065
Total	**1,091**	**2,841**	**3,932**

Table 6.2 Daily Park & Ride Demand Forecasts – Option 2

Park & Ride Site	AM Peak Demand	Inter-peak Demand	Daily Demand
London Road	167	1,126	1,293
Newnham Court	2,225	970	3,195
Willington Street	143	1,145	1,288
Bluebell Hill	610	325	935
Sutton Road	240	350	590
Linton Corner	1,019	550	1,569
Total	**4,403**	**4,466**	**8,869**

Table 6.3 Daily Park & Ride Demand Forecasts – Option 3

Park & Ride Site	AM Peak Demand	Inter-peak Demand	Daily Demand
Sutton Road	874	625	1,499
Cobtree	1,418	1,619	3,036
Total	**2,292**	**2,244**	**4,535**

Car Park Capacity

6.32 The forecasts presented in Tables 6.1 to 6.3 represent an unconstrained demand for park & ride. In reality the available land for the construction of each park & ride site may constrain the number of car parking spaces available, and hence the level of demand that can be accommodated.

6.33 As an example, the forecast level of AM peak demand predicted for the Sittingbourne Road site in Option 1 (940 person trips) is likely to exceed the current available car parking spaces (610), even when you take into account that some individuals will share a car to access the park & ride site.

6.34 The estimate site capacities required to accommodate total daily demand under each scenario, including an allowance for car sharing and for vehicle turnover, are presented in Table 6.4 to 6.6. **Appendix G** provides a summary of the estimation process.

Table 6.4 Park & Ride Site Estimated Capacity Requirements – Option 1

Park & Ride Site	Capacity Requirement
London Road	325
Sittingbourne Road	1,150
Willington Street	200
Total	**1,675**

Table 6.5 Park & Ride Site Estimated Capacity Requirements – Option 2

Park & Ride Site	Capacity Requirement
London Road	375
Newnham Court	2,425
Willington Street	350
Bluebell Hill	650
Sutton Road	300
Linton Corner	1,100
Total	**5,200**

Table 6.6 Park & Ride Site Estimated Capacity Requirements – Option 3

Park & Ride Site	Capacity Requirement
Cobtree	1,725
Sutton Road	975
Total	**2,700**

6.35 Under Option 1 it can be seen that the total car parking capacity required for Sittingbourne Road exceeds the existing supply of 610 spaces. If this site were to continue operation then demand would be constrained to around 850 daily trips, the majority of which would be in the AM peak period.

Revenue Forecasts

6.36 A preliminary assessment of operating revenues that would be generated from each site is presented in Tables 6.7, 6.8 and 6.9.

6.37 They are again based upon the November 2011 revenue data and the profile of different ticket types that are currently sold. The forecasts take due consideration of peak and off-peak travel, with all peak travel assumed to either purchase season tickets or peak period fares. Inter-peak travel assumes off-peak fares, multi-ticket purchases or OAP concessions.

6.38 The Option 1 data is based upon the current peak and off-peak ticket prices. Options 2 and 3 include an uplift for peak and off-peak tickets (£3.00 and £2.00, respectively) with all other ticket types adjusted accordingly, with the exception of OAP concessions, which are kept constant.

6.39 These revenue forecasts are also based upon the unconstrained estimates of demand, outlined in Tables 6.1 to 6.3.

Table 6.7 Park & Ride Site Forecast Operating Revenues – Option 1

Park & Ride Site	Estimated Annual Operating Revenue (£'000)
London Road	£250
Sittingbourne Road	£630
Willington Street	£210
Total	**£1,090**

Table 6.8 Park & Ride Site Forecast Operating Revenues – Option 2

Park & Ride Site	Estimated Annual Operating Revenue (£'000)
London Road	£350
Newnham Court	£1,640
Willington Street	£350
Bluebell Hill	£450
Sutton Road	£240
Linton Corner	£750
Total	**£3,780**

Table 6.9 Park & Ride Site Forecast Operating Revenues – Option 3

Park & Ride Site	Estimated Annual Operating Revenue (£'000)
Cobtree	£1,280
Sutton Road	£690
Total	**£1,960**

6.40 The results indicate that Option 2 will generate the highest operating revenues, reflecting the higher overall demand. There is significant variation in revenue across the sites; however, with the Sutton Road, London Road and Willington Street generating much lower revenues than Newnham Court and Linton Corner.

6.41 The Option 3 results indicate that both sites would generate substantial annual revenues.

6.42 For Option 1, the London Road and Willington Street sites are forecast to generate relatively low annual revenues, reflecting the low proportion of park & ride users in the AM peak who would be charged peak period fares.

Financial Assessment

6.43 Utilising the operating revenues, outlined in the section above, along with the bus park & ride operating costs, outlined in Section 4, an outline assessment of the annual financial profit and loss of each park & ride site is feasible.

Table 6.10 Park & Ride Site Financial Assessment – Option 1

Park & Ride Site	Estimated Annual Operating Cost (£'000)*	Estimated Annual Operating Revenue (£'000)	Estimated Annual Operating Profit / Loss (£'000)
London Road	345	250	-95
Sittingbourne Road	500	630	130
Willington Street	335	210	-125
Total	**1,180**	**1,090**	**-90**

** high forecasts of operating costs*

Table 6.11 Park & Ride Site Financial Assessment – Option 2

Park & Ride Site	Estimated Annual Operating Cost (£'000)*	Estimated Annual Operating Revenue (£'000)	Estimated Annual Operating Profit / Loss (£'000)
London Road	400	350	-40
Newnham Court	510	1,640	1,130
Willington Street	400	350	-50
Bluebell Hill	565	450	-115
Sutton Road	565	240	-325
Linton Corner	510	750	240
Total	**2,950**	**3,780**	**830**

** high forecasts of operating costs*

Table 6.12 Park & Ride Site Financial Assessment – Option 3

Park & Ride Site	Estimated Annual Operating Cost (£'000)*	Estimated Annual Operating Revenue (£'000)	Estimated Annual Operating Profit / Loss (£'000)
Cobtree	690	1,280	590
Sutton Road	555	690	135
Total	**1,245**	**1,960**	**715**

** high forecasts of operating costs*

6.44 The financial assessment has been based upon the upper end of the forecast operating costs, outlined in Section 4, and so are considered to be a robust assessment.

Option 1

6.45 The results demonstrate that, overall, the Option 1 park & ride specification would potentially not cover the operating costs of the service. This is mainly as a result of the poor performance of the London Road and Willington Street sites, where AM peak period demand is forecast to be very low

and hence peak period revenue generation is also low. This leaves these sites unable to cover their operating costs.

6.46 The Sittingbourne Road site is forecast to cover its operating cost; however, it should be cautioned that the revenue generation has been based upon the unconstrained level of demand. If the analysis is re-run with demand constrained to the current available parking spaces then operating revenue is forecast to fall to £470,000 pa, which would leave the site generating a marginal loss of £30,000 pa, albeit against the high operating costs. In reality it is considered that operations could be adjusted to ensure that this site operates at breakeven under a constrained demand scenario.

Option 2

6.47 Option 2 highlights the same issues for London Road and Willington Street, albeit with lower operating loss. The improved performance results for higher forecast AM peak demand for these sites. It is again considered that operations could be adjusted to ensure that these sites operate at breakeven.

6.48 The Bluebell Hill and Sutton Road sites are also forecast to operate at a considerable loss in Option 2. This is as a result of both the relatively poor demand, and hence revenues, at Sutton Road, but also the much higher operating costs for the bus service that would run from Bluebell Hill all the way through town to Sutton Road. This is by far the longest park & ride service and therefore incurs both additional vehicle operating costs, but also a higher number of buses to maintain a 10 minute frequency.

6.49 The Newnham Court and Linton Corner sites are both forecast to make substantial profits, particularly in the case of the Newnham Court. This is as of a direct result of the AM peak period forecasts for demand, and hence revenue generation. As with Sittingbourne Road, there remains the question as to whether the level of demand forecast can be accommodated within the allocated park & ride site areas. the Newnham Court site certainly has sufficient space to accommodate demand; however, the site also has wider development aspirations that may constrain available land. The identified site at Linton Corner is certainly unable to accommodate the forecast level of demand. There are, however, other potential sites in the area, along with the possibility to create multiple sites along the A229 Linton Hill.

Option 3

6.50 Option 3 represents the most consistent performing option in terms of financial operations with both the Cobtree and Sutton Road sites forecast to cover their operating costs. There are also no issues with capacity constraints at either site with both able to accommodate the forecast level of demand.

7 Town Centre Car Parks

Introduction

7.1 In order to support the proposed public transport measures and encourage modal shift, the scheme assessment process has incorporated measures within Options 2 and 3 that will discourage long-stay car parking within the town centre.

7.2 These measures include the removal of some long-stay car parking in MBC car parks in and around the core town centre, along with the increase of long-stay car parking charges by 150%. In addition, short-stay car parks are also increased by 20%.

7.3 The analysis of public transport demand has indicated that these measures are successful in encouraging modal shift to public transport. In particular, the increased cost of town centre car park is forecast to deter car trips into the centre.

7.4 As well as encouraging modal shift to public transport trips, the parking measures will also have a range of financial impacts. This relates to changes in car parking revenue, as well as car park operating cost changes, as well as potential land values resulting from the reduction in car parking spaces. This section provides a summary of these three impacts.

Revenue Impacts

Overview

7.5 The proposed parking measures have conflicting impacts upon parking revenue generation. The reduction in available car parking spaces will potentially reduce the revenue generated from these car parks. In contrast, the increase in parking tariffs could potentially increase revenues, although this depends upon the extent to which total demand for parking decreases as a result of the higher tariffs.

Impact of space reductions

7.6 A stand-alone assessment of the impact of reducing car parking spaces on MBC revenue has been undertaken. This exercise has utilised information about the reduction in spaces in each car park, the current utilisation of those car parks, the availability of substitute parking spaces in nearby MBC car parks, as well as the revenue generated from each car park.

7.7 Table 7.1 presents a breakdown of the current capacity and utilisation of the car parks that are proposed to have a reduction in spaces. It also presents the availability of parking capacity in other MBC car parks in close proximity.

7.8 By assessing the number of cars that would be displaced from each car park, and determining whether they can be accommodated in other nearby car parks, it is possible to calculate an estimate of displacement of parking demand from MBC car parks. This is estimated to be 236 vehicles.

Table 7.1 Impact of reduced car parking spaces on MBC parking demand

MBC Car Park	Current Capacity	Current Utilisation	Proposed reduction in capacity	Nearby Spare MBC Capacity	Estimated Displacement in MBC Parking
King Street	219	216	120	0	107
Brooks Place	7	6	7	0	6
Brunswick Street	66	65	66	0	65
Sittingbourne Road	99	46	99	9	37
Well Street	29	25	29	7	18
Mill Street	132	90	66	10	3
Total	**552**	**448**	**387**	**26**	**236**

7.9 The weekly revenue generated from each car park has then been used to determine an average income of the maximum occupancy of each car park. This is a simplistic way in which to assess the value generated by the car park occupancy. This figure for each car park has then been multiplied by the estimated displaced vehicles to give a total loss of revenue to MBC.

7.10 This total loss of revenue is presented in Table 7.2, alongside the current revenue generated from each of these car parks.

Table 7.2 Forecast revenue Impact from loss of car parking

MBC Car Park	Current Annual Car Park Revenue	Forecast Annual MBC Revenue Loss
King Street	42,000	42,000
Brooks Place	156,000	77,000
Brunswick Street	37,000	30,000
Sittingbourne Road	18,000	13,000
Well Street	5,000	5,000
Mill Street	110,000	4,000
Total	**368,000**	**171,000**

7.11 The results indicate that around 46% of revenue from these car parks is forecast to be lost if these spaces were removed. This assumes that all else remains constant.

Impact of increased car parking tariffs

7.12 As mentioned above, the impact of the proposed increased car parking tariffs has two affects: average revenues will go up but overall demand for MBC parking will decrease. The overall impact upon MBC revenue depends upon relative strength of each impact.

7.13 The output from the Maidstone Visum model provides an indication of the impact of the packages of measures upon vehicle trips into the core town centre. This indicates that in Option 2 vehicle trips will decrease by 370 in the AM peak hour, and by 440 in Option 3. Given that it is only MBC car parking charges that have changed and that the largest change is for long-stay car parking, it is reasonable to assume that these decreases in trips will translate to decreases in long-stay car parking in MBC car parks.

7.14 The 2011 Town Centre Car park utilisation surveys, presented within the Data Report, provide a forecast of current AM peak hour long-stay car parking. This has been translated into 2026 using the forecast growth in vehicle trips. The provides the following forecasts:

- 2026 (Option 1) long-stay car parking (AM peak hour) = 600
- 2026 (Option 1) short-stay car parking (AM peak hour) = 360

7.15 Assuming that the short-stay car parking remains constant, we can generate forecasts for Options 2 and 3 f long-stay car parking by subtracting the reduction in trips to the core town centre, presented above. This gives:

- 2026 (Option 2) long-stay car parking (AM peak hour) = 230
- 2026 (Option 3) long-stay car parking (AM peak hour) = 160

7.16 Using these forecasts we can now generate an estimate of revenue under each option, incorporating the change in tariffs between Option 1 and Options 2 and 3. This is presented in Table 7.3.

Table 7.3 Forecast revenue Impact from change in tariffs

Option	Long-stay revenue (AM peak hour)	Short-stay revenue (AM peak hour)	Total revenue (AM peak hour)	Annual Forecast Change in AM Revenue
Option 1	2,700	720	3,420	-
Option 2	2,558	864	3,452	-
Option 3	1,800	720	2,520	-
Option 2 vs Option 1	**-113**	**144**	**32**	**19,924**
Option 3 vs Option 1	**-900**	**144**	**-756**	**-478,170**

7.17 The results indicate that the fall in demand in Option 2 is off-set by the increase in tariffs. This is not the case with Option 3 where demand is forecast to fall even further resulting in an overall loss of revenue.

Operating Costs

Overview

7.18 The reduction in car parks and car parking spaces will result in a reduction in car park operating costs. These have been calculated from current operating cost data, with car parks that only have a partial reduction in spaces given a pro-rated saving. Table 7.4 presents the results.

Table 7.4 Forecast car park operating cost savings

MBC Car Park	Forecast Annual MBC Operating cost savings
King Street	17,902
Brooks Place	36,853
Brunswick Street	17,284
Sittingbourne Road	11,925
Well Street	9,783
Mill Street	10,779
Total	**104,500**

Land Values

7.19 In addition to the direct operation cost savings, the closure, or part-closure, of car parks will release land value. Estimating the potential value of this land is difficult as it depend upon both the economic climate at the time of the sale and the specific demand for uses.

7.20 Previous work by GL Hearn carried out to assess the land value for the King Street Car Park provides a benchmark against which to assess the other sites.

7.21 Table 7.5 provides a summary of the assumed development quantums and assumed land uses together with an estimate of minimum and maximum land value.

Table 7.5 Outline forecast of land values

MBC Car Park	Development Levels	Development Area (m2)	Land Use	Estimated Maximum Land Value	Estimated Minimum Land Value
King Street	5	72,150	Resi, Retail, Car Park	270,000	180,000
Brooks Place	2	2,990	Resi	80,000	50,000
Brunswick Street	3	31,850	Resi, Office	330,000	210,000
Sittingbourne Road	3	54,600	Resi	430,000	280,000
Well Street	2	8,905	Resi	120,000	80,000
Mill Street	3	112,710	Resi, Office, Car Park	250,000	160,000
Sub-Total (Car Park)		**283,205**	**-**	**1,500,000**	**1,000,000**
Willington Street	2	8,400	Resi (detached units)	175,000	50,000

7.22 An assessment of the Willington Street Park & Ride Site Land value is also included. It is understood that there are likely to be some significant development controls on this site, given its location within Mote Park. This will impact upon the land value and makes an assessment more intangible. It has been assumed that a maximum of 20 units would be constructed on this site, of a style in keeping with the surrounding residential area.

8 Economic Impact Assessment

Context

Introduction

8.1 The impacts of transport constraints or transport improvements upon an economy are varied and can be assessed in a number of ways. Businesses can be affected directly by transport, in terms of the time and cost of travel for their staff and customers across a network, but there are often wider impacts on their operations as well. These can include the affect of transport on access to labour, the affect on the efficiency of market operations, or the benefits that can be derived from greater effective economy density (referred to as agglomeration).

8.2 Whilst the direct impacts of transport on the economy can be measured through transport modelling and economic appraisal tools, the wider impacts require separate, qualitative assessment.

8.3 This section provides an overview of the potential economic impacts resulting from the proposed transport measures within the Integrated Transport strategy packages outlined in Section 4.

National Planning Policy

8.4 The National Planning Policy Framework (NPPF), published March 2012, sets out the Government's commitment to securing economic growth and to create jobs and prosperity. It recognises the role of promoting competitive town centre environments, as well as strong rural economies. There are clear objectives are to promote the vitality and viability of town centres, and meet the needs of consumers for high quality and accessible retail services

8.5 At the same time, the NPPF reiterates that the government is committed to securing economic growth in a sustainable manner with transport playing an important role in facilitating sustainable development. To this end it highlight that developments should be located and designed, where practical, to:

- accommodate the efficient delivery of goods and supplies;
- give priority to pedestrian and cycle movements, and have access to high quality public transport facilities;
- create safe and secure layouts which minimise conflicts between traffic and cyclists or pedestrians, avoiding street clutter and where appropriate establishing home zones;
- incorporate facilities for charging plug-in and other ultra-low emission vehicles; and
- consider the needs of people with disabilities by all modes of transport

8.6 The NPPF provides an important policy framework in assessing the economic impacts of the transport strategy packages.

Core Strategy Proposals

8.7 The emerging Core Strategy document generates a clear aim to create additional employment across the borough of Maidstone, alongside residential housing growth. There is a target to create 10,000 jobs across the borough but with a specific focus on employment site around the east / southeast / south of the town, as well as to the north. There are also employment development opportunities outlined in Staplehurst and Marden.

8.8 If these aspirations for employment growth are to be attained there is a requirement to ensure that there is adequate infrastructure to support both growth, as well as maintain and expand existing economic activities across the borough. Such infrastructure will include all aspects of public service provision, but transport provision is a key aspect in supporting economic activity across the borough.

Maidstone Town Centre Study

8.9 The Maidstone Town Centre Study provides an evidence base to support the preparation of the wider Core Strategy as well as an Area Action Plan for Maidstone Town Centre. It includes a review of the socio-economic role of the town centre, current development policies, existing property market, and traffic and transport issues.

8.10 Within the planning and regeneration context, the study highlights wider research into the needs of Maidstone Town centre, referencing the *Employment Land Study Review (September 2009)* that forecasts a future office floorspace requirement of between 15,000m^2 and 40,000m^2, as well as the *Retail Needs Assessment Study (updated 2009)* that concluded there is a requirement for between 32,500 m^2 and 118,500 m^2 of comparison floorspace and up to 4,650 m^2 of convenience floorspace by 2026.

8.11 The study also highlights Maidstone's role as the county town of Kent and a major transportation hub, and the requirement for it to continue to maintain and develop its role in the future, particularly in response to the challenges posed by other competitor towns in the region. The report indicates that Maidstone's role as the premier shopping centre in Kent is challenged by both other regional town centres, as well as large-scale shopping facilities, such as Bluewater.

8.12 The study also references the *Maidstone Borough Economic Development Strategy (2008)* which suggests that the boroughs economy does not 'punch its weight' and that there is a requirement to develop greater sectoral specialism's, create a more innovative and entrepreneurial economy, and attract and retain investment. This document highlights the following weaknesses within the economy that are linked to transport:

- Traffic congestion and limited accessibility in the town centre
- Traffic congestion on the M20 west of Maidstone
- Operation stack disrupting business and residents in the borough; and
- Rail connectivity to London slow and infrequent when compared to elsewhere

8.13 Whilst some of these issues may have moved on since 2008, they still represent the underlying issues with transport that affect economic activity in the borough.

8.14 The conclusions from the Economic Development Strategy are reiterated within the *South East Plan (2009)* that states that Maidstone needs to provide a focus for investment, new markets, new major retail and employment development.

8.15 Within the property market assessment the study concludes that there is relatively poor demand for office space in the town due to a combination of the condition of much of the office stock, but together with perceptions of the area, including poor public transport and traffic congestion. Whilst the study recognises that these issues are not unique to Maidstone there is a requirement to improve the perception of the town centre as a place to conduct business.

8.16 In terms of general conclusions in relation to transport and the economic activity, the Town Centre Study identifies that, despite a number of stations, rail provision is considered relatively poor, in particular in terms of links to/from Central London. It highlights the perceptions of significant congestion around the town that impacts upon the attractiveness of the location for businesses. More generally, the barriers created by the vehicular routes surrounding the town centre are acknowledged to creating movement difficulties for pedestrians and cyclists reducing town centre accessibility. This is compounded by limited crossings of the River Medway. It also highlights the excessive number of town centre car parks, many of which are very small, for which the land could be better utilised.

Impact of transport on business operations

8.17 Section 2 outlined the business engagement process that has been undertaken to ascertain both the views of business on current and future transport provision, but also to undertaken the key ways that transport in Maidstone affects their business operations.

8.18 The outputs indicated that rail services and vehicle circulation around the town are the major areas where improvements are required in order to support business activity.

8.19 Highway network congestion is a major concern to business, both currently and in the future, and many consider that connectivity to the strategic road network, in particular the M20 motorway, is key issue for business prosperity. Access to the M20 from the south of the borough is currently considered poor.

8.20 Rail services to London were highlighted as an area for further improvement. Whilst it was accepted that the high speed services were a positive introduction, more still needed to be done to reduce journey times across the day.

8.21 Town centre parking provision is currently considered to be more than adequate and businesses were, generally, not significantly concerned about the impact of parking charges upon business operations. Instead it is transport congestion, and the effect upon business travel, that has the greatest impact upon business operations.

Summary

8.22 The background policy and planning studies identify a wide range of issues that are currently affecting economic activity across the borough. In terms of transport, there a number of reoccurring themes that are summarised as follows:

- Town centre vehicle congestion reduces accessibility and creates a poor perception of the location as a place to undertake business
- Vehicle congestion also restricts access across the borough, in particular to and from the M20. This particularly affects business operation in the south of the borough.
- Rail connectivity to London and other major centre is poor and results in Maidstone being less competitive than other centres
- Generally, public transport accessibility across the borough is considered insufficient for certain corridors making access to work for those without a car difficult.
- Town centre car parking supply is considered more than adequate and could be rationalised. Parking tariffs are also considered to be reasonable and are not restrictive to business operations.

Transport and Economic Activity

Background Research

8.23 There is a growing body of evidence that is trying to establish the links between transport provision and economic activity. Much of this has sought to understand the consequences that poor transport provision and traffic congestion has upon both local economies in terms of existing business activities, as well as the ability to attract new investment.

8.24 The Department for Transports (DfT) New Approach to Transport Appraisal (NATA) establishes a range of area in which transport affects wider economic activity. These are based upon on-going research work dating back to 1999 and the SACTRA report on Transport and the Economy. The most recent DfT advice on assessing wider economic impacts focuses upon three elements:

- agglomeration impacts,
- increased or decreased output in imperfectly competitive markets
- labour market impacts: more/less people able to access work or move to more/less productive jobs

8.25 Agglomeration impacts relate to phenomenon known as effective economic density, which provides a measure of the mass of economic activity within an area. This measure reflects the accessibility of firms and workers to each other, with the importance of one firm/worker to another declining over distance. Empirical evidence has demonstrated that the closer that firms and workers are to each other, in terms of relative journey times, the more opportunities there are for these companies to benefit from economies of scale, such as reduced cost from suppliers and greater specialisation. It also allows the labour force to be more transferable and flexible. This results in overall higher output for the local economy.

8.26 Output changes in imperfectly competitive markets relate to situations where existing firms enjoy a competitive advantage over other firms in the market that allows them control prices and outputs. A reduction in transport costs (to a business and/or freight), through improved transport access (e.g. less congestion) allows other firms to increase production, or output. This increases competition and provides welfare gains to consumers of these products.

8.27 Labour market impacts relate to the decisions that the potential labour force make whether to work or whether to change jobs. Improved transport accessibility may incentivise individuals previously not working to enter the labour market or alternative to change to a better paid job. Both outcomes result in increased economic activity for the local economy.

8.28 Recent research in the US by the National Cooperative Highway Research Program has sought to examine the specific impacts of urban traffic congestion on the business activity. This sought to examine how sensitive business costs, productivity, and output are to congestion.

8.29 This research concluded that the level of sensitivity to traffic congestion is attributable to an individual industry sector's reliance on skilled labour, or specialised inputs, and geographic area available to obtain those inputs. In other words, congestion effectively contracts the market area for inputs, increasing their costs, and, hence, increasing production costs. The research also demonstrated that industries will compensate for congestion and try to reduce costs through location choices, but also other strategies such as changing operations.

The findings of the US research compliment the UK research work with the recognition that the real monetary cost of congestion to an economy is greater than just the direct transport impacts in terms of travel times and costs for users, with the full cost includes additional productivity costs.

8.30 It identifies the link between productivity and the ability of businesses to substitute among inputs (and workers) as they adjust to the higher costs of travel as a key element. Congestion effectively shrinks business market areas and reduces (eliminates) the scale economies (agglomeration benefits) of operating in large urban areas.

Impact of Packages

8.31 The research work to date has demonstrated that the direct impacts of transport constraints or transport improvements should be considered not just in terms of the observable impact of journey times and costs for transport users, but also the wider implications on business operations.

8.32 The impact of travel time, the costs associated with travel, and the reliability of travel upon economic activity should be considered in the following contexts:

- ***Employment growth:*** the recent performance, and on-going uncertainty, in the macro economy means that it is difficult to forecast direct impacts of transport beyond the short-term instability. It is challenging to attribute future employment change with any robustness to the existing and future state of the transport network.
- ***Existing businesses and commercial areas:*** these represent the underlying drivers of economic competitiveness within the local and regional economy. Existing operations require servicing, as well as access by customers, the majority of which is road based. Access across the borough and connectivity to the M20 is a critical element. Highly congested conditions will impact significantly on business operations, increasing transport costs, and reducing outputs. It will also create negative agglomeration impacts as effective economic density (e.g. accessibility between firms) increases.
- ***Labour market:*** An effective labour market relies upon good accessibility between residential and employment areas. Increasing congestion and journey times distorts the market reducing the available supply or increasing the cost. The current nature of the labour market with high unemployment means that this is less of an issue at present, although it will affect the choice of jobs that individuals take. The Maidstone jobs market is currently not considered to be over specialised, which reduces the sensitivity of accessibility changes on the availability of suitable labour. However, if the borough aims to develop the economy further and diversify into new innovative sectors then access to labour will become a more critical factor.
- ***Road freight:*** Whilst modern Just-in-Time production and delivery means that anticipated transport delays can partly be scheduled into itineraries, the reliability of the transport network is a critical aspect. It is therefore important that access to and from the strategic road network is efficient and reliable.
- ***Town centre:*** accessibility to the retail core is critical for both individual businesses but also the overall perception of Maidstone as a premier retail centre.
- ***Rural economy:*** the rural economy often has a much great reliance upon the highway network with employment and residential densities often reducing the viability of public transport provision. Marinating efficient and reliable highway network is, therefore, critical with connections to town centres and the strategic road network of premium importance. Public transport connections to town centres will also enhance economic activity, not least in providing greater access to the labour market.

- ***Inward investment:*** A congested, dislocated and traffic polluted local economy is not conducive to inward investment, especially as road transport forms the dominant modal share in the UK. Poor mainline rail connections to Central London are also a deterrent. If traffic conditions are exacerbated , this will create a clear disincentive investment; and
- ***Development capacity:*** the local planning studies have identified the requirement for the local economy to diversify and unlocking development capacity is an opportunity to achieve this aim. Poor transport connectivity will deter investors and sites, without improvements to accessibility, from coming forward to create jobs and economic growth.

Option Assessment

Overview

8.33 The transport model analysis has provided an insight into the impact of the packages of measures upon overall transport network provision. It provides a series of metrics that can be utilised to assess the potential impacts on the wider economy and economic activity. This includes:

- Peak period vehicle flows
- Peak period journey times
- Peak period network congestion

8.34 In addition, the proposed enhancements to transport capacity can be examined in terms of the opportunities they will provide to increase accessibility across the borough.

Reference Case (Option 1)

8.35 The modelling outputs indicate that there will be around a 50% increase in traffic movements on the main road corridors leading in and out from Maidstone between 2007 and 2026. The largest increases will be to the north of the borough along the A229 and A249. The impact that this growth in trips will have on the highway network is to increase journey times along these corridors and create additional congestion.

8.36 Figure 5.1 (Section 5) highlights the predicted network congestion within the AM peak under Option 1, and highlighted both the A229 and A249 as operating either close or over capacity.

8.37 The impact that this level of congestion will have upon the local economy is widespread. Not only will journey times to access business and clients increase significantly, the reliability of the highway network is likely to deteriorate considerably on those links that are operating so close, or over capacity. Given the importance of these links in accessing the strategic road network, i.e. the M20, it is considered likely that this will represent a significant disbenefit to business operations.

8.38 North-south routes through the town centre are predicted to be particularly affected by the additional congestion, which will have a particularly affect upon businesses located south of the town centre wishing to access the M20.

8.39 The option does provide enhanced bus operations across the network that will provide significant improvements to public transport accessibility. The Thameslink Rail project also provides enhanced rail connectivity to London.

8.40 Enhancements to walking and cycling provision will also improve accessibility to town centre employment and retail opportunities.

8.41 The impact upon each key economic element is assessed below:

- ***Existing business:*** the increasing levels of underlying highway congestion will increase transport costs with the likely impact to reduce outputs in competitive markets. The reduced accessibility will also reduce effective economic density between companies therefore reducing agglomeration benefits.
- ***Labour market:*** increased highway congestion will also result in reduce efficiency of the labour market. Improved bus and rail provision, alongside walking and cycling infrastructure, will help to readdress the balance, although bus services along corridors without dedicated bus lanes will also be affected by the increased highway congestion.
- ***Road freight:*** increased highway congestion and reduced reliability will directly affect freight accessibility. Access to and from the M20 will be affected, as will deliveries into the town centre and trips required to travel through the town centre to the south of the borough.
- ***The Town Centre:*** Accessibility to the town centre by car will be significantly affected by increased congestion, particularly in the peak periods. This will impact both directly upon business operations, as well as affecting the perceptions of the Town Centre as a retail core. Enhanced public transport services will provide countering benefits with improved connectivity by rail to London. It is envisaged that there will be particular improvements in the inter-peak periods where bus services will be much more frequent.
- ***The rural economy:*** Network congestion is mainly focused on the main arterial routes leading into Maidstone Town Centre; however, this is likely to affect business operations in terms of cross-borough movements and access to the M20 from the south of the borough. Improvements to bus services should provide enhanced access to labour markets and improve the competitiveness of business.
- ***Encouraging inward investment:*** the vehicle network congestion, with associated disbenefits, is likely to affect the perception of Maidstone as a location to invest. Improved rail connectivity to London will assist in countering this impact; however, the overall impacts are likely to be detrimental in comparison with other competing area.
- ***Unlocking development capacity:*** the forecast congestion and unreliability of the highway network will impact significantly upon connectivity and hence the opportunity to unlock development capacity. The attractiveness of town centre development will be reduced due to peak period congestion, as will sites to the south of the town that require primary access along the A229 corridor. Improved public transport provision will improve accessibility to the town centre and so potentially assist in encouraging retail development, although this would be countered by freight access issues.

Option 2

8.42 The impacts of the additional transport measures incorporated within Option 2 are assessed against the Option 1 results.

8.43 The modelling outputs indicate that there will be around a 5% increase in peak traffic movements on the main road corridors leading in and out from Maidstone with the Option 2 packages in comparison to Option 1. This is on top of the significant increase from the 2007 peak vehicle flows.

8.44 There are decreases, however, on one of the key corridors, the A229 Royal Engineers Road, leading to the town centre from the north of the borough. Figure 5.2 (Section 5) highlights the predicted network congestion within the AM peak under Option 2. This indicates that the A229

Royal Engineers Road remains highly congested, along with the A249. Congestion along the A229 Loose Road, to the south of the town centre is forecast to reduce, as is congestion around Junction 5 of M20, thus improving access to the strategic road network.

8.45 The impact that the vehicle congestion will have upon the local economy will remain widespread, as with Option 1. Journey times to access business and clients would remain high in peak periods and the reliability on the very congested elements of the highway network is likely to remain poor. Given the importance of these links in accessing the strategic road network, i.e. the M20, it is considered likely that this will still represent a significant disbenefit to business operations.

8.46 North-south routes through the town centre will remain affected by the heavy congestion in peak periods, although access to the town centre from the south of the borough will improve. Businesses in the south wishes to access the M20 will still be affected by congestion on the A229 Royal Engineers Road.

8.47 The enhanced park & ride services will provide greater accessibility by public transport into the town centre, in particular along the A229 / A274 corridors where bus lanes and bus priority measures will be provided.

8.48 The impact upon each key economic element of the additional measures included in Option 2 is assessed below:

- ***Existing business:*** highway congestion would continue to increase transport costs and reduce outputs in competitive markets. The reduced accessibility will also continue to affect agglomeration benefits.
- ***Labour market:*** highway congestion would continue to reduce efficiency of the labour market, albeit countered by the bus and rail enhancements provided in both Options 1 and 2. Improved park & ride provision in Option 2 would improve accessibility to the town centre further, in particular from rural areas and from workers outside of Maidstone. This could enhance the diversity of the available labour market. The increased long-stay car parking charges will deter commuter travel into Maidstone Town Centre by car. Whilst this could potentially reduce the size of the available labour market for those without access to alternative modes, the availability of both a significantly enhanced bus network and six park & ride sites is considered sufficient to ensure that this would not be the case.
- ***Road freight:*** highway congestion and reduced reliability would continue to affect freight accessibility. Access to and from the M20 will be affected, as would deliveries into the town centre. There would be an improvement in reliability for trips from the south of the borough into the town centre, although onward access to the M20 will remain poor.
- ***The Town Centre:*** Accessibility to the town centre by car would continue to be significantly affected by increased congestion, particularly in the peak periods, impacting upon business operations and the perception of the Town Centre as a retail core. Enhanced public transport services would continue to provide countering benefits with improved connectivity by rail to London. The enhanced park & ride provision in Option 2 would also much improve access to the town centre. Increased long-stay car parking charges will impact primarily upon commuter traffic with the modelling analysis indicating that short-distance commuters will switch to bus services.
- ***The rural economy:*** business operations would continue to be affected by cross-borough vehicle movements and access to the M20, although access from the south of the borough will be improved. The improved bus services would continue provide enhanced access to labour

markets and improves the competitiveness of business. In addition, the park & ride services would provide a convenient transport option within which to access the town centre.

- ***Encouraging inward investment:*** the vehicle network congestion, with associated disbenefits, would continue to affect the perception of Maidstone as a location to invest. Improved rail connectivity to London would continue to assist in countering this impact. The enhance park & ride provision would improve town centre accessibility and so would provide a positive encouragement to retail investment.
- ***Unlocking development capacity:*** the congestion and unreliability of the highway network would continue to impact upon vehicle connectivity and hence the opportunity to unlock development capacity. Improved public transport provision, specifically the enhance park & ride services would improve accessibility to the town centre and assist in encouraging retail development.

Option 3

8.49 The impacts of the additional transport measures incorporated within Option 3 are assessed against the Option 1 results.

8.50 The modelling outputs indicate that there will be around a 3% increase in overall peak traffic movements on the main road corridors leading in and out from Maidstone with the Option 3 packages in comparison to Option 1. This is on top of the significant increase from the 2007 peak vehicle flows.

8.51 There are decreases, however, on the A229 Royal Engineers Road and the A249 Sittingbourne Road leading to the town centre from the north of the borough. Figure 5.3 (Section 5) highlights the predicted network congestion within the AM peak under Option 2. This indicates that the A229 Royal Engineers Road remains highly congested, along with parts of the A249. Congestion along the A229 Loose Road, to the south of the town centre is forecast to reduce, as is congestion around Junction 5 of M20, thus improving access to the strategic road network.

8.52 The impact that the vehicle congestion will have upon the local economy will remain widespread, as with Option 1. Journey times to access business and clients would remain high in peak periods and the reliability on the very congested elements of the highway network is likely to remain poor. Given the importance of these links in accessing the strategic road network, i.e. the M20, it is considered likely that this will still represent a significant disbenefit to business operations.

8.53 North-south routes through the town centre will remain affected by the heavy congestion in the peak periods, although access to the town centre from the south of the borough will improve. Businesses in the south wishing to access the M20 will still be affected by congestion on the A229 Royal Engineers Road.

8.54 The enhanced park & ride services will provide greater accessibility by public transport into the town centre, in particular along the A229 / A274 corridors where bus lanes and bus priority measures will be provided. The North West Express Loop bus service will also provide greater connectivity between the town centre and proposed development sites to the south of Junction 5 of the M20.

8.55 The impact upon each key economic element of the additional measures included in Option 3 is assessed below:

- ***Existing business:*** highway congestion would continue to increase transport costs and reduce outputs in competitive markets. The reduced accessibility will also continue to affect agglomeration benefits.
- ***Labour market:*** highway congestion would continue to reduce efficiency of the labour market, albeit countered by the bus and rail enhancements provided in both Options 1 and 3. Improved park & ride provision in Option 3 would improve accessibility to the town centre further, in particular from rural areas and from workers outside of Maidstone. This could enhance the diversity of the available labour market. The increased long-stay car parking charges will deter commuter travel into Maidstone Town Centre by car. Whilst this could potentially reduce the size of the available labour market for those without access to alternative modes, the availability of both a significantly enhanced bus network and the north and south park & ride sites is considered sufficient to ensure that this would not be the case.
- ***Road freight:*** highway congestion and reduced reliability would continue to affect freight accessibility. Access to and from the M20 will be affected, as would deliveries into the town centre. There would be an improvement in reliability for trips from the south of the borough into the town centre, although onward access to the M20 will remain poor.
- ***The Town Centre:*** Accessibility to the town centre by car would continue to be significantly affected by increased congestion, particularly in the peak periods, impacting upon business operations and the perception of the Town Centre as a retail core. Enhanced public transport services would continue to provide countering benefits with improved connectivity by rail to London. The enhanced park & ride provision in Option 3, along with the North West Express Loop bus service would also much improve access to the town centre. Increased long-stay car parking charges will impact primarily upon commuter traffic with the modelling analysis indicating that short-distance commuters will switch to bus services.
- ***The rural economy:*** business operations would continue to be affected by cross-borough vehicle movements and access to the M20, although access from the south of the borough will be improved. The improved bus services would continue provide enhanced access to labour markets and improves the competitiveness of business. In addition, the park & ride services would provide a convenient transport option within which to access the town centre.
- ***Encouraging inward investment:*** the vehicle network congestion, with associated disbenefits, would continue to affect the perception of Maidstone as a location to invest. Improved rail connectivity to London would continue to assist in countering this impact. The enhance park & ride provision would improve town centre accessibility and so would provide a positive encouragement to retail investment. The North West Express Loop bus service would also enhance connectivity between the development sites in the North West and the town centre.
- ***Unlocking development capacity:*** the congestion and unreliability of the highway network would continue to impact upon vehicle connectivity and hence the opportunity to unlock development capacity. Improved public transport provision, specifically the enhance park & ride services and North West Express Loop bus service would improve accessibility to the town centre and assist in encouraging retail development.

Option 4

8.56 The SEMSL scheme, within Option 4, will provide additional highway capacity and will provide both enhanced connectivity from the south of the borough to the strategic road network, as well as provide some congestion relief to the town centre.

8.57 The impact upon each key economic element of the SEMSL scheme is assessed below:

- ***Existing business:*** the scheme will enhance connectivity to the strategic road network for businesses located in the south of the borough and would reduce transport costs and increase outputs in competitive markets. The improved accessibility would also have positive agglomeration benefits for these businesses. The scheme should also help relieve some of the town centre highway congestion and so provide businesses located within the town centre or those who are required to travel across the town.
- ***Labour market:*** the new highway link and reduced highway congestion would improve accessibility to the south of the borough and to the town centre improving the efficiency of the labour market for those with access to car.
- ***Road freight:*** the new highway link and reduced highway congestion would improve accessibility from the strategic road network to the south of the borough and the reliability to journeys to the town centre.
- ***The Town Centre:*** reduced highway congestion would improve accessibility to the town centre and improve business operations and the perception of the Town Centre as a retail core.
- ***The rural economy:*** business operations in the south of the borough would benefit from improved accessibility to the strategic road network as well as to the town centre by car and would enhance competitiveness.
- ***Encouraging inward investment:*** the reduced vehicle network congestion would enhance the perception of Maidstone as a location to invest.
- ***Unlocking development capacity:*** the new road link and enhanced accessibility to the strategic road network would unlock development opportunities. Reduced network congestion would also encourage wider development opportunities.

9 Cost Benefit Analysis

Overview

9.1 This section presents the cost benefit analysis of Options 2, 3 and 4 in relation to the reference case (Option 1). It assesses the impact of each package of measures against the DfT's New Approach to Transport Appraisal (NATA) criteria elements:

- Economy;
- Environment;
- Accessibility and Social Inclusion;
- Integration; and
- Safety;

9.2 The primary focus is upon the direct impact of the transport measures upon the economy, along with an accident analysis. A qualitative assessment has been undertaken for the other elements.

Economy Objective

Overview

9.3 The economic objective seeks to assess the benefits of the packages of measures against both direct and indirect impacts on the economy.

9.4 The direct impacts relate to the Transport Economic Efficiency of the package in terms of improvements in journey times and reduction in travel costs. In addition, journey time reliability is also assessed. This is assessed in terms of groups travelling for different purposes, including businesses, commuters and other shopping, leisure and personal trips.

9.5 The indirect impacts relate to the potential affects upon the wider economy. This analysis has already been presented in Section 7.

9.6 The Economy Objective also includes the overall assessment of benefits against the cost to the Public Accounts. This is considered at the end of the Section 8.

Transport Economic Efficiency

9.7 The outputs from the Maidstone Visum modelling work have been used as the basis upon which to assess the Transport Economic Efficiency benefits relating from the scheme. These summarise the present value of user and non-user benefits for consumers and businesses over the lifetime of the scheme.

9.8 A standard approach to the analysis has been undertaken utilising the DfT's Transport User Benefits Appraisal (TUBA) modelling software and in full accordance with WebTAG requirements.

TUBA Modelling Approach

9.9 The TUBA modelling has utilised the forecast 2026 person trips, journey times, distances travelled, public transport fares and vehicle parking charges. These have been provided from the modelled AM peak hour and PM peak hour periods.

9.10 In the absence of a second modelled year this has been simulated for 2041 through the application of TEMPRO growth rates to factor up the levels of person flows. The same journey times,

distances travelled, public transport fares and vehicle parking charges matrices have been applied as the 2026 model.

9.11 A scheme opening year of 2026 has been applied with a final appraisal year of 2085. A peak period factor of 2.5 and annulisation factor of 253 has been applied, giving 632 AM peak and 632 PM Peak hours within the analysis. No allowance has been made for inter-peak, off-peak or weekend impacts due to an absence of transport modelling data.

9.12 All monetary values presented are in 2002 market prices and values are discounted to 2002 applying a discount rate of 3.5% for benefits within the first 30 years of appraisal and 3.0% beyond.

9.13 The TUBA model assesses the change in travel patterns/demand, travel times, and travel distances between the modelled reference case (Option 1) and the do-something cases (Options 2 and 3) in order to assess the impact upon travel time and vehicle operating costs.

9.14 Default values of time, and growth in values of time, and vehicle operating costs have been applied (as specified in WebTAG) in order to monetise the benefits/disbenefits associated with the mitigation measures.

9.15 The results are presented for the impact upon commuters, other non-business trips, and for business trips.

Limitations of the TUBA modelling

9.16 The TUBA modelling process has been restricted due to a number of limitations relating to the Maidstone Visum Model. These are summarised below.

- Modelled period: the availability of only a single AM peak and single PM peak hour has restricted the ability of the TUBA modelling to assess all day impacts. The profile of delays and congestion in the inter-peak, off-peak and weekends was considered to dissimilar to the single hour peak models to warrant legitimate extrapolation of the results. This is likely to result in an under-reporting of the benefits from the schemes.
- Modelled years: TUBA requires two modelled years in order to be able to assess costs and benefits over time. In the absence of a second modelled year a crude process has been undertaken to simulate a second modelled year, as described above. This is again, likely to result in an under-reporting of the benefits from the schemes, as we would expect congestion to worsen over time as a result of increased person trips.
- Model Specifications: when originally constructed in 2007, the Maidstone Visum modelled focused mainly upon replicating the transport network and movements within the borough of Maidstone. Whilst a range of other external zones were included, to represent the rest of Kent and beyond, these were not modelled in great detail. The 2012 modelling work has revealed that the output data for these zones resulting from the trips distribution module is unreliable. It has therefore been necessary to discard much of this data from the TUBA modelling, in particular in relation to rail and bus trips. Unfortunately, due to the nature of the Park & Ride measures that have been assessed, many of these trips originate within these external zones. This has affected the accuracy of these results within the TUBA model outputs.

- Model Matrices: due to some of the issues described above in relation to the model specification, it has not been possible to utilise all of the Visum output matrices within the TUBA modelling. This includes the rail matrices and the car park charge matrices. Whilst an alternative assessment of the car park charges has been undertaken and incorporated into the TUBA outputs, no account of rail trips is included in the assessment. This is anticipated to under-estimate some of the benefits.
- Model Scenarios: the Option 4 package has not been specifically modelled against the revised Core Strategy development proposals. Previous modelling work has been carried out that provides an indication of the impact of the scheme. No TUBA analysis has been conducted for Option 4, instead a separate exercise has been conducted to assess the potential benefits.

9.17 It is important that these limitations are taken into account when assessing the TUBA model results.

Transport Economic Efficiency Analysis Outputs

9.18 The results of the TUBA modelling work for each Options 2 and 3 are presented in Tables 9.1 and 9.2, respectively.

Table 9.1 Transport User Impacts – TUBA Output – Option 2

Mode	Journey Time Benefits (£'000s)	User Charge Impacts (£'000s)	Vehicle Operating Cost Impacts (£'000s)
Car	433,280	-10,044	71,861
Bus	549	-	-
Rail	n/a*	n/a*	n/a*
Park & Ride	-100,728	-13,757	-
Total	**333,101**	**-23,801**	**71,861**

TUBA Modelling – all outputs in £'000s, over 60 years, discounted to 2002 and in 2002 prices

** rail trips have been removed from the TUBA model due to limitations with the external zone of the Maidstone Visum Model*

9.19 The results demonstrate that the Option 2 measures are forecast to generate significant journey time savings for travellers. The benefits are all derived by car users, resulting from less congestion.

9.20 There is a reduction journey time benefits for park & ride users; however, this is considered to be partly as a result of the issue with the external zones in the Maidstone Visum model. It may partly reflect the fact that park & ride services on three of the six corridors benefit for no bus lanes and so journey times may not be any quicker than car but individuals are choosing to use park & ride as it is much cheaper than long-stay parking in the town centre.

Table 9.2 Transport User Impacts – TUBA Output – Option 3

Mode	Journey Time Benefits (£'000s)	User Charge Impacts (£'000s)	Vehicle Operating Cost Impacts (£'000s)
Car	738,637	-7,247	70,419
Bus	-57,159	-	-
Rail	n/a*	n/a*	n/a*
Park & Ride	-13,606	-4,302	-3,016
Total	**667,873**	**-11,549**	**67,402**

TUBA Modelling – all outputs in £'000s, over 60 years, discounted to 2002 and in 2002 prices

** rail trips have been removed from the TUBA model due to limitations with the external zone of the Maidstone Visum Model*

9.21 A similar pattern is recorded for Option 3, although the journey time benefits are forecast to be much greater.

9.22 There is only a marginal negative journey time impact for park & ride reflecting the fact that all services have bus lane and bus priority measures.

9.23 Table 9.3 provides an overall summary of private and business benefits for Options 2 and 3 and presents the overall present value of TEE benefits.

Table 9.3 Transport Economic Efficiency Benefits – TUBA Output – Option 2 and 3

Mode	Option 2 (£'000s)	Option 3 (£'000s)
Commuter User Benefits	90,653	174,749
Other User Benefits	140,628	191,226
Business User Benefits	149,880	357,751
Private Sector Impacts	27,205	35,122
Other Business Impacts	-4,451	-
Present Value of Transport Economic Efficiency Benefits	**403,915**	**758,849**

TUBA Modelling – all outputs in £'000s, over 60 years, discounted to 2002 and in 2002 prices

9.24 The five user groups presented in Table 9.3 are defined as follows:

Commuter User Benefits: net benefits to commuters travelling to and from a place of work

Other User Benefits: net benefits to non-commuters and non-business users on shopping, leisure, personal business trips

Business User Benefits: net benefits to businesses from any business-related journeys undertaken by staff or by freight

Private Sector Benefits: net benefits to private sector public transport operators in terms of reduced operating costs or increased revenues (note: these relate to bus operator benefits)

Other Business Impacts: Developer contributions (note: the Option 2 impacts relate to an assumed developer contribution to the park & ride site at Newnham Court)

9.25 The outputs indicate that Option 3 is forecast to generate considerably larger user benefits than Option 2. The largest benefits are derived by the business users, reflecting the fact that they value journey time savings more highly than commuters and other users.

9.26 The Option 3 business user benefits, calculated over 60 years, discounted to 2002 and in 2002 prices, are in the region of £358 million. In order to put this value into some form of present day context this could be considered as the equivalent of generating £7.75 million of benefits to business in 2012 and for every subsequent year over 59 years, although in practice benefits would have a much different profile. The equivalent 2012 proxy value for Option 2 business benefits would be £3.25 million.

9.27 More detailed assessment of the outputs indicates that the majority of benefits generated for Option 2 are associated with the PM peak. In comparison, Option 3 provides equal AM and PM peak period benefits.

Reliability

9.28 In addition to outright travel time impacts from the packages of measures, the reliability of travel time is also an important element of potential scheme benefits.

9.29 The network congestion maps for Options 2 and Options 3 (Figures 5.2 and 5.3) indicate that a number of highway links within the network will remain operating above or very close to capacity. Whilst this does not represent a deterioration from the Option 1 outputs, it still indicates that vehicle journey times could potentially be subject to unreliability.

9.30 Whilst a detailed assessment of network congestion for Option 4 is unavailable the indication from the assessment of potential impacts suggests that the scheme will help to reduce congestion within the town. This should have a positive impact upon the reliability of journey times along the A229 corridor.

9.31 The additional bus priority measures that are included within the Option 2 and 3 will improve the reliability of bus and park & ride journey times. The incorporation of bus / HOV lanes will also enhance journey time reliability for buses and multi-occupancy vehicles.

Safety Objective

9.32 The safety objective encompasses two elements: accidents and personal safety and security.

9.33 The accident analysis has been conducted using COBA modelling software approach to assess the impacts of the package options upon accident levels.

9.34 A qualitative assessment road safety and personal security has also been undertaken.

Accidents Analysis

9.35 The outputs from the Maidstone Visum modelling work have been used as the basis upon which to assess the impact upon accident levels resulting from the packages of measures. These summarise the present value of accident impacts for all highway users over the lifetime of the scheme.

9.36 A standard approach to the analysis has been undertaken utilising the COBA11 modelling software and in full accordance with WebTAG requirements. The assessment is not available for Option 4 due to an absence of transport modelling data.

COBA Modelling Approach

9.37 The COBA modelling has utilised the Maidstone Visum model to provide a list of links in each scenario, including link lengths and the classes of road. In addition the forecast flows along each link within each modelled scenarios are also utilised.

9.38 A scheme opening year of 2026 has been applied with a final appraisal year of 2085. An annulisation factor of 632 has been applied. All monetary values presented are in 2002 market prices and values are discounted to 2002 applying a discount rate of 3.5% for costs within the first 30 years of appraisal and 3.0% beyond.

9.39 The COBA model attributes accident rates to link types and assesses the volume of flows associated with these each link. As such, when assessing the impact of the mitigation measures it will assess both the impact that this has upon link types and lengths of links, as well as the volume traffic forecast to use each link.

9.40 Default accident rates, and changes in accident rates over time, and accident costs have been applied (as specified in WebTAG) in order to monetise the benefits/disbenefits associated with the mitigation measures

Accident Analysis Outputs

9.41 The results of the COBA modelling work for Options 2 and 3 are presented in Table 9.4. This indicates the number of accidents over the lifetime of the appraisal and the monetised value of the impacts.

Table 9.4 Accident Analysis Outputs

Option Assessment	Number of Fatal Accidents	Number of Serious Accidents	Number of Slight Accidents	Present Value of Accident Savings (£'000)
Option 2 vs Option 1	+14	+118	+697	-30,372
Option 3 vs Option 1	-5	-26	-669	+9,776

COBA Modelling, benefits over 60 years, monetary value discounted to 2002 and in 2002 prices

9.42 The results indicate that Option 2 is forecast to have an increase in the level of accidents, resulting from the change in vehicle trips distribution across the network.

9.43 Conversely, Option 3 is forecast to have a minor improvement.

Personal Safety and Security

9.44 The impacts of the packages on personal safety and security are considered to be minimal; however, all the park & ride sites within Options w and 3 are assumed to incorporate high quality parking and waiting facilities, including CCTV.

Environment Objective

Overview

9.45 The environment objective aims to protect the built and natural environment. This includes reducing the direct and indirect impacts of transport schemes and their use on the environment. There are 10 sub-objectives, which include:

- Noise,
- Local Air Quality,
- Greenhouse Gases,
- Landscape,
- Townscape,
- Heritage of Historic Resources,
- Biodiversity,
- Water Environment,
- Physical Fitness, and
- Journey Ambience.

9.46 The environmental assessment provides an indicative high level assessment of the environmental criteria set out above, with a specific focus upon air quality, greenhouse gases, and landscape & townscape. This provides a discussion of the potential issues relating to each option but is not meant to provide a detailed appraisal. A full strategic environmental assessment would be required for this purpose.

Local Air Quality

9.47 Local air quality is affected by the levels of vehicle trips, and hence emissions, in urban areas where there is exposure to properties. Whilst a detailed analysis has not been undertaken, Options 2 and 3 both reduce the overall number of car trips into the town centre, albeit that the Visum model outputs indicates that on the major corridors leading into the town centre the number of vehicle movement increases marginally. Overall it is anticipated that both options should improve local air quality within the core town centre.

9.48 Option 4 will also reduce vehicle trips through the town centre and so would have a benefit of improving local air quality along the A229 corridor. Conversely trips to the south east of the town centre would increase and have a negative impact on properties in this locality.

Greenhouse Gases

9.49 The TUBA modelling provides an assessment of greenhouse gases (or carbon impact) for the measures including within Options 2 and 3. Table 9.5 summaries the outputs.

Table 9.5 Greenhouse Gas Analysis Outputs

Option Assessment	AM Peak Carbon Saving (tonnes)	PM Peak Carbon Saving (tonnes)	Present Value of Carbon Savings (£'000)
Option 2	-38,727	-144,869	+18,814
Option 3	-62,276	-111,473	+17,802

TUBA Modelling – all outputs in £'000s, over 60 years, discounted to 2002 and in 2002 prices

9.50 The results indicate that, overall, both packages of measures are forecast to have very similar impacts upon reducing greenhouse gas emissions. A larger proportion of benefits are associated with the PM peak period, where vehicle trip reductions are forecast to be higher.

9.51 The absence of modelling data for Option 4 means that a quantitative analysis of greenhouse gas impacts is unavailable. The SEMSL scheme, however, would create additional vehicle trips and so have a negative impact on greenhouse gas production.

Landscape & Townscape

9.52 Options 2 and 3 will have some impacts upon landscape and townscape. The major infrastructure works relate to the construction of the new park & ride sites and the creation of bus / HOV lanes.

9.53 Some of the park & ride sites are proposed to be constructed on green fields and so would have a negative impact on visual appearance.

9.54 Whilst some of the bus / HOV lanes will be constructed on existing carriageway (e.g. along the A229 gyratory) other section will require land take and will therefore have a negative impact upon townscape along these corridors, primarily the A229 and A274.

9.55 There will also be negative impacts during the construction phases of all the infrastructure elements.

9.56 Option 4 will have a much greater impact upon landscape with the SEMSL being constructed across green fields, with some bridge work and grade separated junctions. In addition the increased traffic volumes within the area will also impact upon the visual aspect of the landscape. There will also be negative impacts during the construction phase.

Other Environmental Impacts

9.57 There are a range of other potential environmental impacts that are discussed in brief below:

- Noise: traffic volumes in built up areas will impact upon noise measures. All options should help to reduce traffic volumes within the core town centre, although flows along some corridors will worsen. In particularly, option 4 would generate significant disbenefit in the south east of the borough
- Heritage: infrastructure construction can impact upon a range of heritage criteria including monuments, listed buildings, and tree preservation orders, amongst others. No information is currently available as to whether any of the measures would impact upon these criteria.
- Biodiversity: infrastructure construction can impact upon a range of biodiversity criteria including designated sites, habitats, and protected species, amongst others. No information is currently available as to whether any of the measures would impact upon these criteria.
- Water environment: infrastructure construction can impact upon a range of water-related criteria including surface water, ground Water, and flood risk, amongst others. No information is currently available as to whether any of the measures would impact upon these criteria.
- Physical fitness: Options 2 and 3 incorporate additional public transport measures that would encourage walking at either end of the public transport leg of the journey. This should have a minor positive impact upon physical fitness. Option 4 will encourage trips by car so could have a negative impact upon physical fitness.
- Journey ambience: the enhanced park & ride facilities in Option 2 and 3 will improve journey ambience for these trips.

Accessibility Objective

Overview

9.58 The accessibility objective comprises three sub-objectives:

- Option Values,
- Severance, and
- Access to the Transport System.

9.59 The Maidstone Visum Model outputs have been used to assess the impact of the packages on accessibility between residential areas and key locations of employment, education, and other facilities and services.

Option Values

9.60 Option values provide a measure as to whether a package of measures increases the available transport options to individuals. WebTAG Unit 3.6.1 describes the option value sub-objective as particularly important for the schemes that will substantially change the availability of the transport services within the study area.

9.61 Options 2 and 3 provide new park & ride services along transport corridors into Maidstone, although Option 3 also removes some services. Option 2 is therefore considered to provide strong positive option value benefits. Option 3 is also considered to provide positive benefits as the new designation of park & ride services provides access to the town centre from both the north and the south of the borough, rather than the currently predominance of services in the north.

Severance

9.62 This sub-objective is concerned with severance (as a result of a proposed scheme) to non-motorised modes, especially pedestrians. Cyclists and equestrians should also be considered but are less susceptible to severance because they can travel more quickly than people on foot.

9.63 Options 2 and 3 will have limited impact upon severance, although the reduction in vehicle trips into the town centre should reduce barriers to pedestrian movements caused be vehicle flows.

9.64 Option 4 will create additional barriers to movement for pedestrians and cyclists around junctions of SEMSL, although this is considered likely to affect only a relative small number of trips.

Access to the Transport System

9.65 The access to the Transport System sub-objective assesses the access to the transport system based on two variables: availability of a vehicle for private use and the proximity to a public transport service.

9.66 The additional park & ride services in Options 2 and 3 do potentially increase the access of individuals to public transport services, although this is restricted, in general, to those with prior access to a car with which to access the park & ride site.

9.67 The additional North West Express Loop bus service in Option 3 will provide additional public transport connectivity to the north west of the town.

Integration Objective

9.68 The integration objective comprises the sub-objectives:

- Transport Interchange,
- Land Use and Other Government Policy

9.69 The NATA integration criterion covers both the impact of measures on integration with the existing transport network, as well as integration with overarching policy. Both aspects have been assessed qualitatively, the former by determining how the packages improve interchange between public transport modes, the latter through a review of key policy documents.

Transport Interchange

9.70 The Transport Interchanges sub-objective is aimed at assessing a scheme against the Government's objective of achieving truly integrated transport. WebTAG guidance sets out a series of passenger indicators:

- Waiting environment
- Level of facilities
- Level of information
- Visible staff presence
- Physical linkage for next stage of journey
- Reliability of connection

9.71 The new park & ride facilities in Options 2 and 3 will provide high quality waiting environment, along with associated facilities and information provision. In addition, the bus priority and bus lane provision will ensure a reliability of connection.

9.72 The park & ride services will also significantly improve interchange with rail and other bus services in the town centre.

Policy Integration

9.73 The policy integration sub-objectives assess the extent to which the packages are integrated with the land use proposals and policies.

9.74 The National Planning Framework, referred to in Section 3, emphasise the importance of designing new development to provide the right conditions to encourage walking, cycling and the use of public transport.

9.75 Options 2 and 3 clearly integration with the NPF policy through encouraging public transport trips and reducing the need to drive. The opposite is true for Option 4 which will encourage car use.

Overall Quantified Impact

9.76 An overall assessment of the quantified and monetised impacts from the appraisal process has been undertaken in order to provide an overall indication of the scale of the potential costs and benefits associated within each package.

9.77 It should be noted that the quantified element of the assessment is only one element of the overall appraisal and should be considered along with the qualitative assessment.

9.78 For Options 2 and 3 the assessment has utilised the TUBA and COBA modelling outputs. A separate analysis has been conducted for Option 4.

Present Value of Benefits

9.79 This section summarises the performance of the scheme option against the quantified and monetised impacts, outlined in the previous sections. This includes the transport user (TEE) impacts, the accident impacts, carbon impacts, and indirect tax revenue impacts (e.g. VAT on fuel).

9.80 Table 9.6 presents the overall impact upon the Present Value of Benefits (PVB) associated with the package.

Table 9.6 Overall Present Value of Benefits – Option 2 and 3

Element	Option 2 (£'000s)	Option 3 (£'000s)
Present Value of TEE benefits	403,915	758,849
Present Value of Accident Impacts	-30,372	9,776
Present Value of Carbon Impacts	18,814	17,802
Present Value of Indirect Tax Revenues	-43,224	-39,912
Overall Present Value of Benefits	**349,133**	**746,515**

TUBA Modelling – all outputs in £'000s, discounted to 2002 and in 2002 prices

Present Value of Scheme Costs

9.81 The scheme costs for each option, presented in Section 5, have been profiled over the lifetime of the appraisal and discounted. The net capital and operating costs between the reference case and Options 2 and 3 have been calculated.

9.82 Table 9.7 presents the present value of net costs to Government

Table 9.7 Overall Present Value of Costs to Government – Option 2 and 3

Public Accounts	Option 2 (£'000s)	Option 3 (£'000s)
Local Government Funding		
Revenue Cost (park & ride)	-34,879	-13,244
Revenue Cost (parking)	-212	6,047
Operating Costs	19,717	16,683
Investment Costs	4,384	1,308
Developer Contributions	-4,451	-
Net Local Government Funding	**-15,441**	**10,794**
Central Government Funding		
Revenue	-	-
Operating Costs	-	-
Investment Costs	10,875	17,018
Developer Contributions	-	-
Net Central Government Funding	**10,875**	**17,018**
Broad Transport Budget	**-4,566**	**27,812**

TUBA Modelling – all outputs in £'000s, over 60 years, discounted to 2002 and in 2002 prices
negative values represent a benefit to Government i.e. a revenue not a cost

9.83 The outputs indicate that Option 3 has a higher cost to Government over the lifetime of the appraisal and that Option 2 is forecast to generate sufficient revenue from park & ride to cover both the operating costs and the capital costs of the scheme. This is a direct result of the high overall forecasts of park & ride from the model, specifically at Newnham Court.

Quantified Package Performance - Option 2

9.84 The overall net impact of the proposed package of measures in Option 2, in terms of user and non-user benefits, private sector benefits, and Government costs are as follows:

- Net Present Value (NPV) = £384 million
- Benefit to Cost Ratio (BCR) = (negative costs make BCR calculation irrelevant)

9.85 The NPV represents a positive indication that the package of measures in Option 2 is considered to generate benefits well in excess of the associated costs. A BCR cannot be calculated since the scheme is not forecast to represent a cost to Government due to the revenue generation of the park & ride scheme.

9.86 The scheme would also generate inter-peak, off-peak and weekend benefits that are not included within this analysis.

9.87 A separate exercise has been undertaken to look at the time period over which the measures outlined in Option 2 would breakeven in economic terms i.e. when the net capital and operating costs are off-set by the revenue and economic benefits to the economy. The analysis has evaluated all of the capital and operating costs, alongside park & ride and town centre car parking revenue impacts, as well as the economic business benefits.

9.88 The result is that the Option 2 measures are forecast to breakeven, in economic terms, just six years after the assumed scheme opening year of 2026.

Quantified Package Performance - Option 3

9.89 The overall net impact of the proposed package of measures in Option 3, in terms of user and non-user benefits, private sector benefits, and Government costs are as follows:

- Net Present Value (NPV) = £709 million
- Benefit to Cost Ratio (BCR) = 26 to 1

9.90 The BCR represents a very strong positive indication that the package of measures in Option 3 is considered to generate benefits in excess of the associated costs. Again, this is associated with the revenue generation of the park & ride scheme.

9.91 The scheme would also generate inter-peak, off-peak and weekend benefits that are not included within this analysis.

9.92 Again, a separate exercise has been undertaken to look at the time period over which the measures outlined in Option 3 would breakeven in economic terms i.e. when the net capital and operating costs are off-set by the revenue and economic benefits to the economy.

9.93 The result is that the Option 3 measures are forecast to breakeven, in economic terms, just four years after the assumed scheme opening year of 2026.

Quantified Package Performance - Option 4

9.94 A separate assessment of Option 4 has been undertaken as there was insufficient transport modelling output available to conduct a TUBA or COBA analysis.

9.95 This has utilised the transport model outputs described in Section 5 in order to estimate the potential number of vehicles that might use SEMSL, as well as those other vehicle drivers who would benefit from reduced congestion in Maidstone Town Centre.

SEMSL User Benefits

9.96 The Section 5 analysis indicated that around 5,360 vehicle movements would be in scope to potentially use SEMSL. For the purpose of the cost benefit assessment it has been assumed that 85% would choose to use the route, with others utilising alternative routes, including choosing to travel through the town centre as part of linked trips with intermediate destinations. This would give a forecast two-movement along SEMSL of 4,500 AM peak trips.

9.97 Information is unavailable regarding the potential time savings that these trips would benefit from but for the purpose of the analysis it has been assumed that there would be an average journey time saving of 5 minutes. This would mean that for some travellers the time saving would be much greater but for others for whom, it might be more difficult to access SEMSL, the benefits would be less.

9.98 Based upon this 5 minute journey times saving, and applying the average value of time from the Maidstone Visum Model (8.48 pence per minute) and applying the same peak period factor of 2.5, this would generate an estimated annual journey time benefit of £2.4 million.

Other Non-User Benefits for Town Centre Vehicle Trips

9.99 The Visum model has also been used to assess the number of vehicle trips travelling into Maidstone that could benefit from reduced congestion as a result of other vehicle diverting to use SEMSL. It is estimated that around 17,500 vehicle trips could potentially benefit in some level.

9.100 Again, information is unavailable regarding the potential time savings that these town centre trips would benefit from but for the purpose of the analysis it has been assumed that there would be an average journey time saving of 2 minutes. Again, this would mean that for some travellers the time saving would be much greater (for example those travelling along the whole of the A229 corridor) but for others who only cut across the main A229 corridor the benefits would be much less.

9.101 Based upon this 2 minute journey times saving, and applying the average value of time from the Maidstone Visum Model (8.48 pence per minute) and applying the same peak period factor of 2.5, this would generate an estimated annual journey time benefit of £3.7 million.

Total Peak Period User and Non-User Benefits

9.102 The total peak period user and non-user benefits, based upon the assumed journey time savings, are estimated to be £6.1 million per annum.

9.103 As a sensitivity test, if average journey time savings were increased to 7.5 minutes and 3 minutes, respectively, then total peak period user and non-user benefits would be estimated at £9.2 million per annum.

Construction, Maintenance and Renewal Costs

9.104 Section 4 provides an estimate of the SEMSL scheme capital costs at £76 million. Over a 60 year appraisal period an allowance is required for on-going maintenance and renewal costs. For annual

maintenance an allowance of 0.25% of the scheme capital costs has been incorporated. Every 20 years a renewal cost allowance of 10% of scheme capital costs has been allowed.

Present value of Costs and Benefits

9.105 The present value of costs and benefits of the scheme over a 60-year appraisal period (discounted to 2002 and in 2002 prices) has been calculated as follows:

- Present Value of Benefits = £58 million
- Present value of Costs = £44 million

9.106 Based upon these values the SEMSL scheme would generate the following overall economic performance:

- Net Present Value (NPV) = £14 million
- Benefit to Cost Ratio (BCR) = 1.3 to 1

9.107 If the higher journey time savings outlined in the sensitivity test were applied these values would increase to:

- Net Present Value (NPV) = £25 million
- Benefit Cost Ratio (BCR) = 1.6 to 1

9.108 The scheme would also generate inter-peak, off-peak and weekend benefits; however, since these are excluded from the assessment of Options 2 and 3, they have also been excluded for Option 4.

9.109 The results are inconclusive as to whether the SEMSL scheme has the potential to generate sufficient journey time benefits with which to off-set the costs of construction and maintenance of the scheme.

10 Package Performance against Objectives

Introduction

10.1 The section provides an overall summary of the performance of each package of measures against the appraisal objectives and the NATA cost benefit objectives.

Appraisal Objectives

Introduction

10.2 Section 3 established nine appraisal objectives against which to assess the packages of measures. This section provides a summary of the performance of Options 2, 3 and 4, drawing upon previous analysis presented earlier in the report.

Support the Core Strategy development

10.3 Options 2 and 3 provide additional public transport capacity for routes leading into the town centre. The analysis has indicated that this would target around 15% of the future year trips. Given the spatially diverse nature of the development proposals the park & ride schemes will only directly support a proportion of the development areas. The radial park & ride options within Option 2 offer greater accessibility to public transport across the borough.

10.4 The wider aim of the park & ride measures is to encourage greater public transport mode share and reduce vehicle trips into the town centre. This will the help reduce town centre congestion and support development across the borough. The overall origin – destination analysis suggests that the schemes are successful in this aim, with a large reduction in car trips into the Core Town Centre. The link flow analysis; however, is less conclusive in this matter, suggesting overall increases in flows into the town along major arterial corridors.

10.5 In terms of journey time savings, Option 3 is forecast to generate greater benefits; however the network congestion map presented still indicated that parts of the A229 corridor, and some other links, will still be operating above or very close to capacity.

10.6 Option 4 will provide a significant enhancement to development proposals within the south east, and more generally, the south of the borough through enhanced accessibility to the strategic road network. It will also offer some congestion relief to the town centre, although the extent to which this will occur is less clear. Given the spatially diverse nature of the Core Strategy proposals this measure would appear to be limited in geographic extend of its benefits.

Maintain and enhance primary road network

10.7 Option 4 offers a direct enhancement to the primary road network through additional capacity, in addition, it would offer some congestion relief to the A229 corridor through the town centre by diverting through traffic to Junction 8 of the M20.

10.8 Option 2 and 3 appear to reduce overall car trips leading into Maidstone; however, the modelling results appear inconclusive about the extent to which this improves congestion, although some benefits will definitely be materialised on certain points of the network. Option 2 performs worse than Option 3 against this objective with forecast increases in journey times along key routes leading into the town centre in the AM peak.

Maintain and enhance connectivity to, and operation performance of, the SRN

10.9 Option 4 offers a direct enhancement to access to the strategic road network, as well as indirect benefits through reducing town centre congestion. This option will also significantly impact upon the distribution of trips on the M20 with increased flows between Junction 6 and 8 in both directions. Overall trips on other section of the M20 may also increase.

10.10 The network congestion maps indicate that both Options 2 and 3 will improve access to the M20 through Junction 5; however, the results are less conclusive regard the impact on congestion and journey times on the A229 and A249 corridors, although Option 3 would appear to outperform Option 2.

10.11 The model output indicates that capacity constraints will occur on the M20 under both Options 2 and 3, with some flows higher than in the reference case. Option 3 is forecast to induce higher flows on the sections of the M20 leading to Junction 6 due to the concentration of flows accessing the Cobtree P&R site.

Encourage public transport usage

10.12 Both Options 2 and 3 clearly encourage public transport usage with increases in bus and park & ride mode share. Option 3 also increases rail mode share. The increases in public transport trips are particularly prevalent on trips leading into the town centre, reflecting the impact of the increased car parking charges upon individuals' choice of mode.

10.13 It is also considered that the nature of the mode share forecasting of the Maidstone Visum model will under report the potential impacts of the increased bus frequencies across the network, suggesting that bus patronage could be higher than presented.

10.14 Option 4 will have no positive impact on encouraging public transport usage and is likely to results in the opposite.

Encourage walking and cycling

10.15 All options, including the reference options, incorporate walking and cycling measures to encourage walking and cycling.

Increase high occupancy vehicle trips

10.16 All options, including the reference options, incorporate travel planning measures that will seek to encourage car sharing trips.

10.17 Options 2 and 3 both incorporate HOV lanes along the A229 corridor. These will encourage high occupancy vehicle trips through reduced journey times, although no forecast of predicted change has been feasible as high occupancy vehicle were not modelled separately within the Visum model.

10.18 Option 4 is includes no specific measures to encourage high occupancy vehicle trips and is considered more likely to generate the opposite impact and encourage more single occupancy trips across the network.

Reduce the overall need to travel

10.19 All options, including the reference options, incorporate travel planning measures that will seek to reduce the need to travel.

Maintain and enhance local air quality and reduce carbon emissions

10.20 Options 2 and 3 both reduce the overall number of car trips into the town centre, albeit that the Visum model outputs indicates that on the major corridors leading into the town centre the number of vehicle movement increases marginally. Overall it is anticipated that both options should improve local air quality within the core town centre. Both options are also predicted to generate overall reduction in carbon emissions.

10.21 Option 4 will also reduce vehicle trips through the town centre and so would improve local air quality along the A229 corridor. Conversely trips to the south east of the town centre would increase and have a negative impact on properties in this locality. No direct measure of carbon impacts has been feasible; however, it is likely that a negative impact would be generated as a result of increased vehicle trips across the network.

Value for money

10.22 The quantified assessment of value for money indicates that Option 2 offers the highest socio-economic returns on public investment due to the significant revenues forecast to be generated by park & ride, which would cover both the operational cost and capital investment costs. Option 3 is also forecast to generate positive value for money, particularly if inter-peak, off-peak and weekend benefits are added into the appraisal process.

10.23 A detailed appraisal of Option 4 has not been feasible; however an outline assessment indicates that the scheme may offer lower value for money than both Option 2 and 3.

On-going operating and maintenance costs

10.24 Options 2 and 3 incorporate significant additional public transport operating costs in the form of park & ride operations and, for Option 3, the North West Express Loop bus. The analysis of park & ride revenue generation, based upon the peak period demand forecasts from the Visum model, indicates that overall both options would generate sufficient revenues to cover the operating costs.

10.25 Within Option 2, however, it is clear that some of the individual park & ride sites would not operate at a profit. This includes London Road, Willington Street, Bluebell Hill and Sutton Road.

10.26 Revenue data is unavailable for the North West Express Loop bus services; however it is clear from the levels of patronage forecast, particularly in the AM peak, that the service would require a substantial subsidy if it were to operate at the 10 minute frequency specified within the package.

10.27 Option 4 would require on-going maintenance of the SEMSL link which would be a cost to the public account for which there is no corresponding revenue source.

NATA Objectives

Introduction

10.28 This section provides a brief overview of the findings from Section 8.

Economy

10.29 Option 3 is forecast to generate the greatest user benefits in terms of journey time savings, vehicle operating costs and user charges. Option 2 is forecast to generate around half the benefits of Option 3. Option 4 has not been robustly assessed but is estimated to generate lower journey time savings across the network than either Option 2 or 3.

10.30 Neither Option 2 nor 3 are forecast to improve road journey time reliability with notable parts of the network forecast to remain above or close to operation capacity. Public transport reliability would be enhanced through bus priority and bus lanes. Option 4 is anticipated to provide some benefits to road journey time reliability.

10.31 In terms of wider economic impacts, Option 4 is anticipated to provide the greatest benefits to highway accessibility, particularly in terms of access to the M20, and so would generate positive economic benefits. The impact of Options 2 and 3 is not entirely clear from the model outputs with network congestion expected to remain high on routes into the town centre that will impact upon the attractiveness of the area for economic activity.

Safety

10.32 The measures in Option 2 are forecast to result in a marginal increase in accidents across the network. Option 3 is forecast to results in a marginal improvement. Option 4 was not assessed.

10.33 There are no major personal security benefits for any of the options, although all public transport measures will be designed and built to high safety specifications.

Environment

10.34 Options 2 and 3 are clearly forecast to generate environmental benefits in terms of greenhouse gas reduction and will also improve local air quality along certain corridors. The associated infrastructure measures would require careful planning, with appropriate mitigation measures, to ensure that landscape, townscape, biodiversity, heritage and water impacts are minimal. These options will also improve public transport journey ambience.

10.35 Option 4 is likely to create a range of negative environmental impacts, particularly in terms of emissions. Again all construction elements would have to be carefully managed with appropriate mitigation measures.

Accessibility

10.36 Options 2 and 3 offer option value benefits through the provision of new park and ride and bus services.

10.37 None of the options are considered to have a major impact upon severance, although Option 4 would have the largest impact.

10.38 Options 2 and 3 will provide the largest improvements to access to the transport system through additional public transport provision and interchange between park & ride, rail and bus.

Integration

10.39 Options 2 and 3 will provide high quality transport interchange at the park & ride sites and through interchange between park & ride, rail and bus.

10.40 Options 2 and 3 also encourage sustainable travel supporting Government policy, whilst Option 1 is likely to encourage increased car use.

Summary

Option 2

10.41 This package of measures is forecast to increase bus and park & ride patronage, as well as significantly reduce the volume of vehicle trips. The journey time analysis indicates that bus and, to

a lesser extent, park & ride, do not offer a significant journey time saving over car but that commuters are forecast to change modes from car due to the increase in town centre parking tariffs.

10.42 Vehicle congestion remains across parts of the primary road network leading into the town centre, with some journey times forecast to increase on key routes. This will continue to have both direct impacts on vehicle accessibility and wider impacts upon economic activity. In contrast the enhanced public transport provision will provide labour market and retail sector accessibility benefits.

10.43 Whilst the package of measures is forecast to generate sufficient revenue to cover operational costs, there are individual schemes that would require subsidy. In addition, there are notable capital investment costs which, in combination with the operating costs, mean that, whilst the package is anticipated to generate an acceptable rate of return on investment, it does not perform as well as Option 3.

Option 3

10.44 As with Option 2, the package of measures is forecast to increase bus and park & ride patronage, as well as significantly reduce the volume of vehicle trips. The journey time analysis indicates that bus does not offer a significant journey time saving over car but that commuters are forecast to change modes from car due to the increase in town centre parking tariffs.

10.45 Vehicle congestion remains across parts of the primary road network leading into the town centre, but there are forecast to be some journey time reductions on key routes. The network congestion would continue to have impacts upon vehicle accessibility and upon economic activity, although offer an improvement over Option 2. The enhanced public transport provision would also provide labour market and retail sector accessibility benefits.

10.46 The package of measures is forecast to generate sufficient revenue to cover operational costs. The park & ride measures would be financially self-sufficient; however, the North West Express Loop bus service would require a significant subsidy, as currently specified. There are significant capital investment costs but even in combination with the operating costs, the package is forecast to offer a good anticipated rate of return on investment.

Option 4

10.47 Whilst this option has not been modelled in the same detail as the other packages, Option 4 would increase vehicle network accessibility to the strategic road network from the south east of the borough. It would also generate congestion relief benefits in the town centre, although the extent of these benefits is not clear, with previous modelling work indicating that the reduction in trips through the town centre would not have a significant impact.

10.48 Whilst this Option would clearly generate positive impacts upon the economy to the southeast of Maidstone and would support development activity in this sector, the benefits across the borough as a whole would be less significant. Given the geographical spread of the development proposals within the Core Strategy this option is considered to be too spatially focused to be the sole focus of the transport measures.

10.49 The SEMSL scheme measures could be incorporated within a wider package of measures; however, the scheme cost may then become prohibitively expensive. Obviously, if part of cost of the scheme could be covered through private sector developer contributions this could make it more deliverable.

11 Assessment of individual measures

Introduction

11.1 This section seeks to provide an overall assessment of each individual element of the package options. In some cases this is easier to do than others, since by its nature, the modelling of packages makes it difficult to determine the impact that each individual element are having on transport performance.

Park & Ride

Site Performance

11.2 Overall, the performance of the park & ride measures specified within Options 1, 2, and 3 provide sufficient evidence that these measures can have an important role within integrated transport provision for the borough of Maidstone. Within each option at least one site is considered to perform strongly enough, in terms of demand generation, to warrant potential inclusion within the strategy. At the same time it is clear that not all sites perform adequately, either in absolute terms or in combination with other sites.

11.3 Both the Option 1 and 2 packages demonstrate that London Road and Willington Street do not perform strongly in terms of peak period demand generation. This is considered to be due to a combination of site access issues, lack of bus priority measures leading into town, and competition with other public transport modes. It is, therefore, not recommended that either of these sites are taken forward to the final strategy.

11.4 In terms of other sites in Option 1 and 2, the Sittingbourne Road / Newnham Court locations are forecast to generate significant demand from both the A249 corridor but also along the wider M20 corridor. The analysis suggests that Sittingbourne Road will suffer from capacity constraints in the future but may also be restricted by site access issues in comparison to Newnham Court, although it must be noted that Option 1 does not include increased town centre parking charges and so we would expect lower demand.

11.5 The Newnham Court site appears to perform exceptionally well and would generate a significant operating profit if the demand forecast were to be realised. Its direct access of the M20 and A249 corridors, along with relative short journey distance to the town centre appear to provide it with a competitive advantage.

11.6 Bluebell Hill generates reasonable levels of demand; however the increased bus operating costs from the site, resulting from the additional distance to the town centre, mean that this site is not forecast to make a profit. The modelling outputs also suggest that much of the demand will be from along the M20 corridor to the east. Whilst there may be some journey time benefits for travellers using this route if their ultimate destination is on the north side of the town centre, overall it is considered that this is likely to be considered an unfavourable route choice. The level of demand at this site is, therefore, considered to be optimistic.

11.7 The Linton Corner site is also forecast to perform well above initial expectations and would cover its operating costs. The forecast levels of demand would exceed the identified site capacity so a new or additional site would need to be identified along the same A229 Linton Hill corridor. If demand was constrained to 400 spaces then the site would not cover the cost, nor justify, the 10 minute bus frequency throughout the day.

11.8 The Sutton Road site does not perform well within the Option 2 package as it appears to be competing directly with Linton Corner. The site is only forecast to attract trips from the local vicinity with no long-distance trips accessing the site. Under Option 3, as the sole site the south of the town, Sutton Road performs well and would cover its operational costs. Analysis of the demand profile indicates that it would extract much, but not all of the demand that goes to Linton Corner in Option 2. The advantage of the Sutton Road site over Linton Corner is that there is a clearly identified land parcel of more than sufficient size to accommodate demand. From a purely demand driven assessment, however, it would appear that the Linton Corner site is more favourable.

11.9 The Cobtree site is forecast to generate significant demand and would cover the operational costs of the site. The capital costs associated with the site are significant with major junctions works required. There also remain questionmarks about how well the junction will operate with the additional traffic generated by the site and this would require further detailed modelling work.

Preferred Options

11.10 The analysis work indicates that the Option 2 park & ride measures do not provide a complete solution. They are much more expensive to operate than the Option 3 park & ride sites, although they are also forecast to generate higher revenues. The inclusion of London Road and Willington Street are considered to offer very poor value for money. As such, it is not recommended that this option is taken forward in its entirety.

11.11 Option 3 does provide significant benefits and would cover the cost of operations. The detailed assessment of the individual sites, however, would suggest that whilst the principle of north/south spine is correct, it may be that alternative site would offer even greater benefits and value for money.

11.12 The analysis work would appear to indicate that the Newnham Court site is the preferred site for park & ride in terms of overall demand generation. This is despite the fact that there are no associated bus lanes provided along the A249 to provide priority access the town centre, although some junction priority is included. The overall capital costs of this site are, therefore, less and there is the significant potential for developer contributions that would increase the financial viability of the site. In terms of cost benefit analysis this site would appear to perform better than the Cobtree site.

11.13 In the south, the analysis has already indicated that Linton Corner is a preferred site, in terms of demand, in comparison to Sutton Road. The choice of site, however, will be dependent upon the availability of land along the A229 Linton Hill corridor of sufficient size to accommodate the demand forecast at Linton Corner.

Bus Measures

North West Express Loop Bus

11.14 The analysis of the North West Express Loop (NWEL) bus service indicates that it will not generate sufficient patronage to justify the 10 minute frequency in each direction and the associated capital cost. It is therefore not recommended that this option is pursued as currently specified.

11.15 It has been highlighted that existing bus services operating along the A26 to the Hospital are currently duplicating part of the NWEL bus route. There is, therefore, the potential to rationalise the bus services along this corridor and increase loadings on the NWEL bus service. Without further detailed analysis it is not feasible to assess the success of such a rationalisation process but it is considered that there would need to be a substantial cost saving to justify the NWEL bus service.

Bus priority and bus lanes

11.16 The provision of bus priority measures at junctions across the network should be pursued as part of the underlying scheme option to increase bus frequencies across the network.

11.17 The choice of specific bus lanes and junction enhancements to prioritise bus movements will be dependent upon the final configuration of park and ride measures, the density of bus services across the network, and the availability of carriageway space.

11.18 The majority of the proposed bus / HOV lane measures are along the A229 north/south corridor, as well as the A274. These were clearly designed in support of the Cobtree and Sutton Road park & ride option. If the north/south axis were to be switched to Newnham Court and Linton Corner then this would impact upon the justification of certain sections of bus lane. Clearly the section of the A229 gyratory and Loose Road leading to the Wheatsheaf junction still provides benefits to buses travelling to/from Linton Corner.

11.19 Since there is insufficient carriageway width on the A229 Loose Road (south of the Wheatsheaf junction) and the A274 to incorporate bus lanes, it is not simply a case of switching provision to a potential new Northeast/South axis park & ride axis. The fact that both the Newnham Court and Linton Corner sites are forecast to perform well without such priority measures indicates that such measures are not required anyway to support these park & ride services.

11.20 The bus lanes on the A229 Royal Engineers Road and A274 could still be provided to support local bus services. The journey time analysis for buses appears to indicate that they remain uncompetitive against car travel, therefore the provision of bus lanes along major corridors will help improve this disparity. The associated cost involved, however, may not justify this approach.

High Occupancy Vehicle Lanes

11.21 The analysis has not been able to assess the success of the high occupancy vehicle lanes as high occupancy vehicles have not been modelled separately within the Maidstone Visum model. The implication from the Option 3 results is, however, that the additional capacity available to car has helped to reduce journey times along these corridors.

11.22 Having shared bus and HOV lanes will clearly have a detrimental impact upon bus journey times. Again, it is very difficult to ascertain the extent to which buses will be delayed without appropriate modelling tools; however, clearly the more successful the HOV lane is at attracting HOVs, the greater the delays to bus. It is recommended that further analysis is conducted in to the impact of joint bus and HOV lanes.

Town Centre Car Parking

11.23 The business engagement process focused specifically upon the issue of town centre car parking and tariffs. The outputs from this process indicated that transport accessibility, and more specifically, vehicle accessibility, were considered much more important issues for business operations than parking charges.

11.24 The impact of long-stay car parking charges will have limited impact upon retail shoppers and so will have limited affect on the attractiveness of the town as a retail destination. The long-stay charges will impact most upon commuters. It is, therefore, imperative to provide an integrated package of measures that provides an alternative means of access for commuters in to the town. Park & ride is considered an ideal alternative since it still allows individuals to drive to a park & ride

site, hence giving flexibility. Alongside that, improvements to bus service provision will provide an alternative to commuters living within the urban fringe to travel into the town.

11.25 The town centre car park utilisation surveys indicated that there is clearly an oversupply of parking in the town centre. This has been confirmed through the various stakeholder engagement processes. The reduction of long stay car parking is, therefore, considered to be an appropriate measure, but, again, only as long as it is supported by improved public transport provision.

11.26 In terms of an overall package of measures, the restriction of town centre car parking and increased long-stay parking charges is considered to be imperative to developing a successful park & ride service. Experience from elsewhere around the UK has demonstrated that successful park & ride goes hand-in-hand with tight controls on town centre parking and parking tariffs.

Appendix A

Business Workshop Meeting Note

Note of Meeting

Date	16 March 2012
Job No/ Name	ST12118
Present	Peter Court, Jason Lewis, John Foster, Robert Patterson (Arriva), Graeme Wyles (MTCM), Bill Moss (TCM), Jane Shortliff (Downs Mail), Sean Whittam, Matt Startin (Enterprise Rent A Car), David Chen (D. Chen Consultancy), John Taylor (CoC), Andrew Aves (FoSB), Mike Fitgerald (Cllr), David Burton (Cllr), Malcolm Robertson (Cllr), Fran Wilson (Cllr)
Subject	Maidstone Business Workshop

1. Introduction

This note provides a summary of the feedback received at the Maidstone Business Workshop undertaken on Wednesday 7th march 2012.

The purpose of the workshop was to seek to understand the views of business of current transport provision in the borough of Maidstone and how it affects the way they operate their business. Looking further forward, the impact of growth on transport demand was also presented leading on to a discussion of potential solutions to identified problems.

The feedback received will form part of the basis for developing the scheme options to be incorporated within the draft Integrated Transport Strategy. This document will then be subject to further consultation and review.

The feedback received is summarised in the sections below. In some cases the views expressed represent those of individual businesses present at the workshop but this is highlighted in the text where this is the case.

2. Existing Transport Provision - Areas of transport that work well

Park & Ride	-	Generally considered to work well
	-	Thought by some to be the way forward
	-	Service currently good but not always reliable
	-	Infrastructure is poor, should be consolidated
Rail	-	Some services work well, the arrival of High Speed services is welcomed
Buses	-	High frequency services to the south very good

3. Existing Transport Provision - Areas of transport with problems

Rail	-	Links to London, and other cities, not good enough.
	-	This needs to be encouraged as London workers spend income in Maidstone
	-	Too much rail heading
	-	Fares not affordable, poor commuter offer
	-	Maidstone East / Maidstone West have poor connections

Buses	-	Bus station in poor location and visually intimidating
	-	Bus station should be a County Hall
	-	Scheduling of bus services could be better
	-	Low frequency services serving some parts of the borough
Parking	-	Location and mix designation
Road network	-	Maidstone gyratory, no link around Maidstone
	-	Through traffic is a problem
	-	Upper Stone Street / Sutton road / Rush Wood / Rural – South/East all congested
	-	Very poor, congested, particularly in the south
	-	Pinch-points on the network

4. Parking

Overall supply	-	some considered the town centre parking is under-utilised, e.g. over-supply
	-	Others considered there to be the right amount
Designation	-	Some considered there to be too much long stay that encourages commuters

5. The effect of transport on business operations

Parking	-	the supply, designation and location all affect business
	-	Insufficient car parking in residential areas
Road network	-	survey indicated 70% of businesses see road vehicles as critical to operations, only 7% considered buses to be critical
	-	links to the SRN are very important
	-	Congestion in town centre is a problem, deterring investment, particularly to the south
	-	unpredictability of the network makes planning difficult with contingency required
Rail	-	links to London and south of the borough are important
Air quality	-	differing opinions on whether this is an important factor but some consider that businesses need to face up to the issue of the environment

6. Impact of town centre car parking on business

Supply	-	Ease of parking / legibility impacts congestion
Charges	-	politically difficult to change
	-	Charges should not be used as a traffic management measure
	-	Parking should be free during the evening to support the evening economy
Relation to P&R	-	Cheap car parks undermines P&R service
	-	Charing P&R by the car rather than for bus ticket will increase competitiveness
	-	Commuters more willing to use P&R than staff who prefer to drive into town
Workplace	-	Workplace parking levy must not be introduced

7. Concerns for future transport conditions

Road network	-	Maidstone gyratory
	-	Congestion will worsen with economic recovery
	-	Growth in car ownership will create more congestion
	-	Better use of Urban traffic management system will be required to avoid hotspots
Cost of fuel	-	rising cost of fuel is a real concern for business
Parking	-	Workplace parking levy must not be introduced
Trains	-	increasing fares will deter travel by this mode
	-	Further loss of service to London, potential loss of High Speed service
Airport	-	Thames Estuary Airport will create economic problems for Maidstone
Improvements	-	Who will pick up the cost for required improvements?

8. General Solutions

SEMSL	-	reduce through traffic from the south and relieve town centre congestion
	-	Make freight more efficient and safer
	-	Improve access to Archbishops palace, Carriage Museum, Riverside
	-	BUT does this stimulate out-of-town development and encourage more car trips?
Park & Ride	-	Sticks and carrots
	-	Support night time economy by operating longer
	-	Provide more reliable, more comfortable service
School Travel	-	Promote public transport trips to / from school and provide more bus services
Buses	-	Bus lanes generally unrealistic due to space constraints
	-	Bus route through Mote Park
	-	Provide new vehicles and make greater use of technology
Cycling	-	Need segregated provision as safer
Integration	-	make switching between modes much easier
Car sharing	-	promote car clubs as a financial benefit to users not just environmentally friendly
	-	Insufficient capacity on the road network for HOV lanes but encourage car sharing
Car rental	-	pay per hour car rental scheme
UTMC	-	expand where possible to make best use of existing road capacity
Reduce travel	-	encourage working from home
	-	Provide better broadband connections

9. Mode Specific Solutions

Business travel plans	-	Some considered that Employers can play a role in influencing travel
	-	Large employers have greater opportunities
	-	Some scepticism about their ability to be successful
	-	Should focus upon travel options and providing information
	-	Car sharing works best where there are financial benefits to the individuals
	-	Concern that travel plans are a cost to business

Walking & Cycling-		Encourage walking and cycling to school
	-	Cycle lanes could be introduced, in particular along River
	-	Good for health
	-	An alternative view was that nothing should be done to discourage walking & cycling but that there should not be disproportionate spend
Buses	-	Bus lanes would be good but concern about available space
	-	Mote Park bus route
	-	Hybrid buses / quiet
	-	Increase frequency of services and extend evening and weekend services
	-	Improve rural bus services to encourage young people to work for rural-based companies
	-	Improve comfort of vehicles
	-	Cheaper fares
	-	Some concern about levels of subsidies required
Rail	-	Lower fares
	-	Parkway station / cheaper more extensive parking at stations / Park & Ride (West Malling / Barming / Bearsted)
	-	Lobby franchises for improved services
Park & Ride	-	Sticks and carrots have to be right
	-	More reliable and comfortable
	-	More capacity in car parks (1,500 space minimum)
	-	More locations
	-	Express or 'String or pearls' approach with multiple car parks along a route from rural areas
	-	Charge per car rather than per person
	-	Longer operating hours
	-	More secure car parks
	-	Better waiting facilities
	-	Better promotion / signage
	-	Willington Street considered to be probably too close
	-	Blue Bell Hill P&R interchange – connectivity issues
	-	Oxford is a good example
	-	Park & sail
SEMSL	-	Good for freight
	-	Relieves Maidstone Gyratory
	-	Solves north – south through traffic issue
	-	Essential if it can be afforded
Local Roads	-	Widening of Peter's Street Bridge to add extra lane
	-	No right turns in peak periods
	-	Improve motorway junctions, particularly junction 7
	-	Additional lane on Upper Stone Street and provide parking for servicing of local retailers

	-	Pedestrianisation to force use of Park & Ride
Car Parking	-	Get on-street / residential car parking right and don't just displace traffic from town centre into these areas
	-	Sunday charges should be flat rate, as for evenings
	-	Have more 'pay on exit' car parking
	-	Car park charges must not undermine P&R
	-	Car parking is a valuable asset to town centre business for staff and commuters
	-	Could reduce long-stay
	-	Short-stay should increase in price
Car sharing	-	Often can be impractical and difficult to make work
	-	Need individuals to be motivated financially not just environmentally

10. Conclusions

The following strong conclusions can be draw from the workshop:

- Highway network congestion is a major concern to business both currently and in the future
- Rail link, particularly to London, need improving
- Bus interchange and service provision requires improving
- There is a general acceptance that there is, at least, sufficient town centre car parking, if not an over-provision
- It is acknowledged that town centre car parking charges impact upon individuals travel decisions and, in particular, affects the attractiveness of Park & Ride
- Potential solutions include:
    - SEMSL
    - Local road improvements and more use of UTMC
    - Improved rail services to London and other major centres
    - Improved Park & Ride, including Rail Park & Ride
    - Improved Bus service provision, including school services
    - Measures to encourage walking & cycling to school
    - Improved integration between modes
    - Measures to reduce the need to travel, including business travel plans for large companies

Distribution	MBC
Name/ Signed	Jon Bunney

Appendix B

Maidstone Business Travel Survey Form

Maidstone Business Travel Survey Form

Maidstone Borough Council is seeking to develop an integrated transport strategy to support long-term growth and development across the borough. Part of this process is to understand the needs of businesses, how current transport provision affects business operations, and what improvements businesses would like to prioritise going forward. Please take the time to complete this questionnaire and return to the Council.

SECTION 1 – Your Business

Please indicate which of the following industries or sectors you business operates within?

Production / Manufacturing	☐	Property	☐
Construction	☐	Motor trade	☐
Wholesale	☐	Catering	☐
Retail	☐	Services	☐
Agriculture, hunting, forestry/fishing	☐	Other _____	☐

Please indicate the scale of you business operations in terms of number of employees?

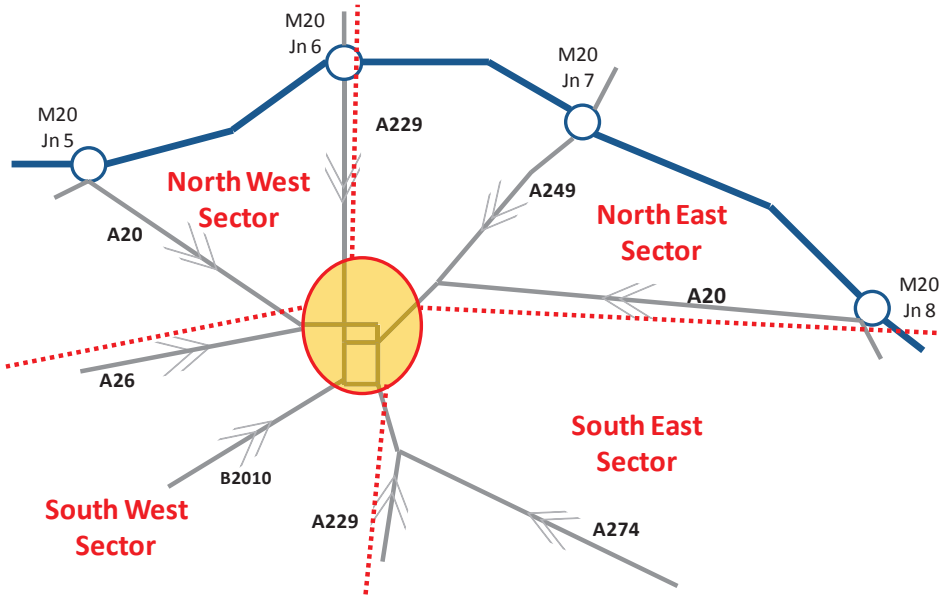
Employees (number)			
0 to 10	☐	51 to 250	☐
11 to 50	☐	251 plus	☐

Please indicate which of the following operations are undertaken by your business:

Office work	☐	Site work	☐
Deliveries to clients/customers	☐	Sales visits to clients/customers	☐

Please indicate (roughly) in which sector (or village), on the map below, your business is located in relation to Maidstone Town Centre.

In Town Centre	☐
Northwest Sector	☐
Northeast Sector	☐
Southeast Sector	☐
Southwest Sector	☐
Marden	☐
Staplehurst	☐
Headcorn	☐
Lenham	☐
Harrietsham	☐
Other (fill below)	☐



Does your business have private car parking available for customers and/or staff?

Car parking for all staff		Car parking for some staff	
Car parking for customers		No car parking	

SECTION TWO – Current Transport

How would you rate current transport provision within Maidstone?

(5=very good, 1=very poor)	5	4	3	2	1	Don't Know
Vehicle access on main roads into/across the borough						
Vehicle circulation around the borough						
Parking in Maidstone town centre						
Bus service provision						
Rail service provision						
Walking & cycling provision						

How much of an impact does current transport congestion have upon the following aspects of your business operation?

(5=large impact, 1=limited impact)	5	4	3	2	1	Not applicable
Business travel to or from your premises						
Deliveries to or from your premises						
Customer travel to your premises						
Employee commuter travel to work						

What impact do town centre parking charges have upon your business operation?

(5=large impact, 1=limited impact)	5	4	3	2	1	Not applicable
Customers accessing your premises						
Employees travelling to work						
Business travel to or from your premises						

SECTION THREE –Transport Improvements

Please rate how beneficial each of the following transport improvements would be to your business.

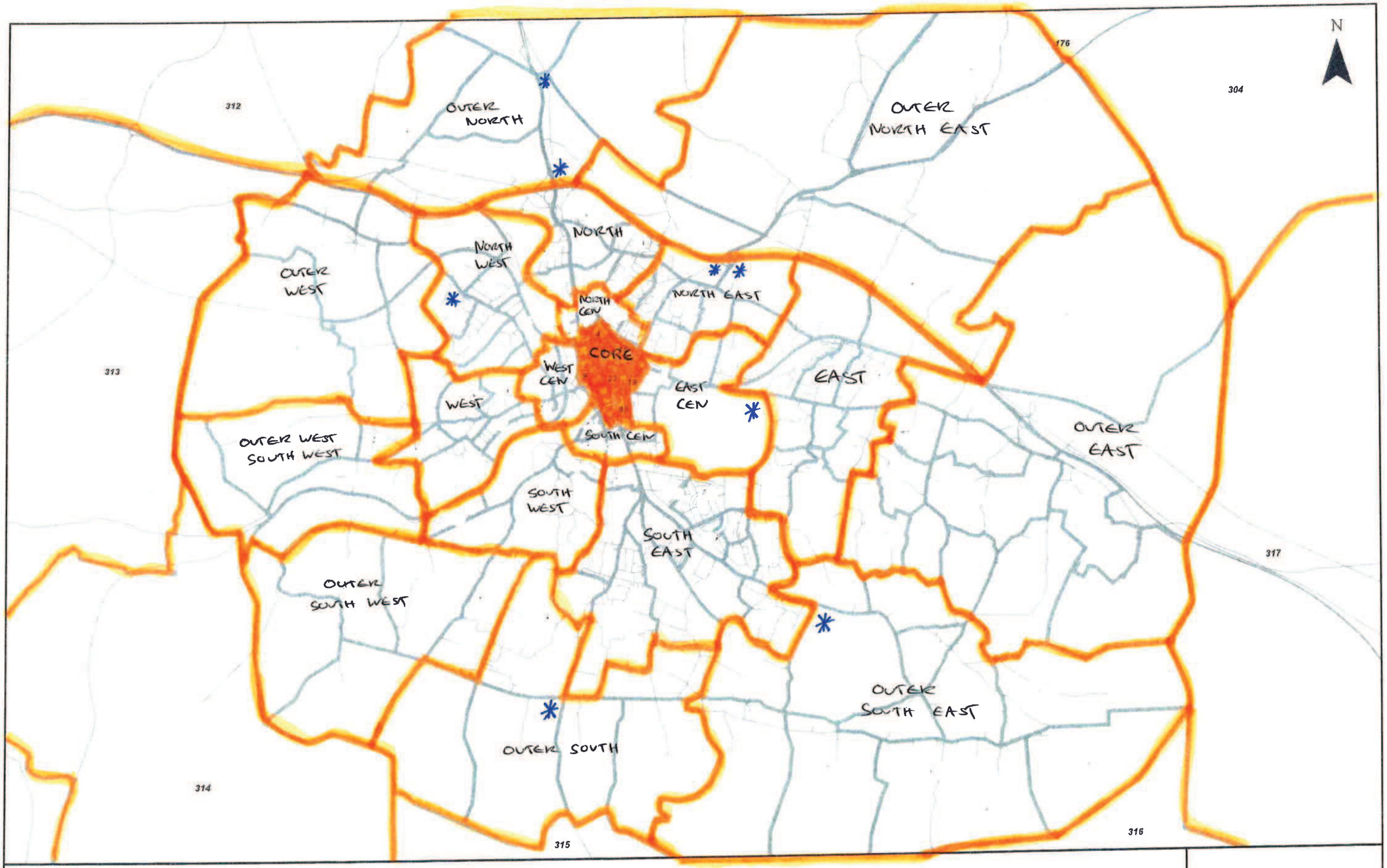
(5=large impact, 1=limited impact)	5	4	3	2	1	Don't Know
Reduce vehicle journey times into Maidstone town centre						
Reduce vehicle journey times across the borough						
Improve vehicle circulation around the borough						
Improve bus service provision						
Improve rail service provision						
Improve walking and cycling provision						

Please describe what single transport improvement you consider would be the most important for your business and how it would enhance the operation of your business.

