SMALL SCHEMES - BUSINESS CASE

for

A414 Maldon to Chelmsford Route Based Strategy

Please note that this proforma is designed to collect key information about the project. The scheme promoters are encouraged to attach any additional supporting information to this business case proforma.

Project type (rail, road, LSTF, integrated package, maintenance etc.):	Road
Size of Project:	Small (total cost is below £8m)
Project Location:	A414 Maldon to Chelmsford
Project start date:	July 1, 2015
Project complete date:	March 31, 2017
Project development stage:	Implementation
Promoting authority name:	Essex County Council
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The Strategic Case

1. Project Description

1.1. Purpose

The A414 is the primary and key strategic route serving transport movements between Maldon and Chelmsford. Currently, traffic congestion and poor journey time reliability is experienced along the corridor with over 15,000 vehicles using the route each day. This is demonstrated in the TrafficMaster mapping shown in Figs 2 & 3 below (P7), which highlights the key pinch points along the route. This situation will be further exacerbated by the significant planned growth in Maldon and Heybridge. Undertaking highway capacity improvements will provide much needed additional capacity along the A414, to ease current traffic flows, but also to provide for future demand facilitating the delivery of growth as identified in Maldon's draft Local Development Plan.

This project provides a package of measures along the A414 between Maldon and Chelmsford, aiming to:

- Enable and facilitate the delivery of growth in Maldon District
- Improve access to the Chelmsford growth area for all users and businesses
- Improve access to Maldon and the surrounding district for all users and businesses
- Improve journey times and reliability for all users (including passenger transport users): through traffic management, capacity enhancements and congestion relief measures
- Targeted safety improvements
- Renew Highway assets

1.2. Brief description

The package of works consists primarily of four junction improvement schemes, along with additional maintenance and safety enhancements (see map below – Fig 1 P3):

- **A414 / Spital Road**
  The scheme consists of widening to provide a dedicated northbound lane at the roundabout and widening of the north and southbound approaches to the junction. The purpose of the scheme is to provide additional capacity to ease current traffic flows and to provide for future demand.

- **A414 / B1018 (Limebrook Way / Wycke Hill)**
  The scheme consists of widening to provide two entry lanes on all four approaches to the junction. The purpose of the scheme is to provide additional capacity to ease current traffic flows and to provide for future demand.

- **A414 / Little Baddow Road / Mayes Lane (Eves Corner)**
  The scheme consists of providing pre-signals on the minor approaches to the junction to provide additional capacity and improve peak time traffic operations on the primary route (the A414) to ease current traffic flows and to provide for future demand and discourage "rat running" along parallel routes..

- **A414 - Well Lane to Eves Corner**
  Improvements to the current layout will be made through significant resurfacing of the junction and approaches using high PSV stone to increase surface friction (improving braking), re-lining and a review of signing. Resurfacing between Well Lane and Eves Corner will also be undertaken, as this has been identified as a key location along the route which requires improvement, not just planing of the wearing course, but also into the base course to address more structural problems.

NB: The measures identified in this package will be supported by the 'Chelmsford City Growth Area Scheme' once vehicles reach Chelmsford.

