

EXECUTIVE SUMMARY

1. The Greater Ashford Development Framework (GADF) and Ashford Area Transport Study (AATS) both identify SMARTLINK as the 'backbone' of a comprehensive transport strategy to support and secure the growth of Ashford. SMARTLINK is therefore an essential component of the overall transport strategy for the Ashford growth area. The main aim of this report is to produce information for inclusion in a Business Case document which can be used to secure funding of the scheme.

2. This Scheme Appraisal document and the associated studies will also:
 - act as supporting information to make a case for SMARTLINK at the regional level;
 - act as a key document to obtain funding from other streams (ODPM etc);
 - refine capital costs and allow key constraints to be identified;
 - allow impacts on local bus services to be evaluated;
 - provide more detail on the scheme itself; and
 - provide a document for discussion with potential operators.

Objectives for New Public Transport

3. Existing key challenges (problems) were considered as part of the transport studies and were addressed in the development of the land use transport strategy for future Ashford and in the initial conception of the SMARTLINK public transport scheme. This identified that Ashford today is:-
 - Typical of the national picture in terms of demographics.
 - A place where a relatively small proportion of travel is focused on the town centre, reflecting the existing land-use pattern. There is also much movement into and out of the town.
 - A place where the vast majority of travel is undertaken by car and where car is dominant.
 - Constrained by barriers to travel including the railway lines, strategic roads and the floodplain. These make movement more difficult, particularly by sustainable modes, and increase overall travel distances, again which favours car use in the town.
 - Relatively congestion free, generally not resulting in any need or desire to use other modes.

4. Consideration of the above led to the development of a transport vision for Ashford which can be characterised as:

- having sustainability at its core in all respects;
 - to gain recognition of Ashford as 'the connected city' in a pivotal location at the heart of a strategic region;
 - to maximise the desirability of travel around Ashford by public transport;
 - to achieve a significant modal shift away from car use with a new high quality transit system;
 - helping integrate the existing and new parts of Ashford and maximising accessibility throughout;
 - ensuring quality in the public realm;
 - optimising connectivity and integration of live, work, leisure and learning activity;
 - to maximise walking and cycling activity;
 - being conscious of the needs of those with disabilities or lack of mobility; and
 - providing an adequate road network for all modes of transport but consistent with the above.
5. In response to this 'vision', a comprehensive transport strategy has been developed and full details are set out in the KCC report 'The Transport Strategy for Ashford'. The strategy is based around a ten point plan:-
1. Improved public transport, including a new SMARTLINK express transit system.
 2. Park and Ride services.
 3. A car parking strategy managing supply and cost to promote demand management.
 4. A car park relocation policy to areas outside of the existing Ring Road.
 5. A comprehensive quality cycling and walking network.
 6. A limited programme of highway improvements, but including motorway junction improvements, a new Victoria Way and the dualling of Chart Road.
 7. A programme of public realm improvements, including modifying the Ring Road into a series of quality two-way streets.
 8. A Public Art Strategy for the town centre integrated with public realm improvements.
 9. A step improvement in transport information and communications.
 10. An underlying strategy of personal security and mobility for all.
6. The objectives for the overall transport strategy were set at the outset of the transport studies. It was clear that a new public transport system would be needed to support the growth area and the objectives for this were also set as part of AATS. The objectives are that the new local public transport system for Ashford should:-
- i) contribute to the overall objective of creating sustainable development patterns and, in particular, to modal split targets;

- ii) create an alternative to the car, thus reducing the overall impacts of transport;
- iii) not create any overall adverse impacts, accepting that there could be localised environmental disbenefits in some areas;
- iv) be capable of being funded, taking account of public sector funding criteria, the private sector's view on risk and the potential availability of developer funding;
- v) be deliverable within a reasonable timescale and, ideally, should be available in some form as the early stages of development progress;
- vi) be capable of planned implementation and be responsive to any changes in land-use designations (as a result of planning policies or market forces);
- vii) benefit the 'old and 'new' Ashford, ideally in itself assisting with the integration of the development areas with the existing urban area; and
- viii) be of a quality worthy of the Ashford growth area, helping to bring confidence to the area.

The SMARTLINK Scheme

7. A three-leg SMARTLINK system is proposed, with all legs emanating from the town centre. The south west leg would run from the town centre towards the proposed urban village at Chilmington Green and could serve Cobbs Wood, Godinton Park, Singleton and parts of Stanhope. A park and ride site at Chart Road would be located at the end of the route. The leg to the south east would run between the town centre and the Cheeseman's Green urban village and could also serve the railway station, Designer Outlet Village, New Town Works, Orbital Park and Waterbrook. A potential park and ride site would be located close to A2070 Southern Orbital. The third leg of the SMARTLINK system runs between the development area at Eureka/Bockhanger Wood to join the south west leg of the system in the Cobbs Wood area. It has the potential to also serve the mixed use development at The Barracks and the existing leisure development close to M20J9 at Eureka. A park and ride site would be located at The Warren.

8. The SMARTLINK system will provide a 'step-change' in new public transport in Ashford which will include:
 - Faster in-vehicle times: to match or beat car journey times along key corridors.
 - Reduced walk times: by penetrating close to both origins and destinations and by designing high quality access routes.
 - Higher frequency services: to reduce wait times with services provided throughout the day, in the evenings and at weekends.
 - Competitive fares: season tickets, through ticketing, simple fare structures.
 - Quality and reliability: minimum vehicle standards, better ticketing systems, improved

- waiting environments, priority over traffic, real-time information.
 - Integration: simple service patterns, connections to railway stations and park and ride sites.
 - Information: quality timetables, information points etc.
9. Potential stops along the proposed SMARTLINK routes have been planned. The aim has been to maximise the potential demand for SMARTLINK whilst maintaining as high as possible journey times. Various assessments of potential stops have therefore been undertaken to establish the most appropriate locations, also taking account of physical constraints along the SMARTLINK route. In total, thirty stops are currently proposed.
10. Programming indicates that SMARTLINK could be delivered by c2012. Land use phasing has also been considered in detail. SMARTLINK is, at this stage, proposed to be delivered in two main phases: Phase 1 at 2012 and Phase 2 between 2014 and 2016. The second phase is related to the delivery of development identified in GADF at two large urban villages.
11. In practice, the SMARTLINK system may well see the phased operation of different bus based vehicles:-
- early 2008 : Park and Ride services using conventional buses
 - 2008-2012 : conventional (but new) buses serving BLP development sites.
 - 2012 onwards : 'Streetcar' type vehicles.

SMARTLINK Costs

12. Scheme capital costs comprise those associated with infrastructure (largely the physical works associated with the SMARTLINK alignments but also stops and shelters), technology and systems and other costs including statutory undertakers, maintenance, land and fees.
13. The total capital costs (in 2005 prices) are estimated to be as follows:-

Item	Cost
Infrastructure : Civils	£16,226,070
Depot	£3,000,000
Stops	£1,291,860
Technology & Systems	£1,966,400
Statutory Undertakers	£2,500,000
Land and Compensation	£1,000,000
Fees	£3,651,806
Total	£29,736,136

14. As noted above, ODPM have confirmed that GAF will be provided for works to the Newtown

Road railway bridge. It is likely that much of the SMARTLINK scheme will be funded by developer contributions. At this stage, it has been assumed that developers would fund the sections of SMARTLINK, and associated stops, running through major development sites not allocated in the Borough Local Plan (BLP). Thus the anticipated developer contributions are £4,738,960 towards civils works and £406,140 towards stops.