_ _ _ _

Appendix C

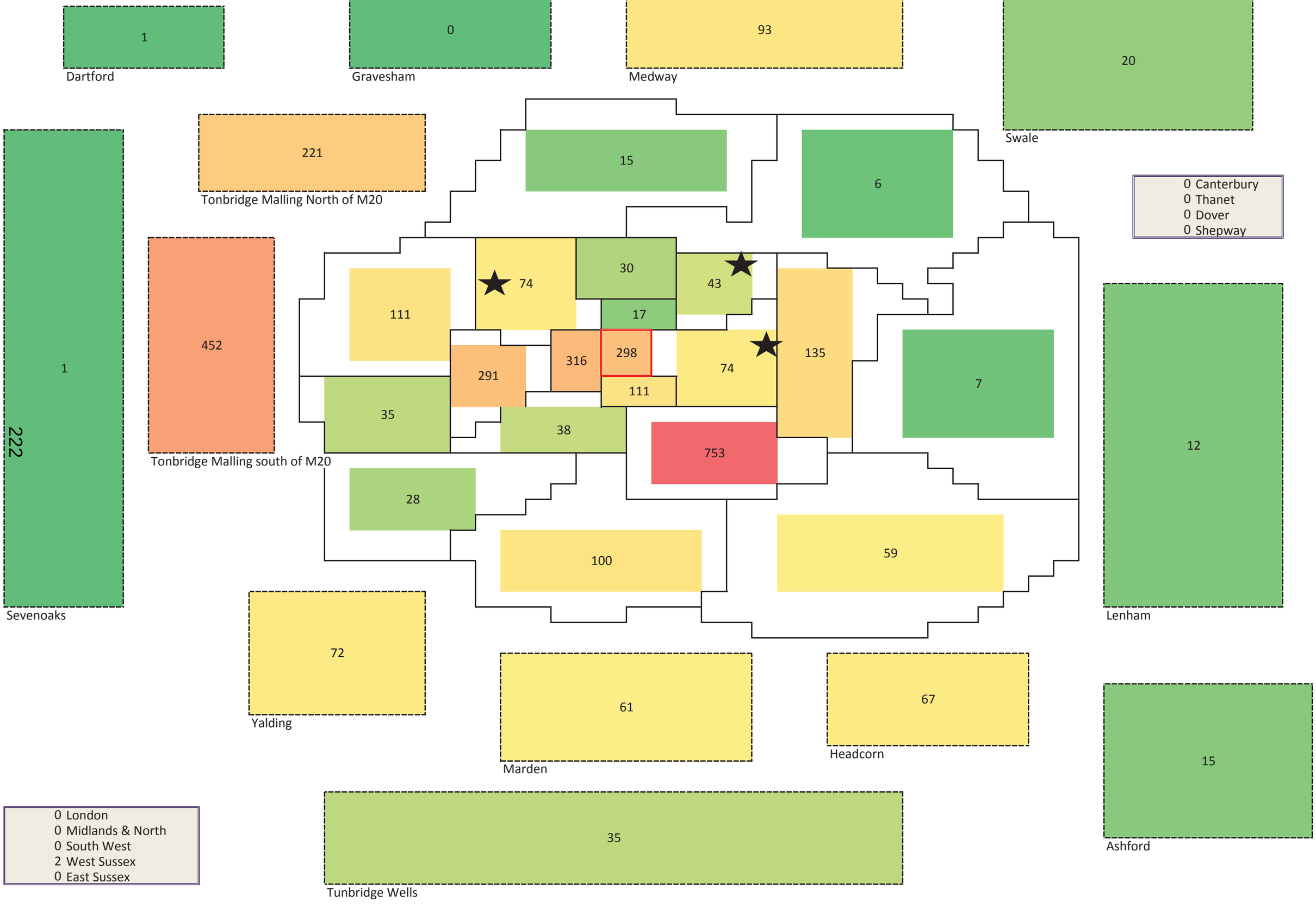
Option 1: Origin – Destination Mapping



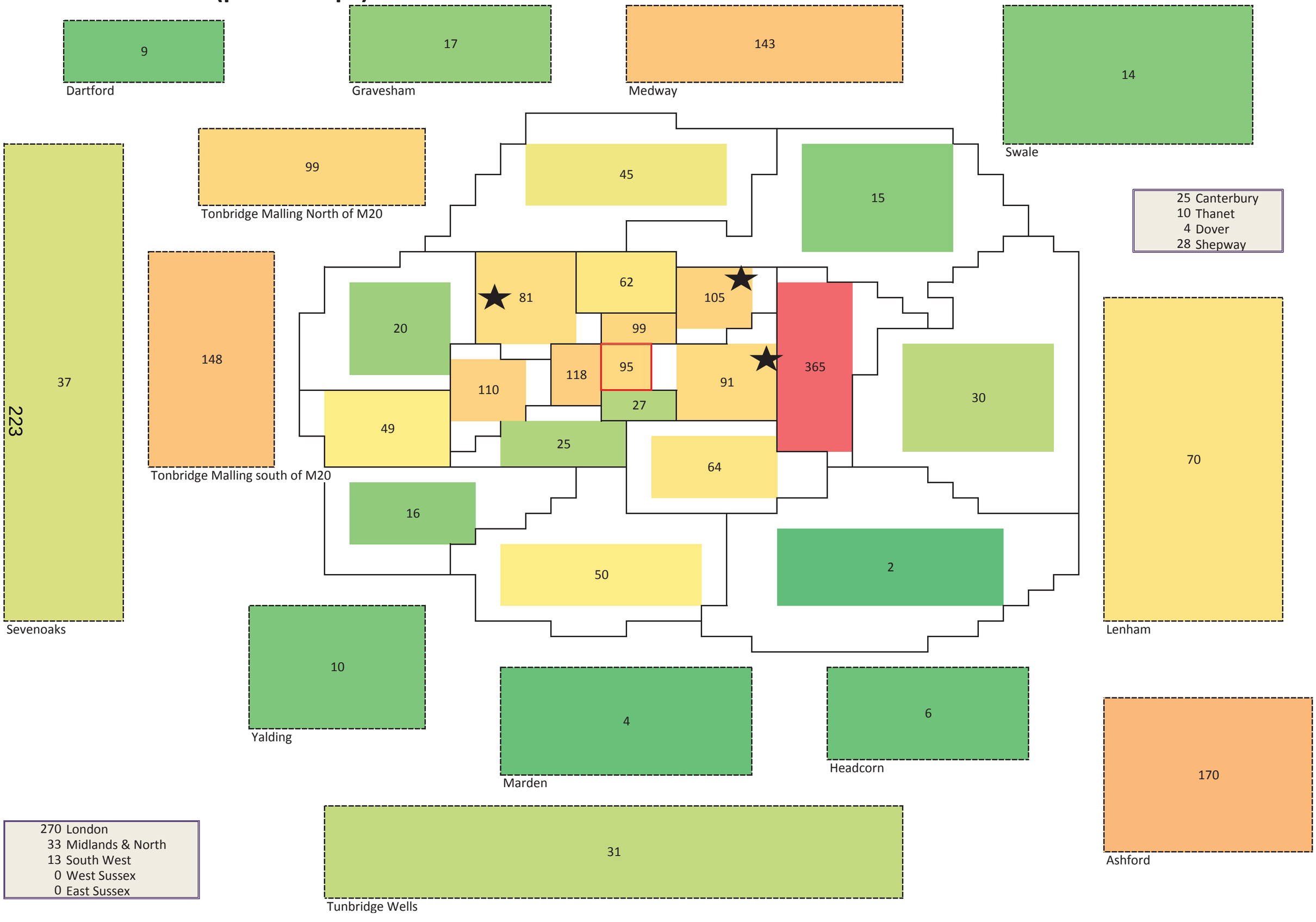
Internal Model Zones

Figure 3.6

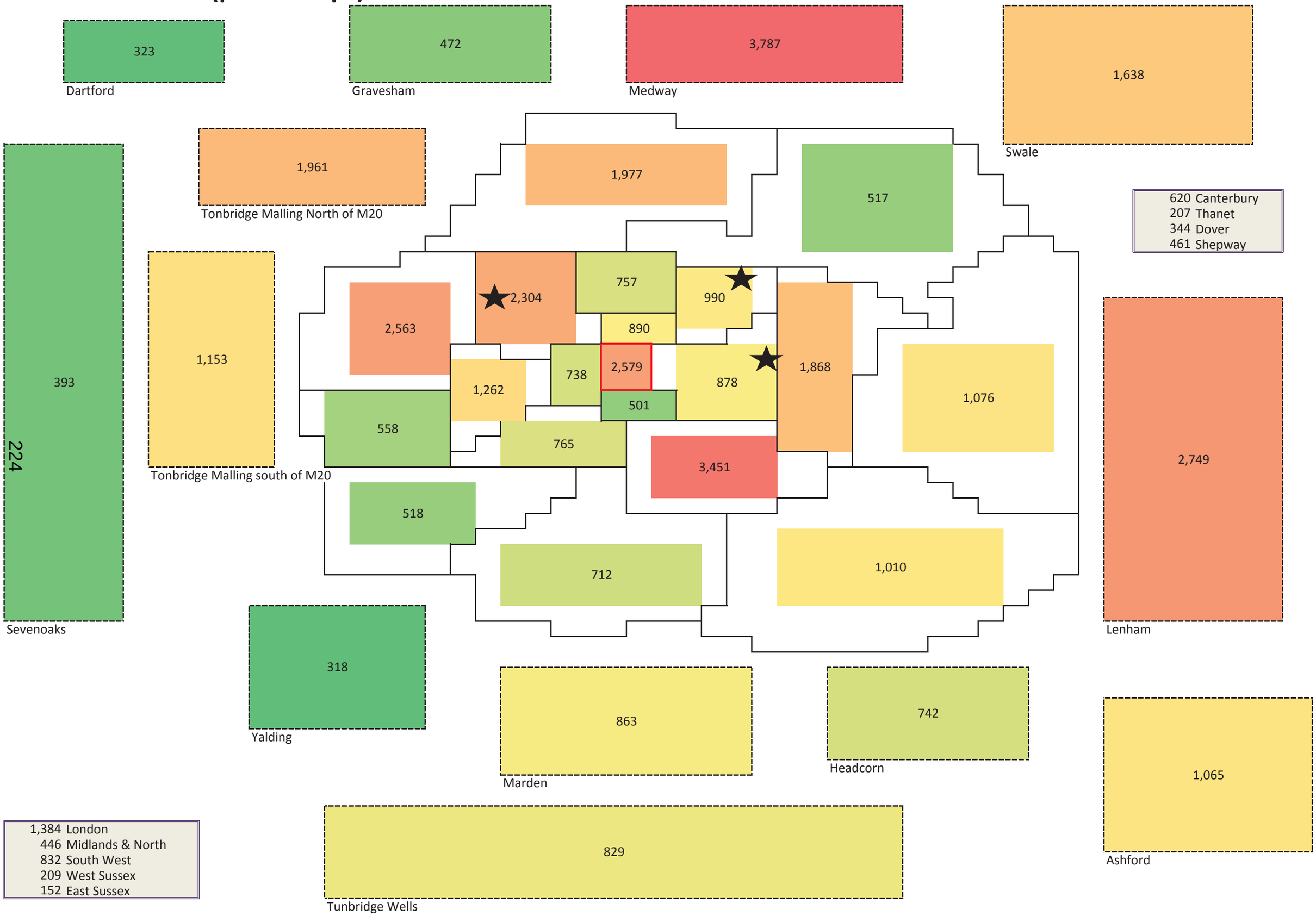
ORIGIN MAP - BUS (person trips) - OPTION 1 - AM



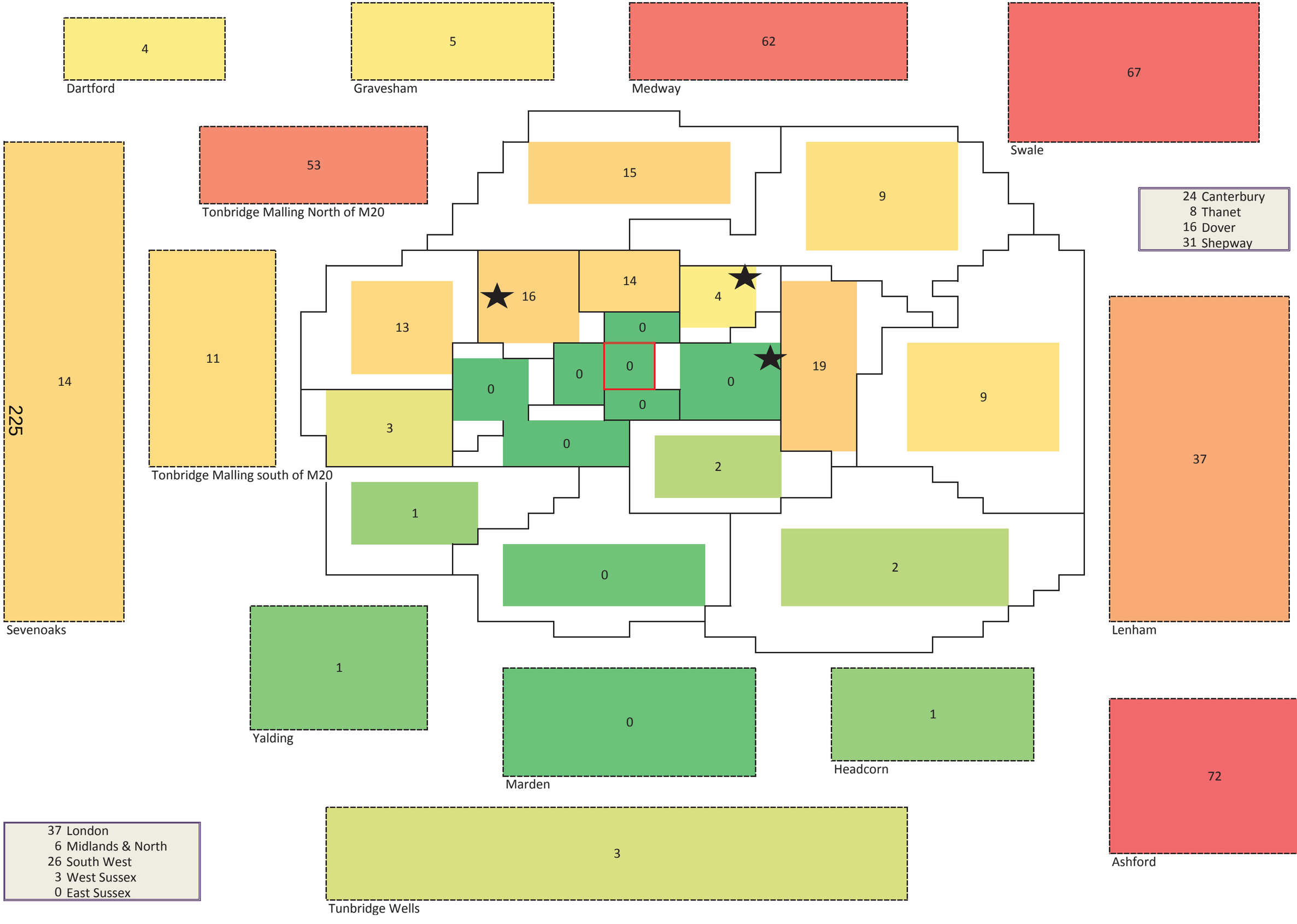
ORIGIN MAP - RAIL (person trips) - OPTION 1 - AM



ORIGIN MAP - CAR (person trips) - OPTION 1 - AM



ORIGIN MAP - P&R CAR LEG (person trips) - OPTION 1 - AM



ORIGIN MAP - ALL MODES (person trips) - OPTION 1 - AM

337
Dartford

495
Gravesham

4,085
Medway

1,738
Swale

2,333
Tonbridge Malling North of M20

2,039

549

668 Canterbury
226 Thanet
364 Dover
521 Shepway

445
226
Sevenoaks

1,764
Tonbridge Malling south of M20

2,701

2,490

850

1,138

1,007

1,664

1,172

2,972

1,049

2,402

638

643

828

4,272

1,114

562

863

1,076

2,868
Lenham

402
Yalding

929
Marden

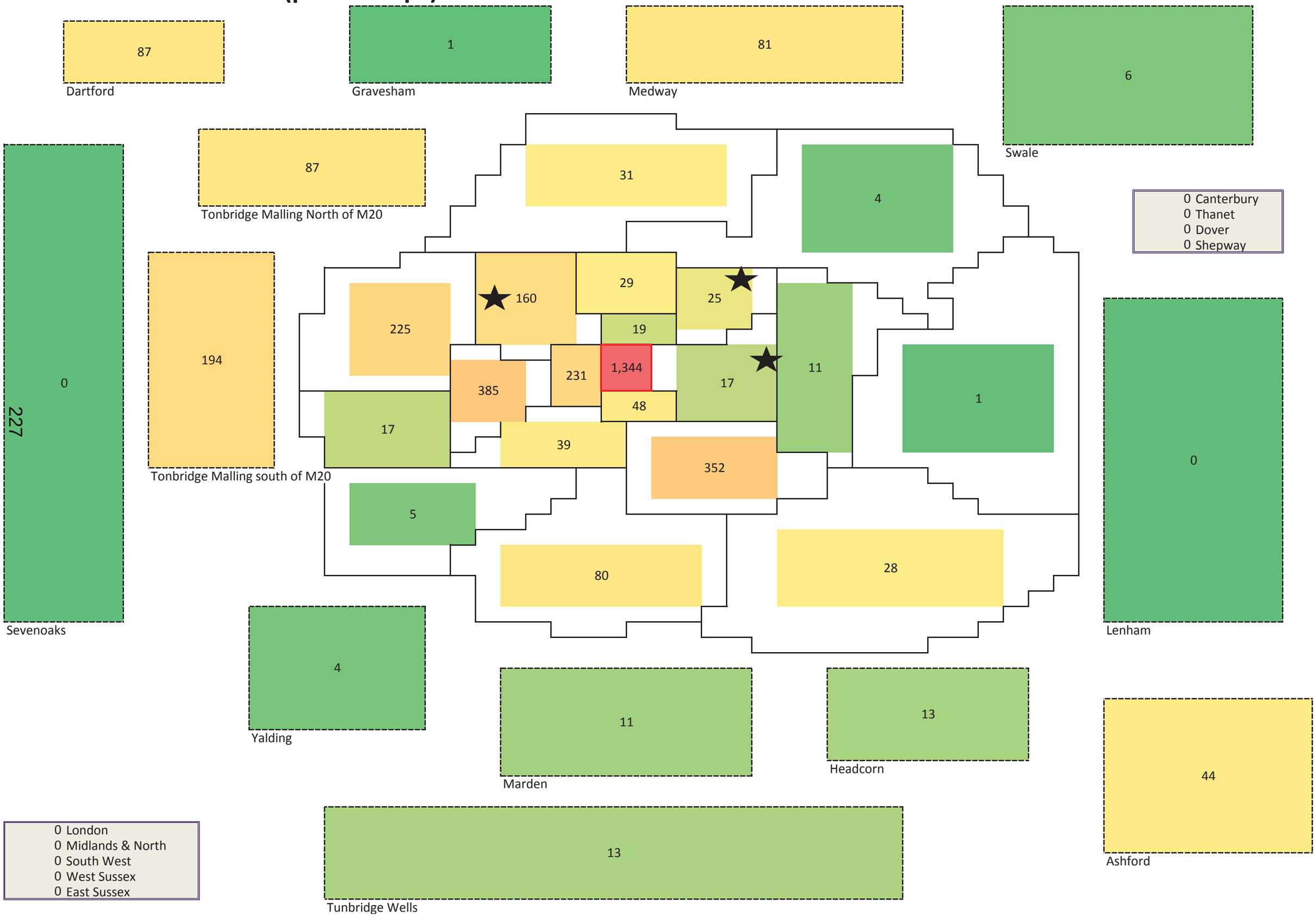
817
Headcorn

1,321
Ashford

898
Tunbridge Wells

1,691 London
484 Midlands & North
872 South West
213 West Sussex
152 East Sussex

DESTINATION MAP - BUS (person trips) - OPTION 1 - AM



DESTINATION MAP - RAIL (person trips) - OPTION 1 - AM

7
Dartford

10
Gravesham

61
Medway

2
Swale

62
Tonbridge Malling North of M20

53

5

22 Canterbury
7 Thanet
0 Dover
21 Shepway

13
228
Sevenoaks

97
Tonbridge Malling south of M20

13

16

17

28

45

714

105

114

27

35

19

21

9

9

32

0

3

1

2
Yalding

0
Marden

5
Headcorn

31
Lenham

67
Ashford

22
Tunbridge Wells

894 London
12 Midlands & North
11 South West
0 West Sussex
0 East Sussex

DESTINATION MAP - CAR (person trips) - OPTION 1 - AM

380
Dartford

368
Gravesham

1,816
Medway

1,202
Swale

821
Tonbridge Malling North of M20

2,164

1,216

978 Canterbury
117 Thanet
267 Dover
754 Shepway

584
229
Sevenoaks

1,437
Tonbridge Malling south of M20

3,435

1,614

753

1,517

1,128

1,667

1,304

3,915

1,115

1,437

514

221

606

3,678

629

268

414

1,061

1,582
Lenham

335
Yalding

830
Marden

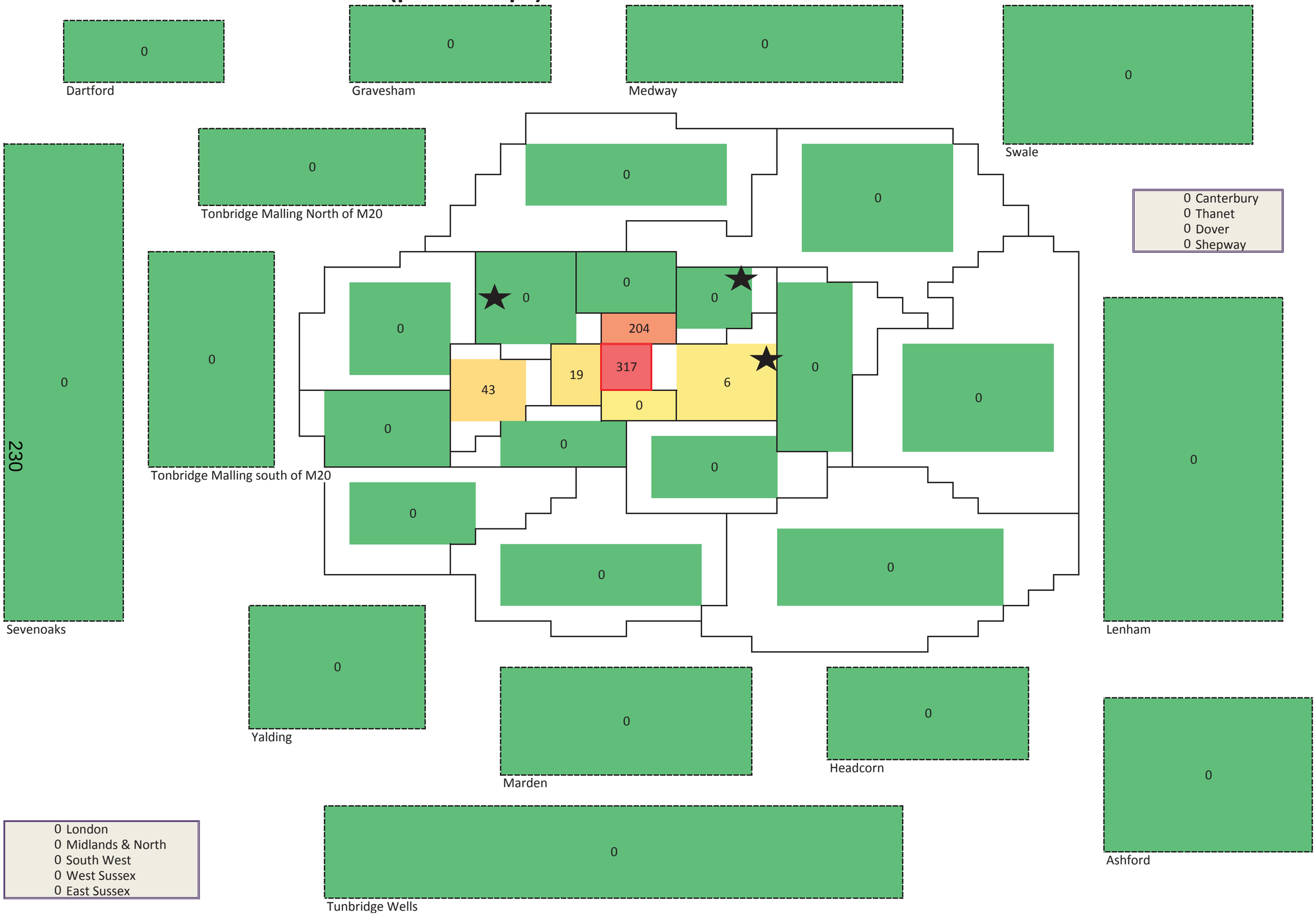
221
Headcorn

980
Ashford

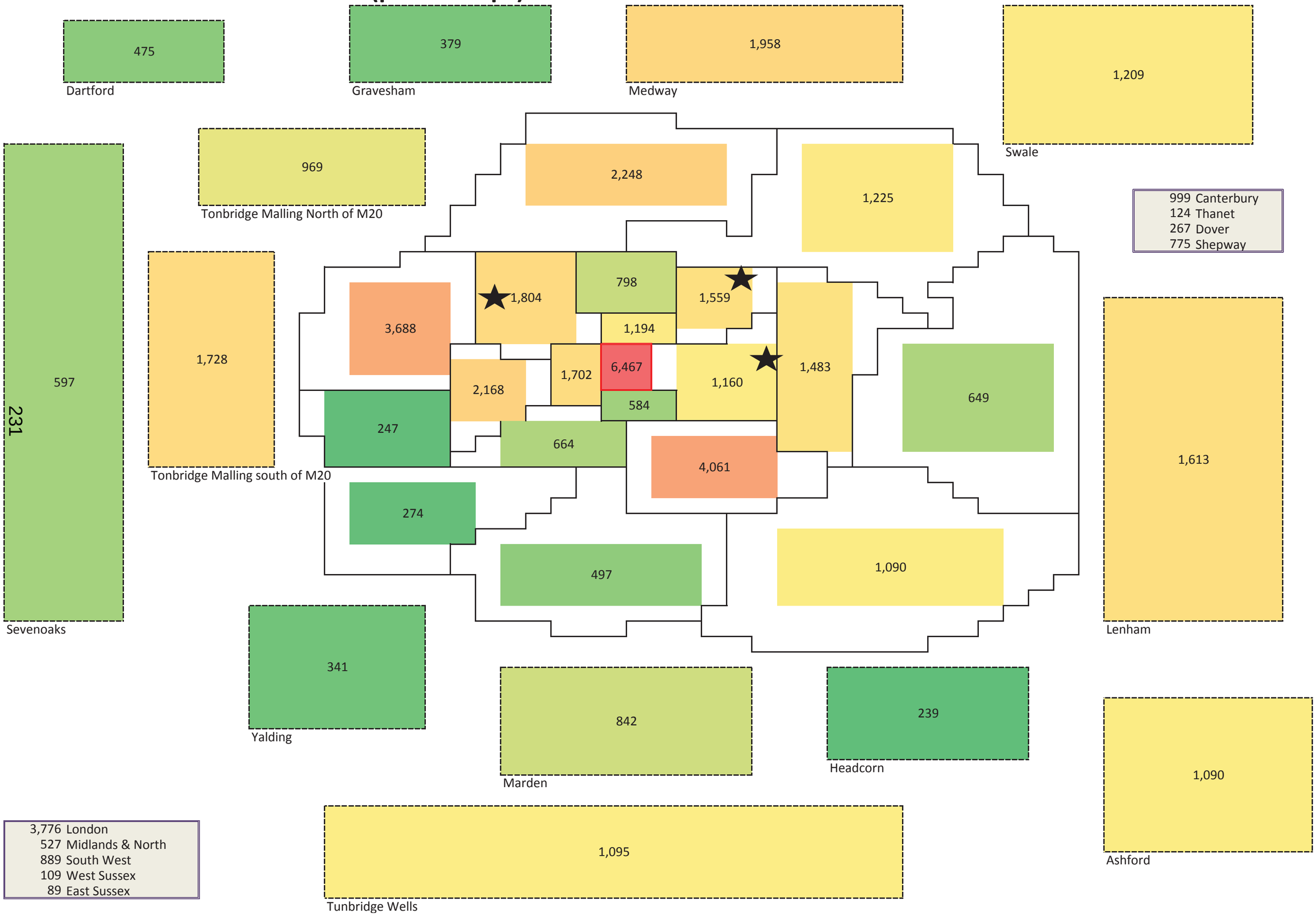
2,882 London
515 Midlands & North
877 South West
109 West Sussex
89 East Sussex

1,060
Tunbridge Wells

DESTINATION MAP - P&R BUS LEG (person trips) - OPTION 1 - AM

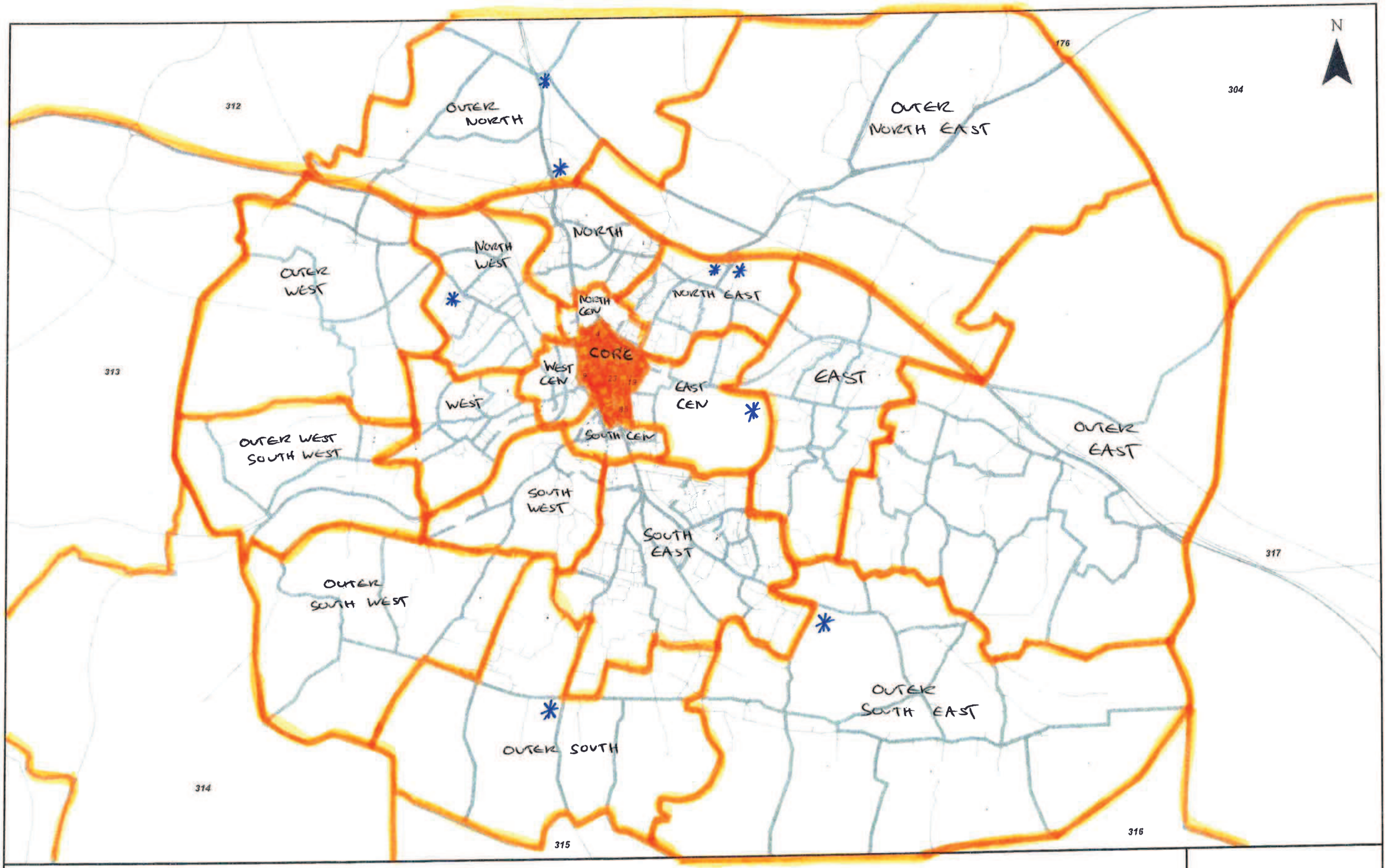


DESTINATION MAP - ALL MODES (person trips) - OPTION 1 - AM



Appendix D

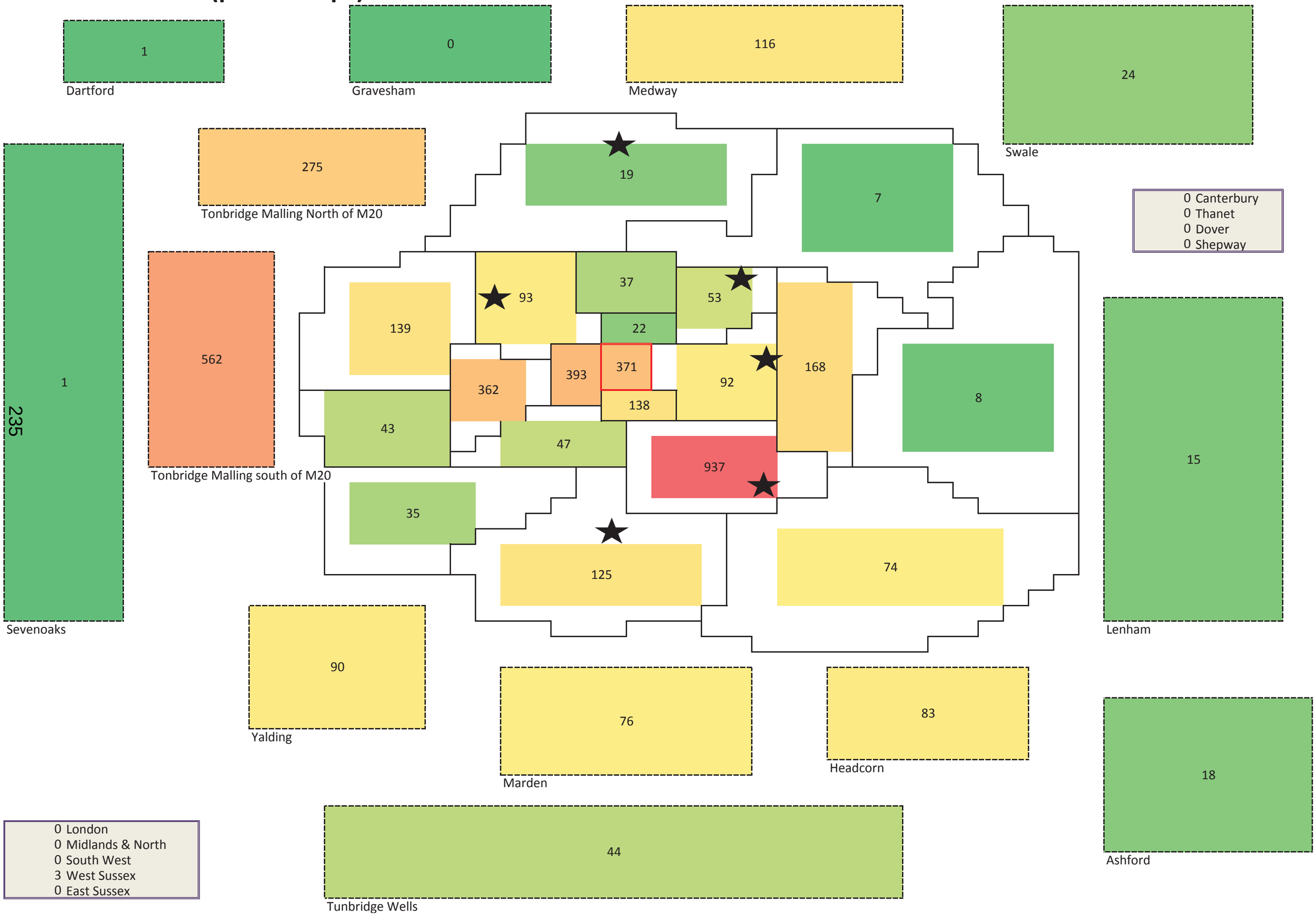
Option 2: Origin – Destination Mapping



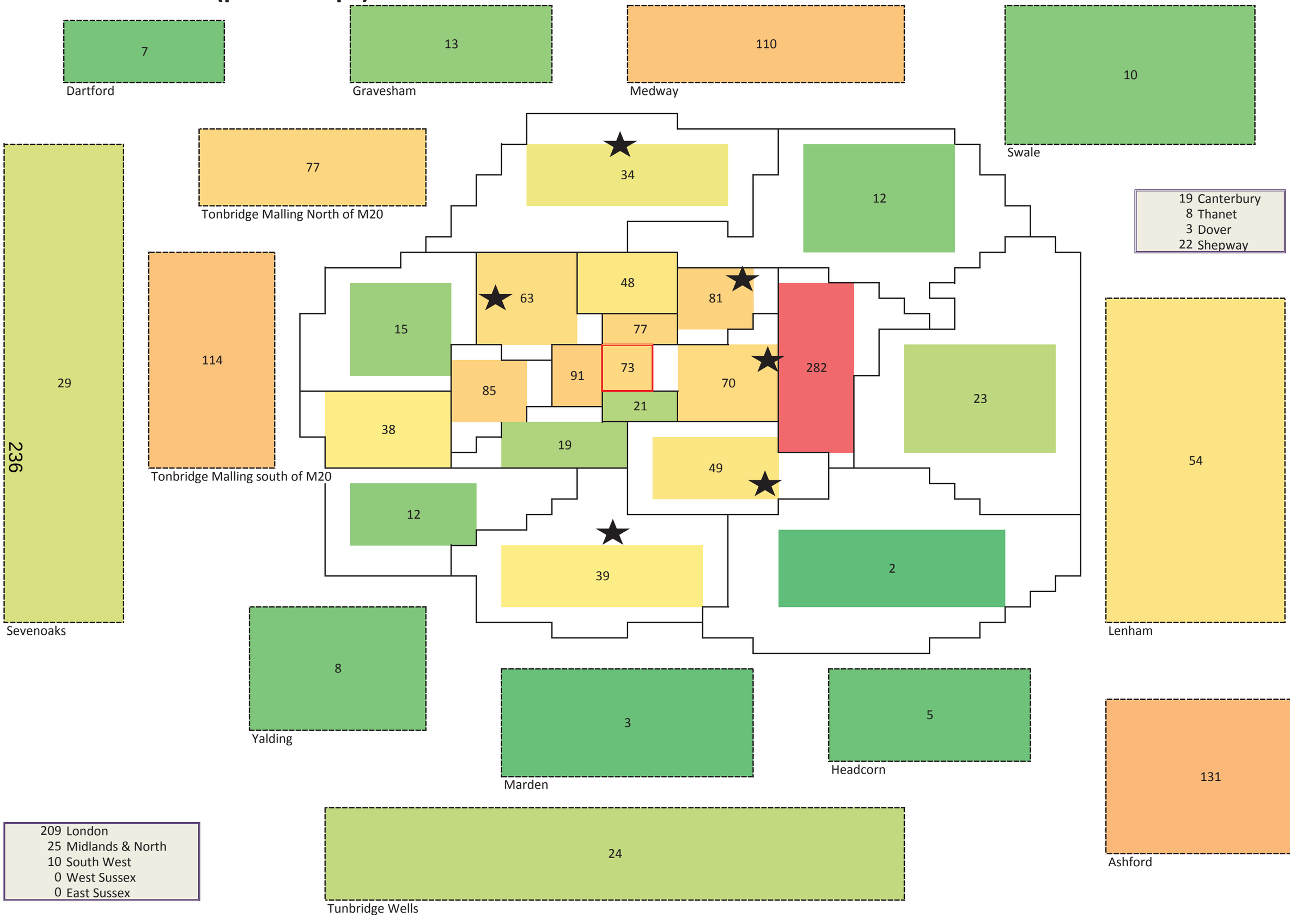
Internal Model Zones

Figure 3.6

ORIGIN MAP - BUS (person trips) - OPTION 2 - AM



ORIGIN MAP - RAIL (person trips) - OPTION 2 - AM



ORIGIN MAP - CAR (person trips) - OPTION 2 - AM

308
Dartford

450
Gravesham

3,610
Medway

1,561
Swale

1,869
Tonbridge Malling North of M20

1,884

493

591 Canterbury
198 Thanet
328 Dover
440 Shepway

375
237
Sevenoaks

1,099
Tonbridge Malling south of M20

2,196

722

944

2,443

848

703

2,458

837

1,781

1,203

478

532

729

3,290

1,026

2,620
Lenham

494

679

962

304
Yalding

823
Marden

707
Headcorn

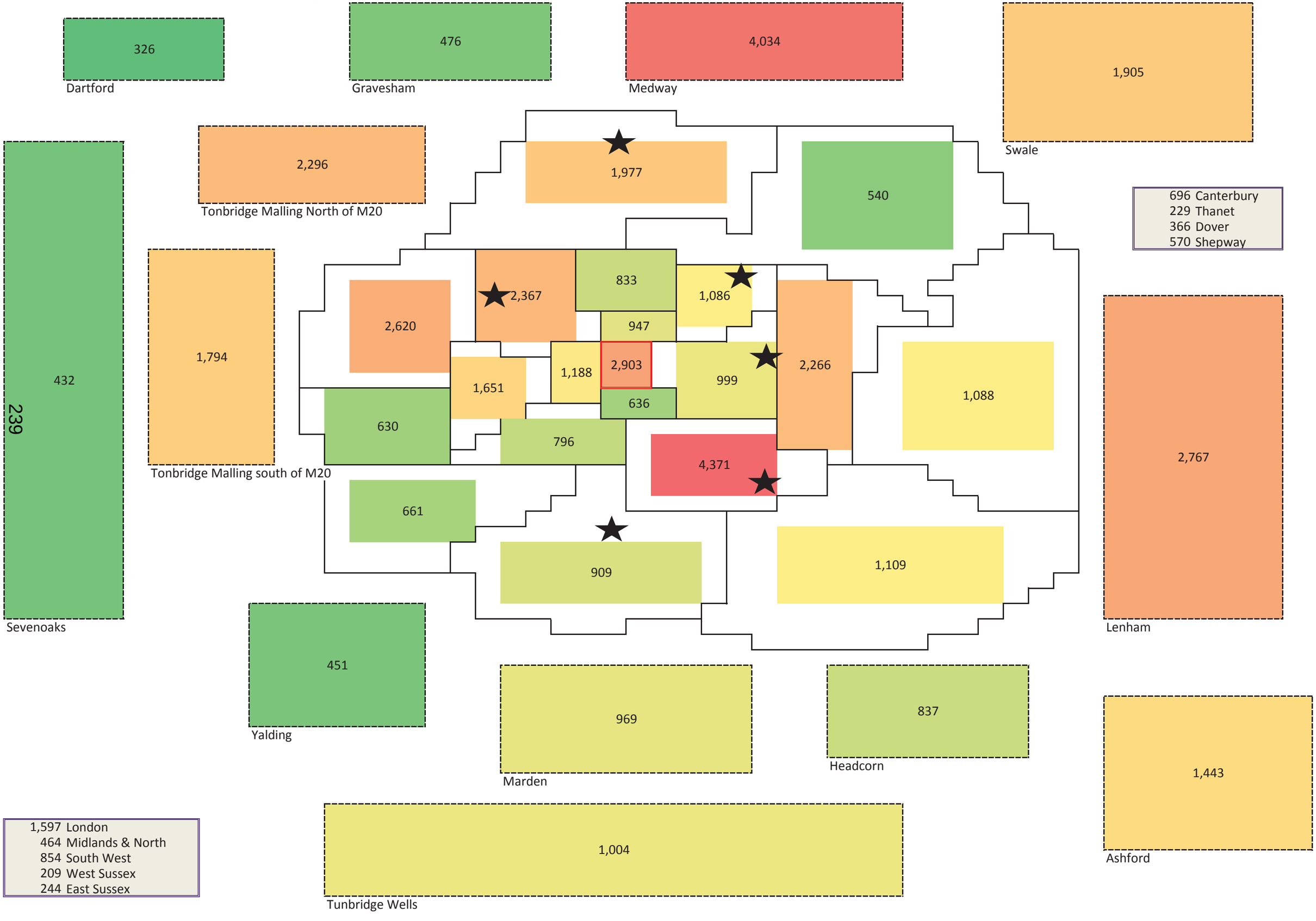
1,015
Ashford

790
Tunbridge Wells

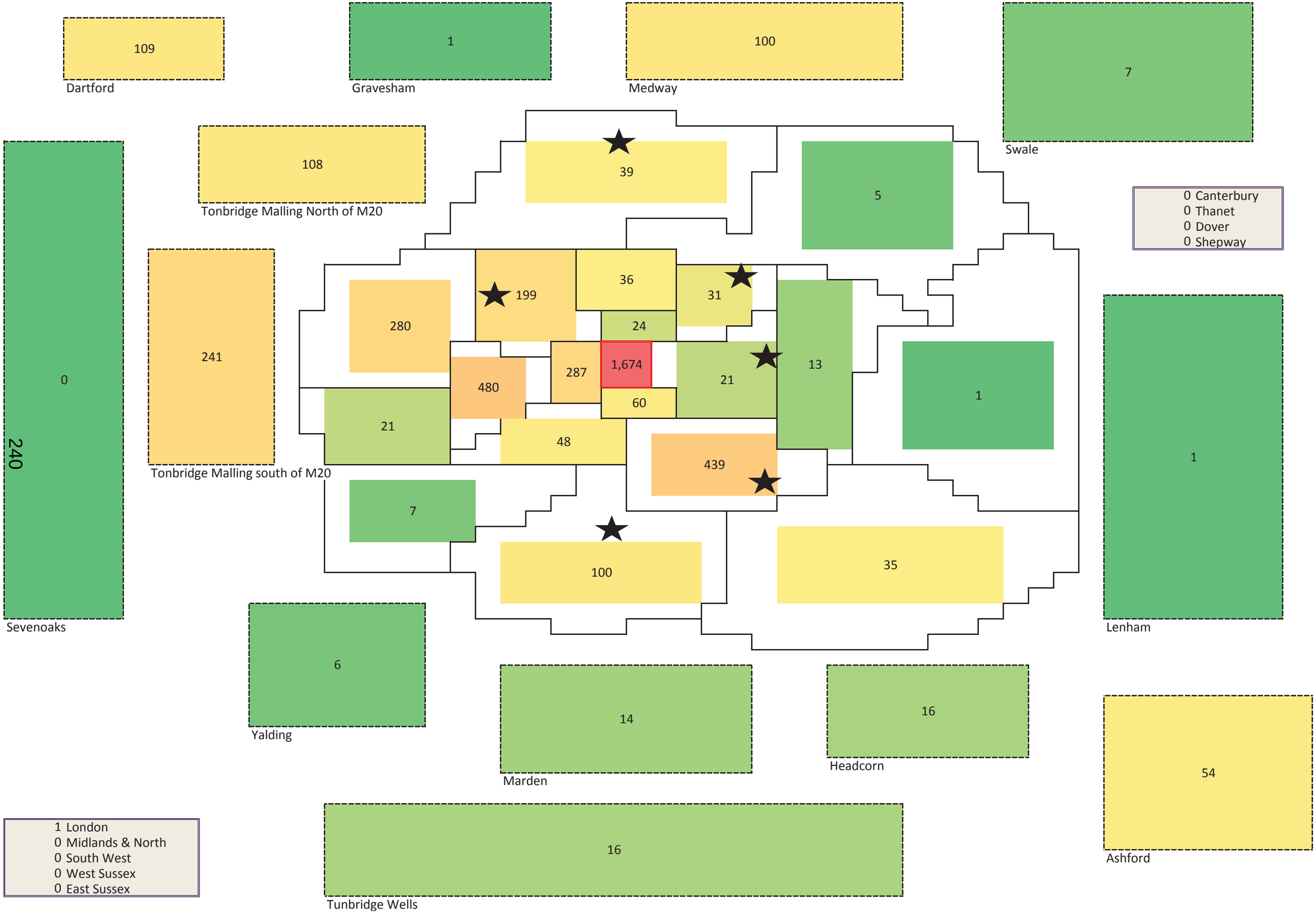
1,319 London
425 Midlands & North
793 South West
199 West Sussex
144 East Sussex

ORIGIN MAP - P&R CAR LEG (person trips) - OPTION 2 - AM

ORIGIN MAP - ALL MODES (person trips) - OPTION 2 - AM

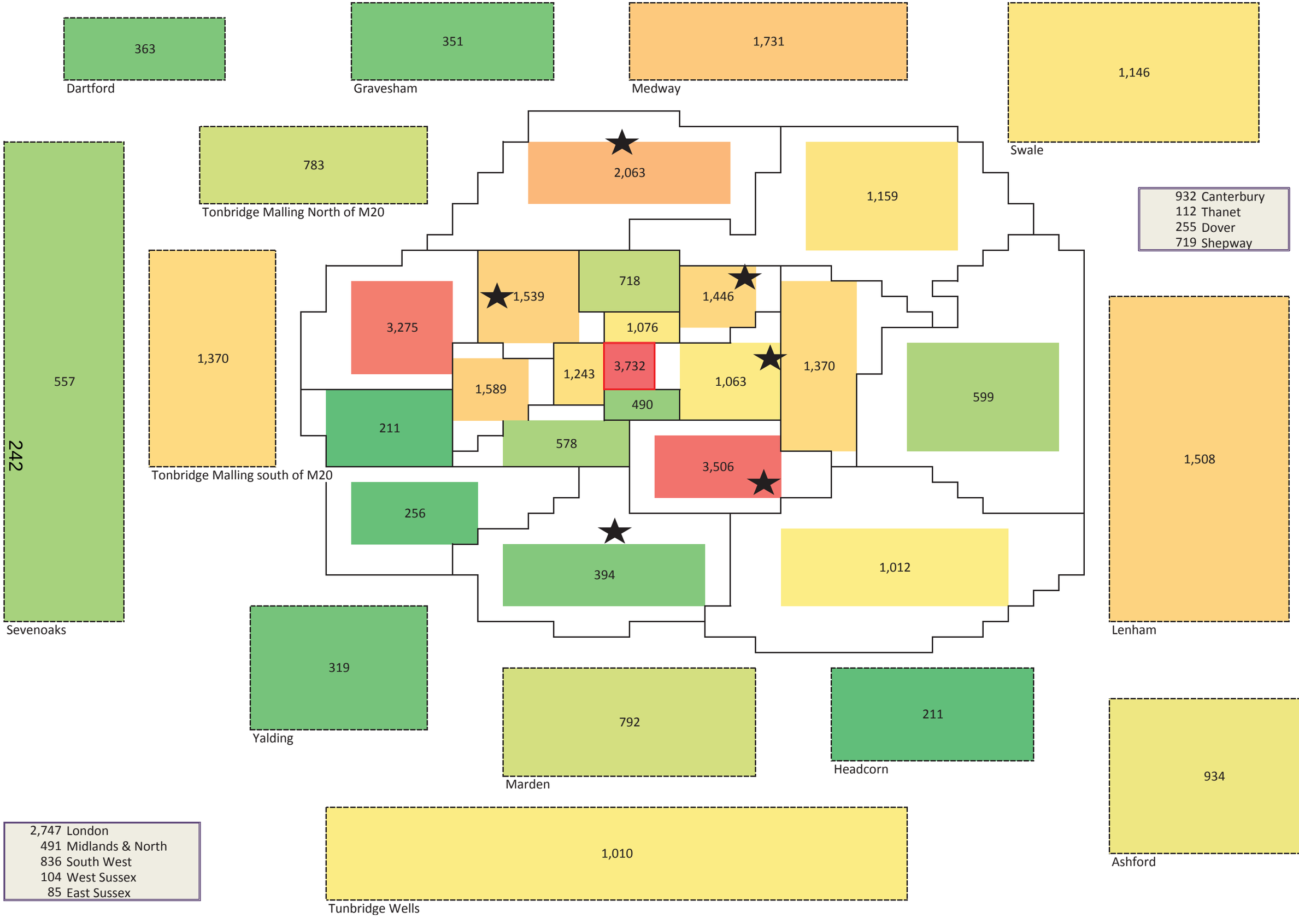


DESTINATION MAP - BUS (person trips) - OPTION 2 - AM

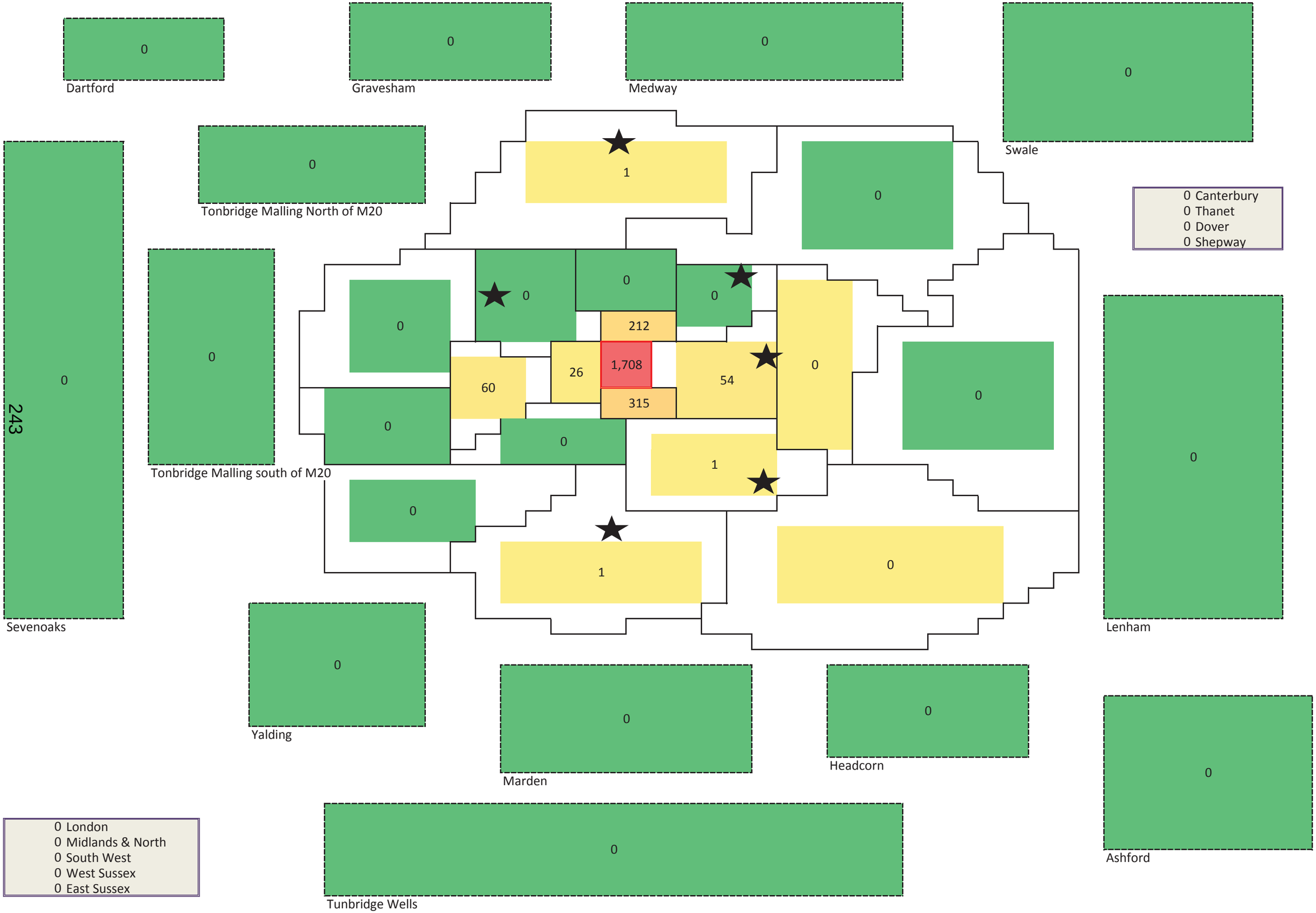


DESTINATION MAP - RAIL (person trips) - OPTION 2 - AM

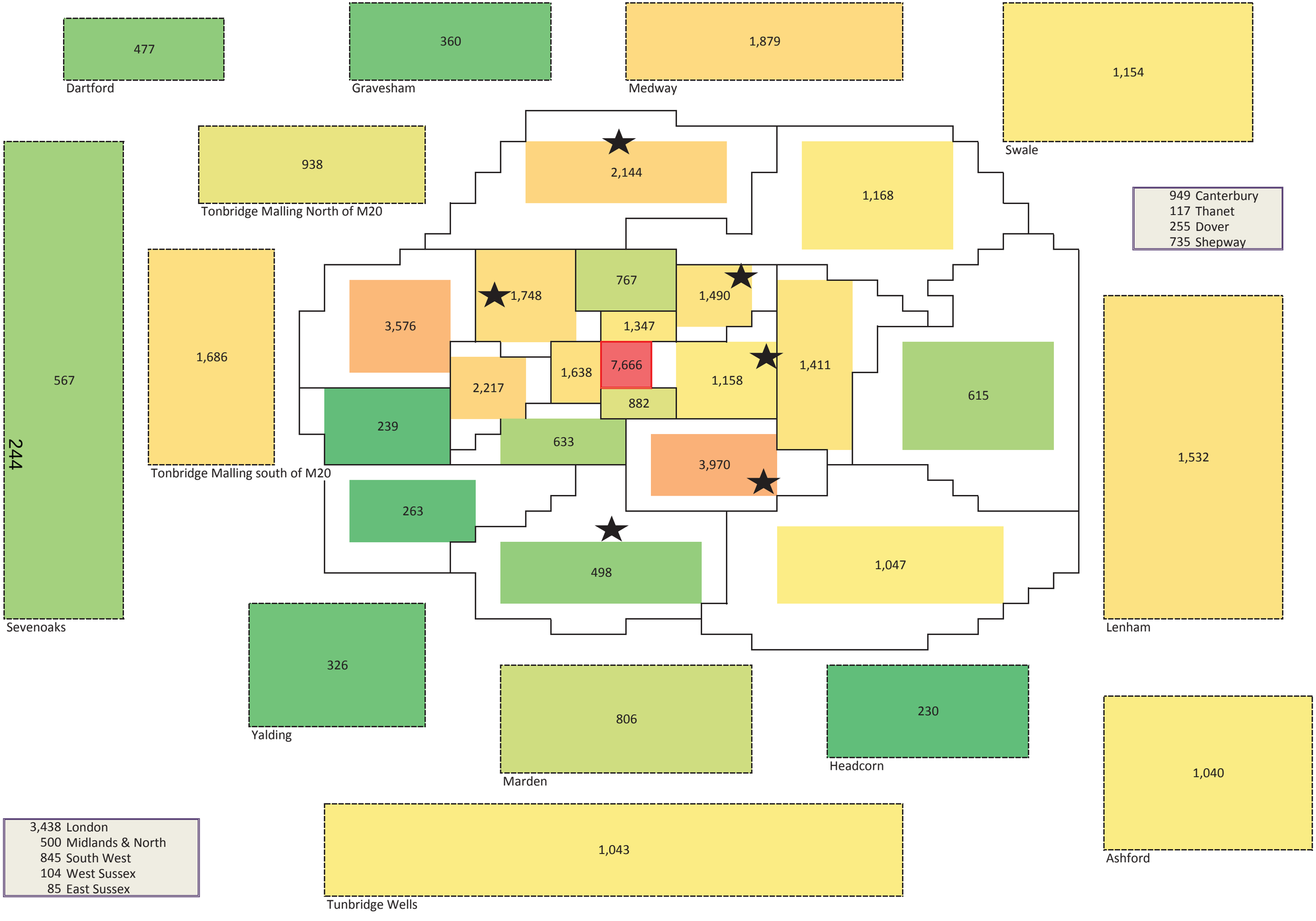
DESTINATION MAP - CAR (person trips) - OPTION 2 - AM



DESTINATION MAP - P&R BUS LEG (person trips) - OPTION 2 - AM

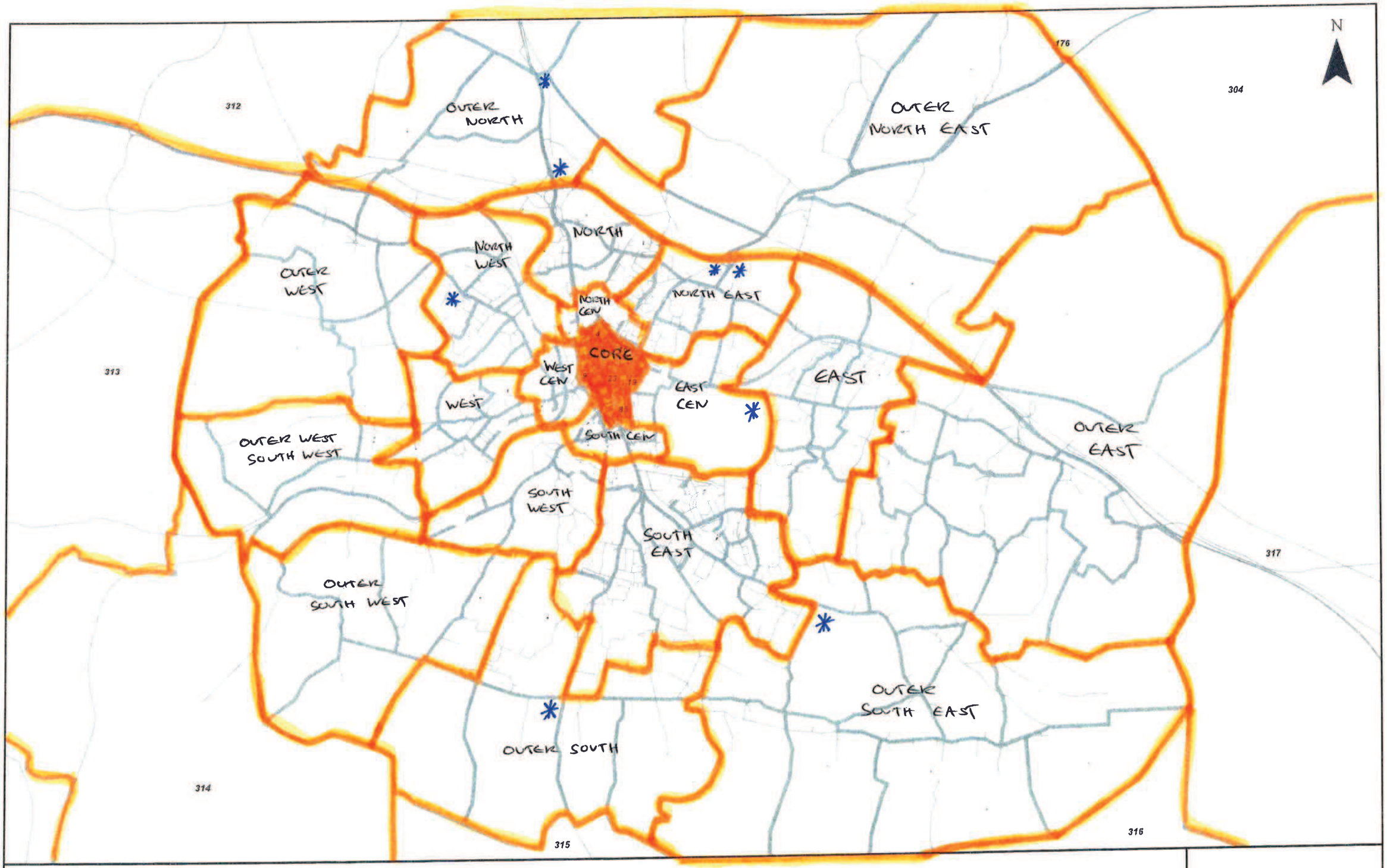


DESTINATION MAP - ALL MODES (person trips) - OPTION 2 - AM



Appendix E

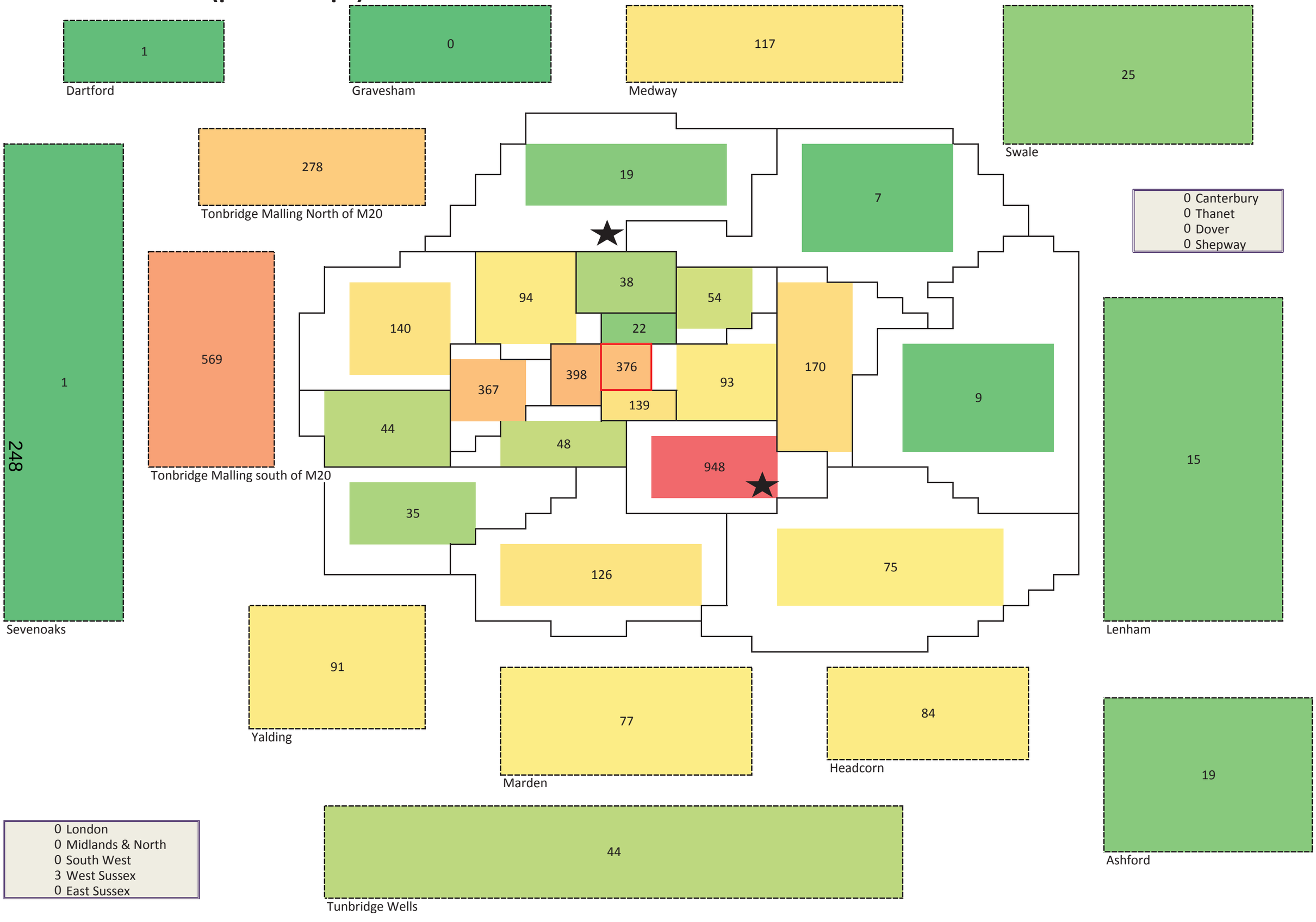
Option 3: Origin – Destination Mapping



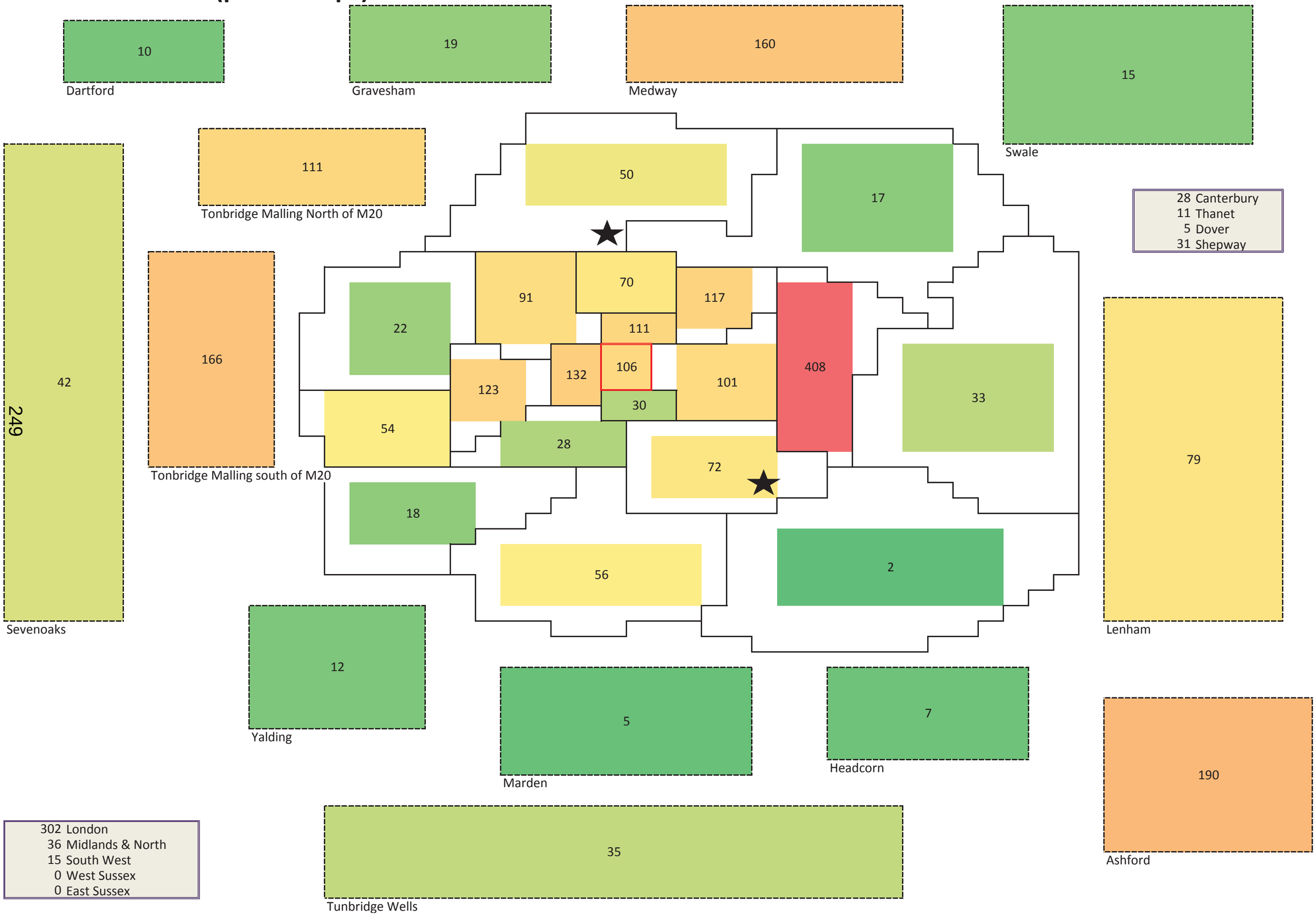
Internal Model Zones

Figure 3.6

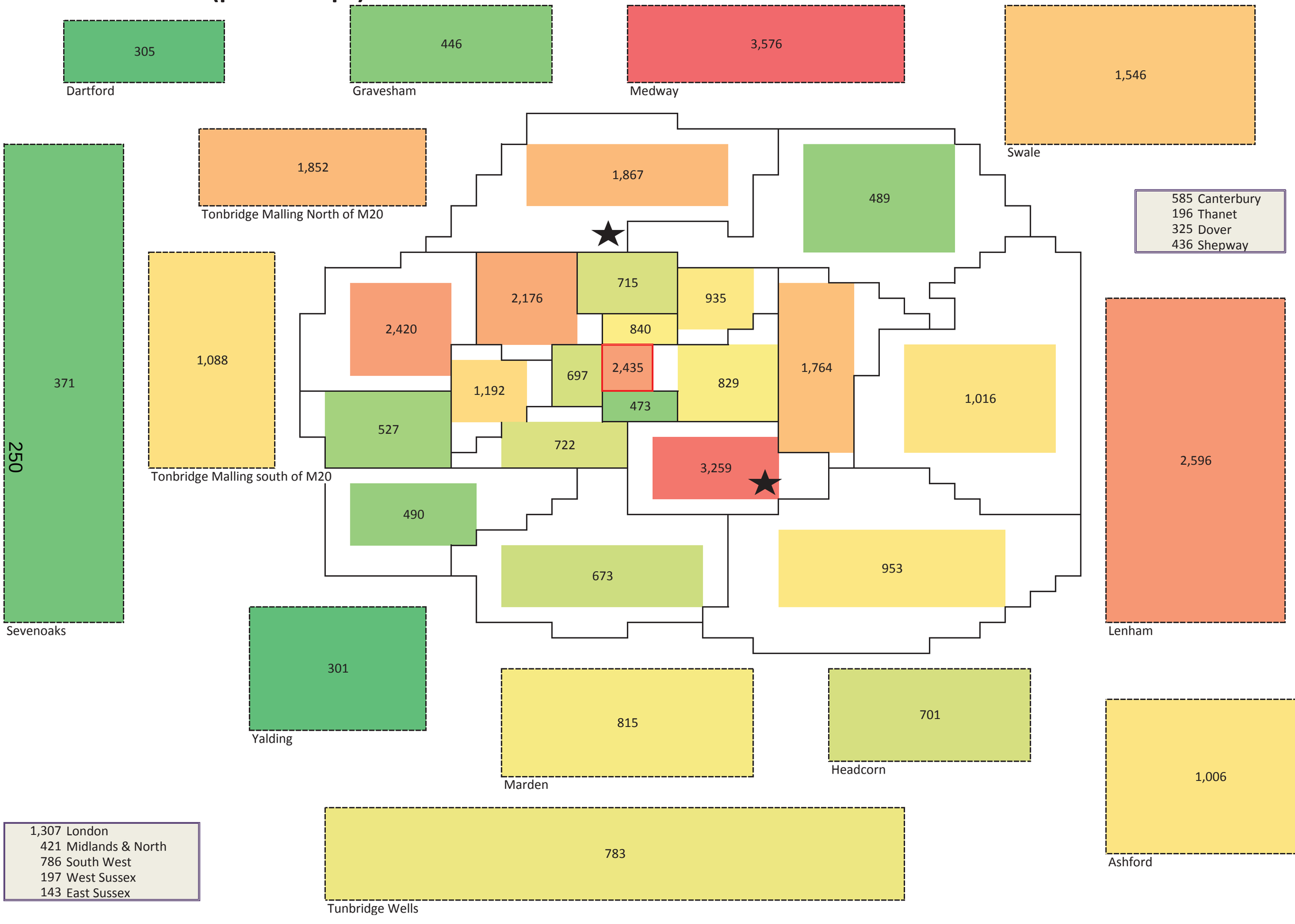
ORIGIN MAP - BUS (person trips) - OPTION 3 - AM



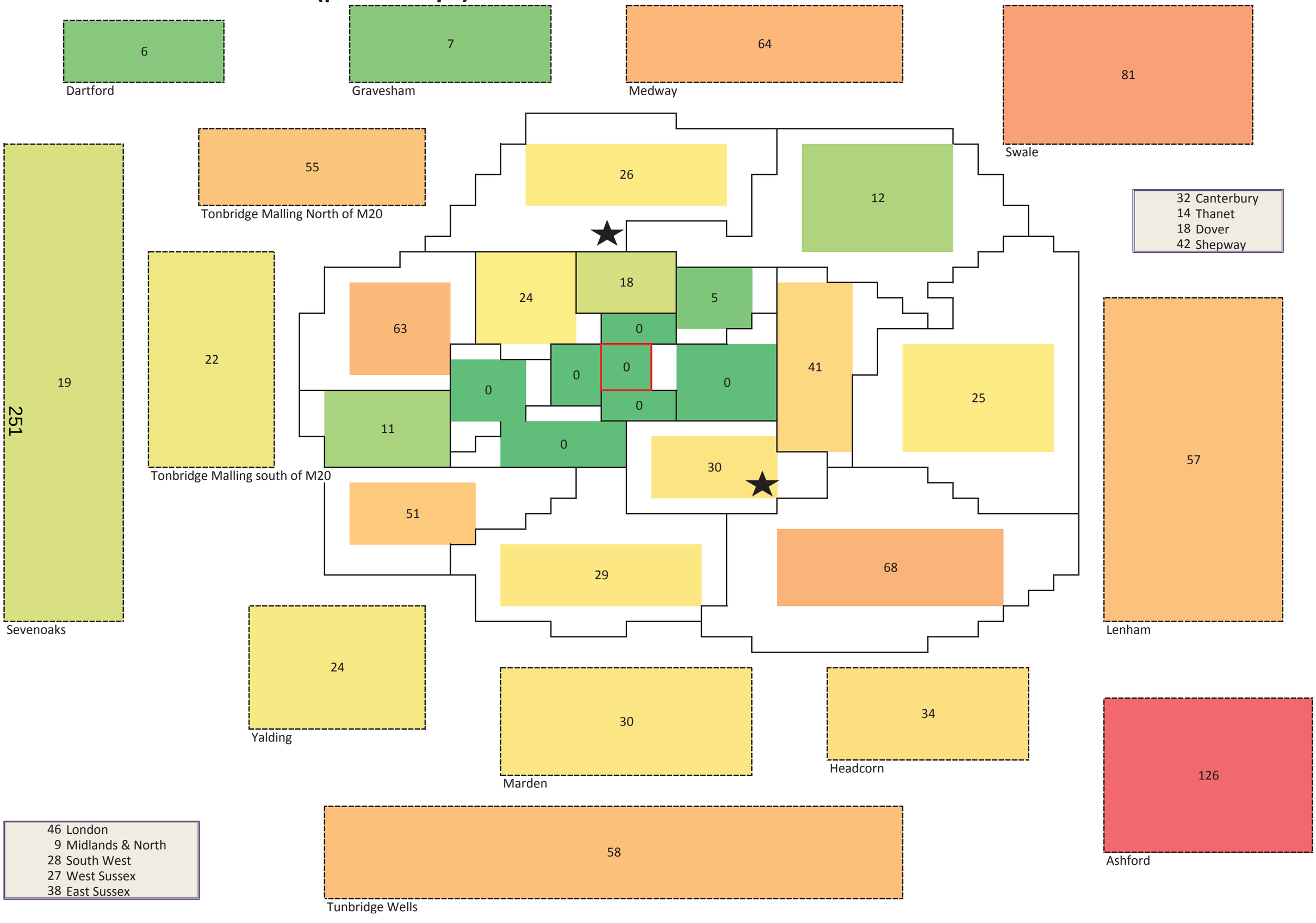
ORIGIN MAP - RAIL (person trips) - OPTION 3 - AM



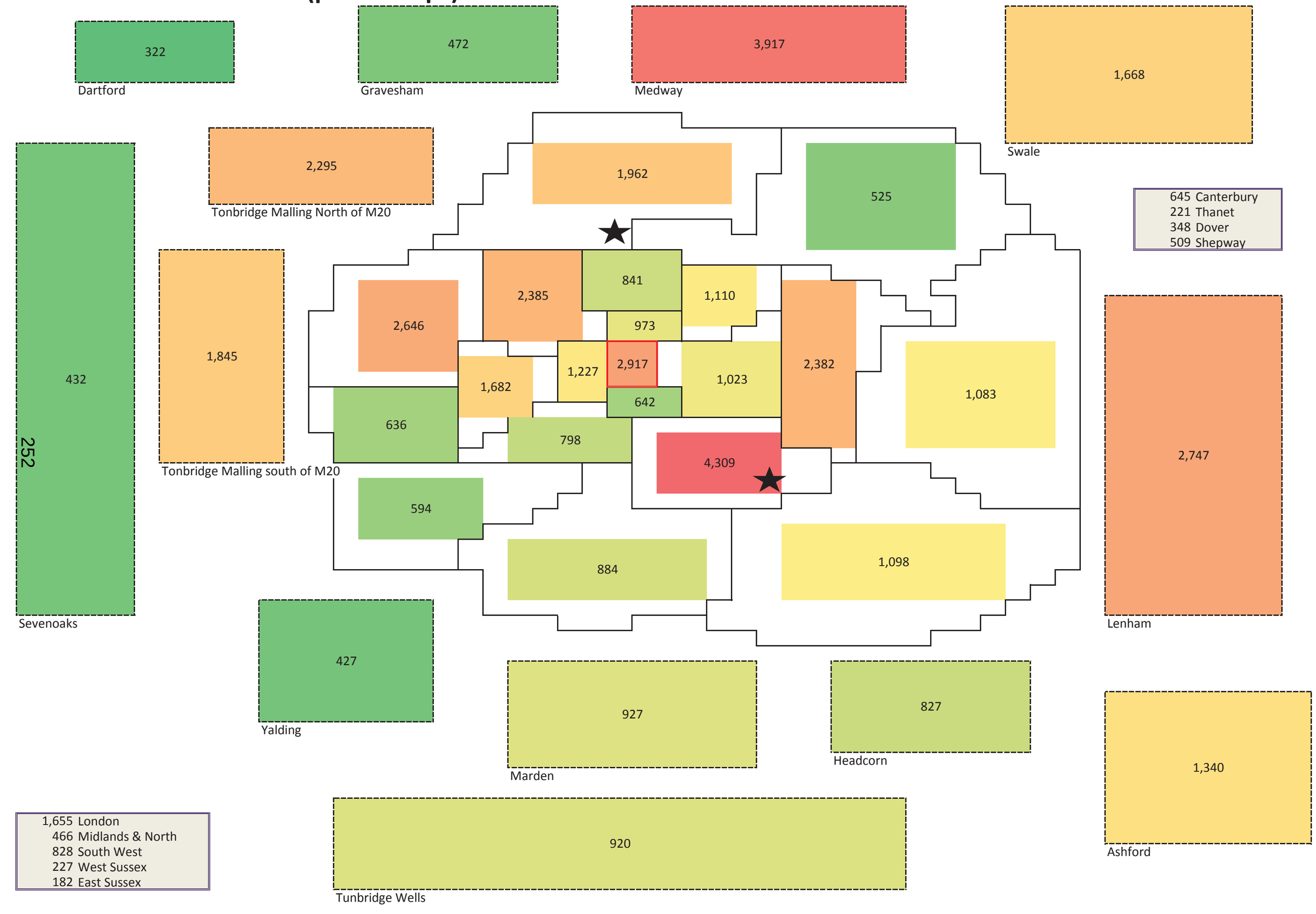
ORIGIN MAP - CAR (person trips) - OPTION 3 - AM



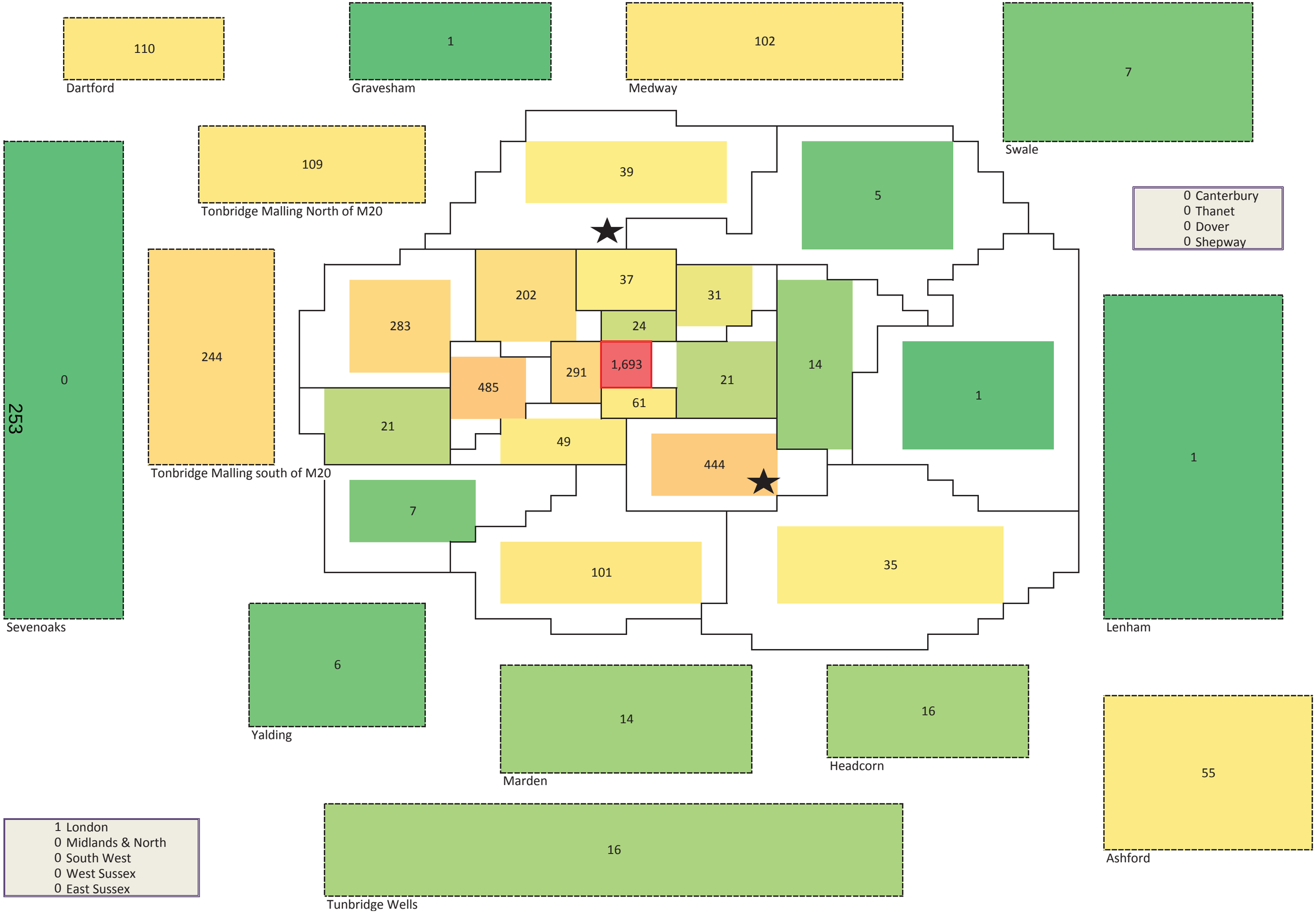
ORIGIN MAP - P&R CAR LEG (person trips) - OPTION 3 - AM



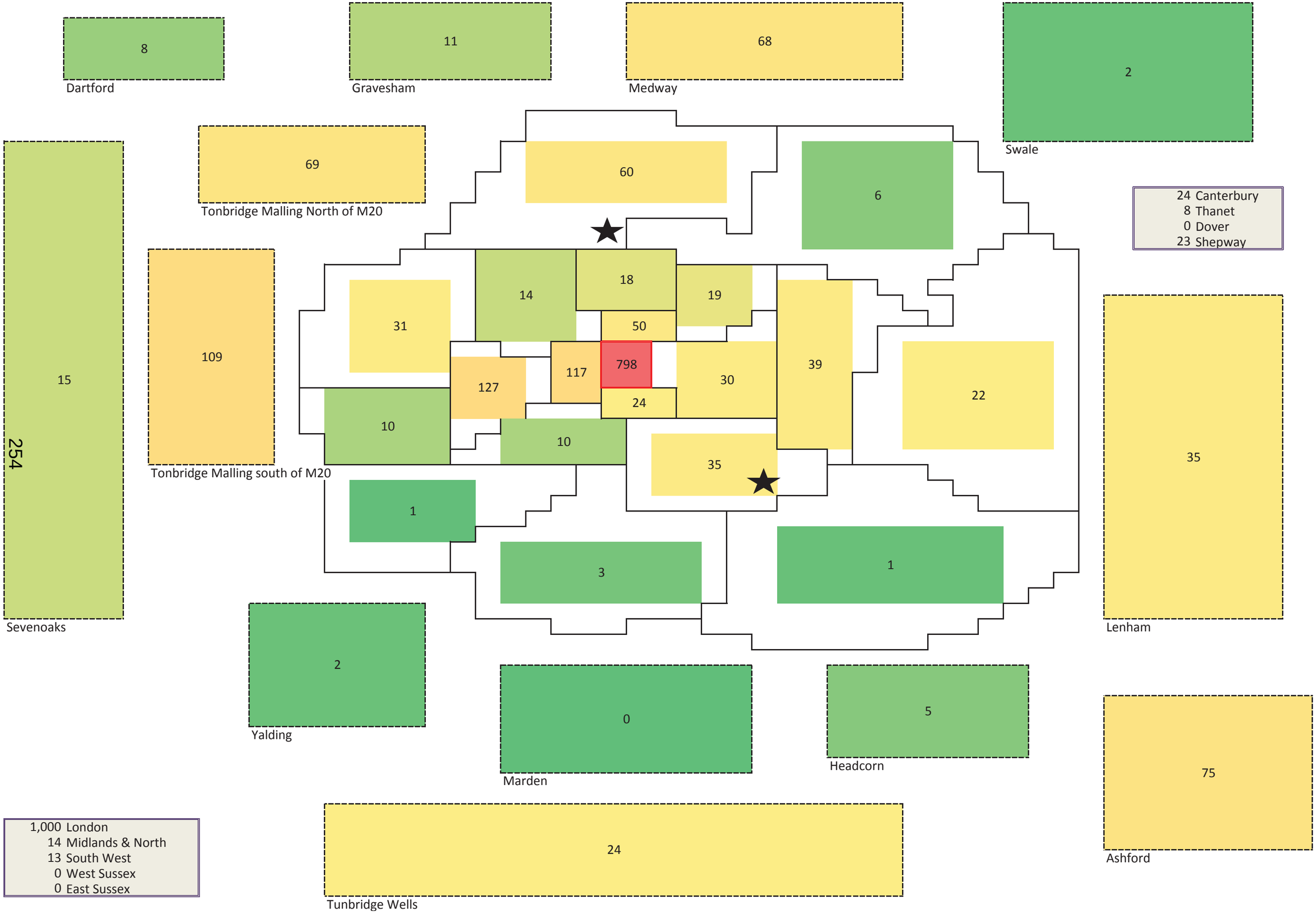
ORIGIN MAP - ALL MODES (person trips) - OPTION 3 - AM



DESTINATION MAP - BUS (person trips) - OPTION 3 - AM



DESTINATION MAP - RAIL (person trips) - OPTION 3 - AM



DESTINATION MAP - CAR (person trips) - OPTION 3 - AM

359
Dartford

347
Gravesham

1,715
Medway

1,135
Swale

775
Tonbridge Malling North of M20

2,043

1,148

923 Canterbury
111 Thanet
252 Dover
712 Shepway

552
255
Sevenoaks

1,357
Tonbridge Malling south of M20

3,244

1,524

711

1,433

1,066

1,357

1,574

1,232

3,697

1,053

594

209

485

572

3,473

1,494
Lenham

253

391

1,002

316
Yalding

784
Marden

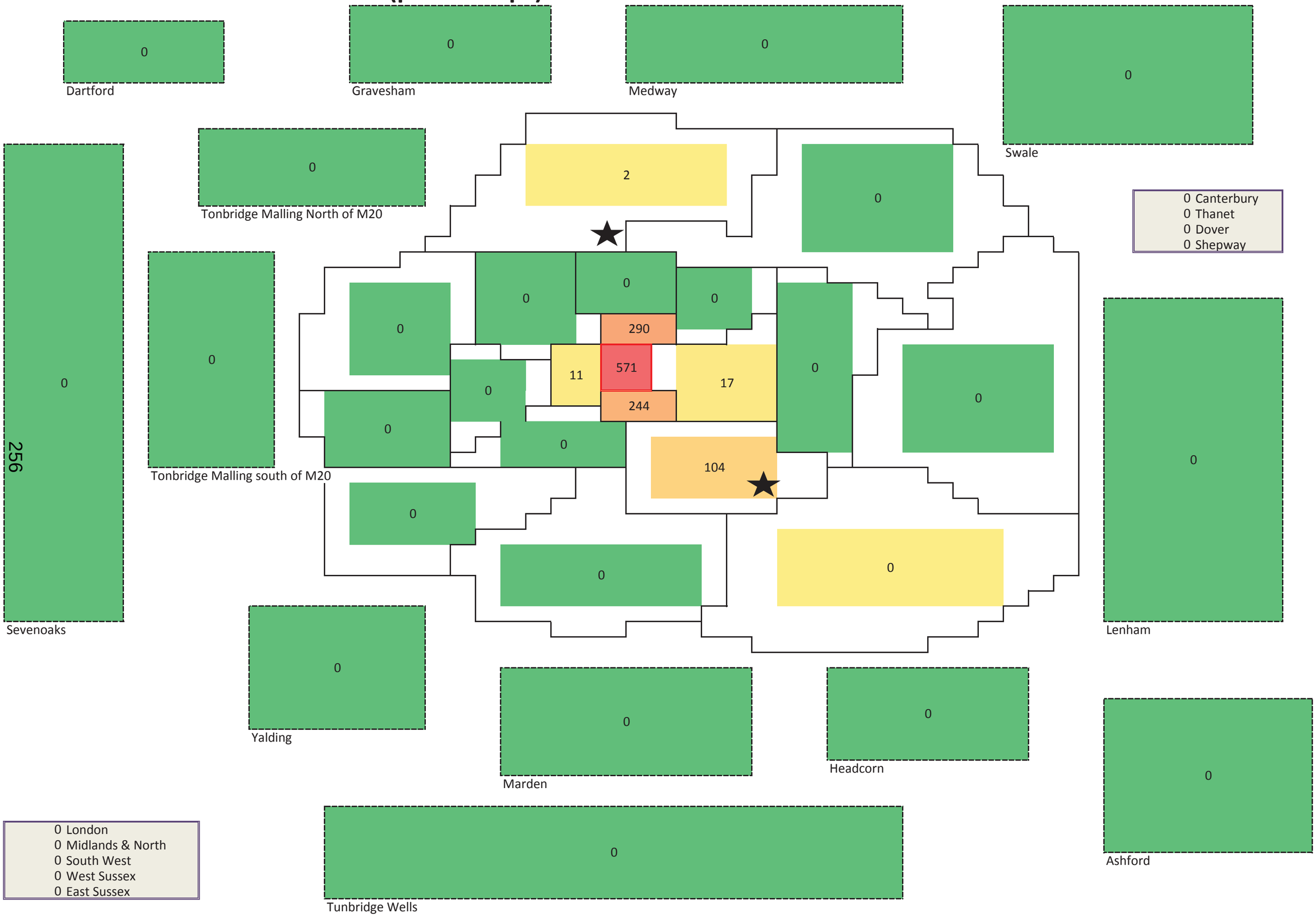
209
Headcorn

925
Ashford

2,721 London
486 Midlands & North
829 South West
103 West Sussex
84 East Sussex

1,001
Tunbridge Wells

DESTINATION MAP - P&R BUS LEG (person trips) - OPTION 3 - AM



DESTINATION MAP - ALL MODES (person trips) - OPTION 3 - AM

477
Dartford

360
Gravesham

1,885
Medway

1,144
Swale

954
Tonbridge Malling North of M20

2,144

1,159

948 Canterbury
119 Thanet
252 Dover
735 Shepway

566
257
Sevenoaks

1,710
Tonbridge Malling south of M20

3,558

1,740

766

1,483

1,431

2,186

1,651

6,760

1,120

1,410

813

240

631

4,056

616

261

495

1,039

1,529
Lenham

323
Yalding

798
Marden

230
Headcorn

1,055
Ashford

3,721 London
500 Midlands & North
841 South West
103 West Sussex
84 East Sussex

1,042
Tunbridge Wells

Appendix F

Approach to forecasting SEMSL demand

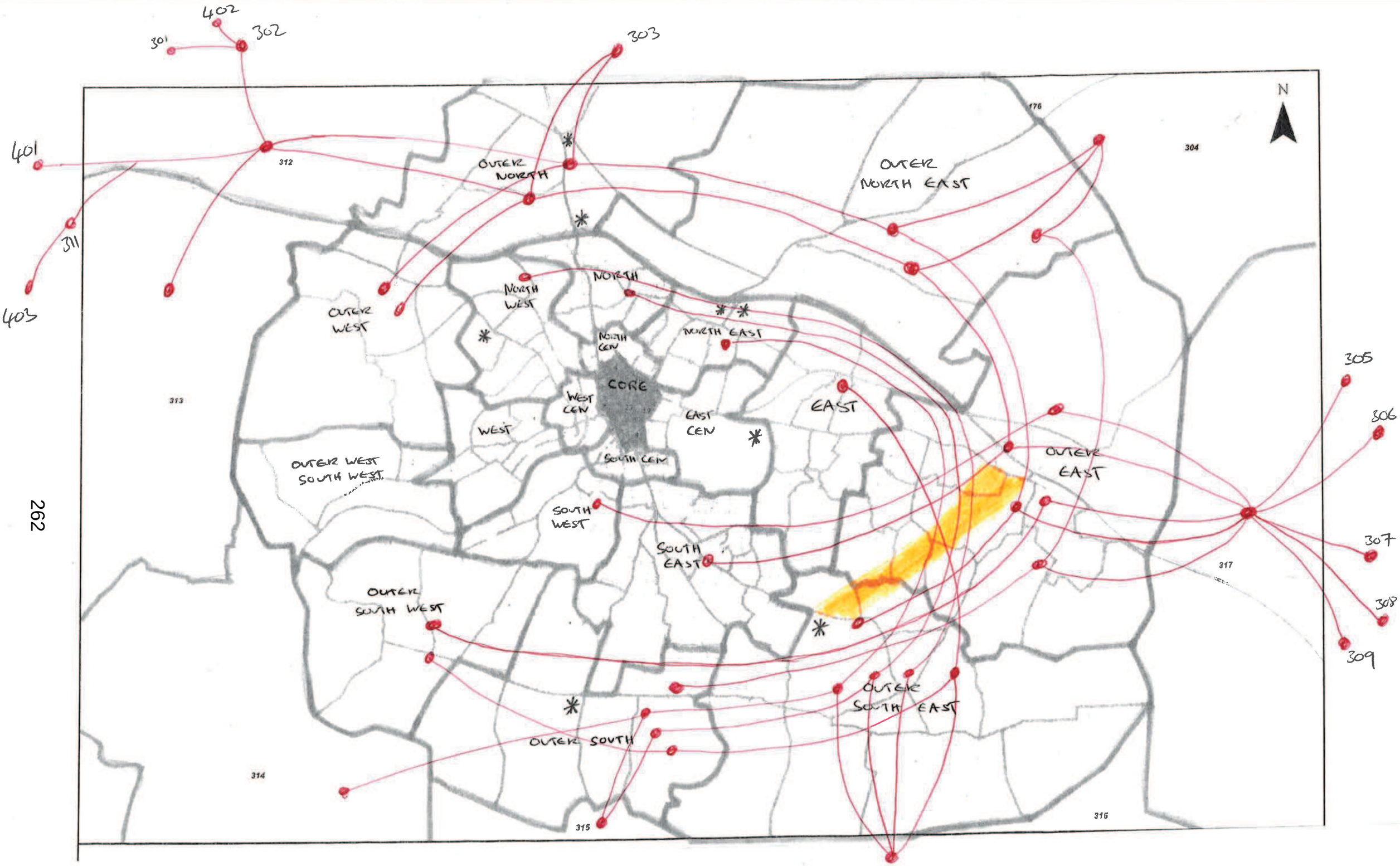
File Note

Date	10 April 2012
Job No/ Name	ST12118
Subject	Approach to forecasting SEMSL Demand

1. The absence of a run of the Maidstone Visum Model for the SEMSL scheme option with the latest Core Strategy development proposals meant that a separate assessment of potential demand for the scheme has been required
2. The 2026 Option 1 Visum Model Outputs have been used to assess the potential demand for the SEMSL scheme.
3. The origin - destination pairs for which travellers could potentially decide to use SEMSL were identified. These are summarised in the table below and presented visually in the accompanying diagram. Note: the origin – destination pairs should treated as two-way flows in either direction.

Origin (and Destination)	**Destination** (and Origin)
North East	Outer South East / Outer South / Yalding / Marden / Headcorn
North	Outer South East / Outer South / Marden / Headcorn
North West	Outer South East / Headcorn
South West	Outer East / Canterbury / Thanet / Dover / Shepway / Ashford / Lenham
South East	Outer East / Outer North East / Outer North / Outer West / Dartford / Gravesham / Medway / Swale / Canterbury / Thanet / Dover / Shepway / Ashford / Sevenoaks / Tonbridge and Malling / Lenham / London and beyond
East	Outer South East / Outer South West / Outer South
Outer South East	Outer East / Outer North East / Outer North / Outer West / Dartford / Gravesham / Medway / Swale / Canterbury / Thanet / Dover / Shepway / Ashford / Sevenoaks / Tonbridge and Malling / Lenham / London and beyond
Outer East	Outer South East / Outer South West / Outer South / Yalding / Marden / Headcorn
Outer North East	Outer South East / Outer South West / Outer South / Yalding / Marden / Headcorn
Outer North	Outer South East / Marden / Headcorn
Outer West	Outer South East / Headcorn
Outer South West	Outer East / Lenham
Outer South	Outer East / Outer North East / Swale / Canterbury / Thanet / Dover / Shepway / Ashford / Lenham
Yalding	Swale / Canterbury / Thanet / Dover / Shepway / Ashford
Marden	Dartford / Gravesham / Medway / Swale / Tonbridge and Malling / Lenham / London and beyond
Headcorn	Dartford / Gravesham / Medway / Swale Sevenoaks / Tonbridge and Malling / Lenham / London and beyond

4. The flows from the 2026 Option 1 model were then extracted for the flows highlighted above.
5. The results indicated that a maximum of around 5,360 two-way movements may use SEMSL in an AM peak hour. This breaks down into 2,585 movements in a south-westerly direction and 2,775 in a north-easterly direction.


401
402
301
302
303
311
403
312
OUTER NORTH
OUTER NORTH EAST
176
304
N
NORTH WEST
NORTH
OUTER WEST
NORTH CEN
NORTH EAST
CORE
WEST CEN
EAST CEN
EAST
WEST
313
OUTER WEST SOUTH WEST
SOUTH CEN
OUTER EAST
305
306
SOUTH WEST
SOUTH EAST
307
317
308
309
OUTER SOUTH WEST
OUTER SOUTH EAST
OUTER SOUTH
314
315
316

Appendix G

Approach to estimating park & ride capacity requirements

File Note

Date	10 April 2012
Job No/ Name	ST12118
Subject	Approach to estimating park & ride site capacity requirements

1. This note provides a summary of the approach undertaken to estimate the potential park & ride site capacity requirements. It starts by discussing the approach to assessing demand for park & ride and then translates this into a capacity requirement for car parking.

AM Peak Demand

2. The Maidstone Visum Model was utilised to determine an AM peak hour forecast of person trips at each park & ride site under each option scenario. These are presented in Table 1.

TableError! No text of specified style in document. **1 Maidstone Visum Model AM Peak Hour Demand Forecasts (person trips)**

P&R Site	Option 1	Option 2	Option 3
London Road	69	90	
Sittingbourne Road	508		
Willington Street	13	1,203	
Newnham Court		77	
Bluebell Hill		329	
Linton Corner		551	
Sutton Road		130	473
Cobtree			766
Total	**590**	**2,380**	**1,239**

3. The AM peak hour demand forecast was factored up to an AM peak period forecast utilising a factor of 1.85 relating to all demand up to 9.30am. The factor 1.85 is considered to be relatively conservative and is based upon the assumption that the peak period is relatively short. Table 2 presents the AM peak period forecasts of person trips.

Table 2 AM Peak Period Demand Forecasts (person trips)

P&R Site	Option 1	Option 2	Option 3
London Road	127	167	
Sittingbourne Road	940		
Willington Street	24	2,225	
Newnham Court		143	
Bluebell Hill		610	
Linton Corner		1,019	
Sutton Road		240	874
Cobtree			1,418
Total	**1,091**	**4,403**	**2,292**

Inter-peak Period Demand

4. The assessment of inter-peak demand has been based upon ticket sales data and the existing observed demand at London Road, Sittingbourne Road, and Willington Street. The interpeak period has been assumed to be from 9.30am through to 4.30pm (6 hours).

5. An inter-peak growth factor from TEMPRO, of 1.164, has been applied to estimate the growth in inter-peak demand that will occur by 2026. This provides the basis for the inter-peak demand forecasts for London Road, Sittingbourne Road, and Willington Street in Option 1.
6. The Option 2 inter-peak forecasts for London Road, Newnham Court, and Willington Street have utilised the same data as Option 1; however, the forecasts for London Road and Willington Street were factored by 1.1 to reflect the enhanced level of park & ride service, whilst the forecast for Newnham Court were factored by 1.25.
7. The absence of existing data for the inter-peak forecasts for Sutton Road, Linton Corner and Bluebell Hill meant that a separate qualitative assessment of potential demand was required. This took into account the location of the sites relative to the residential areas of Maidstone that were seen as the main driver of inter-peak demand at London Road and Willington Street. It was concluded that inter-peak demand at these sites would be much lower and so small nominal levels of demand were attributed to these stites.
8. The option 3 inter-peak demand applied the same demand forecasts for Option 2 and assumed that various proportions from the six option 2 sites would be redistributed between the two sites in option 3. Overall this concluded that there would be 50% less inter-peak demand for Option 3 than Option 2.

Table 3 Inter-peak Period Demand Forecasts (person trips)

P&R Site	Option 1	Option 2	Option 3
London Road	1,024	1,126	
Sittingbourne Road	776		
Willington Street	1,041	1,145	
Newnham Court		970	
Bluebell Hill		325	
Linton Corner		550	
Sutton Road		350	625
Cobtree			1,619
Total	**2,841**	**4,446**	**2,244**

PM Peak Period Demand

9. No additional demand is assumed to be generated in the PM peak period, beyond 4.30pm, with the majority of passengers on the return leg of their journey to the park & ride site.

Car Park Capacity Requirements

10. Having determined the overall levels of demand for each park and ride service an assessment of the required car parking capacities was undertaken through an assessment of car occupancies and turnover.
11. The AM peak and inter-peak period forecasts of person trips are translated into a forecast of vehicle trips using a car occupancy value of 1.15. This value was based conservatively upon the AM peak vehicle occupancy data recorded in the Jacobs Report.
12. The baseline 2011 ticket sales data and the utilisation surveys have been used to assess turnover of vehicles across the day.
13. It has been assumed that the majority of vehicle trips arriving at a park & ride site in the AM peak are commuter-based, or long-stay, and so the conservative assumption has been taken that all these vehicles will remain at the park & ride site until mid-afternoon, at the earliest.
14. It is assumed that there is a much higher turnover of inter-peak vehicles. A ratio between the overall inter-peak demand for park & ride and the maximum observed car park utilisation (generated from the utilisation surveys) provides a basic factor with which to estimate turnover. Table 4 presents this data and the inter-peak turnover factors generated.

Table 4 Existing (Nov 2011) Inter-peak Period Demand Forecasts (person trips)

P&R Site	Inter-peak demand (2011)	Inter-peak Occupation (2011)	Inter-peak Turnover Factor
London Road	880	184	4.8
Sittingbourne Road	667	215	3.1
Willington Street	894	167	5.3
Total / Average	**2,441**	**568**	**4.3**

15. The factors presented appear to be relatively high, specifically for London Road and Willington Street; however, it is known that both these sites are used by local residents and have a high proportion of OAP trips. It is considered that the application of these factors to other site may underestimate the required number of spaces. This has been taken into account in the final calculations.

16. To generate the assessment of parking capacity required at each site, under each option scenario, the following equation has been applied:

    *Capacity = (peak period vehicle demand + (Inter-peak vehicle demand * turnover factor)) * 1.1*

17. An additional 10% capacity has been added to take into account the issue raised with the inter-peak capacity requirement, but also to ensure that the car park is not operating at 100% capacity as this will be to the detriment of the park & ride operation.

Table 5 Park & Ride Site Estimated Car Park Capacity Requirements

P&R Site	Option 1	Option 2	Option 3
London Road	325	375	
Sittingbourne Road	1,150		
Willington Street	200	350	
Newnham Court		2,425	
Bluebell Hill		650	
Linton Corner		1,100	
Sutton Road		300	975
Cobtree			1,725
Total	**1,675**	**5,200**	**2,700**

Distribution	MBC
Name/ Signed	Jon Bunney

MAIDSTONE BOROUGH COUNCIL

CABINET MEMBER FOR ENVIRONMENT

REPORT OF ASSISTANT DIRECTOR FOR ENVIRONMENTAL SERVICES

Report prepared by J Kitson
Date Issued: xxxxxx 2010

DRAFT 28/01/10

1. RESIDENT PARKING SCHEME SURVEY

1.1 Issue for decision

1.1.1 To consider the results of an extensive survey of each of the resident zone parking areas.

1.2 Recommendation of the Assistant Director of Environmental Services

1.2.1 That outcomes and conclusions within this report be noted.

1.2.2 That a trial introduction of the StreetCar service be considered to establish the long term viability of the scheme.

1.3 Reasons for Recommendation

1.3.1 Consultation with residents and businesses within the resident zones was carried out as part of the proposals to manage parking demand. This identified a number of issues where further survey should be carried out to evaluate levels of available parking during the times of scheme operation and during the evening period.

1.3.2 A Scrutiny Committee recommendation also identified that additional surveys should be carried out by year end to identify specific parking problems and to review suggestions to extend the scheme operational hours and limiting non-permit holder use.

1.3.3 The Regeneration and Sustainable Communities Overview and Scrutiny Committee also recommended that the cessation of north zone migration be monitored and reviewed during the first six months of operation.

1.3.4 As a result of these recommendations, extensive surveys have been carried out by Parking Services to identify;

- the number of properties within each zone
- the level of off street parking for residents
- the number of off street parking spaces
- the number of business within each zone
- total on street parking capacity
- the level of on street space per property across all zones
- the number of vehicles parking without permits
- average usage per zone
- the number of commercial vehicles per zone
- total number of vehicles per zone

1.3.5 Appendix A shows the data collated for each of the parking zones relating to the number of properties, parking availability and business use.

1.3.6 Appendix B represents the difference in usage, vehicles parking without permits and commercial vehicle parking across each zone for both day and evening periods.

1.3.7 As anticipated the level of available on street parking decreases during the evening period as an increasing number of residential properties have more than one car per household. This problem is more acute within the north zone with capacity levels of over 90% overall. This figure will include a number of roads where capacity is at 100%, however, it is recognised that some residents park further form their home address to secure a parking space or utilise off street car parks in Well Road, Lucerne Street, Brewer Street, Union Street and Wheeler Street. This concession is also available for south zone residents during the evening period in the Councils Mote Road and Brunswick Street car parks.

1.3.8 This situation has been eased following the reduction of restricted times of single yellow lines throughout the north zones to 09:00hrs - 17:00hrs Monday to Friday only. It was observed that single yellow line parking during non operational times is a preference for some residents as this allows parking closer to their home despite having to move the vehicle before 09:00hrs the following day.

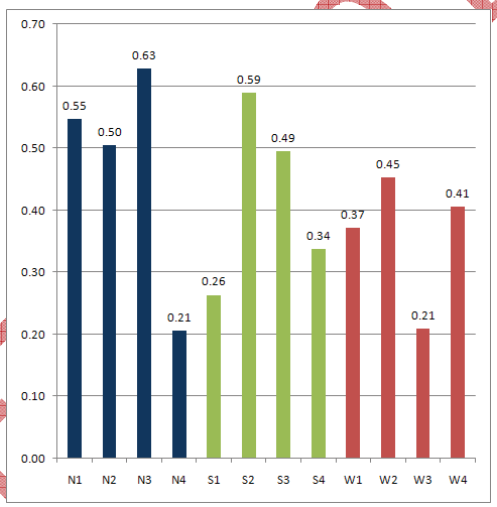
1.3.9 Good levels of parking availability are recorded during the day across each of the parking zones as many residents are away from home during working hours. The remaining vehicles are being closely controlled through enforcement to maximise the space available for local residents.

DRAFT 28/01/10

1.3.10 The level of commercial vehicle parking across all zones is comparatively low at around 5.58%. This percentage increases slightly to 5.68% during the evening.

1.3.11 Commercial vehicle parking in the north zone shows a different trend reducing to 4.64% during the evening. The south and west zones show an increase in the evening of just over 1% from levels observed during the day. This will continue to be monitored to ensure that non regulated commercial vehicle parking remains at a reasonable level.

1.3.12 The data collected enables the average space per property to be calculated at 0.41 which can be used a guide to identify areas where on street parking can be limited often due to the dwelling type and population density. Data below shows this variance between 0.21 in West 3 and North 4 and 0.63 in North 3. This is consistent with previous estimates where reduced parking availability has been identified.



1.3.13 The number of vehicles parking without permits was recorded at times throughout the day and into the evening period. Data shows the number of non permit holders parked across the scheme to be at 10.08% during the day, much lower than anticipated. This figure decreased by 1.7% to 8.38% in the evening. This suggests that many non permit holders during the day are visitors to the local area and not residents.

1.3.14 The impact of this group is therefore significantly less than previously estimated and as a result it is not recommended to change the operational times of the residents parking scheme at present. Further monitoring will take place to ensure that parking availability continues to be closely managed.

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1.3.15 Further investigation has also been carried out in conjunction with the survey to identify the charging methods available for mobile phone payment systems. This may have been a consideration if the percentage of non-permit holder parking reduced opportunities for local residents. However, it has been concluded that once payment handling fees have been taken into account, mobile phone tariff payments are not viable when applied to on street resident parking schemes. This coupled with the low impact of this group on localised parking levels, it is not recommended to charge or restrict non permit holders at present.

1.3.16 An alternative to increasing on street restrictions to manage demand is the StreetCar scheme. This offers local residents the convenience of their own car but without the cost and impact on the local area. StreetCar is a service supported by Kent County Council that has cars parked in a network of dedicated spaces which enable members to use a car for as little as 30 minutes or as long as 6 months. Cars can be reserved online or by phone, and can be collected and returned at any time day or night using smartcard technology. The fleet is made up of new cars and the cost of usage is based on how long the driver has the car and how far they drive. It is estimated that the annual cost of StreetCar for the average user will be dramatically less than owning a car, with improved levels of parking availability achieved if the reliance on car ownership by local residents is reduced. Further information relating to the scheme can be found at www.streetcar.co.uk. (Appendix C)

1.3.17 It is recommended to install two dedicated StreetCar bays in a north zone to establish if the scheme offers an alternative to multiple vehicle ownership. The introduction of the services should be reviewed after six months of operation to identify the impact on local parking availability, resident permit issue and the level street car use by local residents. If successful, consideration can be given to extending the scheme into other densely populated areas within the south and west residents parking zones.

1.3.18 The cessation of north zone migration was reintroduced on 1st June 2009. During the first four weeks 46 advisory notices were issued to vehicles parked in a zone different to the one specified on their resident permit to ensure that drivers were made aware of the changes. During the first six months, 37 penalty charge notices were issued to vehicles parked longer than the permitted waiting time without displaying the correct zone permit.

1.3.19 Driver compliance has continued to improve with limited migration and disruption seen across north zones.

1.4 Alternative Action and why not Recommended

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1.4.1 To introduce further restriction to non permit holders may not significantly influence parking demand as data suggests that this category of drivers represent less than 11% of drivers. This may also impede some local businesses.

1.4.2 Mobile phone charging for non permit holders may not significantly influence parking demand particularly as payment handling fees will make any tariff applied unviable.

1.5 Impact on corporate objectives

1.5.1 Corporate objectives to improve access across the borough through better roads, public transport and services, directly relate to the services provided by Parking Services.

1.6 Risk Management

1.6.1 There is a risk that changing current residents parking scheme arrangements may disrupt stability, as residents are becoming familiar with the changes made during spring 2009.

1.7 Other Implications

1.	Financial	
2.	Staffing	
3.	Legal	
4.	Equality Impact Needs Assessment	
5.	Environmental/Sustainable Development	
6.	Community Safety	
7.	Human Rights Act	
8.	Procurement	
9.	Asset Management	

Background Documents
None.

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NO REPORT WILL BE ACCEPTED WITHOUT THIS BOX BEING COMPLETED

Is this a Key Decision? Yes ☐ No ☑

If yes, when did it appear in the Forward Plan? _____

Is this an Urgent Key Decision? Yes ☐ No ☑

Reason for Urgency

How to Comment

Should you have any comments on the issue that is being considered please contact either the relevant Officer or the Member of the Executive who will be taking the decision.

Cllr Mark Wooding — Cabinet Member for Environment
Telephone: 01622 602000
E-mail: markwooding@maidstone.gov.uk

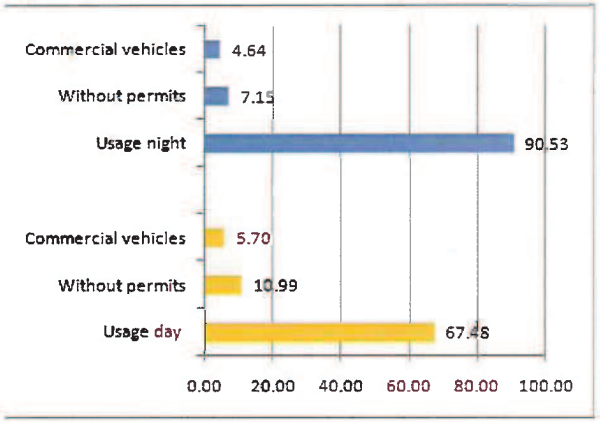
J Kitson — Parking Services Manager
Telephone: 01622 602603
E-mail: jeffkitson@maidstone.gov.uk

	Number of properties	Off Street Parking Available	Off Street Parking - Spaces available	Number of Businesses	Total on-street Capacity	Space per property	Vehicles Without Permits (Day)	Ave Usage %	Vehicles Without Permits (Night)	Ave Usage %	Number of Commercial Vehicles (Day)	Ave Usage %	Number of Commercial Vehicles (Night)	Ave Usage %	Number of Vehicles (Day)	Ave Usage %	Number of Vehicles (Night)	Ave Usage%
N1	578	Mixed	119	28	316	0.5	44	13.92	26	8.23	24	7.59	18	5.70	261	82.59	287	90.82
N2	1333	Yes	264	43	673	0.5	67	9.96	37	5.50	34	5.05	33	4.90	466	69.24	619	91.98
N3	741	Yes	153	17	465	0.6	43	9.25	39	8.39	23	4.95	18	3.87	248	53.33	404	86.88
N4	273	Yes	77	13	56	0.2	12	21.43	6	10.71	5	8.93	1	1.79	44	78.57	57	101.79
N	**2925**		**613**	**101**	**1510**	**0.47**	**166**	**10.99**	**108**	**7.15**	**86**	**5.70**	**70**	**4.64**	**1019**	**67.48**	**1367**	**90.53**
S1	1030	Yes	406	13	271	0.3	14	5.17	20	7.38	13	4.80	17	6.27	219	80.81	250	92.25
S2	479	Mixed	57	20	282	0.6	16	5.67	30	10.64	24	8.51	24	8.51	208	73.76	223	79.08
S3	627	Yes	192	22	310	0.5	31	10.00	23	7.42	11	3.55	15	4.84	139	44.84	229	73.87
S4	344	Yes	278	0	116	0.3	22	18.97	18	15.52	7	6.03	9	7.76	58	50.00	64	55.17
S	**2480**		**933**	**55**	**979**	**0.42**	**83**	**8.48**	**91**	**9.30**	**55**	**5.62**	**65**	**6.64**	**624**	**63.74**	**766**	**78.24**
W1	700	Mixed	187	11	260	0.4	30	11.54	32	12.31	14	5.38	14	5.38	144	55.38	214	82.31
W2	841	Yes	190	28	381	0.5	38	9.97	34	8.92	24	6.30	28	7.35	253	66.40	350	91.86
W3	594	Yes	91	6	124	0.2	12	9.68	8	6.45	5	4.03	8	6.45	47	37.90	63	50.81
W4	101	Yes	14	1	41	0.4	3	7.32	3	7.32	0	0.00	2	4.88	22	53.66	39	95.12
W	**2236**		**482**	**46**	**806**	**0.36**	**83**	**10.30**	**77**	**9.55**	**43**	**5.33**	**52**	**6.45**	**466**	**57.82**	**666**	**82.63**
ALL	***7641***		***2028***	***202***	***3295***	***0.4***	***332***	***10.08***	***276***	***8.38***	***184***	***5.58***	***187***	***5.68***	***2109***	***64.01***	***2799***	***84.95***

Appendix A

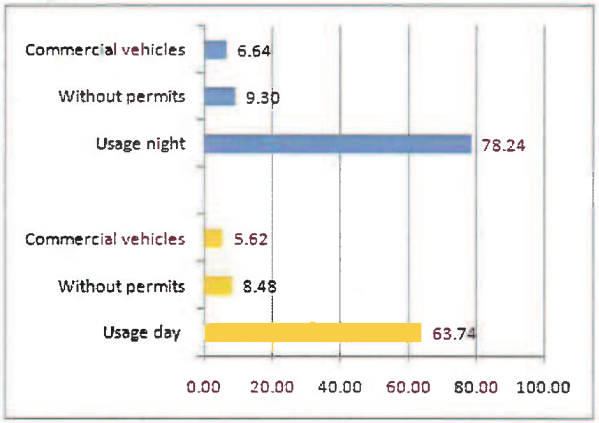
North

Usage day	67.48 %
Without permits	10.99 %
Commercial vehicles	5.70 %
Usage night	90.53 %
Without permits	7.15 %
Commercial vehicles	4.64 %



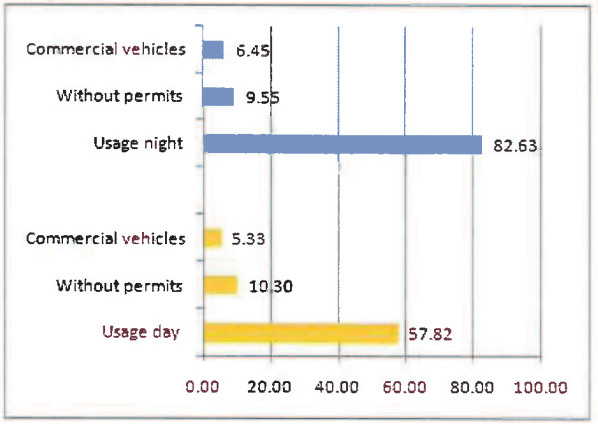
South

Usage day	63.74 %
Without permits	8.48 %
Commercial vehicles	5.62 %
Usage night	78.24 %
Without permits	9.30 %
Commercial vehicles	6.64 %



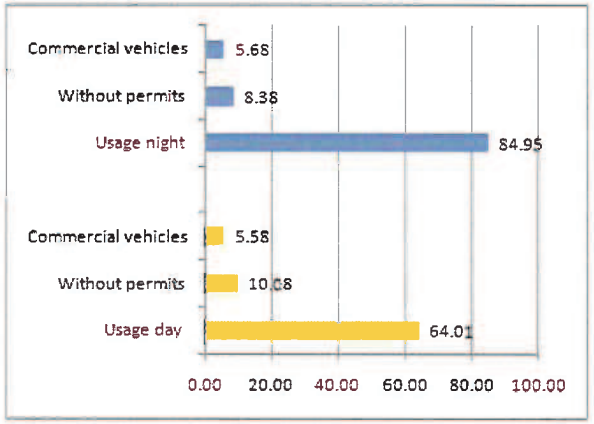
West

Usage day	57.82 %
Without permits	10.30 %
Commercial vehicles	5.33 %
Usage night	82.63 %
Without permits	9.55 %
Commercial vehicles	6.45 %



All Zones

Usage day	64.01 %
Without permits	10.08 %
Commercial vehicles	5.58 %
Usage night	84.95 %
Without permits	8.38 %
Commercial vehicles	5.68 %



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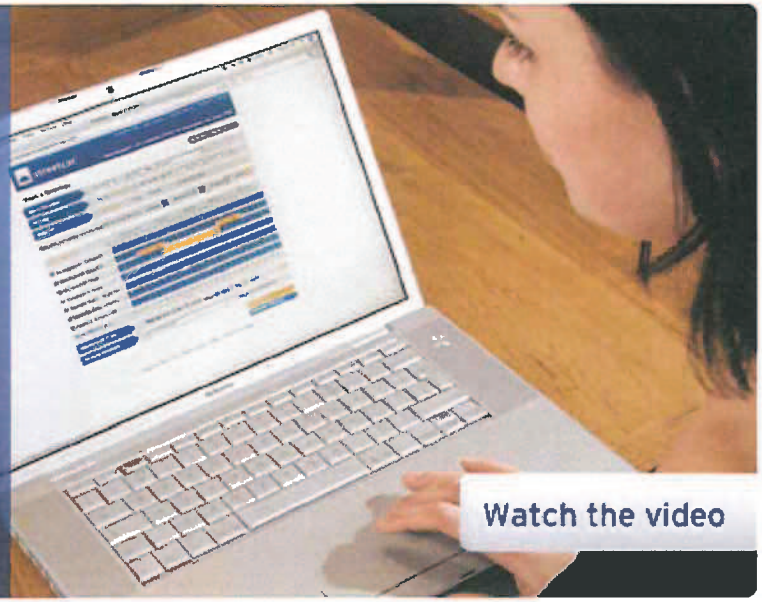

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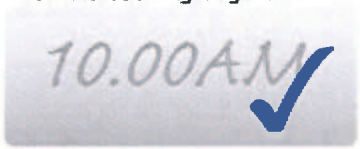

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3. PIN

Type a unique PIN into the dashboard

4. Drive

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Maidstone Integrated Parking Strategy Research

Data Report

Report

Maidstone Integrated Parking Strategy Research

Data Report

Report

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Maidstone Integrated Parking Strategy Research

Data Report

Report

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1 Introduction

Overview

1.1 Maidstone Borough Council (MBC) appointed JMP Consultants Ltd (JMP) to undertake a series of research tasks to support the development of the Council's Integrated Parking Strategy. The strategy aims to assess the current and future use of both Town Centre Car Parks, as well as Park & Ride facilities to support the development growth outlined within the Maidstone Core Strategy (2011).