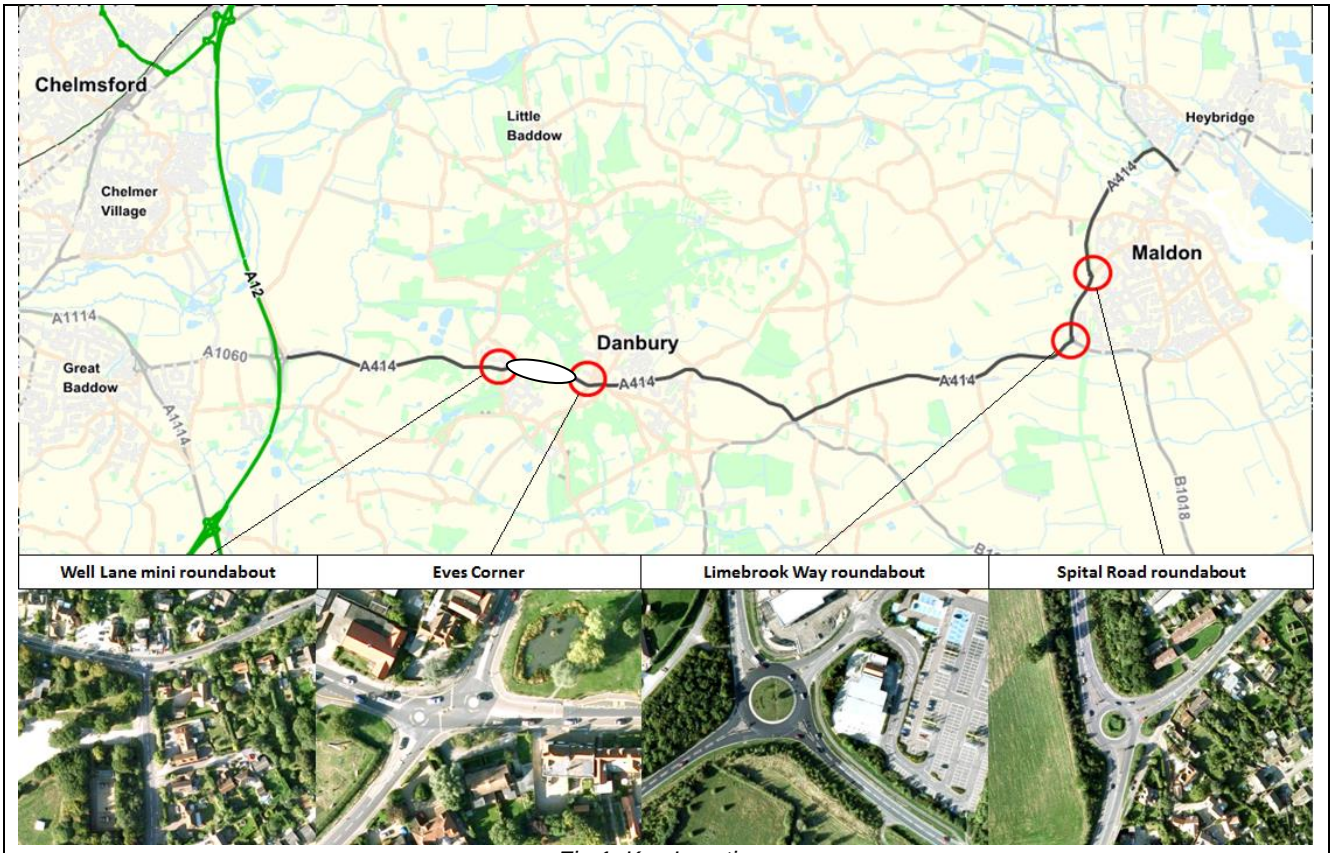

Fig 1: Key Locations

1.3. Strategic case

Maldon Local Development Plan

Maldon District Council has been preparing their Local Development Plan with forecast growth of 4,430 new homes built by 2029 and with 2,000 new jobs created.

The Maldon Local Development Plan (LDP) sought to meet the 'objectively assessed needs' for housing in the district as required by the National Planning Policy Framework (NPPF), and in so doing provide a significant uplift in the amount of future housing development delivered in the District. The plan sought to concentrate development at Maldon/Heybridge, to enable the provision of key infrastructure necessary for strategic growth to take place in a sustainable manner, including the provision of increased local highway capacity.

In preparing the LDP significant highway modelling has been undertaken, which identified the need for mitigation on the local and wider highway network early in the plan period. The commitment of funding through SELEP (including ECC match funding) for key improvements along the A414 Corridor between Chelmsford and Maldon will enable the planned delivery of housing while accommodating the impacts of that growth. Delivery of the schemes, as set out in this business case, by 2016/17 will further assist the viability and delivery of growth in this area.

The transport improvements contained within this Business Case will enable development to come forward at a rate similar to that identified in the LDP Infrastructure Delivery Plan, which in turn will enable the district to identify a 5 year housing supply and maintain the necessary control over the delivery of key strategic infrastructure, as identified in the submitted LDP.

In May 2015 the Maldon LDP was found unsound by the Inspector, based on policy H6: Provision for Travellers: however, Maldon District Council remains fully committed to the delivery and implementation of the LDP and have stated that they will continue to utilise the policies set out in the Plan.