15. In total, ten SMARTLINK services are proposed and these have been adopted in demand and revenue modelling and the assessment of operating costs. The total operating costs per annum for the SMARTLINK system are estimated to be as follows:-

Item	Cost (pa)	
	2011	2021/31
Bus depreciation	£420,000	£525,000
Staff Costs	£1,137,708	£1,431,638
Mileage Related Costs	£345,491	£508,400
Depot Costs	£200,000	£200,000
Sub Total	£2,103,199	£2,665,038
Operator Profit (15%)	£315,480	£399,756
Total Operating Cost	£2,418,679	£3,064,794

Demand and Revenue Forecasts

16. The AATS Strategic Transport Model (STM) has been developed to assess travel patterns at the corridor level and has been subsequently used to forecast changes in demand as a result of both land-use and transport scenarios. It has been used to forecast demand for SMARTLINK. In summary, observed AM and inter-peak models were developed using RSI data. A distribution mode split (DMS) model was calibrated to a 12 hour day covering three market segments: car available work (CAW), car available other (CAO) and non-car available (NCA). These were then used to forecast car and public transport demand in the study area. This demand was assigned using assignment models that covered car and goods vehicles in the AM and inter peak time periods and public transport for 12 hour passenger trips. Transport forecasts are synthesised using a distribution mode split (DMS) model.
17. The model outputs demand and revenue forecasts for a 12 hour weekday. Revenues have been annualised and the effects of fare dodgers have been taken into account. Additional revenues resulting from parking restraint have been calculated. The resulting annual revenues are as follows:-

Forecast Year	Revenue
2011	£2,455,580
2021	£5,235,750
2031	£9,227,780

18. The STM has also been used to extract boardings and alightings at each stop. The results are set out in the table below and exclude the effects of both parking restraint and park and ride. Flows are two-way (boarders and alighters) 12 hour weekday. Various stops have been grouped together.

SMARTLINK Stop(s)	Total Passengers		
	2011	2021	2031
Cheeseman's Green	0	1970	4090
Waterbrook	170	890	1360
Orbital Park & S Willesboro'	690	1030	1380
Newtown Works & Aylesford Green	500	830	1080
DOV	1620	2060	2950
Station Area	550	1620	7330
Town Centre	6430	9960	13970
Cobbs Wood	490	930	1560
Godinton Park & Arlington	800	970	1190
Singleton & Stanhope	2170	2740	3250
Discovery Park	100	340	410
Chilmington Green	0	1980	4150
Barracks	630	840	1030
The Warren	240	300	400
Bockhanger	310	390	520
Eureka	210	860	1930
Total	14910	27710	46600

Alternatives to SMARTLINK

19. The evolution and development of the SMARTLINK public transport scheme for the Ashford growth area has taken place over a considerable period of time and has involved the assessment of a range of options. SMARTLINK is a vital part in the overall transport strategy for the Ashford growth area and helps to deliver large scale development, particularly in the town centre. It is considered inconceivable that the levels of growth envisaged could be achieved without a step-change in the quality of public transport provision in Ashford. This step-change is SMARTLINK.
20. It is considered that a lesser quality scheme would not deliver the objectives of SMARTLINK and would result in problems delivering town centre growth. Market advice on parking supports this view. Notwithstanding this, a do-minimum scenario has been adopted which assumes normal bus operations and which also assumes poorer quality public transport leads to difficulty in delivering parking restraint in the town centre, which in turn leads to less viable public transport. As a result, fewer jobs are created in the town because of access difficulties, resulting in greater levels of out-commuting. This scenario has also been adopted as the low cost alternative. Given that the do-minimum/low cost alternative has a capital cost not too far below SMARTLINK then it is difficult to envisage a lower cost (than SMARTLINK) next best alternative. The next best alternative has therefore been taken as a higher cost higher quality

scheme, such as an LRT. This allows a range of appraisal results to be presented.

21. The capital costs of the schemes are as follows:-

Scheme	Scheme Cost
SMARTLINK	£29,736,000
Low Cost Alternative	£15,867,000
Next Best Alternative	£146,000,000

Thus the capital cost of SMARTLINK is c£14 million greater than the low cost alternative but c£116 million lower than an LRT alternative.

22. The operating costs of the schemes, at 2012 and 2021, are as follows:-

Scheme	Operating Cost	
	2012	2021
SMARTLINK	£2,418,680	£3,064,790
Low Cost Alternative	£2,973,830	£3,407,400
Next Best Alternative	£3,702,860	£4,730,000

The SMARTLINK operating costs are lower than the low cost alternative because fewer vehicles are used.

23. The daily (12 hour weekday) patronage forecasts for each of the schemes are as follows:-

Scheme	Daily Demand (12 hour)		
	2011	2021	2031
SMARTLINK	7516	13911	23281
Low Cost Alternative	2689	5319	9794
Next Best Alternative	11410	20355	33825

SMARTLINK demand is more than double that of the low cost alternative but is c.two-thirds that of the next best alternative.

24. The annual revenues for the schemes, which also take account of parking restraint, are as follows:-

Scheme	Annual Revenue		
	2011	2021	2031
SMARTLINK	£2,455,580	£5,235,750	£9,227,780
Low Cost Alternative	£719,280	£1,685,290	£3,117,450
Next Best Alternative	£3,394,880	£6,795,390	£12,088,230

SMARTLINK revenues are significantly greater (3 times) than the low cost alternative and are c75% of those of the next best alternative.

Economic Appraisal

25. The economic assessment of the scheme considers SMARTLINK in comparison with the do-minimum/low cost alternative (LCA) normal bus option. Separate economic assessments of the next best alternative (NBA) have also been considered, again in comparison with the do-minimum.
26. The table below shows that the SMARTLINK scheme results in a high NPV and very healthy BCR. Whilst the NBA also performs well, SMARTLINK performs significantly better with a BCR over double that of the NBA.

Indicator	SMARTLINK	NBA
Net Present Value (NPV)	£418,296,000	£352,939,000
Benefit to Cost Ratio	7.95	3.12
Net Present Value : Cost to Public Accounts Ratio	6.95	2.12
Forecast Year Benefit : Cost Ratio	0.10	0.03

27. The effects of optimism bias on scheme capital costs has been considered (table below). This again shows that SMARTLINK performs very well with a high NPV and BCR. The SMARTLINK preferred scheme performs significantly better than the NBA with the BCR being almost three times greater than that of the NBA.

Indicator	SMARTLINK	NBA
Net Present Value (NPV)	£413,227,000	£307,185,000
Benefit to Cost Ratio	7.33	2.45
Net Present Value : Cost to Public Accounts Ratio	6.33	1.45
Forecast Year Benefit : Cost Ratio	0.08	0.03

28. The evaluation of reliability is based on a generalised comparison of the operation of the transport network in the low cost alternative (do-minimum) case and with SMARTLINK. The key factors that have been considered are reliability benefits for users of the SMARTLINK and alternative service, the impact of the proposals on reliability for routes used by other road users and the impact of the proposals on the number of transport users affected. Over the transport network as a whole it is anticipated that the introduction of SMARTLINK will result in a slight benefit to reliability
29. The Ashford growth area will see significant development over the next 30 years: an additional 31000 dwellings and 28000 jobs are envisaged in the period 2001-2031. All of the growth studies have confirmed that a high quality public transport system – SMARTLINK – is needed to support and secure economic growth. Without a high quality public transport system then it is considered the levels of development envisaged in Ashford town centre may not be achieved. The effects of this have been estimated and this identifies that, at 2011, the total increased tax receipts could range between £4.3 million - £8.6 million per annum. These

would increase over time to between £14.6 million - £29.2 million per annum in 2031. These would result in significant additional benefits if considered over the 60 year evaluation period. At this stage they have been excluded from the economic analysis.