Content

1.2 This report is the first output of the research study and presents tall the findings from the data collection and collation exercises that have been undertaken. This includes:

- Policy and strategy review;
- Park & Ride site assessment;
- Town Centre car park audit and assessment;
- Park & Ride site occupancy surveys;
- Town Centre Car park site occupancy surveys;
- Park & Ride customer surveys; and
- Town Centre car park customer surveys.

1.3 A summary of each data set is presented in the sections to follow.

2 Policy and Strategy

Overview

2.1 This research project has been commissioned on the basis of a number of on-going policy and strategy development proposals for the Borough of Maidstone and Maidstone Town Centre. As part of the initial review process each of the core policy and strategy documents have been reviewed in order to provide the context in which the research will be conducted.

2.2 Amongst the documents that have been reviewed, the two key ones for the purpose of this research are:

- Emerging Maidstone Core Strategy Document (2011); and
- Maidstone Town Centre Study (2010)

Emerging Maidstone Core Strategy Document

2.3 The Council's Core Strategy document sets outs the proposed development strategy between 2006 and 2026. The overall borough-wide strategy is to deliver 10,080 homes and around 10,000 additional jobs within this period.

2.4 Within the document is a spatial assessment of where this development should occur with an identified need to focus upon sustainable locations where "employment, services and facilities, together with a range of transport choices are available". Based upon this approach, the document sets out a 'Settlement Hierarchy' the town of Maidstone as the key location for development, with the rural areas of Harrietsham, Headcorn, Lenham, Marden, and Staplehurs identified as other potential development areas.

2.5 The strategy sets out that the town of Maidstone will be the focus for a significant proportion of new housing, employment and retail development in the borough. It identifies specific retail and office development for the core Town Centre with a strategy for redevelopment or infilling of appropriate urban sites across the town. 2.5 It is acknowledged, however, that the urban area of Maidstone cannot accommodate all the growth that will be required and so development at the edge of the urban area would prove to be the next most sustainable alternative.

2.6 The strategy document acknowledges that a significant amount of development will be concentrated within the urban areas where traffic congestion is already currently an issues at peak times, particularly on the main radial approaches to the urban area and around the town centre and at the Junctions with the M20. There is, therefore, an acknowledgement that the proposals will require a "*upward step change*" in the use of sustainable transport modes in order to ensure that traffic congestion does not worsen.

Maidstone Town Centre Study

2.7 The Maidstone Town Centre Study provides an evidence to support the preparation of the wider Core Strategy as well as an Area Action Plan for Maidstone Town Centre. It includes a review of the socio-economic role of the town centre, current development policies, existing property market and traffic and transport issues.

2.8 It provides an analysis of key pedestrian routs and desire lines across the town centre, along with an assessment of cycling provision. It examines the existing bus and rail network and the areas

that it serves, along with a discussion of the current park & ride facilities. It also assesses the exiting town centre car parking provision and usage.

2.9 In terms of general conclusions in relation to transport and access, it identifies the barriers created by the vehicular routes surrounding the town centre creating movement difficulties for pedestrians and cyclists. This is also compounded by limited crossings of the River Medway. It identifies that, despite a number of station, rail provision is relatively poor. It also highlights the excessive number of town centre car parks, many of which are very small.

3 Park and Ride Sites

Overview

3.1 Maidstone has historically supported the principle of Park and Ride. The first site serving the town opened in 1989 with three others opening in subsequent years. All sites have dedicated bus services with payment on-bus.

3.2 The four original sites were:-

- Willington Street, Off A20, 2 miles East of centre opened in 1989
- Coombe Quarry, Armstrong Road, 1.5 miles South of centre opened in 1990
- London Road, A20 London Road opened in 1991
- Sittingbourne Road, off Bearsted Road near to A249 opened in 1998.

3.3 The Coombe Quarry site has now ceased operating.

3.4 The three current sites operate from 07:00 Monday to Fridays and 08:00 on Saturdays to circa 18:45 with buses to the town centre operating at least every 15 minutes. All three bus services are operated by Arriva Buses.

3.5 The tariffs for travel are as follows:

- Peak Return (up to 9am Monday to Friday) = £2.50
- Off-peak return = £1.50
- Ten single trip tickets = £10
- Twelve week season ticket = £100
- Annual season ticket = £400

London Road

3.6 The London Road site is located to the northwest of the town centre in relative close proximity to Junction 5 of the M20. The site is actually accessed off Beaver Road, which is a local distributor road located on the south side of A20, London Road.

3.7 The site has 518 spaces, with lighting and CCTV provided. The quality of surfacing is good with spaces clearly marked, build-outs providing demarcation of parking bays, dedicated footway provision, and clear circulation markings. The site is within a suburban location with some natural surveillance from surrounding premises.

3.8 There are limited facilities for customers waiting for a bus, with an old bus shelter, an information display and limited seating.

3.9 The estimated journey time from the site to Maidstone town Centre is approximately 9 minutes. Buses travel eastwards along the A20, London Road and continue on into the town centre along the High Street.

Sittingbourne Road

3.10 The Sittingbourne Road site is located to the northeast of the town centre in close proximity to Junction 7 of the M20. The site is actually accessed off Bearstead Road, which is a local distributor road located to the north of the A249, Sittingbourne Road.

This is the largest park & ride site with 610 spaces, with lighting and CCTV provided. Whilst spaces are marked out across the site, the quality of surfacing is relatively poor and inconsistent across the site. It is a relatively exposed site with limited natural surveillance.

There are limited facilities for customers waiting for a bus, with two bus shelters, an information display and but no seating.

3.13 The estimated journey time from the site to Maidstone town Centre is approximately 6 minutes. Buses travel southbound along the A249, Sittingbourne Road and then turn westwards into the town centre along King Street and then access the High Street.

Willington Street

3.14 The Willington Street site is located to the east of the town centre along the A20 Corridor. The site is accessed off the western side of Willington Street, which is a local distributor road located to the south of A20, Ashford Road.

3.15 This is the smallest park & ride site with 400 spaces, with lighting and CCTV provided. The quality of surfacing is good with spaces clearly marked, rows marked, and clear circulation markings. The site has is within a pleasant parkland environment, although there is limited natural surveillance.

3.16 There are limited facilities for customers waiting for a bus, with a bus shelter, an information display and some seating provided.

3.17 The estimated journey time from the site to Maidstone town Centre is approximately 6 minutes. Buses travel westwards along the A20, Ashford Road and continue on into the town centre along King Street and then access the High Street.

4 Town Centre Car Parks

Car Park Assessments

Overview

4.1 An assessment of each of the existing seventeen town centre car parks was undertaken in order to assess the current standard of provision, to evaluate both vehicular and pedestrian access to the site and the proximity to key town centre locations, to assess utilisation, tariffs and revenues, and to compare against operating costs.

4.2 To aid the spatial assessment the town centre area has been split into eight separate zones. The seventeen car parks are allocated to the zones, as follows:

Zone 1

- Medway Street

Zone 2

- Brewer Street East
- Wheeler Street
- Lucerne Road
- Well Road

Zone 3

- Union Street East
- Union Street West
- Sittingbourne Road

Zone 4

- Mote Road

Zone 5

- King Street
- Brooks Place

Zone 6

- Palace Avenue
- Mill Street
- College Road

Zone 7

- Barker Road
- Lockmeadow

Zone 8

- Brunswick Street

4.3 This is also presented within Figure 4.1 on the following page.

Figure 4.1 Town centre Car Park Zone Allocations

Assessment criteria

4.4 The on-site car park audits were used to assess the following criteria:

- Size;
- Short/long stay;
- Tariffs;
- Physical condition;
- Safety & security provision;
- Physical vehicular access; and
- Physical pedestrian access.

4.5 In addition, the wider town centre assessment was used to determine:

- Local highway network access;
- Strategic highway network access;
- Proximity to key Town Centre locations (retail, employment, services, leisure function)
- Proximity to other car parks (clusters); and
- Local pedestrian access.

4.6 The car park occupancy counts and customer surveys also provide:

- Utilisation;
- Primary reasons for use;
- Durations of stay; and
- Perceptions of safety.

4.7 MBC have also provided data on:

- Revenue generation; and
- Operating costs.

4.8 The data collected and collated from the on-site audits and town centre assessment is presented below. The findings from the cart park occupancy and customer surveys is presented in Sections 6 and 8, respectively, whilst the revenue generation and operating costs will be presented within the following 'Analysis Report'.

On-site Audits

4.9 An audit of each of the existing seventeen town centre car parks was undertaken in order to assess the current standard of provision and to evaluate both vehicular and pedestrian access. A summary of each car park is provided below.

Zone 1 – North West

Medway Street

Table 4.1 Medway Street Car Park Audit

Size (spaces)	59
Short/ long stay	Short
Tariffs	½ hour = £0.30 1 hour = £0.50 2 hours = £1.00 3 hours = £1.80 4 hours = £ 2.00 18.30-08.00 = £1.50
Physical Condition	Some damage and repairs to surface
Safety & security provision	Lights
Physical vehicular access	1 entrance from Medway Street, 1 exit onto Fairmeadow. Both of which are two-way roads
Physical pedestrian access	No dedicated pedestrian access point. However footways provided along Medway Street and Fairmeadow

Zone 2 - North

Brewer Street East

Table 4.2 Brewer Street East Car Park Audit

Size (spaces)	71
Short/ long stay	Short
Tariffs	½ hour = £0.40 3 hours = £1.80 4 hours = £ 2.70 18.30-08.00 = £1.50
Physical Condition	Good surface conditions
Safety & security provision	Lights
Physical vehicular access	1 access point from Brewer Street serving as entrance and exit.
Physical pedestrian access	Footways provided along Brewer Street allowing access at the same point as vehicular access. There is also a footpath to the rear (south) of the site providing connections to Union Street and the neighbouring car park on Wheeler Street.

Wheeler Street

Table 4.3 Wheeler Street Car Park Audit

Size (spaces)	67
Short/ long stay	Short
Tariffs	½ hour = £0.70 3 hours = £1.80 4 hours = £ 2.70 18.30-08.00 = £1.50
Physical Condition	Good surface conditions
Safety & security provision	Lighting and CCTV
Physical vehicular access	1 access point from Wheeler Street serving as entrance and exit.
Physical pedestrian access	Footways provided along Wheeler Street allowing access at the same point as vehicular access. There is also a footpath to the rear (south) of the site providing connections to Union Street and the neighbouring car park on Brewer Street.

Lucerne Street

Table 4.4 Lucerne Street Car Park Audit

Size (spaces)	18
Short/ long stay	Long
Tariffs	½ hour = £0.40 3 hours = £1.80 4 hours = £ 2.70 Over four hours = £4.50 18.30-08.00 = £1.50
Physical Condition	Good surface conditions
Safety & security provision	1 Lamppost
Physical vehicular access	1 access point from Wheeler Street serving as entrance and exit.
Physical pedestrian access	Footways provided along Wheeler Street allowing access at the same point as vehicular access. There is also footway along Lucerne Street with no bollards to stop vehicular access across the pavement but provide no obstacle to pedestrian ingress and egress from site.

Well Road

Table 4.5 Well Road Car Park Audit

Size (spaces)	29
Short/ long stay	Long
Tariffs	½ hour = £0.40 3 hours = £1.80 4 hours = £ 2.70 Over four hours = £4.50 18.30-08.00 = £1.50
Physical Condition	Good surface conditions
Safety & security provision	1 Lamppost
Physical vehicular access	2 access points from Well Road separately serving as entrance (west) and exit (east).
Physical pedestrian access	Footways provided along Well Road allowing access at the same points as vehicular access. There is also a pedestrian phase incorporated in the signal stages of the junction of Well Road and Boxley Road.

Zone 3 – North East

Union Street East

Table 4.6 Union Street East Car Park Audit

Size (spaces)	55
Short/ long stay	Long
Tariffs	½ hour = £0.40 3 hours = £1.80 4 hours = £ 2.70 Over four hours = £4.50 18.30-08.00 = £1.50
Physical Condition	Good surface conditions
Safety & security provision	Lighting and CCTV
Physical vehicular access	1 access point from Union Street, serving as both entrance and exit. Within the car park there is a segregated area for use by NHS staff only. It is controlled by rising bollards operated using a pass-card system.
Physical pedestrian access	Footways provided along Union Street allowing access at the same point as vehicular access. There are also two stepped pedestrian access points onto the site from Queen Anne Road. The southern access point is into the NHS reserved car park however pedestrians are also able to walk through to the public car park.

Union Street West

Table 4.7 Union Street West Car Park Audit

Size (spaces)	35
Short/ long stay	Long
Tariffs	1 hour = £0.70 3 hours = £1.80 4 hours = £ 2.70 Over four hours = £4.50 18.30-08.00 = £1.50
Physical Condition	Good surface conditions
Safety & security provision	Lighting, CCTV
Physical vehicular access	1 access point from Union Street, serving as both entrance and exit.
Physical pedestrian access	Footways provided along Union Street allowing access at the same point as vehicular access.

Sittingbourne Road

Table 4.8 Sittingbourne Road Car Park Audit

Size (spaces)	99
Short/ long stay	Long
Tariffs	1 hour = £0.70 3 hours = £1.80 4 hours = £ 2.70 Over four hours = £4.50 18.30-08.00 = £1.50
Physical Condition	Good surface conditions
Safety & security provision	Lighting, CCTV
Physical vehicular access	1 access point from Vinters Road, serving as both entrance and exit.
Physical pedestrian access	Footways provided along Vinters Road allowing access adjacent to the vehicular access. Also there are pedestrian access points on the corner of Vinters Road/Sittingbourne Road and from Sittingbourne Road.

Zone 4 - East

Mote Road

Table 4.9 Mote Road Car Park Audit

Size (spaces)	105
Short/ long stay	Short
Tariffs	1 hour = £0.70 3 hours = £1.80 4 hours = £ 2.70 18.30-08.00 = £1.50
Physical Condition	Good surface conditions
Safety & security provision	Lighting
Physical vehicular access	1 access point from Mote Road, serving as both entrance and exit.
Physical pedestrian access	Footways provided along Mote Road allowing access at the same point as vehicular access. Also there are pedestrian access points from Chancery Lane and through a private car park, pedestrians are able to access Wat Tyler Way (A249).

Zone 5 – Central East

King Street

Table 4.10 King Street Car Park Audit

Size (spaces)	219
Short/ long stay	Long
Tariffs	1 hour = £0.50 2 hours = £1.00 3 hours = £1.40 4 hours = £ 1.80 5 hours = £2.00 Over 5 hours = £5.50
Physical Condition	Good surface conditions
Safety & security provision	Lighting, CCTV and staffed.
Physical vehicular access	1 access point from King Street, separate entrance and exit.
Physical pedestrian access	There are 2 pedestrian access points; one on Church Street and one on King Street. There is access to all floors using either stairs or lifts.

Brooks Place

Table 4.11 Brooks Place Car Park Audit

Size (spaces)	7
Short/ long stay	Long
Tariffs	1 hour = £0.70 3 hours = £1.80 4 hours = £ 2.70 Over 4 hours = £4.50 18.30-0800 = £1.50
Physical Condition	Good surface conditions
Safety & security provision	Lighting
Physical vehicular access	1 access point from Queen Anne Road, serving as both entrance and exit.
Physical pedestrian access	Footway on Queen Anne Road provides pedestrian access at the same point as vehicular access.

Zone 6 – Central West

Palace Avenue

Table 4.12 Palace Avenue Car Park Audit

Size (spaces)	41
Short/ long stay	Short
Tariffs	3 hours = £1.80 4 hours = £ 2.70 18.30-0800 = £1.50
Physical Condition	Good surface conditions
Safety & security provision	Lighting
Physical vehicular access	1 access point from Palace Avenue (A229), serving as both entrance and exit. Palace Avenue is a one-way road operating west-east.
Physical pedestrian access	4 Pedestrian access points; 2 pedestrian only points from Mill Street, 1 at the same point as the vehicular entrance on Palace Avenue and 1 pedestrian footpath, leading south from the site, through the gardens to the rear of the Tyrewhitt-Drake Museum of Carriages.

Mill Street

Table 4.13 Mill Street Car Park Audit

Size (spaces)	132
Short/ long stay	Short
Tariffs	1 hour = £0.70 3 hours = £1.80 4 hours = £ 2.70 18.30-0800 = £1.50
Physical Condition	Good surface conditions
Safety & security provision	Lighting and CCTV
Physical vehicular access	2 access points from Mill Street (A229), the north one serving as both entrance and exit the south as only an entrance. Mill Street is a one-way operating south-north.
Physical pedestrian access	4 Pedestrian access points; 2 pedestrian only points from Mill Street, 1 at the same point as the vehicular entrance on Palace Avenue and 1 pedestrian footpath, leading south from the site, through the gardens to the rear of the Tyrewhitt-Drake Museum of Carriages.

College Road

Table 4.14 College Road Car Park Audit

Size (spaces)	72
Short/ long stay	Long
Tariffs	1 hour = £0.70 3 hours = £1.80 4 hours = £ 2.70 Over 4 hours =£4.50 18.30-0800 = £1.50
Physical Condition	Reasonable surface conditions
Safety & security provision	Lighting and CCTV
Physical vehicular access	1 access point from College Road (A229), serving as both entrance and exit. College Road is a one-way operating south-north.
Physical pedestrian access	There are 3 pedestrian access points; two pedestrian only points to the north of the site onto Knightrider Street and the third is via the vehicular access point on College Road.

Zone 7 - West

Barker Road

Table 4.15 Barker Road Car Park Audit

Size (spaces)	76
Short/ long stay	Long
Tariffs	1 hour = £0.70 3 hours = £1.80 4 hours = £ 2.70 Over 4 hours =£4.50 18.30-0800 = £1.50 From 24/05/11, commuters using Southeastern High Speed Rail Service are offered discounted all day parking Monday-Friday at Barker Road car park: over 4 hours = £2.70
Physical Condition	Reasonable surface conditions
Safety & security provision	Street Lighting on Barker Road
Physical vehicular access	1 access point from Barker Road, serving as both entrance and exit. Barker Road is a two-way road.
Physical pedestrian access	There are 3 pedestrian access points; two pedestrian only points to the north of the site onto Barker Road and the third is via the vehicular access point on Barker Road.

Lockmeadow

Table 4.16 Lockmeadow Car Park Audit

Size (spaces)	598
Short/ long stay	Long
Tariffs	1 hour = £0.70 4 hours = £ 1.50 Over 4 hours =£4.60 18.30-08.00 = free
Physical Condition	Excellent surface conditions
Safety & security provision	Lighting and CCTV
Physical vehicular access	2 access points; 1 from Barker Road, serving as both entrance and exit and a second from Hart Street serving as both entrance and exit. Hart Street is the main access point for the site. Both Hart Street and Barker Road are two-way roads.
Physical pedestrian access	There are 3 pedestrian access points; one at each vehicular access point on Barker Road and Hart Street and the third via the footbridge to the rear of the site providing connection to Kightrider Street.

Zone 8 - South

Brunswick Street

Table 4.17 Brunswick Street Car Park Audit

Size (spaces)	66
Short/ long stay	Long
Tariffs	1 hour = £0.70 3 hours = £1.80 4 hours = £ 2.70 Over 4 hours =£4.50 18.30-08.00 = £1.50
Physical Condition	Reasonable surface conditions
Safety & security provision	Lighting
Physical vehicular access	3 access points all acting as both entrance and exit; one from Orchard Street, a second from Brunswick Street and the third from George Street. All three roads are two-way roads.
Physical pedestrian access	There are 3 pedestrian access points; one at each vehicular access points.

Town Centre Assessments

4.10 The wider town centre assessment has evaluated the primary vehicular access routes into the Maidstone Town Centre and the relative ease of access to each of the MBC car parks via the local highway network. The position of each car park is also assessed relative to each other as well as the key town centre localities. The provision of pedestrian access to each car park is also considered.

Primary vehicular access routes to Town Centre Car Parks

4.11 There are considered to be eight strategic access routes leading into Maidstone, as follows:

- A26
- A20 (east)
- A20 (west)
- A274 (south)
- A229 (north)
- A229
- A249
- B2010

4.12 Of these, the A26 and A20 (west) merge on the western approach to the town centre and the A229 (south), A274 and B2010 all merge on the southern approach into the one-way gyratory system, giving five primary access routes to car parks in the town centre.

Eastern Approach (A26/A20)

4.13 Approaching the town centre from the east, the first car parks that are immediately accessible are the Barker Road and Lockmeadow Car Parks, both located on the eastern bank of the River Medway.

4.14 Crossing over the river, the next closest car park is technically on Medway Street; however this is not directly accessible off the A229 northbound carriageway and, as such, it is easier to progress to the next junction with Earl Street and then access the Fremlin Walk Shopping Centre Car Park. Alternatively drivers could access the High Street and then turn back along Pudding Lane to reach the Medway Street Car Park.

4.15 Continuing along the High Street provides access to the King Street, and Rooftop Mall Car Parks. Alternatively, upon crossing the river, drivers can head southbound along Bishop's Way and access the Palace Avenue Car Park and then the Mall Multi-story.

North Eastern Approach (A229)

4.16 Approaching the town centre from the northeast, the closest car park is actually on Well Road, that would be accessed via Staceys Street and Lower Boxley Road. This car park is, however, a long way out of the main town centre.

4.17 Continuing further along the A229 southbound, drivers can easily access the Fremlin Walk Shopping Centre Car Park and then the Medway Street Car Park. At the junction with the A20, drivers have the choice of turning westbound to access Barker Road and Lockmeadow Car Parks on the other side of the River Medway, turning eastbound along the High Street to access the King Street, and Rooftop Mall Car Parks, or to continue southbound to access Palace Avenue Car Park and then the Mall Multi-story.

North Western Approach (A249)

4.18 Approaching the town centre from the northwest, the first car park on the route in is Sittingbourne Road. This car park is, however, some way out of the main town centre. The two Union Street Car Parks are located a little further south over the railway line.

4.19 Further south, on reaching the junction with the A20, drivers can access King Street which provides access to first that small Brooks Place Car Park and then the large Multi-story King Street Car park and the Rooftop Mall Car Park.

4.20 Alternatively, drivers can continue further south along the A249 and access the Sainsbury's car park and then the Multi-story Mall Car Park, along Romney Place. In addition the Mote Road Car Park is also in close proximity.

Western Approach (A20)

4.21 Approaching the town centre from the west, there are no car parks until you reach King Street which provides access to first that small Brooks Place Car Park and then the large Multi-story King Street Car Park and the Rooftop Mall Car Park.

4.22 Alternatively, drivers can turn south onto the A249 and access the Sainsbury's car park and then the Multi-story Mall Car Park, along Romney Place. In addition the Mote Road Car Park is also in close proximity.

4.23 Whilst the Union Street Car Parks are also relatively easily accessible from the west, it does require driving away from the town centre to reach them.

Southern Approach (A229/A274)

4.24 Approaching the town centre from the south, there are no car parks along the one-way gyratory system until you reach the College Road Car Park. Drivers can then access Mill Street and Palace Avenue immediately afterwards.

4.25 Whilst the Brunswick Street Car Park is, technically, the closest car park on the southern route into the town centre it cannot actually be accessed without first travelling most of the way round the one-way gyratory system.

4.26 Beyond Palace Avenue drivers can access the Multi-story Mall Car Park and Sainsbury's.

Local vehicular access routes to Town Centre Car Parks

4.27 There are a limited number of additional local vehicular access routes into the town centre. All routes from the west/north west have to feed into the A20 in order to cross the River Mead, likewise all routes from the south have to feed into the one-way gyratory system.

4.28 Mote Road provides access from residential areas to the east of the town centre, with the Mote Road Car Park being the first accessible car park, followed by the Sainsbury's and Multi-Story Mall Car Parks.

4.29 From the north there are a number of routes leading into the town centre from the residential area to the south of the M20. All routes cross over the B2012 (Lower Boxley Road / Well Road / Holland Road) and the effectively are funnelled into two routes into the town centre, either Wheeler Street or Sandling Road. The Well Road Car Park is the first accessible car park along this route, and then Lucerne Street, Jeffrey Street, Brewer Street East and Wheeler Street Car Parks can then all be accessed off Wheeler Street. There are no immediately accessible car parks off Sandling Road route into the town centre, although Brewer Street East can be reached from the west.

Proximity and access to other facilities

4.30 An audit was completed of each existing car park with reference to the surrounding area focusing in particular on proximity to town centre facilities, other car parks and pedestrian access to these facilities. A summary of site is provided below.

Zone 1

Medway Street

Table 4.18 Medway Street Wider Town Centre Assessment

Proximity to key Town Centre locations	Medway Street car park is close to the High Street and other retail areas in the centre of Maidstone. There is office and other employment facilities nearby and residential flats overlooking the car park.
Proximity to other car parks	The nearest car park is Palace Avenue 450m to the south-east
Local pedestrian access	There is pedestrian access into the site from Medway Street and Fairmeadow. The footways on Medway Street connect to Pudding Lane and in turn Earl Street and High Street. There is also a footpath connecting the southern end of Fairmeadow to High Street.

Zone 2

Brewer Street East

Table 4.19 Brewer Street East Wider Town Centre Assessment

Proximity to key Town Centre locations	The majority of the land use around the site is residential however there are retail and business properties, particularly on Week Street. Maidstone East Rail Station is located approximately 300m north-west of the site.
Proximity to other car parks	There is an adjacent car park on Wheeler Street. The entrance is approximately 170m by road however there is a pedestrian link connecting the two car parks to Union Street.
Local pedestrian access	There is pedestrian access into the site from Brewer Street and Union Street. All the surrounding roads have good quality footways and street lighting.

Wheeler Street

Table 4.20 Wheeler Street Wider Town Centre Assessment

Proximity to key Town Centre locations	The majority of the land use around the site is residential however there are retail and business properties, particularly on Week Street. Maidstone East Rail Station is located 500m north-west of the site.
Proximity to other car parks	There is an adjacent car park on Brewer Street. The entrance is approximately 170m by road however there is a pedestrian link connecting the two car parks to Union Street.
Local pedestrian access	There is pedestrian access into the site from Wheeler Street and Union Street. All the surrounding roads have good quality footways and street lighting.

Lucerne Street

Table 4.21 Lucerne Street Wider Town Centre Assessment

Proximity to key Town Centre locations	Land use around the site is predominantly residential however there are retail and business properties. Maidstone East Rail Station is located approximately 500m west of the site. HMP Maidstone is north-west of the site with access available from Staceys Street (B2012).
Proximity to other car parks	The nearest car park is located on Wheeler Street, 120m south of the site.
Local pedestrian access	There is pedestrian access into the site from Wheeler Street and Lucerne Street. All the surrounding roads have good quality footways and street lighting. There are also pedestrian crossing phases incorporated into the signal stages at the junction of Holland Road, Well Road and Wheeler Street.

Well Road

Table 4.22 Well Road Wider Town Centre Assessment

Proximity to key Town Centre locations	Land use to the north of the site is residential. HMP Maidstone is located to the south of the Site
Proximity to other car parks	The nearest car park is located at the junction of Lucerne Street and Wheeler Street, approximately 300m south-east of the site.
Local pedestrian access	There is pedestrian access into the site from Well Road. All the surrounding roads have good quality footways and street lighting. There are also pedestrian crossing phases incorporated into the signal stages at the junction of Holland Road, Well Road and Wheeler Street as well as at the junction of Well Road and Boxley Road.

Zone 3

Union Street East

Table 4.23 Union Street East Wider Town Centre Assessment

Proximity to key Town Centre locations	Land use around the site is a mix of residential, employment, education, leisure and religious buildings. The DVLA office is adjacent to the site on Queen Anne Road.
Proximity to other car parks	The nearest car park is located less than 100m west along Union Street.
Local pedestrian access	There is pedestrian access into the site from Union Street and Queen Anne Road. All the surrounding roads have good quality footways and street lighting. There are also pedestrian crossing phases incorporated into the signal stages on Sittingbourne Road (A249).

Union Street West

Table 4.24 Union Street West Wider Town Centre Assessment

Proximity to key Town Centre locations	Land use around the site is a mix of residential, employment, education, leisure and religious buildings. East Borough Primary School is located 350m east on Vinters Road and King Street is 450m south, accessed via Queen Anne Road.
Proximity to other car parks	The nearest car park is located less than 100m east along Union Street.
Local pedestrian access	There is pedestrian access into the site from Union Street. All the surrounding roads have good quality footways and street lighting. There are also pedestrian crossing phases incorporated into the signal stages on Sittingbourne Road (A249).

Sittingbourne Road

Table 4.25 Sittingbourne Road Wider Town Centre Assessment

Proximity to key Town Centre locations	Land use around the site is a mix of residential, employment, education, leisure and religious buildings. East Borough Primary School is located adjacent to the site.
Proximity to other car parks	The nearest car park is Union Street West, approximately 230m west of the site.
Local pedestrian access	There is pedestrian access into the site from Vinters Street and Sittingbourne Road. All the surrounding roads have good quality footways and street lighting. There are also pedestrian crossing phases incorporated into the signal stages on Sittingbourne Road (A249).

Zone 4

Mote Road

Table 4.26 Mote Road Wider Town Centre Assessment

Proximity to key Town Centre locations	Land use around the site is a mix of residential and employment. There is a large foodstore located north-west of the site. There are also a number of retail centres and a bus centre north-west of the site.
Proximity to other car parks	The nearest car park is Brooks Place, approximately 550m north of the site.
Local pedestrian access	There is pedestrian access into the site from Mote Road, Wat Tyler Way and Chancery Lane. All the surrounding roads have good quality footways and street lighting. There are also pedestrian crossing phases incorporated into the signal stages on Mote Road and Wat Tyler Road (A249).

Zone 5

King Street

Table 4.27 King Street Road Wider Town Centre Assessment

Proximity to key Town Centre locations	Land use around the site is predominantly retail, leisure and employment however there are also some residential units and religious buildings. There was previously a large foodstore at the ground level however this is currently vacant.
Proximity to other car parks	The nearest car park is Brooks Place, approximately 260m east of the site.
Local pedestrian access	There is pedestrian access into the site from Church Street and Kings Street. All the surrounding roads have good quality footways and street lighting. There are also pedestrian crossing phases incorporated into the signal stages on King Street, High Street and the A249.

Brooks Place

Table 4.28 Brooks Place Wider Town Centre Assessment

Proximity to key Town Centre locations	Land use around the site is a mix of residential and employment uses. Kings Street to the south is a busy retail and leisure area.
Proximity to other car parks	There are two nearby car parks, Union Street West and Kings Street, both at approximately 250m from Brook Place car park.
Local pedestrian access	There is pedestrian access into the site from Queen Anne Road. All the surrounding roads have good quality footways and street lighting. There are also pedestrian crossing phases incorporated into the signal stages on King Street, High Street and the A249.

Zone 6

Palace Avenue

Table 4.29 Palace Avenue Wider Town Centre Assessment

Proximity to key Town Centre locations	Land use around the site is predominantly office and employment based however there are also a number of religious centres. To the rear of the site is a museum and to the east is the Maidstone police station.
Proximity to other car parks	Palace Avenue car park is adjacent to Mill Street Car park with the footpath through the museum gardens providing a pedestrian link between the two. Vehicular access is longer and more complicated due to the gyratory system. It is approximately 650m by road for a vehicle to drive from Palace Avenue car park, via Lower Stone Street and Knightrider Street to Mill Street car park.
Local pedestrian access	There is pedestrian access into the site from Mill Street and Palace Avenue. All the surrounding roads have good quality footways, pedestrian facilities such as dropped kerbs and safety features such as street lighting. There are also pedestrian crossing phases incorporated into the signal stages on the A229 and A249.

Mill Street

Table 4.30 Mill Street Wider Town Centre Assessment

Proximity to key Town Centre locations	Land use around the site is predominantly office and employment based however there are also a number of religious centres. To the west of the site is a museum and to the north is the Maidstone police station. High Street is approximately 300m walking distance from the site.
Proximity to other car parks	Mill Street car park is adjacent to Palace Avenue Car park with the footpath through the museum gardens providing a pedestrian link between the two. It is approximately 150m by road for a vehicle to drive from Mill Street car park to Palace Avenue car park.
Local pedestrian access	There is pedestrian access into the site from Mill Street. All the surrounding roads have good quality footways, pedestrian facilities such as dropped kerbs and safety features such as street lighting. There are also pedestrian crossing phases incorporated into the signal stages on the A229 and A249.

College Road

Table 4.31 College Road Wider Town Centre Assessment

Proximity to key Town Centre locations	Land use around the site is a mix of residential, employment, leisure, education and religious centres. To the rear of the site is a bridge crossing the river and providing access to Lockmeadow centre and Maidstone Market.
Proximity to other car parks	College Road car park is 100m south of Mill Street car park and 250m south of Palace Avenue car park.
Local pedestrian access	There is pedestrian access into the site from Kightrider Street, pedestrian footpath across the river and College Road. All the surrounding roads have good quality footways, pedestrian facilities such as dropped kerbs and safety features such as street lighting. There are also pedestrian crossing phases incorporated into the signal stages on the A229 and A249.

Zone 7

Barker Road

Table 4.32 Barker Road Wider Town Centre Assessment

Proximity to key Town Centre locations	Land use around the site is a mix of retail, employment and leisure. To the south of the site is the Lockmeadow centre and Maidstone Market.
Proximity to other car parks	Barker Road car park is less than 100m north of Lockmeadow car park.
Local pedestrian access	There is pedestrian access into the site from Barker Road. All the surrounding roads have good quality footways, pedestrian facilities such as dropped kerbs and safety features such as street lighting. There are also pedestrian crossing phases incorporated into the signal stages on the A229.

Lockmeadow

Table 4.33 Lockmeadow Wider Town Centre Assessment

Proximity to key Town Centre locations	Land use around the site is a mix of retail, employment and leisure. On the site is the Lockmeadow centre and Maidstone Market.
Proximity to other car parks	Barker Road car park is less than 100m north of Lockmeadow car park.
Local pedestrian access	There is pedestrian access into the site from Barker Road and Hart Street. All the surrounding roads have good quality footways, pedestrian facilities such as dropped kerbs and safety features such as street lighting. There are also pedestrian crossing phases incorporated into the signal stages on the A229. The footbridge to the east of the site is well lit with footpaths connecting it to the car parks at either end of it.

Zone 8

Brunswick Street

Table 4.34 Brunswick Street Wider Town Centre Assessment

Proximity to key Town Centre locations	Land use around the site is a mix of retail, employment, health services and religious centres.
Proximity to other car parks	College Road car park is approximately 300m north of Brunswick car park.
Local pedestrian access	There is pedestrian access into the site from each of the vehicle access points. All the surrounding roads have good quality footways and safety features such as street lighting.

5 Park and Ride Utilisation

Introduction

5.1 Occupancy counts were undertaken at all three park & ride sites on Thursday 22nd, Friday 23rd, Saturday 24th, Tuesday 29th November 2011.

5.2 The counts were undertaken as spot counts at agreed times of the day, as follows:

- 9.30am
- 12.30pm
- 16.30pm

5.3 The data collected is presented for the individual sites below.

London Road

Site

5.4 London Road Park & Ride is located off the A20 approximately 1.5km to the north west of Maidstone Town Centre. The site is approximately 500 metres from junction 6 of the M20.

Capacity

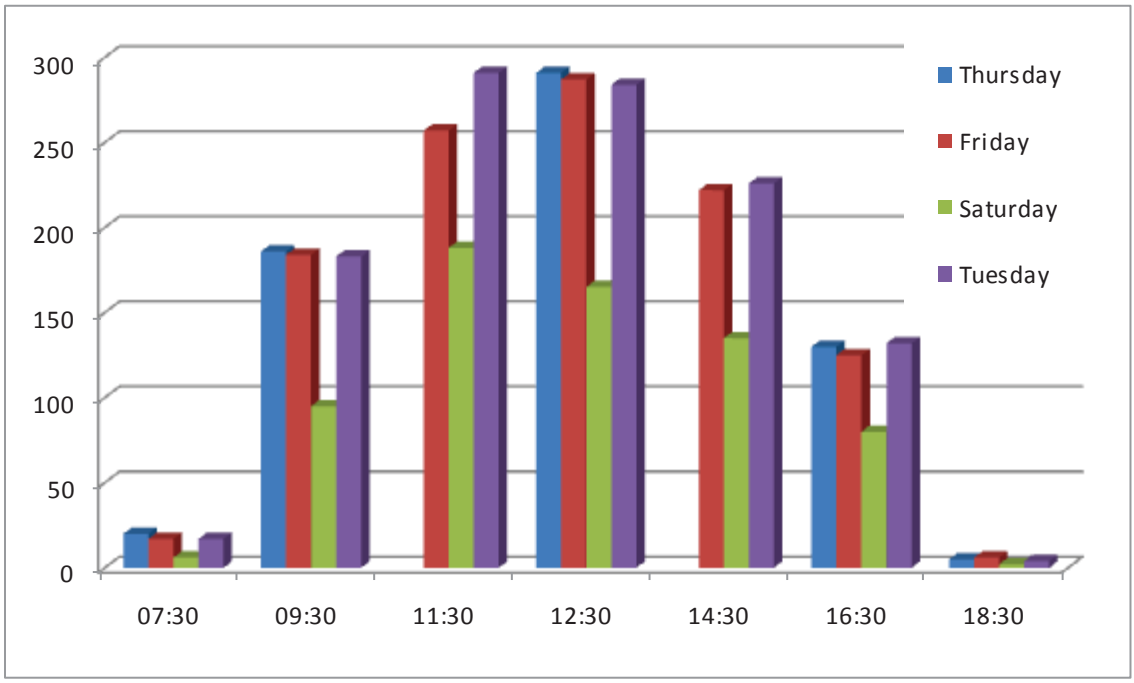
5.5 There are 518 spaces at the London Road site, with the following breakdown:

Normal	Parent &Child	Disabled	M/C	Bike	Out of Use	Total
505	0	13	0	0	0	518

Occupancy Counts

5.6 Figure 5.1 presents the observed levels of occupancy during the four survey days.

Figure 5.1 London Road Park & Ride Occupancy



5.7 The highest occupation recorded was on a Tuesday in the 11:30 timeframe. Saturdays were the least occupied in all timeframes which suggests that this Park & Ride site is predominantly used by commuters.

Utilisation

5.8 Figure 5.1 indicates that the maximum occupancy observed at any one point during the survey period was 291. This was observed at both 12.30pm on a Thursday and 11.30am on a Tuesday. This represents a maximum utilisation of 56%, which can be observed in Figure 5.5.

5.9 The maximum utilisation observed on a Saturday was only 36%, which can be observed in Figure 5.6.

Sittingbourne Road

Site

5.10 Sittingbourne Road Park & Ride is located off the A249 approximately 1.5 km to the north east of Maidstone Town Centre. The site is approximately 250 metres from junction 7 of the M20.

Capacity

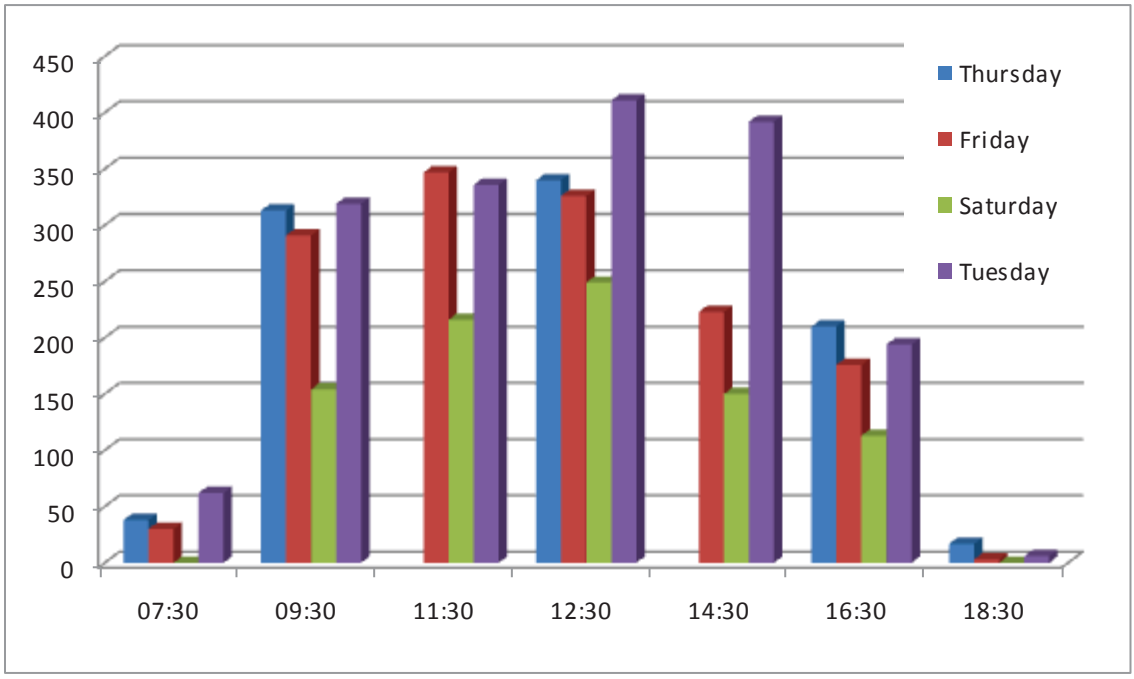
5.11 There are 610 spaces at the Sittingbourne Road site, with the following breakdown:

Normal	Parent &Child	Disabled	M/C	Bike	Out of Use	Total
583	0	27	0	0	0	610

Occupancy Counts

5.12 Figure 5.2 presents the observed levels of occupancy during the four survey days.

Figure 5.2 Sittingbourne Road Park & Ride Occupancy



5.13 The highest occupation recorded was on a Tuesday in the 12:30 and the 14:30 timeframe. Saturdays were the least occupied in all timeframes which suggests that this Park & Ride site is also predominantly used by commuters.

Utilisation

5.14 Figure 5.2 indicates that the maximum occupancy observed at any one point during the survey period was 411. This was observed at 12.30pm on a Tuesday. This represents a maximum utilisation of 67%, which can be observed in Figure 5.5.

5.15 The maximum utilisation observed on a Saturday was only 41%, which can be observed in Figure 5.6.

Willington Street

Site

5.16 Willington Street Park & Ride is located off the A20, approximately 2 km to the east of Maidstone Town Centre. The site is in close proximity to Mote Park.

Capacity

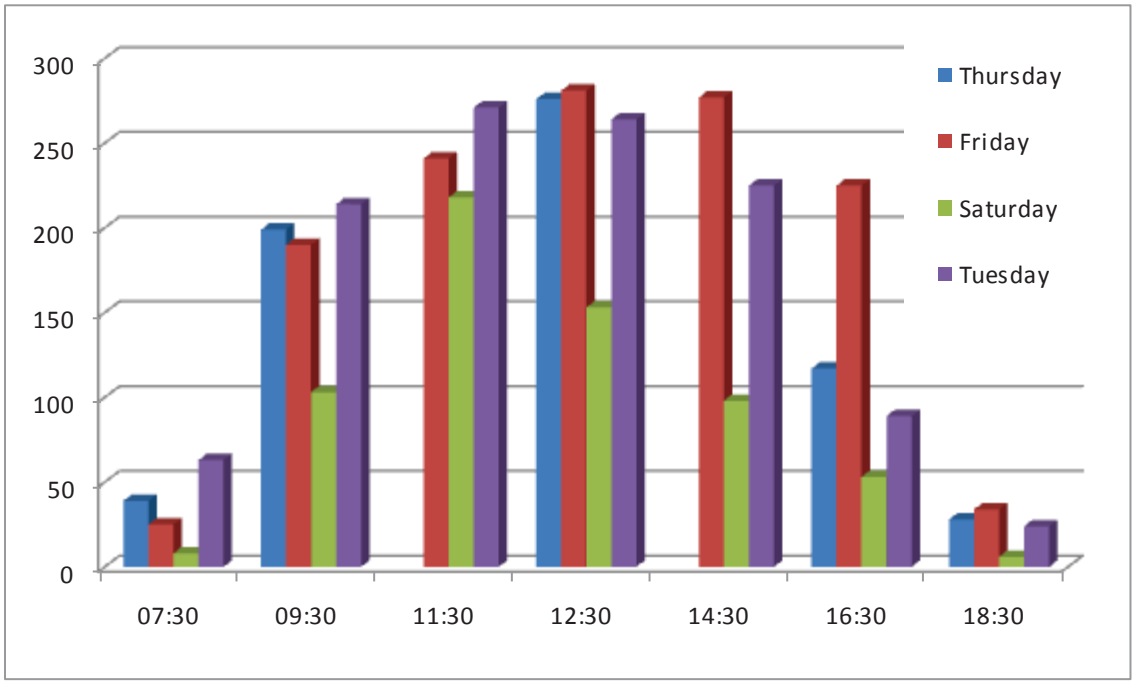
5.17 There are 400 spaces at the Willington Street site, with the following breakdown:

Normal	Parent &Child	Disabled	M/C	Bike	Out of Use	Total
382	0	18	0	0	0	400

Occupancy Counts

5.18 Figure 5.3 presents the observed levels of occupancy during the four survey days.

Figure 5.3 Willington Street Park & Ride Occupancy



5.19 The highest occupation recorded was on a Friday in the 12:30 and 14:30 timeframe. Saturdays were the least occupied in all timeframes which suggests that this Park & Ride site is again predominantly used by commuters.

Utilisation

5.20 Figure 5.3 indicates that the maximum occupancy observed at any one point during the survey period was 281. This was observed at 12.30pm on a Friday. This represents a maximum utilisation of 70%, which can be observed in Figure 5.5.

5.21 The maximum utilisation observed on a Saturday was only 55%, which can be observed in Figure 5.6.

Summary

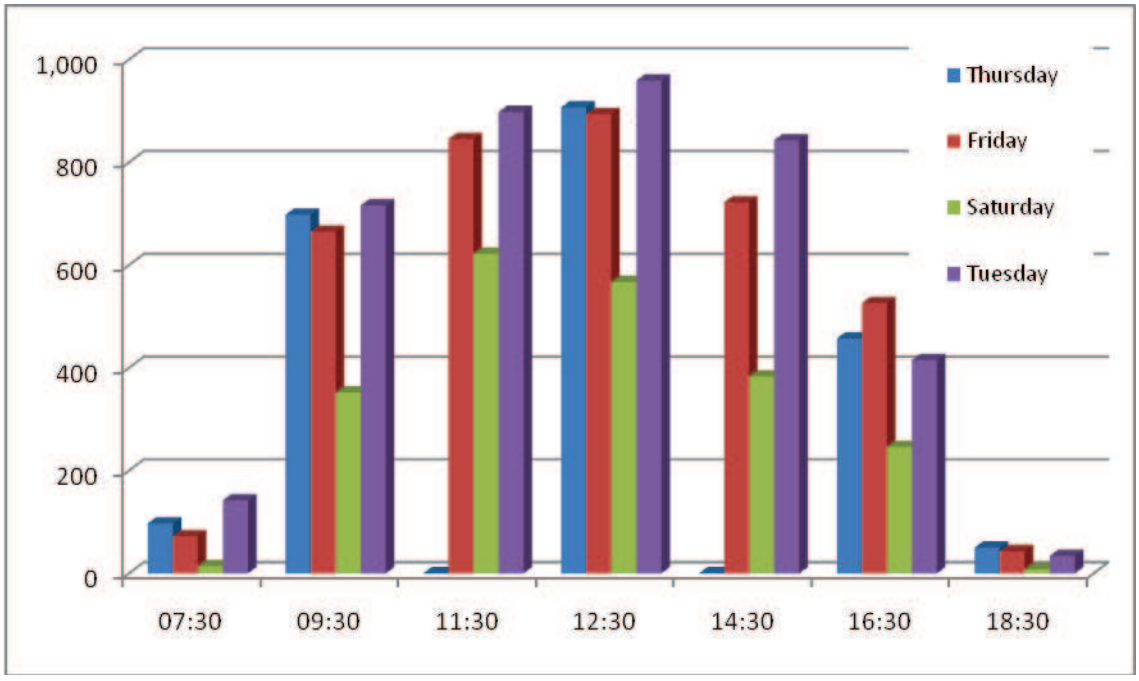
Overall Capacity

5.22 Across the three park and ride sites there is a total park & ride site capacity of 1,528 spaces

Aggregated Occupancy Counts

5.23 Figure 5.4 presents the combined level of occupancy during the four survey days.

Figure 5.4 Combined Park & Ride Occupancy

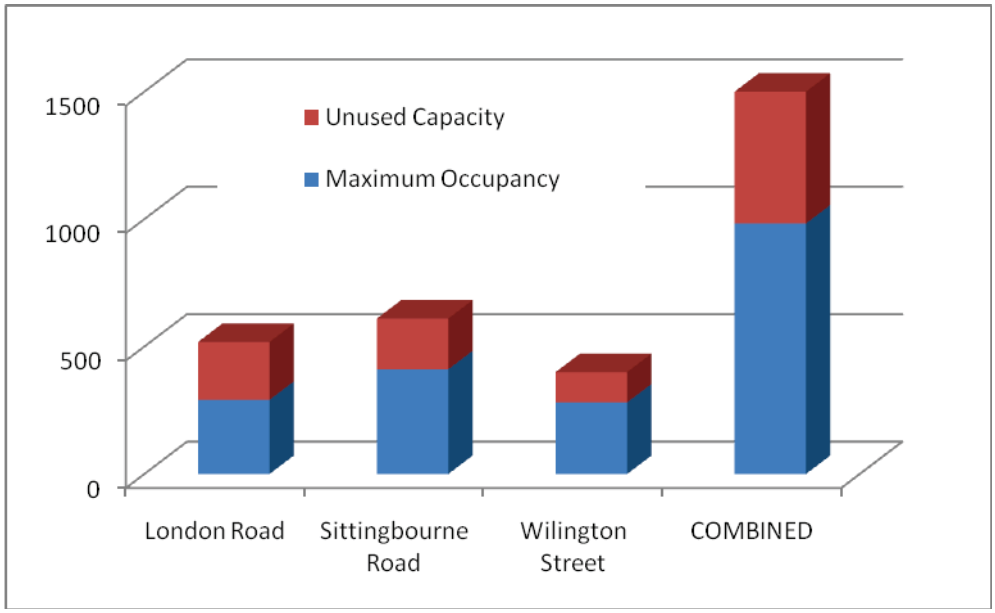


5.24 The highest occupation recorded was on a Friday in the 12:30 of 959 vehicles. Generally occupancy levels are much lower on Saturdays than on weekdays with a maximum observed occupancy level of 622 vehicles.

Overall Park & Ride Site Utilisation

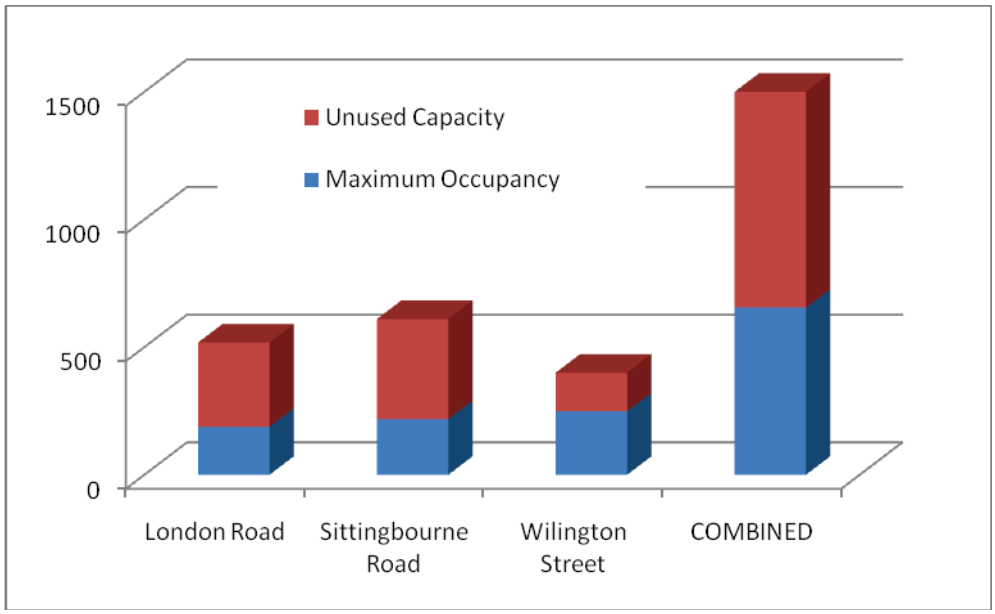
5.25 Figure 5.5 presents the combined level of maximum park & ride site utilisation on a weekday. This demonstrates that there is currently around a third of the overall parking capacity that is not utilised at any stage during the week.

Figure 5.5 Combined Park & Ride Site Capacity Utilisation – Weekday



5.26 Figure 5.6 presents the combined level of maximum park & ride site utilisation on a Saturday. This indicates that over 55% of the available capacity is unused on a typical Saturday.

Figure 5.6 Combined Park & Ride Site Capacity Utilisation – Saturday



6 Town Centre Car Park Utilisation

Introduction

6.1 Occupancy counts were undertaken at twenty two town centre car parks on Thursday 22nd, Friday 23rd, Saturday 24th, Tuesday 29th November 2011.

6.2 The counts were undertaken as spot counts at agreed times of the day, as follows:

- 7.30am
- 9.30am
- 12.30pm
- 16.30pm
- 20.00pm

6.3 Counts were not undertaken at the Fremlin Car Park, where permission was not granted to undertake surveys within the car park footprint.

6.4 In order to aid the spatial analysis of the Car Parks, the Town Centre has been split into eight zones, as presented within the figure below.

6.5 The data collected is presented for the individual sites on a zone-by-zone basis below. This is based upon the zone system presented in Figure 3.1 in Section 3.

Zone 1 – North West

Sites

6.6 The north west of the town contains two car parks; Medway Street which is a long stay council run car park, and Fremlin Way which is run privately. Maidstone East railway station is also in this zone.

Capacities

6.7 There are 59 spaces at the Medway Street car park, with the breakdown presented in table 6.1.

Table 6.1 Car Park Capacity - North West Zone

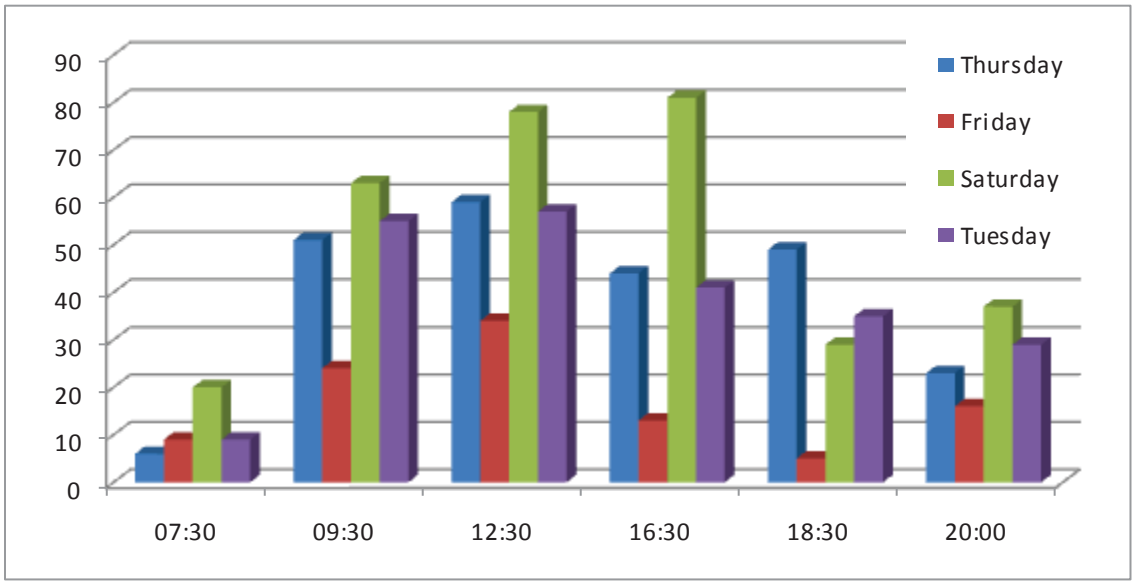
Site	Normal	Parent &Child	Disabled	M/C	Bike	Out of Use	Total
Medway Street	49	0	5	4	0	1	59
Fremlin Way	n/a	n/a	n/a	n/a	n/a	n/a	n/a

6.8 The corresponding data is currently unable for the Fremlin Way car park as permission to gain capacity and occupancy data was refused by the management of Fremlin Way car park.

Occupancy Counts

6.9 Figure 6.1 presents the observed levels of occupancy at the Medway Street car park during the four survey days.

Figure 6.1 Medway Street Occupancy

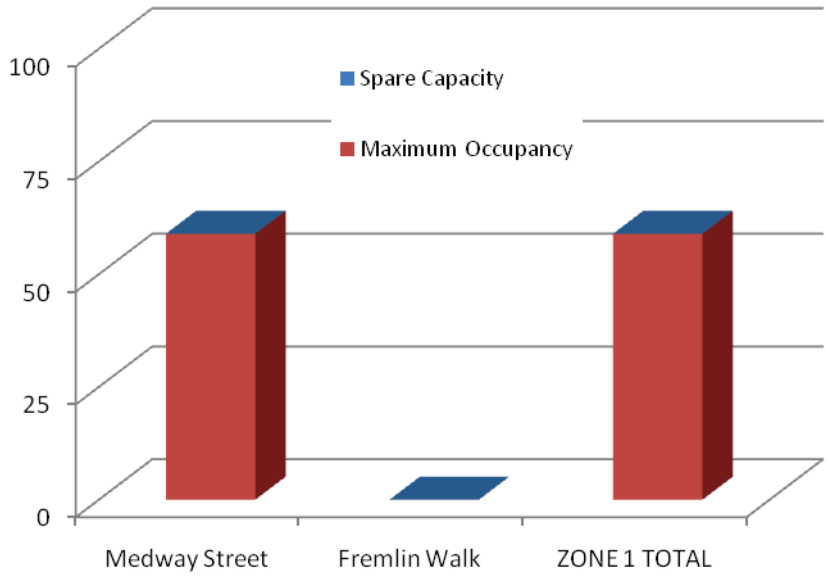


6.10 The highest levels of occupancy at Medway Street were on Saturday, with the exception of the 18:30 time period, of which Thursday had the highest occupancy levels. The lowest time period of occupancy was 07:30.

Utilisations

6.11 Figure 6.2 presents the observed levels of occupancy during the four survey days.

Figure 6.2 Maximum Car Park Utilisation – North West Zone



6.12 This demonstrates that the Medway Street car park does reach maximum capacity during the week. This was observed to occur during both a weekday and a Saturday.

Zone 2 – North

Sites

6.13 The north of the town contains six car parks. Four of these are run by the Council; Well Road and Lucerne Street which are short stay; and Brewer Street East and Wheeler Street which are long stay. Jeffrey Street and Church Street car parks are also located here which are privately run.

Capacities

6.14 There are 267 spaces across the six car parks in the designated North Zone, with the breakdown presented in Table 6.2.

Table 6.2 Car Park Capacity – North Zone

Site	Normal	Parent &Child	Disabled	M/C	Bike	Out of Use	Total
Well Road	20	0	1	8	0	0	29
Lucerne Street	17	0	1	0	0	0	18
Brewer Street East	65	0	4	2	0	0	71
Wheeler Street	60	0	5	2	0	0	67
Jeffrey Street	42	0	3	0	0	0	45
Church Street	35	1	1	0	0	0	37

Occupancy Counts

6.15 Figures 6.3 to 6.8 presents the observed levels of occupancy at each of the car park, respectively, during the four survey days.

Figure 6.3 Well Road Occupancy

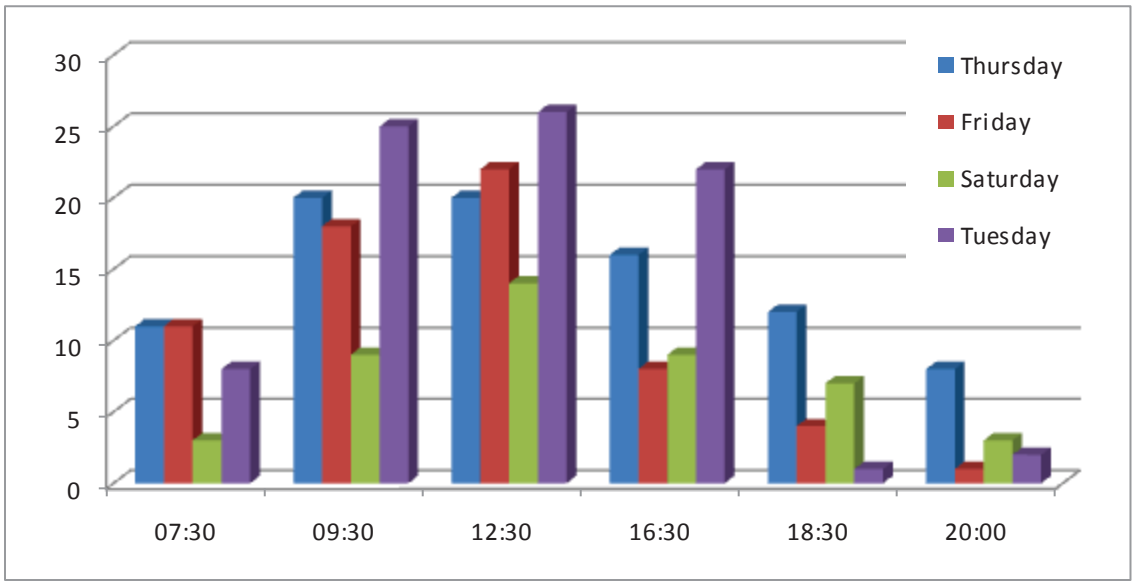


Figure 6.4 Lucerne Street Occupancy

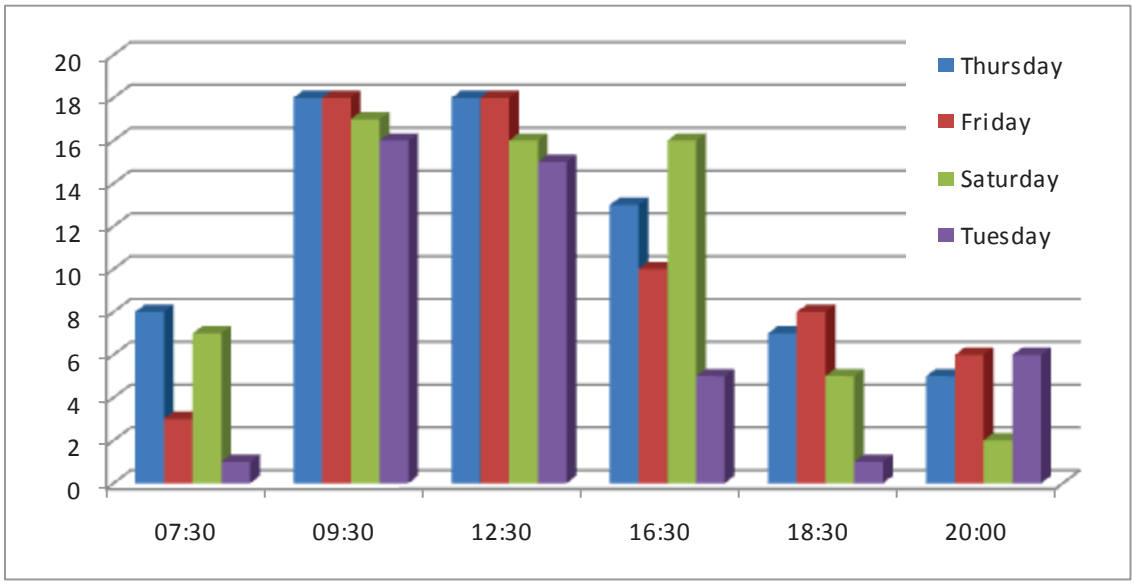


Figure 6.5 Brewer Street East Occupancy

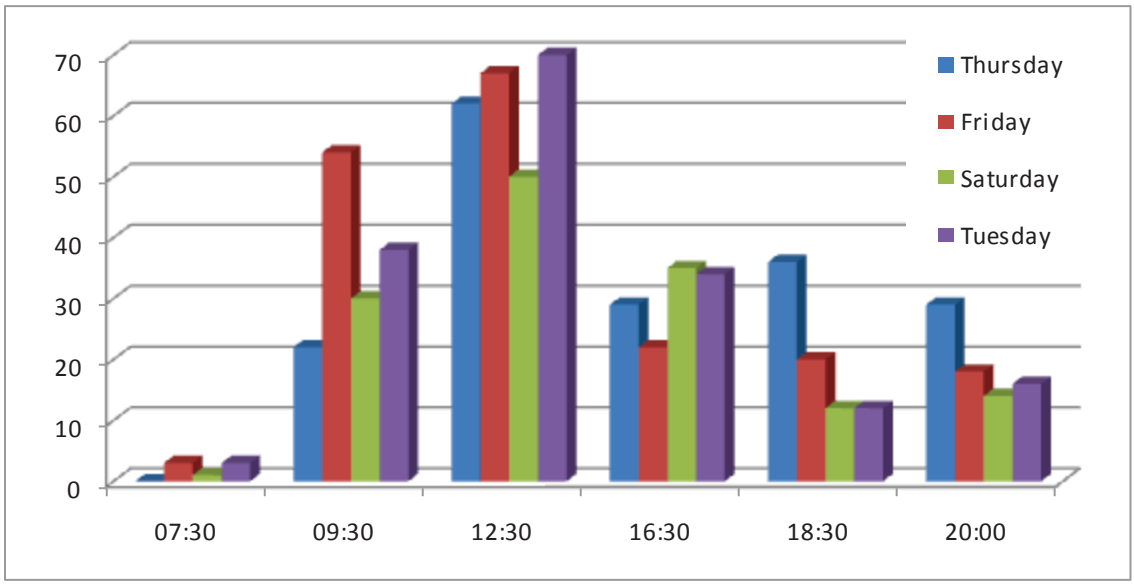


Figure 6.6 Wheeler Street Occupancy

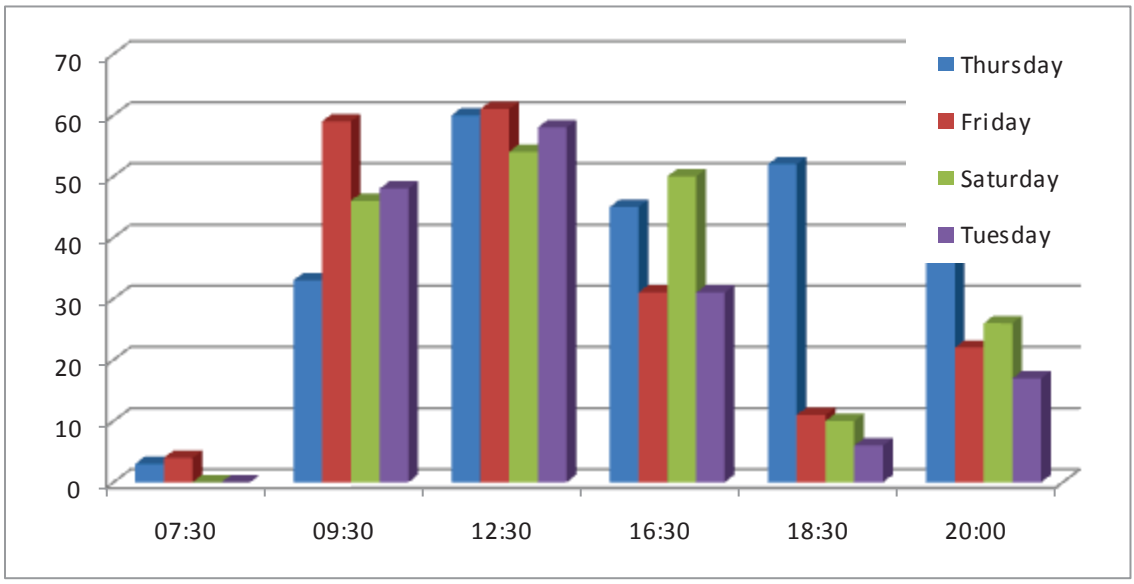


Figure 6.7 Jeffrey Street Occupancy

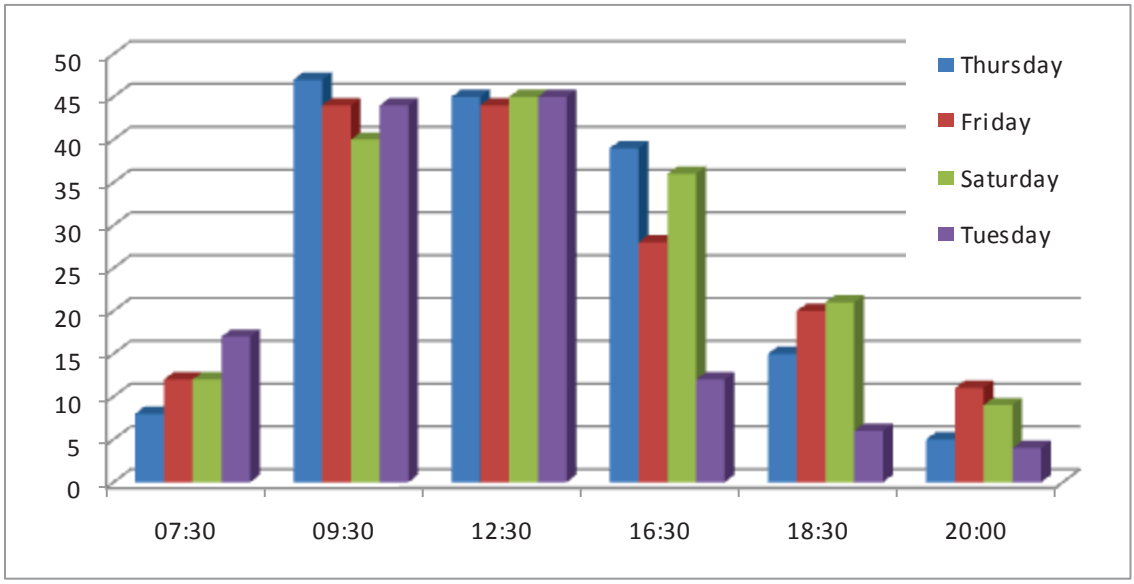
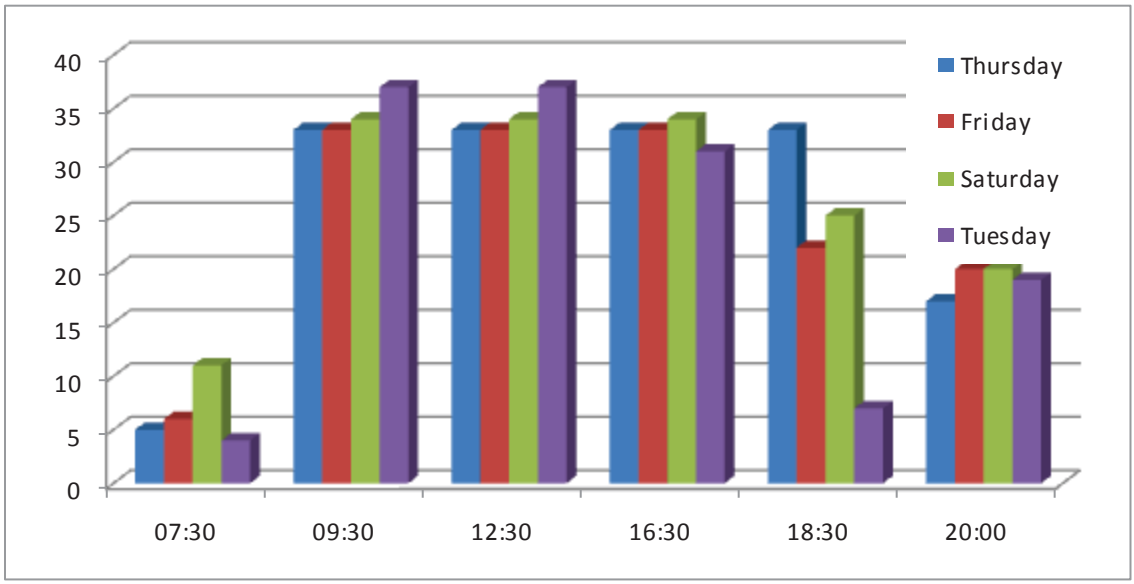


Figure 6.8 Church Street Occupancy

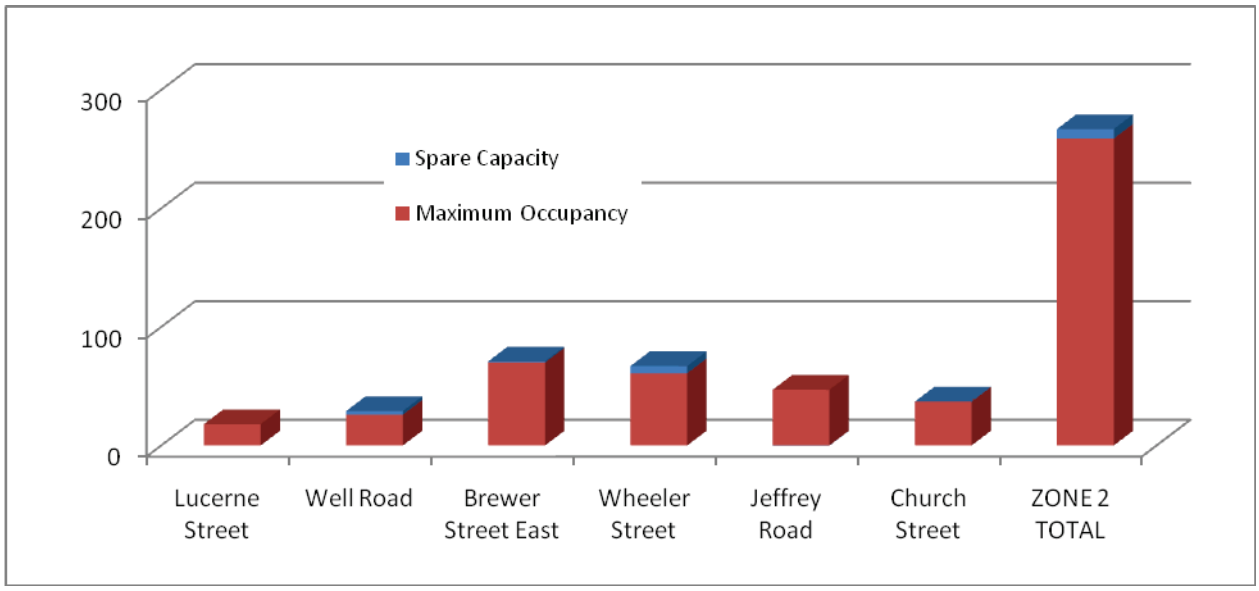


6.16 Well Road has the highest level of occupancy on Tuesdays, Thursdays and Fridays which suggests it us used primarily by commuters rather than shoppers. This would also correlate with its location towards the edge of the town centre. Brewer Street and Wheeler Street have extremely low occupancy rates in the 07:00 time frame. Jeffrey Street has high occupancy levels between 09:30 and 18:30, whilst Church Street has consistently high occupancy all day.

Utilisations

6.17 Figure 6.9 presents the observed levels of occupancy during the four survey days.

Figure 6.9 Maximum Car Park Utilisation – North Zone



6.18 This demonstrates that within the North Zone the majority of the car parks reach maximum capacity during the week.

Zone 3 – North East

Sites

6.19 The north east of the town has three car parks. These are all Council run and are all long stay. These car parks are; Sittingbourne Road, Union Street East and Union Street West.

Capacities

6.20 There are 189 spaces across the three car parks in the designated North East Zone, with the breakdown presented in Table 6.3.

Table 6.3 Car Park Capacity – North East Zone

Site	Normal	Parent &Child	Disabled	M/C	Bike	Out of Use	Total
Sittingbourne Road	86	4	9	0	0	0	99
Union Street East	48	0	3	0	4	0	55
Union Street West	30	0	3	2	0	0	35

Occupancy Counts

6.21 Figures 6.10 to 6.12 presents the observed levels of occupancy at each of the car park, respectively, during the four survey days.

Figure 6.10 Sittingbourne Road Occupancy

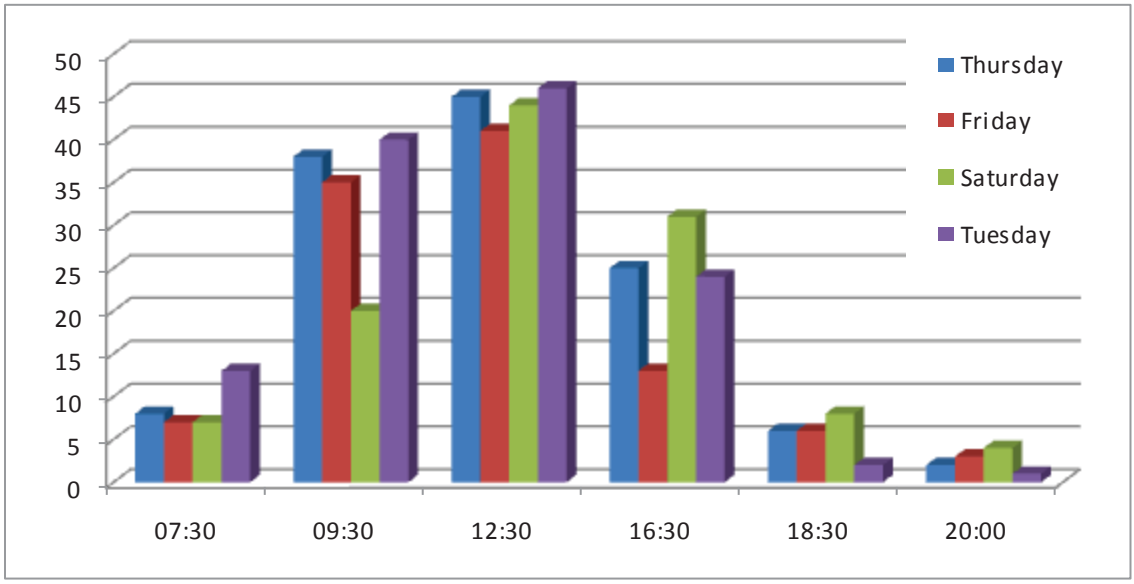


Figure 6.11 Union Street East Occupancy

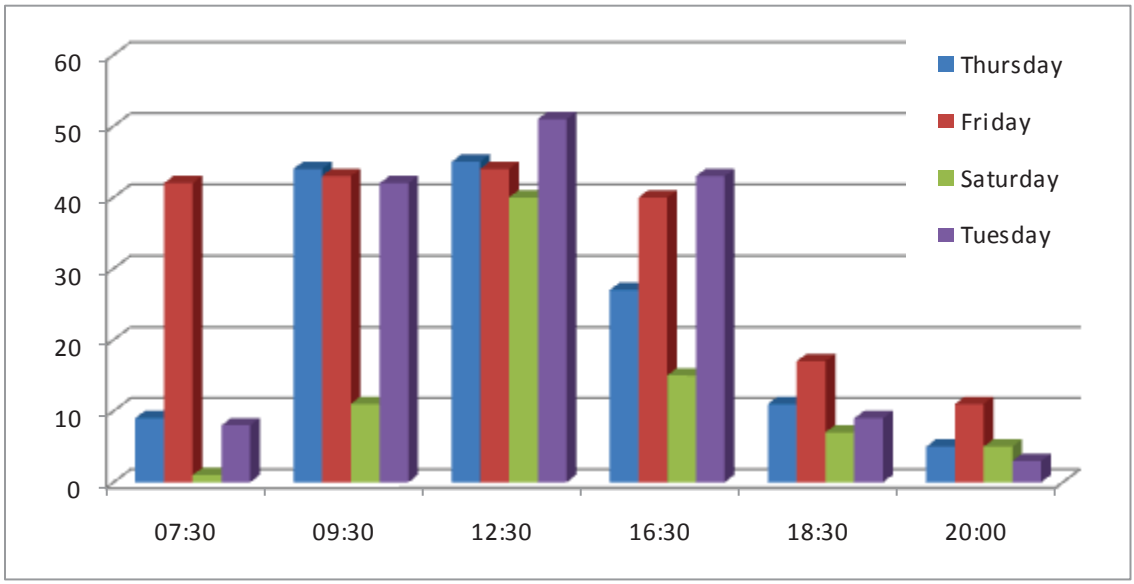
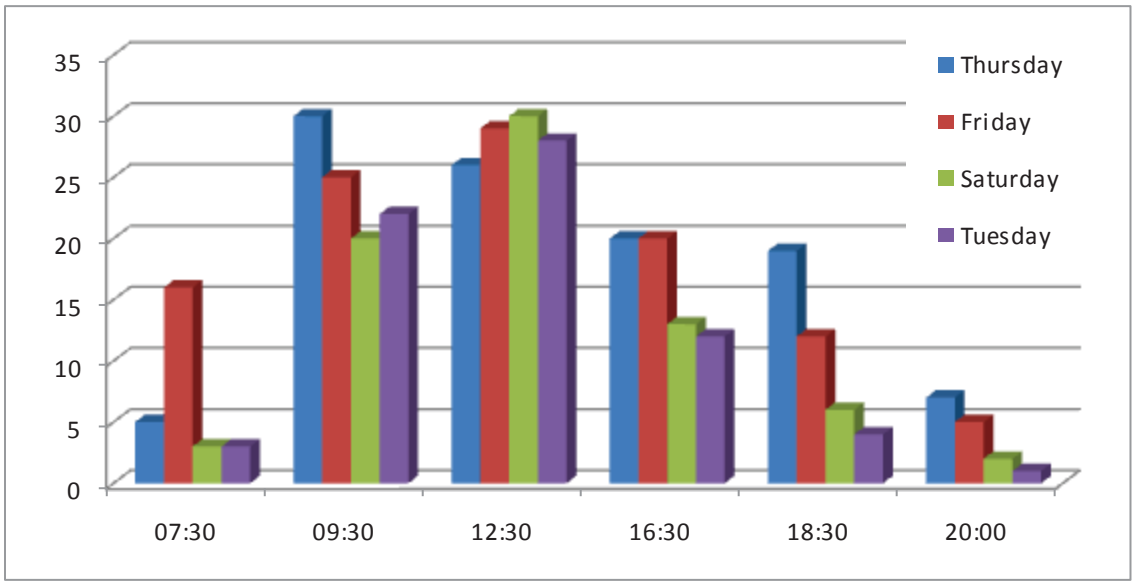


Figure 6.12 Union Street West Occupancy

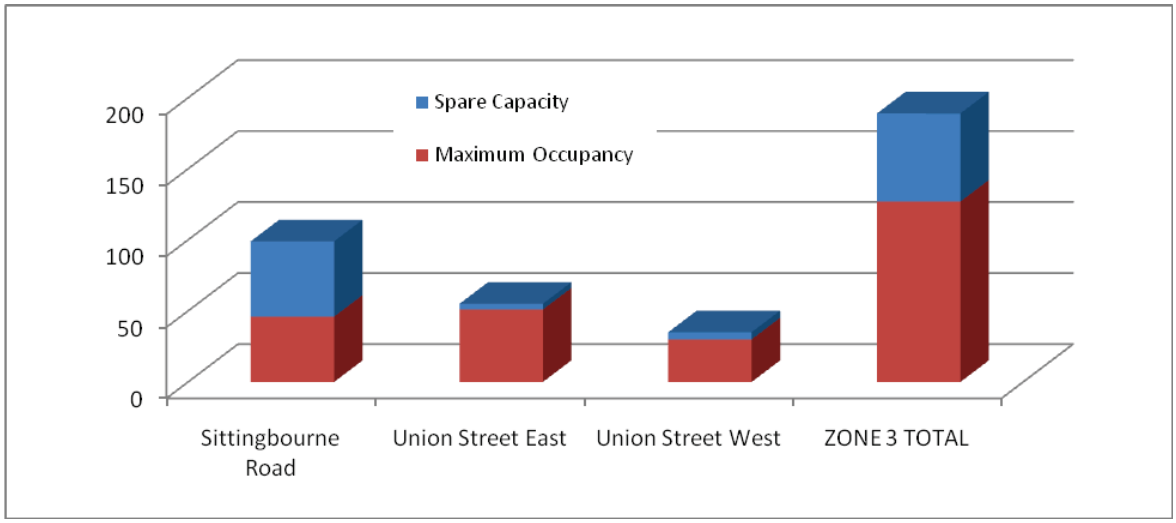


6.22 Union Street East shows a high occupancy level on Tuesday. Union Street West had the highest occupancy levels on Thursday.

Utilisations

6.23 Figure 6.13 presents the observed levels of occupancy during the four survey days.

Figure 6.13 Maximum Car Park Utilisation – North East Zone



6.24 This demonstrates that within the North East Zone, whilst the car parks on Union Street reach close to maximum capacity during the week, there is significant spare capacity at the Sittingbourne road car park.

Zone 4 – East

Sites

6.25 The eastern zone of the town has one car park. Mote Street is a short stay car park and is operated by the council.

Capacities

6.26 There are 105 spaces at the Mote Road car park, with the breakdown presented in Table 6.4.

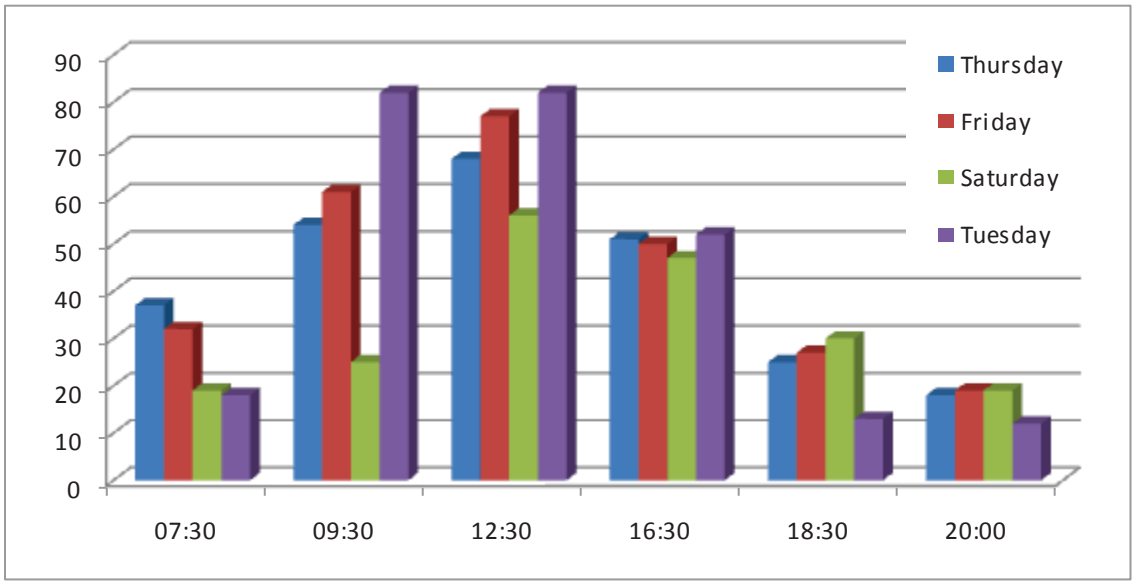
Table 6.4 Car Park Capacity – East Zone

Site	Normal	Resident Bay	Disabled	M/C	Bike	Out of Use	Total
Mote Road	89	10	6	0	0	0	105

Occupancy Counts

6.27 Figures 6.14 presents the observed levels of occupancy at the Mote Road car park during the four survey days.

Figure 6.14 Mote Road Occupancy



6.28 The highest occupancy levels at Mote Road were recorded on Tuesday in the 09:30 and 12:30 timeframes. Occupancy after 09:30 was relatively consistent over all days.

Utilisations

6.29 The Mote Road car park was only observed to reach around 80% capacity during the entire survey period. Maximum observed utilisation on a Saturday was much lower at only around 50%.

Zone 5 – Central (east)

Sites

6.30 The Central East zone has five car parks. Brooks Place and King Street are both long stay car parks operated by the council. Sainsbury`s, Mall Multi Storey and Mall Rooftop are also located in this zone and are privately operated. Maidstone Borough Councils Civic Centre is also located in this zone.

Capacities

6.31 There are 1,662 spaces across the five car parks in the designated Central East Zone, with the breakdown presented in Table 6.5.

Table 6.5 Car Park Capacity - Central East Zone

Site	Normal	Parent & Child	Disabled	M/C	Bike	Out of Use	Total
Brooks Place	6	0	1	0	0	0	7
King Street	200	0	16	3	0	0	219
Sainsburys	388	15	14	4	5	0	426
Mall Multi Storey	658	27	19	0	0	0	704
Mall Rooftop	306	0	0	0	0	0	306

Occupancy Counts

6.32 Figures 6.15 to 6.19 presents the observed levels of occupancy at each of the car park, respectively, during the four survey days.

Figure 6.15 Brooks Place Occupancy

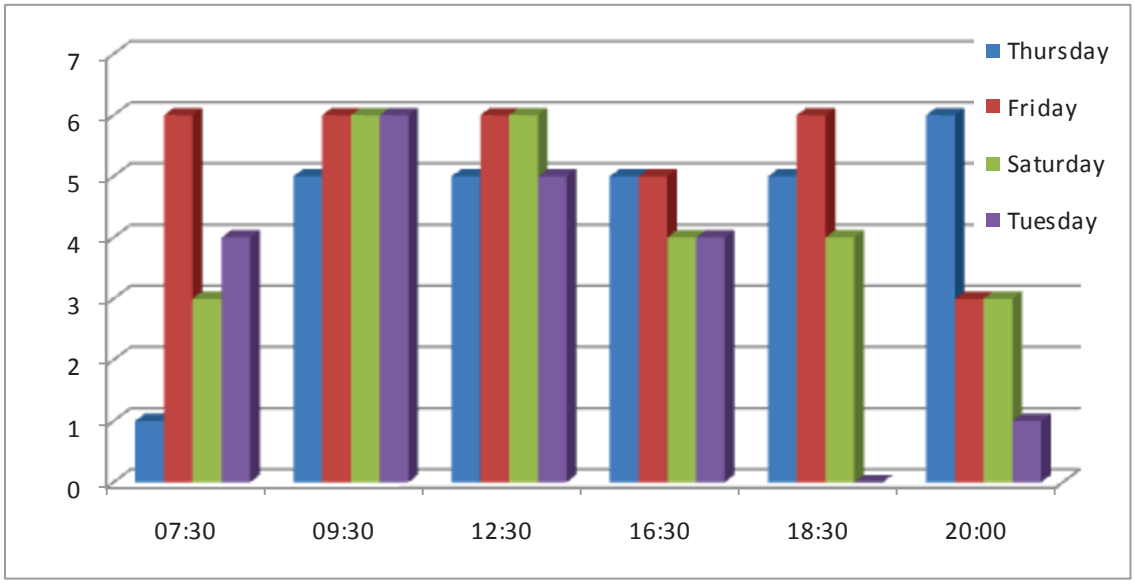


Figure 6.16 King Street Occupancy

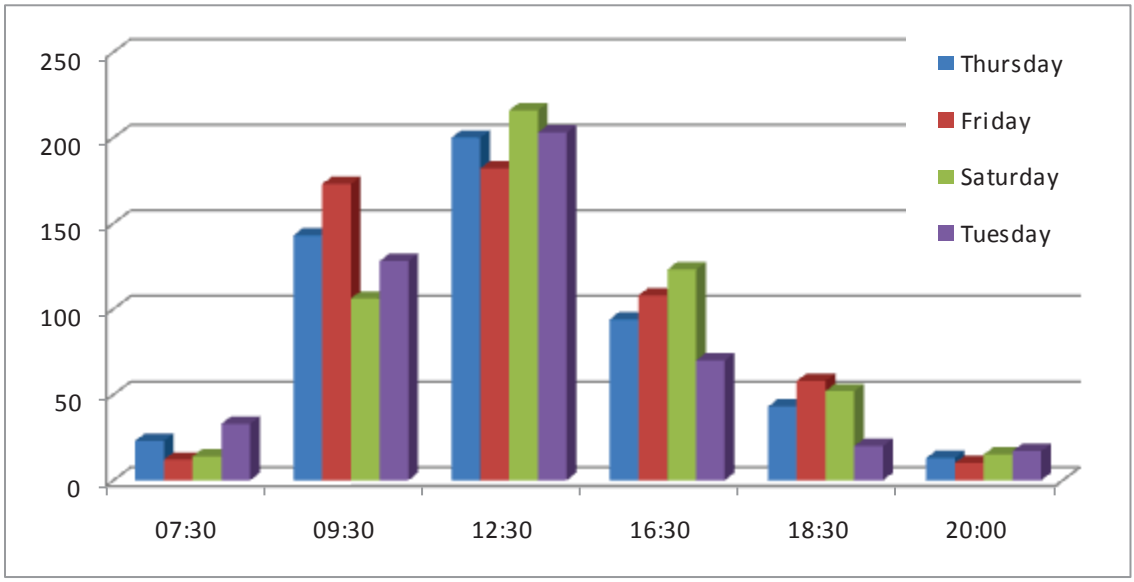


Figure 6.17 Sainsbury`s Occupancy

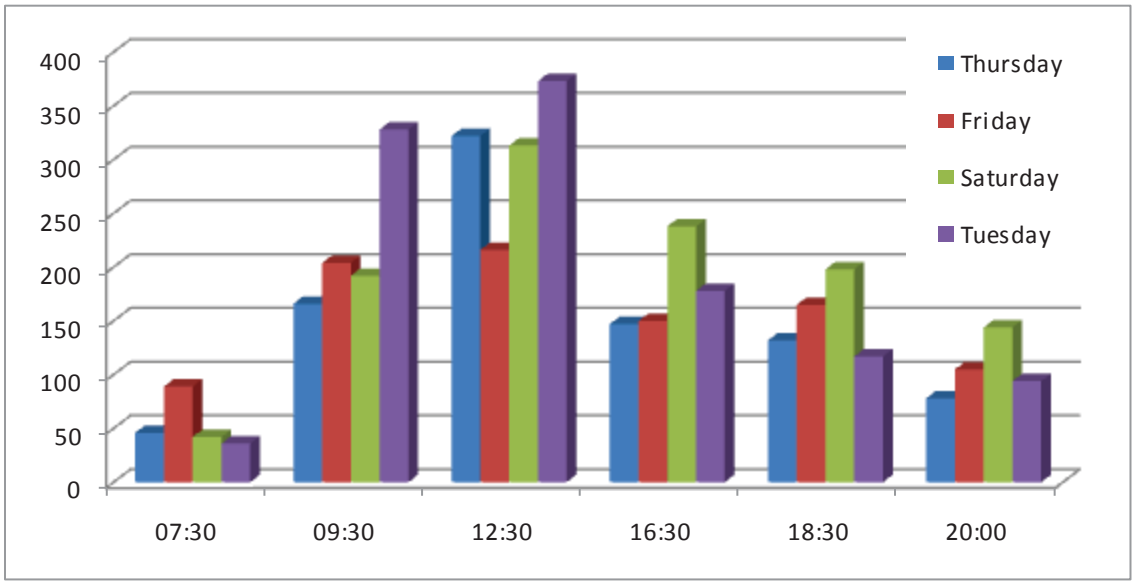


Figure 6.18 Mall Multi Storey Occupancy

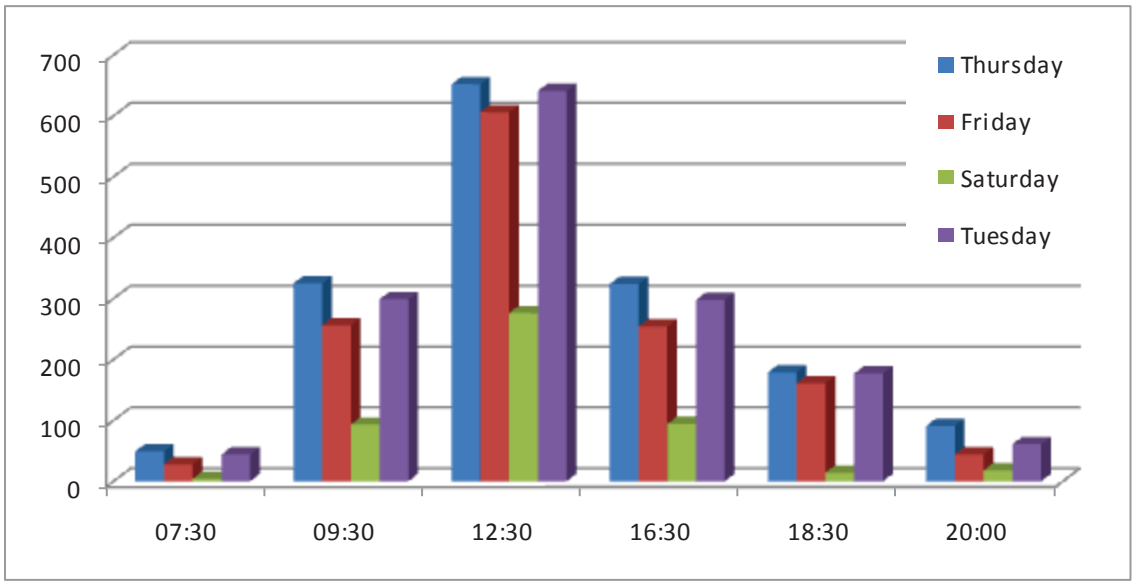
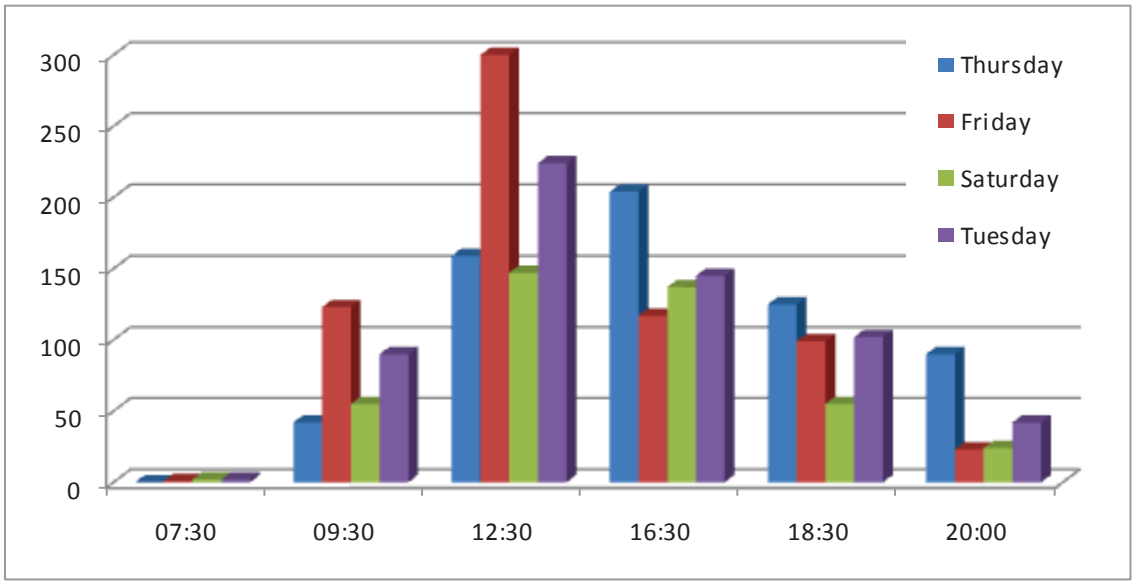


Figure 6.19 Mall Rooftop Occupancy

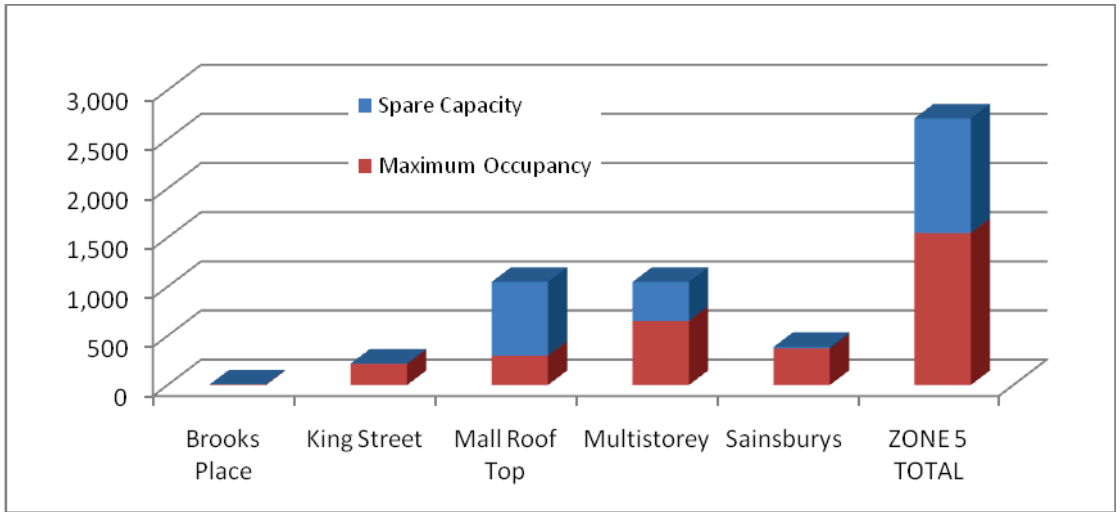


6.33 Occupancy at Brooks Place is consistently high over all time periods. Occupancy at King Street and Sainsbury`s was high on Saturdays which is to be expected through the volume of shoppers. The Mall Multi Storey had higher occupancy levels on Tuesdays, Thursdays and Fridays which suggests it is utilised more by commuters.

Utilisations

6.34 Figure 6.20 presents the observed levels of occupancy during the four survey days.

Figure 6.20 Maximum Car Park Utilisation – Central East Zone



6.35 The figure demonstrates that within the Central East Zone there is a significant amount of car parking capacity which results in significant spare capacity overall (nearly 50%). However, most of this spare capacity is within the private run car parks related to the Mall.

6.36 The MBC operated car parks, Brooks Place and King Street, do operate at close to capacity.

Zone 6 – Central (west)

Sites

6.37 The Central zone has three car parks which are all operated by the Council. Palace Avenue and Mill Street are short stay; whilst College Road is a long stay car park.

Capacities

6.38 There are 245 spaces across the three car parks in the designated Central West Zone, with the breakdown presented in Table 6.6.

Table 6.6 Car Park Capacity – Central West

Site	Normal	Parent & Child	Disabled	M/C	Bike	Out of Use	Total
Palace Avenue	36	0	3	0	0	2	41
Mill Street	126	0	6	0	0	0	132
College Road	68	0	4	0	0	0	72

Occupancy Counts

6.39 Figures 6.21 to 6.23 presents the observed levels of occupancy at each of the car park, respectively, during the four survey days.

Figure 6.21 Palace Avenue Occupancy

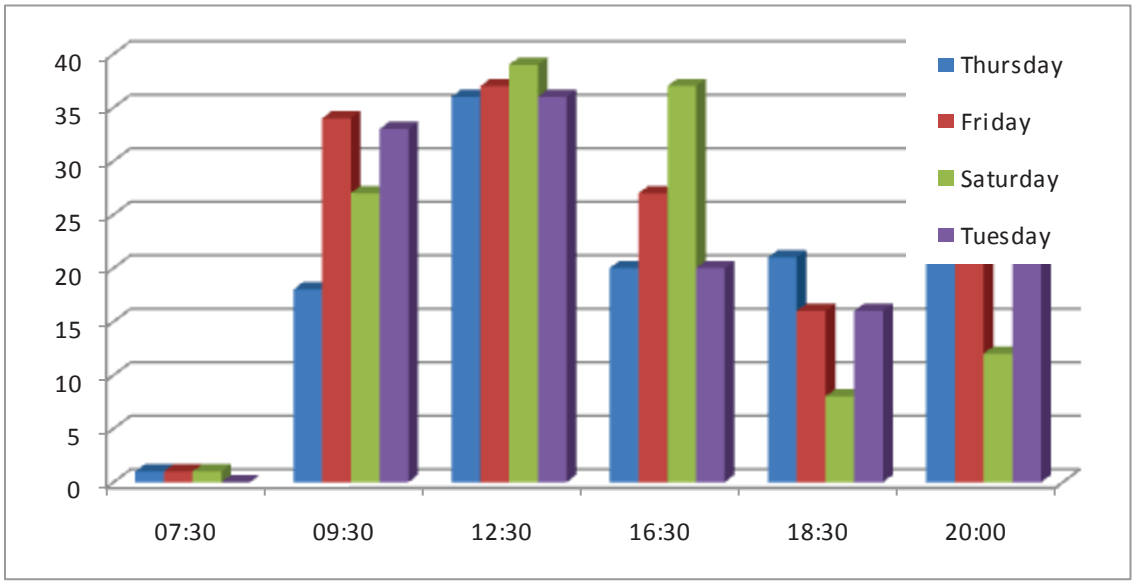


Figure 6.22 Mill Street Occupancy

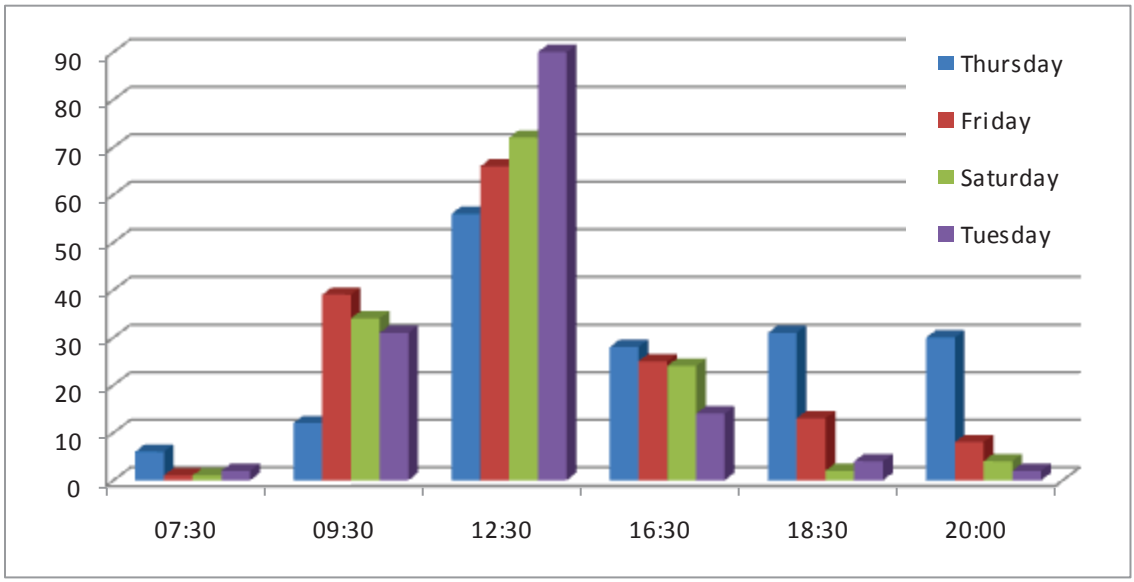
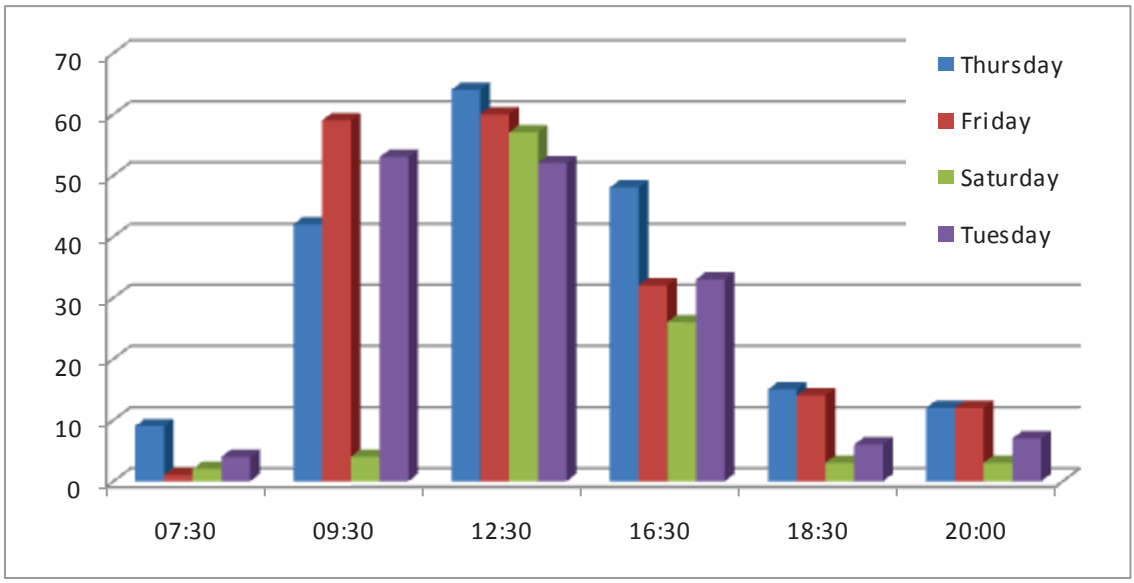


Figure 6.23 College Road Occupancy

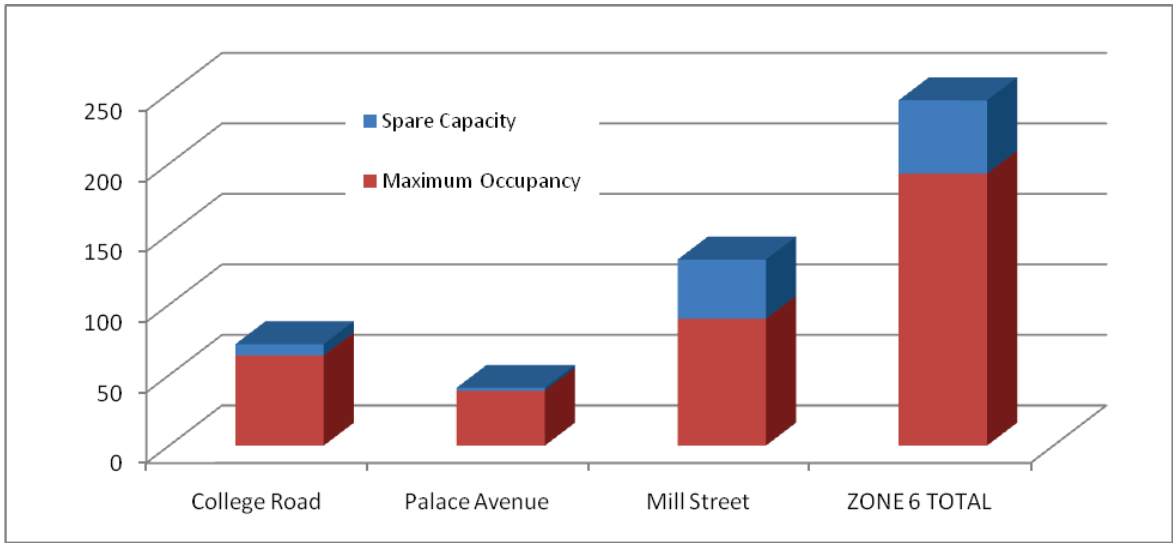


6.40 Palace Avenue was reasonably well occupied across all days. Mill Street had a relatively low occupation on all days and timeframes with the exception of 12:30.

Utilisations

6.41 Figure 6.20 presents the observed levels of occupancy during the four survey days.

Figure 6.24 Maximum Car Park Utilisation – Central West Zone



6.42 The figure demonstrates that within the Central West Zone, whilst the College Road and Palace Avenue car parks reach maximum capacity, there a available car parking capacity at the Mill Street car park, which gives an overall level of spare capacity of around 20%.

Zone 7 – West

Sites

6.43 The western zone of the town has two car parks. Barker Road and Lockmeadow are both operated by the council and are both long stay. Maidstone west railway station is also located in this zone.

Capacities

6.44 There are 674 spaces across the two car parks in the designated West Zone, with the breakdown presented in Table 6.7.

Table 6.7 Car Park Capacity – West Zone

Site	Normal	Parent & Child	Disabled	M/C	Bike	Out of Use	Total
Barker Road	73	0	3	0	0	0	76
Lockmeadow	567	2	25	4	0	0	598

Occupancy Counts

6.45 Figures 6.25 and 6.26 presents the observed levels of occupancy at each of the car park, respectively, during the four survey days.