Additionally, the Inspector has noted that the allocations in the LDP are at a reasonably advanced stage and likely to come forward in the short term. He states:

`the Council has been working proactively with the developers of the strategic housing sites allocated in the

Plan by inviting the submission of planning applications on them, and by the production of draft Masterplans on the Garden Suburb sites at North Heybridge and South Maldon. As a consequence, the Council has already granted planning permission on sites allocated in policy S2 (c) and (g) and a S2 rural site at North Fambridge. It has applications submitted and pending on sites s2 (a), (e), (i and j). Other applications on sites S2 (d), (f), (h) and (k) are expected to be shortly submitted. The only other allocated site is S2 (b) for 300 homes. The Council has also granted planning permissions on a number of other sites, which are not allocated in the Plan. Its housing land supply position is, therefore, rapidly improving.'

Given the progress being made on these allocations it is likely that a significant amount of development will still come forward in the early years of the plan, as identified in the Infrastructure Delivery Plan (IDP) and housing trajectory. The expected delivery of housing in the early years of the plan means that the need for the early delivery of highway infrastructure remains. The highways modelling work which Essex County Council has undertaken which has identified improvements along the A414 therefore still stands and improvements along the strategic A414 route identified in this business case remain essential.

With the Maldon Local Development Plan being found unsound, the certainty of securing funding from developers for strategic schemes is reduced, so there is even greater need to secure Local Growth Fund via the LEP to support locally available funding to provide the schemes to mitigate the impact of growth along the route.

Wider local development

The South East LEP Strategic Economic Plan identifies the A12 and Great Eastern Mainline Brentwood-Chelmsford-Colchester Corridor as a key driver of growth, with additional growth in Maldon. The A12 and Great Eastern Mainline provide the main routes to Harwich and Felixstowe and link London with these centres.

The Chelmsford Innovation Centre (MedBIC), part of the Anglia Ruskin Med Tech infrastructure, is being developed to support the growing life sciences and health care sector. The development of an employer-led STEM & Enterprise Skills Centre in Maldon will help develop a pipeline of skilled labour to enable the expansion of advanced manufacturing.

Additional investment in rail and road infrastructure is essential for unlocking the full economic potential of this Corridor. The Corridor has strong links with the London labour market, supporting substantial commuter flows to and from the capital which will only increase further when Crossrail is completed.

In north east Chelmsford, investment in the forthcoming Beaulieu Park station will stimulate a faster pace of development of both residential and employment areas in the urban extension and help attract higher value occupiers to the business park more quickly, with knock-on effects from this on local job creation and economic output. The station is part of a wider package of journey time, capacity and reliability improvements and is being developed by the "Norwich in 90" Parliamentary Task Force with the assistance of the New Anglia LEP and Network Rail.

A package of investment is proposed to address bottlenecks on the A12 to support growth. With sufficient investment, there is the potential to create 3,126 jobs and 1,446 new homes by 2021 and facilitate 16,200 jobs and 13,800 homes through our proposed transport schemes.

1.4. Strategic context

The A414 Maldon to Chelmsford route based strategy supports the SE LEP Vision; to **'Create the most enterprising economy in England'** and the single SE LEP goal; **to promote steady, sustained economic growth** over the next two decades. The scheme provides efficient access to Chelmsford – a key employment zone in Essex, providing improved access to employment, markets and suppliers, to maximise the economic benefits to the SE LEP economy. The improvements provided along the A414 for traffic flow will, in turn, provide improvements for passenger transport users along the route. Through continued discussions with developers, we will work together to ensure the provision of improved and extended bus routes to serve developments and to encourage modal shift and sustainable travel. Whether directly or indirectly, the scheme, therefore, also intends to promote sustainable travel, to enhance and protect the valuable natural assets which make our communities and landscapes attractive and distinctive.

The route based strategy supports the SE LEP objective 4: Strengthen the competitive advantage of strategic growth locations. Substantial economic growth is enabled by investment in capacity enhancements and

passenger transport improvements along this key strategic route to Chelmsford, ensuring that Chelmsford is an attractive location to invest and for companies to grow with easy access to potential employees, markets and suppliers, including London. It also supports growth in the Maldon District.

Investment in improvements along the A414 between Maldon and Chelmsford is wholly compliant with the aspirations of the Economic Plan for Essex (EPfE) that will update and incorporate the Greater Essex Integrated County Strategy (ICS) and the ECC Economic Growth Strategy (EGS). The package of improvements proposed also supports the delivery of the Essex Local Transport Plan (LTP), and has the support of partner authorities.