Environment

30. It will be important to resolve the transport challenges facing Ashford in a way which allows for predicted growth and which facilitates new development but has the least impact upon the environment. SMARTLINK will meet transport objectives and the aim will be to minimise any impacts of the scheme on the environment. Environmental issues were at the core of the development of the GADF Masterplan.
31. As far as archaeology is concerned, the proposed SMARTLINK may have the potential to cause both direct and indirect effects upon cultural heritage features, including known and unknown buried archaeological remains of all periods. In addition, indirect effects upon the settings of both designated and non-designated cultural heritage features may be caused, through increases in visual intrusion.
32. There are two major watercourses, associated with areas of floodplain, which run close to the proposed SMARTLINK route. SMARTLINK may lead to an increase in surface water run-off associated with new roads and widening of existing roads, however this is not likely to lead to a significant risk of flooding. Mitigation in the form of balancing ponds, draining channels and road design should provide adequate mitigation.
33. SMARTLINK will pass through or close to a number of Conservation Areas, mostly in the town centre. The proposed route in these locations is along existing roads and the bus routes will have no significant additional impact. Where SMARTLINK is proposed to run along new, segregated routes, there will be a degree of visual impact associated with new bus routes, and also with the associated Park and Ride facilities and other infrastructure. The generally open aspect of Ashford will result in a visual impact. This is not considered to be significant when taken in context with the growth of and development of Ashford as a whole. Landscape impact is also likely to be of a minor nature; there will be some land take as part of the proposals and potentially loss of woodland. The potential loss of part of Captain's Wood would cause an impact although the SMARTLINK route could be modified to avoid this. Most of the visual and landscape impacts could be mitigated for by new planning and/or other appropriate screening.
34. There are no statutory sites directly affected by the proposed route which will utilise a mixture of established, modified and newly created roads, and pass through a mixture of urban and rural habitats, including several major watercourses and areas of woodland. The potential

ecological habitat constraints identified were Captain's Wood (ancient woodland and part of a Site of Nature Conservation Interest), hedgerows; and ponds and running water. There were also a number of protected species identified that could be affected by the route, including bats, water voles, great crested newts, badgers and breeding birds.

35. There will be a need for further more detailed work as the scheme progresses but at this stage, based on the desk top review undertaken, there are unlikely to be any significant constraints which would prejudice the development of the SMARTLINK scheme.

Safety and Security

36. An assessment has been undertaken of the safety of the highway network in relation to road accidents based on the overall volume of travel associated with the SMARTLINK and next best alternative scenarios, relative to the low cost alternative/do-minimum scenario. Both SMARTLINK and the NBA are anticipated to deliver a substantial benefit in terms of highway safety in relation to the low cost alternative (do-minimum) case. The NBA delivers a slightly greater benefit than SMARTLINK, which is to be expected as a result of the increased attractiveness assumption for the NBA and consequent increase in mode shift from car use. This has the effect of reducing the overall vehicle mileage within the network and hence results in a lower accident prediction.
37. A review of the key security indicators for public transport passengers has been completed for the SMARTLINK proposal in relation to the do-minimum case. The overall assessment of impact on the Security sub-objective is a large positive by virtue of the high number of users affected by the improved security provision anticipated as part of the SMARTLINK scheme.

Accessibility and Integration

38. SMARTLINK has been designed to be fully accessible and to promote accessibility throughout Ashford – within existing areas and through new development areas. The planning of transport and land use has been integrated during the process of developing the GADF Masterplan. SMARTLINK is an integral and essential component of the strategy for the growth area.
39. Given the substantial difference in the attractiveness of the SMARTLINK proposal when compared with a low cost bus alternative it is anticipated that the increase in the number of people benefiting from an additional travel option will be significant and will result in a strong beneficial score in terms of the option values sub-objective.
40. SMARTLINK has been designed to be integrated with surrounding land uses. Within new

development areas it will be designed in detail to operate alongside complementary uses. Within the existing urban area it will largely operate on-street. The overall effect of the SMARTLINK proposal on severance is expected to be neutral.

41. Interchange between transport modes is a key factor in delivering integrated transport. The SMARTLINK scheme and do-minimum normal bus are assumed to provide the same pattern of services and therefore the overall effects on interchange, compared to the do-minimum, will be slight. The overall assessment of interchange standard, for SMARTLINK or the do-minimum normal bus, is high. The overall assessment of the differences between SMARTLINK and the do-minimum is neutral.

Sensitivity Analysis

42. The development of the SMARTLINK system has been subject to extensive testing and the assessment of various scenarios comprising different land use options, alternative public transport systems and variations in the scheme alignment. This has resulted in the preferred scheme. The demand for SMARTLINK services will vary if the attributes of the services are varied. A range of scenarios have been tested with the AATS STM and this identifies that variations in the parameters in the demand model (ie the attributes of SMARTLINK or parking charges) are unlikely to significantly affect the economics of the scheme.
43. Future land use development and associated transport provision has been planned comprehensively and concomitantly in the Ashford growth area. There is, however, inevitably some uncertainty when land uses are planned over a 30 year period. Land uses may evolve over the forecast period and change in response to external factors (eg demographics, market conditions, planning policy) and transport policies (eg related to parking or charging) may also change. These uncertainties have been considered in the evolution of, initially, the SMARTLINK concept and, latterly, the development of the SMARTLINK scheme. Indeed, one of the objectives of SMARTLINK is that it should be capable of planned implementation and be responsive to changes in land use designations.
44. As the SMARTLINK project progresses, a 'Risk Register' will need to be established. Project management will need to be introduced to maintain the register and develop a Full Project Plan. At this stage, various uncertainties and how they might affect the scheme have been considered. Overall, it is considered that the planning, design and implementation of the SMARTLINK scheme would be able to respond to uncertain outcomes. This has been one of the key objectives of the scheme and has been taken into account in the development of the SMARTLINK concept.

Affordability and Financial Sustainability

45. Operating ratios (annual revenues/annual operating costs) have been calculated to assess whether revenues will cover costs on an on-going basis. The results for SMARTLINK, the low cost conventional bus alternative and next best alternative are set out below.

Scheme	2011	2021	2031
SMARTLINK	1.02	1.71	3.01
Low Cost Alternative	0.24	0.46	0.84
Next Best Alternative	1.00	1.44	2.56

46. Thus SMARTLINK revenues would cover scheme operating costs throughout the life of the scheme. The surplus of revenues above costs (ie where there is an operating ratio greater than 1.00) would generate a concession value over the operating concession period. The economic analysis identifies that the value of revenues less annual costs (maintenance and operating) is c£80 million over the 60 year evaluation period discounted to 2002. Thus the proposals will generate a concession value, with the amount depending upon the private sector's view of risk.
47. The scheme capital costs are estimated to be £29.74 million with an identified GAF grant of £2.97 million and developer contributions of £5.15 million, giving a net cost of £21.62 million. At this stage, the developer contribution consists only of the cost of building the SMARTLINK scheme through GADF sites. It is considered that there would be opportunities to increase the level of developer contribution to include both contributions from other sites and contributions from the GADF sites for works outside their site boundaries. Given the modest net capital cost, the potential operating concession value, the potential for increased developer contributions and the prospect of further grant, it is considered the SMARTLINK scheme is affordable and deliverable and its operation would be financially sustainable, given the healthy operating ratios.

Conclusions

48. Overall, the appraisal demonstrates that SMARTLINK has many benefits and represents good value for money. It is considered to be feasible to deliver and has every prospect of being funded. SMARTLINK will represent a step-change in public transport provision in Ashford, the step-change needed to deliver the growth set out in the Sustainable Communities Plan.