Figure 6.25 Barker Road Occupancy

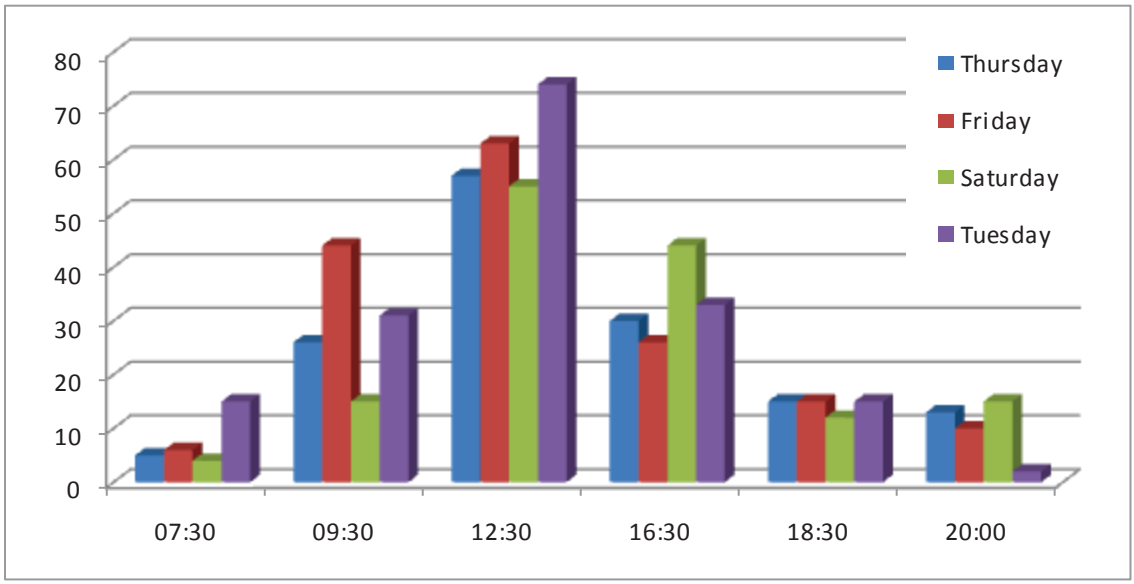
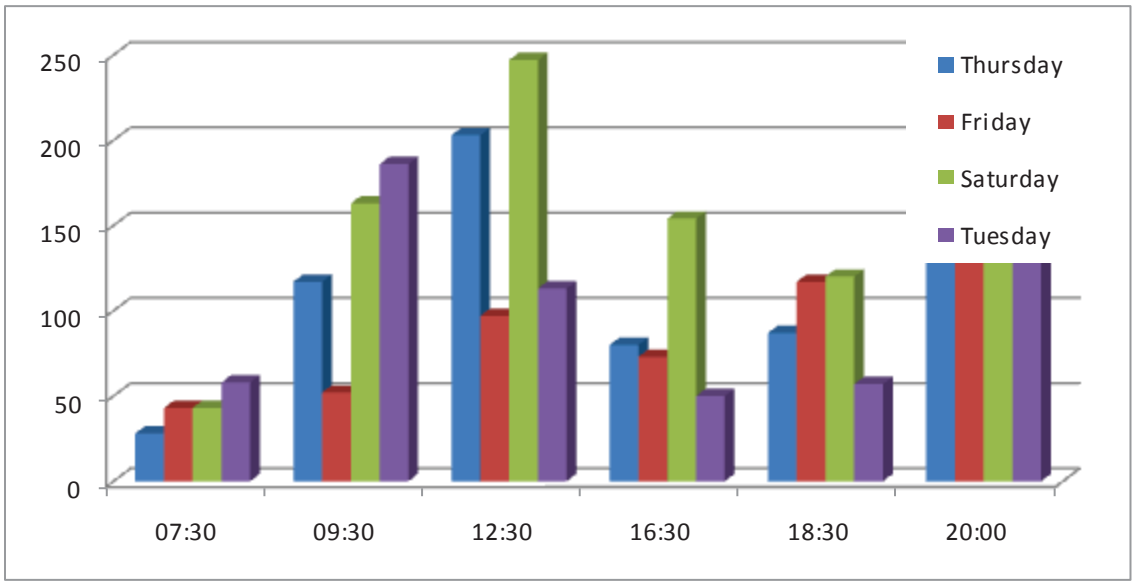


Figure 6.26 Lockmeadow Occupancy

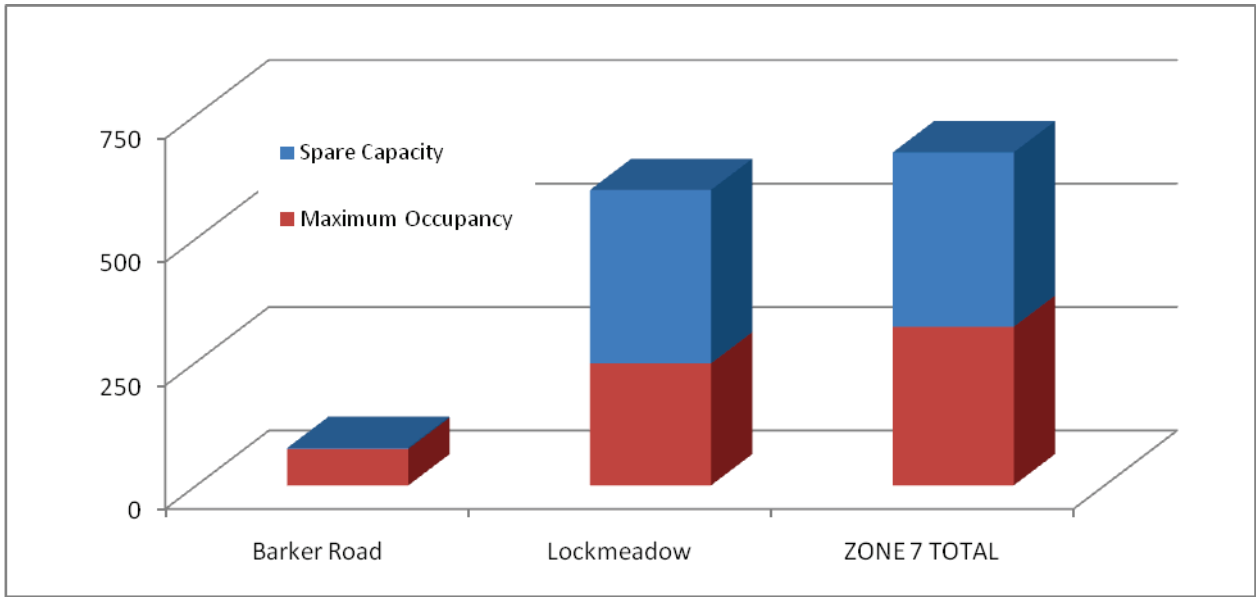


6.46 Barker Road had the highest occupancy levels in the 12:30 timeframe. The highest occupancy levels at Lockmeadow were recorded on Saturday.

Utilisations

6.47 Figure 6.27 presents the observed levels of occupancy during the four survey days.

Figure 6.27 Maximum Car Park Utilisation – West Zone



6.48 The figure demonstrates that within the West Zone there is considerable available car parking capacity at the Lockmeadow car park, which gives an overall level of spare capacity of around 50%. The Barker Road car park does, however, operate at capacity.

Zone 8 – South

Sites

6.49 The southern zone has one car park. Brunswick Street is a long stay car park operated by the council.

Capacities

6.50 There are 66 spaces within the Brunswick Street car park, with the breakdown presented in Table 6.8.

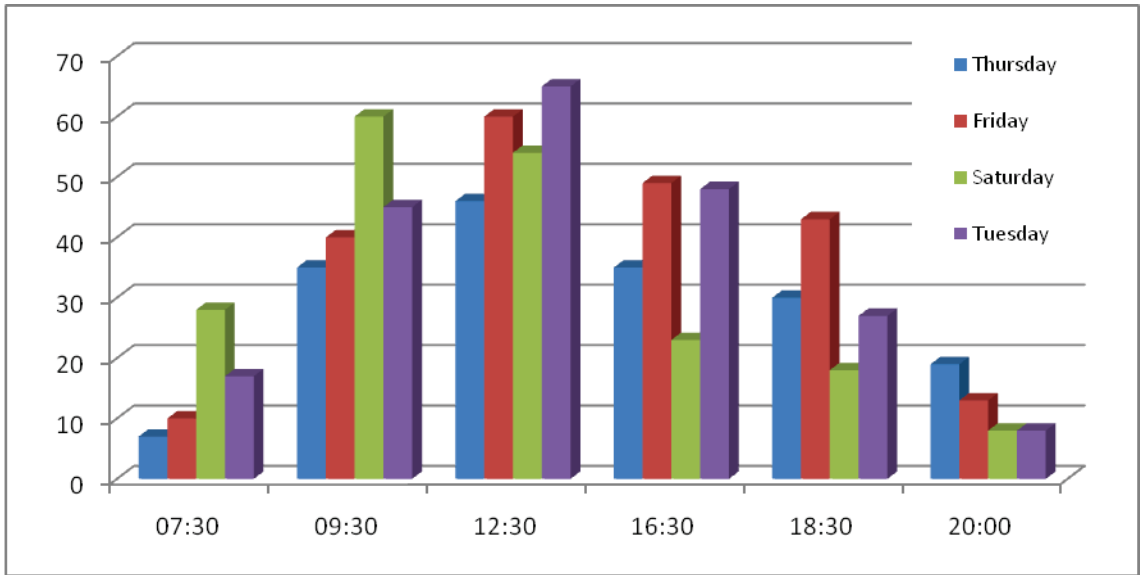
Table 6.8 Car Park Capacity – South Zone

Site	Normal	Parent & Child	Disabled	M/C	Bike	Out of Use	Total
Brunswick Street	60	0	4	2	0	0	66

Occupancy Counts

6.51 Figures 6.28 presents the observed levels of occupancy at Brunswick Street car park during the four survey days.

Figure 6.28 Brunswick Street Occupancy



Utilisations

6.52 The Brunswick Street car park was only observed to reach maximum capacity during the Tuesday survey and was also operating relatively close to capacity on the Saturday as well.

Summary

Overall Capacity

6.53 The overall available car parking capacity across the town centre is currently 4,320 spaces, excluding Fremlin Way. Of these around 1,750 spaces (41%) are in MCB operated car parks.

Overall Car Park Utilisation

6.54 Overall the assessment suggests that there is significant available spare capacity across all the car parks of around 1,730 spaces or 40%.

6.55 Within MBC operated car parks, they levels of utilisation are, on average, slightly higher, but overall there are still around 570 spaces or 33% spare capacity.

7 Park & Ride Customer Surveys

Introduction

Process

7.1 Customer Surveys were undertaken at all three park & ride sites on Thursday 22nd, Friday 23rd, Saturday 24th, Tuesday 29th November 2011. Surveys were conducted between the hours of 7am and 6.30pm, when the park and ride sites close.

7.2 The surveys were primarily conducted with park & ride customers waiting at the bus stops before they boarded a bus service. Clipboards were handed out to customers to complete the surveys or, in some instances, survey staff members interviewed the customers. In peak periods, customers would often board the service and complete the survey whilst travelling. Surveys were conducted of both inbound and outbound customers.

Questionnaire

7.3 Copies of the questionnaires are included within Appendix A. The questionnaires each include a set of generic questions but were tailored to the individual sites in order to aid the ease of completion.

7.4 The areas of questioning included:

- Trip purpose
- Group size
- Trip frequency
- Park & ride site access route
- Park & ride site access journey time
- Trip origin
- Duration of town centre stay
- Initial awareness of park & ride service
- Reason for using park & ride
- Alternative options to park & ride, including car route
- Perception of safety and preference for an on-site parking attendant
- Suggested improvements

7.5 In addition, socio-economic data was also requested.

7.6 The data collected is presented for the individual sites below.

London Road

Surveys

7.7 A total of 258 surveys were completed at the London Road site.

Table 7.1 London Road Customer Surveys

Weekday (Thursday, Friday & Tuesday	Weekend (Saturday)	Total
194	64	258

QTS Survey

Trip information

7.8 The figures below provide a breakdown of trip purpose.

Figure 7.1 Trip Purpose - London Road (Weekday)

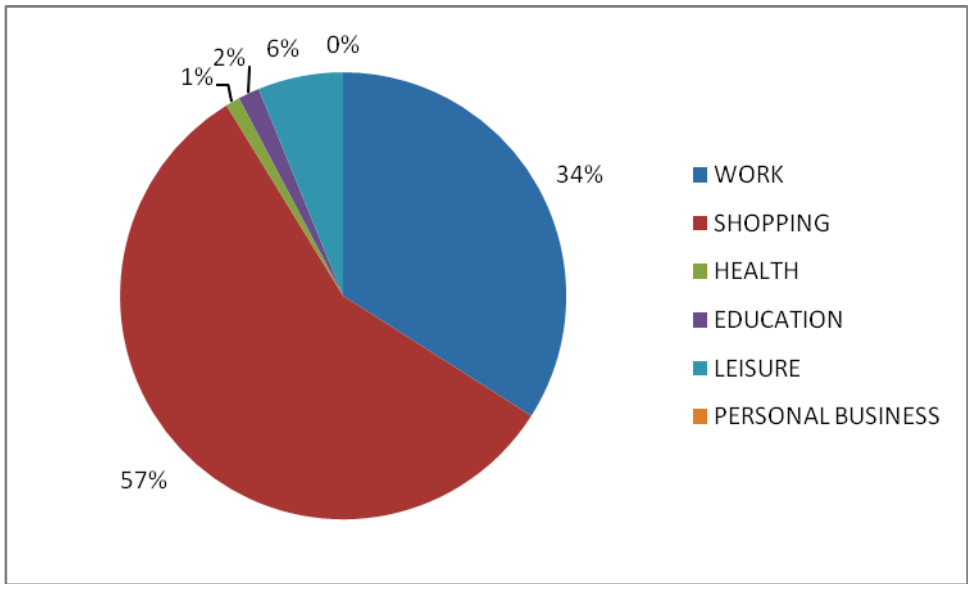
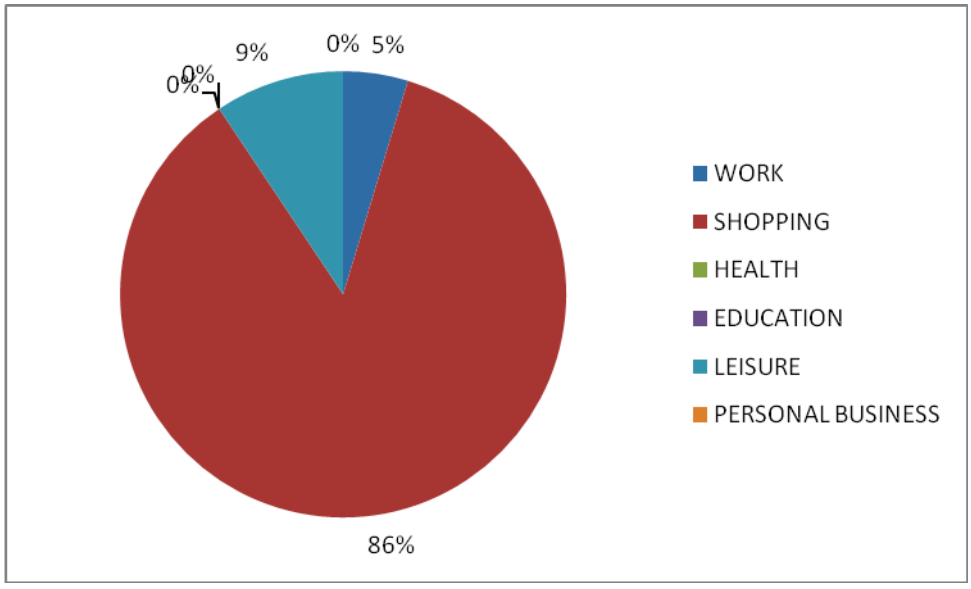


Figure 7.2 Trip Purpose - London Road (Saturday)



7.9 The table below provide a breakdown of group size.

Table 7.2 Group Size - London Road

Group Size	Weekday %	Weekend %
1	55	36
2	35	47
3+	10	17

7.10 The figures below provide a breakdown of trip frequency

Figure 7.3 Trip Frequency - London Road (Weekday)

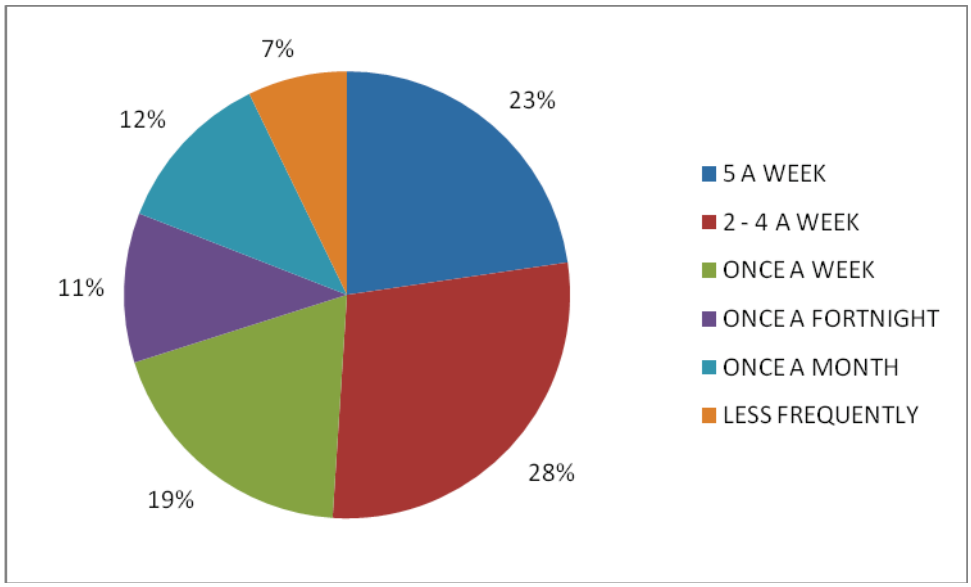
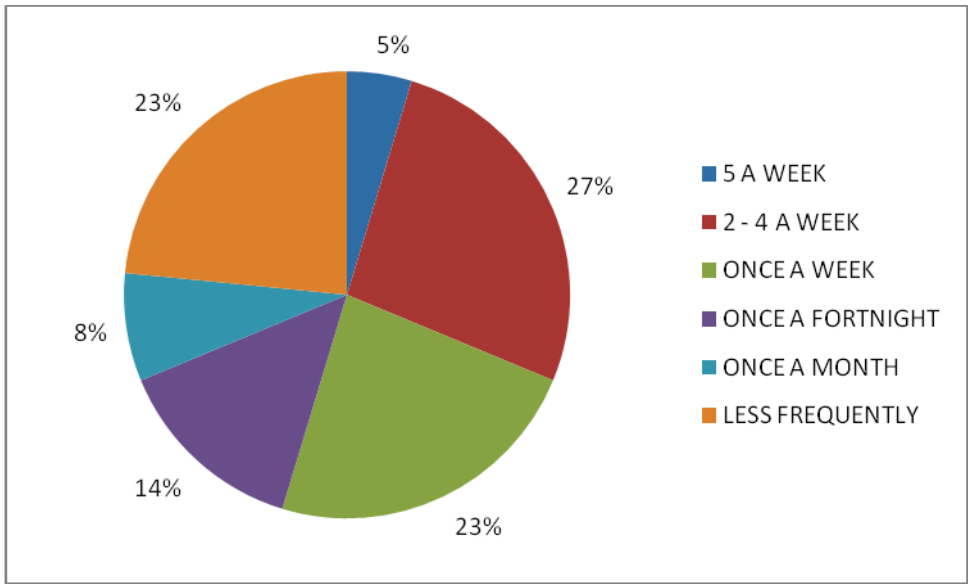


Figure 7.4 Trip Frequency - London Road (Saturday)



7.11 The figures below provide a breakdown of duration of town centre stay

Figure 7.5 Duration of Stay - London Road (Weekday)

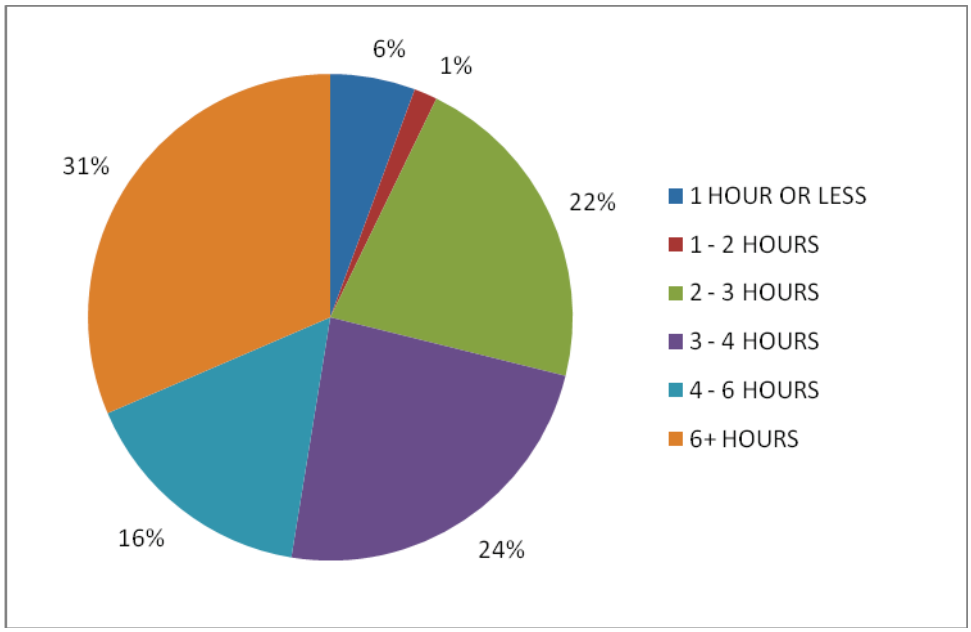
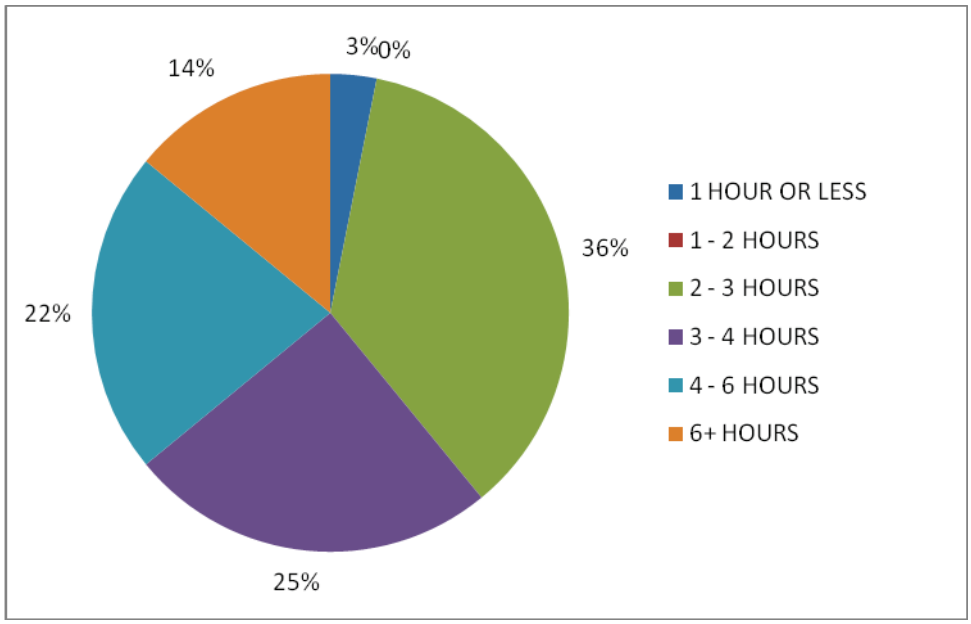


Figure 7.6 Duration of Stay - London Road (Saturday)



Park & Ride Site Access

7.12 The table below provide a breakdown of access route

Table 7.3 Access Route - London Road

Access Route	Weekday %	Weekend %
M20 FROM THE EAST	15	8
M20 FROM THE WEST	33	29
BEAVER ROAD SOUTH	11	14
A20 FROM THE EAST	14	21
A20 FROM THE WEST	18	27
ST LAURENCE AVENUE	1	0
OTHER	8	2

7.13 The figures below provide a breakdown of access journey time

Figure 7.7 Access Journey Time - London Road (Weekday)

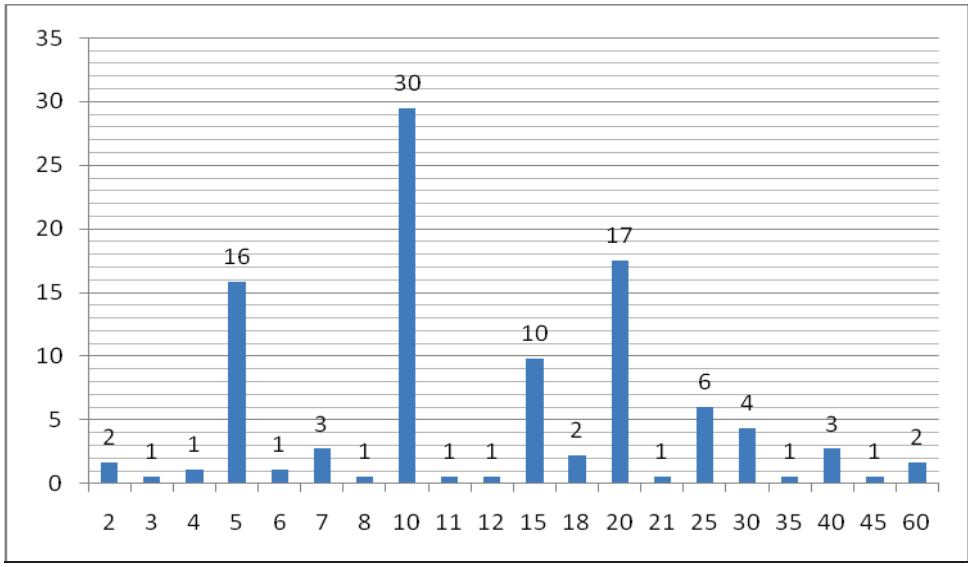
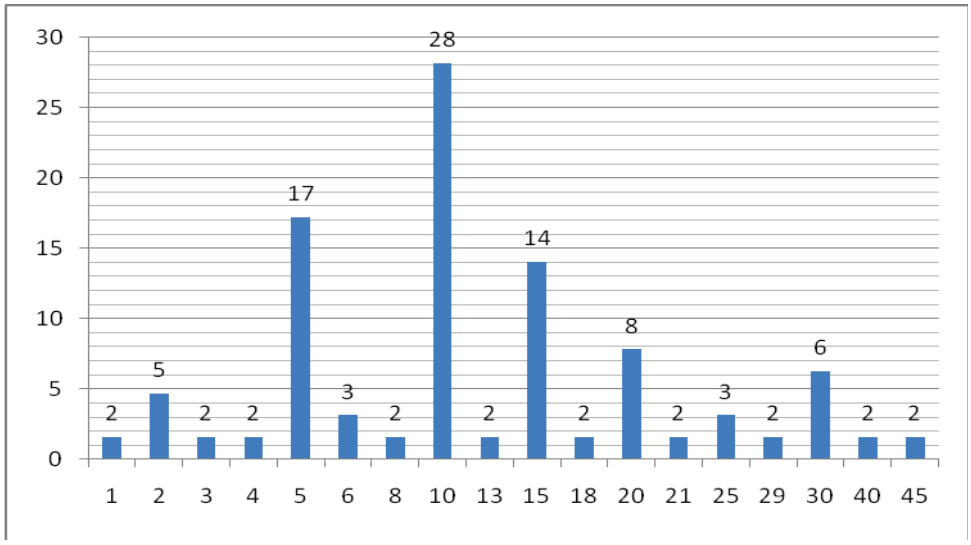


Figure 7.8 Access Journey Time - London Road (Saturday)



7.14 The figures below provide a breakdown of trip origin

Figure 7.9 Trip Origin - London Road (Weekday)

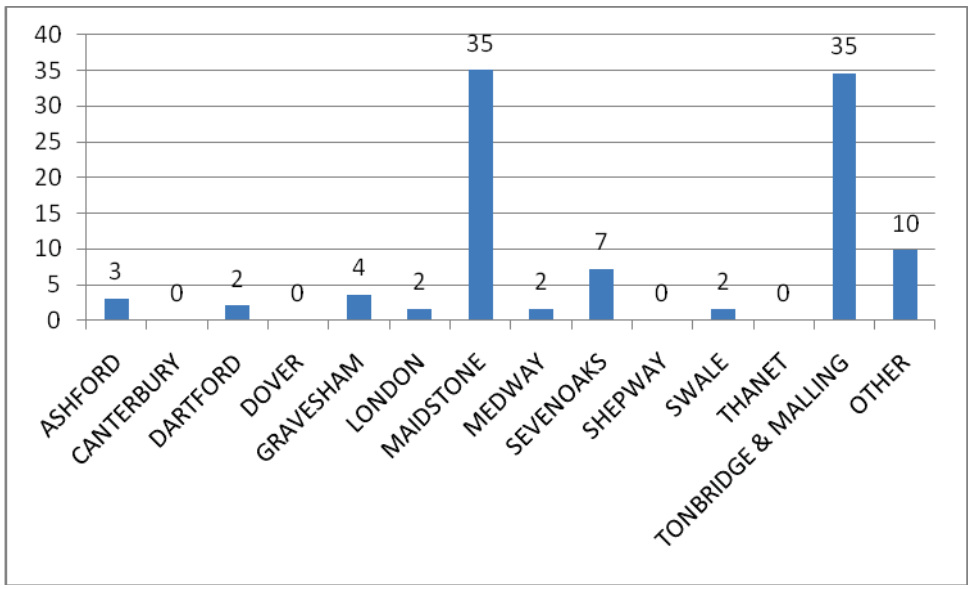
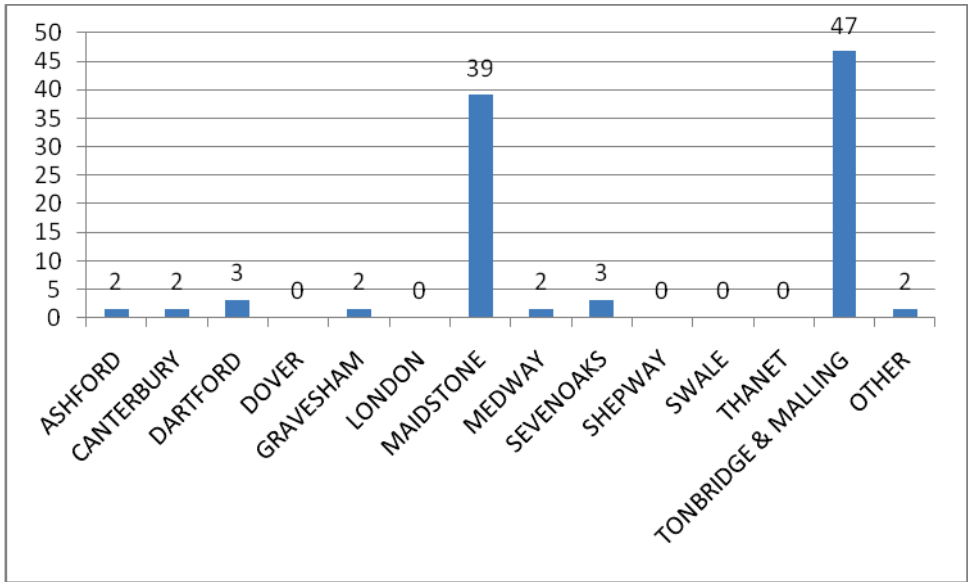


Figure 7.10 Trip Origin - London Road (c)



Choice of Park & Ride

7.15 The figures below provide a breakdown of initial awareness of park & ride service

Figure 7.11 Initial awareness of park & Ride - London Road (Weekday)

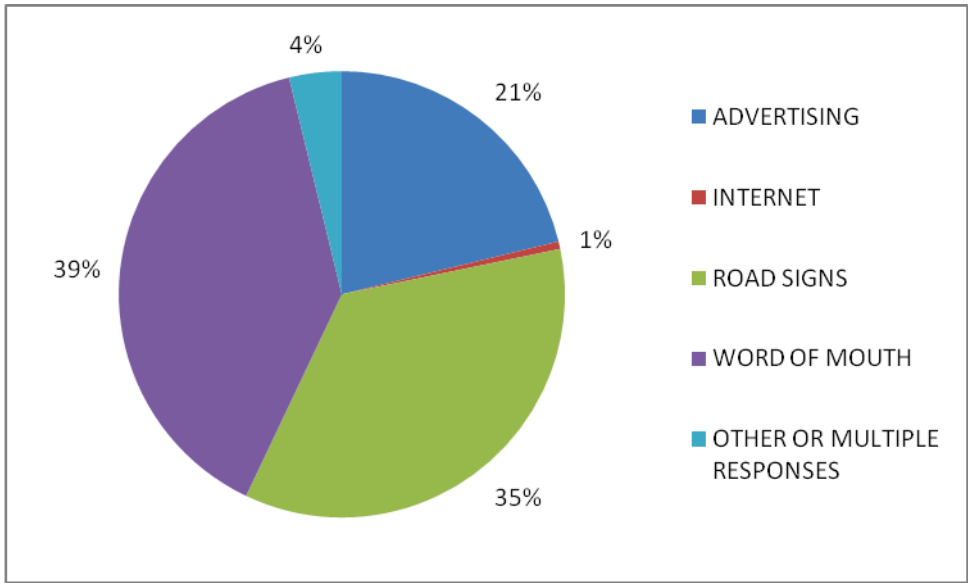
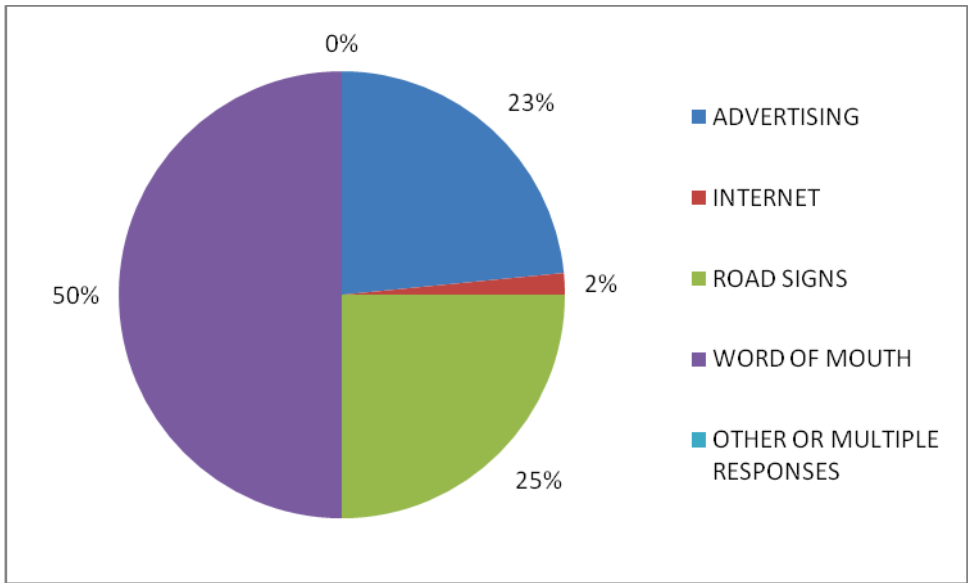


Figure 7.12 Initial awareness of park & Ride - London Road (Saturday)



7.16 The figures below provide a breakdown of reasons for using park & ride

Figure 7.13 Reason for use of Park & Ride - London Road (Weekday)

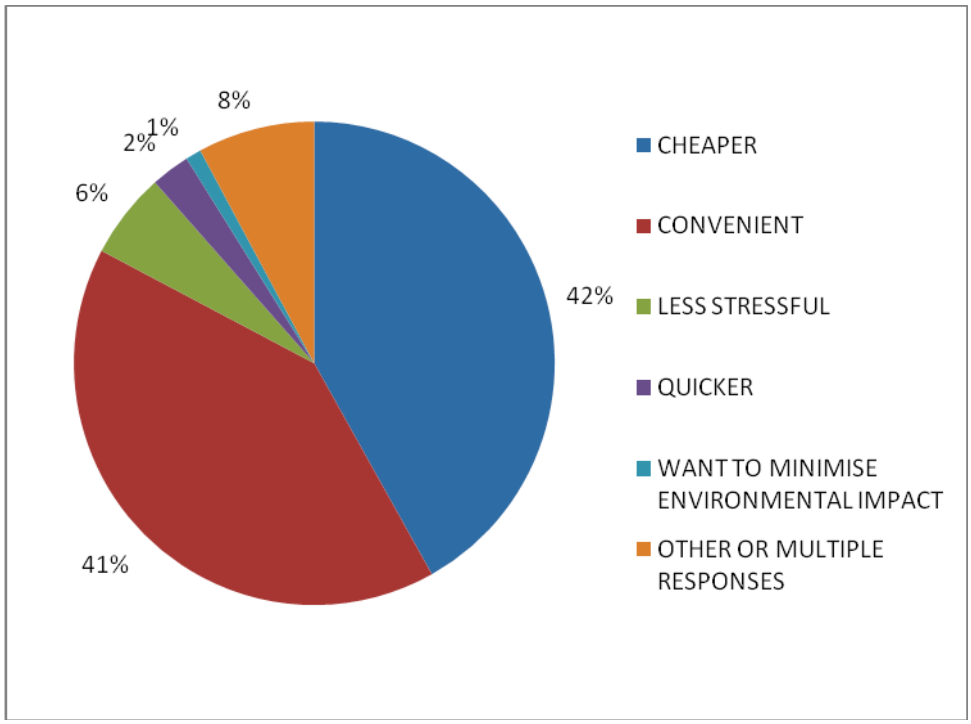
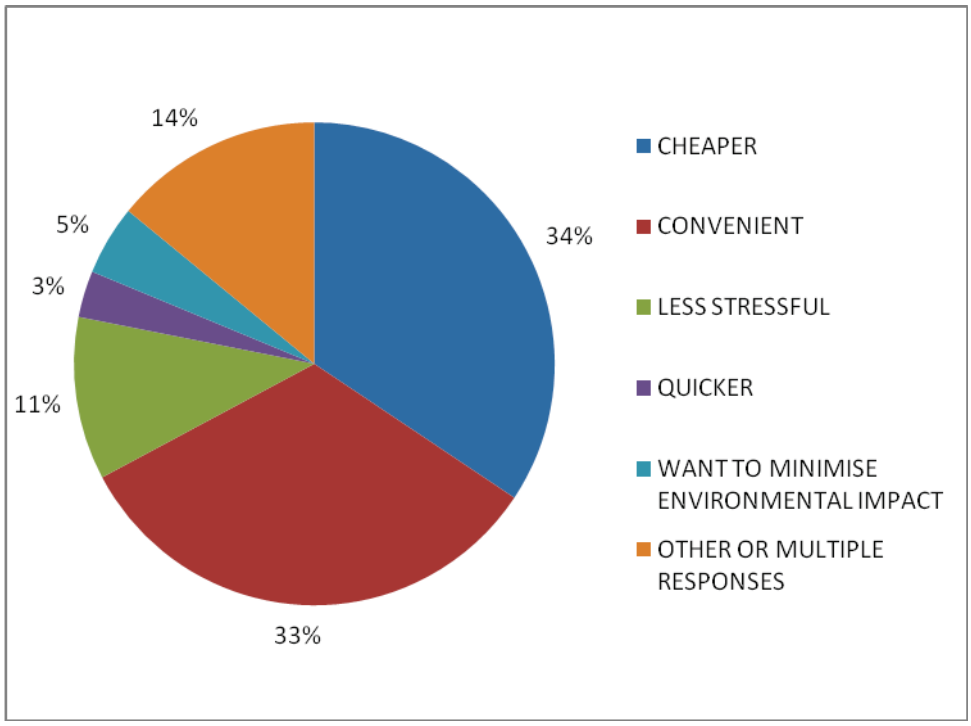


Figure 7.14 Reason for use of Park & Ride - London Road (Saturday)



Alternative to Park & Ride

7.17 The figures below provide a breakdown of individual preferred alternative option to park & ride, were it not to be available.

Figure 7.15 Alternative to Park & Ride - London Road (Weekday)

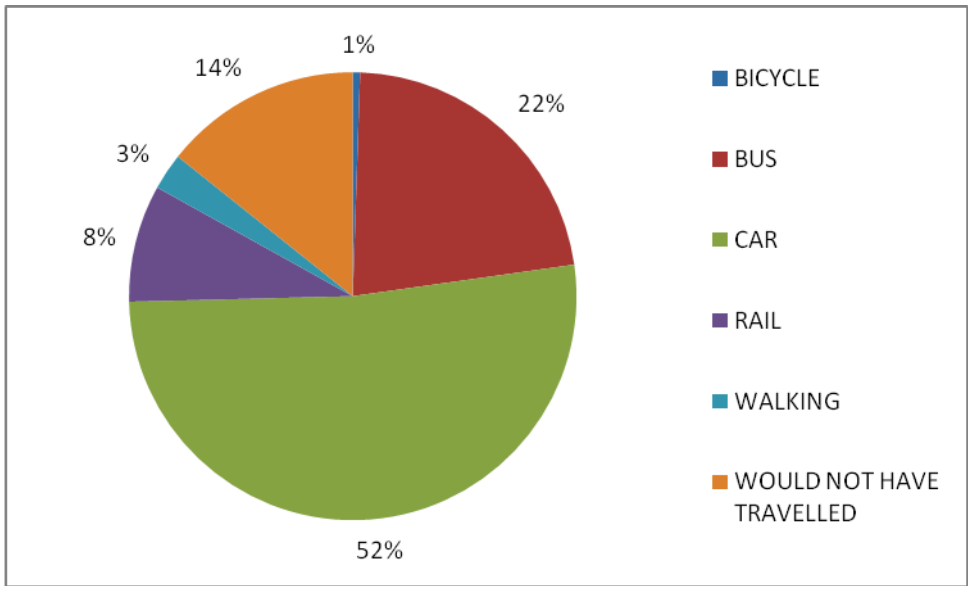
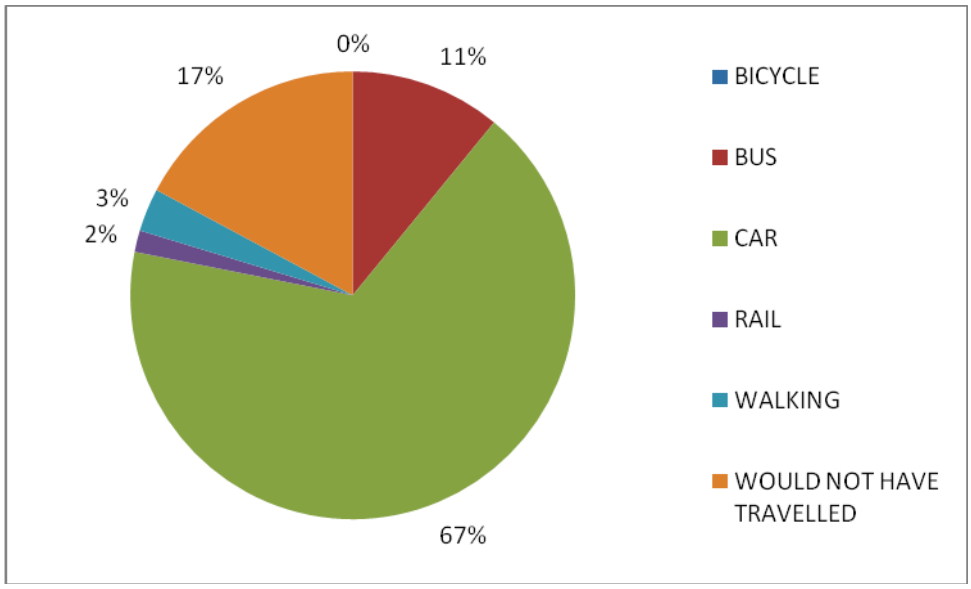


Figure 7.16 Alternative to Park & Ride - London Road (Saturday)



7.18 The table below provide a breakdown of the car routes that individual would take into town if the park & ride service was not available.

Table 7.4 Car Route - London Road

	Weekday %	Weekend %
A229	9	4
A20	79	82
A26	8	4
B2010	1	4
OTHER	3	6

Safety

7.19 The table below provide a breakdown of perception of safety at London Road park & Ride site.

c

	Weekday %	Weekend %
VERY GOOD	65	58
GOOD	23	31
AVERAGE	9	8
POOR	0	2
VERY POOR	0	0
NO OPINION	4	2

7.20 The table below provide a breakdown individuals' willingness to pay extra to have a parking attendant at London Road park & Ride site.

Table 7.5 Willingness to pay for Parking attendant - London Road

	Weekday %	Weekend %
YES	30	39
NO	42	41
NOT SURE	20	17
NO OPINION	7	3

Sittingbourne Road

Surveys

7.21 A total of 226 surveys were completed at the Sittingbourne Road site.

Table 7.6 Sittingbourne Road Customer Surveys

Weekday (Thursday, Friday & Tuesday	Weekend (Saturday)	Total
180	46	226

QTS Survey

Trip information

7.22 The figures below provide a breakdown of trip purpose

Figure 7.17 Trip Purpose - Sittingbourne Road (Weekday)

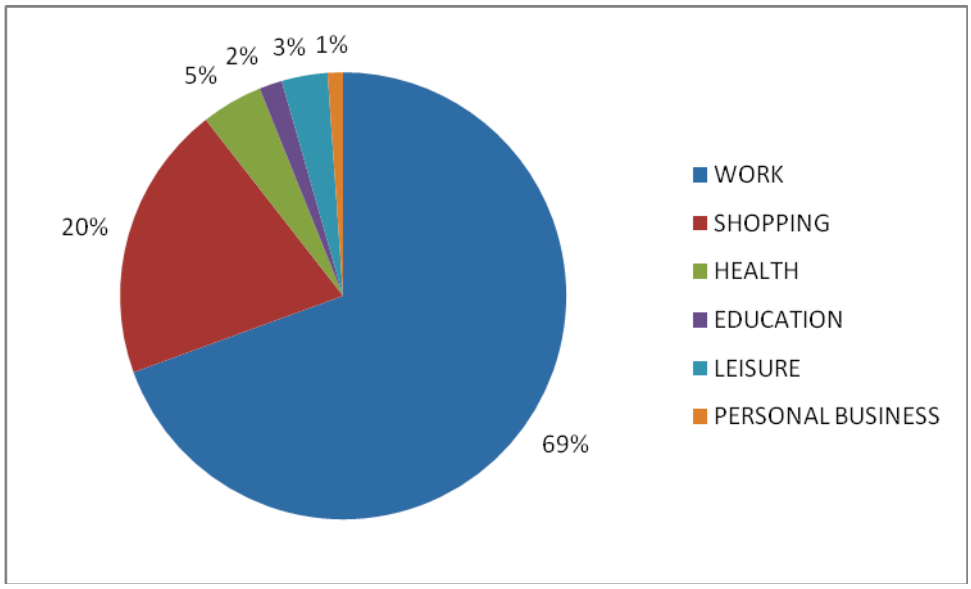
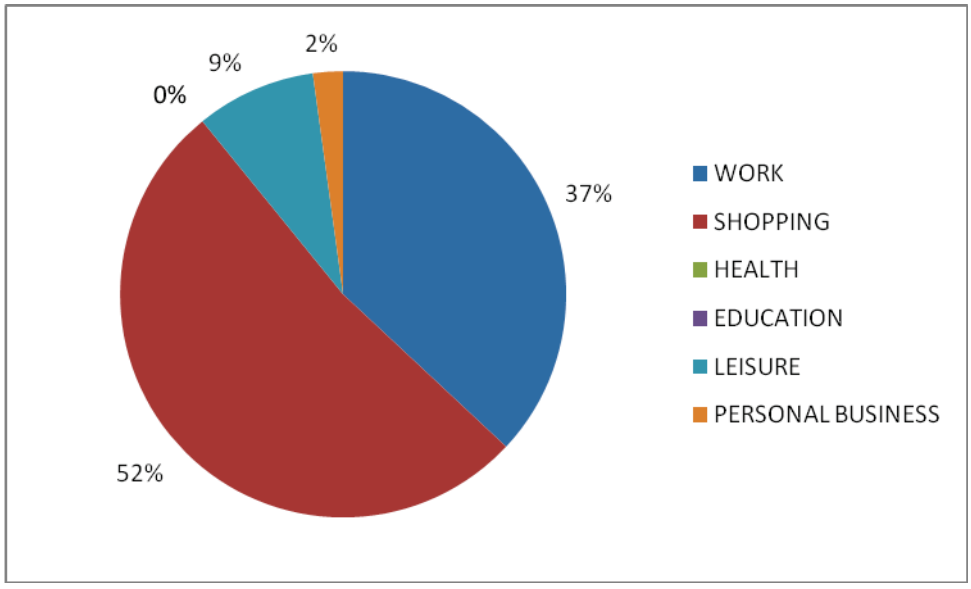


Figure 7.18 Trip Purpose - Sittingbourne Road (Saturday)



Group Size

7.23 The table below provide a breakdown of group size

Table 7.7 Group Size - Sittingbourne Road

Group Size	Weekday %	Weekend %
1	73	61
2	23	35
3+	4	4

7.24 The figures below provide a breakdown of trip frequency

Figure 7.19 Trip Frequency - Sittingbourne Road (Weekday)

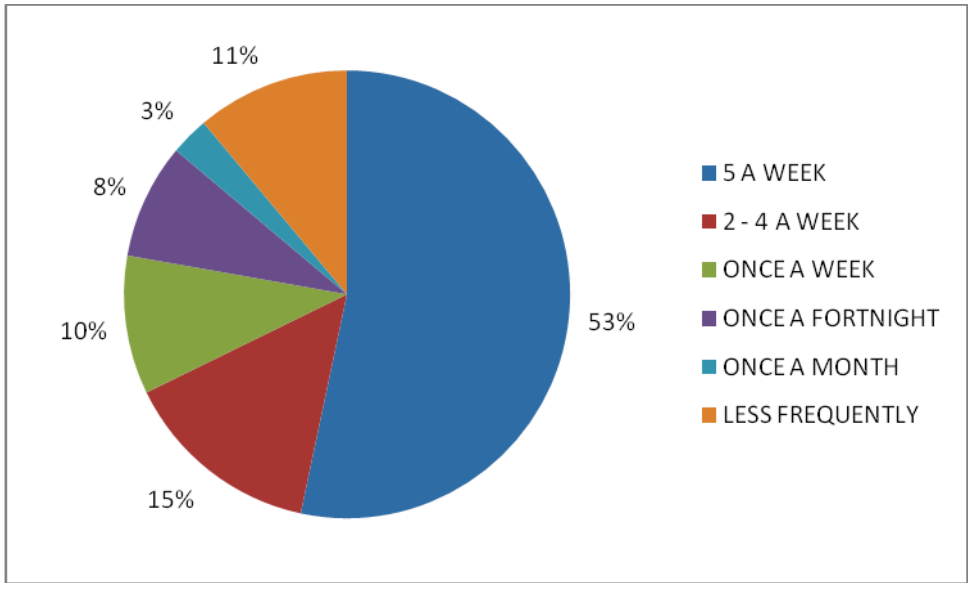
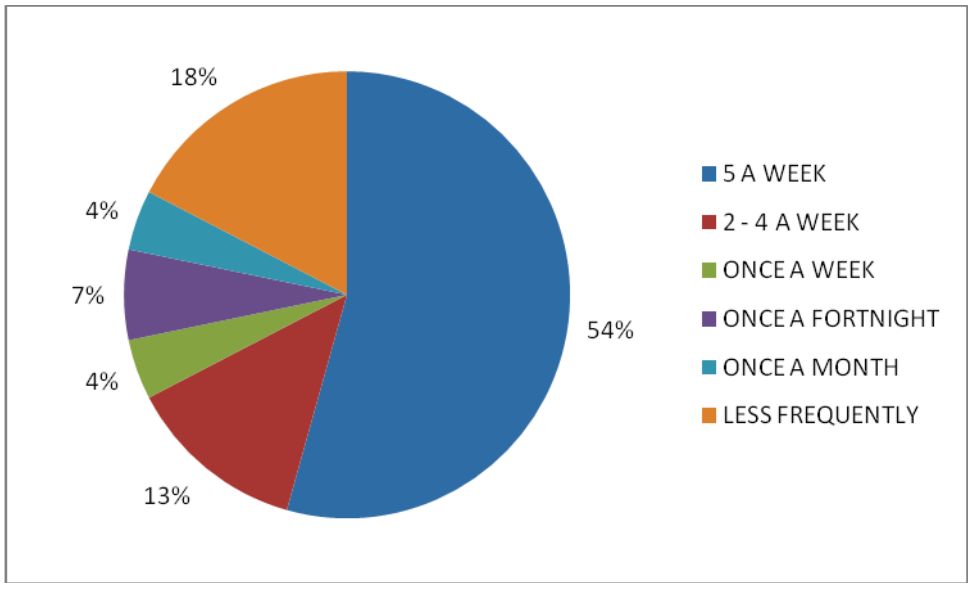


Figure 7.20 Trip Frequency - Sittingbourne Road (Saturday)



7.25 The figures below provide a breakdown of duration of town centre stay

Figure 7.21 Duration of Stay - Sittingbourne Road (Weekday)

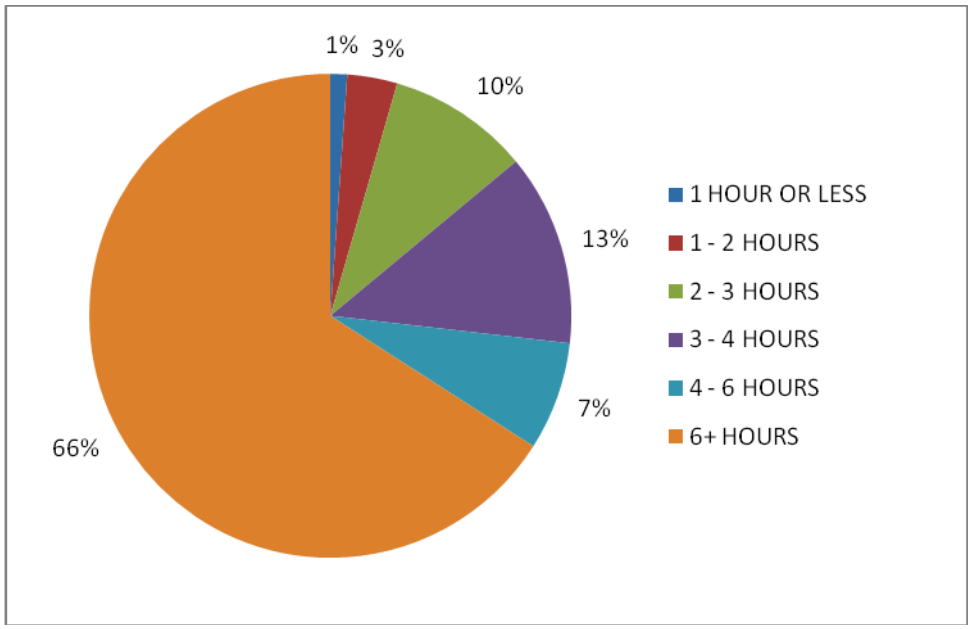
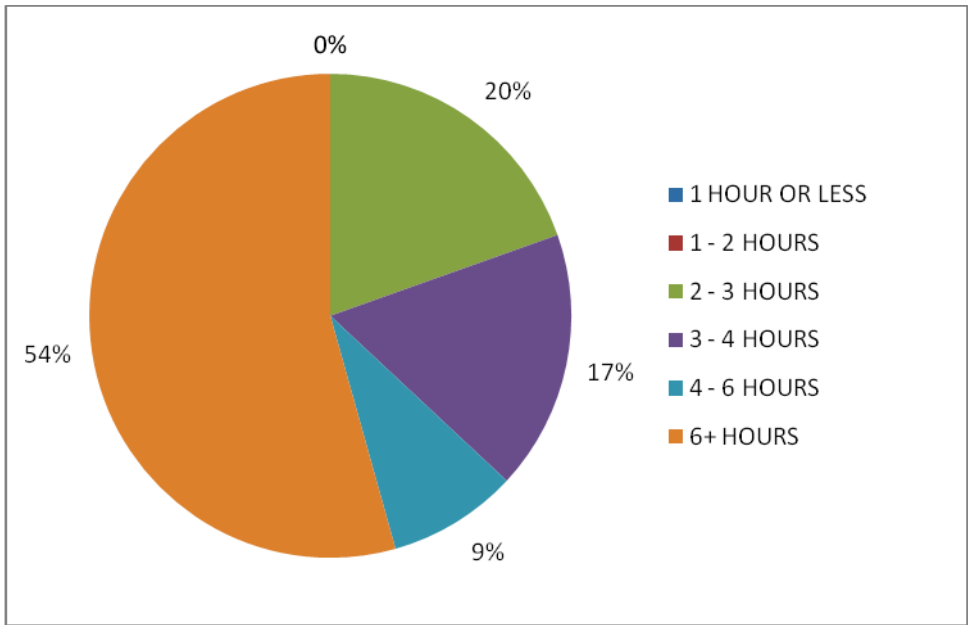


Figure 7.22 Duration of Stay - Sittingbourne Road (Saturday)



Park & Ride Site Access

7.26 The table below provide a breakdown of access route

Table 7.8 Access Route - Sittingbourne Road

Access Route	Weekday %	Weekend %
M20 FROM THE EAST	24	9
M20 FROM THE WEST	15	20
BEARSTED ROAD	8	2
A249 FROM THE NORTH	30	28
A249 FROM THE SOUTH	6	13
PENEDEN HEATH ROAD	17	28
OTHER	0	0

7.27 The figures below provide a breakdown of access journey time

Figure 7.23 Access Journey Time - Sittingbourne Road (Weekday)

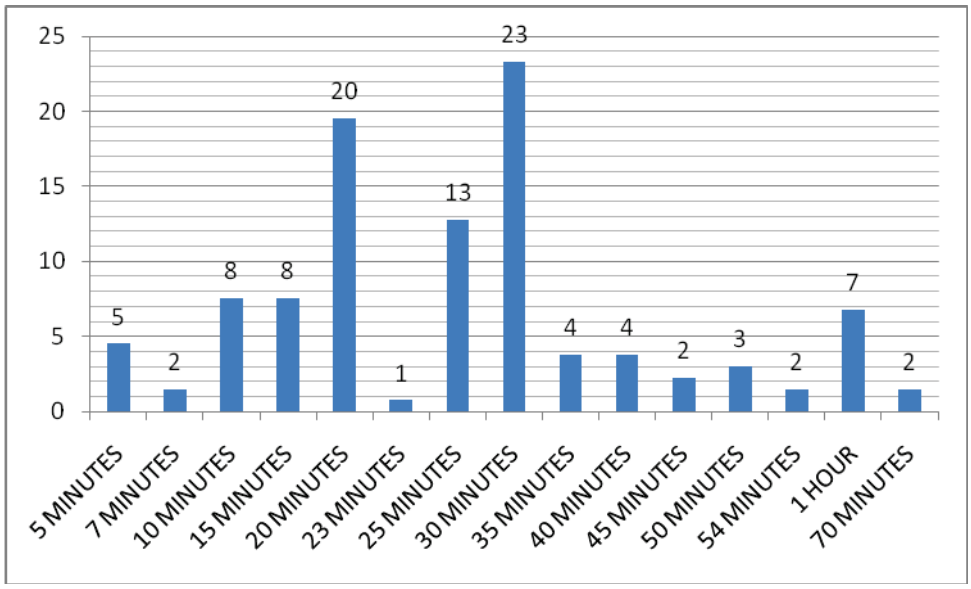
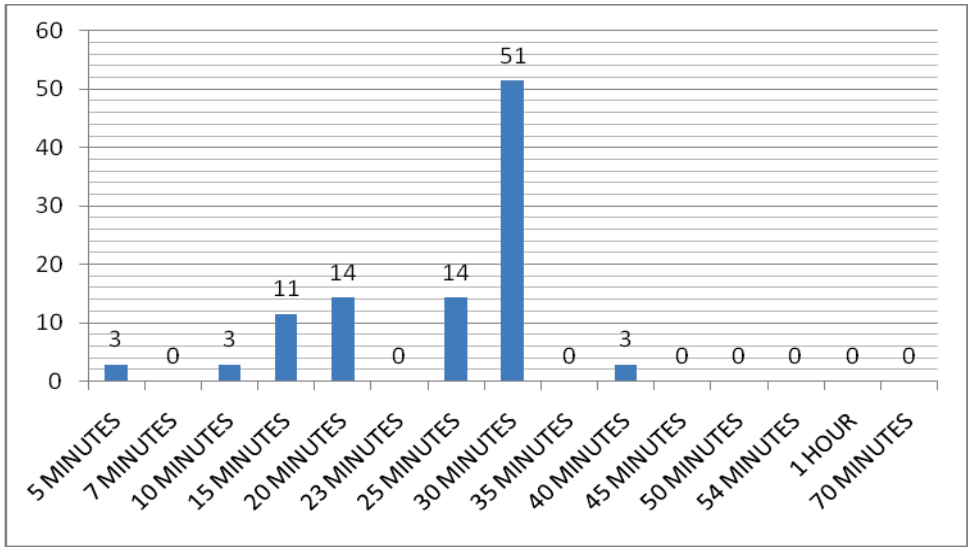


Figure 7.24 Access Journey Time - Sittingbourne Road (Saturday)



7.28 The figures below provide a breakdown of trip origin

Figure 7.25 Trip Origin - Sittingbourne Road (Weekday)

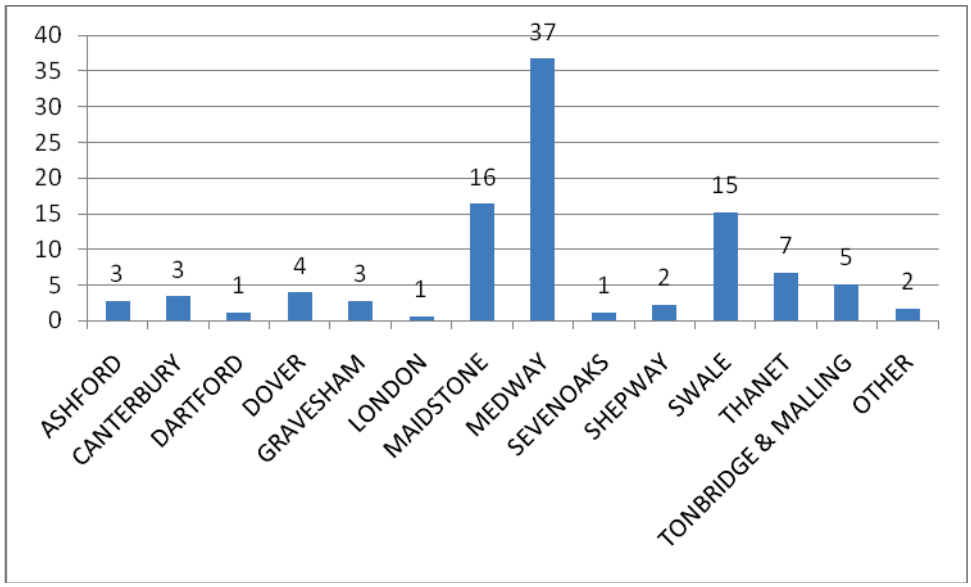
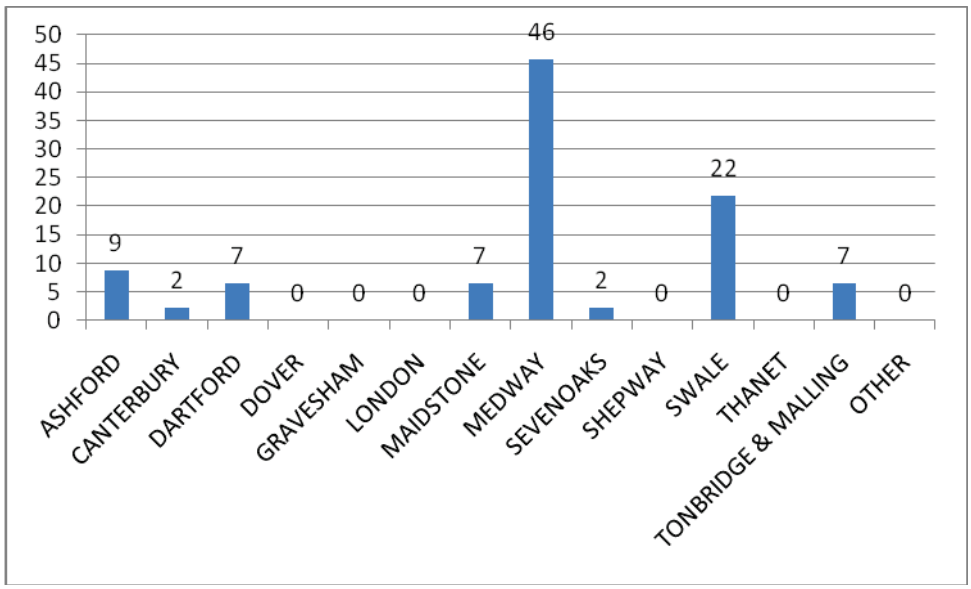


Figure 7.26 Trip Origin - Sittingbourne Road (Saturday)



Choice of Park & Ride

7.29 The figures below provide a breakdown of initial awareness of park & ride service

Figure 7.27 Initial awareness of park & ride - Sittingbourne Road (Weekday)

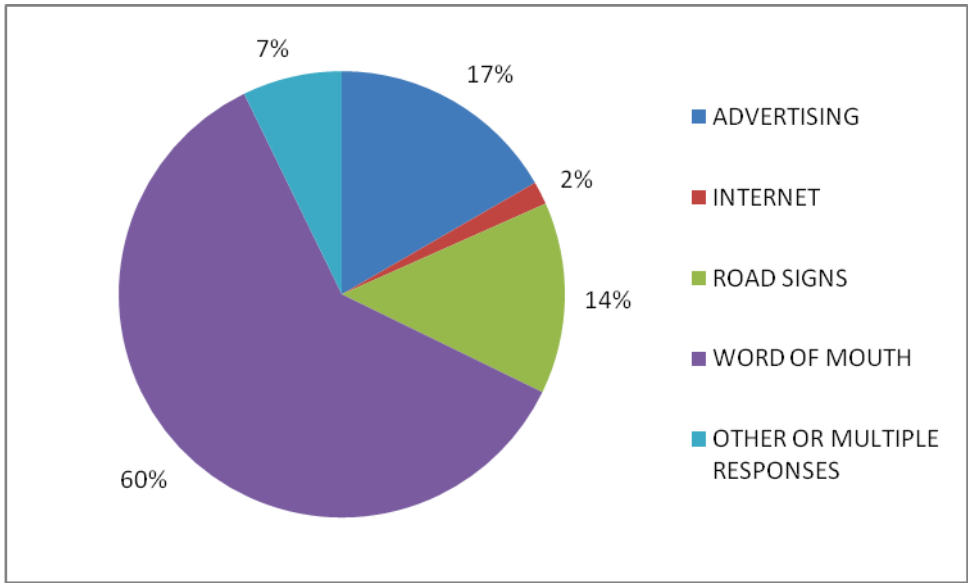
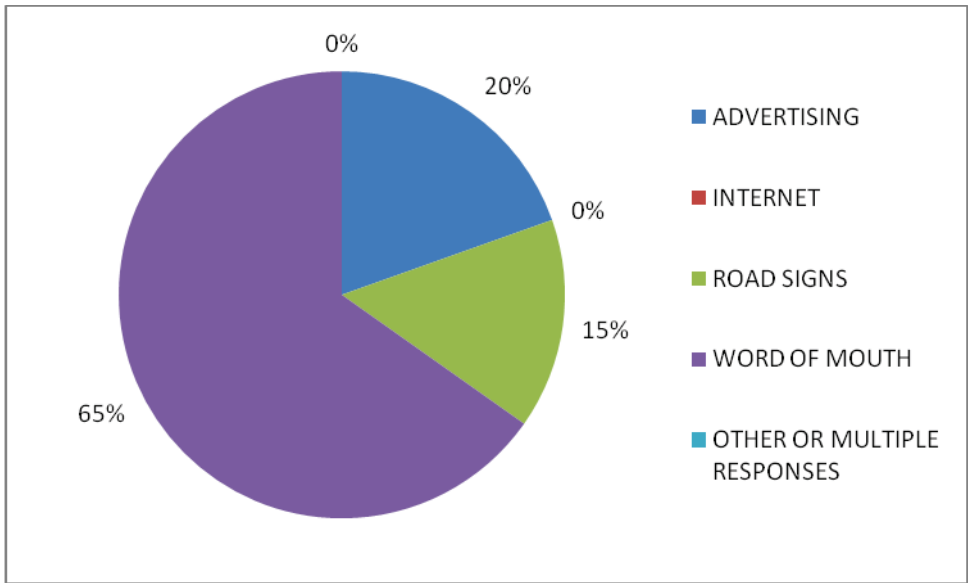


Figure 7.28 Initial awareness of park & ride - Sittingbourne Road (Saturday)



7.30 The figures below provide a breakdown of individuals' reasons for using park & ride.

Figure 7.29 Reason for use of park & ride - Sittingbourne Road (Weekday)

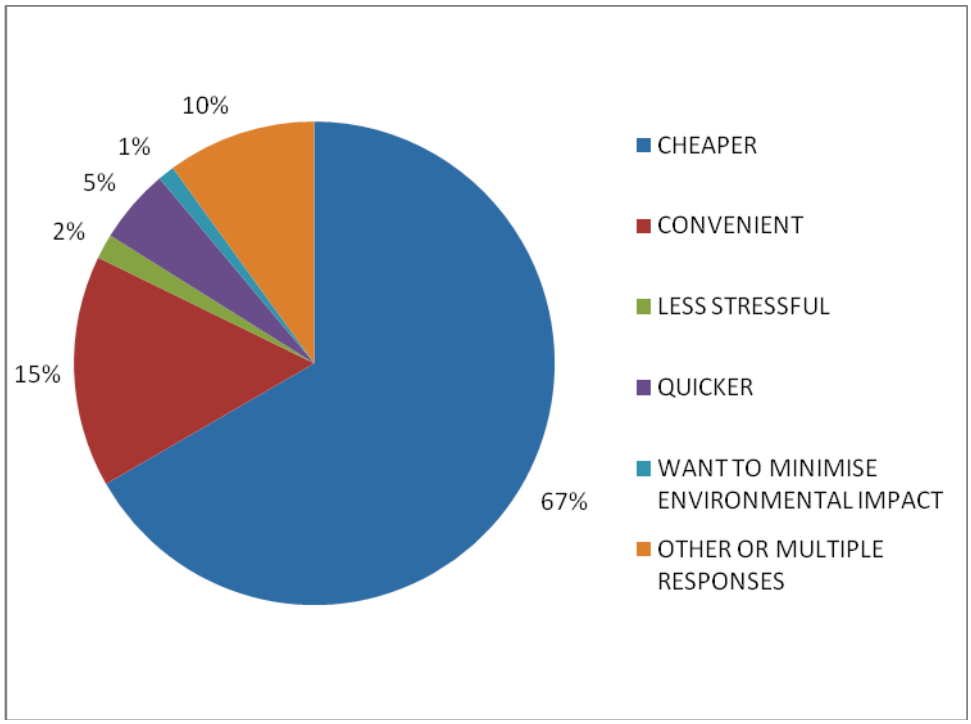
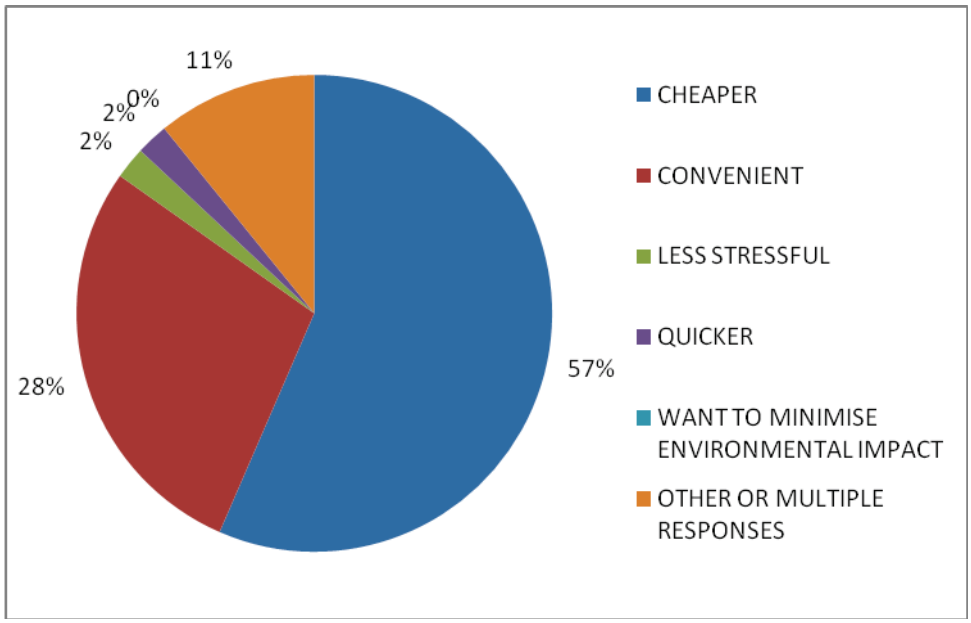


Figure 7.30 Reason for use of park & ride - Sittingbourne Road (Saturday)



Alternative to Park & Ride

7.31 The figures below provide a breakdown of individuals' alternative options to park & ride, should it not be available.

Figure 7.31 Alternative to park & ride - Sittingbourne Road (Weekday)

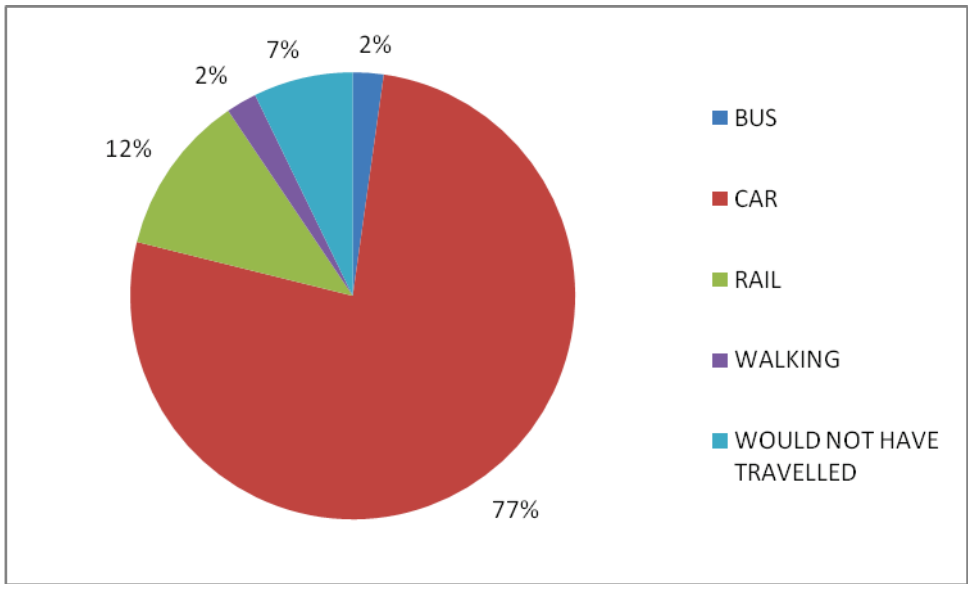
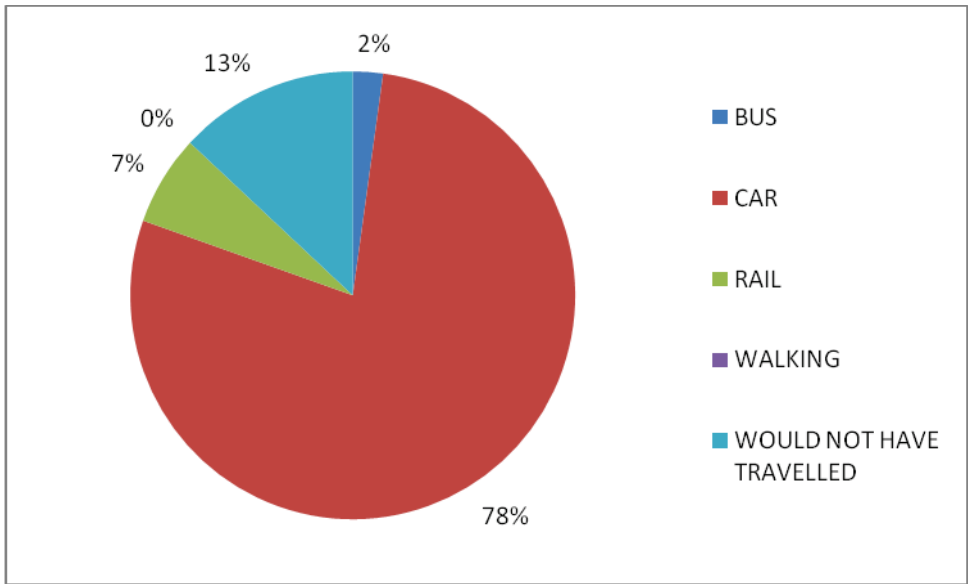


Figure 7.32 Alternative to park & ride - Sittingbourne Road (Saturday)



7.32 The table below provide a breakdown of route that individuals' would take by car into town, if the park & ride service was not available.

Table 7.9 Car Route - Sittingbourne Road

	Weekday %	Weekend %
A20 FROM THE EAST	17	7
A20 FROM THE WEST	8	7
A229	21	19
A249	46	55
OTHER	8	12

Safety

7.33 The table below provide a breakdown of perception of safety at the Sittingbourne park & ride site.

Table 7.10 Perceptions of Safety - Sittingbourne Road

	Weekday %	Weekend %
VERY GOOD	32	28
GOOD	39	35
AVERAGE	22	33
POOR	2	0
VERY POOR	1	0
NO OPINION	5	4

7.34 The table below provide a breakdown individuals' willingness to pay extra to have a parking attendant at Sittingbourne Road park & Ride site.

Table 7.11 Willingness to pay for Parking Attendant - Sittingbourne Road

	Weekday %	Weekend %
YES	30	37
NO	39	37
NOT SURE	27	22
NO OPINION	5	4

Willington Street

Surveys

7.35 A total of 655 surveys were completed at the Willington Street site.

Table 7.12 Willington Street Customer Surveys

Weekday (Thursday, Friday & Tuesday	Weekend (Saturday)	Total
458	197	655

QTS Survey

Trip information

7.36 The figures below provide a breakdown of trip purpose

Figure 7.33 Trip Purpose – Willington Street (Weekday)

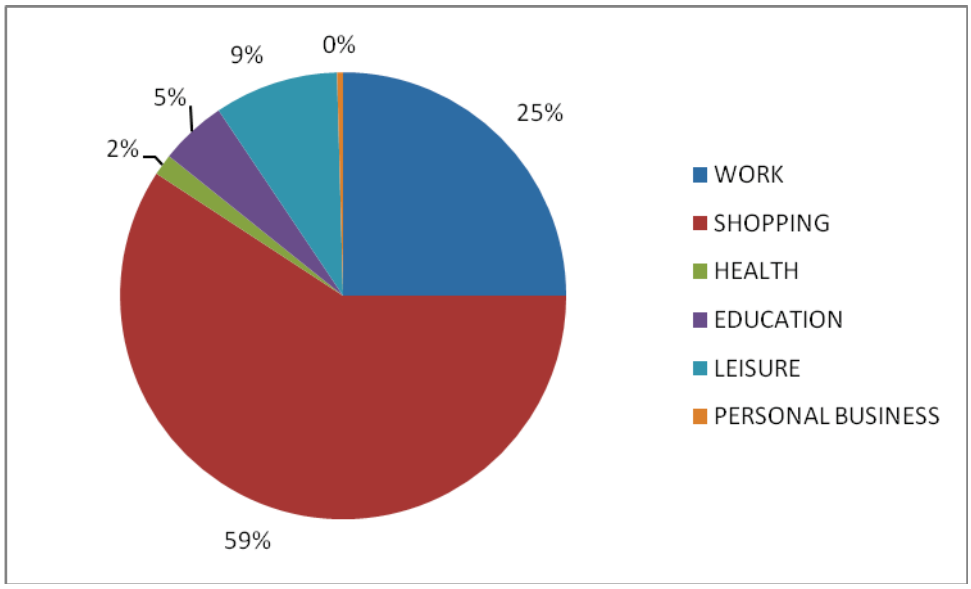
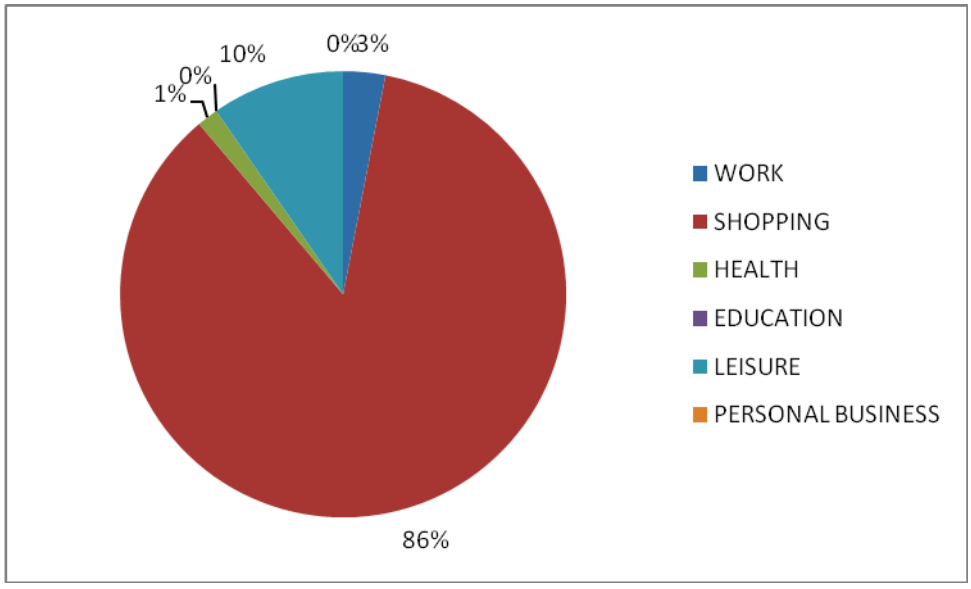


Figure 7.34 Trip Purpose – Willington Street (Saturday)



Group Size

7.37 The table below provide a breakdown of group size

Table 7.13 Group Size - Willington Street

Group Size	Weekday %	Weekend %
1	58	35
2	36	51
3+	6	14

7.38 The figures below provide a breakdown of trip frequency

Figure 7.35 Trip Frequency – Willington Street (Weekday)

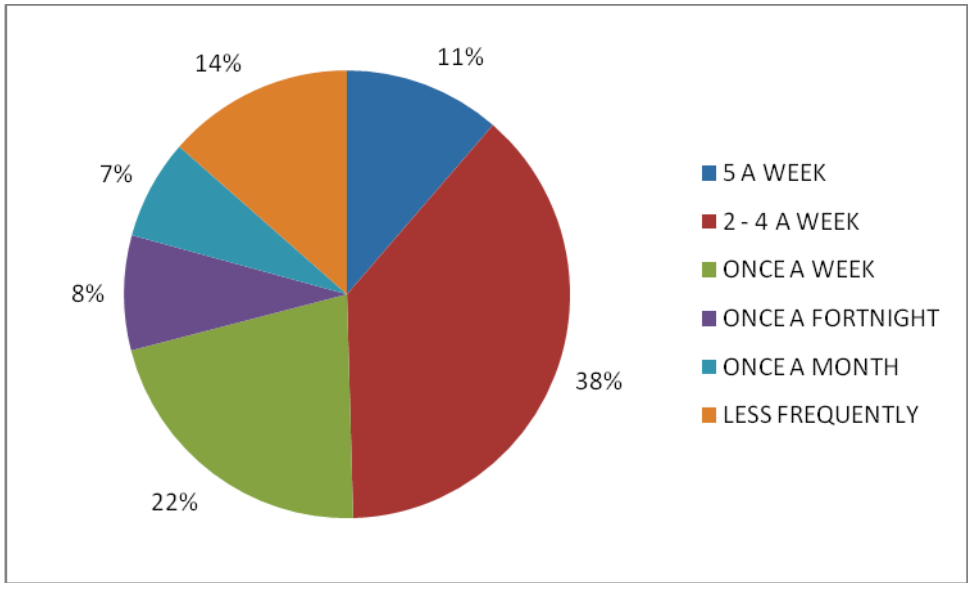
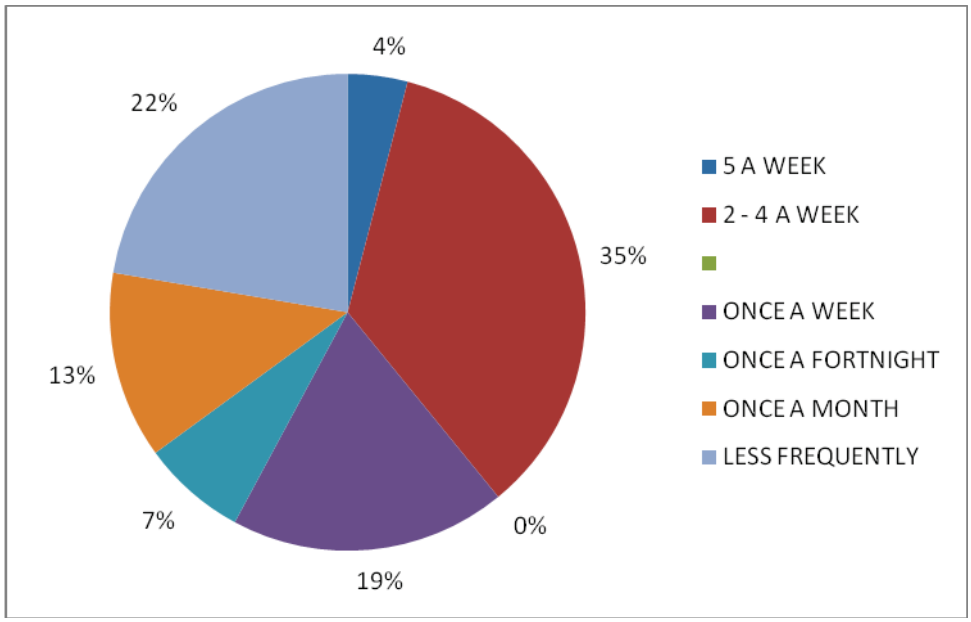


Figure 7.36 Trip Frequency – Willington Street (Saturday)



7.39 The figures below provide a breakdown of duration of town centre stay

Figure 7.37 Duration of Stay – Willington Street (Weekday)

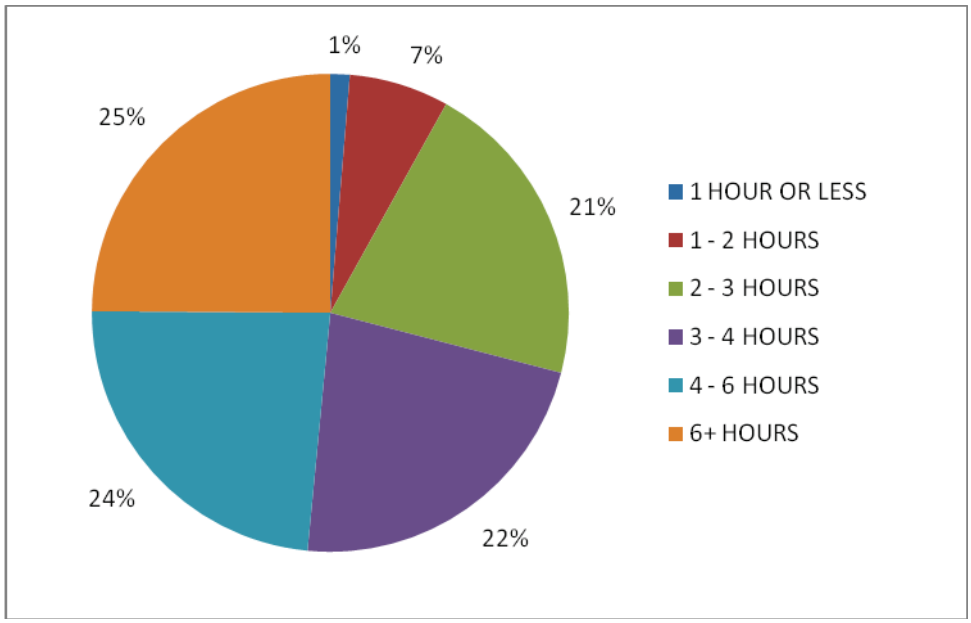
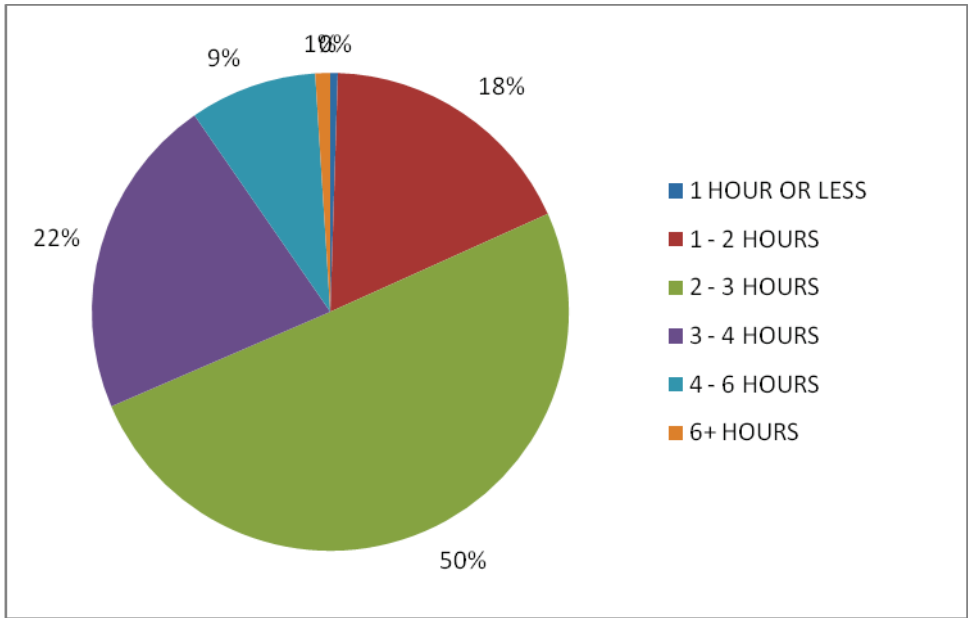


Figure 7.38 Duration of Stay – Willington Street (Saturday)



Park & Ride Site Access

7.40 The table below provide a breakdown of access route

Table 7.14 Access Route - Willington Street

Access Route	Weekday %	Weekend %
A20 FROM THE EAST	49	47
A20 FROM THE WEST	8	7
A274 FROM THE EAST	12	10
A274 FROM THE WEST	5	4
WILLINGTON STREET	25	31
OTHER	1	1

7.41 The figures below provide a breakdown of access journey time

Figure 7.39 Access Journey Time – Willington Street (Weekday)

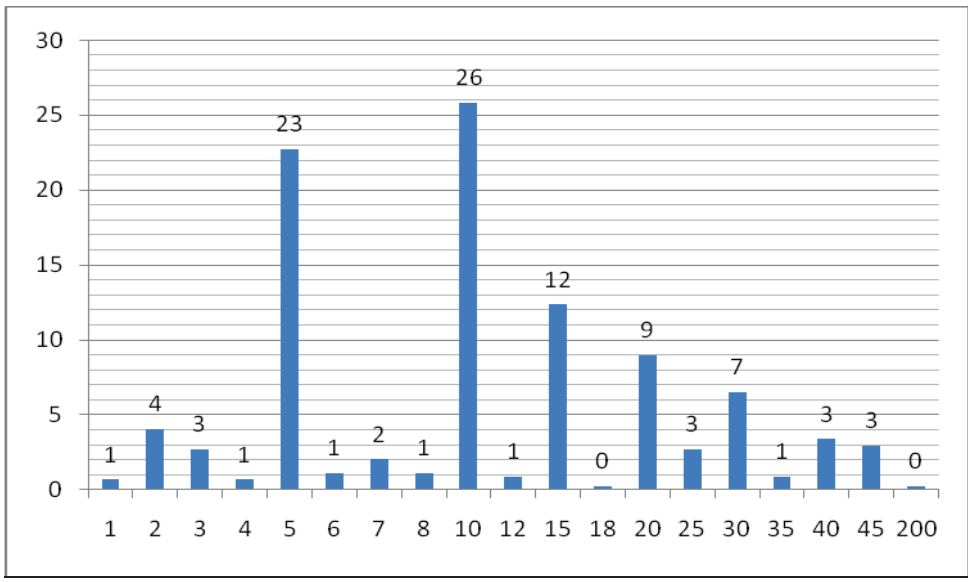
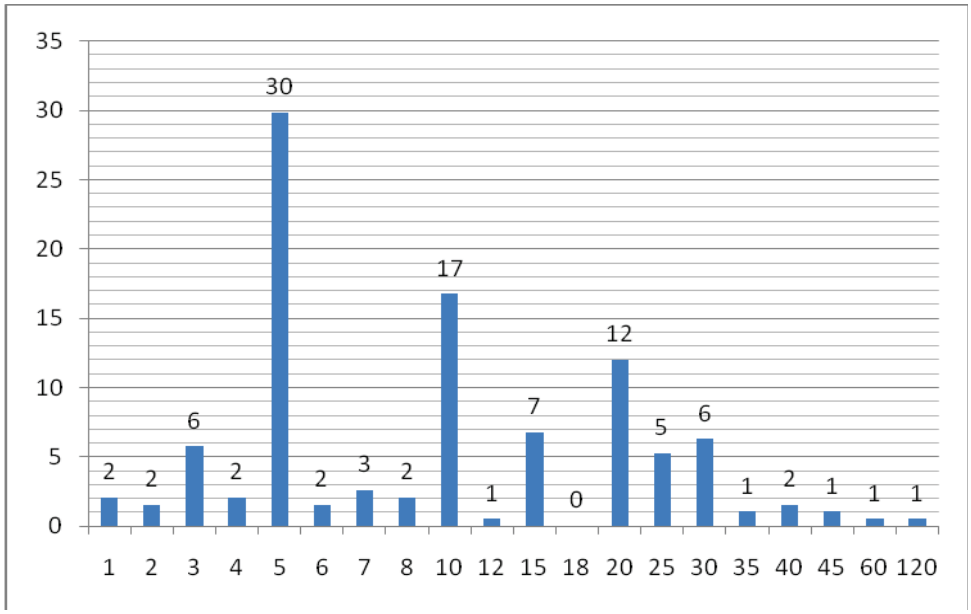


Figure 7.40 Access Journey Time – Willington Street (Saturday)



7.42 The figures below provide a breakdown of trip origin

Figure 7.41 Trip Origin – Willington Street (Weekday)

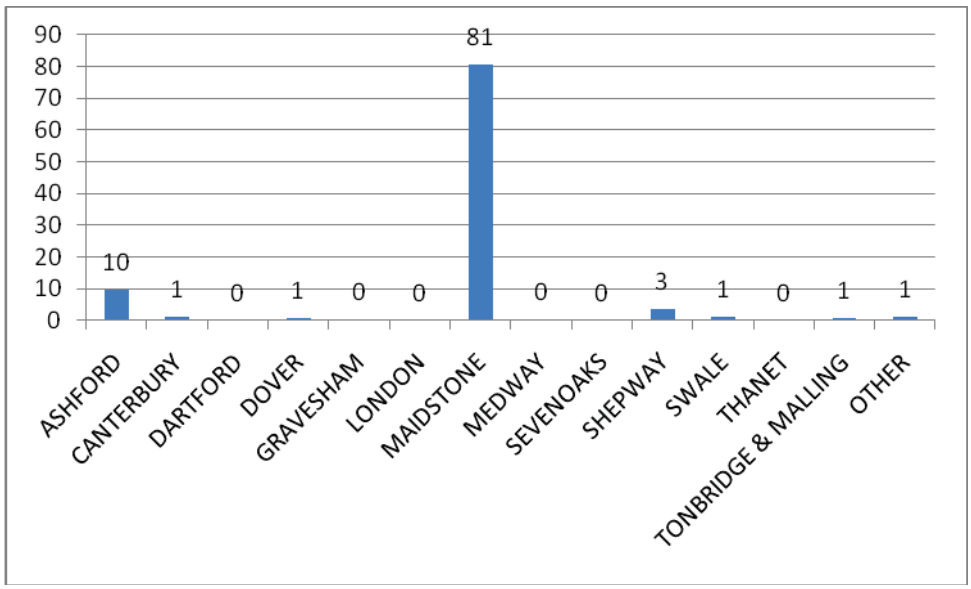
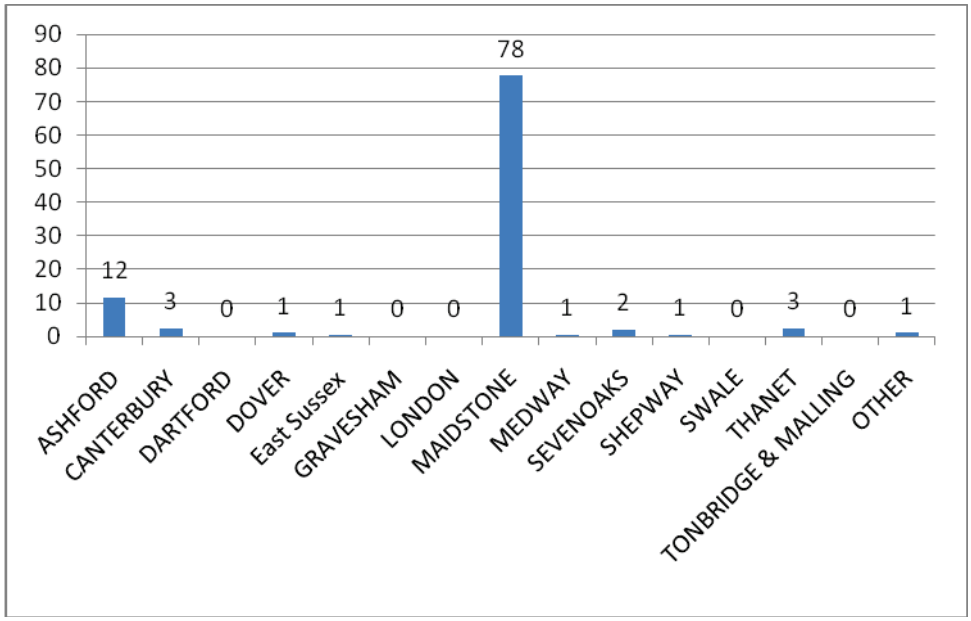


Figure 7.42 Trip Origin – Willington Street (Saturday)



Choice of Park & Ride

7.43 The figures below provide a breakdown of initial awareness of park & ride service

Figure 7.43 Initial awareness of park & ride – Willington Street (Weekday)

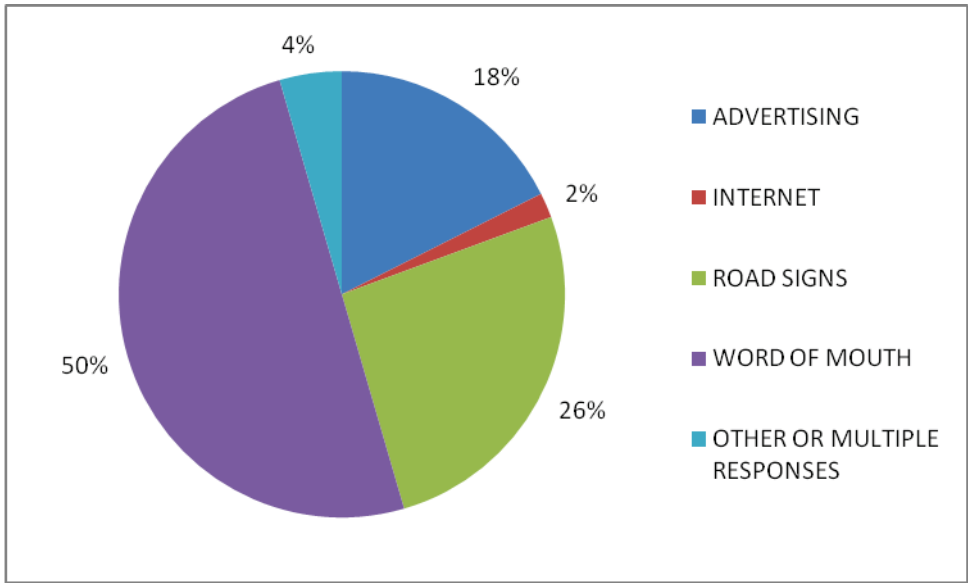
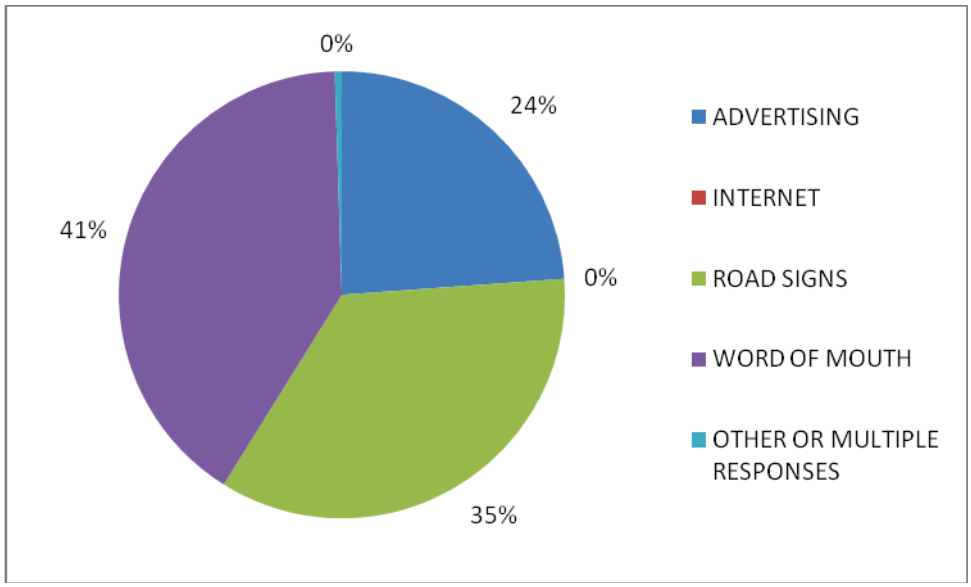


Figure 7.44 Initial awareness of park & ride – Willington Street (Saturday)



7.44 The figures below provide a breakdown of individuals' reasons for using park & ride.

Figure 7.45 Reasons for use of park & ride – Willington Street (Weekday)

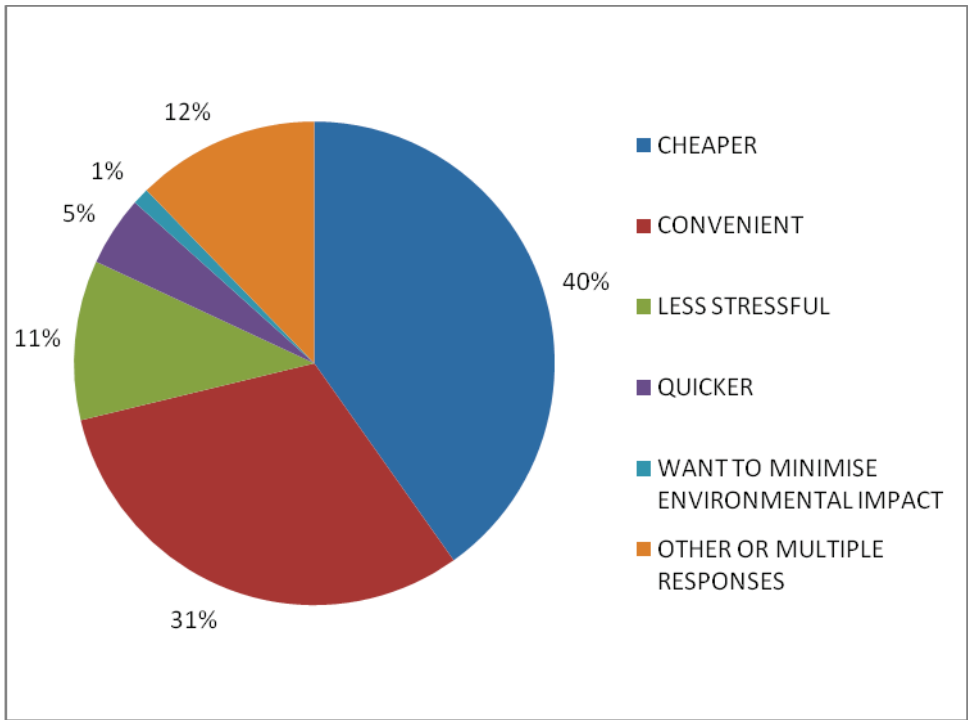
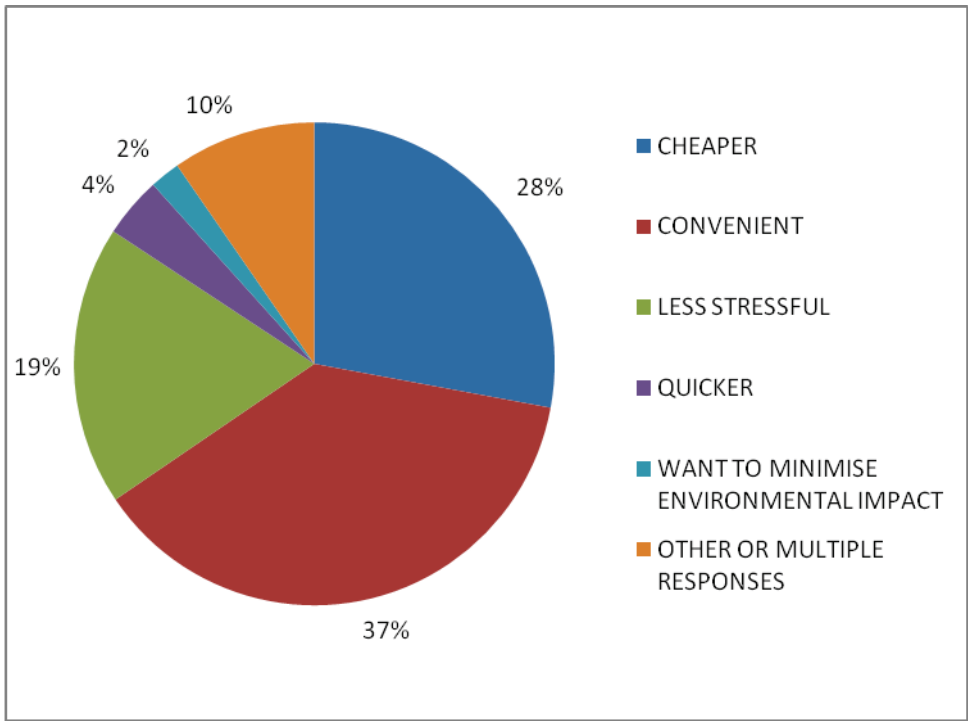


Figure 7.46 Reasons for use of park & ride – Willington Street (Saturday)



Alternative to Park & Ride

7.45 The figures below provide a breakdown of individuals' alternative options to park & ride, should it not be operating.

Figure 7.47 Alternative to park & ride – Willington Street (Weekday)

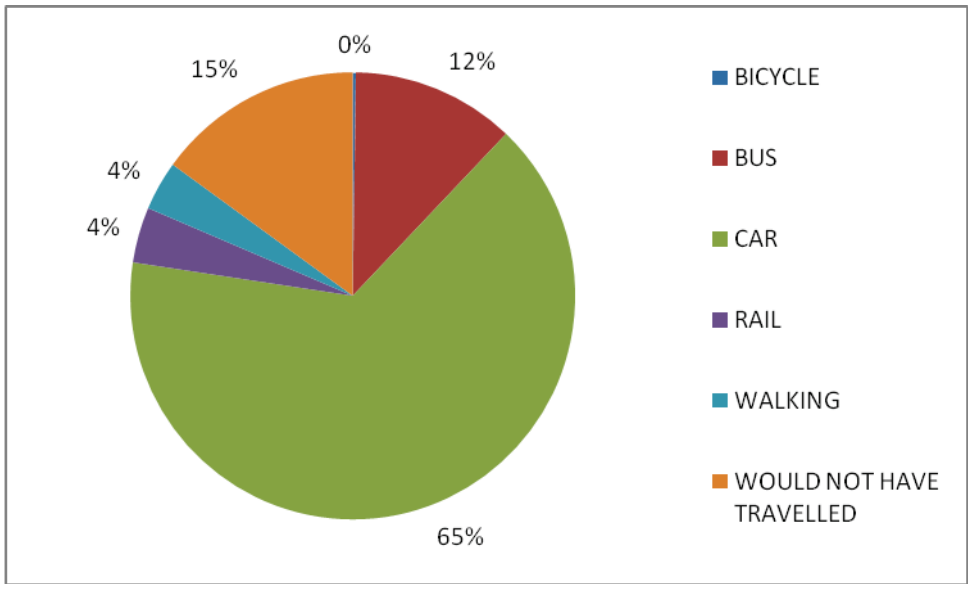
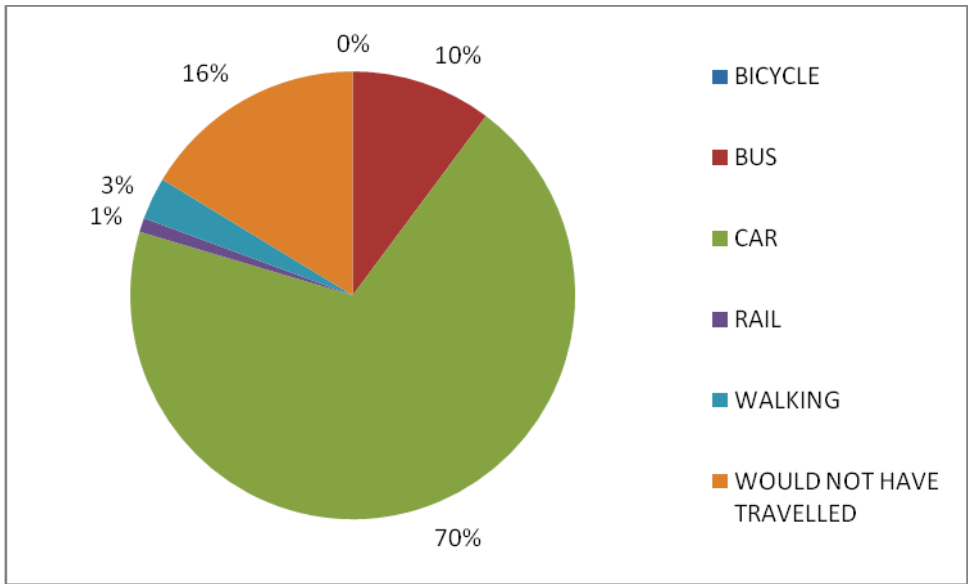


Figure 7.48 Alternative to park & ride – Willington Street (Saturday)



7.46 The table below provide a breakdown of individuals' choice of car route into town, should the park & ride service not be available.

Table 7.15 Car Route - Willington Street

	Weekday %	Weekend %
A229 NORTH	1	11
A229 SOUTH	6	0
A249	5	5
A20	73	74
A274	13	9
OTHER	2	1

Safety

7.47 The figures below provide a breakdown of perception of safety at the Willington Street park & ride site

Table 7.16 Perceptions of Safety - Willington Street

	Weekday %	Weekend %
VERY GOOD	54	45
GOOD	31	34
AVERAGE	8	9
POOR	1	3
VERY POOR	0	0
NO OPINION	4	8

7.48 The table below provide a breakdown individuals' willingness to pay extra to have a parking attendant at Willington Street Park & Ride site.

Table 7.17 Willingness to pay for parking Attendant - Willington Street

	Weekday %	Weekend %
YES	35	33
NO	32	27
NOT SURE	22	28
NO OPINION	11	13

8 Town Centre Car Park Customer Surveys

Introduction

Process

8.1 Customer Surveys were undertaken at twenty of the Town Centre Car Parks on Thursday 22nd, Friday 23rd, Saturday 24th, Tuesday 29th November 2011. The surveyors were unable to interview at the Fremilin Car Park after initial permission was revoked by the independent private car park operator. Surveys were conducted between the hours of 7am and 8pm.

8.2 Car park customers were interviewed as they left their cars and walked to their destinations.

Questionnaire

8.3 A copy of the questionnaire is included within Appendix B. The questionnaires each include a set of generic questions but were tailored to the individual sites in order to aid the ease of completion.

8.4 The areas of questioning included:

- Trip purpose
- Group size
- Trip frequency
- Car park access route
- Car park access journey time
- Trip origin
- Duration of town centre stay and associated car park tariff
- Reason for using car park
- Perception of safety
- Awareness of park & ride service and reason for not using that day
- Use of park & ride previously

8.5 In addition, socio-economic data was also requested and the time of the survey completion was also recorded.

8.6 The data collected is presented for the individual sites on a zone-by-zone basis below.

General Trip Information

Survey returns

8.7 A total of 1,645 surveys were completed across the car park sites, as detailed within Table 8.1.

Table 8.1 Town Centre Car Park Surveys – Responses by Car Park

Car Park	Surveys		
	Weekday	Saturday	Total
Barker Road	68	33	101
Brooks Place	5	3	8
Brunswick Street	19	11	30
College Road	17	19	36
Lucerne Street	34	7	41
Sittingbourne Road	31	11	42
Union Street East	24	11	35
Union Street West	16	5	21
Well Road	31	13	44
Lockmeadow	83	32	115
King Street	73	40	113
Medway Street	57	28	85
Brewer Street East	103	45	148
Wheeler Street	127	32	159
Palace Avenue	21	34	55
Mote Street	63	20	83
Mill Street	59	24	83
Mall Roof Top	92	36	128
Multistorey	41	28	69
Sainsburys	74	40	114
Jeffrey Road	27	15	42
Church Street	53	40	93
TOTAL	**1,118**	**527**	**1,645**

QTS Survey

Socio-economic profile

8.8 The socio-economic profile of respondents is presented in Table 8.2

Table 8.2 Town Centre Car Park Surveys – Gender and Age Profile

Group	Weekday	Saturday	Total	
			Responses	%
Male	495	248	743	45%
Female	620	279	899	55%
Other	1	0	1	0%
SUB-TOTAL	**1,116**	**527**	**1,643**	**100%**
0 to15	0	0	0	0%

16 to 25	158	38	196	12%
26 to 35	293	149	442	27%
36 to 45	280	125	405	25%
46 to 55	158	112	270	16%
56 to 65	148	69	217	13%
66 to 75	55	26	81	5%
75+	20	8	28	2%
SUB-TOTAL	**1,112**	**527**	**1,639**	**100%**

QTS Survey

8.9 There was a slightly higher proportion of females who responded to the survey, whilst nearly 70% were between the age of 26 to 55 years old.

Trip Origins

8.10 Table 8.3 presents the trip origins for individuals using the town centre car parks.

Table 8.3 Town Centre Car Park Surveys – Trip Origin

Origin	Weekday	Saturday	Total	
			Response	%
Maidstone	657	333	990	61%
Tonbridge & Malling	57	25	82	5%
Medway	76	43	119	7%
Swale	25	24	49	3%
Ashford	70	26	96	6%
Canterbury	20	7	27	2%
Thanet	4	2	6	0%
Dover	7	3	10	1%
Shepway	11	2	13	1%
Sevenoaks	16	7	23	1%
Dartford	1	2	3	0%
Gravesham	8	2	10	1%
London	12	8	20	1%
Essex	7	2	9	1%
East Sussex	6	3	9	1%
Other	133	31	164	10%
TOTAL	**1,110**	**520**	**1,630**	**100%**

QTS Survey

8.11 Around 60% of respondents had travelled from within the borough of Maidstone, with Medway, Ashford and Tonbridge and Malling being the next highest.

Journey Times

8.12 Table 8.4 presents a breakdown of the average journey times to access a town centre car park by car.

Table 8.4 Town Centre Car Park Surveys – Journey Time

Journey Time	Weekday	Saturday	Total	
			Response	%
5 MIN OR LESS	118	59	177	11%
6 - 10 MINS	253	124	377	23%
11 - 15 MINS	205	106	311	19%
16 - 20 MINS	214	110	324	20%
21 - 30 MINS	201	92	293	18%
31 - 45 MINS	63	14	77	5%
46 - 60 MINS	34	14	48	3%
1 HOUR OR MORE	14	2	16	1%
TOTAL	**1,102**	**521**	**1,623**	**100%**

QTS Survey

8.13 The results demonstrate that over 90% of trips were under 30 minutes, with a relatively even distribution between 5 and 30 minutes.

Group Size

8.14 Table 8.5 presents information about group sizes.

Table 8.5 Town Centre Car Park Surveys – Group Size

Journey Time	Weekday	Saturday	Total	
			Response	%
Travelling alone	625	266	891	54%
Group of two	355	185	540	33%
Group of three or more	136	76	212	13%
TOTAL	**1,116**	**527**	**1,643**	**100%**

QTS Survey

8.15 This demonstrates that around half of individual travel alone, whilst the other travel in pairs or in groups of three or more.