Essex County Council has the stated ambition to make Essex the location of choice for business and to be a county where innovation brings prosperity:

- To grow, the Essex economy depends on the efficient movement of people, goods and information, via effective and reliable transport and communications networks to provide access to markets and suppliers. It is therefore essential that we develop and maintain the infrastructure that enables our residents to travel and our businesses to grow
- Support for employment and entrepreneurship across our economy is focused on ensuring a ready supply of development land, new housing and the coordinated provision of appropriate infrastructure.

This investment along the strategic corridor from Maldon to Chelmsford is essential for the delivery of this ambition.

The Essex County Council Corporate Outcomes Framework 2014-2018 sets out the seven high level outcomes that ECC want to achieve to ensure prosperity and wellbeing for Essex residents. Securing these outcomes will make Essex a more prosperous county; one where people can flourish, live well and achieve their ambitions.

The seven outcomes are listed below:

- Children in Essex get the best start in life
- People in Essex enjoy good health and wellbeing
- People have aspirations and achieve their ambitions through education, training and life-long learning
- People in Essex live in safe communities and are protected from harm
- Sustainable economic growth for Essex communities and businesses
- People in Essex experience a high quality and sustainable environment
- People in Essex can live independently and exercise control over their lives.

The A414 Chelmsford to Maldon Route Based Strategy fully supports the achievement of our outcomes. The scheme will;

- drive economic growth in Maldon, supporting the provision of new homes, widening access to employment and improving the competitiveness of the Essex economy by driving **sustainable economic growth for Essex communities and businesses**.
- provide safe and sustainable transport for many people living within Maldon, improving access to education, training and health services and supporting independent living.
- support the delivery of the Essex Local Transport Plan vision for a transport system that supports sustainable economic growth and helps deliver the best quality of life for the residents of Essex by providing connectivity for Essex communities and international gateways to support sustainable economic growth and regeneration

The Essex Local Transport Plan applies an incremental approach to ensuring that our transport network is fit for purpose and enables economic growth. This entails; prioritising the maintenance and smarter use of our existing transport network; making targeted investments to address local network pinch points and to support local development; and promoting larger scale projects only where these are required to most effectively address the transport challenges facing Essex.

Case for Change

2. Business needs / Reasons

- ***Outline the rationale for making the investment with reference to the problems with the status quo***

The A414 from Maldon forms a strategically important key radial route into Chelmsford, providing access to the Chelmsford growth area (and from there to other onward key transport links and routes), as well as to Maldon and its environs. There is a significant volume of traffic on the route (over 15,000 vehicles per day), which is extremely sensitive to incidents such as accidents and broken down vehicles, especially during the peak periods resulting in congestion along the route specifically at key pinch points as identified in the TrafficMaster data mapping shown below. In addition, the route requires capacity, maintenance and safety enhancements.

- ***What evidence is there of need for the project ?***

As noted above, there is already traffic congestion and poor journey time reliability along the corridor between Maldon and Chelmsford. This will be further exacerbated by the forecast growth in Maldon and Heybridge. Undertaking highway capacity improvements will see additional capacity along the A414, to ease current traffic flows, and to provide for future demand. The Strategic Case (Section 1.3) and the impact on releasing growth section below sets this out in more detail.

The forecast growth in Maldon (4,430 new homes and 2,000 new jobs) accentuates the need for a route based strategy and associated improvements along the route.

The Maldon Local Development Plan (LDP) sought to meet the 'objectively assessed needs' for housing in the district as required by the National Planning Policy Framework (NPPF), and in so doing provide a significant uplift in the amount of future housing development delivered in the District. The plan sought to concentrate development at Maldon/Heybridge, to enable the provision of key infrastructure necessary for strategic growth to take place in a sustainable manner, including the provision of increased local highway capacity.

In preparing the LDP significant highway modelling has been undertaken, which identified the need for mitigation on the local and wider highway network early in the plan period. The commitment of funding through SELEP (including ECC match funding) for key improvements along the A414 Corridor between Chelmsford and Maldon will enable the planned delivery of housing while accommodating the impacts of that growth. Delivery of the schemes, as set out in this business case, by 2016/17 will further assist the viability and delivery of growth in this area.

The transport improvements contained within this Business Case will enable development to come forward at a rate similar to that identified in the LDP Infrastructure Delivery Plan, which in turn will enable the district to identify a 5 year housing supply and maintain the necessary control over the delivery of key strategic infrastructure, as identified in the submitted LDP.

In May 2015 the Maldon LDP was found unsound by the Inspector, based on policy H6: Provision for Travellers: however, Maldon District Council remains fully committed to the delivery and implementation of the LDP and have stated that they will continue to utilise the policies set out in the Plan.