1.0 Introduction

Background

- 1.1 The Greater Ashford Development Framework (GADF) and Ashford Area Transport Study (AATS) both identify SMARTLINK as the 'backbone' of a comprehensive transport strategy to support and secure the growth of Ashford.
- 1.2 The GADF Masterplan for the town envisages significant levels of future development phased over a 30 year period:-

Table 1.1 : GADF Masterplan

Land Use	2011	2021	2031
Residential Units (No.)	9,070	20,330	31,000
Jobs (No.)	7,000	17,500	28,000
Retail/Leisure (GFA sqm)	60,600	89,700	153,400

The development proposals will effectively double the size of the town and create significant demands for transport. All the studies into the growth proposals recognise that high quality public transport services will be needed to serve the development in a sustainable way.

- 1.3 The GADF masterplan therefore sets out a comprehensive transport strategy to support development in the Ashford growth area, based upon work conducted for AATS. This includes:-
- new and improved local public transport, based around a new SMARTLINK public transport system for the town;
 - a parking strategy, including parking restraint, supported by park and ride; and
 - a roads strategy, with new and improved links and junctions;
- 1.4 SMARTLINK will therefore be the proposed new bus based public transport system for the expanded Ashford community. The technology that best meets the specification derived for the system is a low or zero emissions vehicle with the ability to operate in a 'guided' mode. SMARTLINK is 'smart' in appearance, 'smart' in technology and 'smart' for the environment. SMARTLINK will be designed into the sustainable community of Ashford from the beginning and strategies supporting the new system will be put in place. Operation is at present planned from 2012, subject to the new housing and jobs delivery strategy. SMARTLINK is a fundamental part of the strategy to deliver sustainability in all areas of the development and

growth programme.

The Smartlink System

- 1.5 The SMARTLINK system shown in the GADF masterplan includes two legs from the town centre, to the south east and south west. Subsequent to GADF, a third leg of the system is planned to serve Eureka and The Warren park and ride site.
- 1.6 The south west leg of SMARTLINK would run from the town centre towards the proposed urban village at Chilmington Green and could serve Cobbs Wood, Godinton Park, Singleton and parts of Stanhope. A park and ride site at Chart Road would be located at the end of the SMARTLINK route, designed to capture traffic travelling along the A28 corridor.
- 1.7 The leg to the south east would run between the town centre and the Cheeseman's Green urban village and could also serve the railway station, Designer Outlet Village, New Town Works, Orbital Park and Waterbrook. A potential park and ride site close to A2070 Southern Orbital would capture traffic travelling towards the town centre west bound along M20 and north bound along A2070.
- 1.8 The potential third leg of the SMARTLINK system runs between the development area at Eureka/Bockhanger Wood to join the south west leg of the system in the Cobbs Wood area. It has the potential to also serve the mixed use development at The Barracks and the existing leisure development close to M20J9 at Eureka. A park and ride site at The Warren would capture traffic from M20, A20 west, A251 and A28.
- 1.9 AATS set out a specification for the SMARTLINK system, providing a 'vision' of new public transport in Ashford which would include:
- Faster in-vehicle times: to match or beat car journey times along key corridors.
 - Reduced walk times: by penetrating close to both origins and destinations and by designing high quality access routes.
 - Higher frequency services: to reduce wait times with services provided throughout the day, in the evenings and at weekends.
 - Competitive fares: season tickets, through ticketing, simple fare structures.

- Quality and reliability: minimum vehicle standards, better ticketing systems, improved waiting environments, priority over traffic, real-time information.
 - Integration: simple service patterns, connections to railway stations and park and ride sites.
 - Information: quality timetables, information points etc.
- 1.10 The specification laid down for SMARTLINK (set out in 'Towards A Transport Strategy') covers the areas of infrastructure, passenger interface, vehicles and service standards. Infrastructure will need to be fully in line with any appropriate standards and requirements including the DDA, to be fully compliant with the provisions of the Transport and Works Act and to meet requirements for sustainability appraisal. The passenger interface will need to cover the issues of level boarding, weather protection, high information standards and through/'smart' ticketing. Vehicles should meet high standards of emissions, access, ride quality and heating/ventilation whilst service standards should meet high frequency requirements, low journey times, reliability and driver training. Routeing will be along the most densely developed corridors where a high frequency and high patronage are a feature.
- 1.11 With all the difficulties of looking 30 years ahead, there is a need to build flexibility into the system. For this reason, and to contain costs, a bus based system has been chosen that is able to use guidance where necessary. The last few years have seen significant improvements to the passenger environment of modern buses with improved seating, ride quality, climate control and low floors. Further developments are anticipated including the use of hydrogen or other zero emission fuels. Payment systems, such as 'smart cards', direct debiting and off vehicle payment would mean that the driver would no longer need to be involved in fare collection, thus speeding up journeys. Traffic control technology for bus priority and 'automatic vehicle location' would be a pre-requisite for journey time keeping and reliability.
- 1.12 It is anticipated that with the use of high profile, high quality, reliable and easy-to-use services then significantly increased modal splits in favour of public transport can be achieved. This is evidenced by the predicted growth in public transport modal share.

Appraisal of SMARTLINK

- 1.13 SMARTLINK is therefore an essential component of the overall transport strategy for the Ashford growth area and further work is needed to develop the scheme. The main aim of this report is to produce information for inclusion in a Business Case document which can be used

to secure funding of the scheme. This includes a NATA appraisal, including economic assessments, to meet DfT funding requirements.

1.14 The Business Case/Appraisal document and the associated studies will also:

- act as supporting information to make a case for SMARTLINK at the regional level;
- act as a key document to obtain funding from other streams (ODPM etc);
- refine capital costs and allow key constraints to be identified;
- allow impacts on local bus services to be evaluated;
- provide more detail on the scheme itself; and
- provide a document for discussion with potential operators.

1.15 The appraisal work follows on from the scheme development stage which defined the scheme to be appraised. It considered the alignment of SMARTLINK and key constraints, the need for supporting infrastructure, detailed stop/station planning and catchments, phasing of SMARTLINK, particularly in relation to development, the likely technology and the capital and operating costs of SMARTLINK.

1.16 A separate technical note (ref Scheme Development Technical Note DMY5718-02) provides a summary of the above.

1.17 This appraisal document sets out:-

- in Section 2.0, existing conditions, the problems and objectives identified and the broad assessment of alternative options;
- in Section 3.0, a comprehensive description of the SMARTLINK scheme;
- in Section 4.0, the capital and operating costs of the SMARTLINK preferred scheme as well as consideration of optimism bias;
- in Section 5.0, details of the demand and revenue modelling assumptions and the resultant scheme demand and revenue forecasts;
- in Section 6.0, details of the low cost and next best alternatives;
- in Section 7.0, the scheme economics and TEE tables;

- in Section 8.0, an outline of the key environmental issues relevant to the scheme;
- in Section 9.0, the consideration of safety and security;
- in Section 10.0, issues related to accessibility and integration;
- in Section 11.0, sensitivity and scenario analysis; and
- in Section 12.0, supporting analysis and the distribution of impacts.