Car Park specific Analysis

Trip type

8.16 Figure 8.1 and 8.2 present a breakdown of trip purpose by individual car park.

Figure 8.1 Town Centre Car Parks - Trip Purpose (Weekday)

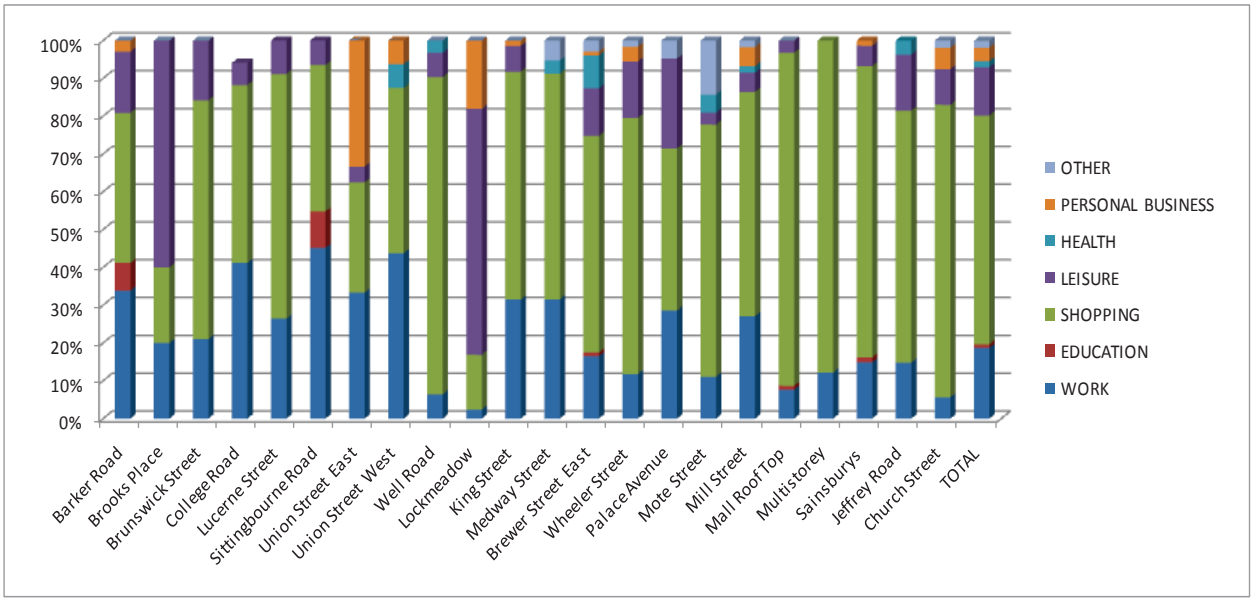
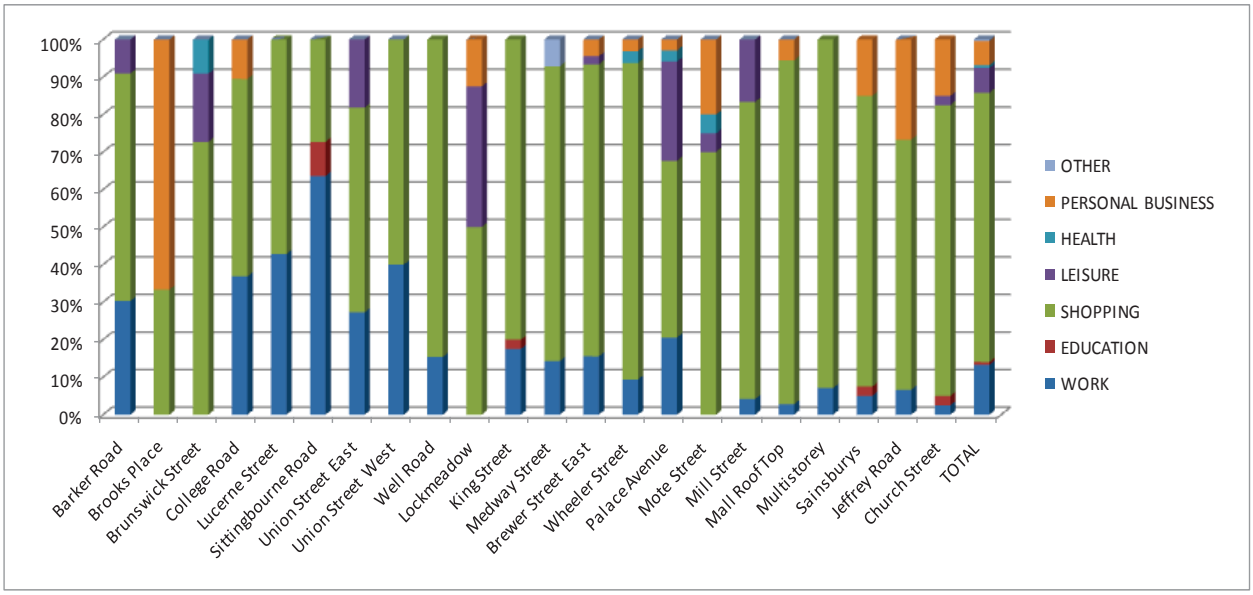


Figure 8.2 Town Centre Car Parks - Trip Purpose (Saturday)



8.17 Most of the car parks were used to park for shopping during the weekday and weekend. A few car parks; Brooks Place, Union Street East and Lockmeadow served other purposes to the users. Both Brooks Place and Lockmeadow had a higher leisure usage compared to other car parks. Union Street East was mainly used for carrying out personal business and shopping. A number of users interviewed expressed they were simply using the bank or making a court visit. A number of the car parks were also used for work.

8.18 Union Street East was split in half and one half was for private use with a barrier entrance. This meant that part of the car park could not be surveyed as we had no access to it. Further this car park was used predominantly for visits to the DVLA.

8.19 Union Street West was noted to be used for a number of doctor visits and DVLA visits, however, not many people were willing to speak to the surveyors and so this was not reflected in the results.

Individuals who did answer the questions, were usually not using the car park for the reasons listed above.

8.20 Sittingbourne Road was predominantly used for work as well as education. During the AM, noon and PM peak, this car park was used by parents to pick up/drop off their children who attended a school and/or nursery located next door. As a result, many parents did not pay for their short stay.

8.21 Further, it was observed that a number of low loading builders lorry's also used the car park as what could be described as a 'temporary yard' switching loads of rubble or ballast between different vehicles and also using the car parks trees/bushes as toilets.

8.22 The graph shows that College Road car park was used primarily for shopping trips and work related trips. During the surveys, it was noted that the car park was heavily used for funerals and christenings and due to the nature of the uses it was difficult to survey anyone at the time as most people declined to be surveyed.

8.23 Palace Avenue on weekdays was full of people involved in court or police business. The lawyers and those visiting/seeing persons at the police station or court where not willing to participate in any surveys. Most of the interviews were gained at the weekend when the car park was used more for the museum it is next to or shopping.

8.24 Mote Road car park had 10 residents bays and we believe we interviewed all residents over the 4 day period. However a number of people parked in resident bays and as a result, residents parked in bays next to or near them. It was noted on a few occasions of people moving their car from a resident’s bay and parking in a normal bay and someone else they had come to meet using their resident bay.

8.25 On a weekend, all the car parks were used for shopping, in some cases more so than during the week. For example, Lockmeadow can be seen to have a higher leisure usage in the weekdays but is used mostly for shopping on the weekend. In addition, Brooks Place although still used for shopping, it is mostly used for carrying out personal business compared to the weekdays when it was mostly used for leisure.

8.26 Sittingbourne road can also be seen to be used mostly for work related trips compared to the weekdays. Only Lockmeadow is not used for any work trips during the weekend.

8.27 It is also apparent that on weekends, there are more trips being carried out to carry out personal business. For instance, Jeffrey Road was used in the weekdays for leisure and health whereas on the weekend these trips are predominantly personal business.

8.28 Figure 8.3 and 8.4 present a breakdown of trip frequency by individual car park.

Figure 8.3 Town Centre Car Parks - Trip Frequency (Weekday)

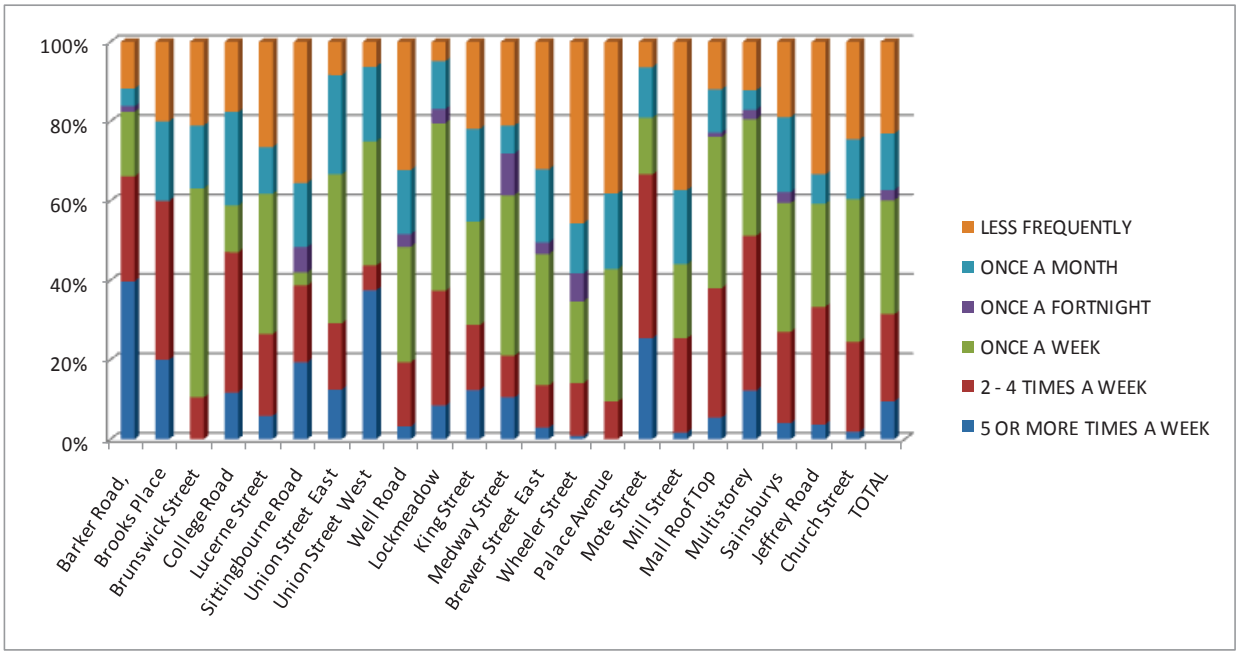
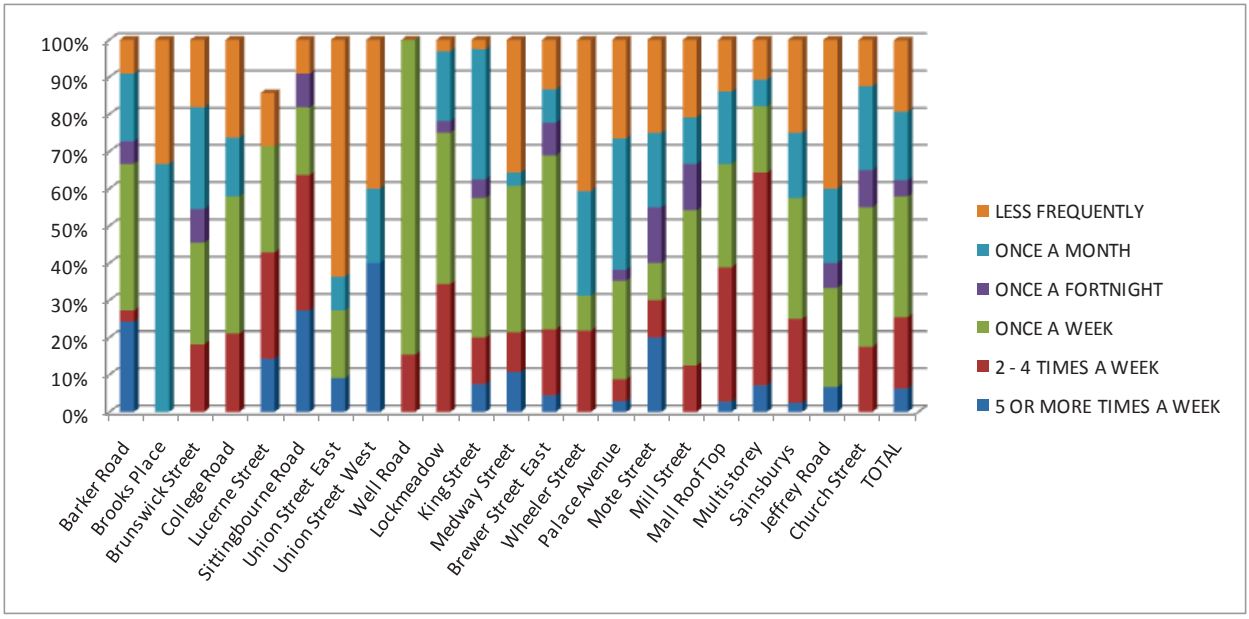


Figure 8.4 Town Centre Car Parks - Trip Frequency (Saturday)



8.29 It is apparent from the weekday results that a number of the trips are either made 'less frequently', 'once a week' or '2-4 times a week'. Barker Road car park is used mostly for more than 5 times a week whilst Wheeler Street, Palace Avenue and Sittingbourne Road can be seen to be used mainly for infrequent trips

8.30 Car parks that are used regularly by interviewees during the week are; Barker Road, Brooks Place, Lockmeadow, Mote Street and the Multi Storey Car parks.

8.31 On the weekends, the use varies considerably amongst some car parks. Brooks Place on a weekend is used mainly by people who rarely visit the town centre with the majority saying they use the car park once a month or less frequently. In addition, Union Street East is also predominantly used by infrequent users. At Well Road, the majority interviewed stated they use

the car park once a week, compared with during the week when it used mostly by infrequent users. The Multi Storey car park and Mall Roof Top have similar frequencies of visits during the weekday and weekend.

8.32 Figure 8.5 and 8.6 present a breakdown of duration of town centre stay by individual car park.

Figure 8.5 Town Centre Car Parks – Duration of stay (Weekday)

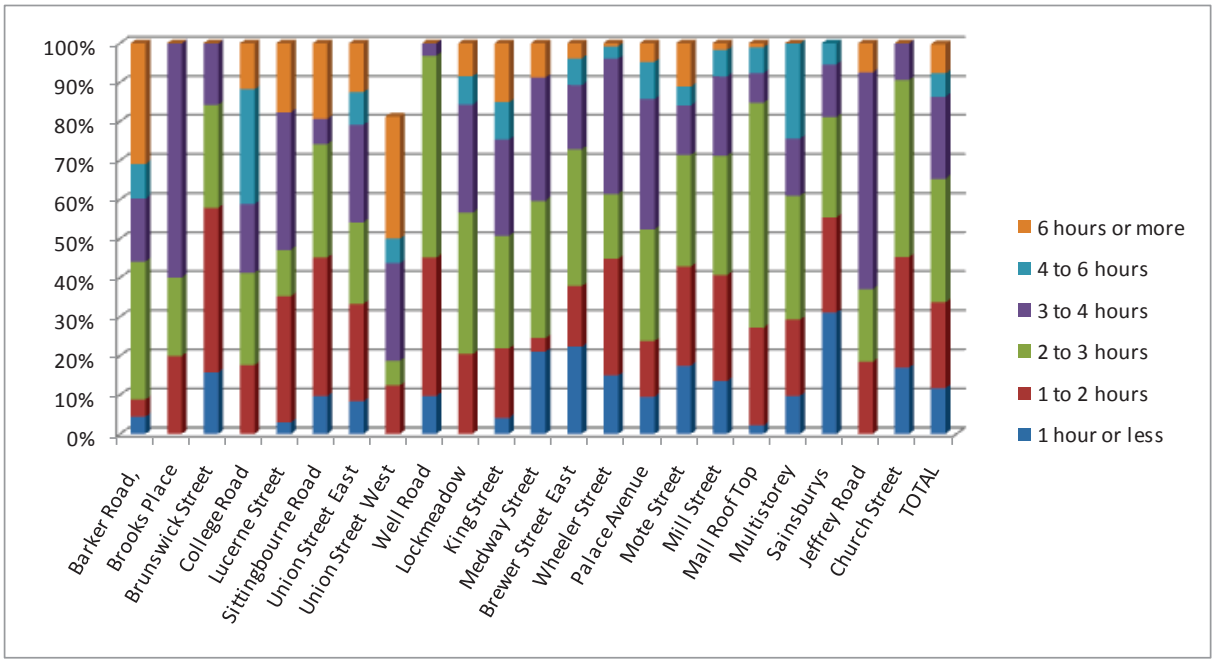
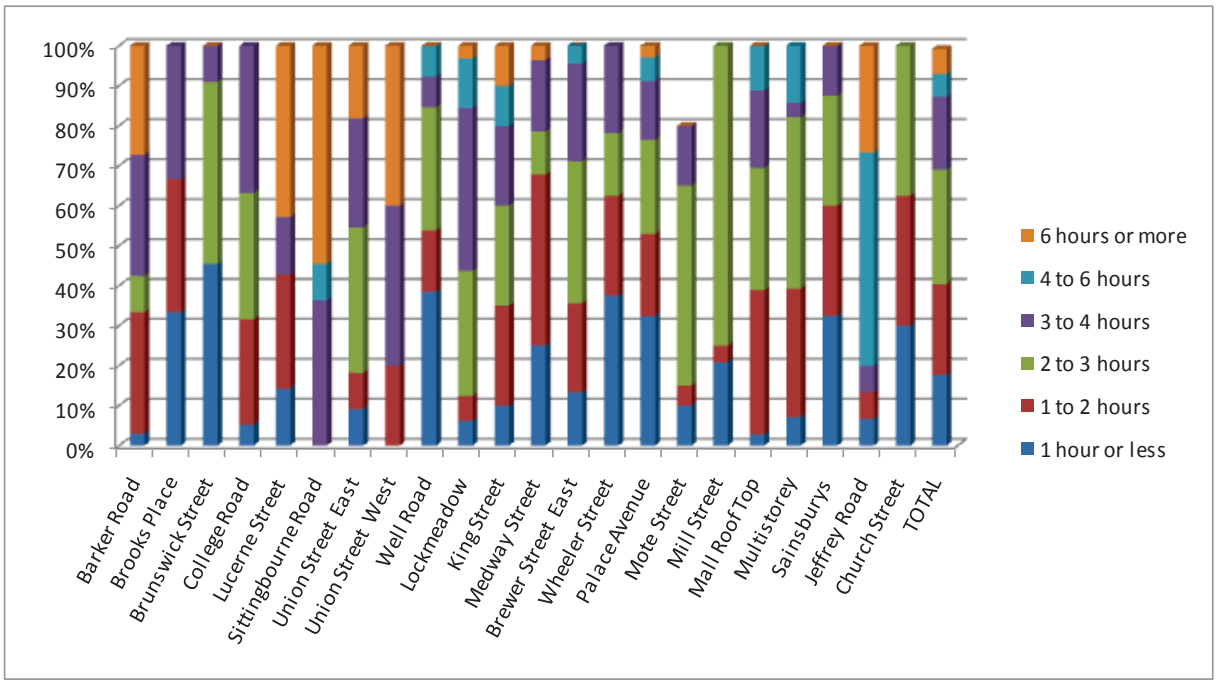


Figure 8.6 Town Centre Car Parks – Duration of stay (Saturday)



8.33 During the week, Barker Road and Union Street West car parks show that a number of interviewees have stated they stay for a minimum of two hours with a high number staying over 6 hours. Jeffrey Road is also heavily used by people staying at least 3-4 hours. Brunswick Street

car park is used mostly for shorter trips with the majority saying they only stay for an hour or two. Well Road is also used for shorter duration trips with many being less than two hours.

8.34 On the weekend, a number of car parks are used for more than 6 hours; Lucerne Street, Sittingbourne Road, Union Street West and Jeffrey Road. Sittingbourne Road in particular, is not used for short trips. Church Street car park is used mostly for short trips lasting no more than 2 hours compared to during the week when it is used more for trips of 2-3 hours.

8.35 Brooks Place car park during the week is used mainly for long stay but on the weekends it is also used for shorter trips of less than two hours. More generally, during the week the car parks can be seen to contain a higher frequency of short trips or trips under 3 hours, whereas on the weekend, a number of trips are long stay trips.

Car Park Access

8.36 Figure 8.7 and 8.8 present a breakdown of access route by individual car park.

Figure 8.7 Town Centre Car Parks – Access Route (Weekday)

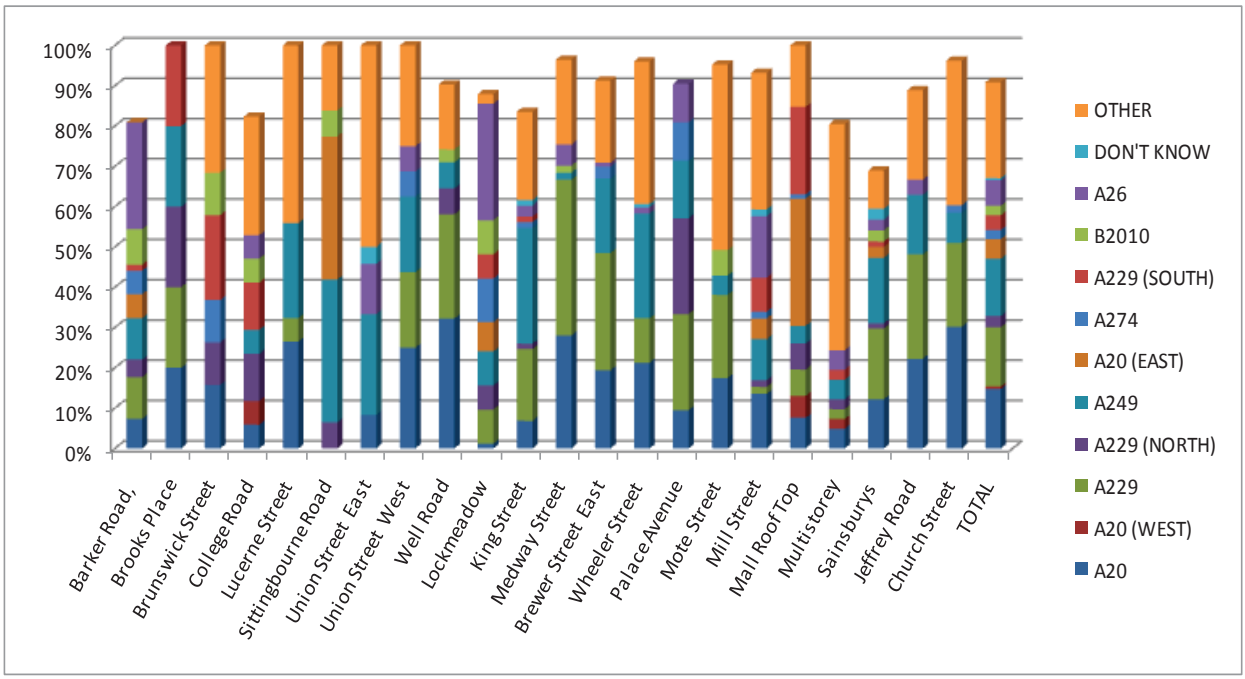
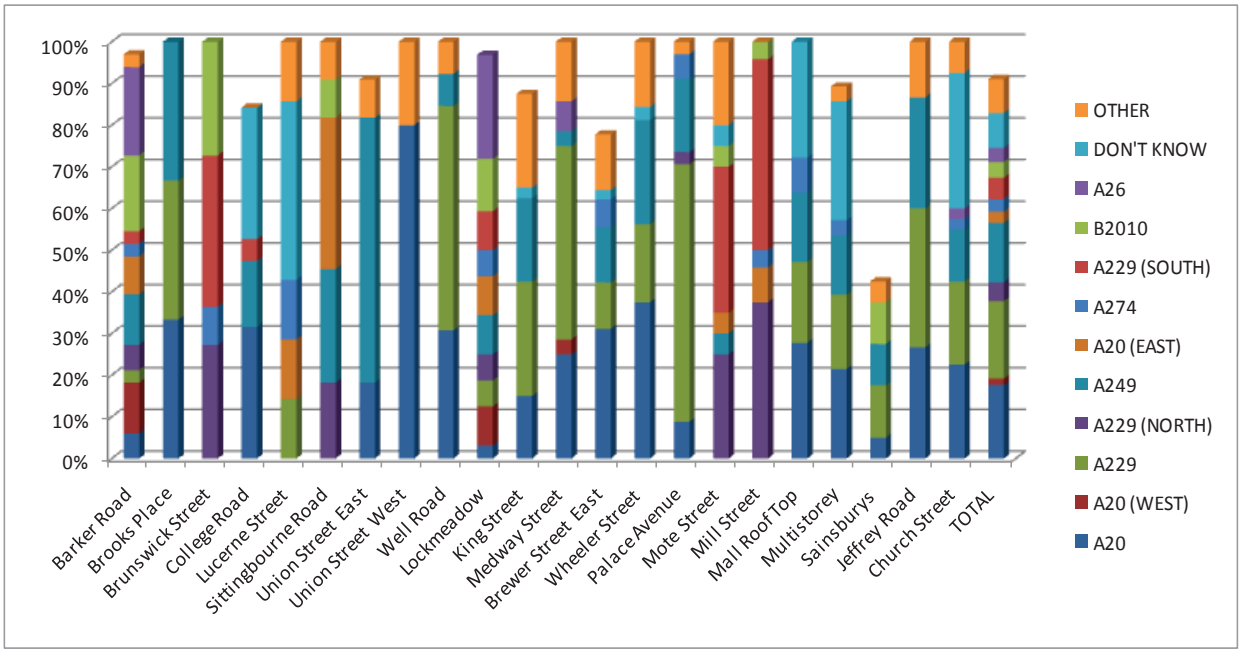


Figure 8.8 Town Centre Car Parks – Access Route (Saturday)



8.37 It is apparent when comparing the weekday and weekend charts that a number of trips are used on a weekday by individuals who stated 'Other'. A number of individuals had stated that they live locally and therefore did not need to access the town centre by any of the routes listed. A handful of journeys had also been made from the M25 or M20.

8.38 Interviews taken during the week also show in the graph that people travelling to the car parks in the town centre use all of the routes listed for access. However, during the weekend, individual car parks show a trend of users. Both Union Street East and Union Street West are accessed via the A20 and other. Union Street East is also accessed via the A249. Well Road shows that it is accessed via the A229 mostly on weekends compared to during the week.

8.39 Overall, both on weekends and weekdays, there is not much difference in how car parks are accessed unless referring to specific car parks.

Choice of Car Park

8.40 Figure 8.9 and 8.10 present a breakdown of the reason for using a specific car park.

Figure 8.9 Town Centre Car Parks – Choice of Car Park (Weekday)

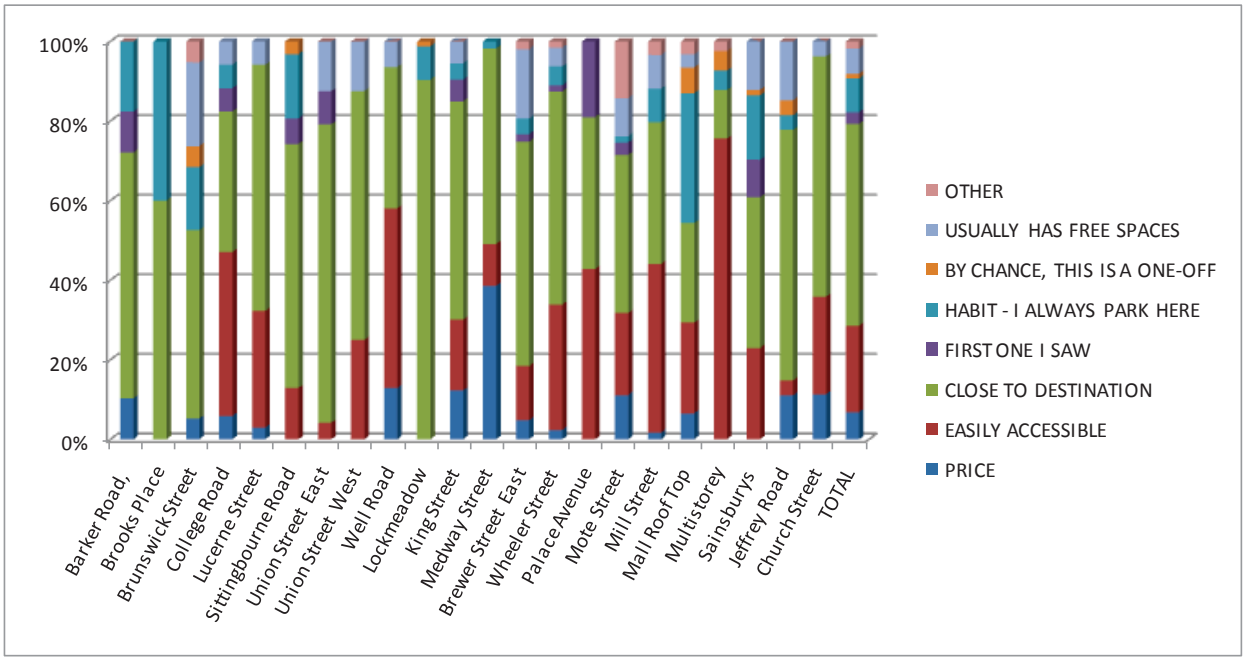
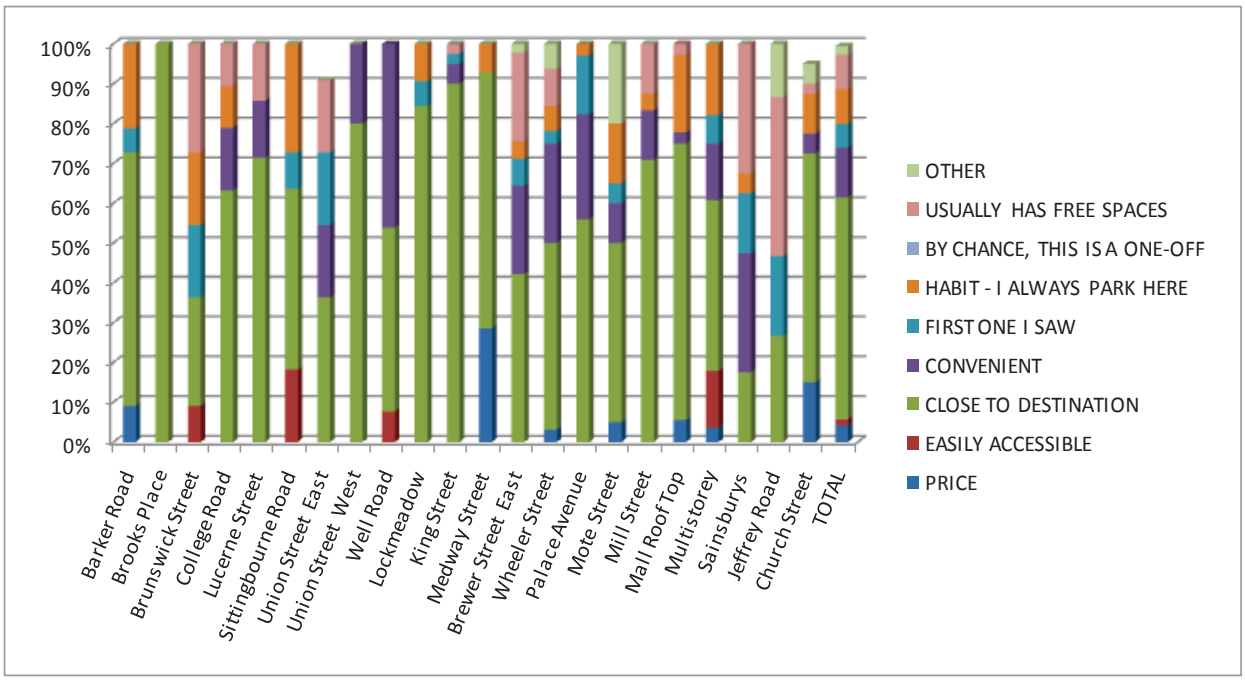


Figure 8.10 Town Centre Car Parks – Choice of Car Park (Saturday)



8.41 Looking at the graphs for both weekend and weekday, most interviewees had responded by saying that their choice of car park is determined by proximity to destination. During the week, a high portion of individuals stated car parks were easily accessible. During the week also saw a higher portion of respondents stating it is habit to park in their chosen car park.

Safety

8.42 Figure 8.11 and 8.12 present a breakdown of perception of safety by individual car park.

Figure 8.11 Town Centre Car Parks – Perception of Safety (Weekday)

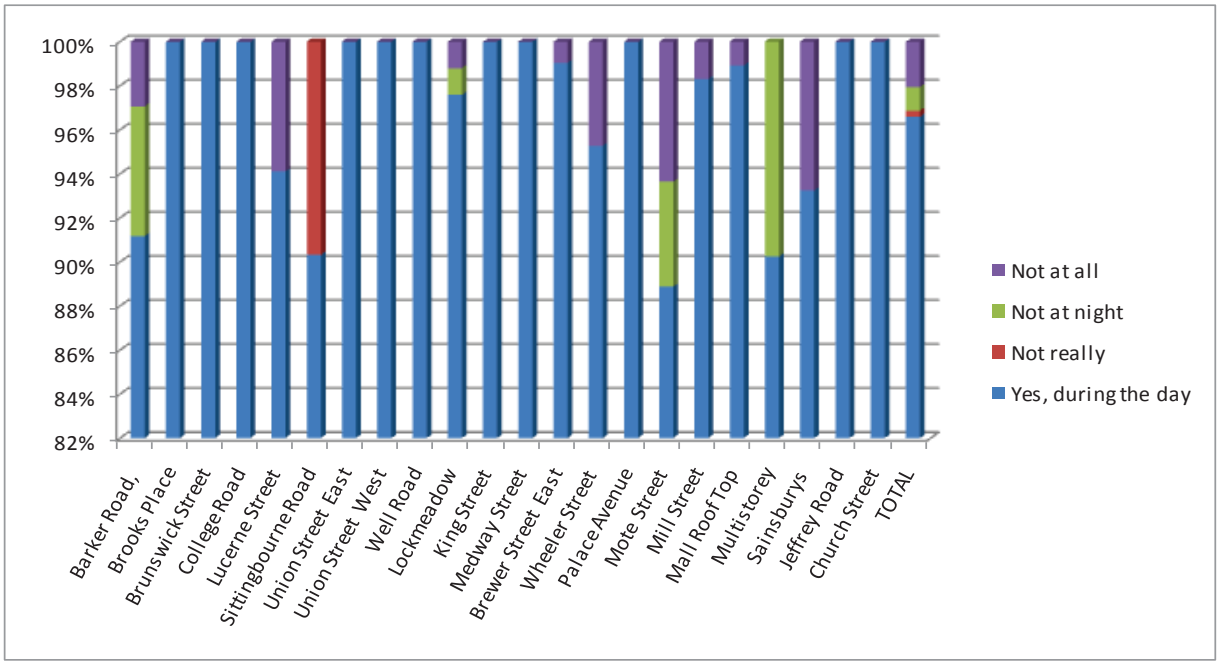
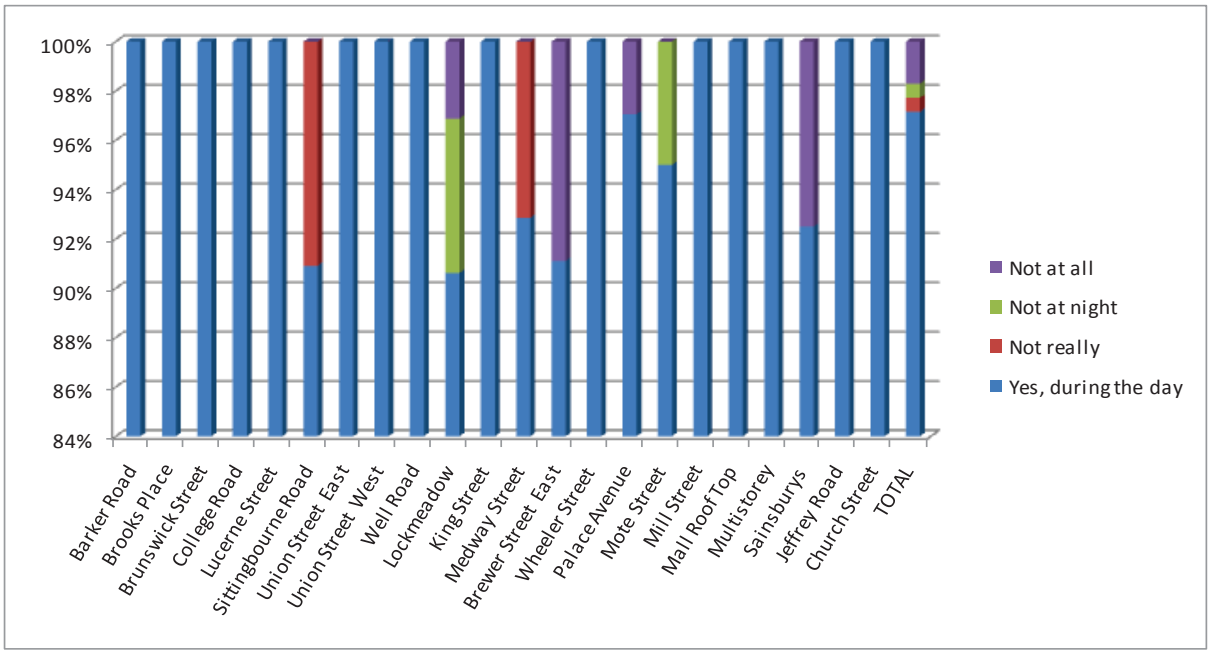


Figure 8.12 Town Centre Car Parks – Perception of Safety (Saturday)



8.43 Looking at the graphs for both weekend and weekday, a number of car parks are considered safe during the day. Barker Road, during the week is considered not safe compared to during the weekend when it is deemed safe. Sittingbourne Road car park is consistently considered not very safe.

8.44 The Lockmeadow car park is not considered safe at night along with the multi storey. Sainsbury's during the week is also not considered safe compared to the weekdays.

8.45 Overall, majority of the car parks are considered safe.

Alternative to Town Centre Parking

Awareness of park & ride

8.46 Table 8.6 indicates individuals' awareness of park & ride around Maidstone.

Table 8.6 Town Centre Car Park Surveys – Awareness of Park & Ride

Journey Time	Weekday	Saturday	Total	
			Response	%
Yes	891	435	1326	81%
No	196	78	274	17%
Vaguely	28	11	39	2%
Not sure	1	0	1	0%
TOTAL	**1,116**	**524**	**1,640**	**100%**

QTS Survey

8.47 This demonstrates that most individuals were aware of the existing park & ride facilities, which would be expected given the longevity that the schemes have been operated. Even so, around a sixth of individual were not aware of the service.

Reason for not using

8.48 Table 8.7 indicates individuals' reasons for not using park & ride on their current trip.

Table 8.7 Town Centre Car Park Surveys – Reasons for not using Park & Ride

Origin	Weekday	Saturday	Total	
			Response	%
Too Expensive	41	41	82	5%
Inconvenient	647	206	853	55%
Don't drive past a site	0	17	17	1%
Takes too long	112	129	241	16%
Buses too infrequent	18	4	22	1%
Need to carry luggage	0	11	11	1%
Don't know where they are	72	13	85	5%
Other	159	81	240	15%
TOTAL	**1,049**	**502**	**1,551**	**100%**

QTS Survey

8.49 The majority of individuals stated that park & ride was too inconvenient for them to use, with a further 16% believing that it is too slow.

Previous use of park & ride

8.50 Table 8.8 indicates the level of use of park & ride site previously, and which sites individuals used.

Table 8.8 Town Centre Car Park Surveys – Previous use of Park & Ride

Journey Time	Weekday	Saturday	Total	
			Response	%
Yes	435	193	628	39%

London Road	57	20	77	5%
Sittingbourne Road	53	18	71	4%
Willington Street	69	23	92	6%
No	634	329	963	61%
TOTAL	**1,069**	**522**	**1,591**	**100%**

QTS Survey

8.51 Around 40% of individuals stated that they had previously used the park & ride service around Maidstone, with a proportional split between the sites, although it would appear that many individuals did not choose, or were unable to remember which park & ride service that had used, suggesting that it may have been some time ago.

Appendix A

Park & Ride Customer Surveys

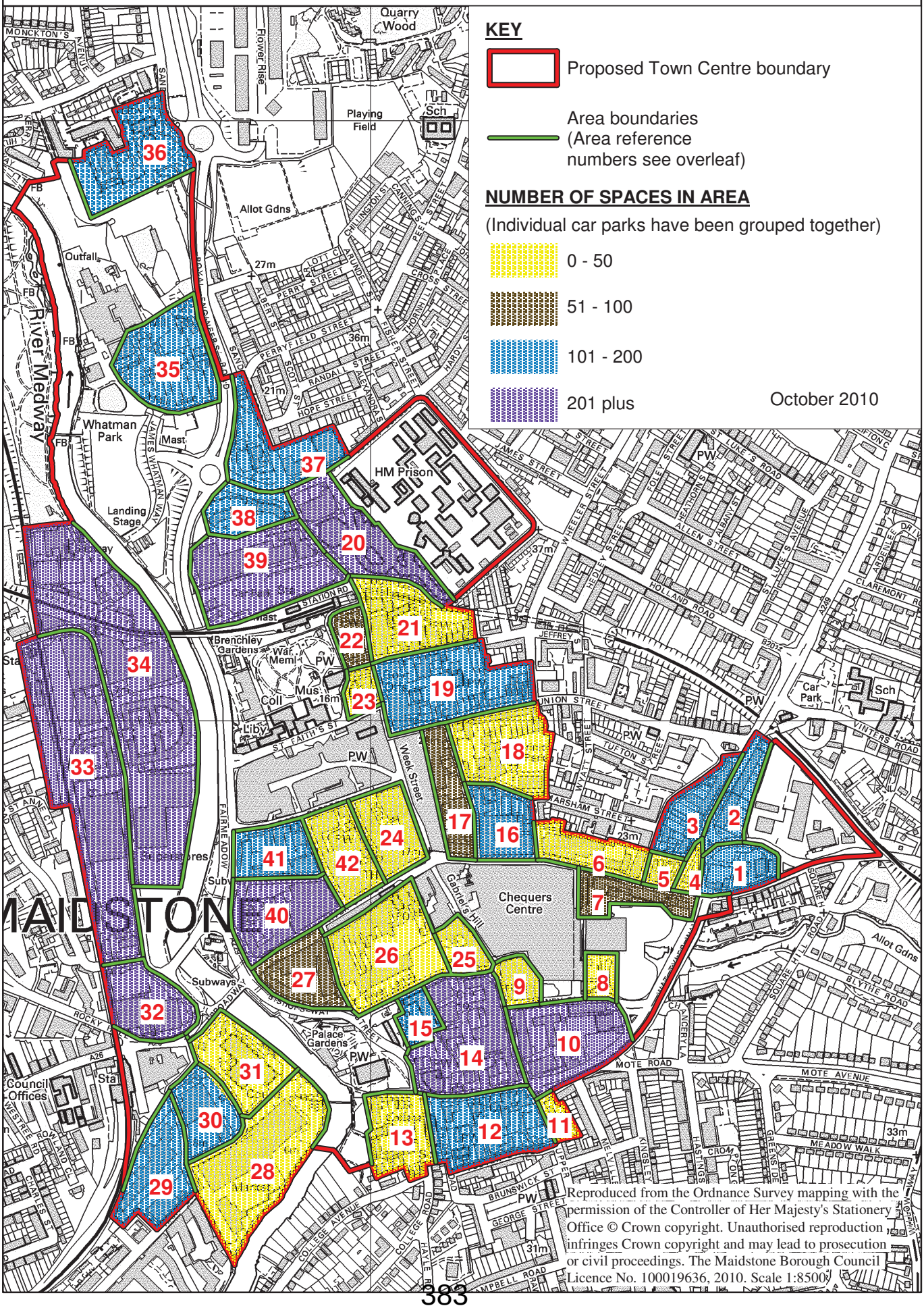
Appendix B

Town Centre Car Park Surveys

Appendix Heading 2

Appendix Heading 3

Fig. 4.6 : Private Spaces Attached To Commercial Premises Oct 2010


KEY
Proposed Town Centre boundary
Area boundaries (Area reference numbers see overleaf)
NUMBER OF SPACES IN AREA
(Individual car parks have been grouped together)
0 - 50
51 - 100
101 - 200
201 plus
October 2010
MAIDSTONE
River Medway
Whatman Park
Landing Stage
HM Prison
Brenchley Gardens
Chequers Centre
Allot Gdns
Playing Field
Quarry Wood
Palace Gardens
Subways
Council Offices
Car Park
Sch
Mast
Outfall
Liby
Coll
Mus
War Mem
Gabriel's Hill
Week Street
Fairmeadow
Broadway
Station Rd
Union Street
Mote Road
Mote Avenue
Meadow Walk
Brunswick St
George Street
College Avenue
Holland Road
Perrywood Street
Randall Street
Hope Street
Perry Street
Albert St
Allen Street
Tufton Street
Marsham Street
Jeffrey St
Faith's St
Square Hill Road
Blythe Road
Vinters Road
Claremont Rd
Hedley Street
Foley Street
Hathorn's
Albany St
St Luke's Avenue
St Luke's Road
James Street
Weeler Street
Fisher Street
Hardy St
Cross Place
Cunningham St
Chillington St
Flower Rise
Monckton's Avenue
Rocky Hill
Westree Road
Rowland Cl
Charles St
Hayle Road
Campbell Road
Kingsley
Hastings
Cromwell
Greenside
Clipper
Sandling Rd
Royal Engineers Rd
Albert St
Scott St
Lott Cl
Pudding Lane
Cannon St
Peel Street
Cross Place
Thornhill St
Fisher Street
Hardy St
James Street
Weeler Street
Foley Street
Hathorn's
Albany St
St Luke's Avenue
St Luke's Road
Allen Street
Holland Road
Claremont Rd
Ardenlee
Jeffrey St
Union Street
Tufton Street
Marsham Street
Faith's St
Square Hill Road
Blythe Road
Vinters Road
Week Street
Fairmeadow
Broadway
Station Rd

MBC Town Centre Parking Tariffs 2011

Car Park Name	Size (Spaces)	Approx Price (Short Stay) (<4hrs)	Approx Price (Long Stay) (<4 hrs)
Barker Road	76	60p/hr	£4.50 all day
Brewer St	71	60p/hr	Short Stay only
Brunswick St	66	60p/hr	£4.50 all day
College Rd	72	60p/hr	£4.50 all day
King St	219	50p/hr	£5.50 all day
Lucerne St	18	60p/hr	£4.50 all day
Sittingbourne Rd	99	60p/hr	£4.50 all day
Medway St	59	50p/hr	Short Stay only
Mill Street	132	60p/hr	Short Stay only
Mote Rd	105	60p/hr	Short Stay only
Palace Ave	41	60p/hr	Short Stay only
Union St West	35	60p/hr	£4.50 all day
Union St East	55	60p/hr	£4.50 all day
Well Rd	29	60p/hr	£4.50 all day
Wheeler St	67	50p/hr	Short Stay only
Brooks Place	7	60p/hr	£4.50 all day
Lockmeadow	598	40p/hr	£4.50 all day
PRIVATE CAR PARKS			
The Mall	1000	70p/hr	£8.00 all day
Fremlins Walk	Unknown	70p/hr	£9.00 all day
Sainsburys	426	70p/hr	£30.00 all day

DRAFT CYCLE STRATEGY

June 2012

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1.0 Introduction

1.1 A new Sustainable Community Strategy (SCS) for Maidstone *'Maidstone 2020'* was adopted in April 2009 and sets out the overall strategic direction and long-term vision for the borough. One of the key objectives of the SCS is to develop an efficient, sustainable and integrated transport system, aligned with objectives set out in the Council's Air Quality Action Plan (2010) and Climate Change Framework (2011-2016).

1.2 The Council's draft Core Strategy helps to deliver the spatial element of objectives outlined in the SCS. Policy CS7 sets a target to increase the proportion of trips made by walking or cycling from 12% to 20% of all trips made in the borough by 2026. To increase the proportion of cycling trips made in the borough the Council will focus on the 4 main objectives outlined below:

1. *Creating new links* – seeking new opportunities to extend routes to more people;
2. *Maintenance of the cycle route network* – looking after what we already have, and improving it;
3. *Creating a safer cycling environment* – designing safer routes and providing road safety education for cyclists and motorists; and
4. *Spreading the word* – raising awareness of existing and emerging cycle facilities

1.3 An efficient and reliable transport system is vital to ensuring the wellbeing of all those living and working within Maidstone borough. If the transport system as a whole does not operate in an efficient manner, peak time congestion will increase (particularly in the urban area) resulting in an adverse impact on the economy, air quality, people's health and the environment.

1.2 The Council recognises that many of the short trips we make could be made by bicycle. Indeed, it is likely many more people would cycle in Maidstone if there were more, better and safer cycle routes and more secure cycle parking facilities.[1] This in turn should have a positive impact on congestion and general

[1] DfT (2009) Analysis and synthesis of evidence on the effects of investment in six cycling demonstration towns - http://webarchive.nationalarchives.gov.uk/20110407094607/http:/www.dft.gov.uk/cyclingengland/site/wp-content/uploads/2010/03/analysis-and-synthesis-report.pdf

wellbeing in the borough as cycling is a healthy, non-polluting and inexpensive mode of transport.

1.3 A renewed emphasis on cycling in Maidstone is timely, especially considering recent statistics reveal that the borough has experienced increasing levels of ill health and childhood and adult obesity in recent years. As an example, the Association of Public Health's summary for Maidstone 2011 shows that the percentage of physically active children and adults in Maidstone is significantly less than the national average at 46.2% and 10.7% respectively.[2] Air pollution in Maidstone is also on the increase and traffic congestion, although decreasing slightly is still an ongoing issue particularly in the urban area. Further statistics are outlined in Appendix 2.

2.0 Context for Producing a Cycle Strategy

2.1 A cycle strategy is necessary to identify and plan for improvements to cycling infrastructure and facilities in the borough, with the intention of achieving an increase in the proportion of cycle trips made in the borough. Furthermore, a cycling strategy will provide the basis for making bids for improvements to cycling infrastructure in Maidstone through Kent County Council's Local Transport Plan 3 (2011-2016).

2.2 Ideally Maidstone should have a comprehensive cycle network. The current strategy is, however, primarily focussed on the urban area as this is where most short distance car journeys are undertaken and the greatest opportunity for obtaining modal shift therefore occurs.

2.3 In the longer term the ideal network would more comprehensively cover the urban area with appropriate 'spokes' to/from the town centre and radial links between these 'spokes' including an outer radial at or close to the edge of the urban area with the proposed Hermitage Lane (Maidstone Hospital) route/s forming its western part. To the south this might be created with routes to serve Cornwallis Academy.

[2] Maidstone Health Profile 2010 (updated 10 June 2011): http://www.apho.org.uk/resource/item.aspx?RID=105472

3.0 Community Engagement

3.1 With support from Kent County Council's Cycling Officer, a Cycling Forum has been re-established in Maidstone in recent months. The Forum brings together officers from the Council, representatives of organisations with an interest in cycling and interested members of the public, to co-ordinate all activities which help to establish, promote and encourage a coherent and safe cycle network.

3.2 Maidstone Cycle Forum's goal is *"to help create a cycle-friendly culture in Maidstone, where residents and visitors of all ages and abilities choose to cycle regularly for those shorter journeys they do not make on foot."* Since its establishment in March 2010, the Forum has completed a number of cycle related research tasks and has provided advice and guidance to officers. This has included:

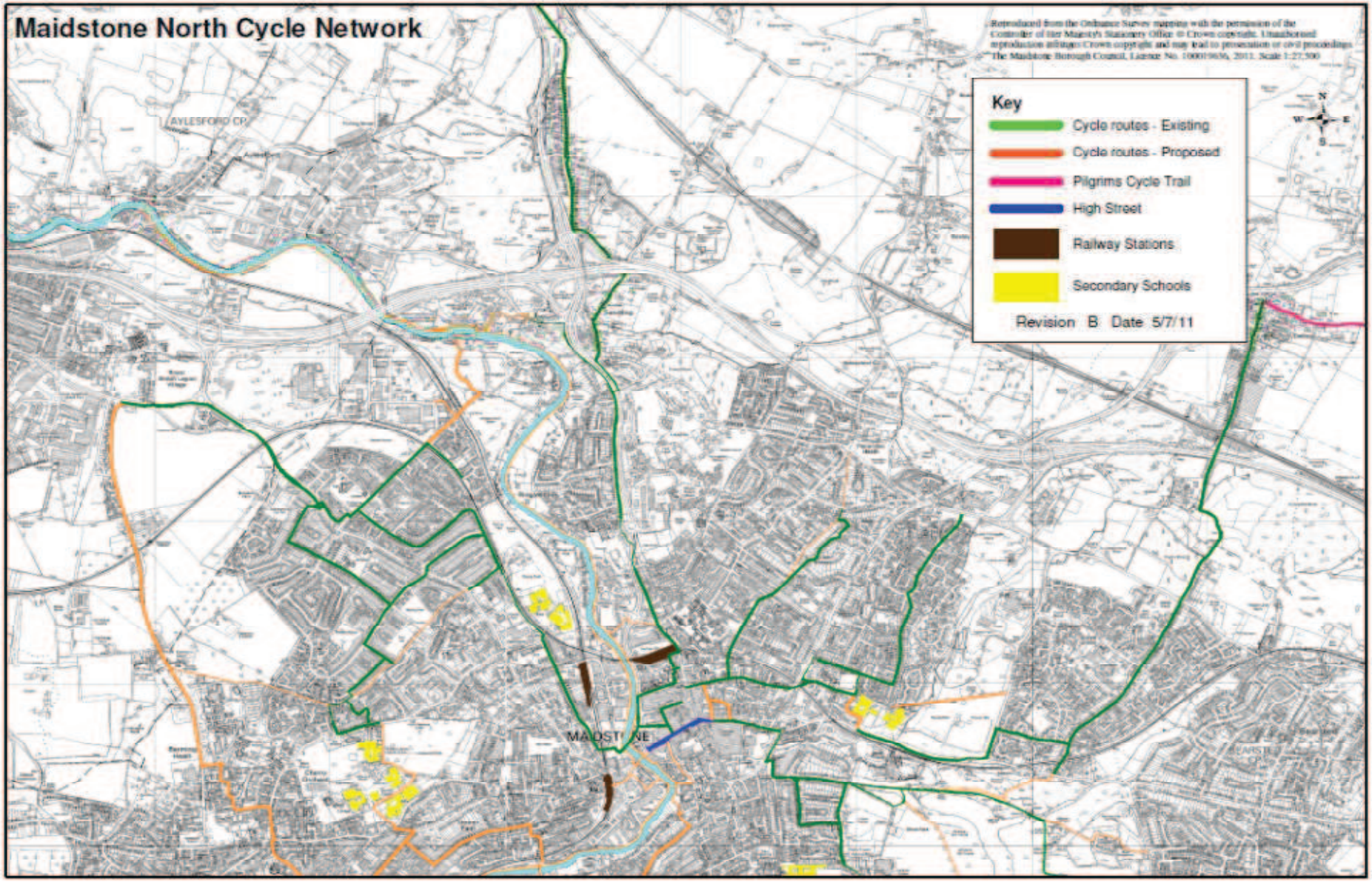
1. Assessment of existing cycling routes in the borough, highlighting issues with surfacing, signage and overgrowth;
2. Assistance with the identification of potential new strategic routes in the borough;
3. Advice and guidance on cycle routes for Mote Park regeneration project
4. Public Rights of Way advice on off-carriageway routes; and
5. Identifying preferred locations for cycle counters and cycle parking in the borough.

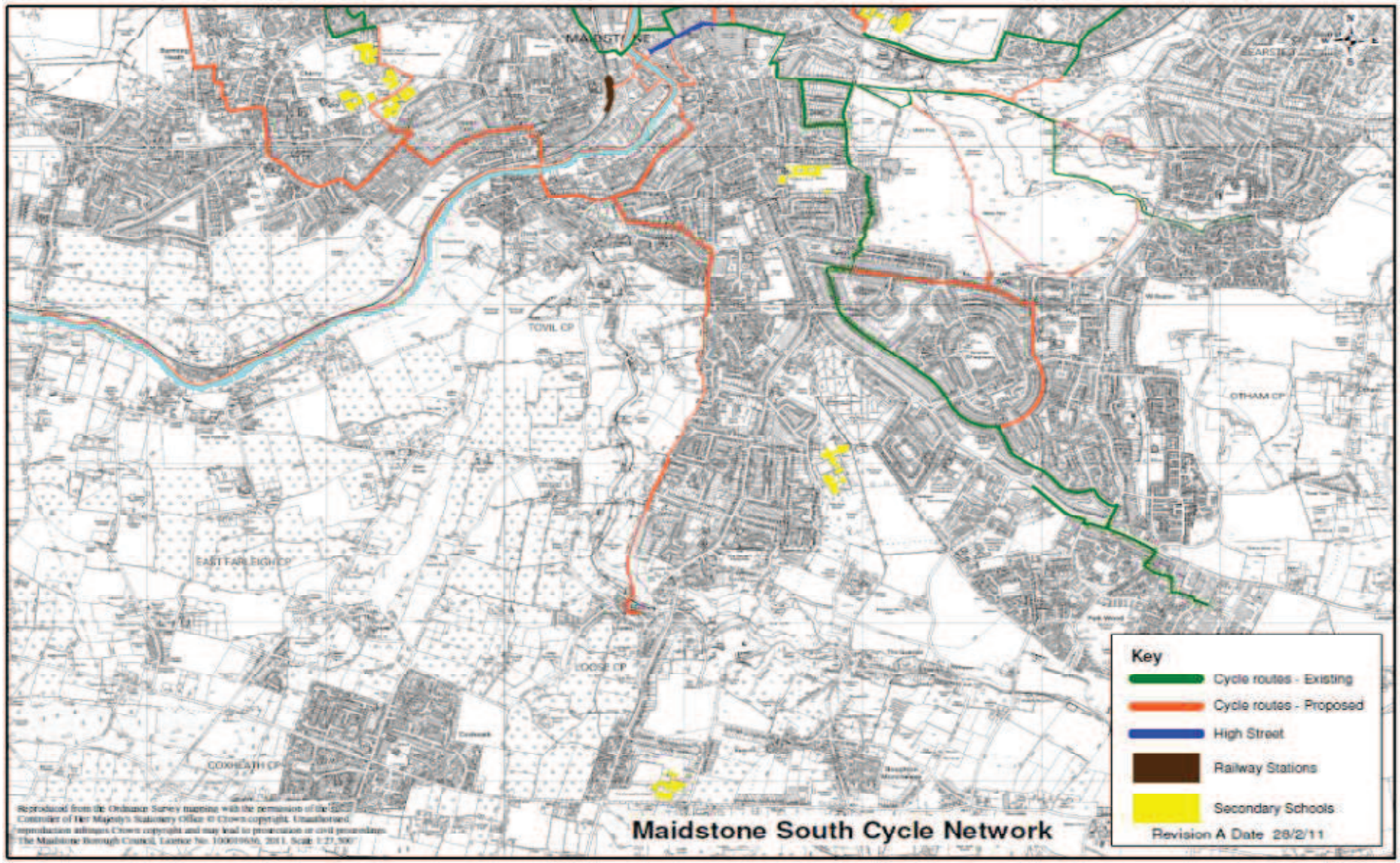
4.0 Cycling in Maidstone Today

<u>Existing Network</u>

4.1 Maidstone's existing cycle network links the town centre to most suburban areas and community facilities, including several schools, Maidstone East train station and Mote Park. The town benefits from a National Cycle Network Route (NCR17) which provides an 11 mile commuter link (approx half off-carriageway) between Maidstone and the Medway towns. At present, NCR17 connects to NCR1 (Inverness to Dover) in Rochester but KCC also have plans to extend the network by connecting to NCR2 (Dover to St Austell) on the South Coast.

4.2 Maidstone also has a Regional Route (RR12) which originates in the town centre and extends along the A20 London Road into Tonbridge and Malling. A section of the route within Maidstone Borough is traffic free and provides good linkages to local schools in the residential area of Allington. Furthermore, from a leisure perspective, there is a recently established route leading from the town centre to Detling village, where it connects to the Pilgrims Way Cycle Route in the North Downs. This provides an excellent cross-district cycling amenity for residents of Maidstone and beyond. A map of the borough's existing cycle routes (split into north and south) is shown below.


Maidstone North Cycle Network
Reproduced from the Ordnance Survey mapping with the permission of the Controller of Her Majesty's Stationery Office © Crown copyright. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings. The Maidstone Borough Council, Licence No. 100019636, 2011. Scale 1:27,500
Key
Cycle routes - Existing
Cycle routes - Proposed
Pilgrims Cycle Trail
High Street
Railway Stations
Secondary Schools
Revision B Date 5/7/11
N
W
E
S
AYLESFORD CP
MAIDSTONE


Key
Cycle routes - Existing
Cycle routes - Proposed
High Street
Railway Stations
Secondary Schools
Revision A Date 28/2/11
Maidstone South Cycle Network
TOVIL CP
LOOSE CP
COXHEATH CP
EAST FARLEIGH CP
OTHAM CP

4.3 Current Issues:

Connections - Connections across the town centre and to the surrounding rural areas are limited. This is particularly evident to the south of the town centre in Tovil and Loose, and to the west in Fant, where there are no designated cycle routes at present. Furthermore, safe cycle routes connecting residential areas to Maidstone Barracks and Maidstone West train stations are absent, as are connections to the schools and college at Oakwood Park.

Safety - At present, the majority of cycle routes in the borough are on-carriageway. Whilst this increases the likelihood of collisions between cyclists and motor vehicles, it should not affect the safety of cyclists if the design, implementation and maintenance are to a consistently high standard. Providing safer routes for cycling is extremely important, especially considering almost 50 cyclists were either killed or seriously injured on Kent's roads in 2010[3]. For Maidstone, although there have been no cyclist fatalities in the last number of years, several cyclists have been seriously injured in the borough. A map of crashes involving cyclists is attached in appendix 5.

Secure Parking - Cycle parking is limited in the town centre, local district centres and at Maidstone's train stations. For example, an officer survey of such facilities in 2010 yielded that Maidstone East Train Station, which handles approximately 1.2 million passenger trips every year, has only 6 sheltered bicycle stands and 10 bicycle lockers.

Maintenance and Signage – The maintenance and signage of cycle routes in Maidstone is the responsibility of the Council, Kent Highways Services and Public Rights of Way, depending on the route or type of path involved. It is important that the 'ride quality' and signage on the routes is good and that vegetation is cut back regularly.

5.0 Future Objectives

5.1 KCC provides year on year monitoring of cycling trips across Kent from inner urban cordons and automatic traffic counts. There are currently only two fixed

[3] Kent Travel Report (2010) https://shareweb.kent.gov.uk/Documents/roads-and-transport/road-policies/kent-travel-report/Kent%20Travel%20Report%202010.pdf

cycle counters for Maidstone, both on A20 London Road. More counters are needed at strategic locations in the urban area to monitor trip data. This will help gauge the success of future improvements to the cycling network.

5.2 In Maidstone, the monitoring of inner cordon cycle counters reveals the rate of cycling more than doubled over a 10-year period beginning in 2000[4]. However, despite this positive trend, statistics show that the rate of cycling is lower now in Maidstone than it was in 2006 and only makes up approx 4% of all trips made in the borough.

5.3 The Council aims to increase the proportion of trips made by walking or cycling from 12% to 20% of all trips made in the borough by 2026, and will focus on the 4 main objectives outlined below to achieve this:

1 *Creating new links* – seeking new opportunities to extend routes to more people;
2 *Maintenance of the cycle route network* – looking after what we already have, and improving it;
3 *Creating a safer cycling environment* – designing safer routes and providing road safety education for cyclists and motorists; and
4 *Spreading the word* – raising awareness of existing and emerging cycle facilities

6.0 Action Plan

Objective 1: Creating New Routes and Linkages

6.1 The Council will aim to improve route continuity by joining routes across the town centre where possible, and by ensuring new routes provide linkages to key destinations throughout the borough's urban area. This cannot be done in isolation, and attention must focus on ensuring these routes are safe, well maintained and easy to follow. The Cycle Strategy must also be flexible enough to allow any new housing and employment sites developed during the lifetime of the Core Strategy to be integrated into the cycling network.

[4] Kent Travel Report (2010) https://shareweb.kent.gov.uk/Documents/roads-and-transport/road-policies/kent-travel-report/Kent%20Travel%20Report%202010.pdf

6.2 Detailed recommendations for new and improved routes in the urban area are included (with supporting maps) below and will be delivered through a combination of Community Infrastructure Levy, Section 106 development contributions and bids for external funding. An estimated cost for each route improvement is included in Appendix 4. The proposed schemes listed are colour coded to provide context to whether the Council consider the routes are deliverable in the plan period, or whether they should remain as long term aspirations.

6.3 List of Recommended New Routes and Linkages

NOTE

Schemes in GREEN are considered deliverable in the Plan period

Schemes in BLUE are long-term aspirational routes

Central Urban Area

1. Connection from White Rabbit roundabout to riverside towpath using James Whatman Way, which will incorporate access to site of Kent Library and Archive Centre
2. Connection from existing route on High Street to route on Union Street using Wyke Manor Road and Church Street
3. Improvements to existing cycling infrastructure in the town centre (i.e. signage, barriers, surfacing) on St Faith's Street, Medway Street, Pudding Lane, Fairmeadow underpass, junction of Buckland Road and St Peter's Street (Travelodge).
4. Improving cycle connections across Maidstone town centre. This will include the High Street to Maidstone West Train Station and better linkages from the south east to High Street.

North/Northwest Urban Area

1. Improving the riverside towpath from the town centre (Millennium Bridge) to Allington Lock. This will require signage, widening and surfacing works
2. Linking existing cycle route on Buckland Lane to Hermitage Lane via Giddyhorn Lane and public footpath KB18 at the northern boundary of Maidstone Hospital – requires signage and works to public footpath – i.e. widening and surfacing

3. Linking Castle Road to Forstal Road via Allington Lock – requires signage
4. Creating new cycle access to rear of 20/20 business park from Castle Road using public footpath KB40. This will require improvements to public footpath – i.e. widening and surfacing.
5. Hermitage Lane Area – potential to collaborate with Tonbridge and Malling Borough Council to develop a link from Maidstone Hospital to Barming Train Station, and possibly onwards to junction with A20 London Road – this would require signage and constructing a cycle lane
6. Hermitage Lane Area – new link from roundabout at Maidstone Hospital to junction of Queens Road and Tonbridge Road – using Tarragon Road – requires signage
7. New link from Oakwood Park to Tovil. See also south west (2)

North/Northeast Urban Area

1. Improved off-carriageway connection to Penenden Heath on public footpaths from junction of Curzon Road/Park Ave across Heathfield Road to Penenden Heath Road
2. Improving public footpath KH2 (rear of Invicta Grammar School) from Vinters Road to New Cut road and making it more suitable for cycling – requires signage, widening and possible surfacing works
3. Connecting Vinters Road to cycle path on A20 Ashford Road via Huntsman Lane
4. Improvements at Vinters Road to allow for two-way cycling path – requires works to footpath to create space for cycle lane

South/Southwest Urban Area

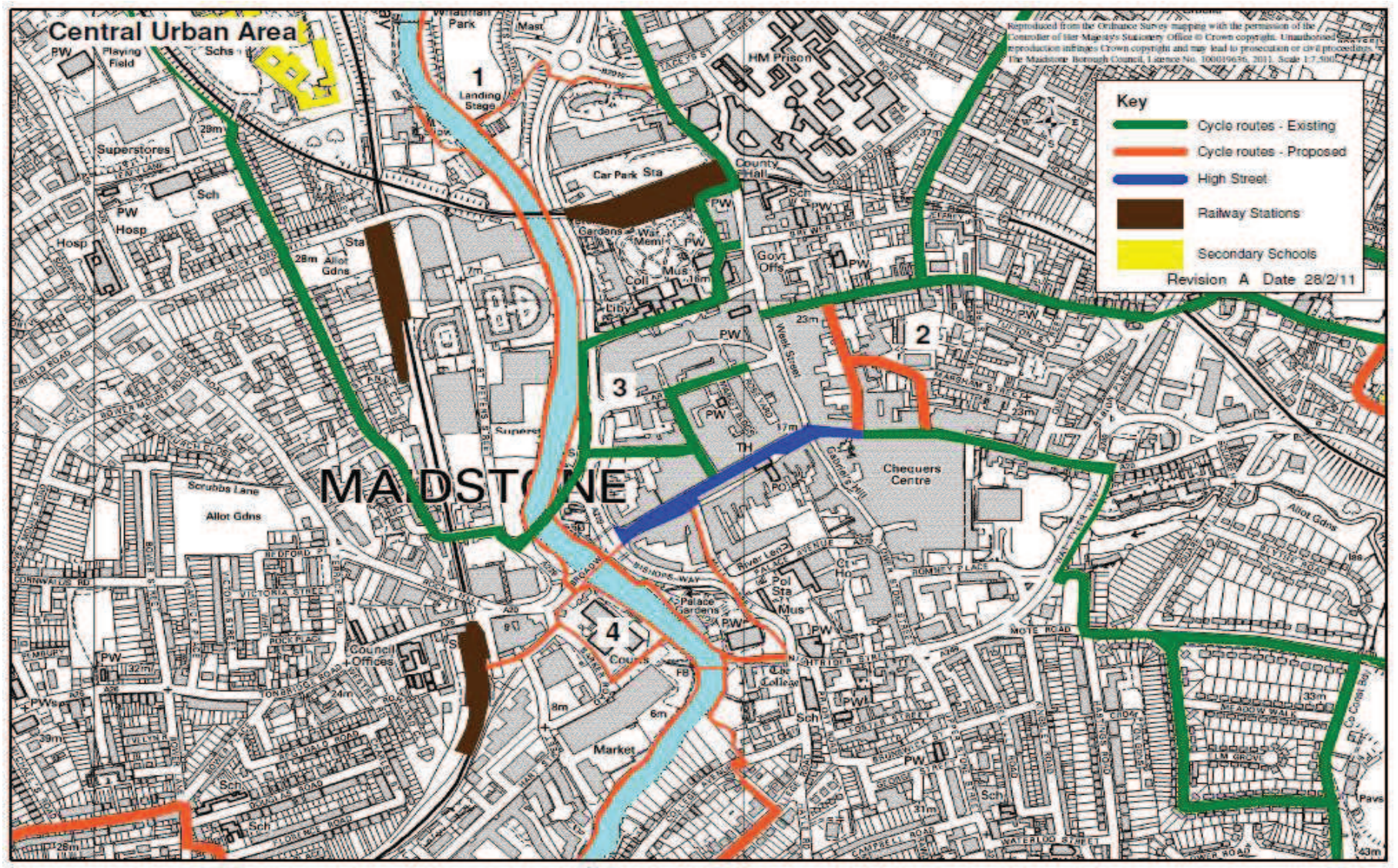
1. Linking Maidstone High Street to Loose village via College Road, Courtenay Road, Postley Road and public footpaths (KB 22, 33, 49 & KM 52/3) from Postley Road to Old Drive and Kirkdale Road, Loose – requires new signage and works to public footpath – i.e. widening and improved surfacing
2. Linking Church Road and Tovil Hill to Oakwood Park via Wharf Road, Bower Lane, Upper Fant Road, Whitmore Street, Milton Street and Tonbridge Road – requires signage and minor improvements at rail crossing

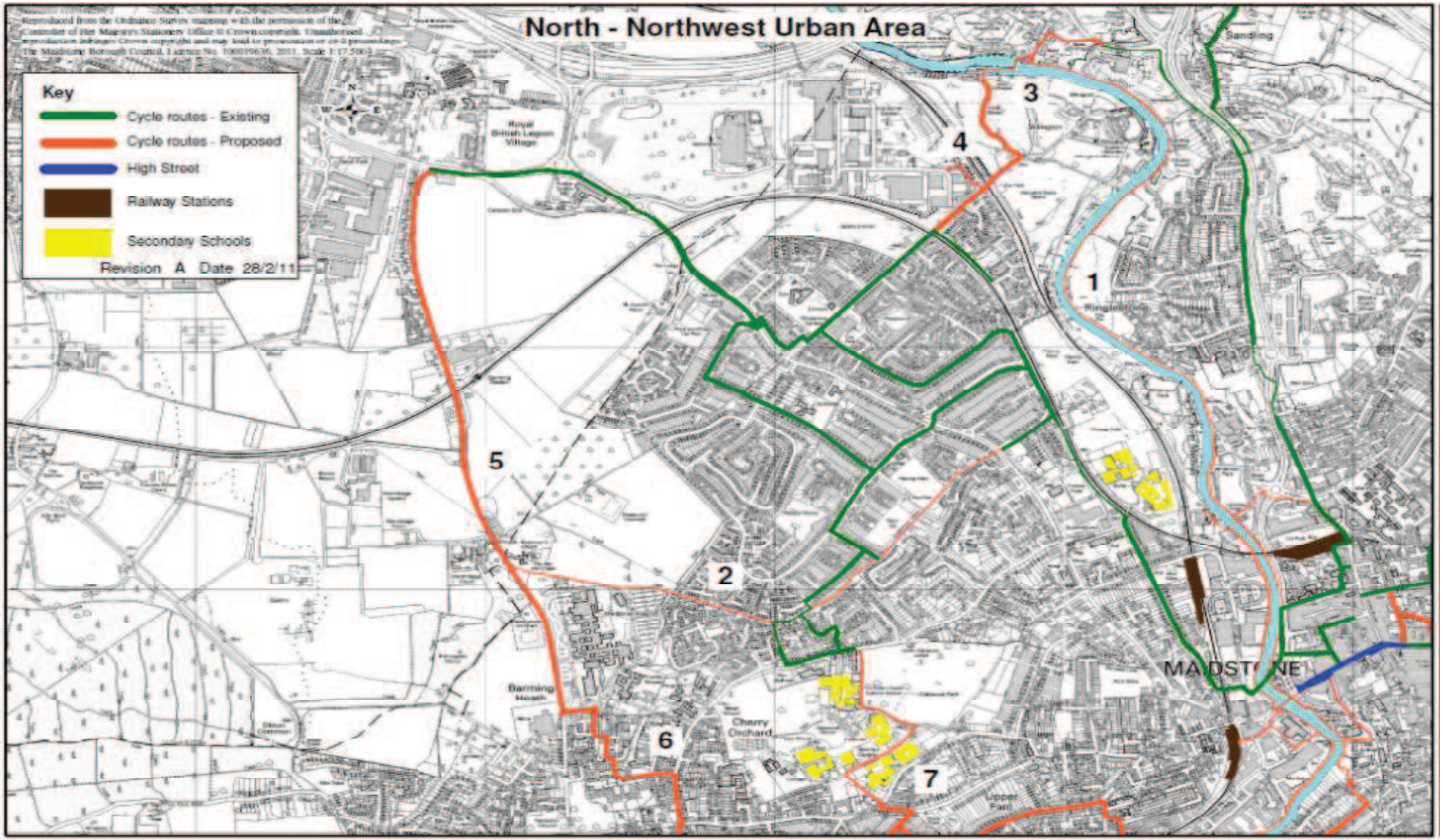
3. Long term aspiration to collaborate with Tonbridge and Malling Borough Council, KCCs Public Rights of Way team, KCCs Medway Valley Countryside Partnership team, Valley of Visions Landscape Partnership and the Environmental Agency to link Allington Lock to Aylesford and Maidstone Town Centre to Tonbridge along an improved dual-use riverside towpath – requires major works to towpath in terms of widening & surfacing.

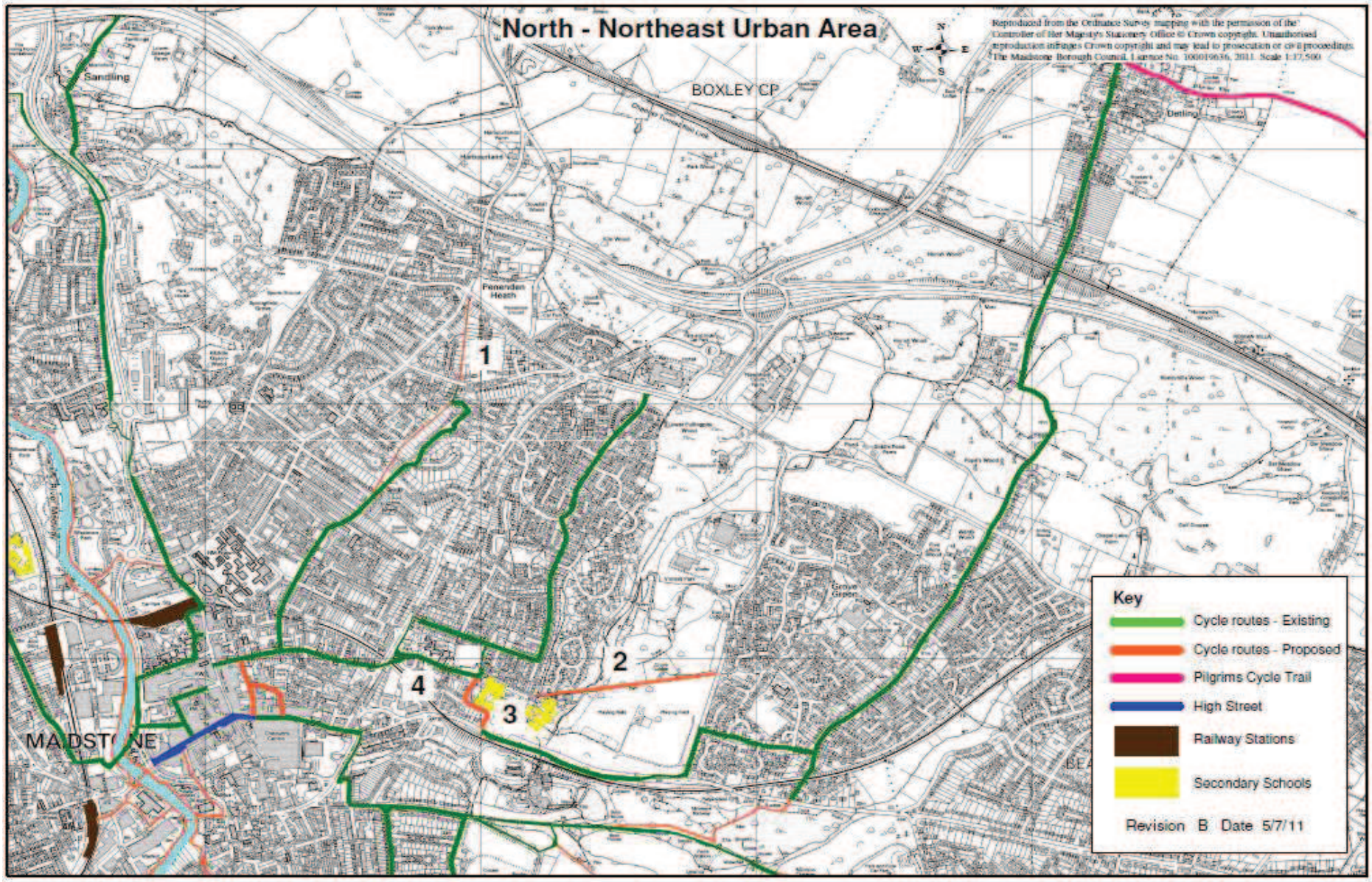
South/Southeast Urban Area

1. Improved cycle link from Mote Park to Weavering Street across Ashford Road. May require Toucan crossing on A20 Ashford Road
2. New connection from south exit of Mote Park to Plains Avenue and onwards via Oxford Road and Worcester Road to meet existing Shepway/Parkwood route at Middlesex Road – requires signage
3. Signing new route into Mote Park via Mote Gardens from Willington Street/Madginford Road junction – requires signage

Supporting Maps: Existing Cycle Network Including Recommended New Routes and Linkages




North - Northwest Urban Area
Key
Cycle routes - Existing
Cycle routes - Proposed
High Street
Railway Stations
Secondary Schools
Revision A Date 28/2/11
1
2
3
4
5
6
7
Royal British Legion Village
Barming Heath
Cherry Orchard
Upper Fant
Sandling


North - Northeast Urban Area
BOXLEY CP
Sandling
Fenenden Heath
Detling
1
2
3
4
MAIDSTONE
Key
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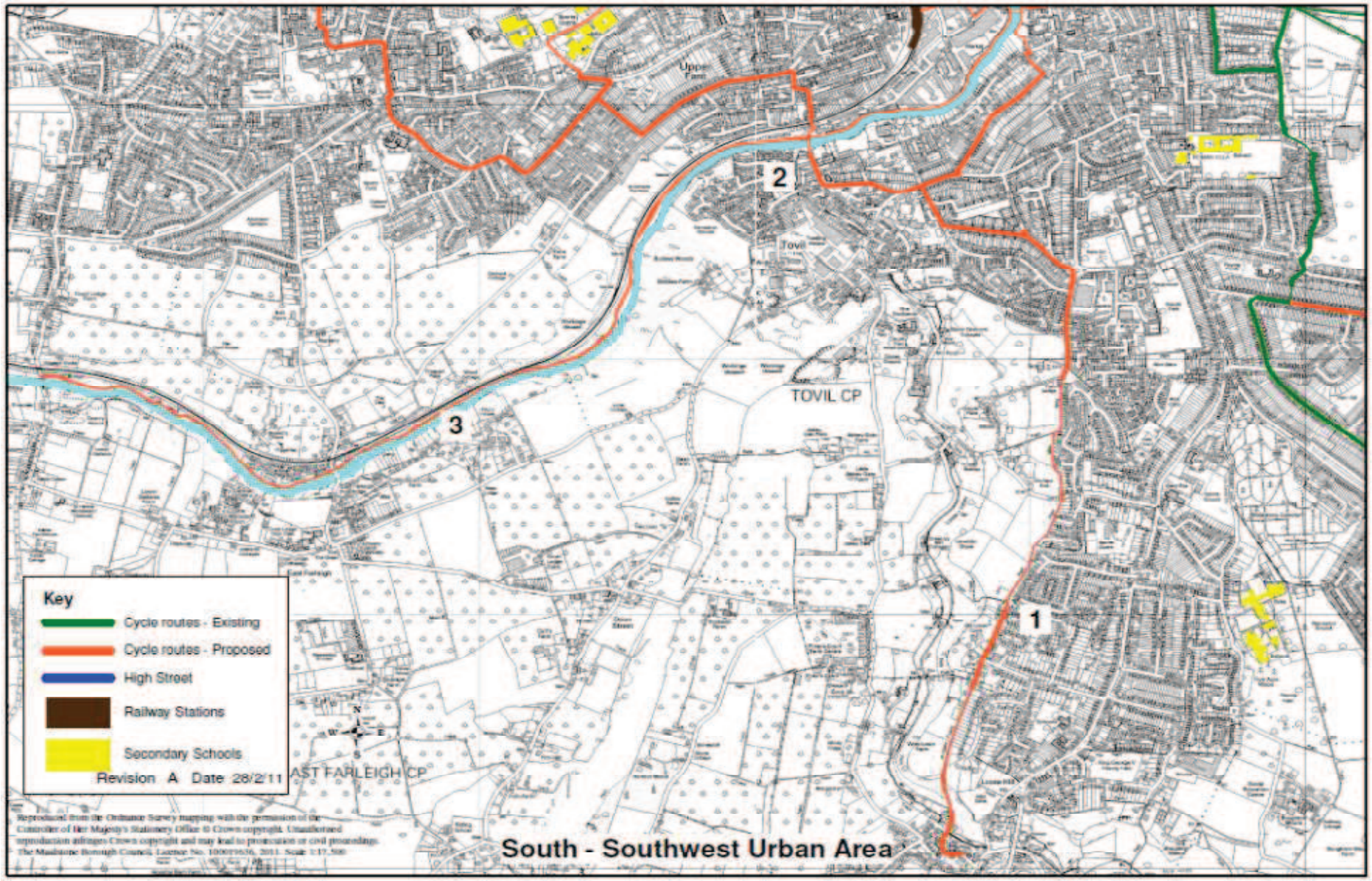
High Street
Railway Stations
Secondary Schools
Revision B Date 5/7/11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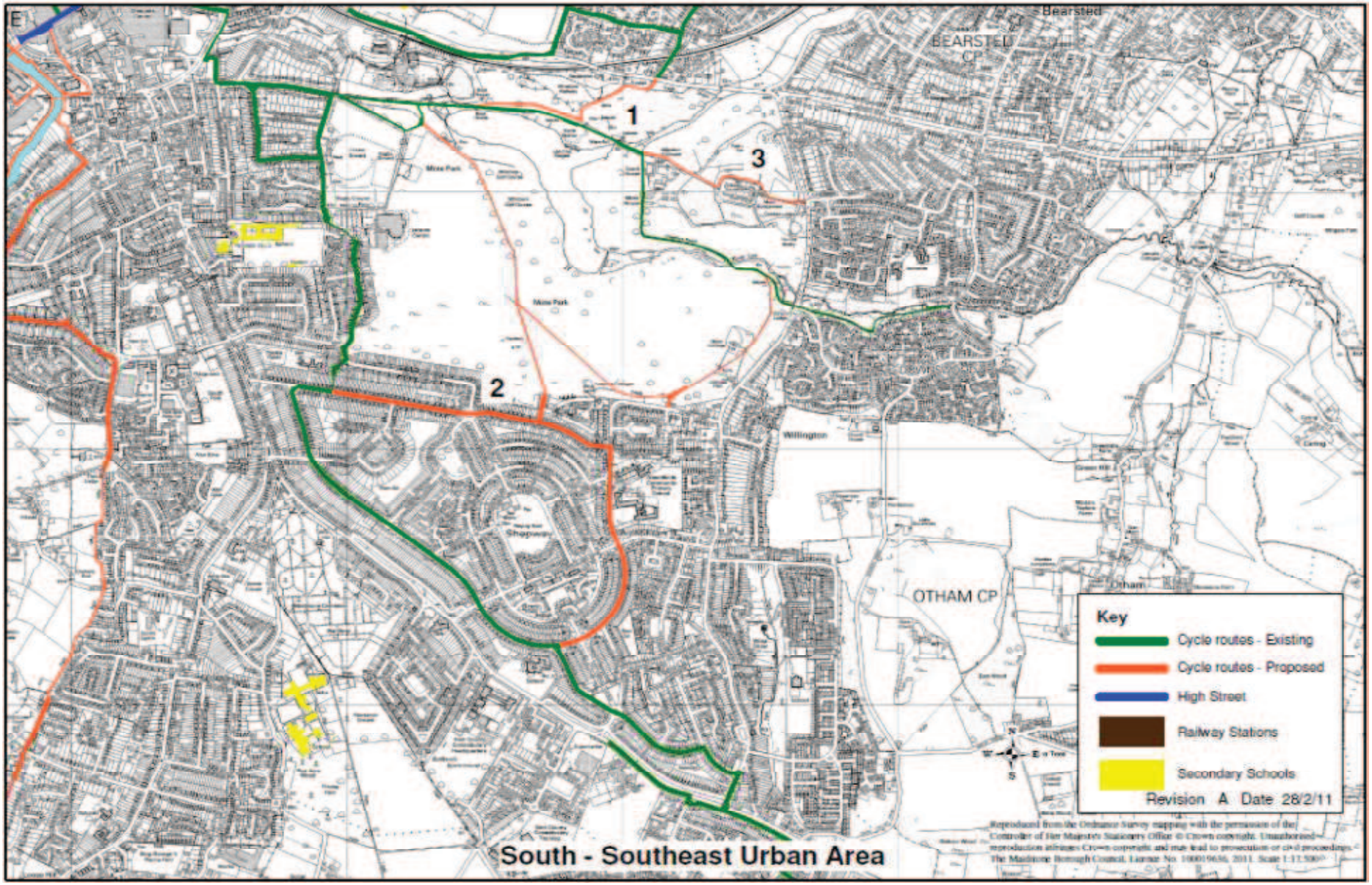
3
1
TOVIL CP
Key
Cycle routes - Existing
Cycle routes - Proposed
High Street
Railway Stations
Secondary Schools
Revision A Date 28/2/11
AST FARLEIGH CP
South - Southwest Urban Area


Bearsted
BEARSTED CP
1
2
3
OTHAM CP
Key
Cycle routes - Existing
Cycle routes - Proposed
High Street
Railway Stations
Secondary Schools
Revision A Date 28/2/11
South - Southeast Urban Area

6.4 Aside from the more strategic aspects of the cycle network, the Council will also aim to improve cycling as a leisure pursuit. This will need a renewed focus on improvements to the riverside path along the River Medway, where the Medway Valley Countryside Partnership and Valley of Visions Landscape Partnership Scheme are already investigating the feasibility of developing a riverside shared use cycle/pedestrian path between the Medway Towns and Tonbridge, via Maidstone.

6.5 DfT Research has shown that many more people cycle for leisure purposes and there is still a suppressed demand for more off-carriageway leisure cycling facilities. For some people the gain in confidence riding off-carriageway for pleasure leads to them trying cycling as a means of transport at other times. However, the experience must be good and the benefits in terms of cost and time be to their advantage or they quickly give up.[5]

Action Point 1: *When new routes are developed in the urban area, the priority will be to 'fill in the gaps' in the existing network with an emphasis also on providing safe and continuous linkages to known destinations (transport hubs, shops, schools, work places) and leisure routes. A further priority will be to link new development sites (large scale housing and employment) to the existing cycle network and to ensure these developments are designed to incorporate cycling throughout, including adequate and carefully designed parking provision.*

Objective 2: Maintaining the Cycle Route Network

6.6 In order to increase levels of cycling, the Council acknowledges it is important to have a cycle network that is safe and offers an attractive alternative to using motorised transport. Therefore, routes should be unimpeded by street furniture, pavement parking and other obstructions. As highlighted in Local Transport Note 2/08 (see appendix 3), it is also important to ensure that surface defects should be repaired before they become a hazard, vegetation should be regularly cut

[5] DfT (2010) Cycling City, Cycling Towns http://webarchive.nationalarchives.gov.uk/20110407094607/http://www.dft.gov.uk/cyclingengland/cycling-cities-towns/]

back to preserve available width and sight lines, and routes should be regularly swept to prevent punctures. This is particularly important on off-carriageway routes.

Action Point 2: *The Council will work closely with Kent Highways Services, Public Rights of Way and the Sustrans Volunteer Rangers to ensure frequent and regular maintenance of all cycle tracks in the borough.*

Objective 3: Improving Cycle Security and Parking

6.7 Sufficient secure cycle parking is essential if people are to be encouraged to cycle. Existing parking facilities have been assessed in Maidstone by the cycle forum and gaps in provision noted to prioritise improvements. This information has been included in Appendix 3.

6.8 If a cycle is to be used frequently there has to be a secure storage area close to the usual exit of a property. A cycle locked in a shed at the end of a garden is less likely to be used than one stored close to the front door. It is essential that new residential properties and other developments have sufficient storage for cycles and this should be managed via the development control process in the same way as car parking is managed.

Action Point 3: *Secure cycle parking will be encouraged in all new developments, both new build residential and employment and change of use. Secure cycle storage must be provided in all new dwellings in the urban areas of the borough. Cycle parking close to amenities in the town will be improved and kept under review to ensure adequate provision.*

Objective 4: Promoting a Cycling Culture

6.9 The Council recognises that cycle routes alone will not dramatically increase the levels of cycling in the Borough. Action to create a pro-cycle culture is needed in a range of areas which include land use planning, transport and traffic planning, regeneration, leisure, health and education. Promotion of cycling will not only

involve improved engineering measures and safety but also training, publicity and raising awareness.

6.10 The survey and mapping of existing facilities provides the ideal opportunity to produce leaflets and maps to let residents and visitors know where the various cycle routes go and where they can safely park. This information will be made available to download from the council's website and will also be made available at Maidstone's visitor information centre, tourist attractions, hotels, large employers and schools. Additional information such as places to stay and places to visit by cycle will also be displayed on the maps.

6.11 Travel Plans (for large employers, schools and new housing developments) provide an opportunity to improve levels of cycling and cycling facilities in the borough. Travel Plans consist of a package of measures designed to suit specific transport needs. Such plans will be encouraged as they can include commitment to improving cycling facilities like secure parking, bicycle lockers or the provision of shower facilities for large employers. Kent County Council has recently produced new best practice guidance on travel plans.[6]

Action Point 4: *The Council will actively promote cycling and the work Kent County Council do in developing school travel plans and business travel plans.*

[6] New Ways to Work – Best practice guide for preparing travel plans in Kent 2011 https://shareweb.kent.gov.uk/Documents/roads-and-transport/getting-around/Travel%20Plan%202010.pdf

Appendix 1: Supporting Policy Overview

National Planning Policy Framework (NPPF, 2012)

http://www.communities.gov.uk/documents/planningandbuilding/pdf/2116950.pdf

The NPPF sets out the Government's planning policies for England and how these are expected to be applied. It replaces over a thousand pages of national policy (previous Planning Policy Statements & Guidance) with around fifty, and provides a framework within which local people and their accountable councils can produce their own distinctive local and neighbourhood plans, which reflect the needs and priorities of their communities.

The NPPF lists 12 core land-use planning principles that should underpin both plan-making and decision-taking. One of the core principles states that patterns of growth should make the fullest possible use of public transport, walking and cycling, and focus significant development in locations which are or can be made sustainable.

Local Transport Note 2/08 'Cycle Infrastructure Design' – Department of Transport (2008)

http://www.bv.com.au/file/Cycling%20Infrastructure%20Design%20Dept%20Transport%20Oct%2008(1).pdf

This Note sets out core requirements for the design of cycling infrastructure and lists these requirements under the headings *Convenience, Accessibility, Safety, Comfort and Attractiveness*. The following paragraphs taken from Note 2/08 cover these five core requirements in more detail.

Convenience: Cycle networks should serve all the main destinations. Routes and key destinations should be properly signed and made available on street maps. Routes should be unimpeded by street furniture, pavement parking and other obstructions. Delays for cyclists at signalled crossings should be minimised. Trip end facilities should be clearly marked, conveniently located and appropriate for the likely length of stay. Designers should consider the future ease of maintenance, including access to vehicles for sweeping, trimming grass verges and surface and lighting repairs along off road routes.

Accessibility: Cycling networks should link trip origins and key destinations, including public transport access points. The routes should be continuous and coherent (type and colour of surfacing may be used to stress route continuity as appropriate). Routes should be provided into and through areas normally inaccessible to motor vehicles, such as parks and vehicle restricted areas

Safety: Not only must infrastructure be safe, but it should be perceived to be safe. Traffic volumes and speeds should be reduced where possible to create safer conditions for cycling and walking. Opportunities for redistributing space within the highway should be explored, including moving kerb lines and street furniture, providing right turn refuges for cyclists or separating conflicting movements by using traffic signals. The potential for conflict between pedestrians and cyclists should be minimised. Cycle parking should be sited where people using the facilities can feel safe.

Comfort: Infrastructure should meet design standards for width, gradient and surface quality, and cater for all types of user, including children and disabled people. Cyclists benefit from even, well maintained and regularly swept surfaces with gentle gradients. Dropped kerbs are particularly beneficial to users of wheelchairs, pushchairs and cycles, and tactile paving needs to be provided to assist visually impaired people.

Attractiveness: Aesthetics, noise reduction and integration with surrounding areas are important. The environment should be attractive, interesting and free from litter and broken glass.

Active Travel Strategy (2010) – Department for Transport/Department of Health

http://www2.dft.gov.uk/pgr/sustainable/cycling/activetravelstrategy/pdf/activetravelstrategy.pdf

This strategy outlines the importance of cycling and walking for health, accessibility, and the reduction of carbon emissions. The report highlights the fact that 66% of journeys are less than 5 miles (a distance easily covered by a half hour cycle) and over half of these journeys are made by car.

Active Communities: Cycling to a better quality of life (2009)

https://member.lgiu.org.uk/whatwedo/Publications/Documents/Active%20Communities.pdf

This report was produced by the Local Government Information Unit to encourage local authorities to take the lead to make cycling a priority in their community through funding and planning. The report advises that local communities can be targeted and engaged in cycling through the use of local cycle groups, cycle forums and local media campaigns.

South East Plan (2009) – Regional Spatial Strategy for the South East*

The South East Plan (SEP) sets the strategic planning context for decision makers in South East England for the period to 2026. It incorporates the Regional Transport Strategy and covers 55 district and borough councils, 12 unitary councils and 7 county councils. Local development documents (e.g. Core Strategy) must be in general conformity with the Plan.

Policy T2 (core transport policy) of the Plan advocates that policies and proposals set out in local development documents and local transport plans should include policies to achieve a rebalancing of the transport system in favour of sustainable modes based on an integrated package of measures including improvements in the extent and quality of pedestrian and cycle routes.

*Note: The 'South east plan', issued in May 2009 by the Government Office for the South East (GOSE), is due to be abolished in the near future. No set date as yet. The archived drafts and background documents for the SEP are on the National Archives website. See link below:
http://webarchive.nationalarchives.gov.uk/20100528142817/http:/www.gos.gov.uk/gose/planning/regionalPlanning/815640/

Kent County Council: Local Transport Plan 3 (2011-2016)

https://shareweb.kent.gov.uk/Documents/roads-and-transport/road-policies/local-transport-plan-3/final-ltp3.pdf

Local Transport Plans (LTPs) are the method by which local authorities secure funding for local transport improvements. The preparation and adoption of a LTP is a statutory requirement under the Local Transport Act 2008. Kent County

Council (KCC) has previously produced two LTPs covering the periods 2001-06 and 2006-11 respectively.

The strategy approach for LTP3 has been to develop five themes, which are:

• Growth without Gridlock

• A Safer and Healthier County

• Supporting Independence

• Tackling a Changing Climate

• Enjoying Life in Kent

The Plan proposes to allocate a proportion of the budget to each of the five themes and, within these themes, to focus the investment in the areas where the challenges associated with each theme are most acute. Schemes will then be prioritised using a value for money assessment. Cycling is linked to all the themes listed above and KCC aims to provide a comprehensive cycle network for residents and visitors to Kent over the lifetime of the Plan.

Kent Countryside Access Improvement Plan (CAIP, 2007-2017)

https://shareweb.kent.gov.uk/Documents/environment-and-planning/public-rights-of-way/countryside-access-improvement-plan.pdf

The CAIP includes the current condition of the entire Public Rights of Way network in Kent and identifies key objectives regarding network management. The overall vision is targeted towards increasing the usage and enjoyment of public rights of way.

CAIP Objective	Description
N3	Increase provision for off-road cycling and mountain biking activity
I4	Produce and distribute information on cycling and horse riding
I7	Work in partnership to improve regional/national/international awareness of walking, cycling and horse riding opportunities in Kent, to directly support tourism objectives
D4	Develop multi-user routes that allow walking, cycling and horse riding from towns to wider countryside
	Wider Countryside

ST2	Identify and investigate where the public rights of way network can be provide safe and alternative routes to avoid having to walk, ride or cycle on busy roads
ST3	Develop the public rights of way network to support the County Council's 'Healthy Schools initiative

Local Policy

Maidstone Sustainable Community Strategy (2009-2020)

http://www.maidstone.gov.uk/PDF/Sustainable%20Community%20Strategy%20for%20Maidstone%20Borough%20adopted%20april%2009.pdf

The purpose of the Sustainable Community Strategy (SCS) is to set the overall strategic direction and long-term vision for the economic, social and environmental wellbeing of a local area in a way that contributes to sustainable development. The SCS acknowledges that congestion in the borough is becoming an increasing problem and that one of the principles of an Integrated Transport Strategy must be based on giving genuine transport choice including sustainable transport modes like cycling.

Maidstone Air Quality Action Plan (AQAP) 2010

http://www.maidstone.gov.uk/pdf/Finalised%20Maidstone%20Town%20Action%20Plan%20Dec%203rd%202010.pdf

The Maidstone Air Quality Action Plan (AQAP) sets out a series of measures which target both confirmed hotspot areas and areas currently under investigation in order to reduce NO2 emissions to within European air quality objectives. Furthermore, the AQAP also sets out measures for Borough wide air pollutant emissions reductions supporting the aims of the Sustainable Communities Strategy, the Carbon Emission Reduction action Plan and the Council's carbon emissions reduction targets.

Within the AQAP there are measures promoting the uptake of all forms of active transport including cycling and there are measures to increase the role that travel planning plays for business, schools and the public sector.

A Health Impact Assessment of the measures within the AQAP was carried out and it confirmed that, if fully implemented, the AQAP would provide a significant and positive benefit to the health and wellbeing of residence within the borough.

Core Strategy

The Local Development Framework (LDF) is produced by Maidstone Borough Council, and ultimately will replace the saved policies of the Local Plan (2000). The LDF will comprise a number of documents, including a Core Strategy and Development Delivery Local Plan.

Draft Policy CS7 of the Core Strategy states that the urban area's cycle network connects some residential areas within the town centre but connections across the urban area are limited. The provision of adequate, attractive and safe walking and cycling routes with adequate cycle parking will be incorporated within a cycling strategy, which will form part of an Integrated Transport Strategy for Maidstone.

CS7 explains that developing a network of cycle routes in the borough requires integration with a comprehensive and extended scheme. It proposes that Maidstone's Integrated Transport Strategy, which will provide the background evidence for the objectives set out in Policy CS7, aims to increase the proportion of trips made by walking or cycling from 12% to 20% of all trips made in the borough by 2026.

Integrated Transport Strategy

The strategy's main aim is to provide the necessary transport infrastructure to support the development aspirations of the Core Strategy and in doing so will address the issues associated with each mode in a holistic way. This strategy adopts an integrated approach that recognises that transport issues are inherently linked to one another, but that they are also part of the wider planning challenge. Measures to improve walking and cycling as a means to manage traffic congestion are detailed in the ITS.

Drafted by MBC and KCC in partnership, the ITS will look at how we can begin to encourage a shift in travel behaviour away from sole use of the private car –

with its particular economic, social and environmental costs - towards more sustainable modes of transport where appropriate.

Appendix 2: Supporting Statistics

It is necessary to encourage an improvement in the level of cycling in the borough as it is a healthy, non-polluting and environmentally friendly mode of transport. It is also timely because, as outlined below, recent statistics reveal that Maidstone is now experiencing increasing levels of ill health, childhood and adult obesity, traffic congestion and air pollution.

Physical Activity and Health: One of the most important positive impacts transport has on health is providing the opportunity to be physically active as part of daily life through walking and cycling. This sentiment is echoed by the South East Public Health Observatory, where it states that "physical activity has major beneficial effects on most chronic diseases, by preventing or limiting the progression of disease, and by improving physical fitness, muscular strength and mental wellbeing."[7]

Physical activity is particularly important for preventing obesity, which has tripled in the last 25 years and has often been described by the Chief Medical Officer as a "health time bomb". The Association of Public Health's summary for Maidstone 2010 shows that the percentage of children in reception year suffering from obesity is higher than the national average at 10.3%. This figure increases to an average of 16.5% for primary school children in year 6 and to 26.5% for adults, figures which are also greater than the national averages.[8] By leading an active life, both children and adults can significantly reduce their risk of premature death due to obesity related illnesses.

Environmental Pollution and Health: The South East Public Health Observatory report (2008) explains that local air pollution has many potential negative impacts on health, many of which are exacerbated by road traffic. Transport related air pollution increases the risk of mortality, particularly from cardio-pulmonary causes. It also affects health in a number of other ways, including non-allergic respiratory disease and allergic illnesses such as asthma.

[7] SEPHO: Choosing Health in the South East – Road Transport and Health (2008)
[8] Maidstone Health Profile 2010 (updated 28 July 2010) available at: www.apho.org.uk/resource/view.aspx?RID=92227

Since the majority of air pollutants in Maidstone borough relate to traffic emissions, anything the Council can do to avoid unnecessary journeys and relieve the strains on our local road system is of benefit. An Air Quality Management Area was established in the borough in 2001 based on exceedences of the harmful air pollutant Nitrogen Dioxide NO_2. Levels of NO_2 have risen and fallen in the borough since 2001 but now remain at their highest mean level (54mg/m3) since the AQMA was established. The Council aims to reduce this figure to an annual mean of less than 40µg/m^3, which makes a further case for increasing levels of cycling in the borough.

Traffic Congestion: With planned growth in the borough set to increase the population of Maidstone by approximately 20,000 between 2006 and 2026 it is inevitable that the demand for journeys across the borough, particularly at peak times, will increase as a result. Maidstone's Sustainable Community Strategy (2010) notes that congestion in the borough is becoming an increasing problem, particularly due to school trips, and seeks an annual reduction of 1% in the rate of children taken to school by car, which stood at 34% in 2010.

Department for Transport (DfT) research shows that cars were used for 64% of all trips made and 78% of the distance travelled in the UK in 2010. Cycling accounted for only 2% of all trips made. Clearly, travel by private automobile is still seen as something inherently more desirable than travel by bike. The DfT research also notes that 24% of car traffic at morning peak time is now taken up with the school run. This statistic is particularly important considering a journey of 2.5 miles should only take approximately 15 minutes by bicycle and the fact that only 1% of primary school children and 2% of secondary school children cycle to school.[9]

[9] DfT National Travel Survey (2010) available at: http://assets.dft.gov.uk/statistics/releases/national-travel-survey-2010/nts2010-01.pdf

Appendix 3: List of Existing and Proposed Cycle Parking Facilities

Town Centre (Existing)

Location	Cycle Parking Provision
Town Hall, Bank Street	2 stands - unsheltered
High Street (below cannon)	5 stands - unsheltered
Earl Street	6 stands - unsheltered
St Faiths Street, Outside Royal Albion pub	4 stands - unsheltered
Palace Avenue, near Gala Bingo	4 stands - unsheltered
Sainsbury's (Romney Place)	6 stands - unsheltered
Church Street (Trinity)	10 stands - unsheltered
KCC Sessions House Plaza	5 stands - unsheltered
KCC Invicta House Plaza	4 stands - unsheltered
St Peters Street (Wickes)	5 stands - unsheltered
St Peters Street (ASDA Living)	10 stands - unsheltered

Town Centre (Proposed)

Location	Cycle Parking Provision
Maidstone Gateway (High Street)	1 stand
Chequers Centre (entrance at High Street)	3 stands
Chequers Centre (entrance at Gabriel's Hill)	4 stands
Week St at junction with Union St	3 stands
Week St at junction with Brewer St	2 stands
Town Hall (High St/Bank St)	3 stands
Earl Street (close to Fremlin entrance)	3 stands
Maidstone Museum/Brenchley Gardens	6 stands
Lockmeadow market	3 stands
Broadway Shopping Centre	2 stands
B & Q (Hart St)	3 stands

Urban Area – Excluding Town Centre (Existing)

Shopping Location	Cycle Parking Provision
Grove Green Tesco's, Bearsted	0
Junction of Ware Street, Thurnham Lane and Yeoman Lane	0
Shops on Ashford Road between Yeoman's Lane and Church Lane	3 cycle stands – not sheltered
Tesco Express on Ashford Road	3 cycle stands – not sheltered
Shops on Ashford Road next to junction with Cavendish Way	0
Shops on Deringwood Drive, Downswood	0
Shops on Willington Street by junction with Woolley Road	0
Woolley Road Shops	0

Parkwood Parade Shops	0
Northumberland Avenue Parade Shops	0
Junction of Old Loose Hill and Loose Road Shops	0
Junction of Cripple Street and Loose Road Shops	0
Junction of Courtenay Road and Brenchley Road Shops (Courtenay Stores)	0
Lidl on Tovil Hill	0
Tesco on Farleigh Hill	0
Lloyds Pharmacy on Tonbridge Road	0
Junction of Queens Road, Fant Lane and Tonbridge Road Shops	0
Tesco Express on Tonbridge Road	3 cycle stands – not sheltered
Junction of Hermitage Lane/ Taragon Road Shops	0
Mid-Kent Shopping Centre, Newbury Avenue, Allington	8 cycle stands – not sheltered
Shops at Junction of Boxley Road, Sandling Lane and Penenden Heath	0

Train Stations - In Town Centre (Existing)

Station	Cycle Parking & Storage Provision
Maidstone Barracks	0
Maidstone East	6 cycle stands – sheltered – 10 cycle lockers
Maidstone West	5 cycle stands – not sheltered

Train Stations Outside Town Centre (Existing)

Station	Cycle Parking & Storage Provision
Bearsted	3 cycle stands – not sheltered 4 cycle stands – sheltered
East Farleigh	0
Harrietsham	0
Hollingbourne	0
Lenham	4 cycle stands – not sheltered
Marden	3 cycle stands – sheltered
Staplehurst	10 cycle stands - sheltered

Appendix 4: Cost Estimates for Route Improvements

Central Urban Area

Route Objective	Brief Route Description	Type of Infrastructure Required	Estimated Cost
1	Connecting Sandling Road to Medway riverside towpath	Toucan crossing/signage	25K
2	Connecting High Street to Union Street via Wyke Manor Road	Signage/road markings/removing barriers	5k
3/4	Town Centre Infrastructure Improvements	Signage/surface improvements/ junction realignment	250k

North/Northwest Urban Area

Route Objective	Brief Route Description	Type of Infrastructure Required	Estimated Cost
1	Medway riverside towpath improvements	Signage/widening/ surfacing	15K
2	Connecting Hermitage Lane with Giddyhorn Lane via public footpath KB18	Signage/widening/ surfacing	40K LSTF bid
3	Connecting Castle Road with Forstal Road	Signage	5K
4	Creating new access to rear of 20/20 business Park from Castle Road	Widening/surfacing/ signage	25K
5	Hermitage Lane improvements	Requires collaboration with Tonbridge & Malling BC	£150k
6	Connecting Maidstone Hospital to Queens Road Via Tarragon Road	Signage	5K
7	Connecting Oakwood Park to	Signage and	

	Church Road, Tovil	improvements at rail crossing. Crossing of Tonbridge Road yet to be finalised	

North/Northeast Urban Area

Route Objective	Brief Route Description	Type of Infrastructure Required	Estimated Cost
1	Improved connections to Penenden Heath	Signage/surfacing/removing steps at end of public footpath	50K
2	Improvements to public footpath KH2 (rear of Invicta Grammar School)	Surfacing/widening/signage	100K
3	Connecting Vinters Road to A20 Ashford Road	Potential to be done as part of junction improvement scheme	
4	Improvements to Vinters Road to allow contra flow cycling	Widening and resurfacing footpath	100K

South/Southwest Urban Area

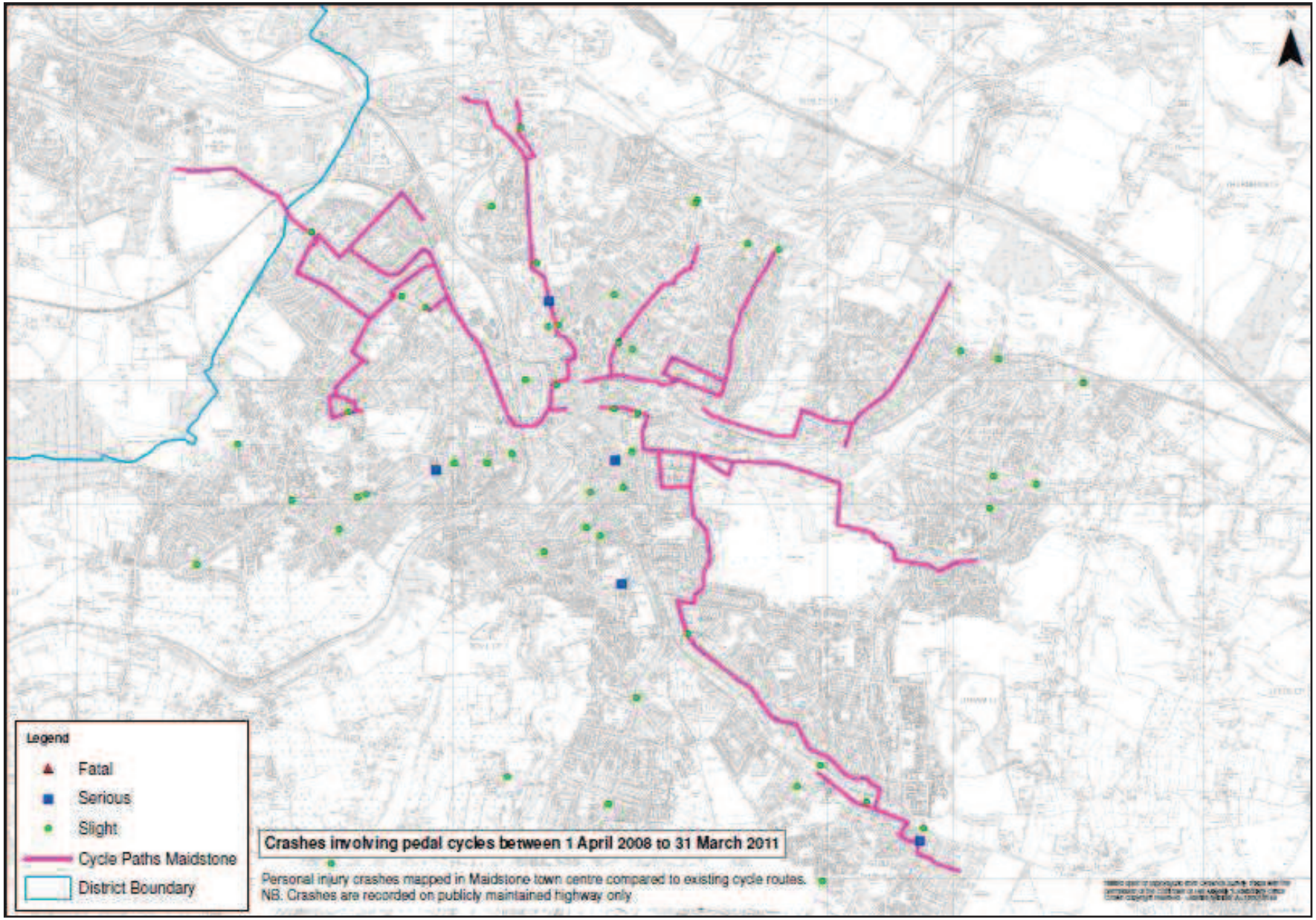
Route Objective	Brief Route Description	Type of Infrastructure Required	Estimated Cost
1	Connecting town centre to Loose village	Surfacing/widening paths/signage/possible toucan crossing	200K
2	Connecting Church Road (Tovil) to Oakwood Park	Signage and improvements at rail crossing. Crossing of Tonbridge Road yet to be finalised	
3	Connecting Maidstone to Tonbridge via Medway riverside	Long term aspiration involving collaboration with KCC, Tonbridge &	

	towpath	Malling BC and the Environment Agency	

South/Southeast Urban Area

Route Objective	Brief Route Description	Type of Infrastructure Required	Estimated Cost
1	Improved connection from Mote Park to Weavering Street	Surfacing/signage	20K
2	Connecting south exit of Mote Park to Plains Avenue	Signage	5K
3	Connecting Willington Street to Mote Park via Mote Gardens	Signage	5K

Appendix 5: Cycle Crash Statistics for Maidstone Urban Area (2008-2011)



Maidstone VISUM Model

2017 and 2026 Forecast Models – South East Maidstone Strategic Link Impacts Summary

FINAL REPORT

December 2009

JACOBS

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Appendix A - Appendix title

Appendix B - Network Performance

Appendix C - SEMSL Select Link Analysis

1 Introduction

Jacobs were commissioned by Kent County Council & Maidstone Borough Council in August 2007 to undertake the development of a multi-modal transport model for the town of Maidstone in Kent. The scope of the report outlines the impact of future year land use developments, including the South East urban extension and the South East Maidstone Strategic Route (SEMSL) from the completed base and forecast models of Maidstone VISUM models.

The Maidstone Multi Modal Transport Models for the AM peak and PM peak were developed using the VISUM modelling software to represent the base year conditions for 2007. The model encompasses Maidstone Borough and the immediate surrounding area in detail, whilst the wider network extends to include the major transport routes across Kent and into London to reflect long distance commuting. The models have been developed to reflect typical weekday morning and evening peak conditions.