Additionally, the Inspector has noted that the allocations in the LDP are at a reasonably advanced stage and likely to come forward in the short term. He states:

`*The Council has been working proactively with the developers of the strategic housing sites allocated in the Plan by inviting the submission of planning applications on them, and by the production of draft Masterplans on the Garden Suburb sites at North Heybridge and South Maldon. As a consequence, the Council has already granted planning permission on sites allocated in policy S2 (c) and (g) and a S2 rural site at North Fambridge. It has applications submitted and pending on sites s2 (a), (e), (i and j). Other applications on sites S2 (d), (f), (h) and (k) are expected to be shortly submitted. The only other allocated site is S2 (b) for 300 homes. The Council has also granted planning permissions on a number of other sites, which are not allocated in the Plan. Its housing land supply position is, therefore, rapidly improving.'*

Given the progress being made on these allocations it is likely that a significant amount of development will still come forward in the early years of the plan, as identified in the Infrastructure Delivery Plan (IDP) and housing trajectory. The expected delivery of housing in the early years of the plan means that the need for the early delivery of highway infrastructure remains. The highways modelling work which Essex County Council has undertaken which has identified improvements along the A414 therefore still stands and improvements along the strategic A414 route identified in this business case remain essential.

With the Maldon Local Development Plan being found unsound, the certainty of securing funding from developers for strategic schemes is reduced, so there is even greater need to secure Local Growth Fund via

the LEP to support locally available funding to provide the schemes to mitigate the impact of growth along the route.

TrafficMaster data for both AM and PM peaks are shown in Figs 2 & 3 below.