1.18 The report ends with overall conclusions relating to the value for money of the scheme.

1.0 Introduction

Background

- 1.1 The Greater Ashford Development Framework (GADF) and Ashford Area Transport Study (AATS) both identify SMARTLINK as the 'backbone' of a comprehensive transport strategy to support and secure the growth of Ashford.
- 1.2 The GADF Masterplan for the town envisages significant levels of future development phased over a 30 year period:-

Table 1.1 : GADF Masterplan

Land Use	2011	2021	2031
Residential Units (No.)	9,070	20,330	31,000
Jobs (No.)	7,000	17,500	28,000
Retail/Leisure (GFA sqm)	60,600	89,700	153,400

The development proposals will effectively double the size of the town and create significant demands for transport. All the studies into the growth proposals recognise that high quality public transport services will be needed to serve the development in a sustainable way.

- 1.3 The GADF masterplan therefore sets out a comprehensive transport strategy to support development in the Ashford growth area, based upon work conducted for AATS. This includes:-
- new and improved local public transport, based around a new SMARTLINK public transport system for the town;
 - a parking strategy, including parking restraint, supported by park and ride; and
 - a roads strategy, with new and improved links and junctions;
- 1.4 SMARTLINK will therefore be the proposed new bus based public transport system for the expanded Ashford community. The technology that best meets the specification derived for the system is a low or zero emissions vehicle with the ability to operate in a 'guided' mode. SMARTLINK is 'smart' in appearance, 'smart' in technology and 'smart' for the environment. SMARTLINK will be designed into the sustainable community of Ashford from the beginning and strategies supporting the new system will be put in place. Operation is at present planned from 2012, subject to the new housing and jobs delivery strategy. SMARTLINK is a fundamental part of the strategy to deliver sustainability in all areas of the development and

growth programme.

The Smartlink System

- 1.5 The SMARTLINK system shown in the GADF masterplan includes two legs from the town centre, to the south east and south west. Subsequent to GADF, a third leg of the system is planned to serve Eureka and The Warren park and ride site.
- 1.6 The south west leg of SMARTLINK would run from the town centre towards the proposed urban village at Chilmington Green and could serve Cobbs Wood, Godinton Park, Singleton and parts of Stanhope. A park and ride site at Chart Road would be located at the end of the SMARTLINK route, designed to capture traffic travelling along the A28 corridor.
- 1.7 The leg to the south east would run between the town centre and the Cheeseman's Green urban village and could also serve the railway station, Designer Outlet Village, New Town Works, Orbital Park and Waterbrook. A potential park and ride site close to A2070 Southern Orbital would capture traffic travelling towards the town centre west bound along M20 and north bound along A2070.
- 1.8 The potential third leg of the SMARTLINK system runs between the development area at Eureka/Bockhanger Wood to join the south west leg of the system in the Cobbs Wood area. It has the potential to also serve the mixed use development at The Barracks and the existing leisure development close to M20J9 at Eureka. A park and ride site at The Warren would capture traffic from M20, A20 west, A251 and A28.
- 1.9 AATS set out a specification for the SMARTLINK system, providing a 'vision' of new public transport in Ashford which would include:
 - Faster in-vehicle times: to match or beat car journey times along key corridors.
 - Reduced walk times: by penetrating close to both origins and destinations and by designing high quality access routes.
 - Higher frequency services: to reduce wait times with services provided throughout the day, in the evenings and at weekends.
 - Competitive fares: season tickets, through ticketing, simple fare structures.

- Quality and reliability: minimum vehicle standards, better ticketing systems, improved waiting environments, priority over traffic, real-time information.
 - Integration: simple service patterns, connections to railway stations and park and ride sites.
 - Information: quality timetables, information points etc.
- 1.10 The specification laid down for SMARTLINK (set out in 'Towards A Transport Strategy') covers the areas of infrastructure, passenger interface, vehicles and service standards. Infrastructure will need to be fully in line with any appropriate standards and requirements including the DDA, to be fully compliant with the provisions of the Transport and Works Act and to meet requirements for sustainability appraisal. The passenger interface will need to cover the issues of level boarding, weather protection, high information standards and through/'smart' ticketing. Vehicles should meet high standards of emissions, access, ride quality and heating/ventilation whilst service standards should meet high frequency requirements, low journey times, reliability and driver training. Routing will be along the most densely developed corridors where a high frequency and high patronage are a feature.
- 1.11 With all the difficulties of looking 30 years ahead, there is a need to build flexibility into the system. For this reason, and to contain costs, a bus based system has been chosen that is able to use guidance where necessary. The last few years have seen significant improvements to the passenger environment of modern buses with improved seating, ride quality, climate control and low floors. Further developments are anticipated including the use of hydrogen or other zero emission fuels. Payment systems, such as 'smart cards', direct debiting and off vehicle payment would mean that the driver would no longer need to be involved in fare collection, thus speeding up journeys. Traffic control technology for bus priority and 'automatic vehicle location' would be a pre-requisite for journey time keeping and reliability.
- 1.12 It is anticipated that with the use of high profile, high quality, reliable and easy-to-use services then significantly increased modal splits in favour of public transport can be achieved. This is evidenced by the predicted growth in public transport modal share.

Appraisal of SMARTLINK

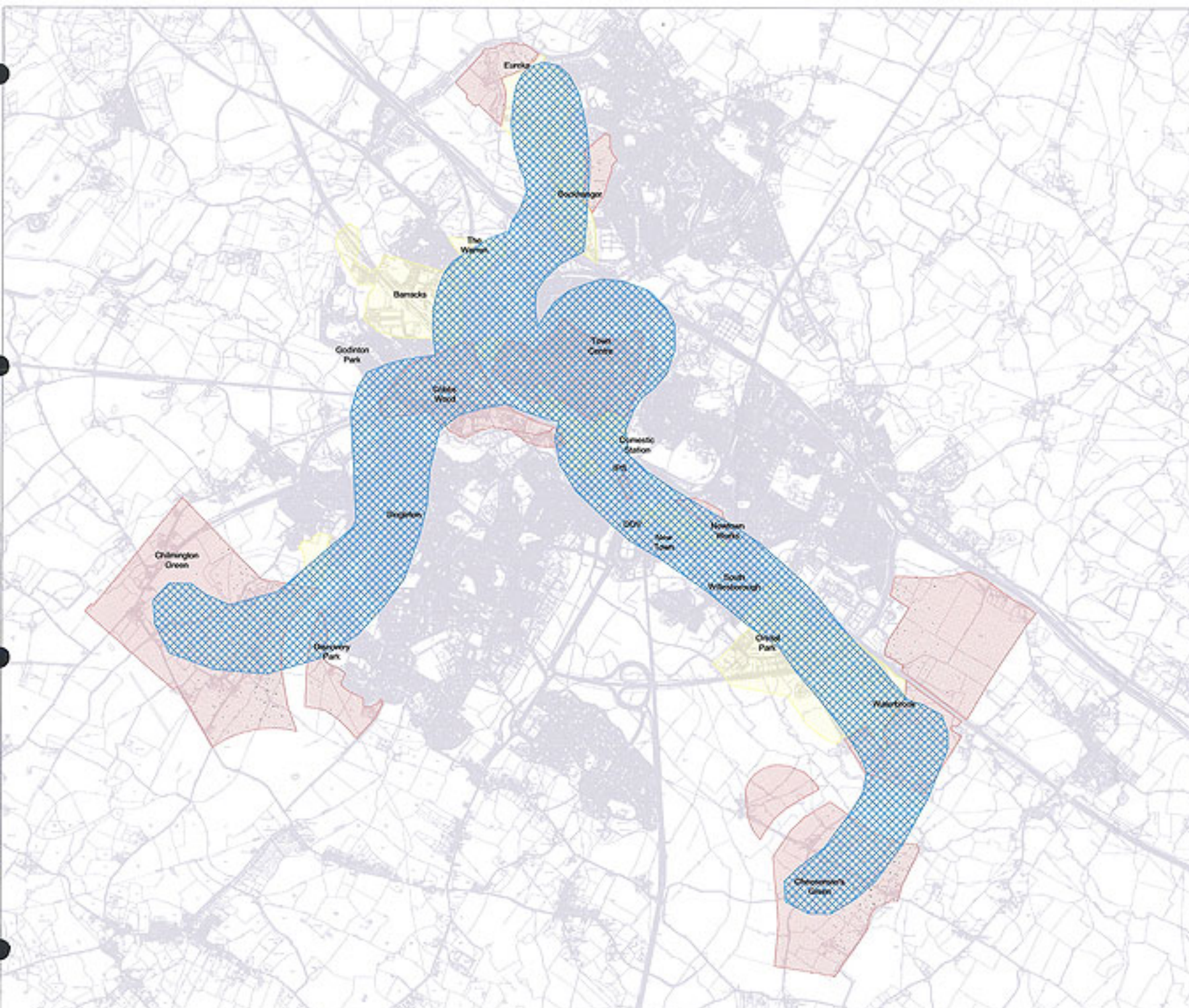
- 1.13 SMARTLINK is therefore an essential component of the overall transport strategy for the Ashford growth area and further work is needed to develop the scheme. The main aim of this report is to produce information for inclusion in a Business Case document which can be used