The models were successfully calibrated and validated against 2007 transport conditions using the standard DfT guidelines and the base model is reported in the *Maidstone Multi Modal Transport Model, Local Model Validation Report, (April 2009)*. The study area around the town of Maidstone which is modelled in detail is shown in **Figure 1.1**.

Figure 1.1 Detailed Study Area around Maidstone

The 2007 modelled network operates within capacity but with significant delays at key locations across the town, which is a robust reflection of the actual level of congestion and delay already experienced across the town.

The Maidstone Multi Modal model is based on travel demand and the 2007 base model demand has been shown to represent the actual observed travel demand in Maidstone.

The Multi Modal Model approach, which allows for travellers to switch between car, bus, rail and park and ride options in response to travel costs and congestion, provides a better representation of actual travel behaviour than a purely highway based model.

The 2017 and 2026 forecast models include the anticipated travel demand which will arise from background growth and new developments such as new homes, businesses and retail development. The Forecast Models, therefore, show the expected demand flows on the network in 2017 and 2026 and demonstrate the impact it will have on the town.

The development of the Local Development Framework (LDF) for Maidstone is an ongoing process and there already have been some changes to the anticipated LDF development assumptions for the forecast years. An initial representation of these assumptions has been incorporated in the latest Forecast Models.

The performance of the Forecast Model is and has shown to be significantly affected by the type of development, size of development and the location across the town. It is therefore critical to establish an agreed key set of assumptions as a base case first.

It has been agreed that Year 2017 will be the year without the South East Strategic Link (SEMSL). SEMSL is assumed to be ready for the Year 2026 and therefore is inputted into the forecast models for Year 2026.

2 Maidstone VISUM Forecast Models

2.1 Modelled Scenarios

Forecast models have been developed to represent the AM and PM peak periods for the years 2017 and 2026, with different development and infrastructure assumptions.

The 2017 and 2026 forecast models already include:

- *Park and Ride site at Parkwood (400 spaces in 2017 and 600 spaces in 2026).*
- *Bus only lanes on sections and improvements along the A274 corridor.*
- *Increased bus frequencies on key routes to 10 minute intervals, where not already at that level of service.*
- *HA signals at M20 junctions and merge improvements at M20 Junction 8 (for 2026 models only).*
- *SEMSL for 2026 models only*
- *Allowance for non motorised trips, which are not modelled.*

The models do not as yet include:

- *Further demand management strategies.*
- *Potential for policy changes.*
- *Any other infrastructure changes expected for 2017 and 2026.*

2.2 LDF Assumptions

The LDF assumptions built into the most recent forecast models are based on information available from the recent reports on predicted housing and retail floor space needs.

The current 2017 AM and PM peak forecast models include anticipated development across the town in addition to a total of 1000 homes and 15,900 sqm retail floor space at the urban extension. The 2017 models do not include the SEMSL. Development at the urban extension at this stage has been allocated to zones near to Parkwood which are connected to the A274 Sutton Road.

The most recent 2026 models include anticipated development across the town in addition to a total of 4000 homes and 15,900 sqm retail floor space at the urban extension. As for the 2017 models, the development at the urban extension has been allocated to zones near to Parkwood which are connected to the A274 Sutton Road. The 2026 models include the SEMSL.

See Appendix A – Development Assumptions

2.3 SEMSL Assumptions

The SEMSL is modelled as single carriageway links with a 60mph speed limit. The scheme includes a link forming a bypass to a section of the A274 from west of Langley to just north of the Five Wents junction with the B2163.

The SEMSL route and the terminal junctions are at the outline stage of design and the junctions modelled may therefore be modified. At the northern end the SEMSL ties into a roundabout at the junction of the A20 with the M20 link road. This junction is currently modelled as a large signalised roundabout in order to provide as much capacity as possible to manage delays on the approaches.

There is a link from the SEMSL to the existing B2163, between Leeds and Langley Heath, at which left in and left out movements only have been allowed to the new route.

Local rural and minor roads to the east of the town have been modelled with limited capacity and low link speeds to inhibit 'rat running' traffic.

Figure 2.1 Proposed SEMSL at the Northern end with A20/M20 roundabout

3 Model Summary Output

3.1 Traffic Movements To and Through Maidstone

Traffic movements crossing the inner and outer cordons points shown in Figure 3.1 are used to illustrate the volume of traffic in the forecast models compared to the base.

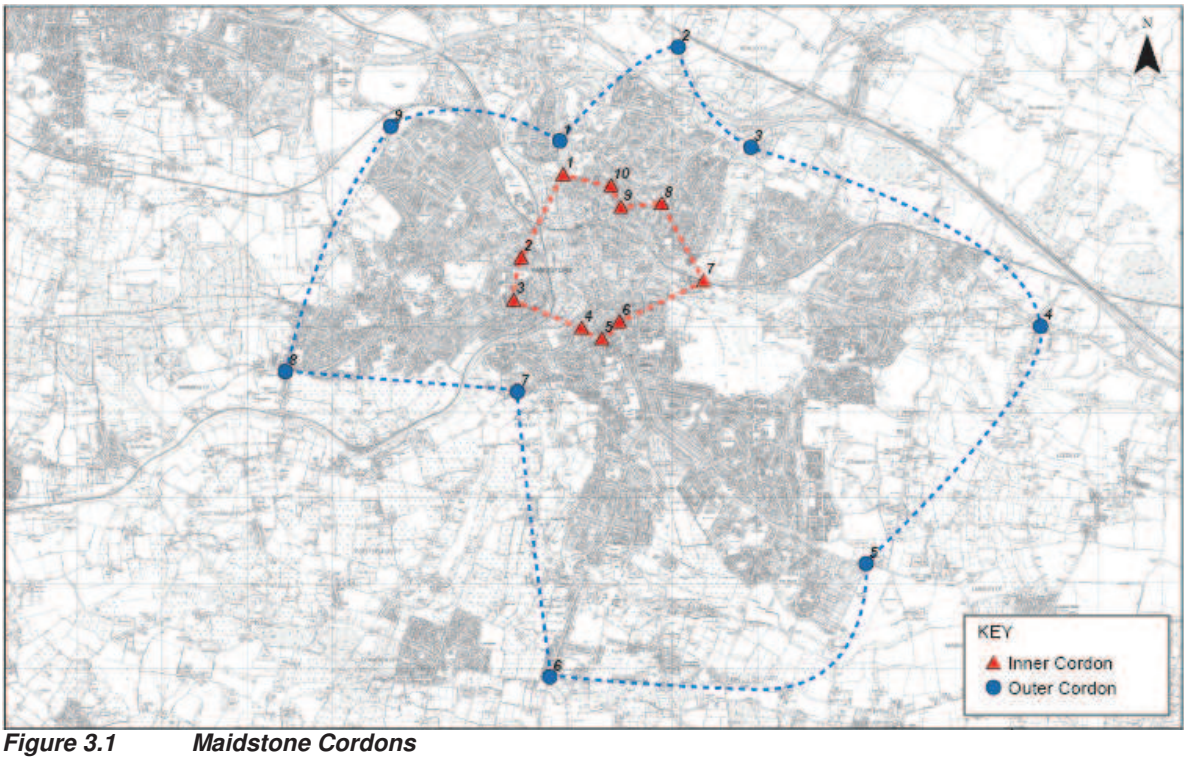


Figure 3.1 Maidstone Cordons

AM Peak	2007	2017 (1000 houses in UE)	2017 % Diff from 2007	2026 (4000 houses in UE)	2026 % Diff from 2017
		No SEMSL		SEMSL	
Inner Cordon	12520	17285	38%	19445	13%
Outer Cordon	15753	19875	26%	23971	21%
PM Peak	**2007**	**2017 (1000 houses in UE)**	**2017 % Diff from 2007**	**2026 (4000 houses in UE)**	**2026 % Diff from 2017**
Inner Cordon	13056	18578	42%	22136	19%
Outer Cordon	16800	19776	18%	22546	14%

Table 3-A Traffic Crossing the Inner and Outer Cordon (vehicles per hour)

In the year 2017, with no SEMSL in place, up to 38% more traffic is estimated to cross the inner cordon, the red dotted line in the figure 3.1 above, and up to 42% more traffic cross the inner cordon in the AM and PM peak respectively than in 2007. This shows that the demand to travel through the town centre has been increased substantially due to the new developments assumed in the Urban Extension (UE) and elsewhere in the town. The traffic is also estimated to increase noticeably from the outer cordon, blue dotted line in the figure 3.1 above, in the year

2017 due to the new assumed developments in Maidstone. Such increase in the traffic level both for the town centre area and the outer cordon has created more delays and congestion on the already congested network..

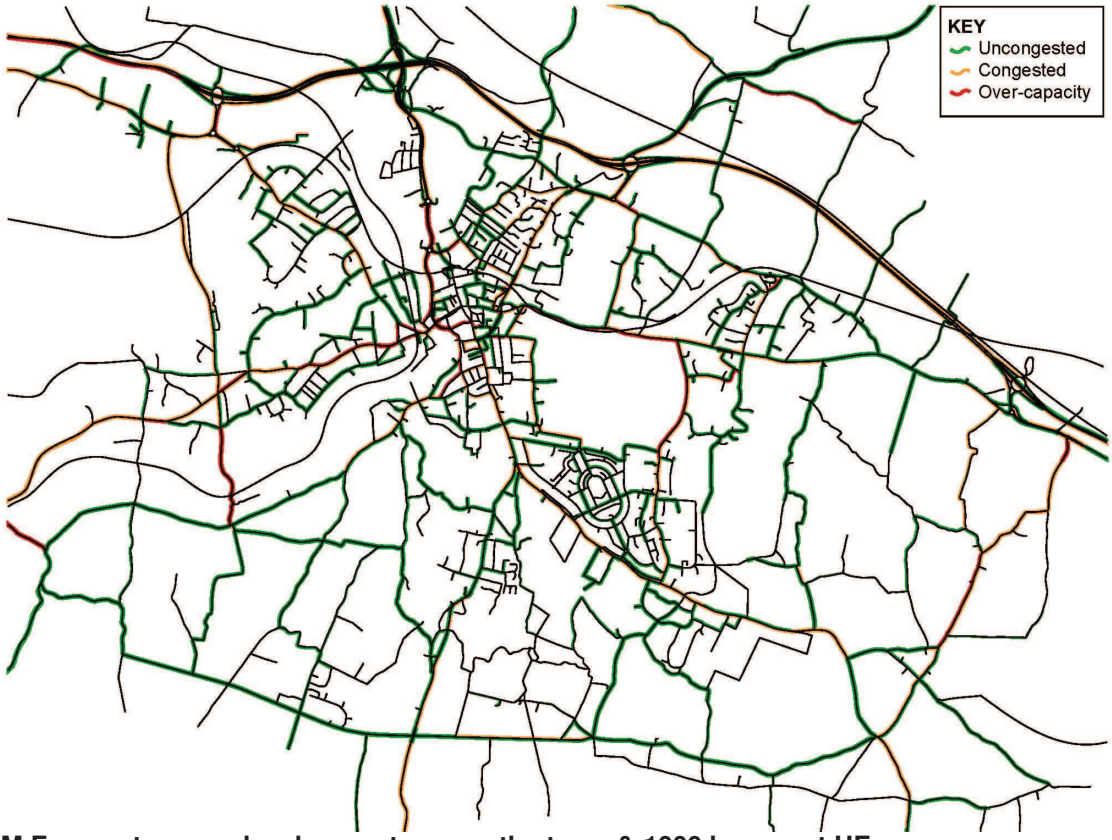
In the forecast year 2026, apart from other additional developments in Maidstone, the UE has 3000 more houses than 2017. This directly implies more traffic and hence more congestion in the network when compared to the 2017 forecast year. In order to keep the traffic moving and transport network flowing in 2026, it is almost essential to consider SEMSL. Due to this fact, the 2026 forecast year has been modelled with SEMSL. The estimates from the model run showed that the overall generated traffic demand using the inner cordon has been limited to an increase by 13% and 19% only in the AM and PM peak respectively when compared to the traffic levels in 2017. The 2026 traffic estimate indicates a substantially lower increase in traffic crossing the inner cordon when compared with 2017 in spite of a substantial development growth. There is also a reduction in the level of increase for traffic demand has been noticed for both AM and PM peak using the outer cordon in the year 2026 when compared to 2017.

SEMSL in 2026, therefore, has shown its full potential to alleviate the general increase in traffic level around Maidstone and hence some of the severe congestion problem that may arise with the 2026 development assumptions and no SEMSL.

It is obvious that 2026 has much more traffic than 2017 and hence SEMSL can not provide a single stop solution to all congestion problems in Maidstone. Therefore, more traffic management schemes besides SEMSL are recommended to further improve the congestion on the network.

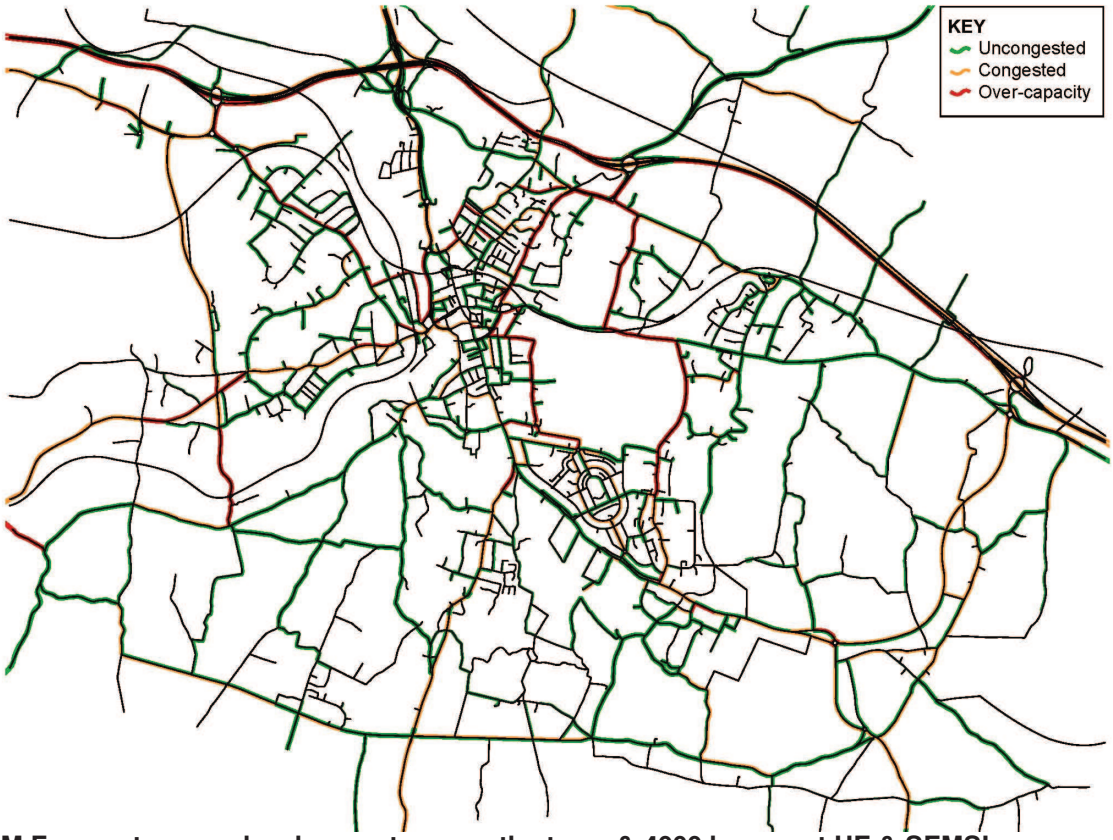
3.2 Network Performance

2007 Base year models reflect the existing situation with sections of the major road network operating under congested conditions, although the modelled traffic can move through the network. Some parts of network are showing signs of overcapacity in the PM peak.



2017 AM Forecast year – development across the town & 1000 homes at UE

There is significantly more congestion across the network with multiple sections of major routes showing signs of overcapacity, where demand is well in excess of the actual traffic that can use that part of the network. The outcome would be severe delays across the town.



2026 AM Forecast year – development across the town & 4000 homes at UE & SEMSL

Despite the added capacity provided by the SEMSL, overcapacity is flagged on key routes as well as minor routes used to move through the town. This shows that there are unacceptable delays across the town with the level of demand input.

The forecast year 2026 model shows more rat runs around the town centre area. The model also indicates overcapacity along the A249 Sittingbourne Road in 2026. On the other hand, the model also shows that the traffic condition, especially during the AM peak, improves on the southern approach of the Maidstone Bridge Gyratory, A274 Sutton Road, Langley and surrounding the areas of SEMSL when compared with 2017. PM 2026 traffic condition has shown a reduction in rat running traffic particularly at Willington Street, New Cut Road and the areas surrounding SEMSL.

With SEMSL, the traffic congestion is efficiently constrained specially in the South and East of Maidstone. In return it helped to lessen the pressure at the Bridge Gyratory in the town centre.

See Appendix B - Network Performance

3.3 SEMSL Traffic

The select link analysis for the SEMSL (Appendix C) indicates that the proposed road infrastructure serves Year 2026 traffic movements from the south and east of Maidstone to the A20/M20 corridor. The SEMSL route accommodates some traffic from the UE. Without the SEMSL, many of these traffic movements are more likely to travel through the town or using the surrounding roads of the nearby parishes.

In the PM peak, the model shows that due to the congestion in the town centre the traffic from the southern part of Maidstone town centre is using SEMSL and M20 Junction 8 to make their journeys .

See Appendix C - SEMSL Select Link Analysis

4 Conclusion

Forecast models have been developed to represent the AM and PM peak periods for the years 2017 and 2026, with different LDF developments and infrastructure assumptions.

The SEMSL is modelled as a single carriageway links with a 60mph speed limit. The scheme includes a link forming a bypass to a section of the A274 from west of Langley to just north of the Five Wents junction with the B2163. Local rural and minor roads to the east of the town have been modelled with limited capacity and low link speeds to inhibit 'rat running' traffic.

2017 is the year without the proposed SEMSL scheme while 2026 is taken as the year with SEMSL. For the purposes of assessing the SEMSL, the forecast models are based on the information available on anticipated forecast developments and a partial developed traffic demand management strategy for the town and for the relevant years.

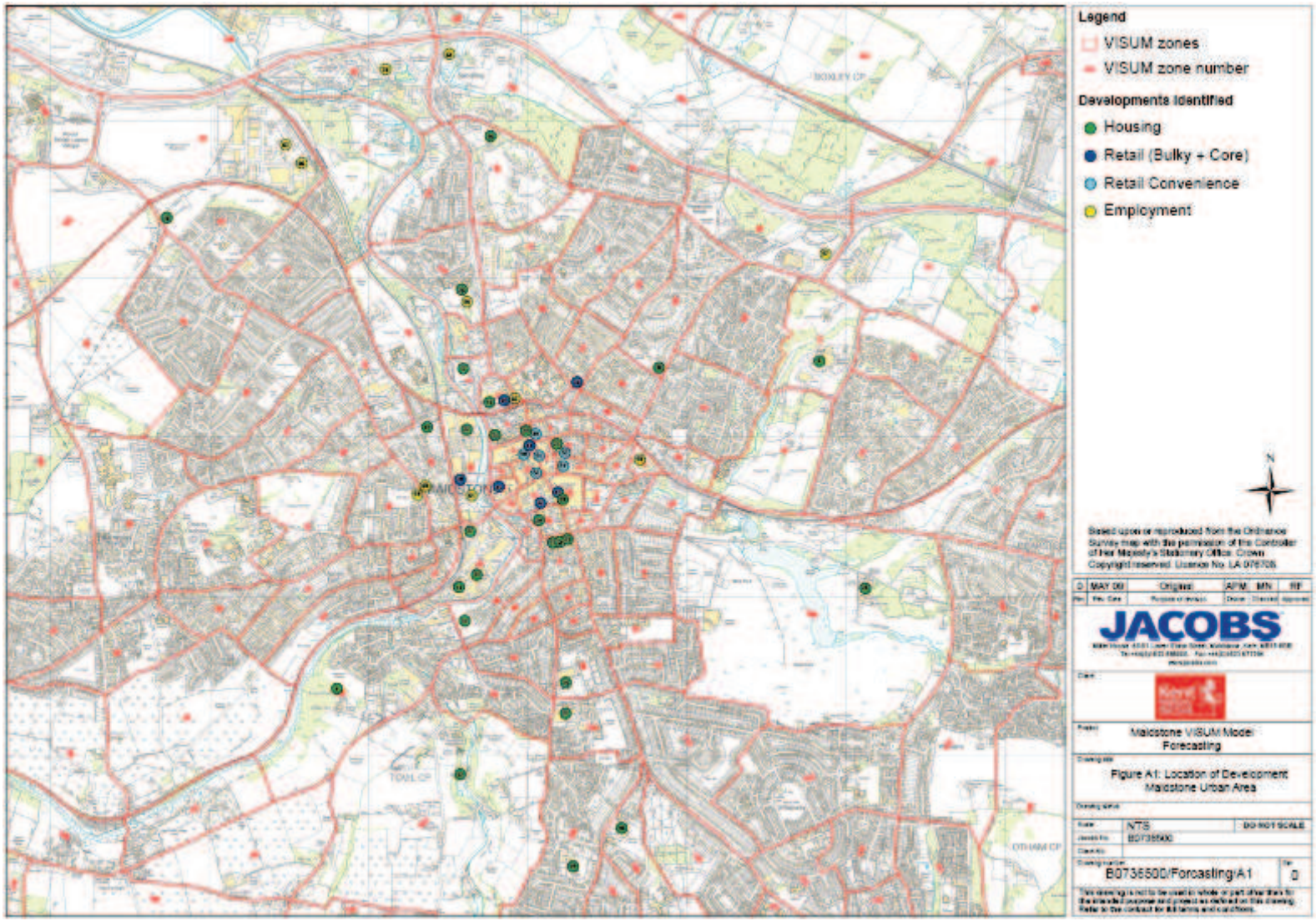
In the year 2017, the LDF development at UE and other locations in Maidstone has resulted in majority of the traffic using the town centre road network. This increase in 2017 town centre traffic levels has created more delays and congestion not only in the town centre itself but also in the surrounding areas.

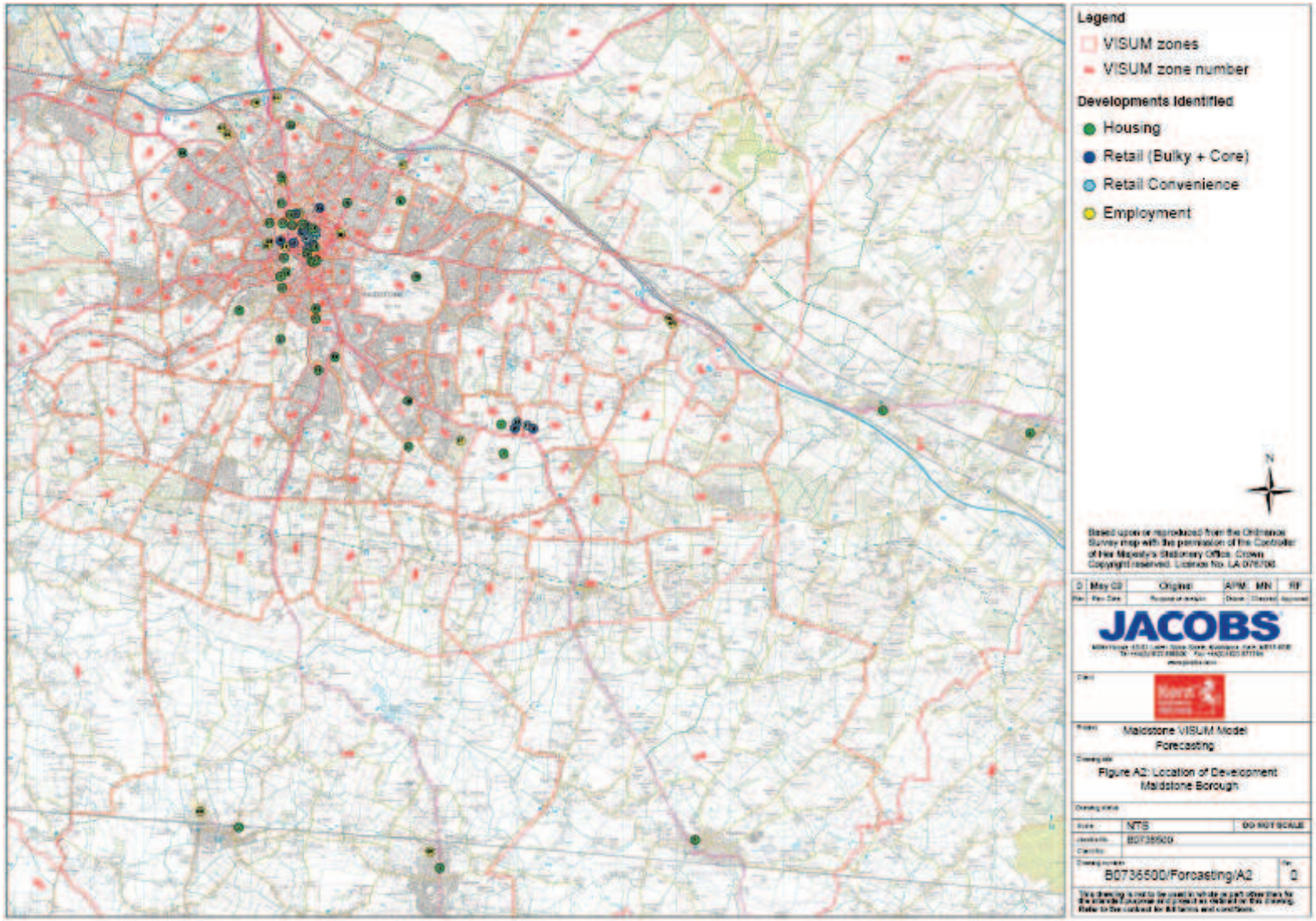
The year 2026 incorporates a substantial increase in the development assumptions, both at the UE and other locations in Maidstone, from 2017. With more developments and SEMSL in the year 2026, the magnitude of increase in traffic demand is not reflected in volume of traffic crossing traffic cordons as opposed to 2017 with no SEMSL. This shows that SEMSL has high potential of handling traffic from South and East of Maidstone and UE. Without SEMSL, many of these movements are more likely to travel through the town centre or using the surrounding roads of the nearby parishes and hence will increase congestion substantially in the town centre itself.

The additional capacity provided by the SEMSL in 2026 has assisted in improving the traffic pressure from South and East of Maidstone and hence mitigating the congestion in Maidstone as a whole. However, the overcapacity is still flagged on some of the key routes as well as the minor routes in the town. The general traffic congestion in Maidstone is greater in the PM than in the AM peak. Supplementary traffic management strategies for both AM and PM are essential to a overall approach in tackling the growth in traffic level for Maidstone.

It is likely that a number of alternative demand management options will need to be tested in order to determine the optimum scenario. These forecast models are the best existing and reasonable base from where to start looking at further strategies.

Appendix A - Development Included in Forecast Models


Legend
VISUM zones
VISUM zone number
Developments Identified
Housing
Retail (Bulky + Core)
Retail Convenience
Employment
N
Based upon or reproduced from the Ordnance Survey map with the permission of the Controller of Her Majesty's Stationery Office. Crown Copyright reserved. Licence No. LA 076705
JACOBS
Maidstone VISUM Model Forecasting
Figure A1: Location of Development Maidstone Urban Area
NTS
DO NOT SCALE
B0736500/Forcasting/A1


Legend
VISUM zones
VISUM zone number
Developments Identified
Housing
Retail (Bulky + Core)
Retail Convenience
Employment
N
Based upon or reproduced from the Ordnance Survey map with the permission of the Controller of Her Majesty's Stationery Office. Crown Copyright reserved. Licence No. LA 076700
JACOBS
Maidstone VISUM Model
Forecasting
Figure A2: Location of Development
Maidstone Borough
NTS
DO NOT SCALE
B0736500/Forcasting/A2

Plan Key No.	Zone	2017 Development Site Name	Residential Units	Employment & Other uses		Land
				Use Class	Floorsp. Sq.ms	Use Code
			6,066			
		Completed 2006/07	714	Residential - mixed		
		Completed 2007/08	792	Residential - mixed		
	---	**Housing ----**				
		South East Urban Extension	**1,000**			
1	122	South East Urban Extension	500	Residential - mixed		M1
2	127	South East Urban Extension	500	Residential - mixed		M1
		Rural service Centres	**600**			
3	315	Staplehurst	120	Residential - mixed		H2
4	315	Marden	120	Residential - mixed		H2
5	316	Headcorn	120	Residential - mixed		H2
6	317	Lenham	120	Residential - mixed		H2
7	317	Harrietsham	120	Residential - mixed		H2
		Edge of Urban	**550**			
8	71	Maidstone Studios	140	Residential - mixed		M1
9	88	Tovil (Burke Land)	270	Residential - mixed		M1
10	125	Loose (Fire Station)	140	Residential - mixed		M1
		Schedule of Other Identified/Potential Sites	**2,410**			
11	33	Hart Street	200	Residential - mixed		M1
12	121	Furfield quarry	150	Residential - mixed		M1
13	54	Buckland Hill	20	Residential - mixed		M1
14	86	Beaconsfield Road/Eccleston Road	250	Residential - mixed		M1
15	96	Hayle Place	200	Residential - mixed		M1
16	3	Maidstone East	30	Residential - mixed		M1
17	2	West of Royal Eng. Way	100	Residential - mixed		M1
18	45	London Road Garden Centre	100	Residential - mixed		M1
19	106	Y centre	80	Residential - mixed		M1
20	117	Senacre	300	Residential - mixed		M1
21	104	Armstrong Road Depot	85	Residential - mixed		M1
22	55	Powerhub	100	Residential - mixed		M1
23	91	Wrens Cross Regeneration Area	250	Residential - mixed		M1
24	14	Opthalmic Hospital	100	Residential - mixed		M1
25	11	A&N Week Street	25	Residential - mixed		M1
26	178	Springfield	50	Residential - mixed		M1
27	33	Maidstone West	40	Residential - mixed		M1
28	105	Mote House - Resdential Home for the Elderly	80	Residential - mixed		M1
29	25	ASLR Area	150	Residential - mixed		M1
30	23	Granada House	100	Residential - mixed		M1
		Assumed Housing Developments 2007-2008				
31	33	Hart Street - additional devs	110	Residential - mixed		M1
32	103	Hayle Mill - 50%	25	Residential - mixed		M1
33	6	Aspects - 50%	44	Residential - mixed		M1
34	91	Iconica - 50%	12	Residential - mixed		M1
35	56	Sandling Park - 50%	54	Residential - mixed		M1
36	65	Sittingbourne rd - crown house and - 50%	52	Residential - mixed		M1
37	91	15, Knightrider Street, Hotel	25	Residential - mixed		M1
		Total - Resid. Units	**4,560**			
		Retail Comparison (Bulky + Core)				
38	128	Vicinity of urban extension (Same Polygon)		Retail - Bulky+Core	0	A1a
39	122	Vicinity of urban extension (Same Polygon)		Retail - Bulky+Core	0	A1a
40	55	St Peters Street		Retail - Bulky+Core	20,000	A1b
41	11	Week Street		Retail - Bulky+Core	1,400	A1b
42	21	Palace Avenue - Robin & Day Peugeot		Retail - Bulky+Core	15,000	A1b
43	23	Gabriels Hill - Granada House		Retail - Bulky+Core	5,000	A1b
44	9	Medway Street - Redevelopment of existing car park		Retail - Bulky+Core	5,000	A1b
45	6	Maidstone East - Rail Station Redevelopment		Retail - Bulky+Core	5,000	A1b
46	63	Aldi		Retail - Bulky+Core	3,000	A1b
		Retail Convenience				
47	128	Vicinity of urban extension (Same Polygon)		Convenience Shops	0	A1a
48	122	Vicinity of urban extension (Same Polygon)		Convenience Shops	0	A1a
49	8	Town Centre		Convenience Shops	525	A1b
50	11	Town Centre		Convenience Shops	525	A1b
51	12	Town Centre		Convenience Shops	525	A1b
52	13	Town Centre		Convenience Shops	525	A1b
53	14	Town Centre		Convenience Shops	525	A1b
54	15	Town Centre		Convenience Shops	525	A1b
		Total - Retail			**57,550**	
		Employment Land - Offices				
55	178	Springfield		B1(a&b)	3,000	B1a+b
56	136	Gallagher@J8		B1(a&b)	3,000	B1c
57	61	Eclipse		B1(a&b)	3,000	B1a+b
58	20	Albion Place		B1(a&b)	1,800	B1a+b
59	32	London Road (Same Polygon)		B1(a&b)	0	B1a+b
60	54	London Road (Same Polygon)		B1(a&b)	0	B1a+b
61	55	Powerhub		B1(a&b)	0	B1a+b
62	6	Maidstone East		B1(a&b)	1,950	B1a+b
63	44	20/20 Allington		B1(a&b)	1,950	B1d
64	164	Abbey Court		B1(a&b)	315	B1d
65	136	Gallagher@J8		B1c,B2,B8	315	Bm
66	44	20/20 Allington		B1c,B2,B8	315	Bm
67	123	Parkwood		B1c,B2,B8	315	Bm
68	315	Marden		B1c,B2,B8	315	Bm
69	315	Staplehurst		B1c,B2,B9	315	Bm
70	42	Former Veglios Motel Site - Audi Car Showroom		Retail - Bulky+Core	0	B1d
		Total - Offices			**16,590**	

Plan Key No.	Zone	2026 Development Site Name	Residential Units	Employment & Other uses		Land
				Use Class	Floorsp. Sq.ms	Use Code
			10,016			
		Completed 2006/07	714	Residential - mixed		
		Completed 2007/08	792	Residential - mixed		
	---	**Housing ----**				
		South East Urban Extension	**4,000**			
1	122	South East Urban Extension	2,000	Residential - mixed		M1
2	127	South East Urban Extension	2,000	Residential - mixed		M1
		Rural service Centres	**850**			
3	315	Staplehurst	170	Residential - mixed		H2
4	315	Marden	170	Residential - mixed		H2
5	316	Headcorn	170	Residential - mixed		H2
6	317	Lenham	170	Residential - mixed		H2
7	317	Harrietsham	170	Residential - mixed		H2
		Edge of Urban	**550**			
8	71	Maidstone Studios	140	Residential - mixed		M1
9	88	Tovil (Burke Land)	270	Residential - mixed		M1
10	125	Loose (Fire Station)	140	Residential - mixed		M1
		Schedule of Other Identified/Potential Sites	**3,110**			
11	33	Hart Street	200	Residential - mixed		M1
12	121	Furfield quarry	150	Residential - mixed		M1
13	54	Buckland Hill	20	Residential - mixed		M1
14	86	Beaconsfield Road/Eccleston Road	250	Residential - mixed		M1
15	96	Hayle Place	200	Residential - mixed		M1
16	3	Maidstone East	30	Residential - mixed		M1
17	2	West of Royal Eng. Way	100	Residential - mixed		M1
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21	104	Armstrong Road Depot	85	Residential - mixed		M1
22	55	Powerhub	100	Residential - mixed		M1
23	91	Wrens Cross Regeneration Area	250	Residential - mixed		M1
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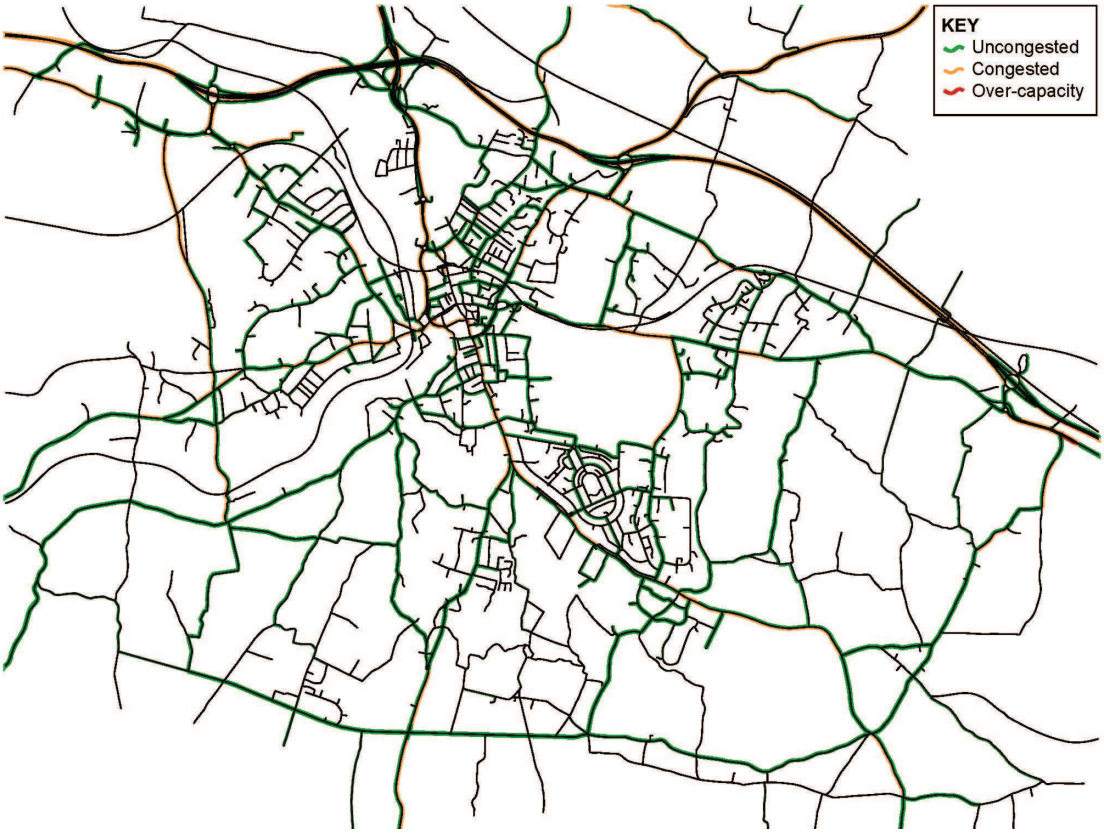
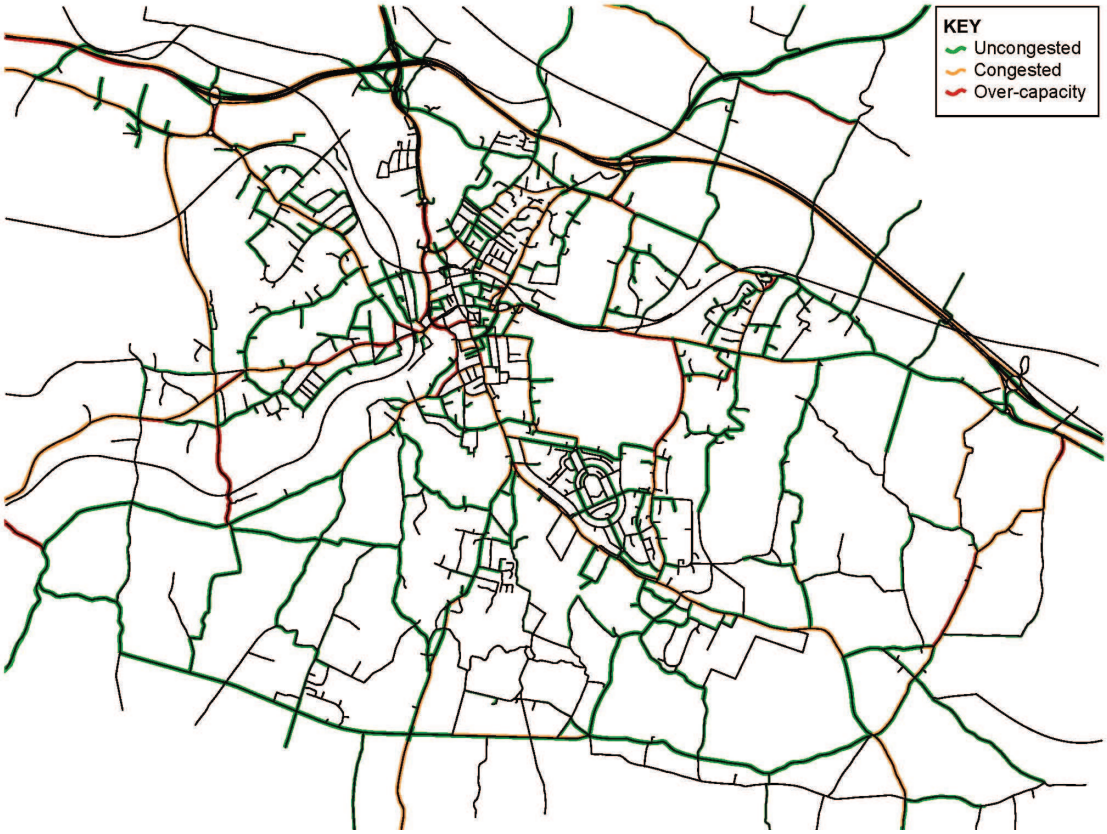
25	11	A&N Week Street	25	Residential - mixed		M1
26	178	Springfield	50	Residential - mixed		M1
27	33	Maidstone West	40	Residential - mixed		M1
28	105	Mote House - Resdential Home for the Elderly	80	Residential - mixed		M1
29	25	ASLR Area	150	Residential - mixed		M1
30	23	Granada House	100	Residential - mixed		M1
	172	Hermitage Lane	700	Residential - mixed		M1
		Assumed Housing Developments 2007-2008				
31	33	Hart Street - additional devs	110	Residential - mixed		M1
32	103	Hayle Mill - 50%	25	Residential - mixed		M1
33	6	Aspects - 50%	44	Residential - mixed		M1
34	91	Iconica - 50%	12	Residential - mixed		M1
35	56	Sandling Park - 50%	54	Residential - mixed		M1
36	65	Sittingbourne rd - crown house and - 50%	52	Residential - mixed		M1
37	91	15, Knightrider Street, Hotel	25	Residential - mixed		M1
		Total - Resid. Units	**8,510**			
		Retail Comparison (Bulky + Core)				
38	128	Vicinity of urban extension (Same Polygon)		Retail - Bulky+Core	7,200	A1e
39	122	Vicinity of urban extension (Same Polygon)		Retail - Bulky+Core	7,200	A1e
40	55	St Peters Street		Retail - Bulky+Core	20,000	A1e
41	11	Week Street		Retail - Bulky+Core	1,400	A1e
42	21	Palace Avenue - Robin & Day Peugeot		Retail - Bulky+Core	15,000	A1e
43	23	Gabriels Hill - Granada House		Retail - Bulky+Core	5,000	A1e
44	9	Medway Street - Redevelopment of existing car park		Retail - Bulky+Core	5,000	A1e
45	6	Maidstone East - Rail Station Redevelopment		Retail - Bulky+Core	5,000	A1e
46	63	Aldi		Retail - Bulky+Core	3,000	A1c
		Retail Convenience				
47	128	Vicinity of urban extension (Same Polygon)		Convenience Shops	750	A1a
48	122	Vicinity of urban extension (Same Polygon)		Convenience Shops	750	A1a
49	8	Town Centre		Convenience Shops	525	A1b
50	11	Town Centre		Convenience Shops	525	A1b
51	12	Town Centre		Convenience Shops	525	A1b
52	13	Town Centre		Convenience Shops	525	A1b
53	14	Town Centre		Convenience Shops	525	A1b
54	15	Town Centre		Convenience Shops	525	A1b
		Total - Retail			**73,450**	
		Employment Land - Offices				
55	178	Springfield		B1(a&b)	10,000	B1a+b
56	136	Gallagher@J8		B1(a&b)	20,000	B1c
57	61	Eclipse		B1(a&b)	10,000	B1a+b
58	20	Albion Place		B1(a&b)	10,000	B1a+b
59	32	London Road (Same Polygon)		B1(a&b)	5,000	B1a+b
60	54	London Road (Same Polygon)		B1(a&b)	5,000	B1a+b
61	55	Powerhub		B1(a&b)	5,000	B1a+b
62	6	Maidstone East		B1(a&b)	5,000	B1a+b
63	44	20/20 Allington		B1(a&b)	4,000	B1d
64	164	Abbey Court		B1(a&b)	3,000	B1d
65	136	Gallagher@J8		B1c,B2,B8	25,000	Bm
66	44	20/20 Allington		B1c,B2,B8	15,000	Bm
67	123	Parkwood		B1c,B2,B8	20,000	Bm
68	315	Marden		B1c,B2,B8	10,000	Bm
69	315	Staplehurst		B1c,B2,B9	10,000	Bm
70	42	Former Veglios Motel Site - Audi Car Showroom		Retail - Bulky+Core	8,000	B1d
		Total - Offices			**165,000**	

Appendix B - Network Performance

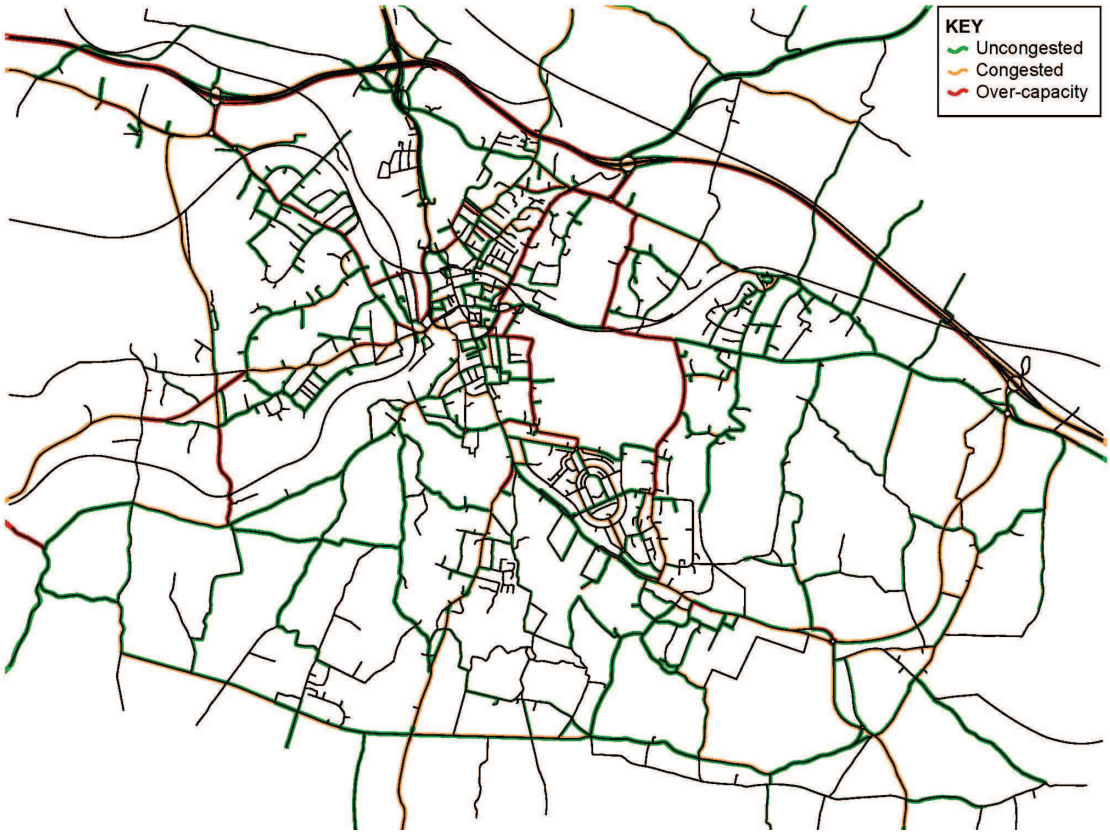
Network Congestion (Volume / Capacity) Plots



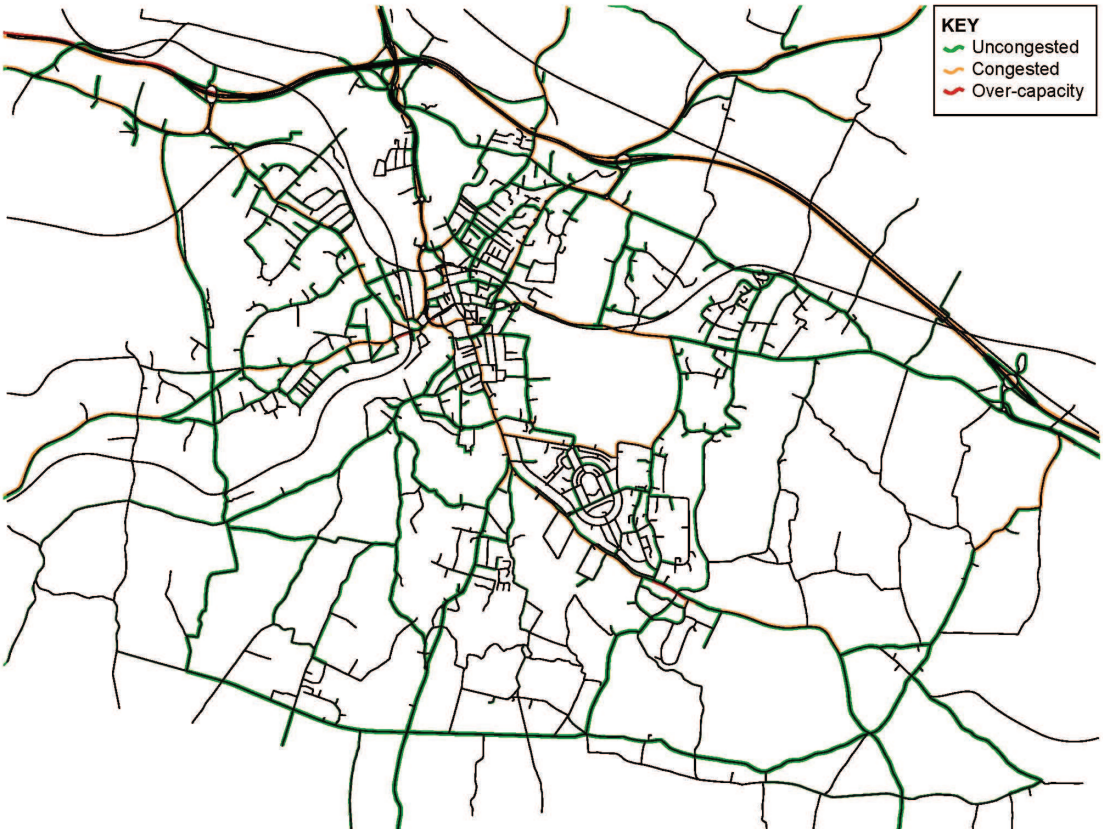
2007 AM Peak



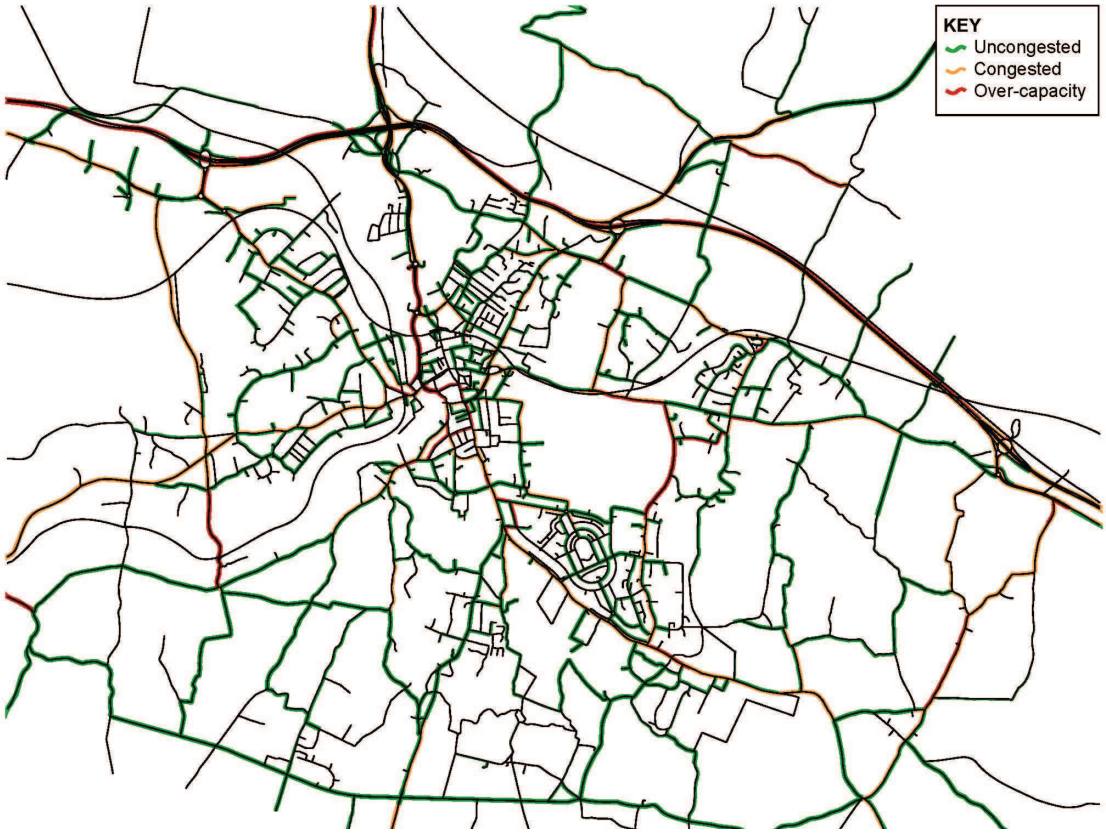
2017 AM Peak



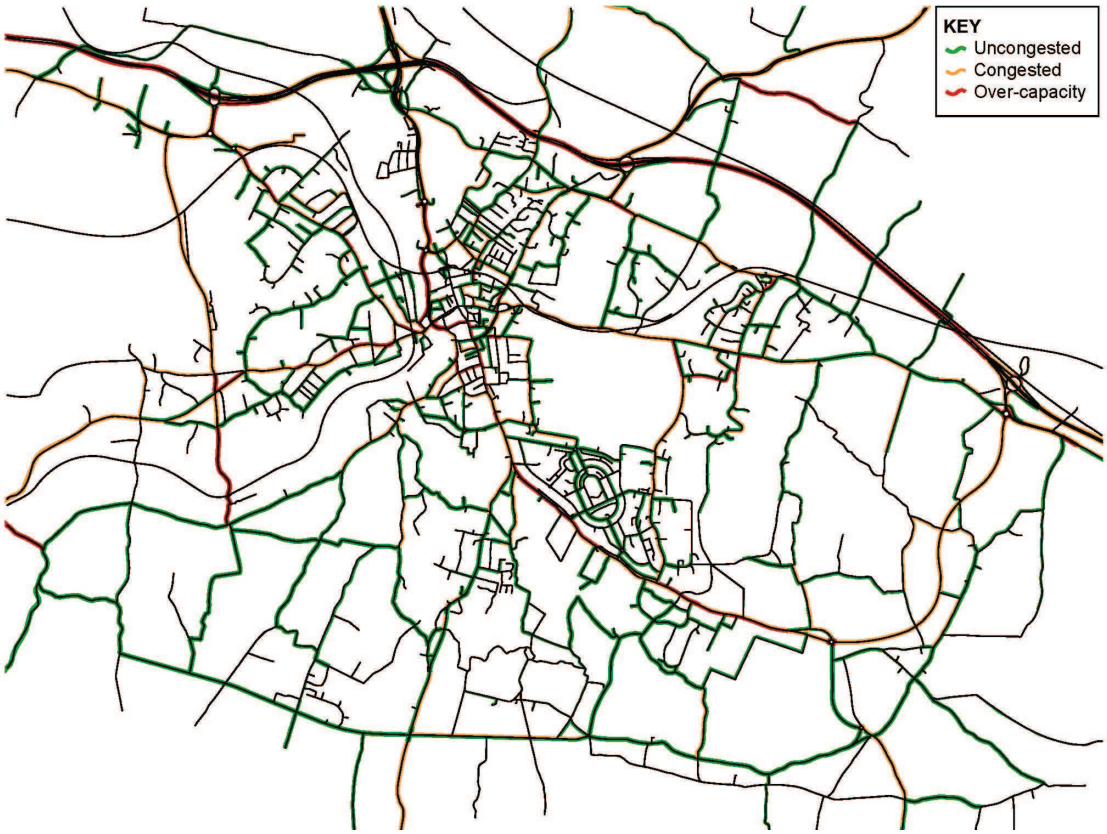
2026 AM Peak



2007 PM Peak

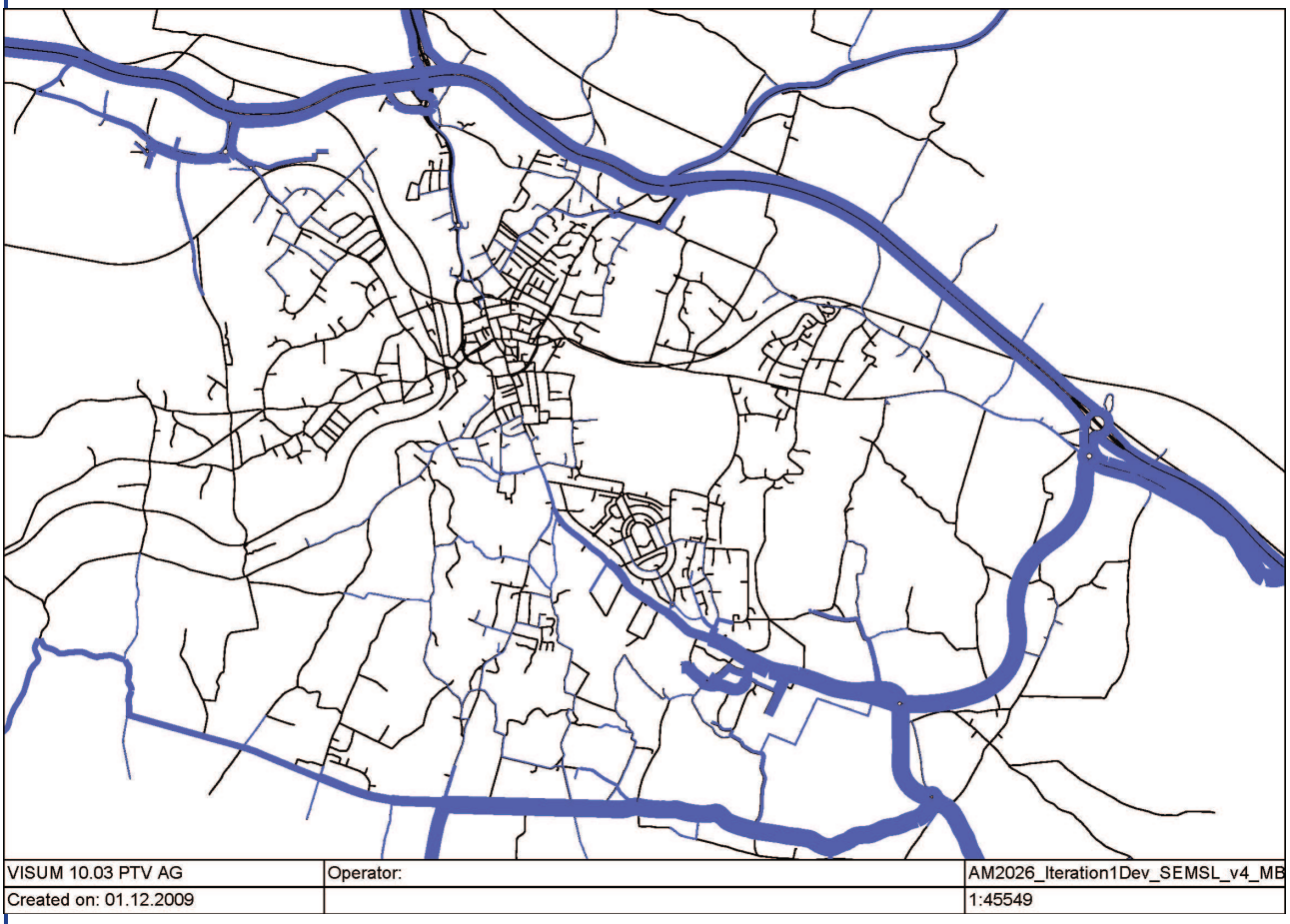


2017 PM Peak

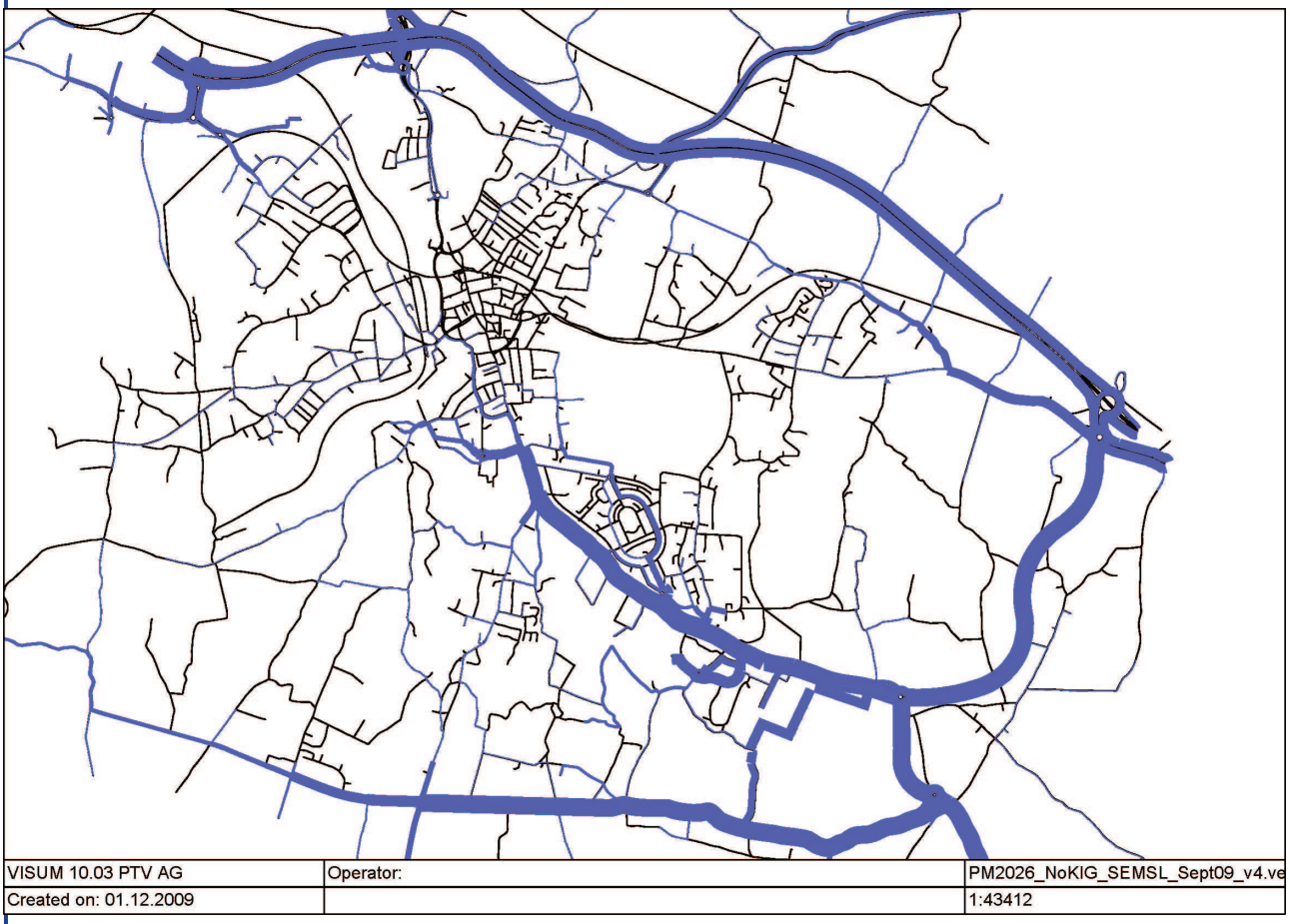


2026 PM Peak

Appendix C - SEMSL Select Link Analysis



2026 AM Peak – Distribution of traffic using the SEMSL (Two-Way Flows)



2026 PM Peak – Distribution of traffic using the SEMSL (Two-Way Flows)

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Kent Highway Services

Maidstone Transport Strategy

Option Testing Summary Tables

March 2011

JACOBS

Document control sheet BPP 04 F8

Client: Kent County Council
Project: Maidstone VISUM Model Job No: B0734500 task H
Document Title: Option Testing Summary Tables

	Originator	Checked by	Reviewed by	Approved by
ORIGINAL	NAME **M. Nicholls**	NAME **S. Kaler**	NAME **S. Srivastava**	NAME **S. Srivastava**
DATE **10/3/11**	SIGNATURE	SIGNATURE	SIGNATURE	SIGNATURE
Document Status				

REVISION	NAME	NAME	NAME	NAME
DATE	SIGNATURE	SIGNATURE	SIGNATURE	SIGNATURE
Document Status				

REVISION	NAME	NAME	NAME	NAME
DATE	SIGNATURE	SIGNATURE	SIGNATURE	SIGNATURE
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1 Introduction

This report details summary tables for the four option tests carried out by Jacobs using the Maidstone VISUM Model Planning Suite. The model study area is show below in figure 1.1.

Figure 1.1 – Model Study Area

The four options tested are:

- Option A – 11,080 new homes, of which 3,725 would be in a south east urban extension
- Option B – 10,080 new homes, using amore dispersed pattern of development
- Option C – 8,200 new homes, also with dispersed distribution
- Option S - (the “Optimal” distribution) – 10,080 new homes

The report contains details on mode share, cordon traffic movements, journey times and travel demand. Figures 1.2 and 1.3 show the locations of cordon sites and the journey time routes.

Figure 1.2 – Location of Cordons

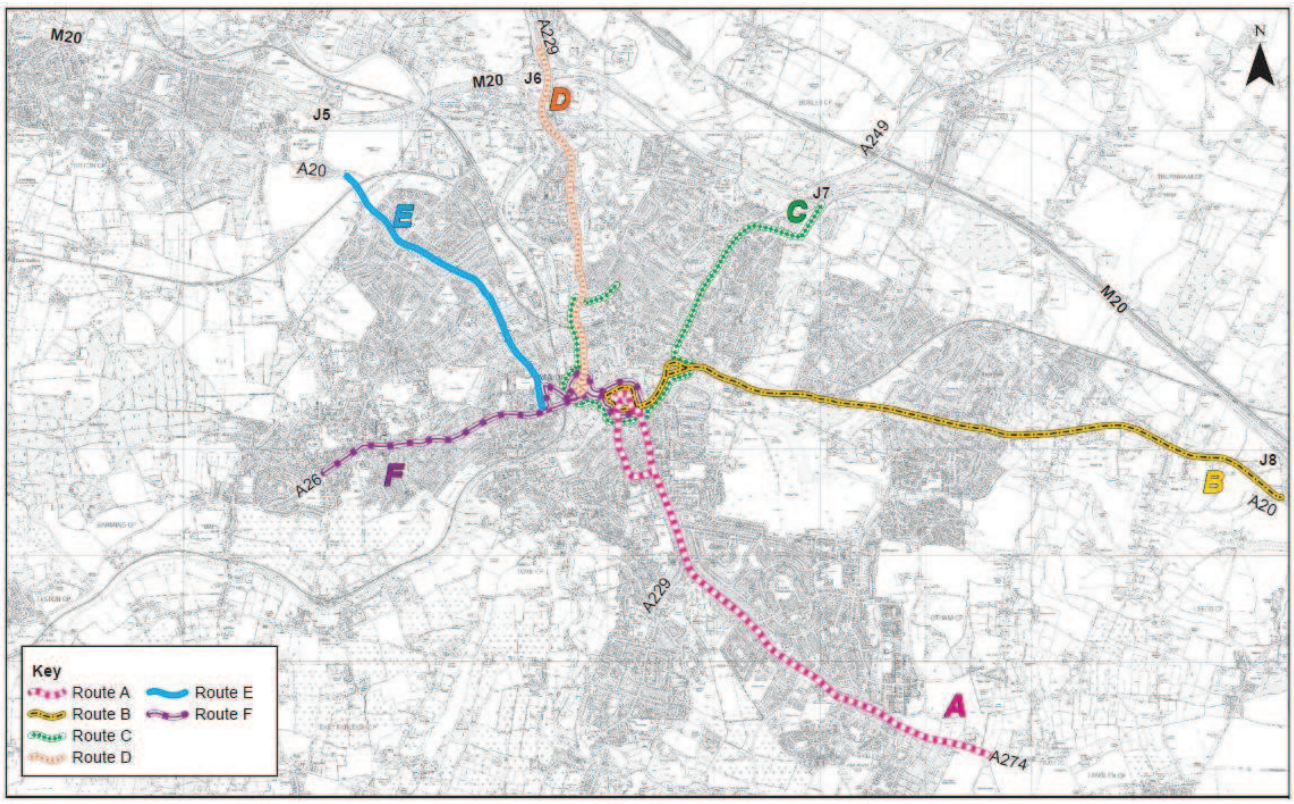


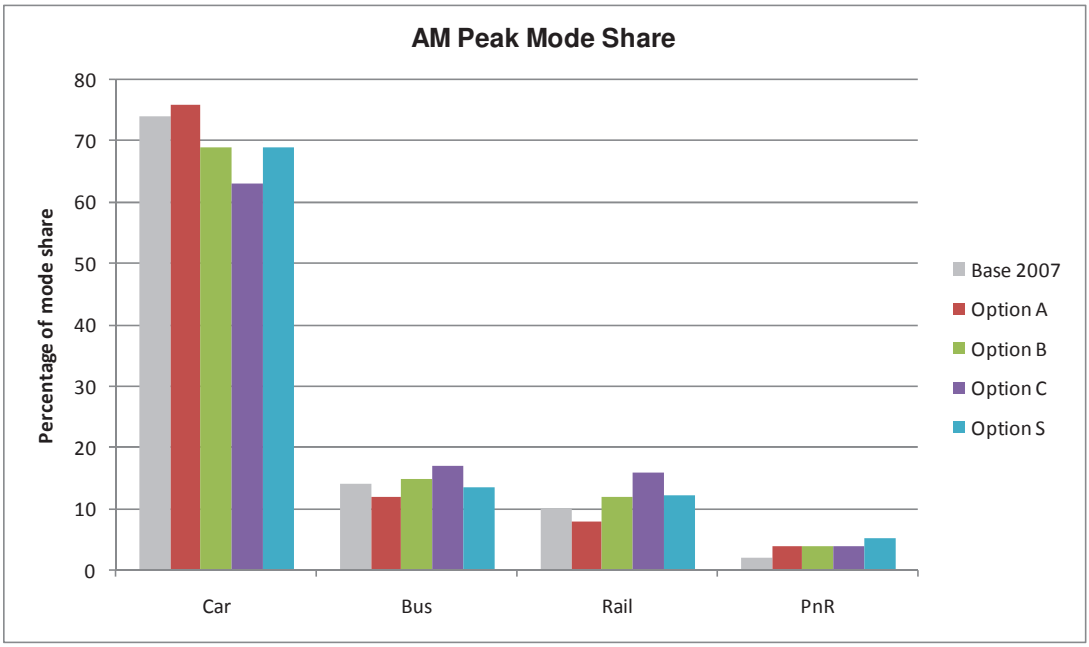
Figure 1.3 – Journey Time Routes

2 Mode Share

Mode Share – AM Peak

	AM Peak - Person Trips by Mode Share				
Mode	*Base 2007*	Option A	Option B	Option C	Option S
Car	*26,043*	34,926	31,580	28,457	30,932
Bus	*4,837*	5,587	6,921	7,439	6,056
Rail	*3,517*	3,610	5,355	7,285	5,499
PnR	*979*	1,735	1,606	1,830	2,317
Total	***35,376***	**45,858**	**45,462**	**45,011**	**44,804**

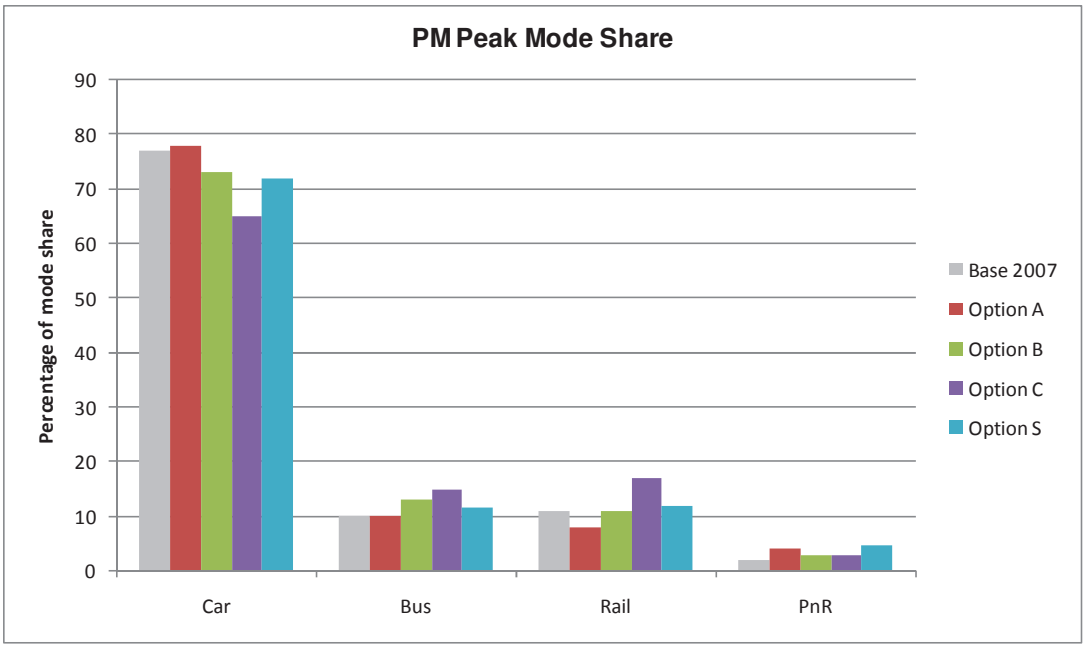
	AM Peak - Person Trips by Mode Share (%)				
Mode	*Base 2007*	Option A	Option B	Option C	Option S
Car	*73*	76	69	63	69
Bus	*14*	12	15	17	14
Rail	*10*	8	12	16	12
PnR	*3*	4	4	4	5
Total	***100***	**100**	**100**	**100**	**100**



Mode Share – PM Peak

	PM Peak - Person Trips by Mode Share				
Mode	***Base 2007***	**Option A**	**Option B**	**Option C**	**Option S**
Car	*24,247*	32,516	29,161	24,201	28,107
Bus	*3,259*	4,168	5,171	5,550	4,518
Rail	*3,347*	3,444	4,536	6,170	4,658
PnR	*593*	1,348	1,248	1,422	1,800
Total	***31,446***	**41,476**	**40,116**	**37,343**	**39,083**

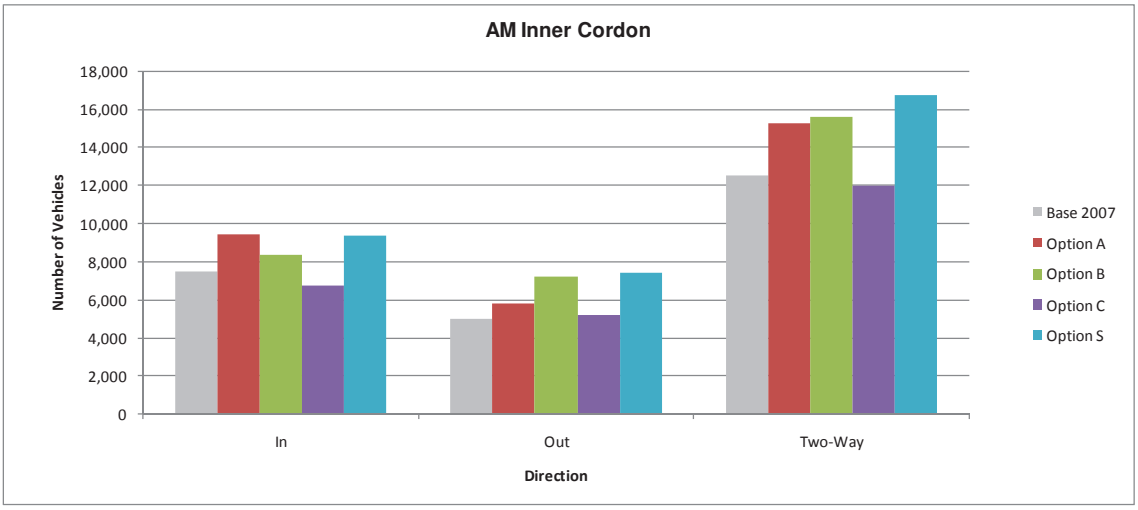
	PM Peak - Person Trips by Mode Share (%)				
Mode	***Base 2007***	**Option A**	**Option B**	**Option C**	**Option S**
Car	*77*	78	73	65	72
Bus	*10*	10	13	15	12
Rail	*11*	8	11	17	12
PnR	*2*	4	3	3	4
Total	***100***	**100**	**100**	**100**	**100**

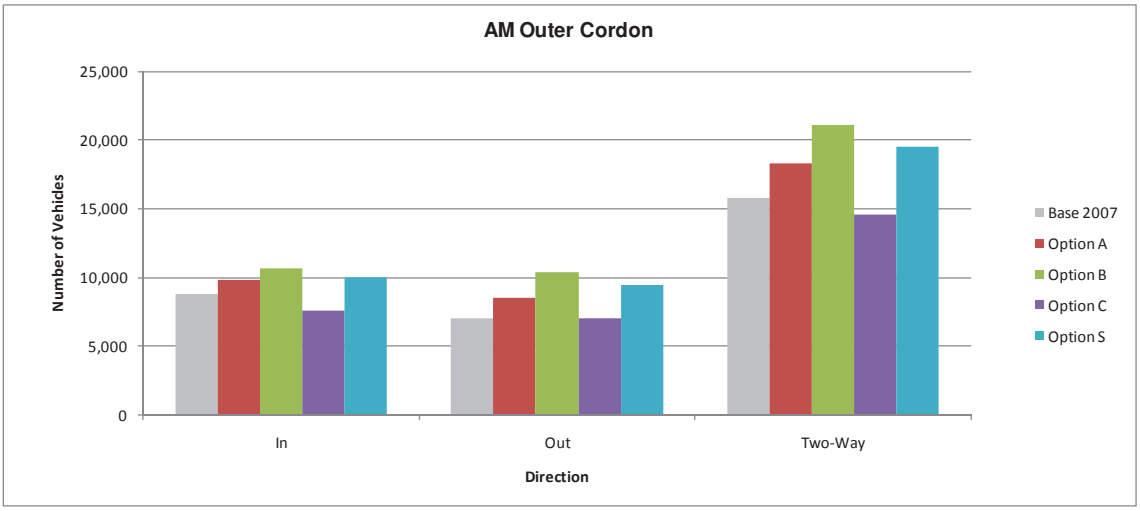


3 Cordon Traffic Movements

Cordon Traffic Movements – AM Peak

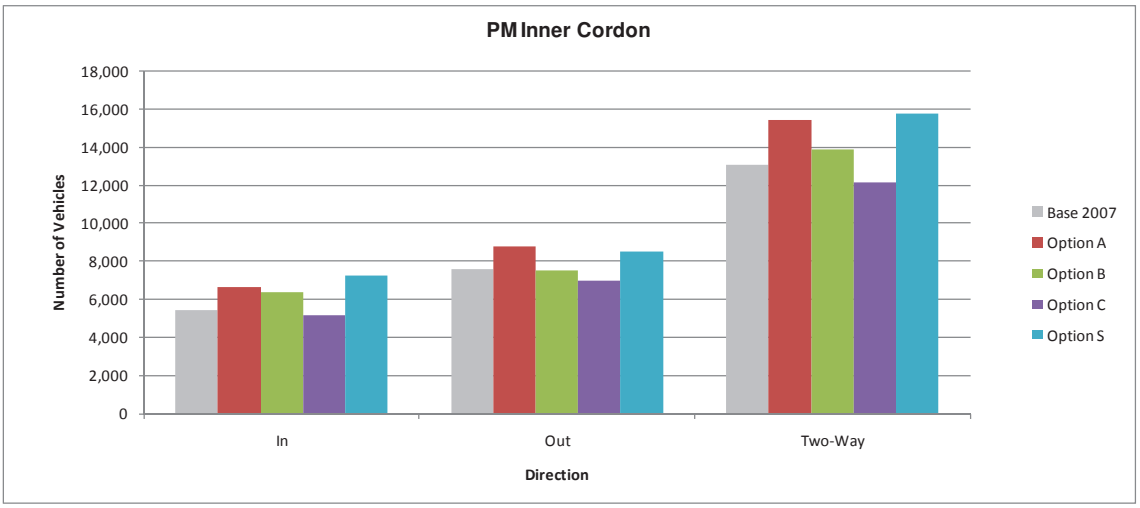
	AM Peak - Inner Cordon Traffic Flow				
Direction	***Base 2007***	**Option A**	**Option B**	**Option C**	**Option S**
In	*7,477*	9,462	8,364	6,765	9,374
Out	*5,043*	5,804	7,227	5,210	7,406
Two way	***12,520***	**15,266**	**15,591**	**11,975**	**16,780**
	AM Peak - Outer Cordon Traffic Flow				
Direction	***Base 2007***	**Option A**	**Option B**	**Option C**	**Option S**
In	*8,757*	9,804	10,676	7,542	10,030
Out	*6,996*	8,497	10,384	7,002	9,481
Two way	***15,753***	**18,301**	**21,060**	**14,544**	**19,511**

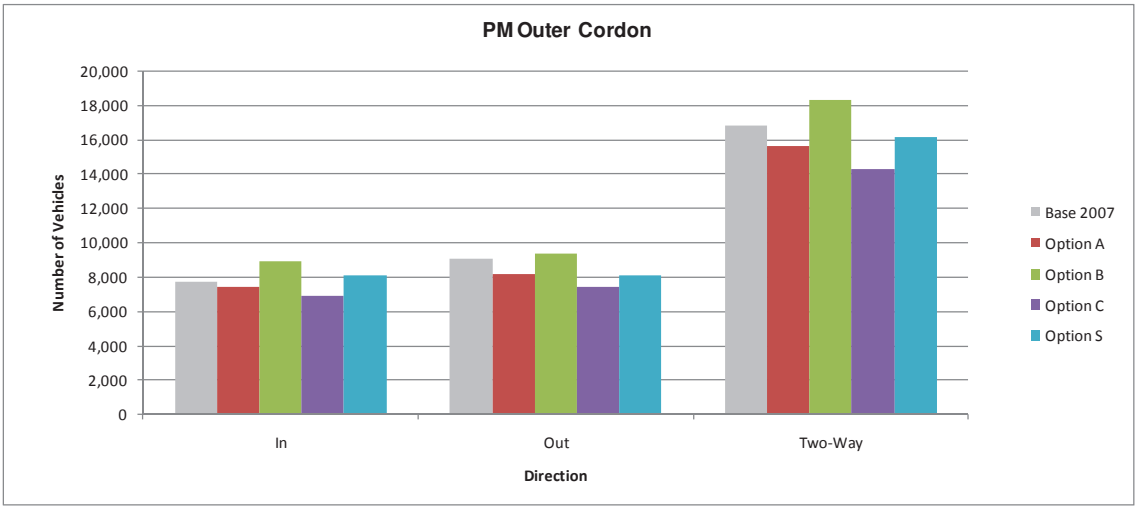


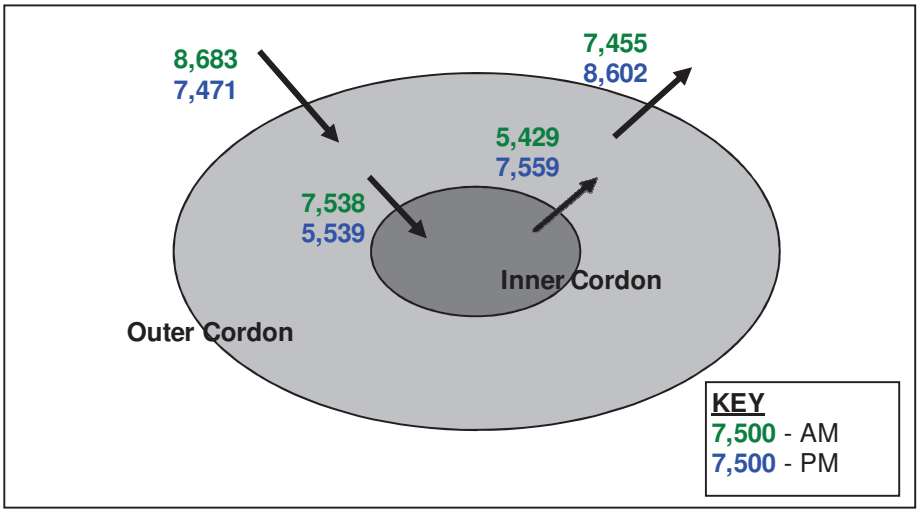


Cordon Traffic Movements – PM Peak

Direction	PM Peak - Inner Cordon Traffic Flow				
	Base 2007	Option A	Option B	Option C	Option S
In	*5,446*	6,637	6,374	5,157	7,254
Out	*7,610*	8,820	7,512	7,013	8,501
Two way	***13,056***	**15,457**	**13,866**	**12,170**	**15,755**
Direction	**PM Peak - Outer Cordon Traffic Flow**				
	Base 2007	Option A	Option B	Option C	Option S
In	*7,756*	7,434	8,934	6,899	8,100
Out	*9,044*	8,208	9,343	7,421	8,081
Two way	***16,800***	**15,642**	**18,273**	**14,320**	**16,181**





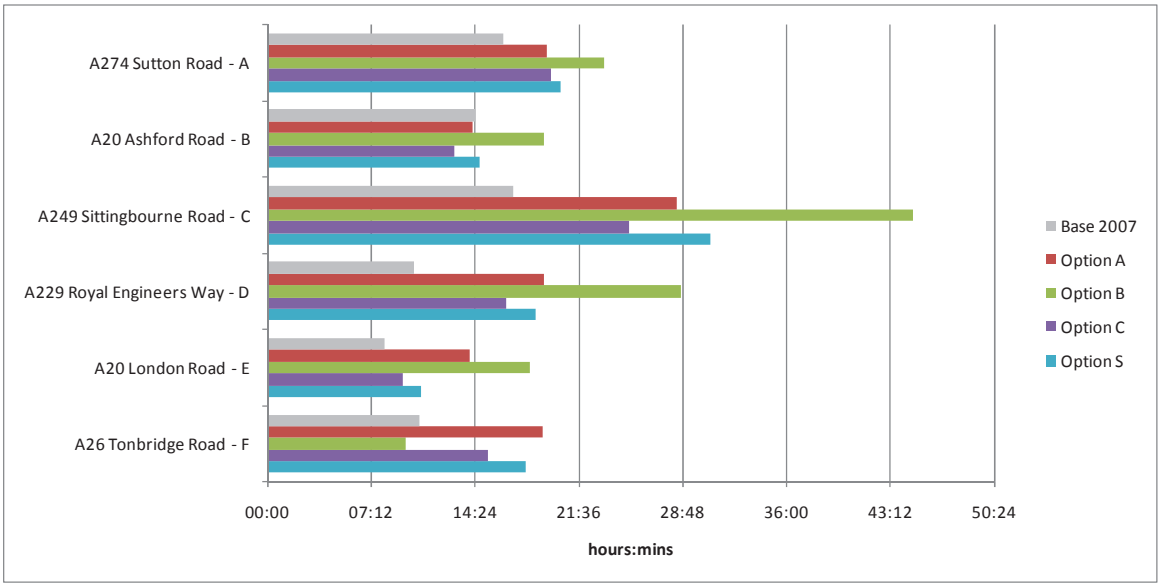


AM and PM cordon flows - 2007 Base Model

4 Journey Times

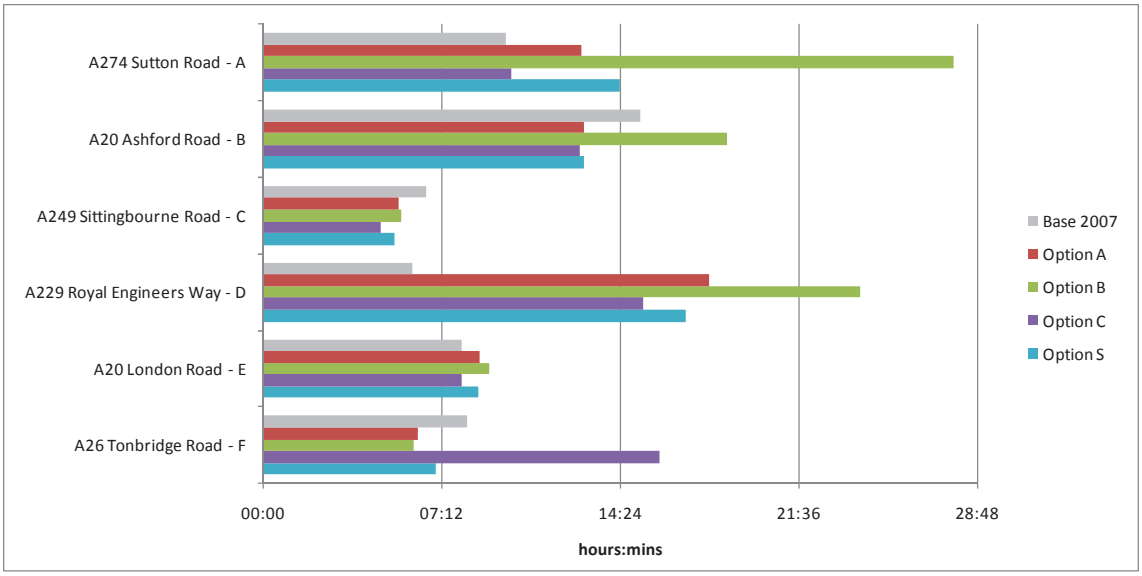
Journey Times – AM Peak

		AM Peak Journey Time (mm:ss)				
Route	Location	Base 2007	Option A	Option B	Option C	Option S
A	A274 Sutton Road	*16:20*	19:23	23:21	19:40	20:19
B	A20 Ashford Road	*14:24*	14:11	19:12	12:56	14:43
C	A249 Sittingbourne Road	*16:59*	28:22	44:47	25:03	30:41
D	A229 Royal Engineers Way	*10:08*	19:12	28:42	16:35	18:34
E	A20 London Road	*08:05*	14:04	18:11	09:21	10:39
F	A26 Tonbridge Road	*10:34*	19:04	09:36	15:19	17:56



Journey Times – PM Peak

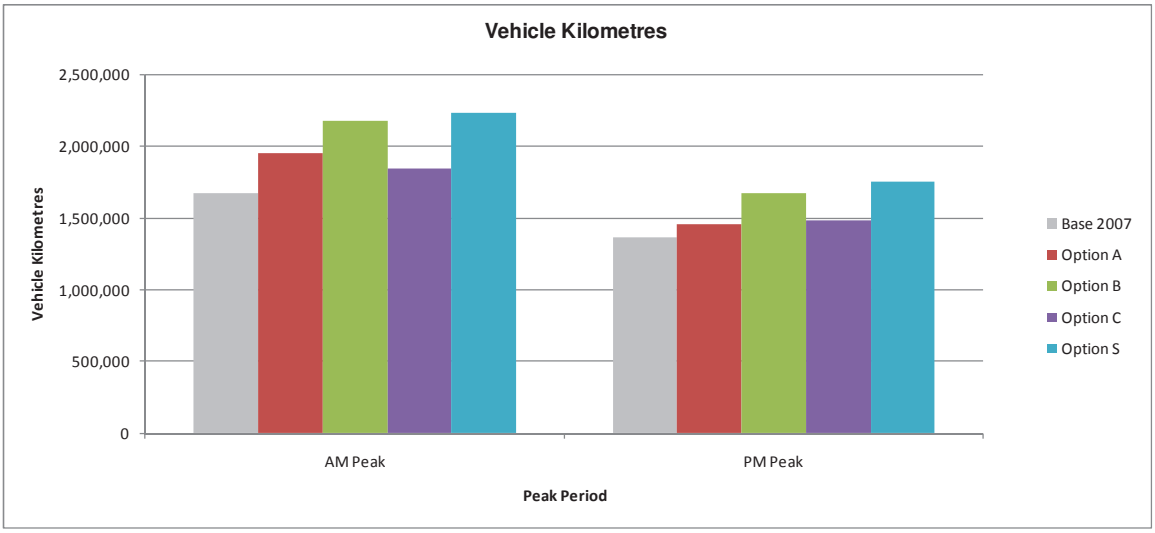
Route	Location	PM Peak Journey Time (mm:ss)				
		Base 2007	Option A	Option B	Option C	Option S
A	A274 Sutton Road	*09:47*	12:50	27:50	09:58	14:23
B	A20 Ashford Road	*15:12*	12:56	18:40	12:47	12:57
C	A249 Sittingbourne Road	*06:34*	05:28	05:35	04:45	05:17
D	A229 Royal Engineers Way	*06:00*	17:58	24:04	15:17	17:02
E	A20 London Road	*07:58*	08:43	09:07	08:01	08:39
F	A26 Tonbridge Road	*08:14*	06:14	06:04	15:59	06:57



5 Travel Demand

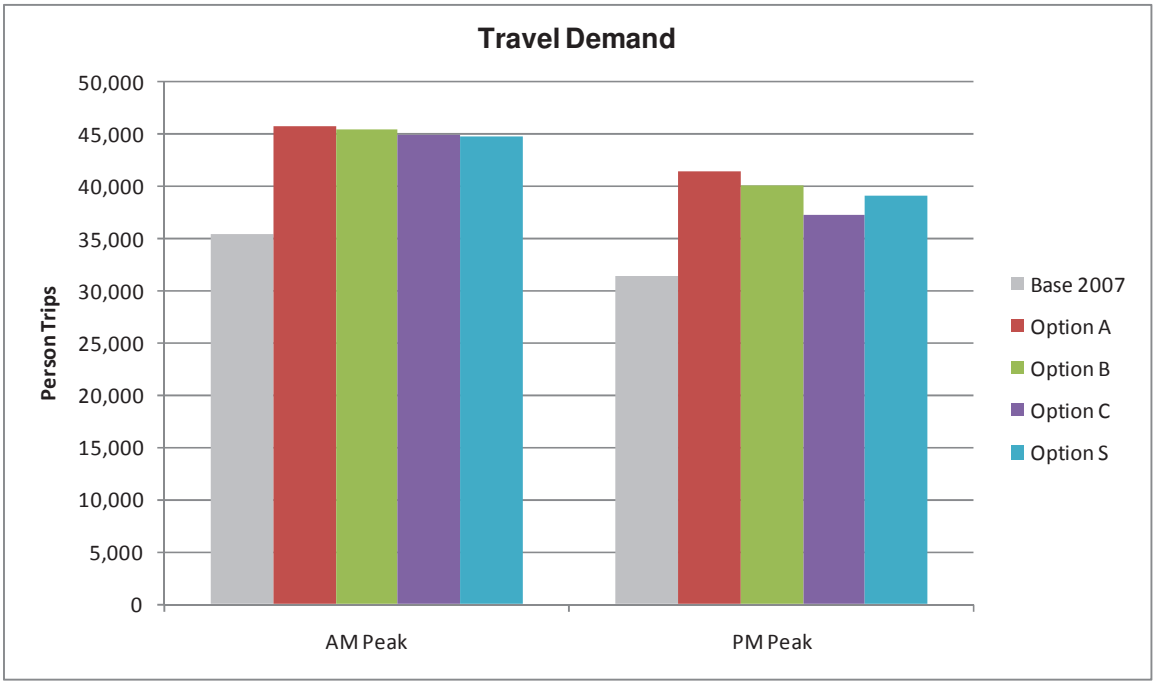
Travel Demand – Vehicle Kilometres

	Total Vehicle Kilometres				
	Base 2007	Option A	Option B	Option C	Option S
AM Peak	*1,667,863*	1,948,256	2,173,599	1,840,795	2,226,001
PM Peak	*1363670*	1454248	1675420	1481724	1748887



Travel Demand – Person Trips

	Total Travel Demand (Person Trips)				
	Base 2007	Option A	Option B	Option C	Option S
AM Peak	*35,376*	45,858	45,462	45,011	44,804
PM Peak	*31,446*	41,476	40,116	37,343	39,083



MAIDSTONE
Borough Council

Maidstone Integrated Parking Strategy Research

Analysis Report

Report

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Analysis Report

Report

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Maidstone Integrated Parking Strategy Research

Analysis Report

Report

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APPENDIX A Spatial Presentation of Scenario Options

1 Introduction

Overview

1.1 Maidstone Borough Council (MBC) appointed JMP Consultants Ltd (JMP) to undertake a series of research tasks to support the development of the Council's Integrated Parking Strategy. The strategy aims to assess the current and future use of both Town Centre Car Parks, as well as Park & Ride facilities to support the development growth outlined within the Maidstone Core Strategy (2011).

Content

1.2 This report is the second output of the research study and presents the initial analysis of the park & ride and town centre car parking issues and opportunities. This includes a discussion of:

- Trip generation;
- Park & Ride Infrastructure appraisal;
- Town Centre Car Park appraisal;
- Outline Strategy Objectives

1.3 A summary of the analysis is presented in the following sections.

2 Trip Generation

Overview

2.1 This section provides a brief assessment of the development proposals that are set out within the Council's Core Strategy and the implications for future trip generation for the movements into and out from the town centre.

Core Strategy Development Assumptions

2.2 The Council's Core Strategy document sets outs the proposed development strategy between 2006 and 2026. The overall borough-wide strategy is to deliver 10,080 homes and around 10,000 additional jobs within this period.

2.3 In terms of the interrelationship between additional housing and jobs, the Core Strategy identifies:

"It is anticipated that the additional 10,080 dwellings would increase the resident labour supply by approximately 5,000 between 2006 and 2026. The resident labour supply will meet half the targeted 10,000 additional jobs within the borough over the same period. It is further anticipated that the remaining jobs would be filled by changes in travel to work patterns including reducing the levels of outcommuting, allowing more residents to live and work in the borough"

2.4 In terms of the spatial distribution of distribution of the development the Core Strategy identifies the need for it to focus upon sustainable locations where "*employment, services and facilities, together with a range of transport choices are available*". Based upon this approach, a 'Settlement Hierarchy' has been developed that identifies Maidstone as the key location for development.

"The County Town of Maidstone provides the most service and employment opportunities as well as the best range of transport options in the borough. For this reason it is to be the focus for a significant proportion of new housing, employment and retail development in the borough"

2.5 It is acknowledged, however, that the urban area of Maidstone cannot accommodate all the growth that will be required and so development at the edge of the urban area would prove to be the next most sustainable alternative.

2.6 The Town Centre Study identified capacity for up to 34,500m2 of floor space for comparison retailing, up to 31,300m2 of B1 offices and some 380 dwellings in the period up to 2026 with selected opportunities for additional convenience shopping, leisure, culture and tourism uses in response to demand. The requirement for Grade A office space will be predominantly met in the town centre. Analysis in the Employment Land Review concludes that a 70:30 split between office floor space in town centre compared with beyond centre locations would be reasonable.

2.7 Based upon this analysis the Core Strategy adopts the policy that "*Town Centre sites will be identified in the Central Maidstone Area Action Plan to provide for 29,950 sqm comparison retail floor space and some 380 new dwellings in addition to substantial provision for high quality office space*".

2.8 Beyond the immediate town centre, within the urban area, the policy is, first, for redevelopment or infilling of appropriate urban sites and to maintain and support current business and shopping areas.

2.9 Specific proposals are then made for the rural areas of Harrietsham, Headcorn, Lenham, Marden, and Staplehurst.

Trip Generation

2.10 Given the outline nature of some of the development proposals, at this stage, it is difficult to provide a traditional site specific assessment of trip generation and distribution. An overarching assessment of trip generation has, however, been undertaken as part of the transport modelling exercise for the area. The model has a land-use interaction module that is able to interpret population and employment data in order to forecast future trip productions and attractions across the modelled zones.

2.11 This output from this process is a forecast increase in peak period person trips of 14,000 by 2016, which represents a 23% increase above the current estimate of 60,000 person trips.

Trip Distribution

2.12 It is clear from the Core Strategy approach that there will be a significant impact upon trips to and from the town centre as a result of the proposed development levels. The focus of retail and office growth within the core Town Centre will be a strong attractor of trips, and whilst some of the additional housing provision will be in and around the town centre, there will also be development around the urban fridge and within rural area.

2.13 The Core Strategy has the vision that 50% of the increase in employment in the borough will be directly linked to the increase in residential dwellings, with the other 50% resulting from existing residents of the borough who currently work outside Maidstone, will instead obtain employment within the town. This would have the impact of reducing the level of outcommuting and increase the flow of trips towards the town centre in the AM peak period.

3 Park & Ride Infrastructure Appraisal

Introduction

3.1 This section presents an initial analysis of the proposed park & ride sites and infrastructure measures proposed as part of the development of the Integrated Parking Strategy.

3.2 A total of eight park & ride sites have been indentified, including the three current sites and five additional sites. Two variations for the London Road and Sutton Road sites are also proposed.

3.3 A total of nine bus priority infrastructure measures have been proposed, including bus lanes and prioritisation at junctions for park and ride sites.

3.4 The sections below provide an overview of the park & ride sites and the associated infrastructure measure along with an initial assessment of their deliverability.

Proposed Park & Ride Sites

Overview

3.5 Eight potential park & ride sites have been identified for assessment, including the existing three sites. They are as follows:

- London Road (518 spaces plus proposed extension of 200 spaces)
- Sittingbourne Road (610 spaces)
- Willington Street (400 spaces)
- Cobtree Roundabout (proposed 1,800 spaces)
- Bluebell Hill (proposed 500 spaces)
- Newnham Court (proposed 1,500 spaces)
- Sutton Road (proposed 1,800 spaces plus smaller option of 600 spaces)
- Linton Corner (proposed 400 spaces)

3.6 A brief description of the sits is provided below.

Existing Sites

3.7 The three existing sites have been operating since the late 1980's and provide park and ride facilities for travellers accessing Maidstone from the north and along the M20 corridor. Whilst the sites all have the same level of bus service provision, they do differ in terms of the standard of site infrastructure, with the Sittingbourne Road site considered to be of the lowest quality in terms of surfacing, demarcations and quality of environment.

Cobtree Roundabout

3.8 The proposed Cobtree site is located to the northeast of the Cobtree Roundabout, which provides interchange between the A229 and the M20 at Junction 6. The site would be accessed by general traffic directly from the roundabout. There are a number of potential options for access to the site by the park & ride buses, including access of the Cobtree roundabout or access from Boarley Lane.

Bus tunnel from northbound A229 to Old Chatham Road / Boarley Lane.

3.9 A bus tunnel was proposed to carry northbound P&R buses from the A229 to a proposed bus route via Boarley Lane to the Cobtree site.

3.10 If this tunnel was designed for buses only and was a one-way route, it would be reasonable to restrict the speed through the tunnel to 30mph, or even less. However there would still be a requirement to allow for some degree of forward visibility as buses are driven on 'line of sight' and not under a fully signalled system like a railway. Furthermore an allowance needs to be made for the bus to descend approximately 6m below the level of the A229. To enable this to happen, buses would need to leave the A229 in the vicinity of the Chatham Road/Gibraltar lane and loop round in the parcel of land bounded by Castle Dene and through some newly constructed buildings. It is understood that this parcel of land is privately owned and is not designated as highway. As such it is likely that Compulsory Purchase Order (CPO) powers would be required to secure this land.

3.11 A judgement needs to be made as to whether the Council could build a compelling case for the purchase of this land which would stand up to scrutiny at public inquiry. To do this it would be necessary to prove that the alternatives are not viable before proceeding with this option. If there is a feasible alternative which is predominantly on public highway, the bus tunnel is unlikely to succeed. As such we have not costed this option and have not considered it further.

Upgrade of Boarley Lane to take buses

3.12 Boarley Lane is a narrow country lane running from Old Chatham Road / Sandling Lane junction north-east, under the M20 motorway, meeting Tyland Lane east of the Cobtree roundabout. It runs on the eastern boundary of the proposed Cobtree P&R site, and as such has been considered as a route for buses into and out of the Park and Ride site.

3.13 The original concept involved linking the bus tunnel outlined above to Boarley Lane for northbound buses, and providing a link from Boarley Lane to the southbound A229 just west of Sandling Place Court. As noted above, the bus tunnel is considered unachievable, and therefore an alternative for north bound buses has been considered, comprising a link from the Sandling Lane A229 roundabout.

3.14 Boarley Lane varies in standard from a single track country lane of no more than 3m width at its narrowest point towards the southern end to a two-lane single carriageway road as it passes under the M20 bridge. Elsewhere it varies in width between these two extremes. The alignment is twisty and threads its way between ponds to the west and residential / agricultural land to the east. Visibility is poor, and it is assumed that the existing carriageway structure is incapable of carrying buses without significant improvement.

3.15 In order to carry a frequent P&R service it is necessary to widen the road to not less than 7.0m in width, taking out the sharper corners and improving visibility around the bends. A site inspection suggests that the land either side of the road is not public highway and as such will need to be purchased either by negotiation or through Compulsory Purchase.

3.16 An alternative scenario would be to improve Boarley Lane to single track road with passing places. If the P&R bus operates at a 10 minute interval in each direction, it is likely that buses will need to pass each other along the length of Boarley Lane which will delay the bus service. The road will still need upgrading such that the pavement can take the loading of 12 buses per hour, and note should be taken of the inconvenience caused to residents by the mix of a frequent bus service with residential traffic. Therefore, whilst there would be a cost saving through a reduced likelihood of

requiring additional land, this would be at the expense of delays to buses caused by single lane working with passing places and increased inconvenience to residents.

Link from Boarley Lane to Sandling Lane Southern Roundabout

3.17 On the corner of Boarley Lane and Old Chatham Road is an old timber framed cottage which is understood to be listed. The level of Boarley Road at this point is significantly lower than the level of the A229, and the cottage lies on the natural route for a new link into Boarley Lane, accounting for the level difference, and would need to be demolished unless a new bridge was built to carry the link across the southernmost pond. It is expected that both these options would be unacceptable on environmental grounds, and that the owner of the cottage would object to either scheme.

3.18 It is feasible to create a new link from the southbound off-slip to Old Chatham Road at this point but it is difficult to envisage how this would help a proposed P&R bus link to Cobtree.

3.19 Given that Boarley Lane needs significant widening along its entire length, and additional land will need to be secured to achieve this and a sensible link to existing highway, it is likely that CPO powers will be required to achieve this option. As with Bluebell Hill, it will therefore be necessary to demonstrate that there is a compelling case for constructing this route, which can only be done if there isn't a viable alternative that does not require CPO.

3.20 We have prepared a cost estimate for a Boarley Lane bus route, but note that this option will be extremely difficult to deliver because of the need for CPO.

Access to Cobtree using existing highway

3.21 Site access can be provided to and from the east side of the Cobtree roundabout for general traffic and will require the following elements of work to be carried out:

i. Realignment of up to 200m of the M20 on-slip so that it either leaves the roundabout further south, or it diverges from the A229 southbound on-slip away from the roundabout.

ii. Reconstruction of the footbridge across the P&R site access and the realigned M20 slip.

iii. Widening of the circulatory carriageway of the Cobtree roundabout making use of the over-wide bridge decks crossing the A229.

iv. Signalisation of the Cobtree roundabout to add capacity.

v. Widening of the A229 slips to provide additional capacity and a bus lane for P&R buses.

vi. Removal of the retaining wall under the westernmost span carrying the northbound slip road under the M20. This will facilitate construction of a bus lane for northbound P&R buses.

vii. Signalisation of the southern A229 roundabout (Sandling Lane) with widening of the A229 slips to provide a bus lane on key approaches.

3.22 Works to the A229 south of the Sandling Lane roundabout are dealt with elsewhere.

3.23 Bus lanes can also be provided as part of the Cobtree roundabout upgrade for general traffic and as such, this would appear to be the most deliverable option as most of the land lies within public ownership.

Bluebell Hill

3.24 The proposed Bluebell Hill site is located off the A229 approximately 1.6km to the north of Junction 6 of the M20. It is a site that is owned by MBC and is located between Old Chatham Road and the High Speed 1 railway line.

3.25 The site is relatively constrained in terms of access opportunities due to both restrictions in space but also the grade changes associated with the A229.

3.26 Immediate access to the site is via the Old Chatham Road which offers a good link for cars to leave the southbound A229 adjacent to the Shell Petrol Filling Station and enter the P&R site.

3.27 Northbound general traffic does not have a direct route into the site. There is a northbound exit slip road from the A229 north of the site which provides a link to Rochester Road. There is a T Junction left off this slip which loops back via a narrow link, under the A229, and round the back of the Shell Filling Station and into Old Chatham Road at the point where the southbound exit slip leaves the A229. To avoid a dangerous vehicle conflict and to improve this route from the northbound A229, the existing route would need to be widened and realigned to form a larger radius requiring agricultural land, and looping round the outside of the filling station to enter the P&R site at its northernmost extremity.

3.28 Northbound exiting general traffic could make use of the same route, rejoining the northbound A229 via Chatham Road. It is likely that the existing underpass under the A229 would not be wide enough for two-way traffic, and as such will need to be re-built.

3.29 Southbound general traffic could rejoin the A229 via a new link from the south end of the P&R site across a field to the A229.

3.30 Park and Ride buses could either join the southbound A229 via a new link south of the filling station, or could make use of Chatham Road to Tyland Lane, turning right to join the southbound A229 Cobtree off-slip.

3.31 Northbound P&R buses could either share the northbound general traffic route via the existing underpass, or would need to cross the A229 by a new bridge. Given the gradients in the area, the length of any new build road would be long on the west side of the new bridge if it passes over the A229, or on the east side of the bridge if it passes under the A229 in order to avoid making the gradient too steep for the buses to use economically. It therefore seems sensible for P&R buses to share the general traffic route, albeit using a dedicated bus lane, as the existing underpass would need to be rebuilt anyway, just to accommodate general traffic.

3.32 There are significant disadvantages associated with the Bluebell Hill site. Firstly it is situated 1.6km (1 mile) north of the M20. It would serve traffic approaching from the Medway towns well but would require a 4km detour away from Maidstone for traffic arriving or departing via the M20 corridor (4km includes arrival and departure car trip and a loop to enter the site from the A229 northbound). This journey is in the wrong direction from the M20 and would offer no journey time saving over driving into the town centre and parking there.

Newnham Court

3.33 The proposed 1500 space Newnham Court site is located to the southeast of Junction 7 of the M20 and would be accessed off the A249. It provides a larger, alternative site to the current Sittingbourne Road site located just to the west of the A249.

3.34 Access for cars and buses is provided by upgrading the existing Newnham Court link from the A249 Bearsted Road link to the M20 junction 7. It is assumed that it is not necessary to provide capacity upgrades to either the M20 roundabout or to the Bearsted Road roundabout

Sutton Road

3.35 The proposed Sutton Road site is located along the A274 just beyond the current urban limit at Bircholt Road. The site is currently greenfield and would have access directly onto the A274, Sutton Road, probably via a signal controlled junction incorporating bus priority measures to facilitate the efficient operation of the bus service.

Linton Corner

3.36 The proposed Linton site is located along the A229 Linton Hill on the southwest corner of the junction with the B2163 Heath Road. The site is currently greenfield and would have access directly onto the A229, Linton Hill by means of a new signal controlled junction. The site is situated at a lower level than the road so the access will need to include a ramp for all vehicles into the site. The site is deliverable, however the space required for the ramp will reduce the space available for parking.

Proposed Bus Priority Measures

Overview

3.37 Successful operation of a park and ride system depends not only on efficient park and ride site design but on achieving a fast and reliable journey time from the park and ride site to the town centre. The following schemes have been identified to link the various park and ride sites to the town centre.

- Southbound bus lane on A229 between M20 (Junction 6) and Sandling Road / Royal Engineers Road
- Northbound bus lane on A229 between M20 (Junction 6) and Sandling Road / Royal Engineers Road
- Northbound bus lane on A274 between Bircholt Road and Wheatsheaf Junction
- Southbound bus lane on A274 between Bircholt Road and Wheatsheaf Junction
- Bus lane from Wheatsheaf Junction around the town centre gyratory system
- Bus only junction at Sandling Road / Royal Engineers Road
- Bus priority measures at Sittingbourne Road / Penden Heath Road Junction
- Bus priority measures at Huntsman Lane / Ashford Road Junction
- Bus priority measures at Willington Street / Ashford Road Junction

3.38 A brief description of each bus priority measures is provided below

A229 Bus Lanes

Southbound

3.39 This section considers provision of a bus lane southbound along the A229 from the Sandling Lane roundabout (M20 J6) and the junction with Sandling Road adjacent to the Shell filling station, a distance of approximately 1300m.

3.40 Over much of this length there is sufficient width to construct a third lane southbound and use it as a dedicated bus lane. However there are a few constraints which prevent the bus lane from being continuous.

3.41 The footbridge opposite Gibraltar Lane spans a little over half the width of a bus lay-by. By narrowing the central reserve at this point it may be possible to fit a three lane carriageway under the bridge, however it is likely that the footbridge will need to be replaced to a larger span.

3.42 A retaining wall on the southbound approach to the Chatham Road / Flowers Rise roundabout needs to be relocated further east to provide space for the bus lane.

3.43 It is likely that the same roundabout will need to be signalised to provide additional capacity.

3.44 The lane terminates just to the south of a Shell filling station. The bus lane will continue onto Sandling Road at this point and is dealt with under another section.

Northbound

3.45 The northbound bus lane mirrors the southbound A229. Some third party land may be required, however it may be possible to avoid this by narrowing the central reserve and moving the entire road slightly east of its present centre line. It is likely to be cheaper to buy the land.

A274 Bus Lanes

Northbound

3.46 This comprises a new bus lane (northbound lane only) adjacent to the A274 between Bircholt Road and Wheatsheaf Junction. The lane is new-build, achieved by widening into the existing verge. It is expected that most of this lane can be achieved within highway land.

Southbound

3.47 This comprises a new bus lane (southbound lane only) adjacent to the A274 between Bircholt Road and Wheatsheaf Junction. The lane is new-build, achieved by widening into the existing verge. It is expected that most of this lane can be achieved within highway land.

Wheatsheaf Junction / Gyratory Bus Lane

3.48 This bus lane links the Wheatsheaf junction with the town centre along Loose Road and the A229 gyratory. Loose Road is a four-lane single carriageway operating as two lanes in each direction, separated by a narrow strip of hatching. The gyratory is not less than two lanes operating as a large circulatory carriageway. The bus lanes are achieved by converting the left hand lane of two in each direction of Loose Road, and the left hand lane of the gyratory into a bus lane. No further carriageway widening is required, however modifications will be required to some of the junctions to accommodate the gyratory.

Junction Enhancements

Sandling Road / Royal Engineers Road

3.49 This scheme comprises removal of the existing boundary wall at the Shell Station to provide access for southbound buses travelling on the A229 onto Sandling Road. The following measures to improve the junction would be required as part of this scheme:

- Carriageway widening along the section of the A229 Royal Engineers Road on approach to its junction with Sandling Road to provide an additional bus lane;
- The installation of retractable bollards at the junction of the A229 Royal Engineers Road / Sandling Road to provide access for southbound buses only; and
- Installation of traffic signals at the A229 Royal Engineers Road / Sandling Road junction.

Sittingbourne Road / Penden Heath Road Roundabout

3.50 This scheme involves signalisation of the Sittingbourne Road / Penden Heath Road roundabout to provide priority access into the roundabout for buses in the AM and PM peak periods. Measures required to implement this scheme include:

- Signalisation of all arms of the roundabout; and
- Carriageway widening and installation of a 'bus only' lane on Sittingbourne Road on approach to the roundabout.