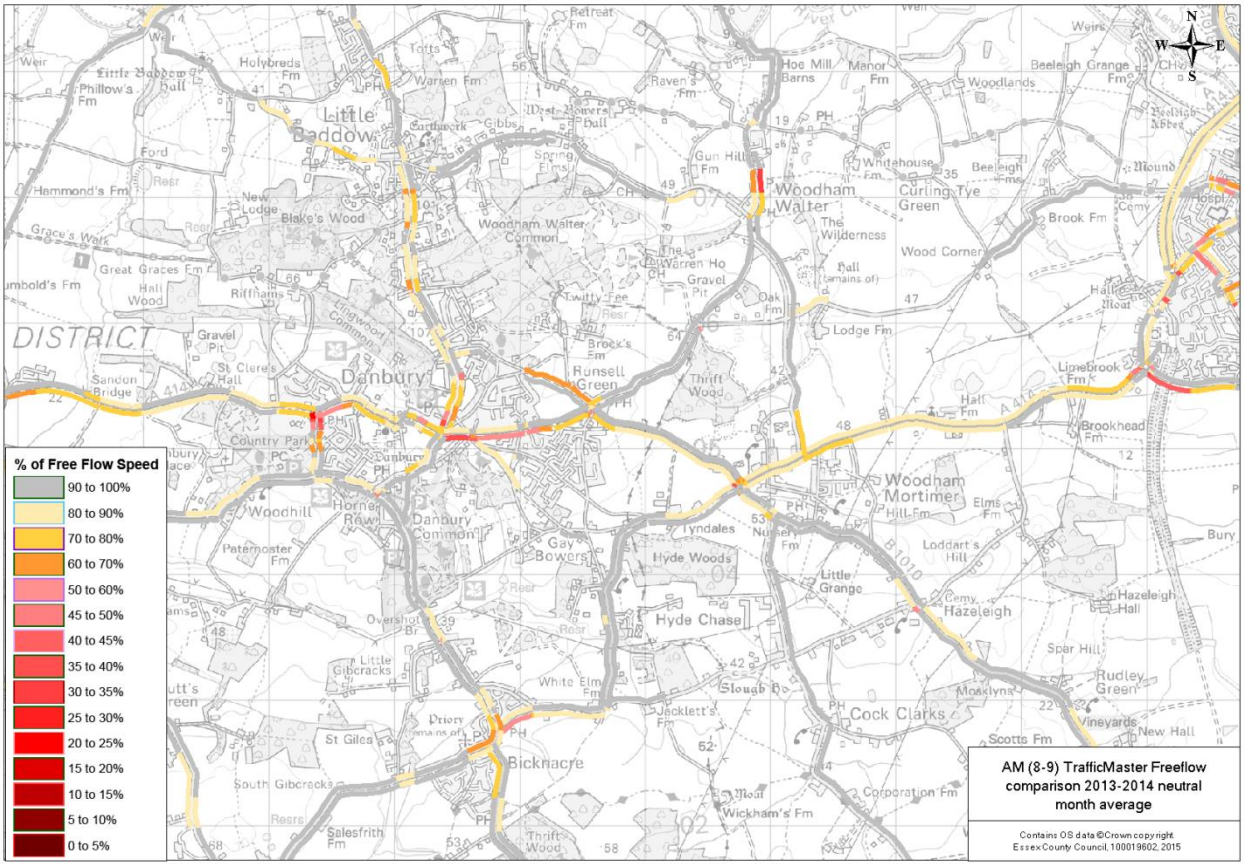

Fig 2: TrafficMaster – AM Data

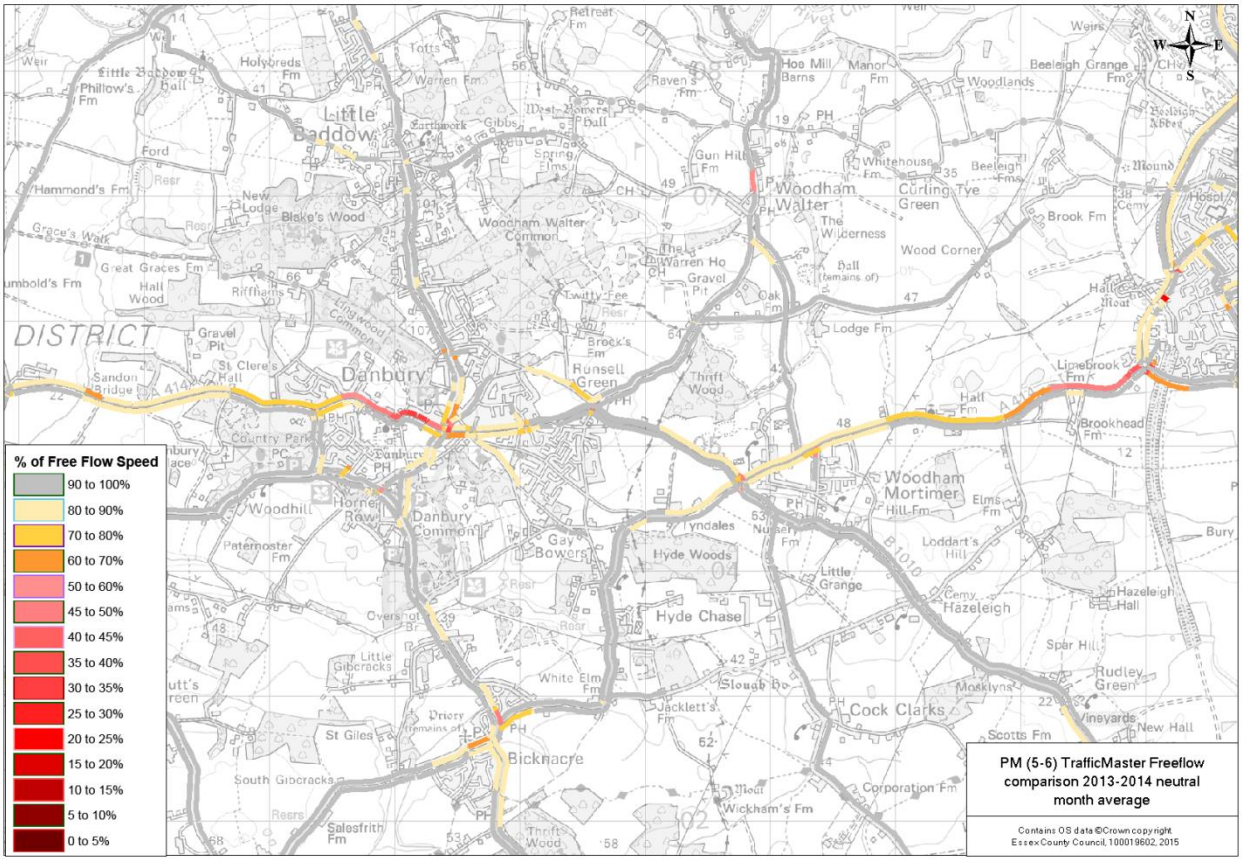

Fig 3: TrafficMaster – PM Data

The forecast growth in Maldon (4,430 new homes and 2,000 new jobs) accentuates the need for a route based strategy and associated improvements along the route.