to secure funding of the scheme. This includes a NATA appraisal, including economic assessments, to meet DfT funding requirements.



1.14 The Business Case/Appraisal document and the associated studies will also:

- act as supporting information to make a case for SMARTLINK at the regional level;
- act as a key document to obtain funding from other streams (ODPM etc);
- refine capital costs and allow key constraints to be identified;
- allow impacts on local bus services to be evaluated;
- provide more detail on the scheme itself; and
- provide a document for discussion with potential operators.

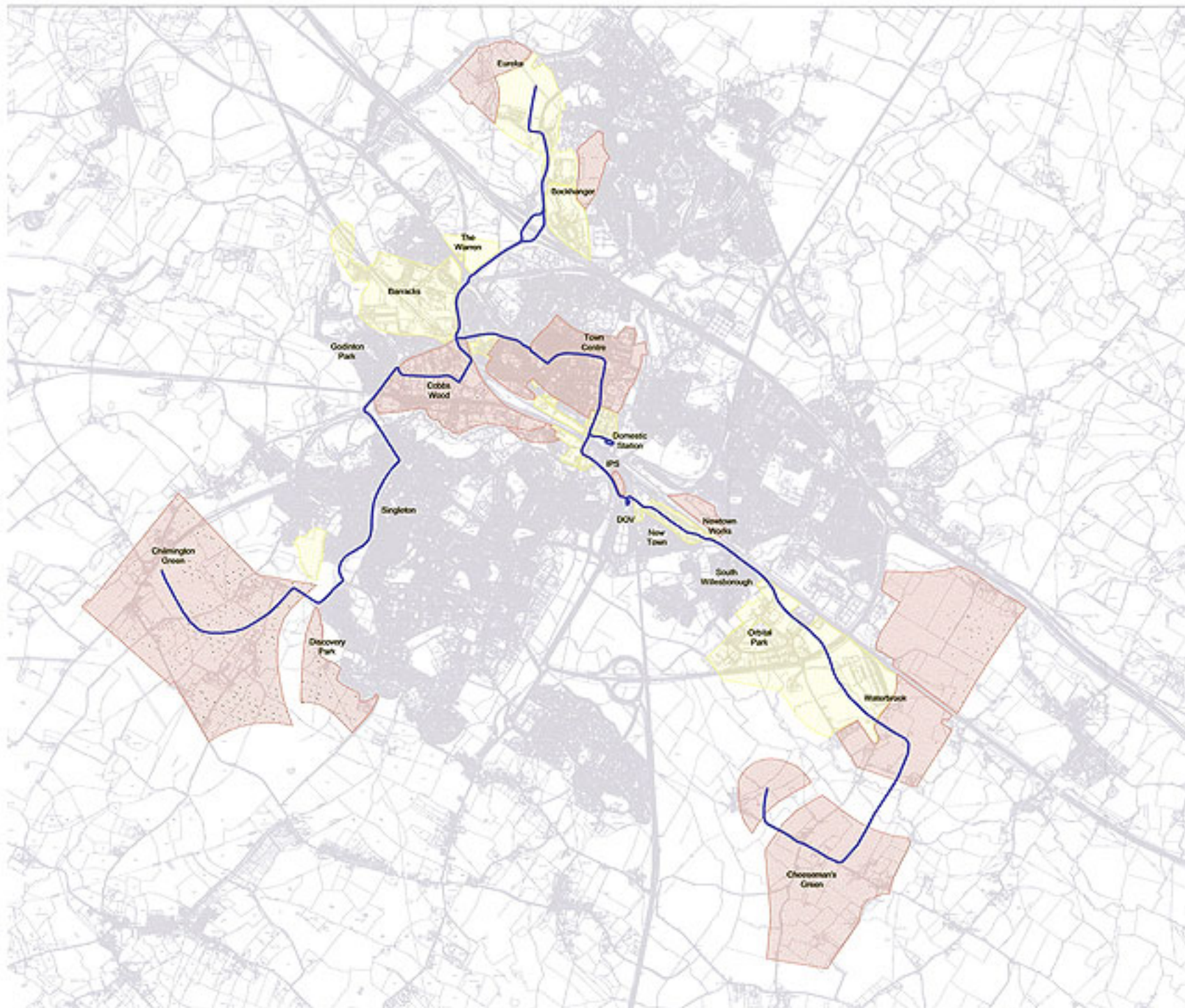
1.15 The appraisal work follows on from the scheme development stage which defined the scheme to be appraised. It considered the alignment of SMARTLINK and key constraints, the need for supporting infrastructure, detailed stop/station planning and catchments, phasing of SMARTLINK, particularly in relation to development, the likely technology and the capital and operating costs of SMARTLINK.



KEY

	BLP Development Area
	GADF Development Area
	SMARTLINK Corridor

REV	DESCRIPTION	DRAWN
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AMENDMENTS		
ISSUE PURPOSE		
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PROJECT		
ASHFORD SMARTLINK		
DRAWING TITLE		
PROPOSED SMARTLINK CORRIDORS		
CLIENT		
KENT COUNTY COUNCIL		
SCALE	ORIGINAL PAPER SIZE	DATE
N.T.S.	A3	09/01/08
DRAWN BY	AUTHORISED BY	FILE REF
MB	SE	DHL2027 - 011
DRAWING NUMBER		REVISION
Figure 2.1		