Huntsman Lane / Ashford Road Junction

3.51 This scheme involves reorganisation of Huntsman Lane / Ashford Road junction in order to provide a bus only lane through the junction. Measures required to implement this scheme include:

- Widening of the existing carriageway on both the northern side of Ashford Road to enable a 'bus only' lane to be installed through the junction;
- Provision of turning pocket for right turning vehicles from Ashford Road into Huntsman Lane; and
- Installation of traffic signals to improve traffic movement at the junction.

Willington Street / Ashford Road Junction

3.52 This scheme involves the installation of a 'bus only' lane for buses travelling from Willington Street into Ashford Road. Measures required in order to implement this scheme include:

- Construction of a 'bus only' lane from Willington Street through a section of the Mote Park onto Ashford Road; and
- Reorganisation and improvement of Ashford Road / Willington Street / Lord Romney's Hill junction to provide improved access for buses and general traffic at this junction.

Construction Costs

Overview

3.53 This section provides an initial estimate of the construction costs associated with the park & ride sites and bus priority infrastructure measures outline above.

3.54 It is important to note that these are very much budgetary costs and are not based on any significant design work. No utility searches have been carried out. The costing exercise was based on rates found in Spons Civil Engineering Price Guide. High and low range costs have been identified to account for the fact that there is little detail on which to base costings.

3.55 Land costs for the actual park and ride sites has not been included in these costs, though an allowance has been made for land where it is required to improve bus links outside of the park and ride sites.

3.56 The cost estimates are summarised under two Scenarios, namely:

- Scenario 2 – Park and Ride Radial Sites Option; and
- Scenario 3 – North / South Park and Ride Spine Option.

3.57 These scenarios are presented graphically in Appendix A.

Scenario 2 – Park and Ride Radial Sites Option

3.58 Table 3.1 provides the cost of each of the schemes identified under Scenario 2.

Table 3.1 Cost estimates for Scenario 2

Scheme No.	Scheme description	Scheme cost (£)	
		Low Cost (£)	High Cost (£)
1a	A bus lane (southbound lane only) adjacent to the A229 between the M20 (junction 6) and the junction of Sandling Rd / Royal Engineers Road.	6,578,550	7,928,219
2a	A bus lane (northbound lane only) adjacent to the A274 between Bircholt Road and Wheatsheaf Junction.	10,069,404	12,374,220
6	Constructing a new P&R site on A274 Sutton Road for 600 vehicles.	1,976,680	2,791,527
7	Constructing a new 0.9ha P&R site on Linton Corner on the south-western corner of the junction (400 spaces)	1,534,441	2,168,373
8	Construction of a new 3.2ha P&R site on Newnham Court directly south of Junction 7 of the M20 (1500 spaces). Assumes no work is required to M20 J7 roundabout or to Bearsted Road roundabout.	4,924,940	6,945,893

9a	Creating a 'bus only' junction at the Sandling Rd / Royal Engineer's Road junction by removing the existing wall across the road and installing a 'bus only' bollard to allow only buses to use Sandling Road	350,770	474,641
9b	Bus priority measures at the Sittingbourne Rd / Peneden Heath Rd roundabout to include traffic lights that give priority to buses entering the roundabout over vehicles entering from Peneden Heath Road and Sittingbourne Rd during the am peak; and then gives priority over vehicles from Bearsted Rd in the pm peak	318,226	565,491
9c	Bus priority measures at the Huntsman Lane / Ashford Rd junction to reorganise the junction to enable a small bus only lane to pass vehicles turning right into Huntsman Lane from Ashford Rd	402,452	616,183
9d	Bus priority measures at the Willington St / Ashford Rd junction. This would include taking some of existing parkland and creating a small bus only lane that bypasses this junction from Willington St and then re-enters Ashford Rd a short/safe distance west of the junction	758,104	1,045,166
11	Constructing a 1.1 ha P&R site at Blue Bell Hill (500 spaces) and connecting it to the A229	8,910,232	12,601,622
12	Expand the London Rd P&R site by 200 spaces	1,281,666	1,744,524
Total		**37,105,465**	**49,255,859**

3.59 Table 3.2 provides the individual costs identified for each scheme under Scenario 3.

Table 3.2 Cost estimates for Scenario 3

Scheme No.	Scheme description	Scheme cost (£)	
		Low Cost (£)	High Cost (£)
1b	Two bus lanes (one in each direction) either side of the A229 between the M20 (junction 6) and the junction of Sandling Rd / Royal Engineers Road (NB Bus Lane)	11,571,634	13,983,457
2b	Two bus lanes (one in each direction) either side of the A274 between Bircholt Road and Wheatsheaf Junction (SB Bus Lane)	20,253,411	24,752,305
3	A bus lane for the A229 from Wheatsheaf junction including the Loose Rd / Hayle Rd / Palace Ave / Upper Stone St gyratory	479,480	643,280

5a	Constructing a new 4.0ha P&R site east of Cobtree Roundabout (1800 spaces) with access ramps to Cobtree Roundabout.	10,715,859	14,329,035
5b	Resurfacing / upgrading Boarley Lane and Old Chatham Rd to a sufficient specification to carry P&R buses and other existing traffic. The length of lane would be between the proposed Cobtree P&R site (just south of Tyland Lane) and the A229. This would include the widening of the lane to accommodate P&R buses with ease and other light traffic. In addition, this would also include a connecting ramp to the A229 to connect to the proposed southbound bus lane (see 1b). This scheme is shown in pink in 'Potential Cobtree P&R Site and Bus Routes'	4,753,711	5,916,743
5d	Constructing a single bus only lane (northbound) adjacent to the current A229 to connect the other northbound bus lane described in (1b) above with the Cobtree P&R site. This scheme is shown in orange in 'Potential Cobtree P&R Site and Bus Routes'.	2,540,473	3,368,124
5e	Option for accessing the Cobtree P&R site via the roundabout south of Junction 6. Assume Boarley Lane is upgraded elsewhere.	1,947,802	2,431,602
6	Constructing a new 3.6ha P&R site on A274 Sutton Rd at urban area limits just east of Bircholt Rd (1800 spaces).	5,514,592	7,776,766
9a	Creating a 'bus only' junction at the Sandling Rd / Royal Engineer's Road junction by removing the existing wall across the road and installing a 'bus only' bollard to allow only buses to use Sandling Road	350,770	474,641
12	Expand the London Rd P&R site by 200 spaces	1,281,666	1,744,524
Total		**59,409,398**	**75,420,477**

4 Park & Ride Scenario Assessments

Introduction

1.1 This section presents an initial assessment of the potential operation of the park and ride sites. The analysis has been conducted on the basis of the three proposed scenarios initially proposed by MBC. These are presented graphically in Appendix A.

1. **Existing park & ride provision**
2. **Park & Ride Radial Sites Option**
3. **North / South Park & Ride Spine Option**

1.2 Park and Ride traditional works most effectively on corridors of high traffic demand. As a parking measure to intercept trips before they reach sensitive or congested area key determinants of demand are location, frequency of bus link operation, differential parking charges between Park and Ride and town centre and town centre car parking capacity.

1.3 To undertake an initial assessment we shall consider the interception rates for the current Park and Ride operations and consider the spatial opportunities created by the three strategy options proposed by the Council.

Approach

1.4 We shall make a spatial assessment of the possible locations for Park and Ride in relation to the key corridors into Maidstone town centre. We shall consider alternative journey attractors that may be susceptible to park and ride.

1.5 We shall commence by calculating the traffic inception rate at the current Park and Ride sites and scale this for peak and off-peak times including Saturdays.

1.6 In parallel to this we shall assess the potential location for sites in the general area of Maidstone not already identified in the Council's options.

1.7 We shall identify current traffic flows on the core radial routes and using this in conjunction with the traffic model data supplied by Jacobs establish the percentage of traffic heading for town centre locations which are most likely to be intercepted by park and ride in the morning peak. We shall then take this inception rate (peak, off-peak and Saturday) and apply this to the traffic flow past proposed new sites.

1.8 The Council has identified the following possible sites:

- Existing - London Road (518 spaces);
- Existing - Sittingbourne Road (610 spaces);
- Existing - Willington Street (400 spaces);
- Site 5 – Cobtree roundabout (1,800 spaces);
- Site 6 – Sutton Road (1,800 spaces or smaller option of 600);
- Site 7 – Linton Corner (400 spaces);
- Site 8 – Newnham Court (1,500 spaces);
- Site 10- Blue Bell Hill (500 spaces); and
- Site 11 – London Road Extension (additional 200 spaces).

1.9 From this list of possible sites the Council has developed three scenarios. Scenario 1 is development of the current sites. Scenario 2 represents a more dispersed approach to Park and Ride provision with sites on the majority of radial routes into the town centre. Scenario 3 represents the development of north – south axis Park and Ride corridor.

General Comments

1.10 The Council's draft LDF Core Strategy 2011 places most growth to the north-west and south-east of the of the town centre - around 2000 new dwellings. Proposed developments at junction 7 (medical) and junction 8 (warehousing) of the M20 may also be relevant to the possible use of park and ride bus services 'against the peak flow'

1.11 At the outset JMP would note that the concept of 'micro' park and ride using less formal car park sites and passing bus services has not been explored. Whilst from a quality perspective this approach will retain the high quality and distinctive Park and Ride services it may not offer full effective coverage across all radial routes.

The Current Offer and Scenario 1

1.12 This represents the existing Park and Ride offer. A further site at Coombe Quarry to the south of the town centre was opened but had since closed. The sites involved are:-

- London Road (518 spaces)
- Sittingbourne Road (610 spaces)
- Willington Street (400 spaces)

1.13 The sites are located near to key radial routes into the town centre but it is understood that limited bus priority is available.

1.14 Each site has a bus link to the town centre only

1.15 The London Road Site has the key target market of traffic from the M20 eastbound heading for the town centre but located some way from M20 junction 5. Apart from M20 traffic the target market is effectively the settlements of East / West Malling and Aylesford.

1.16 The Sittingbourne Road site is located directly south of M20 junction 7 but suffers from a lack of direct access from the motorway junction. DfT circular 02/2007 (and predecessor circulars) generally prevents new accesses in situations such as this. The convoluted access to the site may lower the site's attractiveness to passing motorists heading for the town centre.

1.17 The effective market for the Sittingbourne Road site is to the north of M20 motorway with some traffic from either direction on the M20 also possibly using the site.

1.18 The Willington Street site is located off the main A20 road into the town centre. Again the less than straightforward access from the main radial route may make this site less attractive than a site located directly adjacent to the main road.

1.19 The Willington Road site has a wide target audience from south east Maidstone, the M20 corridor east of the town, accessed through M20 junction 8 and the Willington / Downswood areas of the Maidstone urban area.

1.20 Scenario 1 shows estimated peak hour traffic interception rates of 13.7% of peak hour traffic heading for the town centre. Off peak traffic based on the highest level of car parking at each site

is 2.03 times the car demand intercepted in peak hours. Saturday traffic intercepted is 1.50 x the Monday to Friday peak hour quantum.

1.21 The current performance of Option 1 shows a general trend of declining patronage. The site access arrangements may not present an attractive front to attracting 'passing trade' and the lack f destinations other than the town centre.

1.22 The contract information supplied indicates that the services to these Park and Ride sites require 6.5 buses to operate a service at least every 15 minutes. This equates to a subsidy level of £837,000 per annum with the Council taking full revenue risk on the operation. JMP has highlighted a number of options to increase patronage and reduce the cost of bus service operation.

1.23 Option 1 includes a possible extension of the London Road site by 200 spaces to 718 spaces. On current evidence the car park has a maximum occupancy of 56%. To increase patronage to 2.5 times the existing level would require raising the interception rate to the equivalent of circa 80% of the current peak traffic flow past the site. To cater for the additional patronage the frequency of the current bus service would need to increase to at least every 10 minutes which would increase the combined peak vehicle requirement to 8.0 vehicles. It is suggested this would require extensive traffic restraint, the possible closure of the other current north-of-town park and ride to consolidate the market and a radical change to the current town parking quantum and price.

Scenario 2 - Radial Sites Option

1.24 The development of a radial route based Park and Ride strategy is dependent on the offer of a suitable Park and Ride on each radial road and the retention of the existing sites.

1.25 The new sites to the south of the town centre based on the current peak hour intercept rates have the following indicative Monday to Friday demand:-

- Site 6 – Sutton Road – 302
- Site 7 – Linton Corner – 204

1.26 To provide a typical Park and Ride bus service the following peak vehicle requirement is identified:-

- Site 6 – Sutton Road – 2 vehicles
- Site 7 – Linton Corner – 2 vehicles (3 vehicles peak hours based on the additional distance involved to site 3)

1.27 The new site to the north of M20 on the A229 (Site 10- Blue Bell Hill - 500 spaces) has an indicative Monday to Friday usage based solely on interception rates of 848 vehicles, however, it highly probable that this initial demand figure is artificially high due to the M20 being located between the site and the town centre. In essence, to use the Park and Ride traffic exiting the motorway would need to drive away from the town centre to access the site.

1.28 A bus services from site 10 would require at least two vehicles with a possible third peak hour vehicle to combat congestion on the A229.

1.29 On this basis, Scenario 2 would require an additional 6 buses to be operated with a possible requirement for up to 2 additional vehicles in peak hours. Pro rata costs for this would be in the region of £772k for six vehicles and £1,030 for eight vehicles. At current fares levels this would require an additional 309,000 journeys at the current peak fare of £2.50 to cover the cost of the basic six vehicle service.

1.30 Due to the dispersed nature of the sites providing effective bus priority measures would be a challenging process under this option due to the need to deal with the majority of radial corridors into the town centre.

Scenario 3 - North / South Park & Ride Spine

1.31 The development of a Park and Ride spine provide an opportunity to concentrate Park and Ride activity in a clearly defined route through the town centre. The proposal would involve the closure of the existing Park and Ride locations and the development of new sites at:-

- Site 5 – Cobtree roundabout (1,800 spaces)
- Site 6 – Sutton Road (1,800 spaces or smaller option of 600)

1.32 Whilst it is reasonable to assume that a degree of existing users would be retained vehicle demand for park and ride based solely on interception rates would be:-

- Site 5 – Cobtree roundabout – 848 vehicles
- Site 6 – Sutton Road – 302 vehicles

1.33 This compared to the highest surveyed demand being for 959 spaces at the existing Park and Ride. Naturally should the existing Park and Ride sites close one could expect some redistribution of demand to the new sites, especially to the northern site where the greater proximity of the new site to the M20 compared to the old northern sites could allow the retention of a significant proportion of the extant demand.

1.34 Given the concentration of Park and Ride demand into two sites bus service frequency, especially to the north site would need to increase to cater for the likely demand. Typical peak vehicle requirements would be

- Site 5 – Cobtree roundabout – 3 vehicles on a circa 10 minute frequency (4 vehicles peak)
- Site 6 – Sutton Road – 2 vehicles, 15 minute frequency

1.35 The cost of this operation at current rates would be in the region of £772k but patronage is likely to higher than the current operation thus aiding the financial operating case for Park and Ride.

1.36 The concentration on two corridors could allow for a suite of effective (but capital intensive) bus priority measures to be designed. The simple nature of the direct route between the sites via the town centre could allow the development of route options to serve the hospital west of the town centre.

1.37 The cost of closing the current sites and any resale values (e.g. the Sittingbourne Road site is leased and would not generate a capital receipt) would need to be considered in the making of a business case as would the need for capital expenditure to most likely be a sunk cost to the scheme. Effective value engineering of bus priority measures may be key to generating a economic case for investment as will conformation that capital receipts could be reinvested.

Summary

1.38 The options presented offer a range of solutions to the same key questions:-

- Can Park and Ride viability be improved?
- Does Park and Ride have a role to play in the Borough's growth strategy?
- Can a more attractive Park and Ride offer allow a wider range of spatial planning choices in the town centre?

1.39 If capital funding is not a barrier Scenario 3 has much to commend itself. A concentrated corridor for improvement focuses Park and Ride demand and is amenable to the development of effective bus priority measures.

1.40 Scenario 2 in our view could only be developed if alternative and lower operational cost approaches such as micro Park and Ride are considered due to the spreading of demand over a wider number of sites.

1.41 The retention of the status quo in retaining three sites would not seem to be viable in the long term unless aligned to market growth either through more effective interaction with town centre parking policies or through cost reduction measures. The proposed extension of the London Road site would appear on initial assessment to be unnecessary.

5 Town Centre Car Park Appraisal

Introduction

5.1 The 'Data Report' presented a detailed site audit, and wider spatial assessment, of each of the 17 MBC town centre car parks. This data is now combined with operational data in order to provide an initial assessment of the on-going viability of the town centre car parks.

Assessment Matrix

Overview

5.2 The matrix analysis of the town centre car parks is used to identify the level of performance of each individual car park site against a range of operational and policy criteria.

5.3 The criteria that have been used to assess the car parks is as follows:

- Size;
- Short/long stay;
- Physical condition;
- Safety & security provision;
- Physical vehicular access;
- Physical pedestrian access;
- Local highway network access;
- Strategic highway network access;
- Proximity to key Town Centre locations (retail, employment, services, leisure function)
- Proximity to other car parks;
- Local pedestrian access
- Utilisation;
- Primary reasons for use;
- Durations of stay;
- Perceptions of safety & security;
- Revenue generation;
- Operating costs; and
- Operating Surplus.

5.4 For each of the categories above the data for each car park has been collated. In some instances, (size, stay length, revenue, operating costs) the specific data has been entered. For most of the other criteria a ranking system has been used to identify the level of performance.

5.5 Figure 5.1 sets out the populated matrix for each car park.

Figure 5.1 Town Centre Car Park Appraisal – Matrix Analysis

Element	Barker Road	Brewer Street Upper	Brunswick Street	College Road	King Street	Lucerne Street	Sittingbourne Rd	Medway Street	Mill Street	Mote Road	Palace Avenue	Union Street West	Union Street East	Well Road	Wheeler Street	Brooks Place	Lockmeadow
Size	76	71	66	72	219	18	99	59	132	105	41	35	55	29	67	7	598
Stay Length	Long	Short	Long	Long	Long	Long	Long	Short	Short	Short	Short	Long	Long	Long	Short	Long	Long
Physical Condition	2	3	2	2	3	3	3	2	3	3	3	3	3	3	3	3	3
Safety & Security	1	2	2	3	4	1	3	2	2	2	1	3	3	1	3	1	3
Physical vehiclar access	1	1	2	1	1	1	1	2	2	1	1	1	1	2	1	1	2
Physical pedestrian access	3	2	3	3	3	3	3	1	3	2	3	1	3	1	3	1	3
Local highway network access	2	2	1	1	1	2	2	1	1	2	1	2	2	2	2	1	2
Strategic highway network access	2	1	1	3	1	1	2	3	2	2	2	2	2	1	1	2	2
Proximity to Key Locations	1	1	1	2	3	1	1	3	3	2	3	2	2	0	1	3	1
Proximity to other Car Parks	2	2	0	2	2	2	1	1	3	1	3	2	2	0	2	2	2
Local Pedestrian Access	2	3	2	2	3	3	2	2	2	2	2	3	3	3	3	3	2
Utilisation	4	4	4	3	4	4	1	4	2	2	4	3	3	3	3	3	1
Primary reason for use	SHOP	SHOP	SHOP	SHOP	SHOP	SHOP	WORK	SHOP	SHOP	SHOP	SHOP	WORK	WORK	SHOP	SHOP	LEIS	LEIS
Duration of stay	2-3	2-3	1-2	4-6	2-3	3-4	1-2	2-3	2-3	2-3	2-3	6+	3-4	2-3	2-3	3-4	2-3
Perceptions of safety	1	2	2	2	1	2	1	2	1	2	1	2	1	2	1	1	2
Revenue Generation	102.2	125.2	47.5	64.6	181.4	21.9	45.5	135.2	122.5	54.2	101.2	60.1	33.4	19.2	132.5	5.6	n/a
Operating Costs	20.5	26	17.9	20.4	88.8	10.5	17.3	23.9	26	16.2	17.8	22.1	12.9	11.9	25.5	9.8	383.9
Operating Surplus / Deficit	81.7	99.2	29.6	44.2	92.6	11.4	28.2	111.3	96.5	38	83.4	38	20.5	7.3	107	-4.2	n/a
% Operating Surplus / Deficit	399%	382%	165%	217%	104%	109%	163%	466%	371%	235%	469%	172%	159%	61%	420%	-43%	n/a
Revenue ranking	4	4	2	2	2	2	2	4	3	3	4	2	2	1	4	0	

Physical Characteristics

Size

5.6 The matrix identifies the size and stay length for all the car parks. There is a large range in car park size with the smallest, Brooks Place, offering only 7 spaces, whilst the largest, Lockmedow, offering 598.

Condition

5.7 Car parks were rated on a scale of 1 to 3;

1. Poor
2. Reasonable
3. Good

5.8 All of the car parks were considered to be at least reasonable, with most rated good. The lowest ranking car parks were Barker Road, Brunswick Street, College Road, and Medway Street.

Safety and Security

5.9 Car parks were rated on a scale of 1 to 4;

1. Minimal lighting
2. Good Lighting
3. Lighting and CCTV
4. Lighting, CCTV and staffing

5.10 There is quite a range of provision with some car parks only having minimal lighting Barker road, Lucerne Street, Palace Avenue, Well road, and Brooks Place. In contrast King Street has lighting, CCTV and staffing.

Vehicle Access

5.11 The number of vehicle access points to the car park was recorded. The majority only have a single point of access/egress, however, Medway Street, Mill Street, Well Road, and Lockmeadow had multiple point of entry/exit.

Pedestrian Access

5.12 Car parks were rated on a scale of 1 to 3;

1. Access only by vehicle access point
2. One dedicated access point
3. Two or more dedicated access points

5.13 The majority of car parks had two or more dedicated access points for pedestrians. Medway Street, Union Street West, Well Road, and Brooks Place can only be accessed via the vehicular access.

Spatial Characteristics

Local Access

5.14 Car parks were rated on a scale of 1 to 2;

1. Restricted local access
2. Good local access

5.15 There was a complete range of scores with some car parks having access only off one-way roads or having limited access due to blocked off streets.

Strategic Access

5.16 Car parks were rated on a scale of 1 to 3;

1. Poor access from strategic road network
2. Reasonable access from strategic road network
3. Good access from strategic road network

5.17 The assessment examined how easy a car park is to reach from one or more of the strategic routs leading into the town centre. Medway Street was considered to have a prominent strategic location where the A229, A20 and A26 converge. Other car parks either located off the strategic road network, or more embedded within the town centre scored low marks.

Proximity to key locations

5.18 Car parks were rated on a scale of 1 to 3;

1. Poor access to key locations
2. Reasonable access to key locations
3. Good access to key locations

5.19 The assessment examined how easy it is to reach key town centre locations from the car park. Car parks located on the edge of the core retail and civil functions areas scored highly.

Proximity to other car park

5.20 Car parks were rated on a scale of 0 to 3;

0. Isolated from other car parks
1. Relatively isolated from other MBC car parks but potentially close to an private car park
2. Close to some other MBC car parks
3. Close to many other MBC car parks

5.21 The assessment was undertaken relatively to the context of a town centre, therefore a score of zero reflected that a car park was not within an estimated 250 metres of another car park. Two car parks, Brunswick Street and Well Road were considered to be isolated. Mill street and Palace Avenue were considered to be in close proximity to a number of alternative MBC car parks.

Pedestrian Highway Access

5.22 Car parks were rated on a scale of 1 to 3;

1. Poor local pedestrian highway access
2. Reasonable local pedestrian highway access
3. Good local pedestrian highway access

5.23 This assessment examined the condition of pavements and pedestrian crossing facilities leading to and from the car parks. All of the car parks were considered to have reasonable pedestrian highway access, with many rated good.

Use of the Car Parks

5.24 The Town Centre Car Park occupancy survey data and the customer survey information have been used to assess a range of criteria relating to the use of the car parks.

Utilisation

5.25 The weekday car park occupancy data presented within the 'Data Report', was used to provide rating for each car park on a scale of 1 to 4;

1. Low utilisation
2. Medium utilisation
3. Relatively high utilisation
4. Operating at capacity

5.26 The results demonstrate that a large number of car parks are operating at capacity, with most of the rest operating at a relatively high level of utilisation. Five car parks were considered to have significant spare capacity with Lockmeadow and Sittingbourne Road having the most.

Primary reason for use

5.27 The weekday customer survey data was used to assess the primary reason for using each car park. This demonstrates that shopping (SHOP) is the primary reasons for use of most car parks. The car parks are primarily used for work purposes Sittingbourne and Union Street east and West. Lockmeadow and Brooks Place had a leisure (LEIS) as their primary use.

Primary duration of stay

5.28 The weekday customer survey data was used to assess the primary duration of stay each car park. Most car parks had an average duration of stay of 2 to 3 hours, which ties in with the primary reason for use as shopping. Brunswick Road and Sittingbourne Road had shorter primary duration of stay, whilst Union Street West had the highest.

Perceptions of safety

5.29 The weekday customer survey data was used to assess the perceptions of safety at each car park. A three-scale rating was applied

0. Less than 90% perceive the car park to be safe
1. Around 90% perceive the car park to be safe
2. 100% perceive the car park to be safe

5.30 Generally the response was that most individual perceived the car park that were using was safe. At some car parks limited numbers of individuals indicated they did not always feel safe but no car park was given the lowest rating.

Costs and Revenues

5.31 Revenue and operation cost data was provided by MBC for the car parks that they operate. The exception to this was for Lockmeadow where revenue data was not available.

5.32 The matrix presents the individual revenue generation for the year 2010/11 along with the operating costs. An operating surplus/deficit is then provided, both in absolute terms and relative to operating costs. This data has then been used to generate a 'revenue ranking' for each car park.

5.33 The results indicate that nearly all the car parks generate a significant revenue surplus. Brooks Place, however, appears to be operating at a loss, although this is a very small car park so it may relate to how costs are allocated.

Appendix A

Spatial Presentation of Scenario Options

Scenario 1:
Existing Park and Ride Sites

Scenario 2:
Park and Ride Radial Sites Option
10
1a
11
London Road
9a
9b
8
9c
9d
Willington Street
2a
6
7

Scenario 3:
North / South Park Spine Option
5a,b,d,e
1b
9a
3
2b
6

File Note

Date	12 April 2012
Job No/ Name	ST12118
Subject	Review of Maidstone Modelling and Appraisal Work

The purpose of this note is to provide a review of the Maidstone Visum modelling work and subsequent appraisal analysis in order to help interpret the findings and to rationalise them within a real world context.

The Visum model has provided a range of headline results in terms of future year person flows, vehicle movements on key links, journey times on key links, and overall network congestion. In addition, it has provided forecasts of park & rides usage and bus and rail patronage.

The limitations of the model have been acknowledged as follows:

- Only a single AM and PM peak hour has been modelled: this creates difficulties in understanding the application of peak spreading that is incorporated within the model
- Limited detail in the external zones: this creates difficulties in utilising information that originate and terminate in these areas – a key aspect of park & ride, as well as rail demand.
- No specific modelling of high occupancy vehicles: this means that the impact of HOV lanes cannot be fully understood

Three option scenarios have been assessed, with Option 1 referred to as the reference case, reflecting the minimum specification of schemes that would be included within the Integrated Transport Strategy (ITS). Options 2 and 3 have been assessed against Option 1.

Option 2

The headline Visum outputs for Option 2, in comparison to Option 1 are as follows:

- 5% reduction in AM peak hour car trips and 8% reduction in PM peak hour car trips
- 5% reduction in AM peak hour car trips travelling into the Core Town Centre
- Increased travel times in the AM and PM peaks across all key routes into and out from the town centre
- Reduced network congestion on parts of the A229 southern gyratory and around Junction 5 M20, but increased congestion on A229 Royal Engineers Road
- Increased vehicle flows on a number of the key routes leading into and out from the town centre

One of the issues with the Visum model is that the trip distribution module appeared to be created some anomalous results within this option. As a result, a fixed percentage change to bus, rail and car trips were universally applied to all zones, whilst changes were made to park & ride to reduce the likelihood of multiple interchanges. Whilst this produced more predictable distributions of trips, the downside was that the total number of trips to each area of Maidstone now differs between Option 2 and Option 1. The most extreme example of this is for the core town centre.

A universal increase of 25% was applied to bus trips to this sector, along with a universal reduction of 23% and 5% to rail and car, respectively. Whilst a universal factor was not applied to park & ride, the change in interchange penalties resulted in the Core Town Centre becoming, effectively, the singe destination point, and hence overall demand increased by 314%. Since the underlying levels of demand by each mode were completely different in Option 1, the universal increases/decreases had substantially different impacts with overall trips to the Core Town Centre increasing by 1,500 or 14%. This would obviously be unlikely to occur in actual reality and will affect the way the TUBA model operates.

The TUBA modelling work, that utilises the Visum model output matrices, produces the following headline results:

- Significant journey time savings for businesses, commuters and other travellers across the borough resulting from the measures, although a large proportion of these are associated with the PM peak
- Neutral revenue impact resulting from increased parking tariffs and reduced town centre car parking
- A financial operating surplus from park & ride scheme

The results from the modelling exercises raise a number of questions:

a) Why do the Option 2 measures appear to create additional town centre congestion and not encourage greater switching of trips from car to other modes?

b) Why are overall journey time savings forecast to be generated across the whole network by TUBA, when the Visum model outputs suggest town centre network congestion remains?

c) Is it legitimate to assume that MBC town centre car parking revenues will be broadly neutral?

d) Is it legitimate to assume that the park & ride services will operate with a financial surplus?

Response to question a)

Jacobs have indicated that the additional bus priority measures that have been introduced along all of the park & ride corridors leading into the town centre have the effect of reducing network capacity for other road users, namely private car and freight trips. In addition, the re-allocation of one lane of the A229 southern gyratory to a bus/HOV lane also has the impact of reducing vehicle capacity for private car and freight.

The fact that these increases in journey times, alongside the increase in MBC town centre car parking charges, is not resulting in a significant reduction in car trips indicates that the public transport alternatives still remain uncompetitive for many trips across the borough.

The results certainly suggest that the impact of the MBC car parking tariff increases may not be having the scale of impact as predicted. This might simply be because of the models assumptions relating to private car parking availability in the town centre. There are only around 1,275 long-stay MBC car parking spaces in the town centre but the model predicts that around 8,000 person trips to the Core Town centre in the single AM peak hour will be undertaken by private car in Option 1. This suggests that a maximum of 20% of vehicle trips into the town centre will be affected by the tariff increase and potentially much less, given that the 8,000 is just vehicle trips for a single hour.

There is also the question as to whether the distribution of trips in the Visum outputs is correct. A highlighted above, the outputs were manipulate to increase the park & ride trips to the Core Town Centre; however, there was not an equal and responsive reduction in car trips to the same zone. In practice, therefore, they may be much larger reduction in car trips across the town centre.

Response to question b)

The TUBA assessment of journey time benefits examines changes in journey times for all origin – destination pairs including trips originating and terminating both outside Maidstone Town but also in the rest of Kent and beyond. In comparison to some of the aggregate outputs from the Visum model (e.g. the network congestion maps) or the specific journey time measurements, the TUBA results will pick up ever single change across the network, large or small, positive or negative. In addition, these benefits are assessed across 60 years so will tend to appear a magnitude higher.

As highlighted above, the majority of the journey time benefits for Option 2 are associated with the PM peak. Since, we don't have a PM peak network congestion map is it difficult to ascertain if there appears to be more congestion relief benefits presented by the Visum model, although the journey time analysis still reports increases along the key corridors.

The impact of the trip distribution issue, discussed above, could also be having an impact upon the TUBA calculations, although there is no specific presumption that this would increase or decrease journey time benefits.

The conclusion that must be reached is that many of the journey time benefits are either small in nature but aggregated up across the whole network create significant benefits, or that they are associated with longer distance trips. This is logical in that park & ride will target longer distance trips from outside of Maidstone. The Visum model outputs also present congestion relief benefits at some of the M20 junctions, especially junction 5, as well as along certain sections of the M20.

Response to question c)

The assessment of the impact of the Option 2 measures upon MBC car parking revenues has taken into account:

- November 2011 surveys of car park utilisation by 9.30am = ~ 800 parked vehicles
- The number of vehicles parking in the AM peak hour = ~ 640 parked vehicles
- The increase in trips to 2026 (~50%) = 960 parked vehicles
- The proportion of long car parking (63%) = 600 parked vehicles

The analysis has then simply assumed that the forecast AM peak hour reduction in car trips to the Core Town Centre (370) translates to a reduction in long-stay MBC car parking.

It is therefore straightforward to calculate that the loss in revenue from reduced parking (370 * £4.50 = £1,665) is almost off-set by the increase in parking charge for the remaining long-stay car park users ((600 - 370) * ((£4.50 * 150%) - £4.50) = £1,552). If you also take into account the increase in short-stay tariffs by 20% then it is perfectly reasonable to assume that approach could be revenue neutral.

The main question that remains is whether or not the increased long-stay tariff will only result in a reduction in town centre car parking 370 vehicles. This represents a 62% reduction in MBC long-stay car parking, which in proportional terms is substantial. If 100% MBC long-stay car parking were to be abstracted then the loss of revenue would be £1.7million relating to the AM peak period across a whole year.

It is recommended that further investigation of both the distribution of car trips within the Visum outputs, as well as the way the town centre car park charges and private car parking are modelled within Visum is carried out in order to verify the forecast reduction in town centre car parking.

Response to question d)

The Option Appraisal Report has presented the operational performance of each park & ride site in Option 2. This clearly identifies that not all of the sites are forecast to breakeven, but that Newnham Court and, to a lesser degree, Linton Corner are forecast to generate significant operating surpluses.

The operating cost element of the assessment is considered to be robust and has been benchmarked against the existing park & ride operating contract.

The key factor in the revenue assessment is the underlying forecast of AM peak hour demand produced by the Visum model. Since peak period fares are higher than inter-peak and OAP concessionary fares, the volume of trips in the peak period is a key component in ensuring that farebox revenue covers operational costs.

The AM peak forecasts for Newnham Court and Linton Corner are considered to be high and it would be prudent to conduct sensitivity tests on these to determine the impact upon the financial operation of the park & ride service.

Option 3

The headline Visum outputs for Option 3, in comparison to Option 1 are as follows:

- 6% reduction in AM peak hour car trips and 8% reduction in PM peak hour car trips
- 6% reduction in AM peak hour car trips travelling into the Core Town Centre
- Reduced travel times on inbound flows in the AM peak across all key routes into the town centre, but increases in journey times in the PM peak
- Reduced network congestion on parts of the A229 southern gyratory and around Junction 5 M20, but increased congestion on A229 Royal Engineers Road and A20 Ashford Road
- Increased vehicle flows on a number of the key routes leading into and out from the town centre

The same issues with the trip distribution module apply to Option 3; however the universal increases / decreases have less impact on overall trips to the Core Town Centre than Option 2 with an increase of 670 trips or 6%, reflecting the lower park & ride trips and larger reduction in car trips. This does still remains an issue and will affect the way the TUBA model operates.

The TUBA modelling work, that utilises the Visum model output matrices, produces the following headline results:

- Significant journey time savings (double the size of Option 2) for businesses, commuters and other travellers across the borough of Maidstone resulting from the measures. These benefits occur in both the AM and PM peaks.
- Negative revenue impact resulting from increased parking tariffs and reduced town centre car parking
- A financial operating surplus from park & ride scheme
- A financial operating loss from the NorthWest Express Loop bus service

The results from the modelling exercises raise a number of questions:

e) Since the Option 3 measures appear to reduce AM peak journey times why does the network congestion still remain high, or worsen on corridors such as the A229 and A20?

f) Is there consistency between the journey time savings forecast to be generated across the whole network by TUBA and the Visum model outputs?

g) Is the forecast MBC car parking revenue loss robust?

h) Is it legitimate to assume that the park & ride services will operate with a financial surplus?

Response to question e)

Jacobs have indicated that there are significantly fewer additional bus priority measures than are included in the Option 2 model. The loss of network capacity for cars and freight is, therefore, less significant. The additional A229 Royal Engineers Road bus/HOV lanes also add capacity. This provides some explanation as to why journey times reduce in the AM peak model. It does not, however, explain the increased journey times in the PM peak.

It is also difficult to reconcile the increased network congestion on the A229 Royal Engineers Road presented in the Option 3 network congestion map against the reduced journey times.

As with Option 2, there are also underlying questions about the modelling of the town centre car parking and the effect of the trips distribution process, discussed previously.

Response to question f)

There appears to be greater consistency between the forecast journey time savings in TUBA and the Visum model journey time outputs, although the magnitude of the TUBA benefits is significant.

The same conclusions must be drawn from Option 2 that the TUBA benefits are as a result of small benefits derived across the whole network, as well as from the longer distance trips.

Response to question g)

As discussed with Option 3, the forecast MBC car park revenue impact is very dependent upon the forecast reduction in AM peak car trips to the Core Town Centre from the Visum model, so it is important to re-assess the way this has been modelled, and the impact of the trip distribution process.

Response to question h)

The same comments apply as for Option 2, with sensitivity testing recommended.

Option 4

The assessment of option 4 was necessarily less technically robust as a result of the absence of up-to-date modelling outputs. The assessment indicated that the scheme would potentially attract a significant proportion of trips across the network; however, it was much less conclusive as to whether the overall scheme would offer good value for money.

One of the issues with this scheme is that it does not directly support the Core Strategy development proposals as specified. Having moved away from a development distribution that takes into account the provision of this highway infrastructure, there appears to be less policy reasons to pursue the scheme. Questions would remain as to whether the inclusion of this scheme within the strategy would end up distorting the development profile.

It is acknowledged; however, that it is more difficult to categorically rule out this scheme without an equal and unbiased appraisal against the other options.

Recommendations for further analysis

Based upon the points raised above, along with previously highlighted issues, the following recommendations are made in relation to potential further work:

- Re-examine the underlying trip generation in light of recent industry commentary upon forecast levels of growth. The inclusion of underlying TEMPRO growth and Core Strategy growth could be considered to be double counting.
- Re-examine the approach to the trip distribution in order to ensure total trips to each sector remain broadly constant across the options
- Re-consider the implications of the detail of the External Zones given their importance generating park & ride demand and ensure robustness in the park & ride forecasts. Undertake sensitivity testing of all park & ride demand.
- Re-examine the approach to town centre car parking charges and reduced supply and undertake sensitivity testing of town centre car park demand
- Re-examine the implications of the way the HOV lanes have been modelled to try and determine if these provide benefit.

- Re-examine the approach to applying capacity constraints on park & ride demand within the model, particularly in the context of a longer peak period e.g. demand will be generated pre-8am. Agree capacity restrictions for Newnham Court and Linton Corner and assess implications for demand generation. This could also include restrictions on bus capacities.

In terms of further modelling work, it is understood that there have been requests for an assessment of a do-minimum option that includes the closure of all existing park & ride sites. This would obviously represent the worst-case scenario, in terms of transport network provision against future demand. It would make sense to treat this option as a do-nothing scenario against which to appraise the introduction of various additional measures; however, it is appreciated that resource restriction may not allow Options 1 to 3 to be re-based against an new reference case.

On approach would be to assess Option 3, as the best performing option, against the new reference case and then assess a further hybrid scheme, and the SEMSL scheme if deemed necessary, against the reference case.

In terms of modelling a hybrid scheme the analysis would rule out the following options:

- London Road park & ride
- Willington Street park & ride
- Bluebell Hill park & ride
- Northwest Express Loop Bus with associated Coldharbour Roundabout infrastructure

It is recommended that improvements to bus services to the development areas of Junction 5 are incorporated within existing bus services and as part of KCC plans to enhance bus provision along the A20 London Road corridor.

The analysis would dictate that of the other northern park & ride sites, Newnham Court would appear to be the more attractive site in terms of geography. It appears that much of the demand generated originates from the east along the M20 corridor or from the northeast along the A249 corridor. Even the assessment of the distribution of trips for the Cobtree site indicates that this is the case. The downside to the Newnham Court, and Sittingbourne, sites is the inability to provide significant bus priority measures along the route into the town centre. Even so, the Option 2 results appear to indicate that there is enough advantage to travellers to use this site. What cannot be ascertained from the Option 2 results is whether the Newnham Court site would create the same issues for the M20 if it were the only site in the north as the Cobtree site appears to create.

The level of demand forecast at Newnham Court would appear to justify (or indeed require) much higher frequencies than every 10 minutes. At present there would be an average of 200 passengers per bus.

Of the southern park & ride sites, the analysis demonstrates that Sutton Road would be operationally viable and has a clearly identified site. The forecasts, however, suggest that Linton Corner is again the better geographically located site, even without bus priority measures along the A229. Clearly an appropriate site would need to be identified on this corridor to take this option forward.

Given the scale of development in the South East sector of Maidstone there appear to remain strong reasons to support bus priority measures along the A274/A229 corridor travelling into the town. Both the Option 2 and 3 results suggest that network congestion is reduced with the bus/HOV lane. Even without park & ride buses travelling to Sutton Road, there are frequent bus services along the corridor.

The justification for expenditure on bus / HOV lanes on the A229 Royal Engineers Road appears more dependent upon the choice of park & ride site. There is less specific development along this corridor to support the investment, although bus priority at junctions could still be provided.

The impact of the 150% increase in MBC parking tariffs need to be further examined in the model before a recommendation upon their inclusion, revision or removal be made.

Distribution	Jonathan Morris
Name/ Signed	Jon Bunney

TECHNICAL NOTE

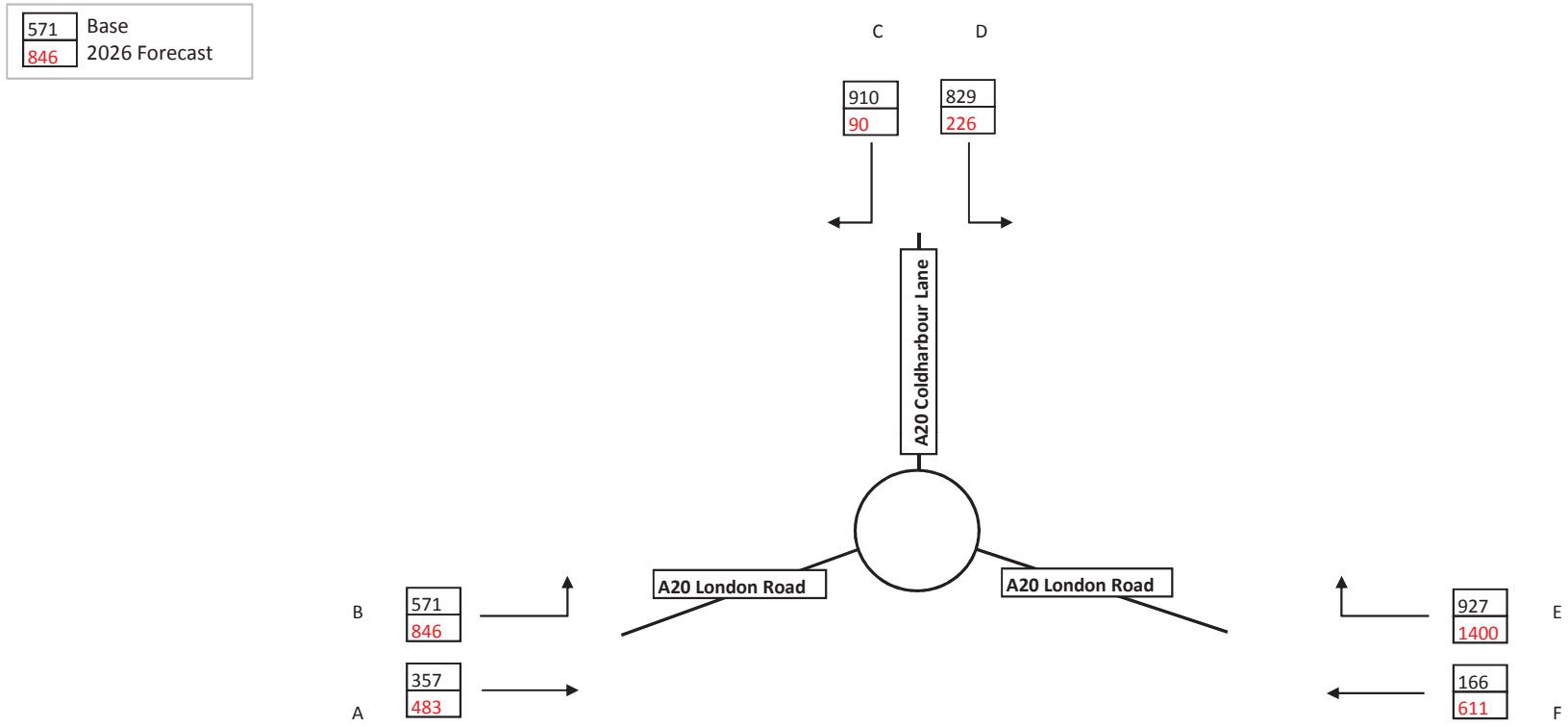
Project Title: Maidstone Option Testing			Sheet No: 1
Subject: Base & 2026 Option 1 (Do Minimum) Turning Movements			Calc No:
Job No: B1786600			File:
Made By: S.Kaler	Date: 13/06/12	Revised By: n/a	Date:
Checked By: B.Sey	Date: 13/06/12	Checked By: n/a	Date:

Turning movements for the junctions listed below have been extracted from the Base and 2026 Option 1 (Do Minimum) models.

- Coldharbour Roundabout
- Hermitage Lane / London Road
- Queens Road / Fant Lane / Tonbridge Road
- Fountain Road / Farleigh Road / Tonbridge Road
- North Street / Tonbridge Road
- Willington Street / Sutton Road

Flow diagrams are provided and where applicable notes are included.

Coldharbour Roundabout - AM



Notes

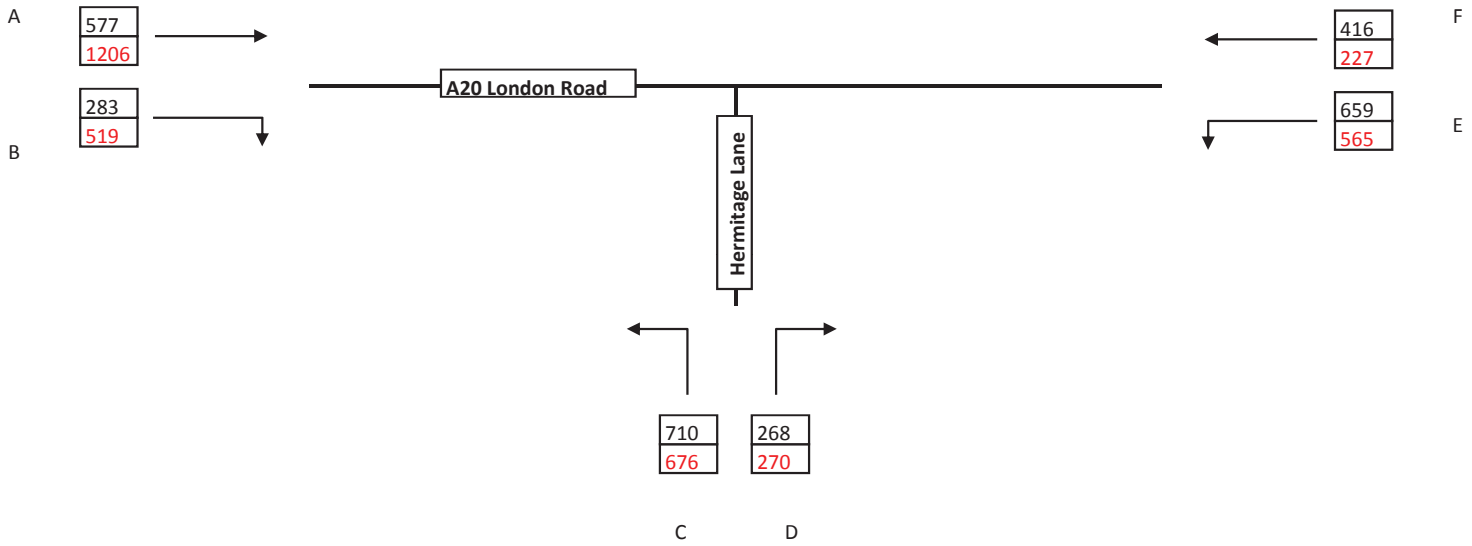
A - 2026 DoMin - More traffic using A20 London Road to access to the Motorway as a result of the Hermitage Lane Development

C - 2026 DoMin - Traffic signals at J5 affects inbound flow.

E, F - 2026 DoMin - More traffic using A20 London Road to access Motorway and Hermitage Lane Development

Hermitage Lane / London Road - AM

571	Base
846	2026 Forecast



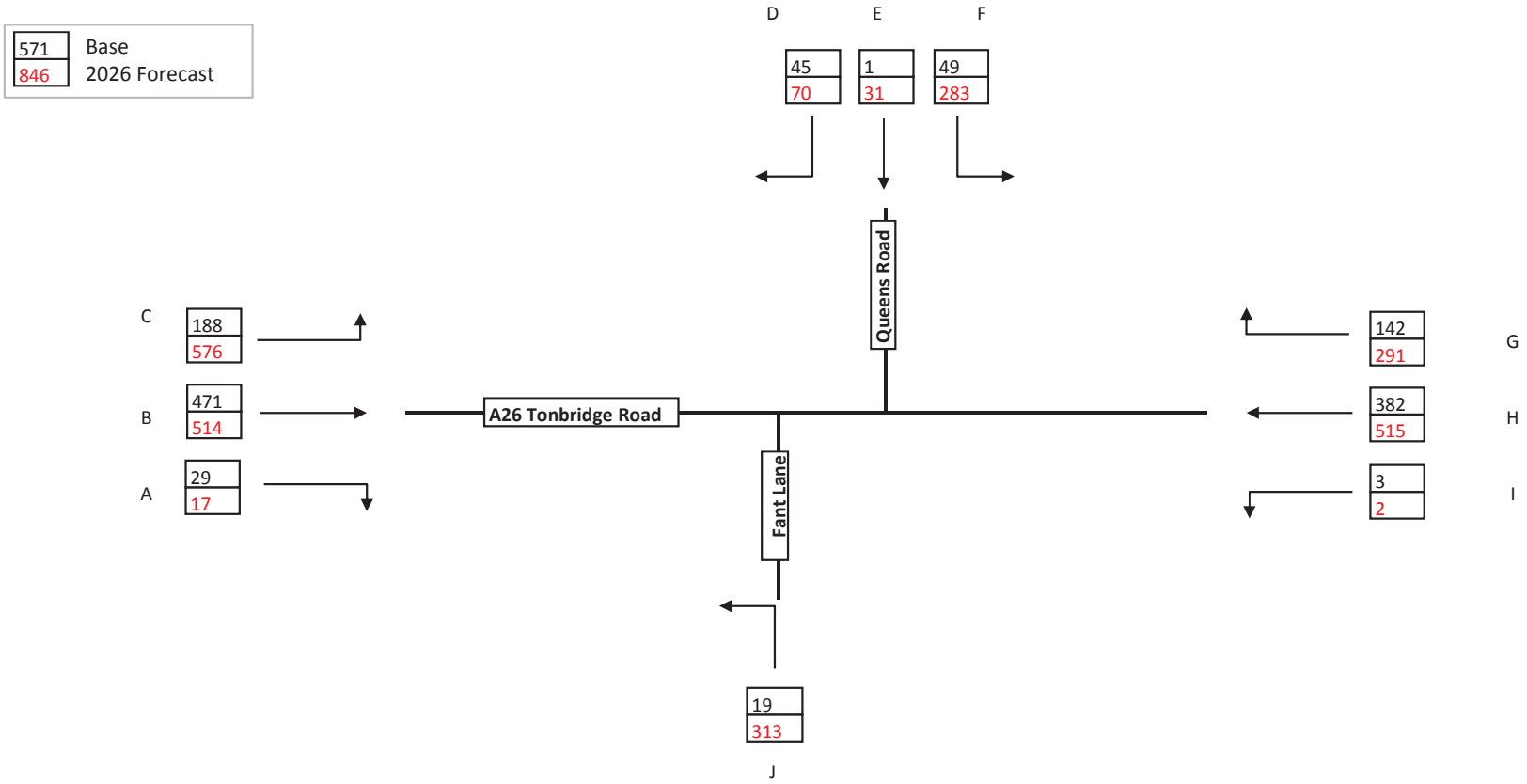
Notes

A - 2026 DoMin - More traffic using A20 London Road as a result of increase in congestion on Motorway in 2026.

B - 2026 DoMin - More traffic turning into Hermitage Lane due to development.

F - 2026 DoMin - Reduced traffic as a result of the signalised M20 J5.

Queens Road / Fant Lane / Tonbridge Road - AM



Notes

C - 2026 DoMin - More traffic turning into Queens Road because of Hermitage Lane Developments.

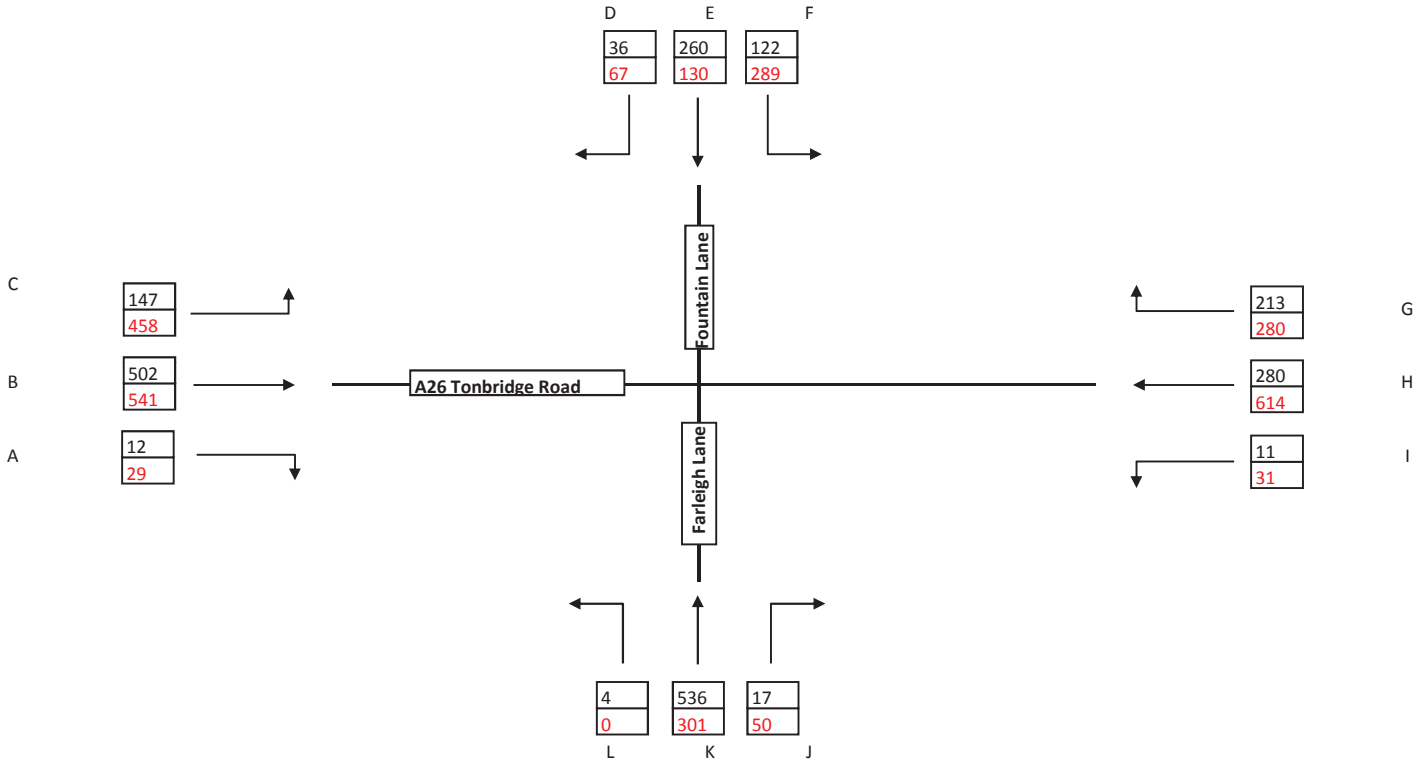
F - 2026 DoMin - Some traffic re-routing as a result of the congestion at the signalised junctions along A20 London Road.

G - 2026 DoMin - Some traffic re-routing as a result of the congestion at the signalised junctions along A20 London Road.

J - 2026 DoMin - More traffic using this movement to avoid queuing at the signalised Junction at Farleigh Lane.

Fountain Road / Farleigh Lane / Tonbridge Road - AM

571	Base
846	2026 Forecast



Notes

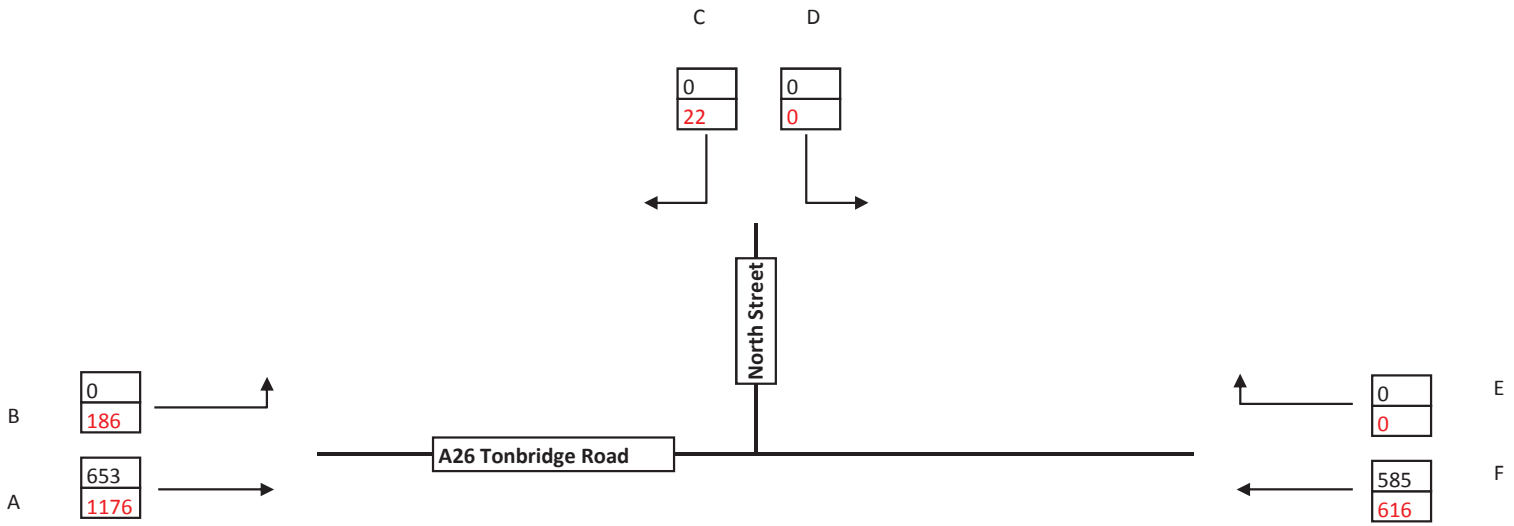
C - 2026 DoMin - More traffic turning into Foutain Lane due to Hermitage Lane developments.

D, E, F - 2026 DoMin - Traffic increase is related to traffic from Hermitage Lane developments .

H - 2026 DoMin - Some traffic using A26 Tonbridge as a result of the congestion at the M20 junctions.

North Street / Tonbridge Road - AM

571	Base
846	2026 Forecast



Notes

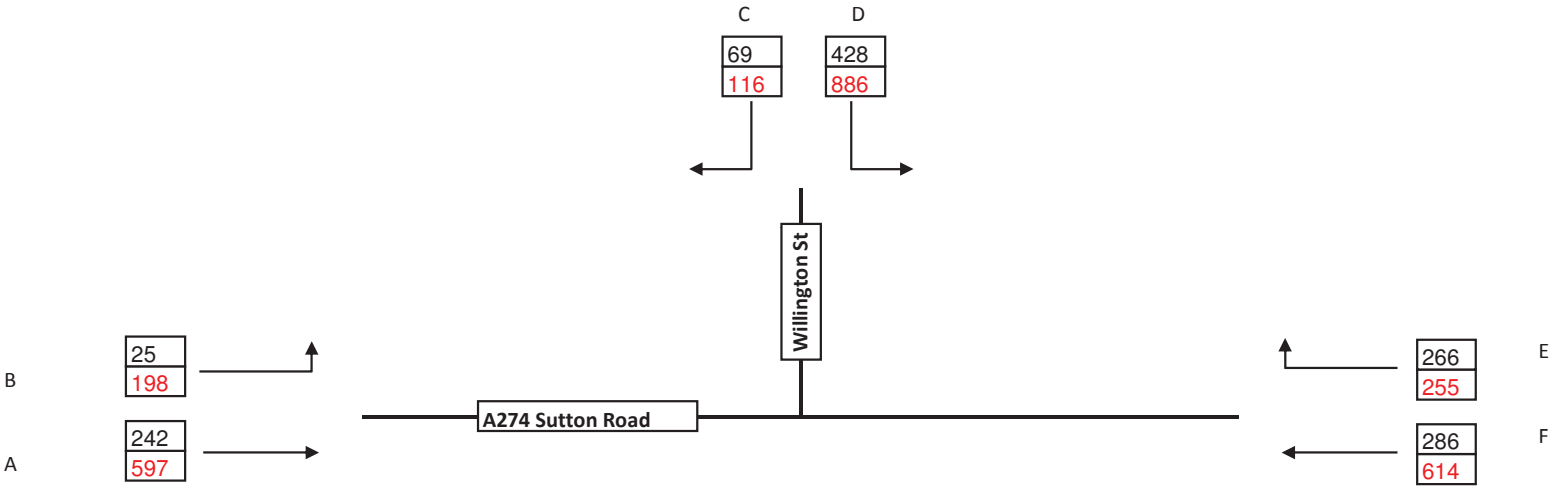
This junction is at the edge of the detailed modelled area

A, B - 2026 DoMin - Traffic increases as a result of Hermitage Lane Developments.

C, D - Low flows due to location of connectors for larger zones at the periphary of town.

Willington Street / Sutton Road - AM

571	Base
846	2026 Forecast



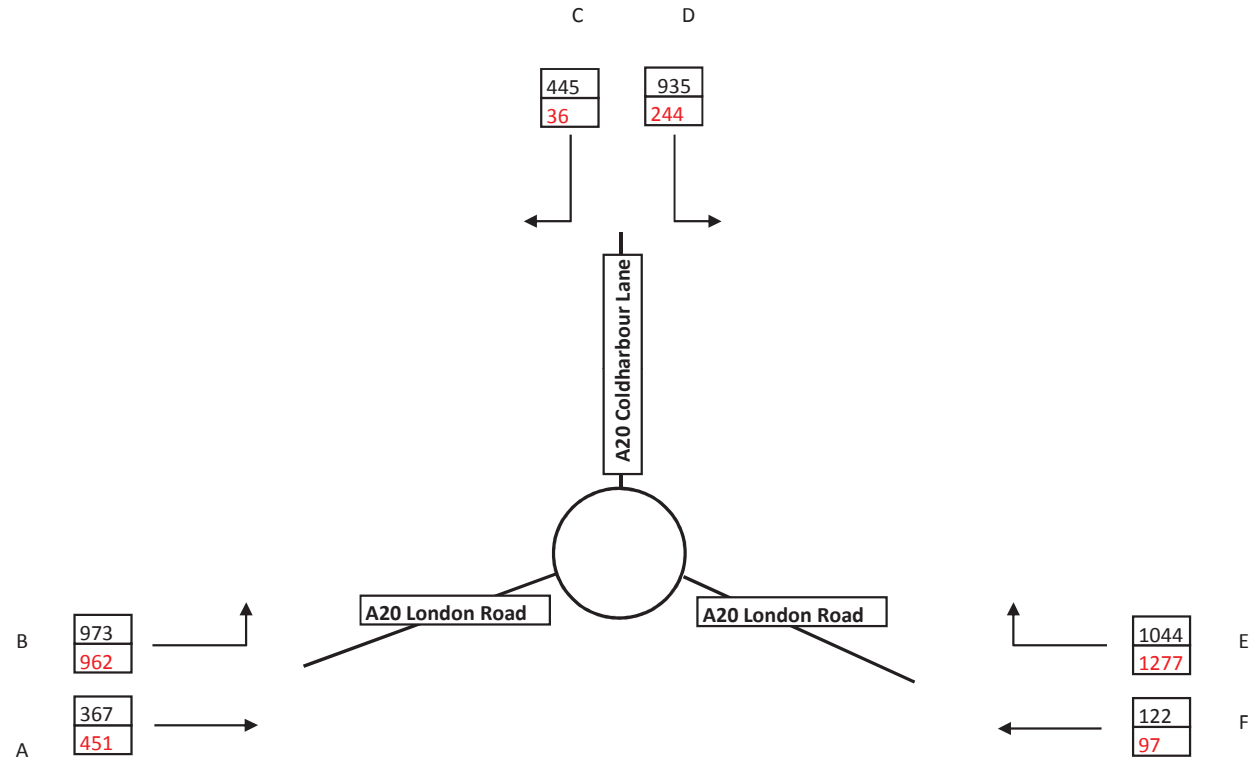
Notes

A, F - 2026 DoMin - Traffic increases as a result of series of developments along the areas and traffic re-routing from A20 Ashford Road.

C, D - 2026 DoMin - More traffic using J7 and Willington St to reach destinations around Sutton Road.

Coldharbour Roundabout - PM

571	Base
846	2026 Forecast

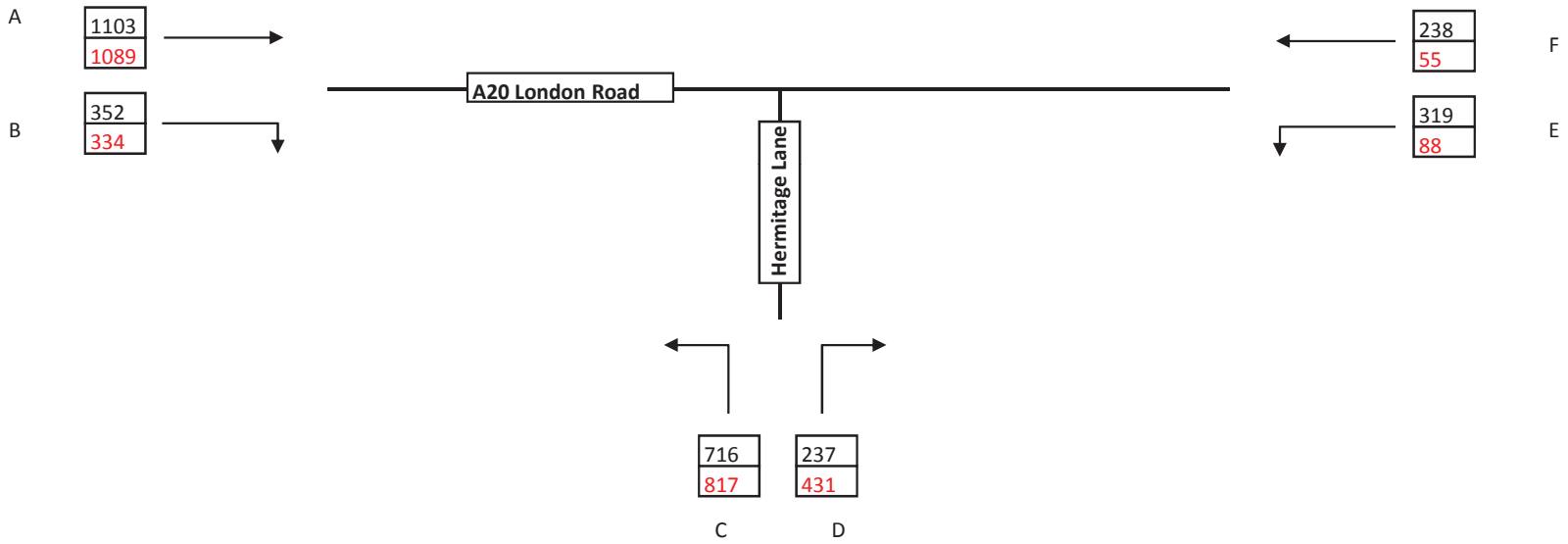


Notes

C, D - 2026 DoMin - Increased congestion at the signalised M20 J5.

Hermitage Lane / London Road - PM

571	Base
846	2026 Forecast

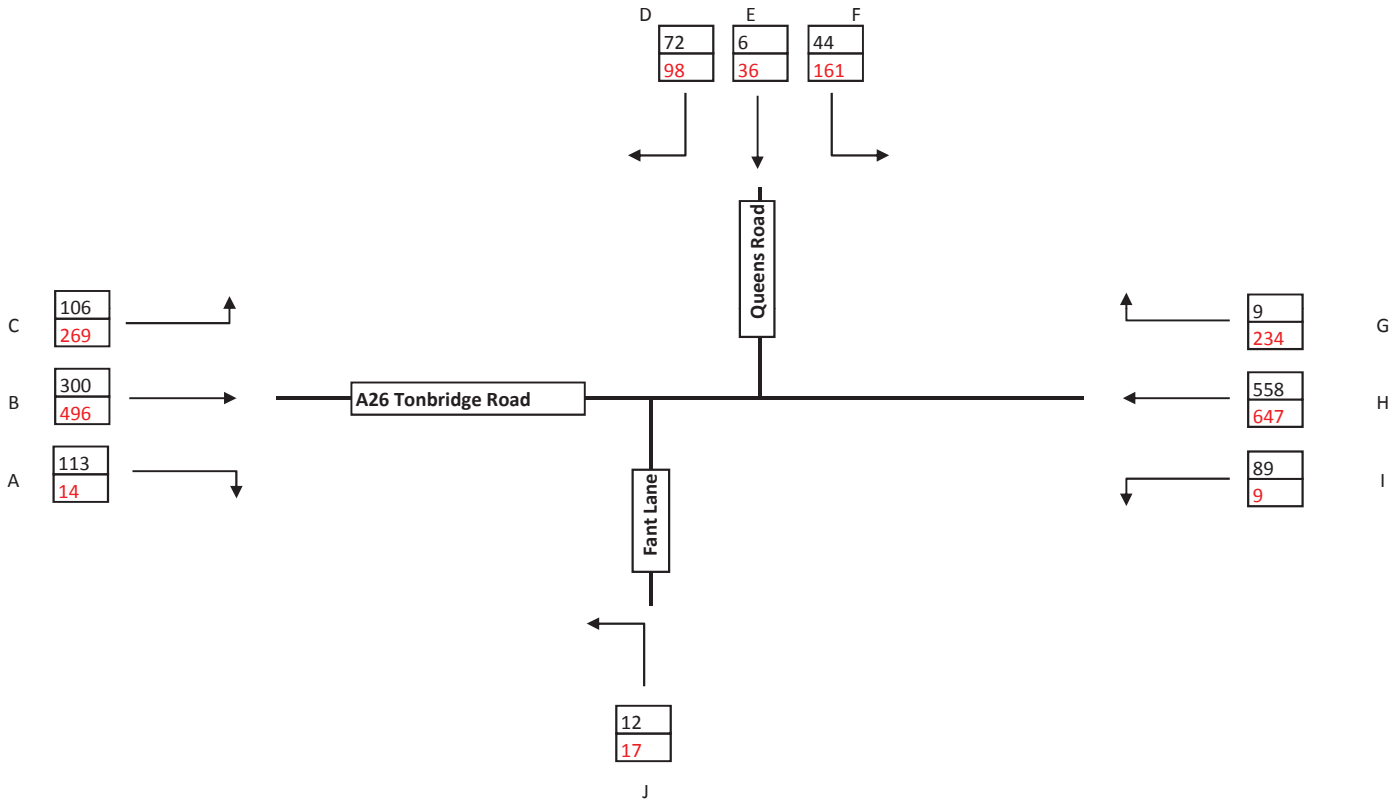


Notes

E, F - 2026 DoMin - Lower flows due to increased congestion at the signalised M20 J5.

Queens Road / Fant Lane / Tonbridge Road - PM

571	Base
846	2026 Forecast



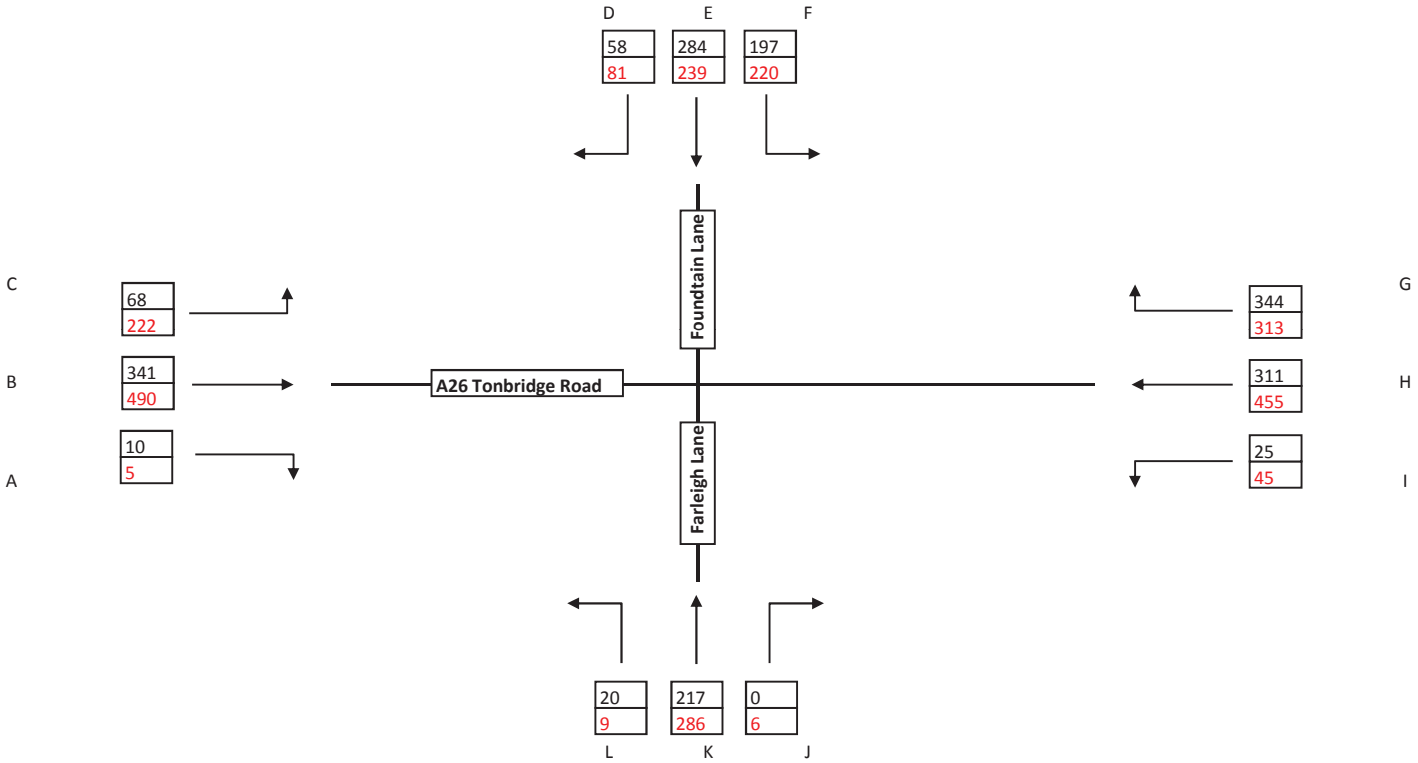
Notes

B, C - 2026 DoMin - Flows increase due to Hermitage Lane Developments.

D,E,F - 2026 DoMin - Flows increase due to developing congestion at A20 London Road.

Fountain Road / Farleigh Lane / Tonbridge Road - PM

571	Base
846	2026 Forecast

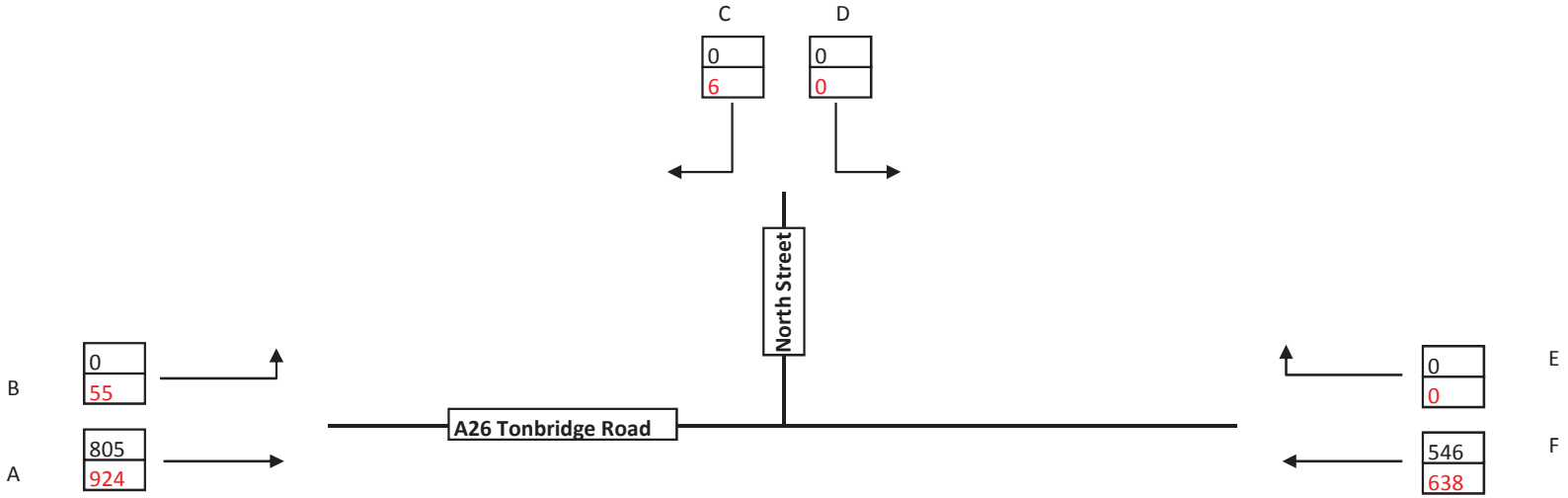


Notes

C - 2026 DoMin - More traffic turning into Foutain Lane due to Hermitage Lane developments.

North Street / Tonbridge Road - PM

571	Base
846	2026 Forecast

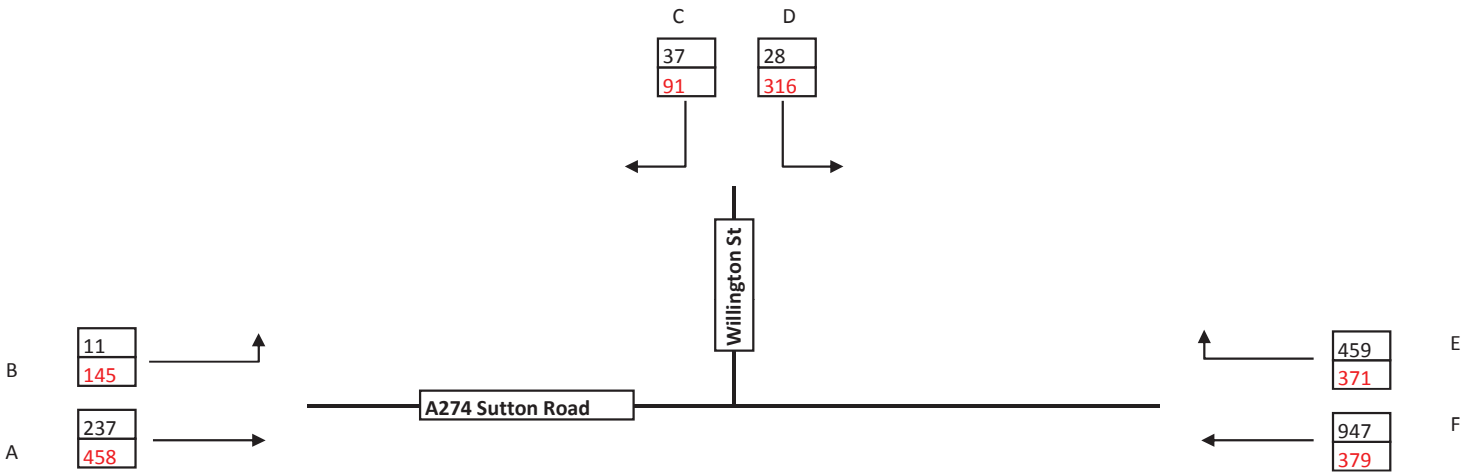


Notes

C, D - Low flows due to location of connectiors for larger zones at the periphary of town.

Willington Street / Sutton Road - PM

571	Base
846	2026 Forecast



Notes

B - 2026 DoMin - Slightly more traffic using Willington St and Sutton Road for J8.

D - 2026 DoMin - More traffic using J7 and Willington St for Sutton Road destinations.

F - 2026 DoMin - More traffic avoids this movement due to the gyratory.

HIGHWAYS AGENCY

M20 MAIDSTONE NEW GROWTH POINT

Report Number: HTT91272/2020.2/0/1

March 2008

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APPENDICES

APPENDIX	Title
I	Acceptability Criteria.
II	Letter from the Department for Communities and the Local Government regarding New Growth Points.

1 INTRODUCTION

1.1 General

1.1.1 Parsons Brinckerhoff (PB) has been commissioned by the Highways Agency (HA) to investigate the operation of the M20 from Junction 5 to Junction 8.

1.1.2 The HA has been asked to respond to the proposals for Maidstone to achieve New Growth Point status. In the DCLG's response to Maidstone's proposals, there were two areas of concern in which Maidstone were recommended to consult with the Highways Agency, these were:

- Sustainability of locating employment development near to the M20
- Appraisal of current and future constraints on the M20 around Maidstone

1.1.3 The HA has been asked to respond to the proposals for Maidstone to achieve New Growth Point status. To enable the HA and Kent County Council (KCC) to understand the impact of the proposed development on the highway network, and to inform the evidence based assessments regarding transport, it is necessary to undertake a strategic transport model of the area. This will enable the transport implications of the proposals to be determined and will provide evidence to enable both highway authorities to address the following questions:

- How would the growth proposals impact on existing transport networks?
- What interventions are necessary to deal with these impacts?
- To what extent have alternatives to investment in new infrastructure been explored by authorities as a means of providing the necessary capacity to cater for the proposed additional growth (i.e. reducing the need to travel, smarter choices, demand management etc)?
- What would be impact on the growth proposals if these interventions were not delivered?
- Is there room for changes in the proposal that would lessen the transport impact
- What are the ballpark costs of each of the transport interventions necessary to support the growth?
- Are there sufficient resources to deliver the growth?

1.2 Project Background

1.2.1 The report has transpired as a result of the Government initiative 'New Growth Points' which are;

'designed to provide support to local communities who wish to pursue large scale and sustainable growth, including new housing, through a partnership with Government.'[1]

1.2.2 As a result, the town of Maidstone applied for such funding and was granted with £1.5 million for the first year, to support the regeneration of the town and to introduce affordable housing, new employment and small business units which will in turn require improved transport links and an upgrade to public spaces. Future funding is dependant upon the outcome of the comprehensive spending review in 2007.

[1] http://www.communities.gov.uk

1.2.3 The HA has been working in partnership with Maidstone Borough Council (MBC) and KCC on this report as required by the Henry Clary letter dated July 2006 which states there will be specific transport issues that need resolved (see appendix 1). "The HA have commented that it will be necessary to assess the effects of the proposals on traffic distribution to ensure that they are deliverable without adverse consequences for the strategic road network".

1.2.4 The funding however has many stipulations, one being the need to achieve an overall growth of 500 houses per year. In order to achieve New Growth Point status, MBC has proposed that 10,080 new homes will be built by 2026 of which 5,040 will be built by 2016. In addition to this 12,000 jobs are predicted to be supplied by 2026. This compares to the housing allocation stated within the South East Plan of 8,200 houses to be built by 2026. In addition it should be noted that these figures are subject to change and it is predicted that there will be potential for an uplift in housing beyond the housing levels used within this report.

1.2.5 Therefore it should be noted that this study only considers the proposed development allocated for the New Growth Point status. As a result, any increase in housing levels will only contribute to the levels of congestion predicted for future years. Also this report assumes there to be no further growth following 2026.

1.3 Local issues

1.3.1 The local highway network within Maidstone is frequently congested especially during weekday AM peak periods. Due to existing levels of congestion it is apparent that the transport network will require a number of measures to ensure that Maidstone can adequately accommodate the proposed development.

1.4 Wider Impacts

1.4.1 The introduction of any development of this volume will result in an increase in traffic flow and congestion levels both within Maidstone and the surrounding area. It is important to note that this report only identifies the problems between M20 Junction 5 – 8 and neighboring junctions and therefore does not consider additional network problems beyond this realm. A few locations already experiencing problems have been provided below.

- The M20 from Junctions 3 to 5 currently operates over capacity. An increase in traffic volumes will only add to the existing congestion levels.
- The growth generated by Medway towns has not been directly included within this assessment and therefore will only add further to congestion levels.
- The current growth proposals occurring at Kent Thameside and Ashford has also not been directly included within this assessment and will also contribute to an increase in congestion levels in the future.

1.5 Purpose and Objectives

1.5.1 The purpose of this study is to inform the Highway Agency on the current operation and future operation of the M20 Junctions 5 to 8, focusing on the development issues. The study also remains in line with the transport analysis objectives set out in

the Guidance for the Methodology for the Multi-Modal Studies (GOMMMS) and any supplementary revisions, namely:

1 Safety;
2 Economy;
3 Environment;
4 Accessibility; and
5 Integration

1.5.2 Understanding the operation and development issues today will allow the HA to make informed decisions in the future regarding changes to the network in accordance with the policies at the time.

1.5.3 The aim of this study is to provide the HA with sufficient information to develop a strategy for improvements along the section of the M20 from Junction 5 to Junction 8 to accommodate future planned developments within Maidstone. This strategy will be in line with policies such as DfT Circular 02/2007 'Planning and the Strategic Road Network'.

1.5.4 This will enable the HA to respond to the Core Strategy and assist in identifying sustainable locations for developments. In addition the intent is to establish a good working relationship with the relevant authorities in order to derive a Core Strategy, which can be supported by the transport evidence in this study to ensure that the Core Strategy is sound.

1.6 Study Area

1.6.1 The M20 forms the main link through the county of Kent and is part of the Trans European Road Network (TERN). It represents a significant link between London and the South West to Dover, Calais, Maidstone and Ashford.

1.6.2 At a regional level the road network supports, commerce, supply and distribution. It serves as a commuting route across the region, and is the main link for Freight offering access to the major ports in the UK.

1.6.3 Locally, the M20 supports economic activity and provides a route linking local communities giving access to local services including; healthcare, shops, education and public transport.

1.6.4 This study covers an 11.1km section of the M20 between Junction 5 to Junction 8.

1.6.5 The trunk road is mainly a three lane motorway with an additional two lane connector road running between Junction 5 and Junction 6 and four lanes between Junction 6 to 7. The national speed limit is in force along the trunk road.

1.6.6 The location the study area is shown in Figure 1.1.

1.7 Report Layout

1.7.1 This report is separated into nine sections, see below, summarising the work undertaken and the results attained:

- Existing Conditions
- Model Validation
- Transport Policy Context
- Qualitative Assessment of Options
- Development Areas
- Future Traffic Growth
- Trip Reduction
- Options
- Transport Strategy
- Conclusion

2 EXISTING CONDITIONS

2.1 General

2.1.1 The existing conditions have been assessed for the current operation of the M20 between Junction 5 and 8. The data collected to carry out this assessment includes the following;

- Automatic Traffic Counters.
- Manual Classified Counts.
- Queue Length Surveys.
- Collision Analysis.
- Special Workplace Statistics Data.
- Roadside Interview Data.
- Existing Public Transport routes/facilities.

2.1.2 In addition, this data has also been used to develop base line transport models for the major junctions concerned in this study.

2.1.3 Please note a more detailed analysis of existing conditions can be found in the technical note 'M20 Junction 5 to 8 - Existing Conditions HTT91272/2020/1/0'.

2.2 Automatic Traffic Counters (ATC)

2.2.1 ATC data was obtained from the HA Traffic Information Database in relation to a number of locations along the M20 corridor, on both eastbound and westbound carriageways. The average 12 hour AWT flow along this stretch of the M20 Motorway is approximately 82,000. Higher flow rates can be observed immediately west of Maidstone, with a general downwards trend as the carriageway continues further east.

2.2.2 Junctions 5 to 7 represent major access points into parts of Maidstone and the surrounding areas. As such the flows are generally above the route average, this is due to a large amount of local trips using the motorway to travel within Maidstone. The RSI data analysed also confirms that there are a significant number of local movements between Junction 5 to 8.

2.2.3 During the AM peak period the major traffic movements travel westbound from Junctions 7 to 5 and eastbound from Junctions 7 to 8 towards Dover. The PM peak movements are mirrored to those in the AM peak.

2.2.4 A review of existing ATC data has been undertaken to understand how existing levels of traffic have grown over the last 3 years (between 2004 and 2006). This has demonstrated that the mainline average annual weekday flows are increasing on average by 1% per year.

2.2.5 The M20 carries a high proportion of HGV's. Within the study area HGV's make up around 20% of the traffic flows trqavelling the mainline of the M20 in each direction. The proportion of HGV's on the slip roads vary between 8 – 13% in either direction.

2.3 Manual Turning Counts

2.3.1 PB commissioned Sky High Traffic Data to carry out a 12-hour manual classified traffic counts between the hours of 7:00 and 19:00 on Tuesday, Wednesday and Thursday, the 14th-16th November 2006 to determine turning movements at each of the 5 junctions along the M20 corridor and 8 junctions adjacent to the network. Figure 2.3.1 shows the location of the manual turning counts.

2.3.2 The level of activity at each of the thirteen junctions has been assessed and highlights that the M20 junction 7 has a significantly higher traffic volume than the other junctions with a total volume of 56,900 vehicles. The A20 London Road Roundabout, the two M20 Junction 6 Roundabouts and Bearsted Road Roundabout also experiences high levels of vehicle movement (approximately 44,000 a day) in comparison to the other junctions surveyed. Figures 2.3.2 to 2.3.14 shows the turning counts for each junction.

2.4 Queue Surveys

2.4.1 PB carried out queue length surveys between the hours of 07:00-18:00 on Thursday 8th March 2007 to determine levels of congestion at Coldharbour Roundabout, Junction 7 and Bearsted Road Roundabout.

2.4.2 Coldharbour Roundabout is a signalised roundabout situated south of Junction 5. The approach with the largest congestion is the London Road (A20) West approach during the AM Peak with a 500 metre queue and London Road East with a 400 metre queue in the PM peak. However the queues at this junction were not reported to queue back to Junction 7 at any point throughout the day.

2.4.3 Junction 7 is a non-signalised roundabout along the M20. Sittingbourne Road to the north of the junction was the most congested during the AM peak with a queue of over 1900 metres long. During the PM Peak the M20 West had the longest queue of 750 metres. None of the queues on the M20 slip roads extend back onto the M20 mainline.

2.4.4 Bearsted Road Roundabout is a non-signalised junction, south of Junction 7. Queuing was only recorded on the Bearsted Road east arm. The queues are 800 metres in the AM peak and 300 metres in the PM peak. The survey did not demonstrate that the operation of this junction causes a problem with the operation of Junction 7.

2.5 Collision Data

2.5.1 The collision data was obtained for a 6-year period from January 2000 to September 2006 for the M20 between junctions 5 and 8. The area covered by the study comprises the M20 corridor from Junction 5 to Junction 8, a length of approximately 10.5km. This section of the M20 was opened to traffic in 1971.

2.5.2 Of the 215 PIA reported along this stretch of the M20, there were 5 fatal (2.3%), 26 serious (12.2%) and 184 slight (85.6%) collisions. This compares to the Road

Causalities of Great Britain 2005 documented value of 88% for slight collisions. 2004 represents the highest number of collisions with a total of 40 collisions in each year. As a general trend, the above results indicate that the collision rate along the study route is steadily around 30 collisions a year with 2004 being an exception to this.

2.5.3 In addition, there appears to be an unusually high proportion of serious collisions in 2001 (11), but on an assessment of the location of these collisions, there does not appear to be a specific reason why this has occurred.

2.5.4 The data has been assessed in respect of collisions by day of the week. This showed a consistent pattern over the survey period. The data demonstrated that Friday has the highest collision totals, while Saturday displays the lowest number. The collision data has been further analysed to discover at which times of the day collisions are occurring. The greatest number of collisions occurred in the time periods prior to 09:30 and 16:00-18:30. These time periods include both the AM and PM peak, which are when the total vehicle flows are at their highest levels.

2.5.5 This stretch of the M20 experiences slightly more collisions in the dark in comparison to the national averages. This is especially apparent at junctions 5, 6 and 8 and between junctions 5 and 6 and 7 and 8. M20 collision data is broadly in line with the national average for road surface. Although there are a couple of skewed results due to low total numbers, which make the proportion of collisions in icy conditions at Junction 7 and 8 look considerably higher than average.

2.5.6 The majority of collisions along this stretch of the M20 occur under fine weather conditions, which is broadly in line with the national averages. However, on the M20 between Junctions 5 and 6 and at Junction 8, a higher proportion of collisions in wet weather conditions are reported in comparison to national averages, but the same pattern is not recorded in the wet surface collisions.

2.5.7 The data has been assessed for the type of accident occurring on the network. It is evident that there is a high proportion of loss of control collisions and some common themes to these collisions include excess water on the carriageway and tyre blow outs. In addition, rear shunts are also fairly high on the mainline as well as at junctions. This could be due to the collisions largely occurring in congested conditions on the mainline. The majority of side impact collisions relate to overtaking incidents both on the mainline and at the junction approaches.

2.5.8 The level of Heavy Goods Vehicles (HGV's) involvement in the observed collisions has also been considered. This shows that 30% of all observed collisions had HGV involvement. When this was broken down further by M20 location, all sections appear to have varying levels of HGV involvement, with the majority being recorded on the mainline M20.

2.6 Special Workplace Statistics

2.6.1 The special workplace statistics (SWS) data was collected in 2001. This data was used to distinguish the actual origin and destination trips of car drivers travelling to and from the workplace. This provides relevant trip distribution information for the Maidstone area.

2.6.2 Approximately 1/3 of all who live in Maidstone also work within Maidstone Borough, with the High Street being the main work attractor. However the most significant commuter destination from Maidstone is to the remainder of Kent indicating that approximately 20% of commuting traffic has a destination to the east, west or south of

Maidstone. In addition, 10% of commuters living in Maidstone travel for work in London and 7% work to the South West of Maidstone.

2.6.3 Maidstone generates over 22,000 internal trips that start and end within the urban area, and of these around 43% are made by car. The internal trips represent 56% of total daily trips generated within the town.

2.6.4 There are about 3,100 daily commuters who have an origin in the Maidstone urban area and a destination in other wards within Maidstone district, with Boxley as the top destination which has a daily trip number of 875, car drivers represent the bulk (76%) of these commuters.

2.6.5 The top destination for out-of-district trips is Tonbridge and Malling with over 4,400 trips per day. The percentage of car commuters making these journeys is fairly high at 82%. This is followed by Medway which attracts around 2,000 daily trips, of which 90% travel by car.

2.6.6 Trips to the Maidstone urban area, on the other hand, originate mostly from the districts of Medway and Tonbridge and Malling, which generate 5,700 and 4,100 trips per day. Medway has a slightly higher percentage of car drivers making this movement at 81%, while Tonbridge and Malling has 75%.

2.6.7 The wards of Coxheath and Hunton, and Boxley generate the highest level of trips to the Maidstone urban area from within Maidstone District, with 950 and 820 trips per day. The corresponding car driver percentage is 73%.

2.6.8 In summary, Maidstone town attracts over 6,500 more trips than it generates. The strongest links occur with Tonbridge and Malling and Medway districts. Future forecast to the year 2026, the M20 between Junction 5 and Junction 7 is likely to experience a 25% increase in stress. This will also result in a level of stress that is not deliverable in practice.

2.7 Road Side Interview Data

2.7.1 Data from the London and South East Travel Survey (LATS) was made available for a number of roadside interview sites in the study area carried out in 2001.

2.7.2 The origins of trips are quite localised within Maidstone and accesses the M20 through the use of Junctions 4 to 8. The trip destinations are more widely spread with the M20 being used to access London, Ashford, Canterbury and East Kent.

2.7.3 It is notable that the M20 is also used for localised movements using mainly Junctions 4, 5 and 6 to access areas of Maidstone. The Roadside Interview data was used to determine the destination of trips in the network.

2.7.4 In the AM peak, around a quarter of the traffic accessing the M20 at Junction 5 and 45% of the traffic joining the M20 at Junction 4 heading eastbound, all comes off at Junction 6 and goes into Maidstone. Approximately 50% of all traffic getting on the M20 westbound at Junctions 7 and 8, in the AM peak comes off and goes into Maidstone at Junction 6. It is also notable that over 50% of traffic that enters the motorway at Junction 3 from the M26 go to Maidstone.

2.7.5 All three time periods universally show that over 70% of trips are single occupancy trips and between 13% and 22% is dual occupancy. Vehicles with 3 or more

passengers account for around 5% of all trips within the network across the three time periods (AM, PM and Interpeak).

2.7.6 The Roadside Interview data shows that in the AM peak the majority of trips are to an employer's usual place of work with the reverse journey in the PM peak.

2.8 Junction Models

2.8.1 An assessment of the operation of M20 junctions 5, 6, 7 and 8 and the Bearsted Road junction have been carried out using the ARCADY 6 roundabout capacity assessment program. The ARCADY software assesses the capacity of the roundabout based on the existing traffic flows and queue surveys and calculates if there is any queuing.

2.8.2 The capacity is measured in a Ratio of Flow to Capacity (RFC). Within the Design Manual for Roads and Bridges (TD16/91) there is an accepted standard error prediction of plus or minus 15%. This therefore means any roundabout which has an RFC of close to or over 85% is considered to be near to capacity.

2.8.3 M20 Junction 5 shows that none of the entry arms is over capacity and therefore does not exceed the recommended government standard of 85% RFC. The results show that there is no queuing issue at the roundabout.

2.8.4 During the AM peak at M20 Junction 6 Cobtree roundabout the junction is shown to operate at capacity. However the PM peak model indicates that the M20 west approach is operating overcapacity causing a queue of over 400 vehicles in the peak hour.

2.8.5 M20 Junction 6 Running Horse roundabout shows that in the AM peak the M20, the A229 and Sandling Lane are all operating above 85% RFC, the A229 is the arm which operates the most over capacity and has an RFC of 99% and a queue of 30 vehicles. In the PM peak the roundabout performs better than the AM peak with all arms operating under 85%. However, A229 and Forstal Road are operating close to capacity. There is no issue with queuing in the PM peak.

2.8.6 The assessment of M20 Junction 7 demonstrates that the roundabout is currently operating over capacity on the A249 North in the AM peak with a 136 vehicle queue. The PM peak on the A249 North and the AM peak on the M20 East are both currently operating close to capacity in 2006, however it does not queue back onto the mainline.

2.8.7 Bearsted Road roundabout is shown to operate over capacity in the AM peak hour in 2006 on all approaches. In the PM peak it can be seen that the Bearsted Road East arm is operating over capacity.

2.8.8 M20 Junction 8 shows that the roundabout operates under capacity in both the AM and PM peak. However, the M20 west offslip is close to the 85% recommended guidelines in the PM peak. There is also no issue with queuing at the junction.

2.9 Alternative Transport Modes

Pedestrians

2.9.1 Most areas of the Maidstone town centre have not been pedestrianised, though there are several streets which are now off limit to motor vehicles. Gabriel's Hill, and Week Street – busy shopping areas, are inaccessible by vehicles. Figure 2.9.1 indicates the location and routes of Maidstone's public footpaths.

Cycling

2.9.2 There are very few designated cycle routes in and around the immediate vicinity of Maidstone's town centre, though a network of bridleways provides some coverage of the outskirts of the town and beyond. Maidstone's latest Integrated Transport Strategy indicates the council's intention to improve and build upon existing cycle routes as part of an initiative to cut down on widespread congestion. A new cycle-way links areas to the north of Maidstone (including Aylesford and Walderslade) to Maidstone centre, and land to the South-East of the town. Figure 2.9.1 indicates the location of cycle routes and bridleways in the Maidstone area.

Bus

2.9.3 Bus services within Maidstone are provided largely by the company 'Arriva', with 'Nu-Venture' and 'Stagecoach in East Kent' run less frequent services. Buses are run from the centre of Maidstone with greatest frequency from Monday - Friday daytime, with multiple services leaving every 10-15 minutes. Services to locations outside of Maidstone vary from hourly to bi-daily. The town's Park and Ride scheme operates from four locations positioned around the outskirts of the town centre. "These sites provide a total of over 1600 car parking spaces. In July 2004 an average of over 1,500 cars and almost 2,000 fare paying passengers used these sites each day. In the busy pre-Christmas period in December 2004 these figures were just under 2,000 cars and just under 3,000 passengers." [2] An award winning service, buses run from every 12 – 15 minutes, between the hours of 07:00-18:30, Monday to Saturday.

2.9.4 Due to the popularity of the scheme, discussions are underway regarding the possibility of the expansion of two of the four parking locations, with a view to introducing further facilities and expanding corresponding bus services. New locations for two "potential sites on A229 and A26" are currently being evaluated.

2.9.5 Buses are run from the centre of Maidstone with greatest frequency from Monday - Friday during daylight hours, with many local services leaving every 10-15 minutes. The frequency of services with destinations outside of Maidstone vary widely from hourly, to twice-daily. Maidstone and its immediate area generally have good coverage from bus transport, but some villages are underserved in the evening time, leading to areas being cut off after normal working hours. Appendix 1 shows buses running in the Maidstone area, and the approximate frequency at which they depart, and figure 2.9.2 shows the route of all buses in the Maidstone area, along with key public service locations (rail and bus).

Train

2.9.6 There are three railway stations in the town; Maidstone East, Maidstone West and Maidstone Barracks. Trains run from Maidstone to London, and more Eastern locations on average every 60 minutes, becoming more frequent at peak hours.

[2] Integrated Transport Strategy

Maidstone's integrated transport strategy however, describes a rail system within which "overcrowding at peak times is unacceptable…there is also very poor connectivity to other parts of the rail network". This is a contributing factor to the current situation - in which many commuters are driven away from the train system and back to their cars. KCC views this as a key issue which needs to be addressed; they aim to make public transport as a whole a more viable, attractive option to commuters and consumers in the Maidstone area.

2.9.7 The current 'South Eastern Trains' body (responsible for the interim operation of Maidstone's train network) is set to be superseded by the 'Integrated Kent Franchise' in 2007. Along with new links to Channel Tunnel services, the franchise will feature revised rail services taking advantage of the new high-speed line. Appendix 2 indicates approximate frequency of trains currently running through stations in Maidstone, and Appendix 3 gives examples of typical fares for common journeys.

Coach

2.9.8 Two main coach companies offer inter-city travel in Maidstone. GreenLine, in conjunction with Arriva, operate services tailored for commuters. There run between residential areas in Maidstone, and Central London. Services are limited to Monday to Friday, only during traditional commuting time periods (5:34am-06:44am,4:00pm-6:15pm). National Express operates no services which originate in Maidstone, but several do stop off en-route to London. Other coach services similarly to the case of Greenline, share the destination only of London, and operate only during peak hours.

Park and Ride

2.9.9 Maidstone operates a successful park and ride scheme. This operation is based out of four locations positioned around the outskirts of the town centre, these locations of theses sites is shown in figure 2.9.3. They "provide a total of over 1600 car parking spaces. In July 2004 an average of over 1500 cars and almost 2,000 fare paying passengers used these sites each day. In the busy pre-Christmas period in December 2004 these figures were just under 2,000 cars and just under 3,000 passengers." Due to the popularity of the scheme, discussions are underway regarding the possibility of the expansion of two of the four parking locations, with a view to introducing further facilities and expanding corresponding bus services. New locations for two sites on A229 and A26 are currently being evaluated.

Maidstone Modal Split

2.9.10 The current Modal Split in Kent has been compared to a national average from the National Travel Survey 2004. The results show that the figures are broadly similar to Maidstone. The results show in the region of 70% of people who travel to work in Kent travel by car (with 8% as car passengers) and 13% travel by foot. Bus travel makes up 4% with rail and cycle around 2.5%.

3 MODEL VALIDATION

3.1 General

3.1.1 Development of a transport model was considered essential in order to determine the impact of the proposed development areas on the trunk road network. A SATURN model was the tool used for this study.

3.1.2 The SATURN model NAOMI has been validated for the year 2001 for the purpose of this report. This model covers the whole of the South East of England and includes the main road network within the area. For this study the whole of Kent was extracted from the NAOMI model providing a basic road network and matrix.

3.1.3 The road network within the Maidstone area was developed and updated to reflect the existing road conditions and junction arrangements. The original NAOMI matrix was then updated with the use of current count information and roadside interview data. This provided a model which was accurate in layout and demonstrated appropriate trip distributions.

3.1.4 The model validation utilises the data from the turning counts, automatic traffic counts, journey time surveys and queue surveys conducted in November 2006. The following section illustrates how, using the information, the model of the AM peak hour accurately reflects the conditions observed.

3.1.5 To measure the accuracy of the traffic model there are "Acceptability Criteria" prescribed in the Design Manual for Road and Bridges (DMRB) Vol. 12a. The acceptability of the traffic model constructed is governed by the criteria. Please refer to Appendix 1 for details.

3.1.6 Due to the strategic nature of the analysis, the calibration was never envisaged to meet all the DMRB calibration criteria along all screenlines. In addition the calibration was concentrated in the M20 corridor. The model was built to inform the current strategic decision process, therefore should any scheme progress further along the design process, a more refined and robust modelling exercise will need to be undertaken.

3.2 Convergence and Stability

3.2.1 Stability – Table 3.2.1 summarises the stability of the model during the AM peak period. The table shows that convergence is reached within 8 assignment/simulation loops with a percentage flow change of less than 5% and is more than 90% for 5 successive iterations. This demonstrates that the model is stable and the flows are not significantly changing between iterations.

Assignment/Simulation Loop Number	Number of Assignment Iterations in Loop	Number of Simulation Iterations in Loop	Percentage Flow changing by less that 5%
1	0.161/59	0.037/25	
2	0.202/29	0.042/17	56.4
3	0.233/9	0.032/10	89.7
4	0.203/16	0.030/6	96.2
5	0.162/6	0.023/5	98.9
6	0.162/2	0.022/5	99.9
7	0.141/2	0.021/4	99.9
8	0.141/2	0.019/4	99.9

Table 3.2.1: AM Peak Hour Convergence Stability

3.2.2 Proximity

3.2.3 As stated in DMRB Vol12a the delta value should be below 1%. The delta value extracted from our model is 0.235%. This shows that the model reaches an acceptable level of convergence.

3.3 Screenline Validation

3.3.1 The Screenlines within this model have been focused along the M20 Junctions. The approaches to Junction 5, 6, 7 and 8 have also been included within the validation process. These screenlines were selected in order to monitor the flows within the model especially that accessing and exiting Maidstone via the M20. The screenlines can be found in figure 3.2.1.

3.3.2 In addition, an outer cordon was used to monitor the actual volumes of traffic entering and leaving the study area and therefore all main movements within the area were used in the assessment.

3.3.3 Table 3.2.2 shows to what accuracy the screenline totals reflects the total observed flows onto the key sections of the model, with 88% of links and GEH statistics meeting the DMRB criteria. The largest GEH is 7 which is located at site 6610.

Location	Count	Modelled Flow	Difference	% Difference	GEH	HA pass/fail GEH<5
M20						
M20 J4-J3	4777	4659	-117	-2	1.72	PASS
M20 J5-J4	4807	4991	184	4	2.63	PASS
M20 J6-J5	3106	3254	148	5	2.63	PASS
M20 J7-J6	4752	4584	-167	-4	2.46	PASS
M20 J8-J7	3525	3393	-131	-4	2.24	PASS
M20 J9-J8	2493	2494	1	0	0.02	PASS
M20 J3-J4	3553	3367	-185	-5	3.17	PASS
M20 J4-J5	4216	4391	175	4	2.67	PASS
M20 J5-J6	2393	2566	173	7	3.47	PASS
M20 J6-J7	4126	3943	-182	-4	2.87	PASS

M20 J7-J8	2690	2600	-89	-3	1.75	PASS
M20 J8-J9	2066	1998	-67	-3	1.51	PASS
Outer Cordon						
2008	122	136	14	12	1.24	PASS
2011	300	315	15	5	0.86	PASS
2013	442	442	0	0	0.01	PASS
207	1117	876	-240	-22	7.63	FAIL
6610	685	881	196	29	7.00	FAIL
104	1031	972	-58	-6	1.87	PASS
2008	138	180	42	30	3.30	PASS
2011	471	435	-35	-8	1.69	PASS
2013	504	511	7	1	0.30	PASS
207	1451	1216	-234	-16	6.45	FAIL
6610	1113	1104	-8	-1	0.27	PASS
104	550	558	8	2	0.36	PASS

Table 3.2.2 – AM Peak link calibration

3.3.4 Since the M20 links and the majority of the outer cordon passes the GEH criteria, this model is considered robust and suitable for this report.

3.4 Link Validation

3.4.1 Link flows were derived from the manual classified link and junction counts undertaken. Throughout the study area there are 24 individual link counts used during the model validation. Table 3.2.3 summarises the results from the link calibration. 88% of links had a GEH statistic of less than 5.

Link Description		GEH Statistic	
		Passed	% Passed
Individual links with flow less than 700 veh/h	7	7	100%
Individual links with flow between 700 – 2,700 veh/h	9	6	66%
Individual links with flow greater than 2,700 veh/h	8	8	100%
ALL LINKS	24	21	88%

Table 3.2.3 – GEH calibration results

3.4.2 This indicates that the model is in compliance with GEH statistics.

3.5 Conclusion

3.5.1 Although the SATURN model has not been calibrated and validated fully in accordance with DMRB standards, it is considered suitably robust for the strategic nature of this study, and reasonably reflects the existing conditions along the M20 corridor.

4 TRANSPORT POLICY CONTEXT

4.1 General Background

4.1.1 Along with 28 other towns across the breadth of England, Maidstone was elevated to New Growth Point status in October 2006. With a target of delivering around 5040 new homes by 2016, planning for the introduction of new, and the improvement of existing transport infrastructure is forefront in ensuring that the region is able to cope with the demands that greatly increased habitation will impose on its road and rail networks.

4.1.2 In support of this time of ambitious growth for the region, Maidstone was allocated £1.55 m from the primary budget for the national scheme, in its opening year. Further financial support as the scheme progresses will be allocated in accordance with the 2007 Comprehensive Spending Review.

4.1.3 By means of response to Maidstone's elevation to the New Growth Point status, a wide reaching set of attainment targets have been realised. A summary of raised points are presented below, relevant to the development and improvement of transport systems in the area:

- Ease congestion and reduce air pollution in Maidstone Town Centre through a package of traffic management measures and improvements to public transport.
- Construction of the 'South Maidstone Strategic Link Road'.
- Provide an additional 10,080 new homes by 2026, 5040 of which will be provided by 2016. Address local housing needs by providing much needed low cost family homes, and the transport infrastructure necessary to support this new growth.
- Reduce the need for car travel across peak hours, providing viable alternatives for commuter use.

4.1.4 Planned expansion of the Maidstone Park and Ride scheme aims to alleviate strain currently imposed on the road network at peak hours, serving both commuters on weekdays, and shoppers on weekends. Two new sites are being considered for addition to the scheme, positioned on the A229 (running from the North to South of Maidstone) and A26 (positioned to the West). Development and expansion of two of the current sites; Sittingbourne Road and Coombe Quarry has also been proposed due to the scheme's popularity, and allowing for future growth. The Park and Ride Scheme currently operates close to capacity at peak months (1500 vehicles / 1600 spaces per day), and so expansion is viewed as a prerequisite to Maidstone's transport system succeeding in the face of its new growth.

4.1.5 Due to concerns regarding the widespread and heavy use of minor highways to the east of Maidstone as a means of access to southern areas of the town, and the future development of a large number of new homes in the area, the South Maidstone Strategic Link Road is seen as a necessary addition to the highway network. Its aim will be to provide a partial orbital route positioned to the south of the town, serving areas which would otherwise be reliant on minor roads for access to Maidstone. Vehicles accessing Maidstone from M20 Junctions positioned to the east of the town, will be able to join the South Maidstone Strategic Link Road, diverted from the heavily

used minor roads. Whilst funds have been allocated by KCC for the advancement of the Strategic Link Road project, Maidstone Council have identified three other schemes it views as necessary to alleviating the onset of gridlock in the town. They include:

- The development of the All Saints Relief Road
- The Dualling of Upper Stone Street
- Improvements to motorway junctions in the Maidstone area

4.1.6 Maidstone's rail network is also a target for improvement. 'Overcrowding at peak times is unacceptable…there is also very poor connectivity to other parts of the rail network' (Maidstone Integrated Transport Strategy). New rail links to Gatwick, and more frequent services to other non-London destinations are envisaged. The Integrated Kent Franchise will be central to delivering these and many other targets. Significant changes to the nature of rail travel in Kent will be seen in 2009, when the IKF phase II is adopted by South-Eastern Trains. Improvements to rail services will be an integral part in reducing strain on the road network in and around Maidstone.

4.1.7 Concern however has been raised regarding how effective these new changes will be to facilitate improvement of services. Whilst in the current system, a maximum theoretical capacity of 26,000 passengers is observed across the network; under the new system, capacity will be significantly lower - at 18,800. This will be due to the lower passenger capacity of new train varieties. More frequent services taking advantage of the high speed channel tunnel rail link (for domestic as well as international journeys) it is hoped will redress this imbalance, and attract more commuters to the rail network.

4.2 DfT Circular 02/02: Planning and the Strategic Road Network

4.2.1 The HA's approach to participating in the planning process is set out in DfT Circular 02/07. The HA is responsible for managing and operating a safe and efficient strategic road network along the M20 corridor and one particular activity that the HA undertake is to review the impact on the network of proposals for new developments and to work proactively with local planning and highway authorities, to identify the demand management tools and infrastructure required to deliver this growth.

4.2.2 Paragraph 21 of Circular 02/07 sets out the HA's role in the preparation of LDF documents. It states that the HA will 'offer advice and technical support that will guide the scale and location of proposal in relation to the strategic road network'. In addition, the HA will 'provide guidance {…} on the scale and nature of improvements to the strategic road network and demand management measures that will be considered in order to facilitate development. However, it remains important for the 'LPA to ensure that its proposals are evidence based and deliverable'.

4.2.3 The HA have been proactive in commissioning this report to undertake a review of the LDF preferred option for Maidstone and also review the Growth Point proposals. The purpose of this report is to provide information and an evidence base for the required transport strategy to ensure that the preferred option can be delivered, in accordance with paragraph 21 of the circular, as identified above.

4.3 South East Regional Spatial Strategy

4.3.1 The Regional Spatial Strategy (RSS) identifies key areas within which the transport network can be improved over the coming years, and outlines causal links which are responsible for the propagation of current issues with the system. Using the Regional Transport Strategy as a basis for its suggestions, the RSS sets forth guidelines for the production of policy surrounding these improvements.

4.3.2 An overview is given of the picture of the South East's transport system as it stands today, and highlights areas of emerging and existing concern.

"The South-East's gateway function means that it plays a pivotal role in the wider transport system of both North-Western Europe and the UK, with access to/from the region's airports and ports a key issue not only for South East England, but also for the rest of the UK".

4.3.3 The smooth running of key strategic links in the South East (this would include Maidstone, positioned as it is – adjacent to the M20), plays an important role in the wider view of transport across the whole of Northern Europe.

4.3.4 The recently updated Regional Transport Strategy for the South East sets forward several points which are relevant to the Maidstone area. The town is referred to widely as a 'hub' for the Kent area; it acts as a major thoroughfare from the ports of Dover and Folkestone on toward the South-East (and by extension to the whole country). Maidstone plays host to several strategic movement corridors which are linked to the efficient working of the South East's international gateways.

4.3.5 The European Commission's 'Spatial Vision for North-Western Europe' draws attention to the transport network subsequent to the Dover Strait, up to and including the M25 Orbital. The spatial vision raises concerns with this corridor's ability to cope with demand created by the constant throughput of freight to and from Northern Europe. The area is identified as one of the major transport congestion bottlenecks in North-Western Europe, with ever present issues conspiring to prevent the smooth running of both road and rail networks.

4.3.6 Maidstone's elevation to the status of New Growth Point and the resulting spike in population over the coming decade means that now more than ever, improvements to local and wider networks are vital to maintaining a functional transport infrastructure.

4.3.7 Asides from planned expansions of the transport networks, the importance of diverting more commuters away from their cars in favour of public transport, walking or cycling is recognised. This will contribute to NGP targets to reduce carbon emissions, improve air quality, and ease the strain on the road network.

4.3.8 Maidstone has been identified as regional hubs in the South East Plan. Work completed by PB in preparation for the RSS examination in public (November 2006) has assisted the HA in understanding the likely impact of the RSS on the trunk road network.

4.3.9 The strongest car-commuter links are as follows:

ORIGIN	DESTINATION	TRIPS (per day)
Medway	Maidstone	6707
Maidstone	Tonbridge and Malling	5784
Tonbridge & Malling	Maidstone	4185
Maidstone	Medway	3333
Maidstone	Tunbridge Wells	1972
Tunbridge Wells	Maidstone	1380
Maidstone	Ashford	1078

Table 4.3.1 – Car Commuter Links

*Source: Special Workplace Statistics based on 2001 census **Trips less than 1000 are not included in the table

4.3.10 This shows there to be a large amount of trips from Medway to Maidstone as a destination for work. In addition a high proportion of Maidstone residents go to work in Tunbridge and Malling.

4.3.11 Maidstone is not particularly self-contained (i.e. residents living and working in the same district). From the above trends, it is clear that many commuters drive to neighbouring districts. The dispersed pattern of movement will make it difficult to provide sustainable transport choices to cater for the range of movements that are likely to be demanded by additional development in these districts.

4.4 Maidstone Local Development Framework

4.4.1 The local development scheme sets out both conditions and a timetable for delivery of the constituent parts of the LDF for Kent. It provides a definition of the purpose of each document comprising the piece, offering guidance as to the levels of public consultation appropriate for each item. As well as submitting a short term timetable for the production of the LDF, a long term timetable sets down a vision of how the document as a whole will evolve up until 2010.

4.4.2 Maidstone local development framework is currently in the preferred options stage of the core strategy. In this document, the Councils preferred options for their allocated development is to provide an urban extension to the east of the town consisting of 5,040 dwellings with the remaining 5,040 in the town centre. The core strategy also states that a corresponding level of employment will also be required by 2026. For the purpose of this report it has been assumed that 12,000 jobs are spread equally between the town centre and the urban extension.

4.4.3 The HA's response to the Council's preferred options (dated 26/02/07) identified that there was no supporting transport evidence to justify the preferred options and therefore this study has completed a qualitative assessment of the options and has also developed the transport strategy to support the core strategy.

4.4.4 Little of the LDF deals directly with the nature of the existing or future transport infrastructure in and around Maidstone, but instead tackles the viability of various locations as potential sites for the upcoming housing growth promoted by the New Growth Point initiative.

4.4.5 Since the consultation on the preferred options report a planning application for Kent International Gateway (KIG) has been received. KIG is 400,000sqm of freight

interchange located south of the M20 Junction 8. It is not within the current local plan.

5 QUALITATIVE ASSESSMENT OF OPTIONS

5.1 Introduction

5.1.1 The Government has named Maidstone as a 'New Growth Point'. This will result in a total number of 10,080 homes proposed in the Borough over the next 20 years. This level of growth will ultimately need to be confirmed in the regional South East Plan. In order to balance housing growth with employment opportunities and to increase economic prosperity, it is likely that provision will also need to be made for at least a further 10,000 jobs in a range of sectors and locations.

5.1.2 Maidstone's Preferred Option stage of the LDF identifies a preferred option for the location (Policy CS2) of the above development as a new mixed use sustainable settlement at eastern/ south eastern edge of Maidstone (50% of housing), with remainder within existing urban area.

5.1.3 In addition, two broad alternative options for the spatial distribution of development were considered: An urban-led approach shown on Alternative Option Key Diagram 1 with over 70% new housing development focused in the existing built-up areas; Maidstone town, the 5 Rural Service Centres (RSCs) and 21 villages with detailed boundaries.

5.1.4 A significantly expanded Rural Service Centre approach shown on Alternative Option Key Diagram 2 with some 50 – 70% of new housing development (some 5000 dwellings) located at the edge of one or more of the 5 Rural Service Centres or alternatively as a completely new settlement. Only two of the Rural Service Centres (Harrietsham and Lenham) are located on a direct rail link to Maidstone. The other 3 centres would rely on the less frequent rural bus service to travel on public transport to Maidstone. Consequently the most likely location for significantly expanded /new rural settlement would be in the vicinity of Harrietsham and Lenham.

5.1.5 This section reviews the two alternative options and the preferred option qualitatively to give an indication of whether the preferred option is reasonable in terms of transport.

5.1.6 In principle, it would appear that the preferred option, that being a combination of continuing brownfield/regeneration development in the town centre and a concentration of greenfield sites on the edge of the town, is reasonably sound in transport terms. However, as with any option accommodating significant growth, it does present some major challenges to both the County Council and the HA as the highway authorities involved.

5.1.7 The level of future development, unless modified through the Regional Spatial Strategy examination process, has identified a figure of 10,080 additional dwellings over the next 20 years. This represents the Growth Point target adopted by MBC, supported by KCC, and endorsed by DCLG.

5.1.8 This level of housing development would appear to be extremely difficult to accommodate within the urban area of Maidstone without resulting in unacceptably high densities. Although this approach would have some advantages in transport terms, assuming that car trips were heavily suppressed by much reduced car parking provision, it is unlikely that this would result in a welcoming environment for residents. It would also tend to use all available land in the centre for housing, forcing all employment land away from the centre, rather than look for development to be a mix

of housing and employment within easy reach of each other. This latter form of development would be better in encouraging the use of all modes of sustainable transport.

5.1.9 It would therefore seem inevitable that a considerable amount of development land would have to be found outside the built up area of the town. The options being either to concentrate on the edge of the existing town or create a new community based on one or more existing villages,

5.1.10 In transportation terms, it would be best to create a concentration of new development, as this gives a stronger market in which to extend public transport services, and create communities where residents have opportunities to walk or cycle to local facilities. The options then come down to whether an edge of town area is better than an outlying area based on existing villages.

5.1.11 The principle would seem to be that the new development will still depend on Maidstone town as its provider of major facilities, such as large shops, employment, hospital, cinema, theatre, restaurants etc. The best way of achieving this, without encouraging reliance on car trips, would be by developing in an area that could be linked to the town by extending and improving the existing bus, cycle and pedestrian networks. This would point to the edge of town area identified in the Core Strategy as being the best in local sustainable transport strategy terms.

5.1.12 There are wider implications, however, as the level of development being promoted will have a major impact on the M20 as well as the local highway network, particularly with new employment land being looked for along the motorway corridor.

5.1.13 Traffic modelling in the town centre was undertaken in 2003 by Jacobs on behalf of KCC, and identified serious peak hour capacity problems beyond 2011, assuming all current permissions and developments under discussion were taken up.

5.1.14 The model work on the M20 being done by PB on behalf of the HA is also likely to show that both the main line and junction capacities are under severe threat from development both in Maidstone and beyond (i.e. Ashford Growth Area and international traffic through Dover), and the HA's principle remit is to retain capacity on this strategic link in the national road network.

5.1.15 Initially we have carried out a NATA type of assessment of the development options that led Maidstone Borough to adopting their preferred option in the Core Strategy. The HA and the DfT Regional Directorate will wish to be convinced that every effort will be made to make future development as sustainable as possible, before they can regard the Core Strategy as sound. If this is not achieved, it would be unwise to submit the Core Strategy to DCLG and its subsequent EIP.

5.2 Methodology

5.2.1 The Evaluation of Options has been done on the basis that the two principle rejected options, the Urban Led approach and the New Rural Settlement, have been compared with the Borough Council's Preferred Option for the Core Strategy. The assessment relates to the proposed housing allocations.

5.2.2 A number of assumptions have been made in comparing the options:-

- The impact is related to the distribution of new housing. The identification of employment land is generally the same for all the options.

- The effect of noise is that to which the new dwellings are subject (i.e. it would be noisier to live in the middle of the urban area rather than in a new rural settlement)

- The impact on air quality is that which the residents of the new dwellings would be exposed to, rather than that which new development imposes on existing residents.

- Any infrastructure would have to go through full safety audit and technical appraisal processes, irrespective of whether they were funded from public or private sources. The safety issues are therefore considered the same for each option.

- The impact on infrastructure costs are taken as an extra cost to KCC with the Urban Led option (as there would be a greater need for investment in traffic management measures to overcome urban congestion) and a slightly lower cost to KCC for the new settlement (as such a settlement would be designed to be as self contained as possible, and thus have less connectivity to the main urban area). It is assumed that major infrastructure such as the South East Strategic Route would be fully funded by development. These assumptions are open to varying interpretations, as the full extent of the cost to public funds is difficult to identify until a full transport strategy has been drawn up to support the Core Strategy.

- In terms of Integration with other policies, the Urban Led option would be beneficial in concentrating new development in the Regional Transport Policy's Maidstone Hub, but offers less flexibility to deal with potential changes in regional targets and places more strain on the UTMC system.

5.3 Option Assessments – Option 1 – Urban Led

Environment

5.3.1 Noise - Higher density urban development would expose more residents to urban noise levels, both from traffic and other sources.

5.3.2 Air Quality - More residents would be exposed to lower quality air. There is already an Air Quality Action Area in the Town Centre. Over development of the town centre could only be achieved by severe traffic management.

5.3.3 Greenhouse Gases - Potentially fewer new vehicle trips, as more residents located closer to services and facilities in urban area, but congestion problems could have an adverse effect.

5.3.4 Landscape - Less greenfield land take, therefore better for rural environment.

5.3.5 Townscape - Higher density would result in a challenge to protect instinctive townscapes and the quality of residential amenity.

5.3.6 Heritage – Higher density development may detract from the setting of historic buildings in the town centre.

5.3.7 Biodiversity - No impact on statutory nature conservation sites.

5.3.8 Water Environment - All options have an impact on water supply concerns. There is countywide concern over the ability of water resources to support development targets.

5.3.9 Physical Fitness - Urban development would encourage walking and cycling. This would be beneficial as along as safety concerns over protection of vulnerable road users are addressed, and air quality problems can be resolved.

5.3.10 Journey Ambience - Traveller Care would be a combination of safety and air quality issues, and Traveller Stress could be caused by severe traffic congestion in the town centre. This can partly be resolved by active traffic management and demand restraint.

Safety

5.3.11 Accidents - All access and highway improvements would be subject to safety audit. There would be a particular need to protect vulnerable road users.

5.3.12 Security - No specific security issues

Economy

5.3.13 Infrastructure Costs - The County Council is committed to funding the Bridge Gyratory and Upper Stone Street improvements, and continuing to develop the Urban Traffic Management and Control system. Further infrastructure cost would be determined by the scale and nature of the development.

5.3.14 Beyond these, there is no current undertaking to progress the All Saints Link Road as a fully funded Local Transport Plan scheme. The revised alignment opens up more opportunities for developer funding, with supporting funds being sought by the Borough Council through Growth Point and any other available sources.

Accessibility

5.3.15 Access to Transport Systems - Urban location would give residents easier access to bus and rail services, and would also encourage access to the town's shops and services on foot and by cycle.

5.3.16 Severance - As with the safety objective, there would be a need to protect vulnerable road users.

Integration

5.3.17 Transport Interchange - Urban location gives better access to bus/rail interchanges

5.3.18 Land Use Policies - Better for reduction in number of trips (PPS 4, PPG 13), assuming sever restraint of parking provision.

Other Government/Regional Policies

5.3.19 Regional Transport Strategy – Maidstone identified as a regional hub, well related to the strategic road and rail network.

5.3.20 Regional Spatial Strategy – EIP process continuing, development targets may change in due course.

5.3.21 Traffic Management Act – Requirement for highway authorities to manage existing network as efficiently as possible (hence UTMC system, Controlled Motorway project)

5.4 Option 2 – Edge of Town

Environment

5.4.1 Noise - New residents would be exposed to less ambient noise, but existing residents of the Otham area would experience increased noise from both traffic and development.

5.4.2 Air Quality - Less development in town centre, so new housing would be away from Air Quality Action Area.

5.4.3 Greenhouse Gases - Less concentration of congestion would occur in the rural location of the development, but still general problem of major impact on main network, including the M20.

5.4.4 Landscape - Impact on landscape in Otham area, between A274 and A20/M20.

5.4.5 Townscape - No impact on urban area of Maidstone

5.4.6 Heritage - Less impact on urban area of Maidstone

5.4.7 Biodiversity - South East Strategic Route would have an impact on the Len Valley Site of Nature Conservation Interest (Local Wildlife Site)

5.4.8 Water Environment - All options have an impact on water supply concerns.

5.4.9 Physical Fitness - Developments will be designed to encourage walking and cycling to local facilities

5.4.10 Journey Ambience - Less congestion than intensive development in town centre, but still concern over wider road network

Safety

5.4.11 Accidents - All infrastructures, including the South East Strategic Route would be subject to safety audit.

5.4.12 Security - No specific security issues

Economy

5.4.13 Infrastructure Costs - The intention is that the South East Strategic Route would have to be funded by development, with little or no public funding. There is a long term maintenance cost involved.

5.4.14 There will still be a need for investment in the UTMC system in the town centre, bus priority and cycle route improvements.

Accessibility

5.4.15 Access to Transport Systems - No easy access to rail network. A step change in bus provision is envisaged through the introduction of a new quality bus service to the town centre.

5.4.16 Severance - New housing developments will be designed to support sustainable transport and allow easy movement between housing and local facilities and therefore will avoid severance.

Integration

5.4.17 Transport Interchange - More remote from transport interchange than town centre locations

5.4.18 Land Use Policies - More difficult to reduce car trips in rural locations

Other Government/Regional Policies

5.4.19 Regional Transport Strategy – new development connected to the edge of Maidstone's transport hub.

5.4.20 Regional Spatial Strategy – Potentially more flexible to accommodate higher growth targets if these emerge from the RSS process.

5.5 New Rural Settlement

Environment

5.5.1 Noise - Lower noise levels for new residents than town centre. Need to mitigate M20 noise. Existing rural residents would experience noise intrusion from new development

5.5.2 Air Quality - Less impact than adding to concentration in urban area but longer trips would damage air quality.

5.5.3 Greenhouse Gases - Potential for more car trips, and hence more emissions

5.5.4 Landscape - Considerable effect on rural landscape in vicinity of Harrietsham and Lenham.

5.5.5 Townscape - Less impact on Maidstone town centre but significant impact would be felt on the villages and surrounding countryside.

5.5.6 Heritage - Less impact on historic buildings in Maidstone town but significant impact would be felt on the villages.

5.5.7 Biodiversity - No impact on statutory nature conservation sites

5.5.8 Water Environment - All options have an impact on water supply problems

5.5.9 Physical Fitness - New development would need to be designed to facilitate walking and cycling access to local facilities

5.5.10 Journey Ambience - Potentially less congestion than the urban-led option, but still general congestion concerns

Safety

5.5.11 Accidents - All access and highway improvements would be subject to safety audit

5.5.12 Security - No specific security issues

Economy

5.5.13 Infrastructure Costs - There would be no need for the full South East Strategic Route, although a section south of Junction 8 might be needed for access to commercial development. There would still be a need for continuing investment in UTMC, bus priority and cycle route improvements in the town.

Accessibility

5.5.14 Access to Transport Systems - Could link to rail network at Harrietsham and Lenham stations

5.5.15 Severance - Care needed to maintain existing local communities and facilities

Integration

5.5.16 Transport Interchange - Not good interchange between bus and rail, as stations away from A20. Future links between the bus and rail services would depend on evolving decisions over the nature of rail services on the London-Maidstone East-Ashford line (i.e. fast/semi-fast versus stopping services)

5.5.17 Land Use Policies - More difficult to restrain car trips in a more rural area.

Other Government/Regional Policies

5.5.18 Regional Transport Strategy – More remote from Maidstone's transport hub

5.5.19 Regional Spatial Strategy – As this option is a new community, there is the potential for more flexibility to cope with any higher development targets emerging from the RSS process.

5.6 Discussion of Results

5.6.1 The outcome of this format of evaluation gives a clear indication that the option of a New Rural Settlement emerges much less favourably than the Preferred Option of extending development onto the south eastern edge of the existing built up area. This would be expected from a transport led assessment, as the national policy emphasis is on minimising the need to travel and enhancing opportunities for sustainable development.

5.6.2 The comparative closeness of the Urban Led Option to the Preferred Option would also be expected. In pure transport terms, the concentration of housing in an existing urban area brings new residents close to many facilities, increasing the opportunities for walking, cycling and the use of public transport. The difficulty comes in achieving the density of development required to meet housing targets (both Structure Plan and Growth Point) without creating unacceptable development within the town– a strategy that would have a major impact on the environment. This form of development would also reduce the opportunities for creating a mix of housing and employment land away from the congestion of the town centre, but still connected to the existing urban area.

5.6.3 Overall, it would therefore appear that the Preferred Option in the Core Strategy represents a reasonable balance in terms of the location of new development.

6 DEVELOPMENT AREAS

6.1 Proposed Development

6.1.1 There are currently a number of existing developments proposed within the Maidstone area. The developments and their status in the development control process are listed in table 6.2.1 below.

Site	Proposal in Local Plan/ LDF	Houses (No. of Dwellings)	Employment (sqm. & Type)	Status	First point of contact with Trunk Road
Abbey Court	✓	-	3,146 B1	Granted	Junction 6
Eclipse Business Park	✓	-	13,000 B1	Outline Consent	Junction 7
Maidstone Studios		142	-	Permission granted subject to condition	Junction 7
Kent Clinic Private Hospital		-	16,386 C2	Permission granted subject to Grampian condition on Junction 7 improvement	Junction 7
Dettling Downs		-	-	Pre - Application	Junction7
Kent International Gateway			380,000 B2	Application submitted	Junction 8
Proposed LDF Urban Extension	✓	5000	6000 jobs	Preferred options stage	Junction 8

Table 6.2.1 - Committed Development

6.1.2 At Junction 7 the developments situated within Eclipse Business Park currently consist of Towergate Partnership Ltd and GP Acoustics. The Mercedes Benz application, whilst within Eclipse Business Park is being assessed separately to the outline consent. The Dettling Downs development is situated to the north of junction 7 on the A249 and is in the early scoping stages of assessment for an equine centre.

6.1.3 The developments proposed at Junction 8 consist of the Kent International Gateway which consists of 400,000 sqm of General Warehouse and Warehousing Accommodation with inter-modal rail/road containerised freight hub. In addition to this the urban extension consists of 5000 houses and 6000 jobs.

7 FUTURE TRAFFIC GROWTH

7.1 Introduction

7.1.1 The base year traffic models have been factored up to undertake a future year assessment in both 2016 and 2026. The following section sets out the process utilised to determine the growth factors applied to the base year model.

7.1.2 The horizon year for the traffic forecasts has been set to 2026. This provides for a 10 year design period from 2006 base year with an opening year of 2016 which is consistent with the horizon year used during the Local Development Framework (LDF) process.

7.1.3 Separate growth factors have been derived for:

- M20 Mainline
- Local road growth
- Development related growth

7.1.4 These factors have then been superimposed on the base matrix to result in a future year assessment.

7.2 Mainline Growth

7.2.1 A number of factors were considered in determining traffic growth from 2006 to 2016. Standard national traffic growth rates (NRTF 1997) incorporate all the factors causing traffic to increase including economic growth, car ownership and use increases, and population and employment increases. The NRTF central factor is then adjusted to take into account TEMPRO values for the Maidstone area with the predicted New Growth Point developments. Tables 7.2.1 and 7.2.2 shows the adjusted traffic growth which will be applied to the M20 mainline flows.

Years		NRTF Central	NRTF Adjust
2006	2016	1.160	1.315
2006	2026	1.266	1.363

Table 7.2.1 - AM peak NRTF adjusted to TEMPRO

Years		NRTF Central	NRTF Adjust
2006	2016	1.160	1.139
2006	2026	1.266	1.370

Table 7.2.2 - PM peak NRTF adjusted to TEMPRO

7.3 Local Road Growth

7.3.1 TEMPRO 5 growth rates take account of local land use and population trends and policies. For the development areas in addition to the urban extension the suggestion is to use TEMPRO factors for the central Maidstone zone. Table 7.3.1 shows the traffic growth rates.

	2006-2016		2006-2026	
	Origin	Destination	Origin	Destination
AM Peak	1.054	1.095	1.095	1.151
PM Peak	1.089	1.065	1.144	1.110

Table 7.3.1 - TEMPRO Growth for Maidstone

7.3.2 Table 7.3.2 shows the adjustments made within TEMPRO to account for the increase in housing and jobs within the area

2006 Base HH	2006 Base Jobs	2026 Future HH	2026 Future Jobs
38886	47101	41147	50590

Table 7.3.2 - Current adjusted Assumptions used within TEMPRO

7.4 TRICS

7.4.1 Another approach to estimate local growth would be to use TEMPRO for the background growth and then use trip rates to superimpose the urban extension on top of the background growth. This approach will allow for a more detailed understanding of the impact of the urban extension.

7.4.2 In order to account for the new development proposed within the Core Strategy Preferred Options report TRICS can be used in the assessment. The Core Strategy states that by 2026 the aim is to introduce 10,080 houses and 13,000 jobs. Therefore it has been assumed that by 2016 the borough will achieve half of the predicted growth.

7.5 Housing Trip Rates

7.5.1 Since the actual housing types for the proposed developments have not yet been confirmed trip rates for typical housing types have been provided below.

	Arrivals	Departures	Total
Flats Privately Owned			
AM	0.047	0.189	0.236
PM	0.156	0.077	0.233
Total	1.311	1.39	2.701
Flats Rented			
AM	0.054	0.099	0.153
PM	0.114	0.083	0.197
Total	1.12	1.37	2.49
Mixed Private/non Private Houses			
AM	0.161	0.442	0.603
PM	0.413	0.244	0.657
Total	3.929	3.966	7.895
Mixed Private Houses			
AM	0.096	0.343	0.439
PM	0.357	0.188	0.539
Total	3.104	3.092	6.196

Table 7.5.1 - Typical trip rates for housing

7.6 Employment Trip Rates

7.6.1 As with housing the trip rates for employment have also been estimated, in order to provide an example of the possible trip rates for the proposed development.

	Arrivals	Departures	Total
Office			
AM	0.139	0.017	0.156
PM	0.019	0.114	0.133
Total	1.073	1.110	2.183
Business park			
AM	0.126	0.018	0.207
PM	0.043	0.105	0.383
Total	1.024	0.993	2.017

Table 7.6.1 - Typical trip rates for employment

7.6.2 For the analysis it has been assumed that the all the residential development will be a mixture of private and non private houses. In addition the employment will be considered to be of equal spilt between office and Business Park. Given that the development consists of 10,080 dwellings and 13,000 jobs the following development trips have been derived for the AM and PM peak periods.

	Arrivals	Departures	Total
Mixed Private/non Private Houses			
AM	1623	4455	6078
PM	4163	2460	6623
Total	5786	6915	12701
Office			
AM	1801	221	2022
PM	247	1482	1729
Total	2048	1703	3751
Business park			
AM	1638	228	1866
PM	553	1365	1918
Total	2191	1593	3783

Table 7.6.2 - Estimate of trips from the Urban Extension

7.6.3 This indicates that the proposed development will generate approximately 6,000 car trips during the peak periods from the housing developments and approximately 2,000 trips will be generated from the proposed employment. Using the existing data from SWS, LATS surveys and the SATURN model, an appropriate distribution for the development traffic, has been developed. The impact of such a distribution on the M20 junctions have been documented below (table 7.6.3) showing the percentage of impact the urban extension will have during the AM peak period.

	Junction 5	Junction 6	Junction 7	Junction 8
Urban Extension	74	520	344	1830
Junction Total	4,589	11762	6163	4460
%	2%	4%	6%	41%

Table 7.6.3 – 2026 Percentage of Urban Extension Trips using the M20 Junctions

7.7 Surrounding Developments

7.7.1 It was also considered important to take into account separately all major growth areas that may impact on the traffic growth along the M20 corridor and Maidstone. The key areas of importance are Medway towns and Ashford.

7.8 Medway

7.8.1 Medway is situated to the north of Maidstone and is also considered an area of high growth. The traffic growth rates extracted from TEMPRO for Medway are shown in Table 10.

Medway	2006-2016		2006-2026	
	Origin	Destination	Origin	Destination
AM	1.110	1.111	1.180	1.183
PM	1.111	1.112	1.187	1.188

Table 7.8.1 - TEMPRO Growth for Medway

7.8.2 The area of Medway will be point loaded onto the network with the appropriate growth factor associated with the model year.

7.9 Ashford

7.9.1 In addition, Ashford is also considered an area of high growth. A previous study conducted for Ashford used NRTF Central growth for rural motorways for the main line and included the proposed developments at Ashford up to 2031, which also considered the influence of peak spreading on the traffic growth. These growth rates obtained from the Ashford Highways and Transport Study will be used in order to accurately represent Ashford in future years.

Ashford	2006-2016		2006-2026	
	Origin	Destination	Origin	Destination
AM	1.188	1.141	1.339	1.241
PM	1.190	1.128	1.210	1.230

Table 7.9.1 - Calculated Growth for Ashford

7.9.2 As with Medway, Ashford will also be point loaded onto the network at Junction 9 and 10 and increased accordingly.

7.10 Future Year Model

7.10.1 In order to ensure all areas within the model are accurately factored, the following process was applied.

- The matrix was factored to account for Kent growth predictions using TEMPRO
- Through traffic along the M20 was factored separately used central growth factors derived from NRTF.

- Areas such as Medway, and Ashford were also factored separately to accurately account for the high development areas.

- The urban extension assumes mixed private/non private housing and a 50/50 split between office and Business Park for employment. TRICS trip rates were used to point load the Urban Extension onto the network.

7.10.2 The future year network was adjusted to include:

- The proposed strategic link road, connecting the M20 junction 8 to the A274 at Langley.

- The urban extension, which was loaded onto the new strategic link road via a single zone.

7.10.3 The following table shows the increase in flows, from the base year.

Location	Direction	2006	2016	2026
M20 between 5-6	WB	2853	3294	3937
	EB	3445	4590	5109
M20 between 6-7	WB	4118	4717	5858
	EB	4691	6065	7190
M20 between 7-8	WB	2693	3663	4060
	EB	3583	4729	5425
A249	NB	1558	1426	2024
	SB	1629	1661	1847
Bearsted Road	WB	916	1680	2179
	EB	900	1237	1292

Table 7.10.1 - Summary Table of Growth in AM peak

8 TRIP REDUCTION

8.1.1 The previous section shows how the car traffic is predicted to grow in the future year assessments. However, this assumes a linear rate of growth and that traffic will not be impacted by other demand management tools available. This section now considers the use of peak spreading and other demand management tools that might reduce the likely future traffic flows, including:

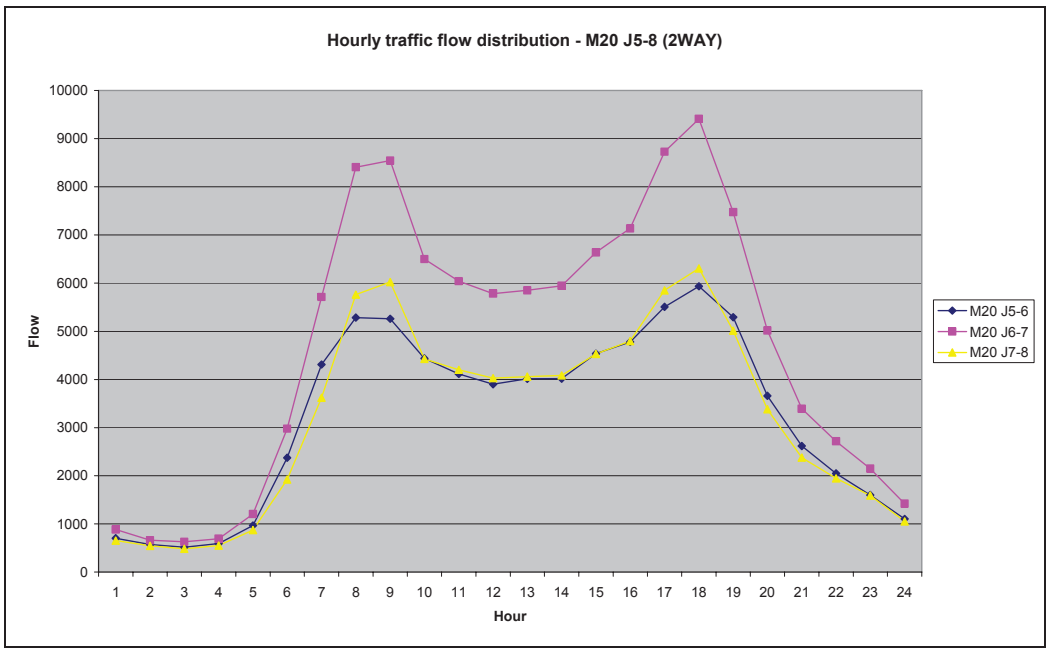
- Travel plans
- Public Transport
- Parking Control

8.2 Peak Spreading

8.2.1 The M20 at Maidstone currently has high levels of traffic and suffers from peak hour congestion. The 2016 traffic forecasts described above indicate a considerable increase in traffic mostly due to traffic generated from the development areas but also from continued traffic growth of existing traffic movements.

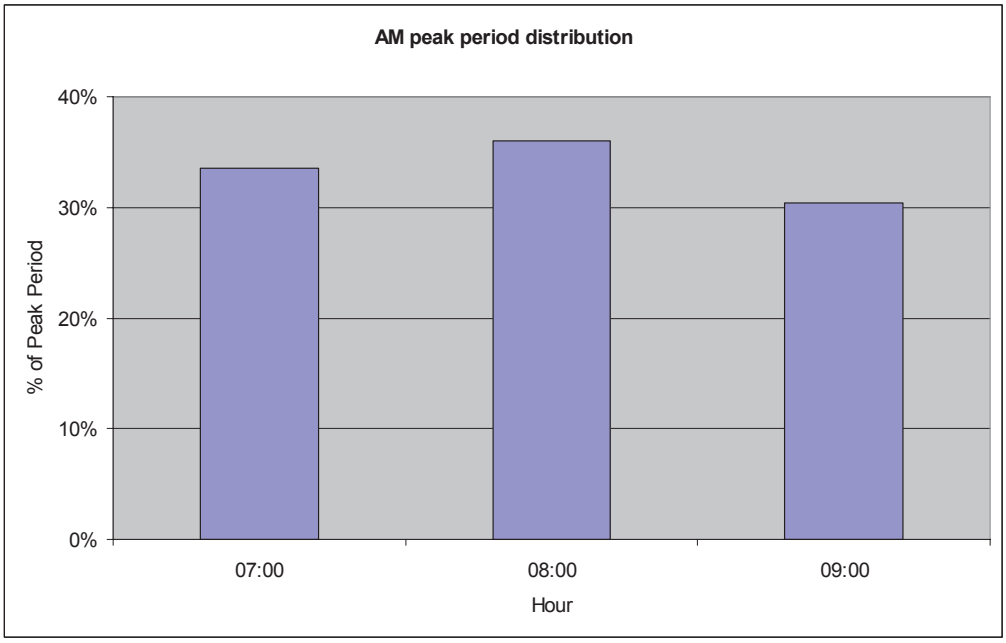
8.2.2 Due to the capacity constraints of the M20, the corresponding junctions and other congestion points that pass through the study area, the scope for peak spreading was considered. Peak spreading would have the effect of reducing the magnitude of the peak hour traffic flows with higher flows either side of the peak so that the total peak period flow remains the same.

8.2.3 Peak spreading would be caused by the deliberate retiming of trips, either earlier or later, to avoid the worst traffic conditions and by the extension of journeys past the peak due to increasing delays. Comparison of the average hour distribution of traffic on the M20 between Junction 5 to Junction 8 shows similar profiles.



8.2.4 The graph above shows that the M20 between Junctions 5 to 8 has pronounced peaks and therefore indicates that a degree of peak spreading may be possible.

8.2.5 However further investigation into the actual AM peak period shows that although the overall 24 hour profile shows peak period is peaky, the peak period is fairly flat. The graph below indicates this.



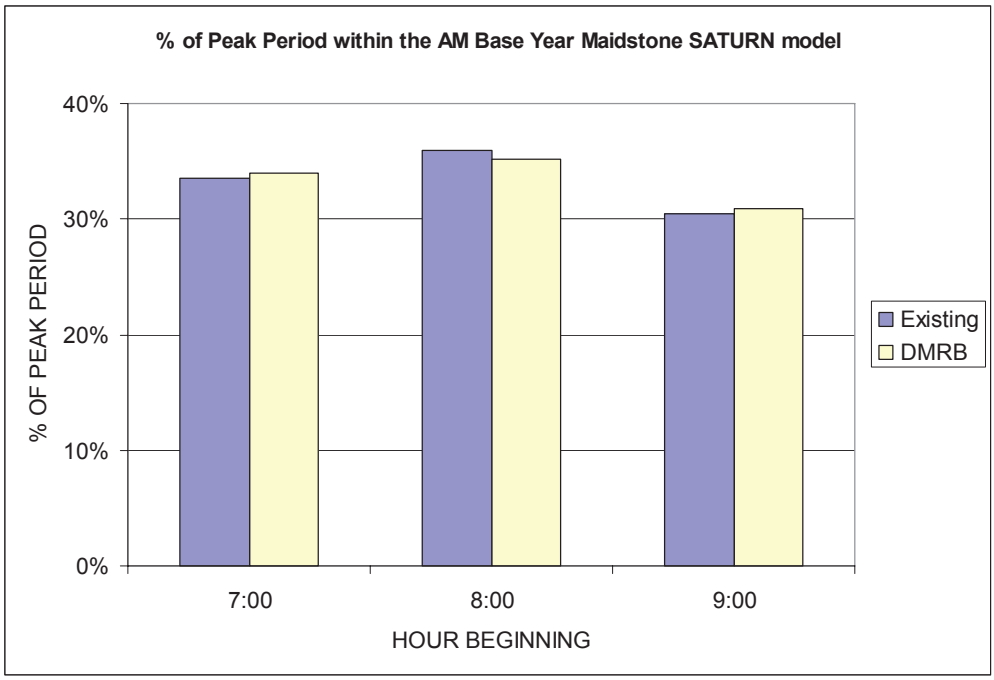
8.2.6 In order to forecast the level of potential peak spreading on the M20 the advice in DMRB Vol 12 Section 12 Appendix F – The Application of Peak Spreading was used. A count based model was calibrated to local traffic count data available for 2006.

8.2.7 Having assessed a three hour period a count based model analysis can be conducted, using the following format.

$$PH/PP = 0.333 + A. \exp(-B.V/C)$$

Where	PH/PP	=	Peak hour to peak hour proportion
	V/C	=	Peak hour volume to capacity ratio
	B	=	3, average slope model
	A	=	0.432, calibrated coefficient

8.2.8 This results in the following graph which identifies a small amount of peak spreading will occur in the future.



8.2.9 The peak spreading model indicates a decrease in PH/PP index for increasing V/C. PH/PP shows a decrease of 0.01 as the V/C increases from 0.46 to 0.64. Peak hour traffic is indicated to reduce by about 1% due to peak spreading. This is due to the relatively flat peak period profile which therefore offers little scope for peak spreading. In addition, the V/C capacity is quite low therefore indicating that there is available capacity within the transport model.

8.2.10 A reduction in peak hour volumes with the equivalent transfer of trips to times before and after the peak hour will be used in the 2026 forecast. The peak spreading estimates can then be derived for 2016 and 2026 enabling a reduction in traffic volume within the forecast matrices.

8.3 Smarter Choices

8.3.1 In addition PB prepared three Library Papers (November 2006) for the RSS Examination in Public one of which looked at the impact of smarter choices on the impact of trip generation. There is a wide range of tools available to influence travel behaviour. The DfT report "Smarter Choices" (2004) identifies many of these and gives an indication of the expected trip reduction gained through the implementation of such measures. This has been summarised below:

Workplace Travel Plans

8.3.2 The typical reduction in car driving attributed to workplace travel plans has been between 10% and 30%, though the DfT Smarter Choices report (2004) acknowledges that the best plans achieve significantly more than that. Local authorities, prioritising workplace travel plans, have managed to engage with organisations representing about 30% of the workforce while county authorities have managed to engage with organisations representing about 10%.

Residential Travel Plans

8.3.3 Residential travel plans are relatively new and as such, there are only a limited number of case studies to draw results from and no conclusive results can be determined to demonstrate how these reduce trips.

School Travel Plans

8.3.4 The application of school travel plans have been found generally to reduce school run traffic by between 8% and 15%, with high performing schools commonly achieving reductions of over 20%.

Travel information systems (TIS)

8.3.5 These systems are increasingly being used on a local and nationwide basis, via internet, radio and in-car systems. However there is no information on the success of this is available to date.

Car Clubs

8.3.6 Recent studies have indicated an increase in walking and cycling of 28% and a 35% increase in public transport through the implementation of car clubs. Such schemes also managed to reduce car mileage by approximately 72%.

Car Sharing Schemes

8.3.7 A review of 20 organisations in 2002, reports that of the 14 companies with schemes that enable them to identify formally registered active sharers, on average 14% of staff have become active sharers. Schemes asking people to car share on an irregular basis have achieved the highest levels of take-up.

Teleworking

8.3.8 Studies suggest that business travel can be reduced by between 10% and 30% as a result of teleconferencing. Home shopping or e-commerce for food retail is estimated to reach 10% to 15% of market spend over the next decade, leading to potential reductions of 7%-11% in all food shopping trips.

Personalised Travel Planning

8.3.9 In the UK, all personalised travel planning initiatives have achieved reductions in car use. Particularly, individualised marketing initiatives have been the most effective in reducing car trips (between 5% and 16%).

Public Transport Information and Marketing

8.3.10 In Cambridge, a simplification of the city's bus network, provision of better information materials and simpler ticketing delivered a patronage increase of 25% over a four-month period.

Summary

8.3.11 In summary, the table below shows how each measure could be considered to reduce trip generation.

SMART measure	Reduction in Car Trips
Workplace travel plans	10% - 30% reduction in car trips
Residential travel plans	-
School travel plans	8% - 20% reduction in car trips
Travel awareness	Approximately 30% reduction in car trips
Travel information	-
Car clubs	28% increase in cycling and walking and a 35% increase in the use of public transport.
Car share schemes	14% of staff are active car shares
Teleworking	10% - 30% reduction in car trips
Personalised travel planning	5% - 16% reduction in car trips
Public transport information and marketing	Increase in patronage of approximately 25%

8.2.1 – SMART Measure Trip Reduction

8.4 Trip Reduction for Maidstone

8.4.1 For the purpose of this study the following trip reductions have been considered appropriate, to reflecting future year trips reductions.

- Peak spreading equates to a reduction of 1%
- Public transport improvements already accounted for within the mean trip rates used therefore no further reduction is necessary.
- Through the implementation of travel plans a 10% reduction for both employment and residential development is considered suitable.
- In order to encourage modal split a reduction in parking standards will be required. For example for office developments, this will reduce the current parking standard from 1:30 spaces/sqm to 1:32 spaces/sqm this should aim to reduce the total number of trips by 5%.

8.4.2 In order to realistically distribute the trip reductions for Maidstone across the trip matrix the percentage reduction has been applied as follows

- Peak Spreading (1%) – All trips within Maidstone and the urban extension was reduced by 1% to account for peak spreading.
- Travel Plans (10%) – It is anticipated that the inclusion of travel plans will result in the trips generated from the urban extension being reduced by 10%.
- Parking Standards (5%) – A reduction in parking standards is anticipated to reduce trips in the town centre only by 5%. Table 8.3.1 shows the trip reductions.

Location	Direction	2006	2016	2026	2026 reduced demand
M20 between 5-6	WB	2853	3294	3937	3878
	EB	3445	4590	5109	4993
M20 between 6-7	WB	4118	4717	5858	5799
	EB	4691	6065	7190	7037
M20 between 7-8	WB	2693	3663	4060	4014
	EB	3583	4729	5425	5280
A249	NB	1558	1426	2024	2009
	SB	1629	1661	1847	1877
Bearsted Road	WB	916	1680	2179	2130
	EB	900	1237	1292	1272

Table 8.3.1 - Summary Table of Growth

9 OPTIONS

9.1 General

9.1.1 This study provided an understanding of the current operation of the M20 between Junctions 5 to 8. Subsequent discussions with the highways authorities provided a broader understanding of the issues and future requirements.

9.1.2 The following section summarises these issues and makes suggestions for possible improvements to each of the junctions.

9.1.3 Capacity assessments of the proposed improvements have been undertaken using future year turning count information from the assessment.

9.1.4 **Indicative layouts have been created for the majority of the proposed options giving a preliminary overview of the design. These layouts are provided for illustrative purposes only and so do not represent a working solution.**

9.1.5 Where necessary local models have been created to model forecasted flows and determine whether the proposed design is viable.

9.1.6 Comments are provided for each option, highlighting the main benefits and/or problems.

9.1.7 Options that bring an improvement to a junction (both in terms of Capacity and Safety) are highlighted in **GREEN**. Those with little or no improvement are highlighted in **RED**.

9.1.8 A 'CAPACITY INDEX' is provided for each option giving an indication of how the capacity of the junction will be improved. The index is based upon the capacity of the junction with 2016/2026 forecasted traffic flows (unless otherwise stated).

CAPACITY INDEX	JUNCTION CAPACITY
★★★	Below Capacity
★★	At Capacity
★	Over Capacity

9.1.9 A 'SAFETY INDEX' is a subjective indication provided for each option giving an indication of the relative improvement to safety at the junction.

SAFETY INDEX	IMPROVEMENT TO JUNCTION SAFETY
★★★	Improvement
★★	No Change
★	Worse

9.1.10 A summary is given for each junction highlighting the main issues found with the options and modelling. Where necessary recommendations are made for further work.

9.2 Assumption/Limitations

9.2.1 **It should be noted that all of the options suggested are indicative designs based upon preliminary assessments of the junctions. They have been produced without detailed topographical studies and are intended purely to illustrate the different options suggested.**

9.2.2 Before any of these options is progressed further detailed site surveys would be necessary to fully understand the extent of the highway boundaries and level details.

9.2.3 The position of existing statutory undertaker's apparatus has not been considered, as this information was not readily available.

9.2.4 Vertical alignment of the junctions has not been considered, as level information was not readily available.

9.2.5 An initial cost estimate is provided for each option. It should be noted that costs are based upon the preliminary layouts and do not allow for stats, levels and land costs.

9.2.6 The cost estimates also do not allow for the following:

- Design and supervision
- Optimism Bias
- Inflation
- Land costs
- Accommodation works
- Boundary fencing
- Work to communication cables
- Work to existing services
- Road lighting

9.3 M20 Junction 5

9.3.1 M20 Junction 5 is a grade separated roundabout. The eastbound on slip and the westbound off slip join a parallel carriageway to Junction 6. The roundabout is linked to a minor road to the north and the A20 to the south.

9.3.2 The major movements at this junction occur between the M20 and the A20 to the south. This movement averages approximately 10,000 vehicles during a 12 hour period with a peak hour volume of approximately 1,500 vehicles.

ISSUES	
Queuing	None
Merges & Diverges	E/B Merge is substandard
Collision Records	Two Fatal Collisions Five Serious Collisions

- The major traffic movement is from the A20 to the M20 Eastbound parallel link in the AM peak with the reverse movement in the PM peak.
- A number of side impact collisions have been recorded at the junction.
- A20 contains three lanes plus a dedicated slip. There is only a one lane exit into Coldharbour Lane and one lane exit onto M20 eastbound on slip. Therefore one of these lanes is redundant.
- Eastbound on slip is constrained by the close proximity of the railway bridge to the east of the junction.

OPTION 1.0 – Do Nothing

COMMENTS

The option to do nothing at junction 5 is likely to have severe safety implications. The 2006 analysis concluded that the Eastbound on-slip merge is substandard therefore an increase in traffic volumes will only add to the existing problem. In order to rectify this, the existing Type A merge will require modification to a Type F or H merge if future traffic volumes are to be accommodated.

The urban extension does not seem to have a direct impact on traffic volumes at Junction 5 however the proposed increase in housing and employment within the town centre will introduce additional trips using this junction.

COST	n/a	CAPACITY	★	SAFETY	★

OPTION 1.1 – Partial Signalisation					Figure 9.3.1
SOLUTION Provide traffic signals on the two M20 approaches and the A20 approach. The approach from Coldharbour Lane remains as a give way entry due to the low number of vehicle movements on this arm. The dedicated left slip road from the A20 to the M20 west will be converted from a painted hatch marking to a solid kerbed island to enable mounting of a signal post. The dedicated left slip will remain unsignalised. Signalising junction 5 improves it's operation enabling the junction to manage 2016 and 2026 predicted volumes. As highlighted in the base line conditions the eastbound merge is substandard. In order to redesign this merge to standard a type F or H merge is required. However the presence of structures on the M20 results in a type B (Parallel merge) being the only solution. The auxiliary lane could only be approximately 200m in length. Therefore a departure in standard would be required if any merge improvement were to be included.					
COMMENTS The main issue at junction 5 will be the right turn movement from the A20 Link road to the M20 East. This movement could result in queuing on the M20 eastbound off slip. However by signalising this approach the junction operation improves. TRANSYT models of the predicted traffic for 2016 and 2026 indicate that there are no major issues with traffic in the future scenarios if the junction undergoes partial signalisation. The Eastbound merge requires a lane gain (Type F or H merge, TD22/06), but this can not be accommodated. An auxiliary lane does enable more time for the slip road traffic to merge with the parallel link but the standard for this is a minimum of 230 metres and will therefore need to be approved as a departure from standard.					
COST	405,000	CAPACITY	★★★	SAFETY	★★★

9.4 M20 Junction 6 – Cobtree Roundabout

9.4.1 M20 Junction 6 – Cobtree Roundabout is a grade separated roundabout from the M20 and A229. The junction forms half of a dumbbell arrangement. The roundabout has an off slip from the eastbound parallel link from junctions 5-6 and an on slip back onto the M20. To the south of the junction the A229 links to Running Horse roundabout via link roads.

9.4.2 The major movements at this junction occur between the A229 North and the A229 South, the majority of this traffic is travelling in the direction of the M20 West, and the M20 West to the A229 North. These movements average approximately 10,600 vehicles during a 12 hour period with a peak hour volume of approximately 1,500 vehicles.

ISSUES	
Queuing	Major Queuing is Apparent in the AM Peak
Merges & Diverges	None
Collision Records	One Serious Accident

- Largest flow from A229 North to A229 South during AM Peak and returning during PM peak.
- Junction connects to Running Horse roundabout to the south.
- Improvement is restricted by land constraints surrounding the junction.

OPTION 2.0 – Do Nothing

COMMENTS

The existing situation at Cobtree roundabout suggests that during the peak period's congestion occurs. This situation will only deteriorate further in future years as traffic volumes increase.

Due to land and infrastructure constraints no physical improvements are possible at this junction. However, perhaps Junction 6 as a whole can act as a congestion hotspot which will restrain traffic from entering the highway network. This could promote modal shift.

COST	N/A	CAPACITY	★	SAFETY	★★

9.5 M20 Junction 6 – Running Horse Roundabout

9.5.1 M20 Junction 6 Running Horse Roundabout is a grade separated roundabout from the M20 and A229. The junction forms half of a dumbbell arrangement. The roundabout is a five arm roundabout. One arm of the roundabout forms the westbound on and off slip for the M20. To the north are the link roads to Cobtree Roundabout linking the eastbound movements.

9.5.2 The major movement at this junction occurs between the A229 North and the M20 West. This movement averages approximately 8,500 vehicles during a 12 hour period with a peak hour volume of approximately 1,200 vehicles.

ISSUES	
Queuing	Major Queuing is Apparent in the AM Peak
Merges & Diverges	None
Collision Records	No Serious or Fatal Accidents

- Largest flow from A229 North to M20 West during AM Peak.
- Junction connects to Cobtree roundabout to the north as forms part of junction 6.
- Improvement is restricted by land constraints surrounding the junction.

OPTION 3.0 – Do Nothing

COMMENTS

If no improvements are carried out at Junction 6 – Running Horse Roundabout the increase in traffic will cause increased congestion. In the AM peak there is currently queuing from the A229 north. This queuing will increase back to Cobtree Roundabout in future years. The general operation and safety of the roundabout will be compromised by future year traffic, however this could support the promotion of modal shift to more sustainable modes.

COST	N/A	CAPACITY	★	SAFETY	★★

9.6 M20 Junction 7

9.6.1 M20 Junction 7 is a grade separated roundabout. The westbound on slip and the eastbound off slip forms a lane gain and lane drop from junction 6. The roundabout is linked to the A249 from the north and south.

9.6.2 The major movement at this junction occurs between the A249 north and the M20 west. This movement averages approximately 10,000 vehicles during a 12 hour period with a peak hour volume of approximately 1,100 vehicles.

ISSUES	
Queuing	A249 North queue to around 300 vehicles in AM peak M20 East queue to around 20 vehicles in AM peak
Merges & Diverges	No Issues
Collision Records	Three Serious Accidents

- Major Movements are between A249 North and M20 West and the M20 west to A249 South.
- 50% of accidents are Rear shunt.
- Queuing on the A249 over 300 vehicles long.

OPTION 4.0 – Do Nothing

COMMENTS

The option to do nothing at Junction 7 is not possible. This junction currently experiences an excess demand at peak hours which results in a high level of queuing which only deteriorates in future years.

Without effective control and management the safe and efficient operation of the trunk road and junction is in jeopardy.

COST	N/A	CAPACITY	★	SAFETY	★

OPTION 4.1 – Partial Signalisation					Figure 9.6.1
SOLUTION Convert the M20 eastbound approach and the two A249 approaches to signals whilst leaving the M20 westbound as a giveway. In addition the lane markings on the circulatory carriageway and M20 eastbound approach will be modified to improve visibility of the signal heads. There are additional lane markings to improve navigation for motorists. The two dedicated left slips from the A249 south to the M20 westbound and M20 westbound to the A249 north will be remain as dedicated slips. The merges and diverges remain as standard.					
COMMENTS A TRANSYT analysis has been conducted to determine the capacity of this junction. The major issue at this junction is the high level of right turn traffic from the A249 north to the M20 westbound. Signalisation will allow smoother, safer operation of the overall junction based on the base year traffic. In the future year scenarios it continues to show a high level of queuing on the A249 north but signalisation allows access to be controlled on to the M20. Although the M20 westbound off slip would not have a queuing issue if it remains a giveway entry, signalisation could further aid access control onto the M20.					
COST	200,000	CAPACITY	★★	SAFETY	★★

OPTION 4.2 –Hamburger					Figure 9.6.2
SOLUTION Convert the junction to a hamburger junction arrangement with a new link from the A249 north to the M20 west. This would enable the A249 north movement to the M20 west to become a priority movement. This movement will require 2 lanes and therefore will result in a 3 lane exit on the M20 slip road (W), which are currently 2 lanes. In order to accommodate the additional lane either the merge will need to be amended to a 3 lane merge, which is not possible due to it requiring a lane gain, or signals will be required on the slip road to control the 2 conflicting movements, therefore keeping the slip road 2 lanes.					
COMMENTS Due to physical constraints the link between the A249 north and the M20 west may be difficult to incorporate. This option is considered to have safety issues due to the poor design of the slip road arrangement.					
COST	1,970,000	CAPACITY	★★★	SAFETY	★

9.7 M20 Junction 8

9.7.1 M20 Junction 8 is a grade separated roundabout. The roundabout has a link road to the A20 east of Maidstone. To the north there are the Motorway services.

9.7.2 The major movement at this junction occurs between the A20 link and the M20 west. This movement averages approximately 8,500 vehicles during a 12 hour period with a peak hour volume of approximately 1,400 vehicles.

ISSUES	
Queuing	None
Merges & Diverges	W/B Merge is substandard
Collision Records	Two Serious accidents

- Largest flow from A20 link to M20 westbound during AM Peak and returning during PM peak.
- Westbound on slip currently a type B Parallel Merge, however TD22/06 suggests this should be more of a lane gain type E or F merge.
- The westbound on slip is constrained by a railway bridge west of the junction.

OPTION 5.0 – Do Nothing

COMMENTS

The option of doing nothing at junction 8 would lead to an increase in queuing on the A20 link road as the left turn movement increases. The general operation of the roundabout is not affected, however there is an increased right turn movement from the M20 eastbound to the A20 link. This does not severely impact on the operation of the remainder of the junction.

COST	n/a	CAPACITY	★	SAFETY	★

OPTION 5.1 – Partial Signalisation with Dedicated Slip to M20 West

Figure 9.7.1

SOLUTION

- Signalise the two M20 approaches and the A20 link with the services left as a giveway entry.
- A dedicated left slip to the westbound M20 slip road is to be added on the A20 link. Due to the high number of vehicles on the slip road the current layout would be unable to cope with the increased traffic. The slip road would therefore become a two lane slip road with traffic from the roundabout in the offside lane.

COMMENTS

A TRANSYT assessment of the junction has been carried out to assess the operation of the junction in future year scenarios. This shows that the operation of the junction is not affected by the increase in traffic.

However the offside lane will be lightly trafficked with approximately 120 vehicles per hour where as the dedicated lane will be carrying in excess of 1800 vehicles per hour and will be operating over capacity.

COST	1,145,000	CAPACITY	★	SAFETY	★★★

OPTION 5.2 – Partial Signalisation with 2 Lane Dedicated Slip to M20 West

Figure 9.7.2

SOLUTION

- Signalise the two M20 approaches and the A20 link with the services left as a giveway entry.
- A two lane dedicated left slip to the westbound M20 slip road is to be added on the A20 link. Due to the high number of vehicles on the slip road the current layout would be unable to cope with the increased traffic.
- Where the dedicated left slip meets the slip road will require a traffic signal junction. The exit from the roundabout will need to be modified to a two lane exit.

COMMENTS

The two lanes on the dedicated slip allows for it to contain more capacity as with the two lanes on the exit.

The signal junction where the dedicated lane meets the slip road would mean that the HGV's on the A20 approach and roundabout would be able to position themselves on the nearside lane allowing easier merging with the motorway traffic.

Where the traffic from the roundabout enters the slip road the two lanes will allow for more capacity on the short link, due to the low number of vehicle negotiating this manoeuvre a minimum green time will be required on this link which will enable more efficient flow passing along the dedicated slip from the A20.

A TRANSYT model of this configuration shows that there are no capacity issues with this arrangement.

COST	1,500,000	CAPACITY	★★★	SAFETY	★★

OPTION 5.3 – Lane Drop and Lane Gain					Figure 9.7.3
SOLUTION • Incorporate a type C lane drop at taper diverge on the westbound off slip from the M20 with a type F lane gain with ghost island merge on the west bound on slip. • This option can be used with both options 5.1 and 5.2 above.					
COMMENTS Whist this option is feasible based on 2026 predicted traffic flows. The main issue is that the M20 has a high proportion of HGV's due to the Dover Ferry Port. The concern is that the HGV's will have to weave on the approach to the junction and will also have to weave with the high number of vehicle merging from junction 8 to the west of the junction. This option can however, be design within the standards identified in TD22/06.					
COST	-	CAPACITY	★★	SAFETY	★

OPTION 5.4 – Modified Type H Alternative Ghost Island Merge with Auxiliary Lane					Figure 9.7.4
SOLUTION • The westbound merge would be converted to a type H merge to enable two lanes of traffic to merge with the M20. The hard shoulder of the merge is restricted by the railway bridge to the west of the junction and with therefore need to be constructed with an emergency access route along the bridge parapet. • This option can be used with both options 5.1 and 5.2 above.					
COMMENTS This option allows for the vehicles on the slip road greater ease to merge with the motorway traffic. However the hard shoulder will need to be discontinued for the last 300 metres of the merge. The issue with this is that if a vehicle breaks down on this section of highway it will block access to vehicles on this section of slip road. This will also require a departure from standard to be authorised.					
COST	450,000	CAPACITY	★★★	SAFETY	★★★

9.8 Suggested Strategy

9.8.1 Based on the above options considered for infrastructure improvements, it is suggested that the following schemes are brought forward as part of the highway strategy:

- Signalisation of Junction 5 and provision of an auxiliary lane on the eastbound on slip (option 1.1)
- Signalisation of Junction 7 (option 4.1)

- Signalise of Junction 8 and improvements to the westbound merge (option 5.2 and 5.4).

- Amend Coldharbour roundabout signal timings

It should be noted that all options are subject to detailed design, departures from standards and road safety audits. This strategy is not to provide huge infrastructure schemes which will enable lots of spare capacity. The intent is to provide options which are in line with the policies of KCC and MBC and will therefore compliment the surrounding network. The strategy for Maidstone is not only dependant on the results from this analysis but will also be influenced by future work and analysis and therefore the strategy for Maidstone NGP may change in the future.

10 TRANSPORT STRATEGY

10.1 Introduction

10.1.1 This study has been undertaken by the HA in partnership with KCC and MBC. The objective of the study is to develop an integrated transport strategy that takes account of the development of land around Maidstone with particular emphasis on the proposed urban extension to the south east of Maidstone. A total of 10,080 housing units and 13,000 jobs are proposed within Maidstone by the year 2026.

10.1.2 The transport strategy is derived from Governmental policies and KCC's local policies. Transport policy is to promote and give highest priority to walking cycling and public transport with efforts to reduce car use through travel plans and other initiatives. Highway improvements have also been included within the strategy however is only to be implemented when the effect of other measures have been considered.

10.1.3 However it has been concluded that the scale of the development will inevitably have significant impact on the road network. Junction 8 is predicted to be the most affected junction along the M20, due to the high volume of traffic accessing the urban extension via this junction and provision of the SEML. The 2026 forecasts a 49% increase in traffic from 2006 base year due mostly to traffic generated from the development area but also from continual growth of existing traffic movements. The forecast development will also have an impact on neighbouring junction such as junctions 7, 6 and 5 which decreases respectively. Consequently the study has considered a number of road improvements at the aforementioned junctions and their vicinity, alongside a number of demand management techniques.

10.1.4 The Core Strategy will need to be supported by a Transport Strategy that assesses all the methods of controlling vehicle trips, as promoting a Strategy that relies solely on highway improvement schemes to create additional capacity will not find favour, and is not in accordance with Circular 02/07.

10.1.5 The actual approach that will be used will be a combination of a number of measures. The County Council's Urban Traffic Management and Control project, currently in its early stages, will provide the means of managing traffic in the town centre to try to prevent gridlock and even out the queues and delays that form on the network. It will also allow coordination between the County's network and the M20, through close working contact with the HA's Regional Control Centre at Godstone (Surrey). Measures such a new quality bus links, cycleways, park and ride and reduced parking standards will need to play an important role, in achieving this strategy.

10.1.6 The main challenges will come with the need to constrain the demand for trips by car, using a combination of encouragement for sustainable transport and discouragement of individual car trips.

10.1.7 **Encouragement** could take the form of:-

- Sustainable layouts of mixed developments, incorporating public transport services, and opportunities for walking and cycle trips
- Improved priority for buses wherever possible, both at key junctions and along key links. This can be achieved in some part by management through UTMC and bus priority technology, but would also involve consideration of either additional road space for buses, or reduction of road space for cars.

- Promotion of Travel Plans (workplace, home, school)
- Extension of Park and Ride services (there are already plans for a larger site on the A249 at Newnham Park next to Junction 7)
- Extension of the Cycle Network
- Extension of the Kent Carshare Scheme
- Extension of the KCC Car Club initiative

10.1.8 **Discouragement** could take the form of :-

- Reduced parking provision (home and workplace)
- Lower priority for cars on the road network
- Access controls on motorway
- Fiscal management (i.e. tolls, congestion charging)

10.2 Public Transport

10.2.1 Improved public transport links will be essential if the urban extension is to come forward as a sustainable community. An increase in congestion levels within the town centre and a good public transport strategy should therefore promote a modal shift from the car to more sustainable methods of transport such as the bus.

10.2.2 Public transport services to the east of Maidstone will be required in order to serve the proposed urban extension community. This service will have to be of high quality and frequency. These services will need to connect either directly of indirectly to residential and employment areas and for maximum effect should be introduced early in the development of the area. This will ensure a choice of mode is available for a large proportion of the trips within the urban extension. Potential public transport routes will require investigation by KCC.

10.2.3 KCC should also consider potential park and ride sites on the north side of the M20, along the A229 and A259 corridor to relieve pressure on the M20 junctions.

10.3 Travel Plans

10.3.1 In order to ensure that the urban extension does not rely entirely on the private car there is a need for the development sites to produce individual travel plans which are complementary to each other. Travel plans are used to assist individuals and organisation in the promotion of alternative transport modes that are more sustainable than single occupancy private journeys. Reduced traffic congestion, protection of the environment, healthier lifestyles and less social exclusion are just some of the benefits of such plans.

10.3.2 Travel plans are seen as a valuable part of employee relations and good business planning for employees. There are many actions that could be included in a travel plan for employers and it is unlikely that a single plan will incorporate them all. Each travel plan produced will require a set of targets and have mechanisms for monitoring and penalties should the targetS not be met.

10.3.3 Travel plans for residential areas are less well developed. Key issues that affect trips generation are household occupancy, car availability and opportunities for a choice of travel by an alternative mode. To ensure trip generation from residential development is low there will need to be a number of measures possibly car clubs, subsidised public transport and high quality infrastructure for slow modes.

10.3.4 This complies with the Regional Spatial Strategy for the South East which highlights a number of SMART objectives considered capable of reducing the level of private car travel.

10.3.5 The implementation of robust travel plans is estimated to reduce car trips by approximately 10%.

10.4 Parking Restraint

10.4.1 Maidstone currently experienceS capacity issues, especially within the town centre. The incorporation of public transport provisions such are bus lanes/bus priority, will only result in a further reduction in road capacity. This will end in traffic travelling slower which in turn will increase the release of harmful emissions into the environment. Town centre parking restraint and charging policy and measures will be needed to achieve a balance between future traffic demand and capacity. In addition parking restraint will be required at all new and redeveloped employment sites to encourage modal shift. A typical parking standard for office type developments is 1:30 when considering mean trip rates. Therefore in order to gain a 5% reduction in car trips due to parking restrictions a 5% reduction in parking ratio is required. Therefore a parking standard of 1:32 will be considered appropriate, for all developments coming forward, as a minimum.

10.5 Alternating shift patterns

10.5.1 Altering start and finish times of shift patterns of major employers within Maidstone can help to reduce the amount of traffic travelling within the city during peak times. (Shifts that generally start and finish outside the peak). This technique could be considered by new employees and implemented through a travel plan.

10.6 Internet

10.6.1 The use of the Internet can help inform people of available travel methods available to them within Maidstone. The developer of the urban extension should work closely with MBC and KCC in order to develop a travel website for the urban extension which will provide correct information, possibly real time information on public transport, cycle and walking link, and car clubs to the residents of the urban extension.

10.7 Traffic Control Centre

10.7.1 A traffic control centre is the operational hub of any transport system. From this centre many intelligent transport systems can be managed and controlled on a daily basis. Such centres can control traffic signals, variable message signing, traffic cameras, bus stop signing, pollution facilities etc. Collaboration between the local authorities and the HA would ensure that both local and trunk roads are operating efficiently.

10.8 HA Demand Management Mechanisms

10.8.1 Alongside the measures above which the Council would be responsible for implementing, the HA need to consider the following mechanisms to also reduce the demand to travel:

- The junctions on the M20 at Maidstone are in close proximity to each other. Through the use technological measures, including traffic signals, VMS, selective vehicle technology, internet etc to enable the network to be actively managed thus ensuring safety, journey reliability and informed travellers.
- Consider the use of access control to ensure safety and journey reliability on the trunk road network.
- Proactively engaging and influencing the land use planning process.
- Consider vulnerable road users and where appropriate, encourage the implementation of infrastructure that will provide a safe route for all users.
- The provision of the HA Traffic Officers (HATOs) to operate on the trunk road system to keep traffic moving around collisions and make road users journeys as safe and reliable as possible.

10.8.2 To ensure the successful delivery of this strategy, the HA will need to work with MBC and KCC to deliver a demand management strategy.

10.8.3 It is essential that this demand management strategy is adapted alongside any highway improvement measures to ensure that the impact of predicted future growth on the M20 corridor is managed, effectively and as efficiently as possible.

10.9 Infrastructure required

10.9.1 Even with the above demand management measures, highways improvements are still required to both the local and strategic road network as highlighted with Maidstone's Local Transport Plan. These consist of

- South East Maidstone Strategic Link
- Junction 8 signalisation and improvements to merge
- Junction 7 signalisation and improvement to junction
- Junction 5 signalisation and improvement to junction
- Coldharbour roundabout – improve signal timings
- The development of the All Saints Relief Road for environmental reasons.

- The inclusion of service bays on Upper Stone Street to prevent the obstruction of through traffic on the A229.

10.10 Phasing

10.10.1 The recommended phasing of the implementation of the developments is as follows

Phase	Transport Infrastructure	Development Phasing
1	Agreement of development plans and transport proposals for major developments. Design and Implementation of the South East of Maidstone (SEML) Strategic Link.	Prior to any development taking place. The SEML and the associated phasing of this infrastructure requires further study work to determine the exact impact of the scheme.
2	Full Signalisation of Junction 8	1000 houses and corresponding employment in urban extension
3	Incorporation of the 2-lane dedicated slip road from the A20 to the M20 westbound. Paired with a type H merge	>1000 houses and corresponding employment
4	Signalisation of Junction 7	Prior to any development taking place that will have a detrimental affect on Junction 7
5	Signalisation of Junction 5	Will be required to accommodate future year traffic
6	Amend Coldharbour Roundabout signal timings	Will be required to accommodate future year traffic

Table 10.5.1 - Phasing of Infrastructure for Maidstone Trunk Road Improvements

10.11 Funding

10.11.1 KCC will need to reach agreement in principal for the proposed developments to make specific contribution to sustainable forms of transport. These commitments need to be co-ordinated in order to develop complementary networks of pedestrian, cycle and bus routes within Maidstone.

10.11.2 In addition it has been identified that in order for the development to proceed the proposed South East Maidstone Strategic Link will be required, which will provide assess to the M20 via junction 8, to allow long distance traffic to gain access to commercial development in the Parkwood area, and also provide a spine to link other residential and commercial development. It is proposed that developers will fully fund this road scheme in order for their developments to come forward.

10.11.3 Contribution will be sought from specific developments and there will, by necessity, need to be a flexible and phased approach for all junction and road improvements.

Tariff Strategy

10.11.4 The transport system within areas of the Maidstone is under pressure as a result of current and predicted levels of development. Existing problems will be made worse and new problems created on the highway network unless sufficient investment is undertaken to mitigate against the impact of new development.

10.11.5 It is recommended that contributions will be sought from all developments, which are expected to have a cumulative transport impact within Maidstone. The impact of any development in traffic terms is clearly relative to the new traffic generated by the development, and it is intended, therefore that trip rate generation be used as the means by which the scale of contribution from differing types of development will be determined.

10.11.6 The pooling of funds with regard to this tariff will be vital to meet costs of strategic highway improvements to the Maidstone network and the required demand management methods, these will be provided and used by the whole community. Immediate localised improvements for particular developments will be provided through the use of S278 agreements with the Local Highway Authority or the Highway Agency in the event of work to a trunk road, or planning approval conditions where appropriate.

11 CONCLUSION

11.1.1 The HA were asked to respond to the proposals for Maidstone to achieve New Growth Point status. In the DCLG's response to Maidstone's proposals, there were two areas of concern in which Maidstone were recommended to consult with the HA, these were:

- Sustainability of locating employment development near to the M20
- Appraisal of current and future constraints on the M20 around Maidstone

11.1.2 In order to enable the HA and KCC to understand the impact of the proposed development on the highway network, and to inform the evidence based assessments regarding transport, it was considered necessary to undertake this study. The aim was to gain a better understanding of the transport implications of the proposals which in turn would enable all authorities involved to address the following questions

- **How would the growth proposals impact on existing transport networks?**

  The proposed development size will have a major impact on the transport network.

- **What interventions are necessary to deal with these impacts?**

  This report has in section 10 identified the details on all measures recommended to relieve the impact, of the development proposals. It should be noted that these measures will not completely remove congestion, but instead should go someway to managing the demand and ensuring that the safe and efficient operation of the trunk road is maintained.

- **To what extent have alternatives to investment in new infrastructure been explored by authorities as a means of providing the necessary capacity to cater for the proposed additional growth (i.e. reducing the need to travel, smarter choices, demand management etc)?**

  Consideration has been given to more sustainable transport methods. Through the exploration of SMART objectives the implementation of travel plans, car share schemes, teleworking, public transport initiatives and parking restraints, is predicted to reduce the overall impact of trips generated from the additional development. In addition a demand management strategy should be put in place through collaboration with all interested parties. Section 8 of this report considers the likely trip reduction on the future matrix as alternative to investment in new infrastructure.

- **What would be the impact on the growth proposals if these interventions were not delivered?**

  If these sustainable transport methods were not implemented within Maidstone then the amount of development would need to be reconsidered as the transport network would become over capacity. This would result in reduced accessibility into and out of Maidstone.

- **Is there room for changes in the proposal that would lessen the transport impact?**

  The site of the urban extension is considered sufficient enough to create a reasonable level of internal trips due to the allocation of jobs and residential areas. This will also support the public transport link into the centre of Maidstone, to make it become viable.

- **What are the ballpark costs of each of the transport interventions necessary to support the growth?**

  Section 9 of this report reviews the cost of each of the proposed improvements. Ballpark costs have been derived for the infrastructural improvements recommended.

- **Are there sufficient resources to deliver the growth?**

  It is considered that through developer funding, and a detailed phasing program there will be sufficient resources available to deliver the growth.

11.1.3 The measures and indicative junction designs highlighted within this report are regarded as a package of measures which will work towards alleviating the impact on both the strategic and local road network. However the stress on the network will remain, with existing congestion levels increasing from that experienced today.

11.2 Risks

11.2.1 However, it is important to note the number of risks association with the development proposal

- Kent International Gateway – The proposal for an international gateway to be situated to the Southwest of the M20 junction 8 has not been considered within this assessment. However if the proposal is to come forward, this will have severe implications on the design at junction 8, the surrounding road network and the ability for the urban extension to come forward in it's entirety.

- Parking Restrictions – Parking Restrictions have been highlighted as a feasible method to reduce car travel and has been used to reduce the future trip estimations. However, if this is considered undeliverable due to commercial viability then an alternative option will be required to reduce trips. In addition if the parking restrictions were to be implemented strict targets, measures and monitoring processes will need to be in place to ensure compliance and success.

- Travel Plans – It is imperative that the delivery of travel plans are implemented successfully and achieve the required percentage reduction in traffic growth.

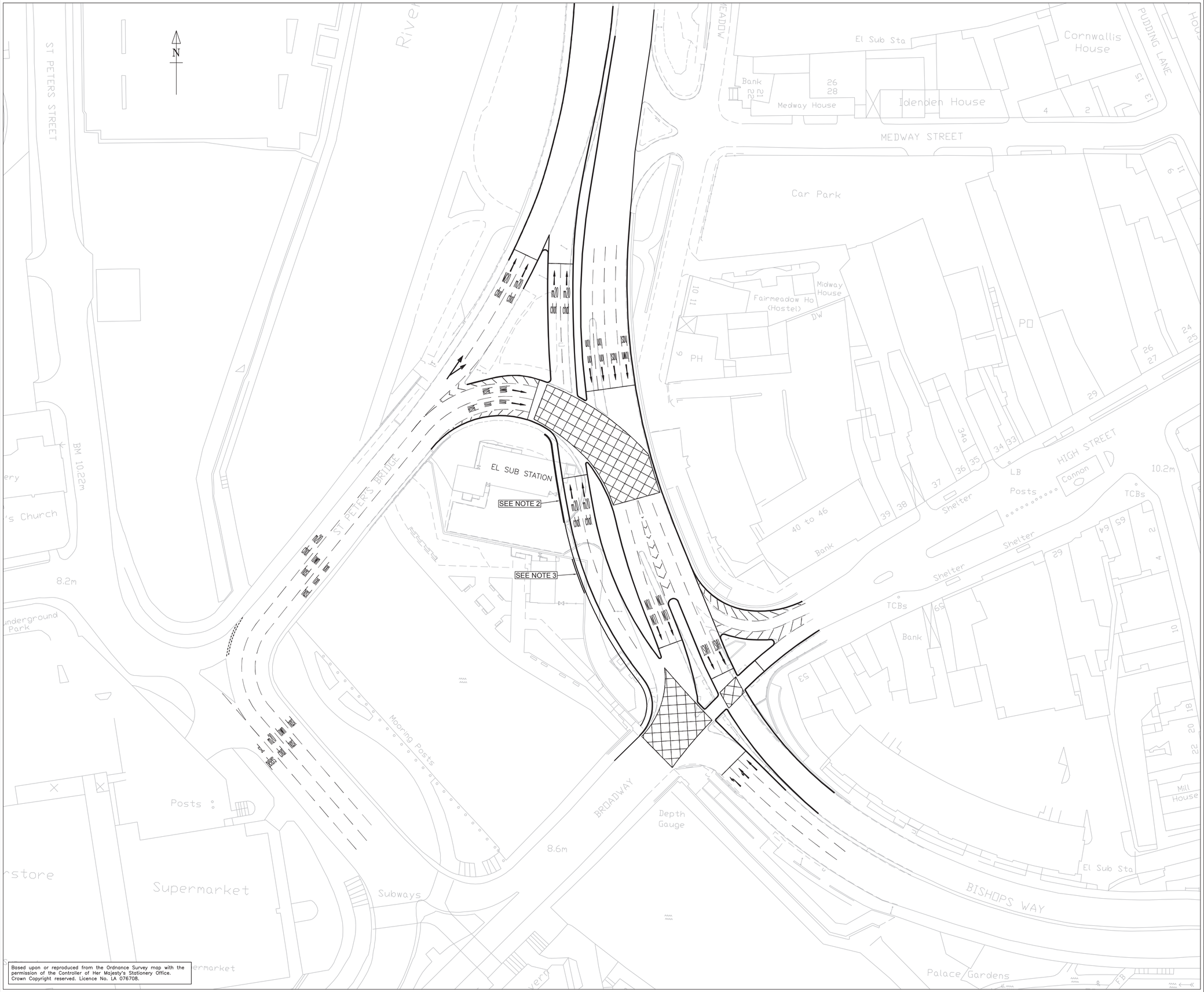
- Public Transport Service – In order to ensure that the urban extension is sustainable the public transport service will need to achieve specific targets. These will be determined when detailed analyses/design has been undertaken.

- South East Maidstone Strategic Link – The SEML should be in place prior to any development taking place. Therefore this will need to be deliverable and fully funded through the developer.

- Strong collaboration between authorities – In order to devise a transport strategy that is both achievable and sustainable it is strongly recommended that collaboration between KCC, MBC, and other relevant authorities.

- Junction improvements – Improvements to the M20 junctions is essential before any development will go forward. It is recommended that developers devise joint contributions in order to fund the relevant schemes.

11.2.2 If any of the criteria has not been implemented to a sufficient standard there is every likelihood that the urban extension will not proceed due to the implications on the strategic network. In addition, if the authorities do not work together in the delivery of the demand management requirements of the strategy, and consequently do not achieve the level of modal shift required, the cost of the infrastructure required will become insurmountable, with major improvements required at Junction 7 and 8 and possibly some contributions to the widening of the M20 between Junction 3 – 5 (which is being considered by another study).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Car Park
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Kent County Council

Maidstone Town Centre Micro-Simulation Model

Assessment of Maidstone Bridge Gyratory A229 Through Link Option

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Figure 2.1 Journey Time Routes

1.0 Introduction

1.1 This note outlines the traffic impact assessment that has been conducted for proposals affecting the bridge gyratory system in Maidstone Town Centre. The assessment has been made using the Micro-Simulation Model (VISSIM Model) developed in 2003 for the AM and PM peak periods. This note compares the results achieved for the proposed scheme (the A229 Through Link) against the existing scenario in terms of overall network performance, total travel time and delay and travel time savings on selected routes through the network.

1.2 The junction assessment was carried out assuming the existing junction gyratory arrangement plus an alternative arrangement (known as the A229 Through Link) whereby northbound A229 traffic is brought across to the eastern side of the junction. The layout of the proposed alternative can be seen in drawing No 0016254/1, previously supplied.

1.3 The structure of this note is as follows. **Section 2** gives details of the assessment of the proposed scheme and **Section 3** contains conclusions drawn from the results of the modelling.

2.0 Scheme Assessment

Introduction

2.1 The Maidstone Micro-Simulation Model was developed in 2003 and calibrated using 2003 data. In order to assess and compare the performance of the proposed junction arrangements with the existing arrangement, the following runs have been undertaken, for the AM and PM peak periods:

- Base 2003
- 2003 with A229 Through Link
- 2011 with Existing Network
- 2011 with A229 Through Link

Assessment Method

2.2 The A229 Through Link option has been tested assuming 2003 traffic conditions using the separate VISSIM models for AM (7.30 - 9.30) and PM (16.30-18.30). The proposals have also been tested assuming 2011 traffic estimates for both the AM and PM. The results have been compared with those for the Base 2003 situation and 2011 without the Through Link. The 2011 assignments include estimates of future traffic for development scheme proposals. The results of the main criteria in assessing the merits of the above option are as follows:

- Network Performance showing total travel time and delay plus overall network speed.
- Journey time comparison on selected routes as shown in **Figure 2.1**.
- Visual inspection of the network helped to compare the performance of the two junction arrangements.

2.3 **Tables 2.1 to 2.4** show the performance of the junctions based on the above criteria.

2.0 Scheme Assessment

Introduction

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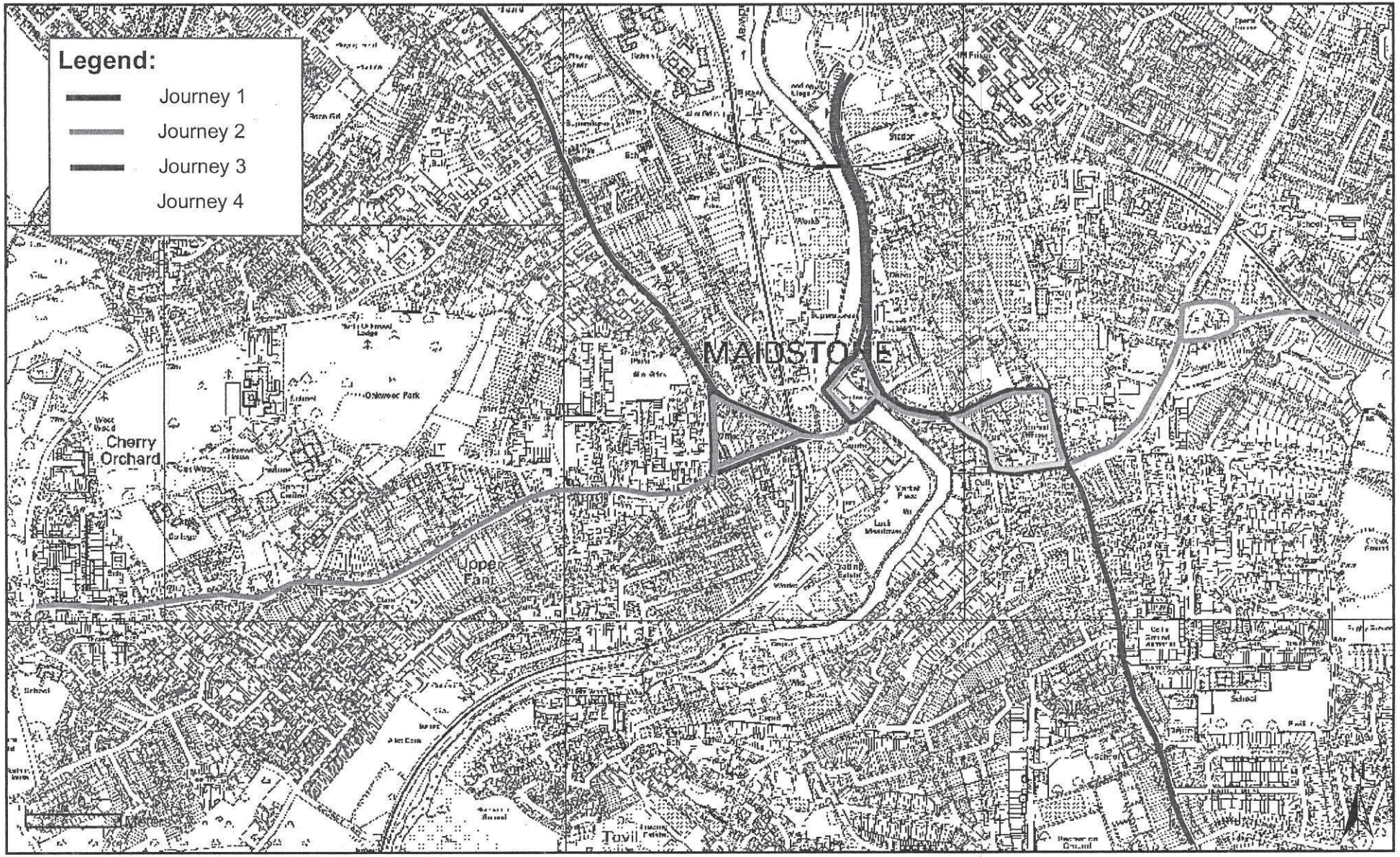


Journey Times Routes | **Figure 2.1**

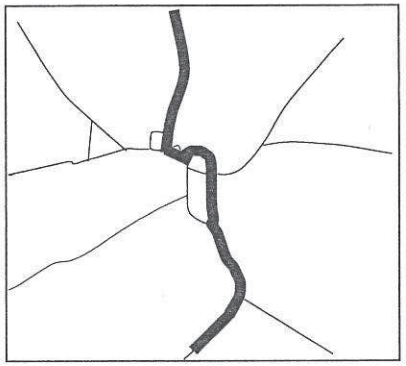
Table 2.1: Network Performance - AM Peak (8:00 - 9:00)

Criteria	2003		2011	
	Base 2003	Through Link 2003	Base 2011	Through Link 2011
No of Vehicles	16753	16753	18889	18889
Total Distance Travelled (km)	41032	40956	46920	47109
Total Travel Time (h)	2250	1953	3208	3039
Average Network Speed (km/h)	18	21	15	16
Total Network Delay (h)	1212	931	2019	1853

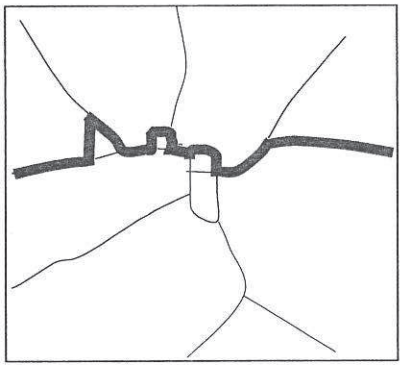
Table 2.2: Journey Time Comparison - AM Peak (8:00 - 9:00)

Journey	Direction	2003		2011	
		Base 2003	Through Link 2003	Base 2011	Through link 2011
1	NB	8.03	5.52	10.10	7.17
	SB	8.07	7.26	7.53	6.52
2	EB	13.30	10.28	22.38	18.22
	WB	11.43	10.08	13.07	11.56
3	NB	3.00	2.56	4.19	4.20
	SB	4.31	3.17	11.28	9.51
4	NB	5.35	4.24	4.22	4.11
	SB	9.13	6.15	8.22	7.40
	Average	**7.58**	**6.21**	**10.17**	**8.49**

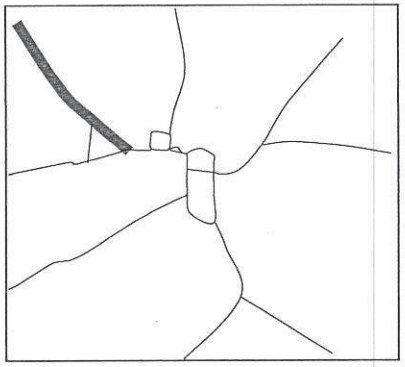
Route 1



Route 2



Route 3



Route 4

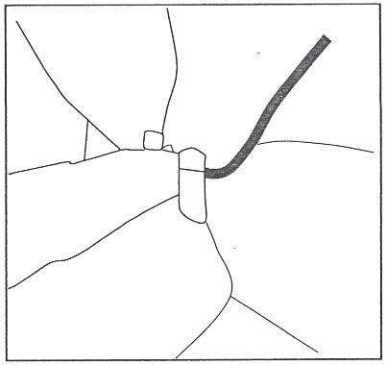


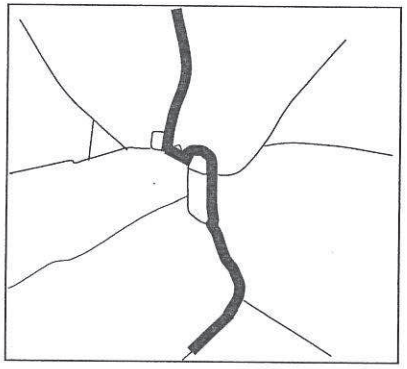
Table 2.3: Network Performance - PM Peak (17:00 - 18:00)

Criteria	2003		2011	
	Base 2003	Through Link 2003	Existing Network 2011	Through Link 2011
No of Vehicles	16856	16856	19681	19681
Total Distance Travelled (km)	41795	41273	49754	49401
Total Travel Time (h)	2104	1830	4410	3396
Average Network Speed (km/h)	20	23	11	15
Total Network Delay (h)	1009	775	3107	2125

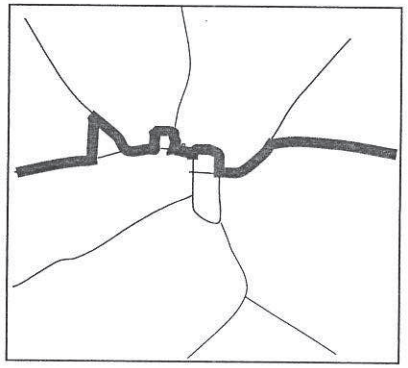
Table 2.4: Journey Time Comparison - PM Peak (17:00 - 18:00)

Journey	Direction	2003		2011	
		Base 2003	Through Link 2003	Existing Network 2011	Through Link 2011
1	NB	8.32	6.39	14.41	8.39
	SB	7.15	7.25	10.28	9.28
2	EB	12.26	12.05	27.02	13.50
	WB	10.50	9.03	22.19	10.28
3	NB	3.09	3.03	3.53	3.52
	SB	3.50	3.43	7.44	6.23
4	NB	4.46	4.18	4.22	4.20
	SB	6.09	4.16	17.17	5.43
	Average	**7.07**	**6.19**	**13.28**	**7.50**

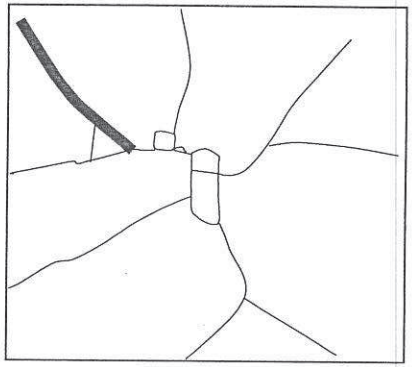
Route 1



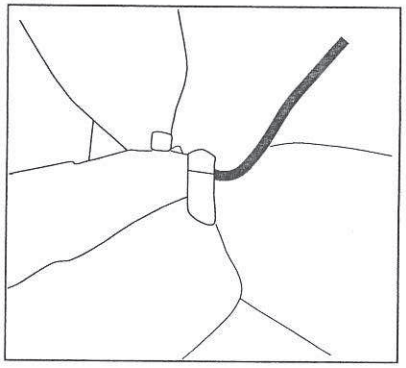
Route 2



Route 3



Route 4



3.0 Conclusion

3.1 As shown in **Tables 2.1 to 2.4**, it is clear that the proposed A229 Through Link improves the performance of the junction and results in less delay to traffic. Visual inspection of the network during the assignment process also confirms that the Bridge Gyratory works better.

3.2 Overall network delay for the 2003 AM peak is down by 24% in the assessment made assuming the new arrangements. In the AM 2011 assignment the delay is down by 10%. Overall average network speeds have increased by 3 kph in the AM 2003 tests.

3.3 The 2003 AM results also show a significant journey time saving for Route 1 (two minutes for northbound traffic) and Route 2 (three minutes for eastbound traffic).

3.4 The 2011 AM tests show a journey time saving of three minutes for northbound traffic on Route 1, a four minute saving for eastbound traffic on Route 2 and a two minute saving for southbound traffic on Route 3.

3.5 The 2003 PM results show a journey time saving of two minutes for northbound traffic on Route 1 and two minutes for westbound traffic on Route 2. Overall network delay is down by 23%. Overall average network speeds are increased by 3 kph in the PM 2003 tests.

3.6 The 2011 PM assessments show that journey times are predicted to be significantly better comparing the A229 Through Link scheme with the Existing Network. There is a journey time saving of six minutes on Route 1 northbound and Route 4 has a saving of twelve minutes in the southbound direction. Route 2 using the Through Link cuts the journey time half, for both directions. The overall network delay is down by 32% and the average speed has increased by 4 kph.

3.7 Visually the AM and PM 2011 Existing Network is extremely congested in the town centre and on all radial routes into the town centre, which causes traffic to divert onto several minor roads. In comparison the A229 Through Link scheme tests have some congestion in the town centre, but the radial routes perform better, with less queuing and with less traffic forced to use the minor roads.

3.8 The A229 Through Link does improve the functionality of Maidstone Town Centre both in the AM and the PM; however, it is best assessed as a remedial measure as it has only a short life span, as its effectiveness will be eroded as traffic continues. This scheme needs to be incorporated with other schemes, such as the All Saints Link and Upper Stone Street Dualling, together with policies to promote a reliable public transport system if the benefits are to be sustained.

Agenda Item 11

To: Maidstone Borough Council

By: Tim Read, Head of Transportation

Subject: Petitions Report

Date: 24th October 2012

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1. Summary: A report to update the Board on the current status of petitions received by Highways & Transportation (KCC).

Update on Petitions submitted to Kent County Council

Traffic Calming Measures, Heath Road, Coxheath

2. A petition was submitted in April 2008 by 59 residents, lead by Mr A R Monk of Westerhill Road, Coxheath. It sought action to improve the traffic calming measures installed along Heath Road, Coxheath as the petitioners felt these were dangerous.

3. A number of changes have been carried out to the traffic calming since the submission of this petition and as previously reported KHS had agreed to carry out a review of the safety record in Coxheath, further speed checks and complete the safety audit of the current scheme. This work has been completed and sent to the both the County Councillor and Parish Council. The Parish Council have recently held an exhibition to consult the community of Coxheath on alternative proposals put forward by their independent consultants prior to further discussions with Kent County Council.

4. Arrangements are currently being undertaken by the Cabinet Member in organising a meeting with Coxheath Parish Council to discuss a way forward.

Postley Road, Maidstone

5. A petition has been received from the residents of Postley Road, Maidstone which raises concern over the dangerous and increasingly unacceptable use of the road by buses including speeding. Kent Highway Services have meet with the lead petitioner and are investigating the issues raised by the petitioners. KHS are currently arranging a meeting with the local Councillors to discuss a way forward with respect to this petition.

6. The above meeting was held between local Councillors and it has been agreed that Postley Road will be proposed as part of the Speed Reduction pilot project with measures to be implemented to reduce vehicular speed on Postley Road.

7. Designs are currently being made and discussions are ongoing with the County Councillor regarding the scheme.

8. Design has been approved; Kent County Council will now undertake formal consultation regarding the location of Interactive Signs associated with the scheme with the view to advertise the Traffic Order Associated with the works.

9. Consultation has now finished, Kent County Council Officers are liaising with one resident regarding the location of an Interactive Sign to appease concerns. The Experimental Order has been written and advertised allowing officers to install the signage.

10. The works relating to this petition were started the week commencing 8th October.

Boxley Road and Beechen Bank Road

11. At the a previous meeting of this Board a petition was received requesting a reduction in the speed limit along Boxley Road and Beechen Bank Road. KHS commissioned a speed survey and have now received the results from its consultants and have reviewed the personal injury crash records along Boxley & Beechen Bank Road. KHS are currently arranging a meeting with the local Councillors and Parish Council to discuss a way forward with respect to this petition.

12. A meeting was held between Officers, Boxley Parish Council and Cllr Carter regarding speed limits along the above-mentioned roads. The results of the surveys showed that the existing speed limit could be reduced and Boxley Parish Council is liaising with officers regarding funding for these works.

13. Boxley Parish Council is funding the speed limit reduction on Boxley Road, designs and costs have been approved by Boxley Parish Council. Negotiations are ongoing regarding the delivery of the works.

14. It has been agreed that Kent County Council will deliver the work. The Traffic Order has been drafted and advertised. The consultation period expires on July 16th 2012. Officers will provide an oral update on the evening regarding the outcome of the consultation and the next phase.

15. The works relating to this petition were completed in August 2012.

New Petitions

A274 Sutton Valence Speed Limit Reduction

16. A petition was submitted in September 2012 by Sutton Valence Parish Council with over 250 signatures requesting an extension of the 30mph limit on the A274 North to Five Wents crossroads. Kent County Council has acknowledged this petition and will be investigating this further.

Accountable Officer: Andy Corcoran 01233 648302

Agenda Item 12

To: Maidstone Joint Transportation Board

By: Tim Read, Head of Transportation

Date*:* 24th October 2012

Subject: Update on 20MPH Zones in Maidstone

Classification: Information only

Summary: This report is to update Members of the board concerning 20MPH Zones in Maidstone.

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1. Please see table below showing information on each scheme, this table is up to date as of 11th October 2012.

Leeds School – Scheme Installed
Ham Lane, Lenham – Scheme Installed
West Street, Hunton – Scheme Installed
Postley Road – Works started onsite 10th October
Queens Road – Works being marked onsite 15th October to install as soon as possible

2. Works are all due to be completed by the end of October allowing officers to monitor the effect of the proposals to seek whether the works have created a positive effect on the area.

3. Works are to be monitored this School year with a full update to be provided in the summer of 2013.

Accountable Officer: Ben Hilden 0845 8247 800

To: Maidstone Joint Transportation Board

By: Tim Read, Head of Transportation

Date: 24th October 2012

Subject: Freight Action Plan Report Update

Classification: Information only

Summary: This report is to update the board of the current progress to the Freight Action Plan in that made from the previous meeting.

The Freight Action Plan (FAP) went to public consultation between the 28th May and 23rd July 2012. The consultation was advertised online and notification of the consultation was forwarded to stakeholders including the Districts and Boroughs, Kent Association of Local Councils and Kent Police.

The majority of the responses received welcomed the FAP and in particular the emphasis on action and partnership working it contained. No significant changes were made to the Plan as a result of the consultation but a number of minor amendments were made. Following this consultation the FAP was formally approved at the Cabinet Committee held on the 20/09/2012.

A number of actions contained in the FAP are already underway including:

Lorry Watch:

Innovative partnership scheme involving KCC, Kent Police and Parish Councils. With the support of KALC a pilot scheme has been agreed for launch with Leeds and Langley in November. Discussion also taken place with other Parishes and additional launches expected to follow.

Freight Gateway:

Testing currently underway of this online journey planner aimed at the haulage industry. This website will allow the intelligent routing of vehicles taking their dimensions and Kent's highway restrictions into account. Once this is bug free a publicised launch will occur.

Signage:

Reviewing and amending signs in a number of locations where HGV signage is inadequate. In Maidstone these include Teston (focusing on Teston Bridge) and Langley (Horseshoes Lane / Leeds Rd).

Lorry Parking:

Engagement with HA over their proposals to close lay-bys on M2 (knock on effect for lorry parking in Kent). Also work begun (Transport Policy Team) on the feasibility of commercially run overnight Lorry Park locations.

Contact officer: Daniel Sheppard
Tel: 08458 247800

Agenda Item 14

To: Maidstone Borough Council

By: Tim Read, Head of Transportation

Subject: Member Highway Fund program update for Maidstone Borough.

Date: 24th October 2012

Classification: Members Information Only

Summary: The following schemes are those which have been approved by both the relevant Member and have been approved by Bryan Sweetland the Cabinet Member for Environment, Highways and Waste. This information is up to date as of 11th October 2012.

Additional details on the schemes below can be found within the individual Member update sheets sent to County Councillors. For any further information please liaise with the Member Highway Fund Officer.

Paul Carter – Maidstone Rural North

Scheme	CSM	Cost	Status
Yeoman Way, Bearsted – Reinstatement of tree on central island	16900466	£510	Ongoing
The Orchard, Bearsted – Installation of safety related restrictions	12400499	£650	Ongoing
Walderslade Woods Road – Installation of Safety Improvements and alteration of speed limit	16900346	£15,000	Ongoing
Cuckoowood Ave – Installation of Parking Restrictions	16900337	£1500	Awaiting Installation
Restharrow Road, Grove Green – Installation of Street Light and warning signage	16900335	£2500	Ongoing
Boarley Lane – Installation of salt bins	16900277	£700	Completed

Alan Chell – Maidstone South

Scheme	CSM	Cost	Status
PROW KB22 and KB33 – Surfacing improvements	16900408	£9980	Ongoing
Tovil Road, Tovil – Contribution to pedestrian crossing installation	10206424	£40,000	Ongoing

Ian Chittenden – Maidstone North East

Scheme	CSM	Cost	Status
Chatham Road, Ringlestone – Maintenance work on existing bollards together with a traffic order to stop overnight parking.	12400818	£4,000	Ongoing
Calder Road, Ringlestone – Installation of safety improvements	169000382	£10,000	Ongoing
Sandling Lane – Removal of dead trees	16900123	£1354.18	Ongoing
Borough Wide – Contribution toward Road Safety Initiative	13000699	£3500	Ongoing
TudorAve/HeathfieldRd and EmsworthGr – Installation of parking restrictions	13000695		Awaiting installation
Calder Road, Ringlestone – Replacement of damage trees	13000651	£7058.92	Ongoing

Gary Cooke – Maidstone South East

Scheme	CSM	Cost	Status
A20/Otham Lane – Installation of HGV signage identifying the narrowness of the route	16900628	£800	Ongoing
B2163 Leeds – Gateway Improvements	10206524	£2927	Ongoing
B2163 Leeds – 20Mph Trial	10205688	£16,200	Complete

Dan Daley – Maidstone Central

Scheme	CSM	Cost	Status
Newbury Ave & Allington Way – Installation of warning signage and associated carriageway markings	16900419	£500	Ongoing
Mote Avenue – Reduction of Lime Trees	16900252	£3325	Ongoing
Adisham Drive – Protect and replace Rose Bushes	16900379	£3600	Ongoing
Maxwell Drive and Hildenborough Crescent – Installation of Bus Shelters	16900073	£14,000	Under Construction
Postley Road, Maidstone – 20Mph Trial	13000715	£10,000	Under Construction
Maidstone Road Safety Campaign – Contribution towards the work	13000699	£1250	Ongoing
Maidstone Town Centre de-cluttering – Contribution to MBC scheme	13000700	£500	Complete
Marigold Way, Maidstone – Request for One Way section of road	10207223	£2109	Ongoing
Queens Road, Maidstone – 20Mph School Trial	10205816	£8500	Under Construction

Eric Hotson – Maidstone Rural South

Scheme	CSM	Cost	Status
Loose Village – Installation of Weight Limit on Old Loose Hill	16900369	£2000	Ongoing
Market Street, Staplehurst - Installation of bollards	16900368	£1300	Complete
Boughton Monchelsea Primary School – Installation of SKC Markings	16900367	£1000	Ongoing
A274/Horseshoes Lane, Langley – Installation of Interactive Sign	16900366	£6000	Awaiting Installation date
Horseshoes Lane, Langley – Installation of Salt Bin	16900350	£350	Ongoing
Southways, Sutton Valence – Installation of Parking restrictions	16900349	£1000	Complete
Marden Road, Staplehurst – Extension of 30Mph Speed Limit	10204186	£10,196	Awaiting Installation

County Councillor – Maidstone Central

Scheme	CSM	Cost	Status
Newbury Ave & Allington Way – Installation of warning signage and associated carriageway markings	16900419	£500	Ongoing
Mote Avenue – Reduction of Lime Trees	16900252	£3325	Ongoing
Adisham Drive – Protect and replace Rose Bushes	16900379	£3600	Ongoing
Maxwell Drive and Hildenborough Crescent – Installation of Bus Shelters	16900073	£14,000	Consultation underway
Postley Road, Maidstone – 20Mph Trial	13000715	£10,000	Under Construction
Maidstone Road Safety Campaign – Contribution towards the work	13000699	£1250	Ongoing
Maidstone Town Centre de-cluttering – Contribution to MBC scheme	13000700	£500	Ongoing
Marigold Way, Maidstone – Request for One Way section of road	10207223	£2109	Ongoing
Queens Road, Maidstone - 20Mph School Trial	10205816	£8500	Under Construction

Paulina Stockell – Maidstone Rural West

Scheme	CSM	Cost	Status
St Margaret's School, Collier Street – Installation of Interactive Sign and parking restrictions in the vicinity of St Margaret's School	16900179	£4800	Ongoing
Valley Court, Tonbridge Road, Teston – Contribution toward the cost of a new footway	10207810	£2000	Complete
Charlton Lane, West Farleigh – Installation of a 30Mph Speed Limit	10207535	£4000	Under Construction
Maidstone Road, Nettlestead – Installation of Interactive Sign	10207220	£6325	Ongoing
A274 Interactive Sign – Interactive sign to be installed on the A274	10206030	£6000	Awaiting installation date
West Street, Hunton – Installation of Village Gateways	10205093	£8757	Ongoing

Jenny Whittle – Maidstone Rural East

Scheme	CSM	Cost	Status
Wormshill to Sittingbourne – Funding of transport	16900380	£4420	Ongoing
Grafty Green Village – Installation of an Interactive Sign	13000712	£3500	Awaiting Installation Date
Thurnham Lane – Installation of Interactive Sign	13000655	£3500	Awaiting Installation Date
Liverton Hill – Request for Speed Limit alterations	10205888	£4552	Under Construction
Ulcombe Hill – Request for Village Gateways	10205164	£6434	Ongoing
Headcorn Road, Boughton Malherbe – Give way to oncoming traffic signage	10204069	£6404	Ongoing

Contact officer: Ben Hilden
Tel: 08458 247800

Agenda Item 15

To: Maidstone Joint Transportation Board

By: KCC Roadworks Co-ordination Team

Date: **10th October 2012**

Subject: Gas Works – Maidstone Town Centre

Classification: Information - ongoing

Summary: The Chairman of the JTB has requested this item is reported on until completion of the ongoing Gas Main replacement works within Maidstone.

Morrison Utilities, working on behalf of Southern Gas Networks, are currently working on the third phase of this five phase project on Upper Stone Street. The right hand lane is currently closed between the carpet shop and the further side of the junction with Foster Street. Access onto and from Upper Stone Street is currently via Brunswick Street. Brunswick Street will also require a closure for three weeks from 21st October 2012and the access will then be via Foster Street. There are currently lane closures on Lower Stone Street. The Highway Management Centre and the Roadworks Team are closely monitoring traffic flow and adjusting traffic light timings to keep traffic disruption on Lower Stone Street, Palace Avenue, Mote Road and Wat Tyler Way to a minimum.

The project is progressing well and is currently running five weeks ahead of schedule. SGN will continue to move along Upper Stone Street, continuing the lane closure on the right hand side up to the junction with Waterloo Street, until the Christmas embargo.

After this, SGN will lay an additional main in the left hand lane of Upper Stone Street, and will also be carried out under a lane closure.

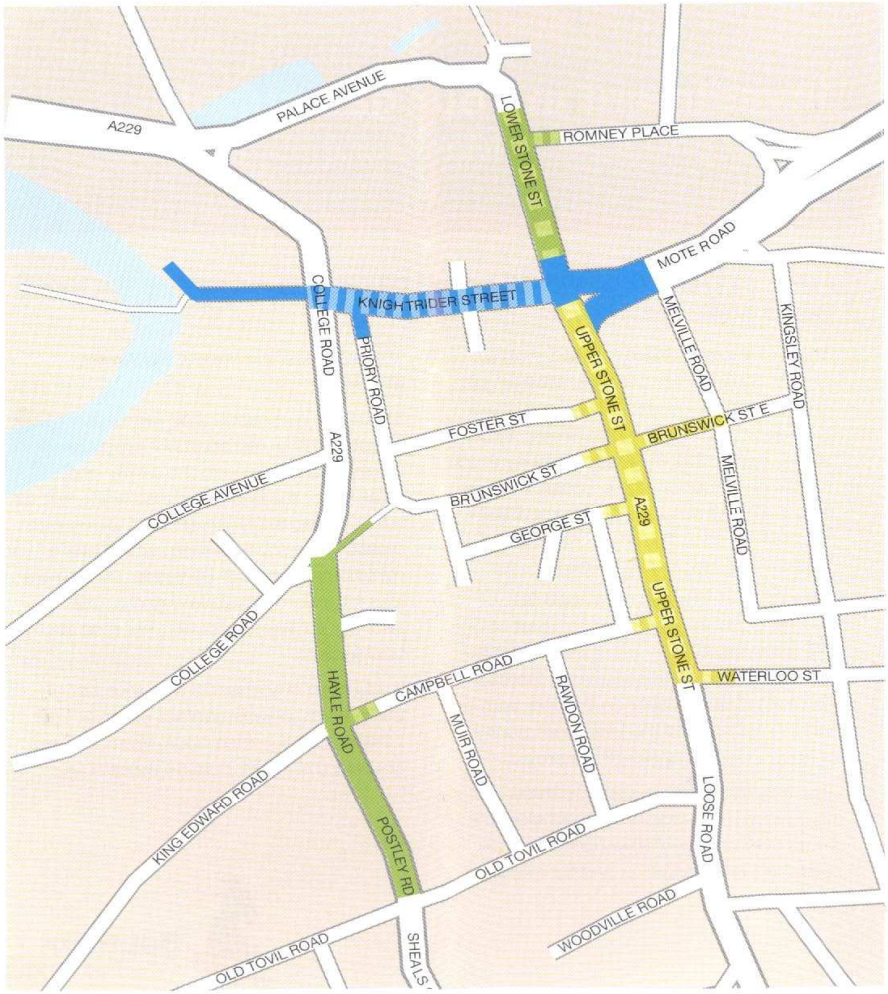
From 16th November 2012 until 7th January 2013, we have required all works and lane closures on Upper Stone Street to be removed to minimise disruption in the town centre in the run up to Christmas and the sales. During this period works will continue in the minor roads, to ensure no time is wasted and the works keep to programme.

The forth and fifth phases of this project are Postley Road, and Hayle Road. Originally it was planned to lay the main in Hayle Road at the same time as Upper Stone Street, but the disruption this would cause was considered too great and the fifth phase was added. This was facilitated by starting Lower Stone Street (Phase 2) alongside Knightrider Street (Phase 1) due to the necessity to change the method of work from tunnelling to open cut excavations because of poor ground conditions, and the continued closure of Knightrider Street. These changes helped to regain some time and the works for each phase has been completed ahead of the time expected.

In conclusion, the Roadworks Co-ordination Team will continue to work closely with Maidstone Borough Council and Morrison Utilities to ensure this complicated and high profile project is completed on time and causes the least amount of disruption, and that the reinstatements are completed to the highest quality.

Contact officer: Barbara Westmacott
Tel: 08458 247800

Where is the work taking place?



Phase one

PHASE 1

Full road closure

The project will begin with the temporary closure of Knightrider Street and the suspension of the one-way order from Stone Street to Mill Street. Some work will also take place in Lower Stone Street, including a new main from Knightrider Street across the junction into Mote Road. Traffic will be diverted via the one-way system. Access to Knightrider Street for residents and businesses will be via Brunswick Street and Priory Road – there will be no through route to Mill Street.

Phase Two

PHASE 2

Full road closure

Temporary/night road closure

Knightrider Street will reopen, with operations moving into Lower Stone Street, Romney Place and Hayle Road. A temporary closure of Romney Place at its junction with Lower Stone Street will be necessary to allow work in the junction – traffic will be diverted via Mote Road. Night-time closures of Lower Stone Street may be necessary. In Hayle Road and Postley Road, work will be carried out with a lane closure.

Phase Three

PHASE 3

Full road closure

Temporary/night road closure

Work in Upper Stone Street will be carried out with a lane closure – for some connections to side roads, night closures will be necessary. Side roads will also be closed at their junction with Upper Stone Street to allow connections to be made. Signs will be in place to indicate diversion routes. The one-way order in Campbell Road will be suspended to allow access.

To: Maidstone Joint Transportation Board

By: Spencer Palmer, Head of Highway Operations

Date: 24th October 2012

Subject: Highway Works Programme 2012/13

Classification: Information Only

Summary: This report updates Members on the identified schemes approved for construction in 2012/13

1**. Introduction**

This report is an update on that made to previous meetings of the board and summarises the identified schemes that have been programmed for construction by Kent County Council in 2012/13

Highway Maintenance Schemes

Carriageway Schemes – see Appendix A1

Other Works

Drainage – see Appendix B1

4. **Conclusion**

This report is for Members information.

Contact Officers:

The following contact officers can be contacted on **0845 8247 800**

Carol Valentine	Highway Manager (West)
John Farmer	Major Capital Project Manager
Richard Emmett	District Manager
Mary Gillett	Resurfacing Manager
Katie Lewis	Drainage Manager

Appendix A – Carriageway Schemes

Appendix A1

Please note that this is an estimated date that Kent County Council plan for the works to commence however if emergency situations occur then dates are likely to change.

Location	Parish	Description of Works	Current Progress	Anticipated Actions for next 3 months (Prior to next JTB)	Original Allocation 2011 - 12	Kent County Council H&T Contact 08458 247800
Marion Crescent	Maidstone	Micro Asphalt	Completed	Completed	N/A	Neil Tree
School Lane	Maidstone	Surface Dressing	Completed	Completed	N/A	Neil Tree
Lancet Lane	Maidstone	Surface Dressing	Completed	Completed	N/A	Neil Tree
Castle Hill	Thurnham	Surface Dressing	Completed	Completed	N/A	Neil Tree
Stede Hill	Harrietsham	Surface Dressing	Completed	Completed	N/A	Neil Tree
Old Mill Road	Leeds	Surface Dressing	Completed	Completed	N/A	Neil Tree
Hubbards Hill	Lenham	Surface Dressing	Completed	Completed	N/A	Neil Tree
Bottom Pond Road	Wormshill	Surface Dressing	Completed	Completed	N/A	Neil Tree

Bedmonton Lane	Wormshill	Surface Dressing	Completed	Completed	N/A	Neil Tree
Gossy Hill Road	Frinsted	Surface Dressing	Completed	Completed	N/A	Neil Tree
Sandway	Boughton Malherbe	Surface Dressing	Completed	Completed	N/A	Neil Tree
Clapper Lane	Staplehurst	Surface Dressing	Completed	Completed	N/A	Neil Tree
Battle Lane	Staplehurst	Surface Dressing	Completed	Completed	N/A	Neil Tree
Woodcock Lane	Boughton Malherbe	Surface Dressing	Completed	Completed	N/A	Neil Tree
Redwall Lane	Linton	Surface Dressing	Completed	Completed	N/A	Neil Tree
Teston Lane	West Farleigh	Surface Dressing	Completed	Completed	N/A	Neil Tree
Station Road	Staplehurst	Plane and Surface	Completed	j/w Station Approach	N/A	Russell

						Boorman
High Street	Staplehurst	Plane and Surface	Completed	Pelican crossing	N/A	Russell Boorman
Heath Road	Boughton Monchelsea	Plane and Surface	Completed	o/s Dean Orchard	N/A	Russell Boorman
Lower Street	Leeds	Plane and Surface	Completed	j/w Wykeham Grove	N/A	Russell Boorman
Penfold Hill	Leeds	Plane and Surface	Completed	Approach to Bridge over River Len	N/A	Russell Boorman
Staceys Street	Maidstone	Plane and Surface	Completed	Pedestrian crossing j/w Staceys Street	N/A	Russell Boorman
Mote Road	Maidstone	Plane and Surface	Completed	J/w Mote Road/Romney Place	N/A	Russell Boorman
Loose Road	Maidstone	Plane and Surface	Completed	J/w Lancet Lane	N/A	Russell Boorman
Hampstead Lane	Yalding	Plane and Surface	November 2012	Railway crossing East of Allington Lock	N/A	Russell Boorman
Heath Road	Linton	Plane and Surface	Completed	J/w Hubbards Lane	N/A	Russell Boorman
Smiths Hill	East Farleigh	Plane and Surface	Completed	Whole Length	N/A	Russell Boorman
Loose Road	Maidstone	Plane and Surface	March 2013	Hearther Drive to The Wheatsheaf Public House	N/A	Russell

						Boorman
Royston Road	Bearsted	Plane and Surface	March 2013	Spot Lane to Madginford Road	N/A	Russell Boorman
Heath Road	Langley	Plane and Surface	March 2013	Horseshoes to Heath Lane	N/A	Russell Boorman

Appendix B – Other Works

Appendix B - Drainage

Appendix B1

Location	Parish	Description of Works	Current Progress	Anticipated Actions for next 3 months (Prior to next JTB)	Original Allocation 2012 - 13	Forecast Out-turn 2012-13	Kent County Council H&T Contact 08458 247800
Warren Street	Lenham	Installation of new soakaway	To be programmed	To be programmed		£6036	Neil Coppin
Caring Lane	Thurnham	Install Crated Soakaway (in private land will not affect highway)	In Progress	N/A		£128583	Alastair Coleman

Appendix C – Street Lighting

Appendix C1

Structural testing has now been completed. We have now identified 316 failures, in the Maidstone area. KCC intend to replace all columns that have failed. However this is an ongoing programme, therefore a further update will be supplied to the board, on Wednesday 23rd January 2013. Please see below information outlining the columns that have failed within that ward identified.

Ward	Number of columns failed
Allington	31
Bearsted	5
Boxley	87
Bridge	17
Coxheath	7
East	19
Fant	18
Harrietsham & Lenham	1
Heath	7
High Street	63
North	11
North Downs	2
Park Wood	16
Shepway South	13
South	13
Staplehurst	6

Contact officer: Richard Emmett/Carol Valentine
Tel: 08458 247800