KEY


ILP Development Areas



GADF Development Areas



SMARTLINK Route

REV	DESCRIPTION	DRAWN
DATE		AUTHORISED

AMENDMENTS

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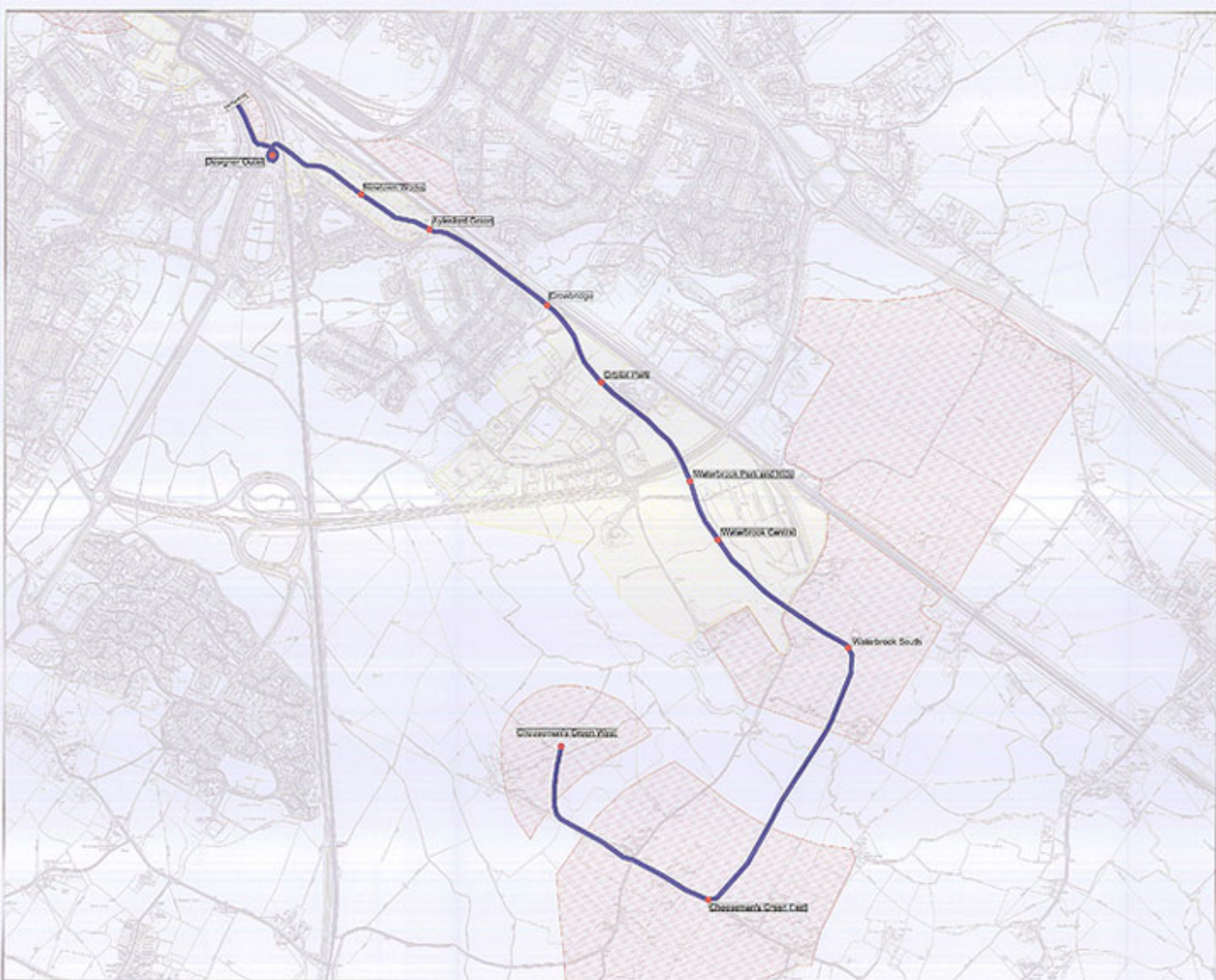
PROJECT
ASHFORD SMARTLINK

DRAWING TITLE
PROPOSED SMARTLINK ROUTES

CLIENT
KENT COUNTY COUNCIL

SCALE	ORIGIN. PAPER SIZE	DATE
N.T.S.	A3	03/11/05
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AJ	SE	DHL2627 - 001
DRAWING NUMBER	REVISION	

Figure 2.2



- KEY**
- BLP Development Areas
 - GADP Development Areas
 - SMARTLINK Route
 - Bus Stops

REV	DESCRIPTION	DATE
001	ISSUED	05/01/08

SCALE: 1:10,000



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SCALE: 1:10,000

**PROPOSED SMARTLINK ROUTES:
CHEESEMAN'S GREEN LINE**

CLIENT: **KENT COUNTY COUNCIL**

SCALE: 1:7,500	DESIGN CODE: A1	DATE: 05/01/08
SCALE BY: MB	APPROVED BY: SE	DATE OF: DfL2027-003b

Figure 2.3

KEY

-  BLP Development Areas
-  QADP Development Areas
-  SMARTLINK Route
-  Bus Stops



REF	DESCRIPTION	DATE
001		12/04/2018

DATE	AUTHOR
12/04/2018	

DATE	AUTHOR
12/04/2018	

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ASHFORD SMARTLINK

**PROPOSED SMARTLINK ROUTES:
CHILINGTON GREEN LINE**

KENT COUNTY COUNCIL

SCALE	1:7,500	DATE	08/01/08
PROJECT	M3	SECTION	SE
PROJECT CODE	DHL2007 - 001b		

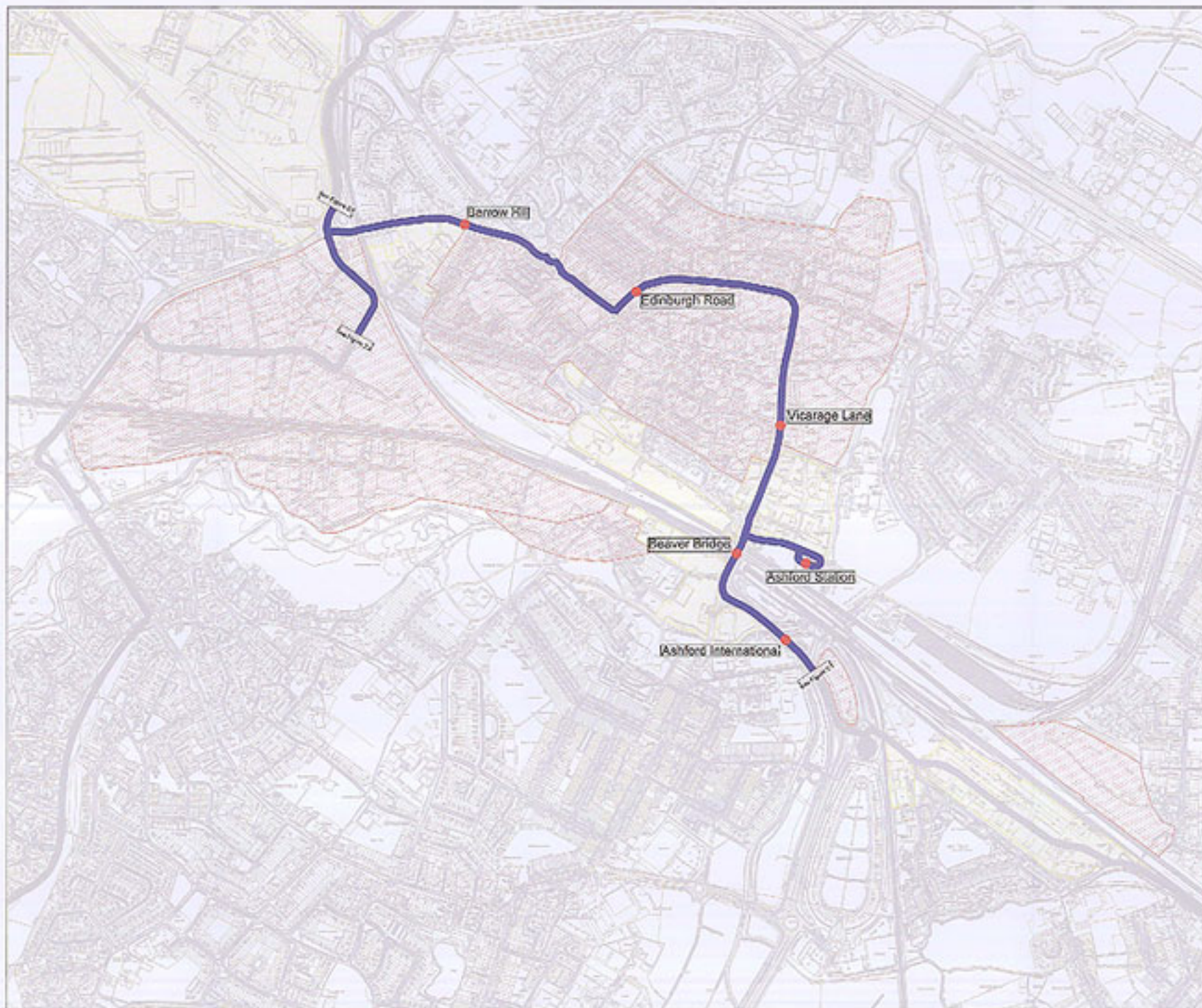
Figure 24



- KEY**
- BLP Development Areas
 - GADP Development Areas
 - SMARTLINK Route
 - Bus Stops

REF	DESCRIPTION	STATUS
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PROPOSED SMARTLINK ROUTES: EUREKA / BOCKHANGER LINE		
CLIENT		
KENT COUNTY COUNCIL		
SCALE	DRAWING CODE NO.	DATE
1/7,500	A1	06/01/06
REVISED BY	APPROVED BY	PROJECT NO.
MB	SE	DHL2627 - 003b

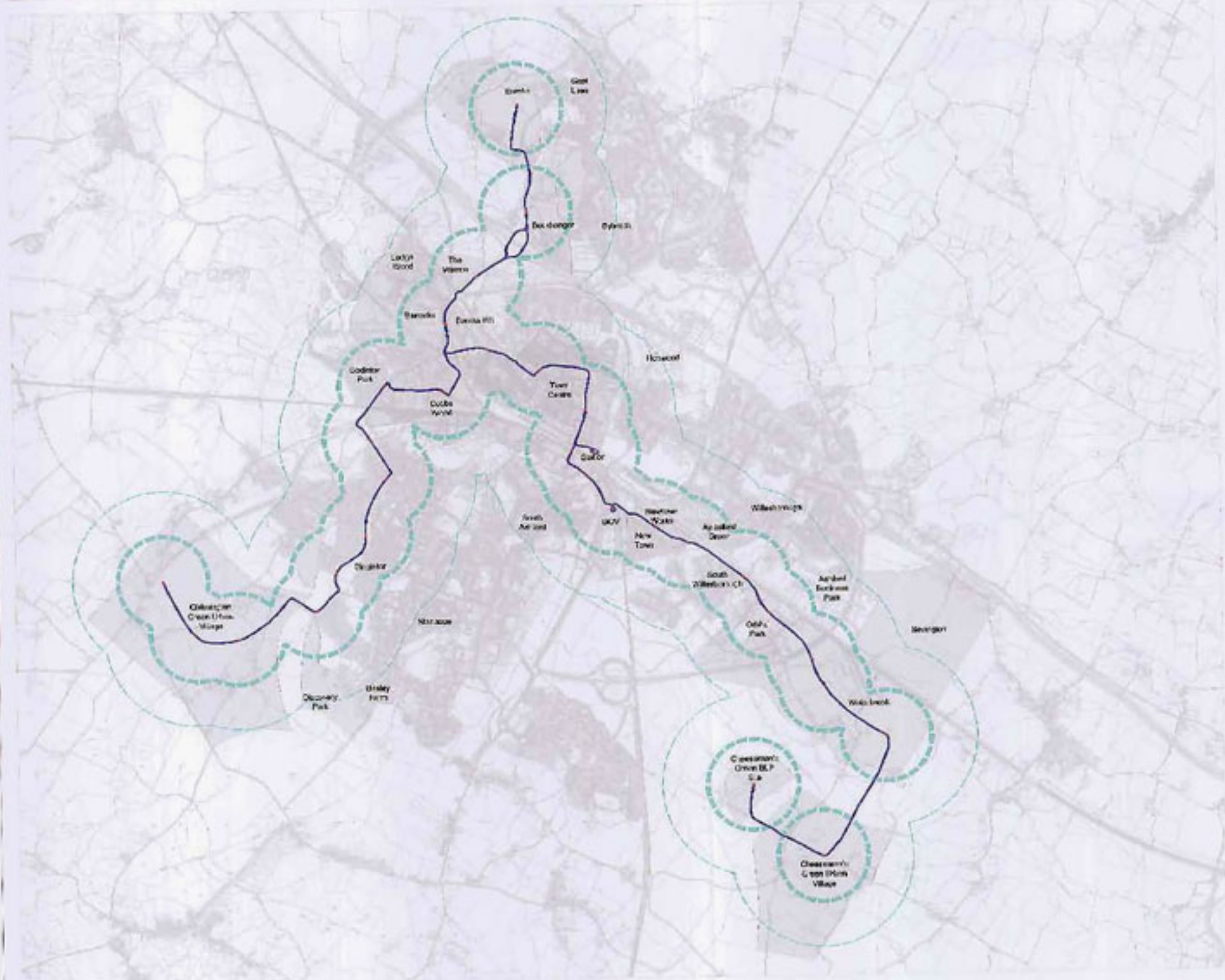
Figure 2.5



KEY

	BLP Development Areas
	GADP Development Areas
	SMARTLINK Route
	Bus Stops

REV	DESCRIPTION	DATE
001		01/03/2016
ISSUE PURPOSE		
		
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ASHFORD SMARTLINK		
Drawing TITLE		
PROPOSED SMARTLINK ROUTES: ASHFORD TOWN CENTRE		
ISSUED BY		
KENT COUNTY COUNCIL		
SCALE	Drawing Title	DATE
1/7,500	A2	06/01/06
Drawn by	Checked by	File No.
MB	SE	DHL2627-0006
Drawing number		
Figure 2.6		



KEY

-  BLP and GADP Development Areas
-  SMARTLINK Route
-  Bus Stop
-  400m Isochrone
-  400m Isochrone

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DATE: 01/08/2006		
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ASHFORD SMARTLINK		
SMARTLINK WALK CATCHMENTS		
KENT COUNTY COUNCIL		
NO.:	A1	03/11/05
DATE:	SE	CHL2507 04

FIGURE 4.1



- KEY**
- DLP & GAEF Development Areas
 - Existing Key Destination
 - Development Placing
 - Phase 1 (2012)
 - Phase 2 (2014 - 2016) To coincide with development

NOTE:

- 1) Further development in respect of SMARTLINK Phase 1
- 2) SMARTLINK Phase 2 will be developed in line with the County Council's Smartlink Strategy. It will be developed in line with the County Council's Smartlink Strategy. It will be developed in line with the County Council's Smartlink Strategy.
- 3) Further development in respect of SMARTLINK Phase 2 will be developed in line with the County Council's Smartlink Strategy. It will be developed in line with the County Council's Smartlink Strategy.

1) FOR A10 ROADWAY

- Ashford 2012
- Maidstone 2012
- Canterbury 2012

DATE	2012/01/01	DATE	2012/01/01
BY	ASHTON	BY	ASHTON
1			

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TRANSPORT

SMARTLINK PHASE 1 & 2
 FROM ASHTON ROAD TO MAIDSTONE ROAD
 FROM ASHTON ROAD TO MAIDSTONE ROAD

ASHFORD SMARTLINK

POSSIBLE SMARTLINK PHASING

KENT COUNTY COUNCIL

NO.	N.T.S.	NO.	AT	NO.	03/11/06
NO.	SC	NO.	DHL2022	NO.	009

FIGURE 5.1