- ***What impact does the scheme have on releasing the growth or overcoming barriers to growth ?***

Maldon District is set to see 4,430 new homes by 2029 with 2,000 new jobs.

The commitment of funding through the SE LEP (including ECC match funding) for key improvements along A414 between Chelmsford and Maldon Corridor will contribute to enabling the planned delivery of housing, alongside the early provision of highway infrastructure, at key pinch points, to accommodate the impacts of that growth. Delivery of the schemes by 2016/17, as set out in this business case, will further assist the viability and delivery of growth in this area.

The proposed infrastructure in the Business Case will enable development to come forward at a rate similar to that identified in the LDP Infrastructure Delivery Plan, which, in turn, will enable the district to identify a five year housing supply and maintain the necessary control over the delivery of key strategic infrastructure, as identified in the submitted LDP.

This package supports growth primarily in Maldon District, but will also contribute to growth in Chelmsford City. Chelmsford City is poised to develop further with 16,000 new homes by 2021 and 20,000 new jobs.

- ***What will happen if the proposed project is not funded from LGF ?***

ECC's funds are committed and it would not be possible to provide further funding for this scheme. In this instance, the project would have to be deferred.

With the Maldon Local Development Plan being found unsound, the certainty of securing funding from developers for strategic schemes is reduced, so there is even greater need to secure funding via the LEP to provide the schemes which are identified in the business case to mitigate the impact of growth along the route.

- ***Is there a potential to reduce costs and still achieve the desired outcomes?***

As this is a complete route strategy, work on selected components would not have the same effect as improving all the subject junctions along the route.

3. Benefits

3.1 Estimate jobs and homes (direct, indirect, safeguarding, construction etc)

	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	Post 2021	Total
Jobs	26	80	80	80	80	80	640	1,066
Homes	55	362	436	482	283	223	1,439	3,280

- ***Describe the methodology of how the number of jobs and homes is estimated***

The forecast increase in jobs and homes are based upon assumptions that underpin the draft Maldon Local Plan. It has been assumed that the delivery of new jobs is flat-rated over the period, as per above. The delivery of new homes is as outlined in the infrastructure delivery plan for the draft Local Plan.

- ***List all main direct and indirect; quantitative and qualitative; cash releasing and non cash releasing benefits associated with the investment***

The specific benefits of the route based strategy will be:

- Supporting housing and economic growth in Maldon District and Chelmsford City:
  - Maldon District is set to see 4,430 new homes by 2029, along with 2,000 new jobs.
  - Chelmsford City is poised to develop further with 16,000 new homes by 2021, and 20,000 new jobs.
- Improved access to the Chelmsford growth area for all users and businesses
- Improved access to Maldon and the surrounding district for all users and businesses
- Improved journey times and reliability for all users (including passenger transport users): through traffic management, capacity enhancements and congestion relief measures
- Walking and cycling improvements along the routes, where appropriate
- Targeted safety improvements
- Highway asset renewal.

4. Risks

4.1. Provide a summary of key risks to the delivery of the scheme (including financial, commercial, economic and management).

A technical feasibility report has been produced for this package, to inform the detailed design stage. The feasibility report has identified some land constraints to the south of Limebrook Way, as well as some potential parking issues at Eves Corner, however, it is believed they will be manageable within each of the projects and they will be mitigated as appropriate.

Capacity improvements at Spital Road and Limebrook Way do involve land take. However, this impact will be mitigated as far as possible and any impact will also be counter-balanced by the capacity improvements which will reduce congestion and have a positive impact on air quality.

4.2. Risk Assessment

Risk	Description of Risk	Likelihood	Impact	Factor	Risk Mitigation	Risk Owner
[redacted]	[redacted]	3	3	9	Early liaison with residents to agree a solution early on at the design stage	ECC
[redacted]	[redacted]	4	4	16	[redacted]	Ringway Jacobs

Contaminated ground or material	Discovery of contaminated ground or material on site (including Coal Tar)	4	2	8	Undertake timely site investigation.	Ringway Jacobs
Contractor failings	Contractor has failings in delivery resulting in programme overrun	4	2	8	Tender scheme using appropriate quality questions	ECC / Ringway Jacobs
Delay in utility diversion	Diversion of utility equipment takes longer than allowed programme resulting in overall programme overrunning and incurring additional cost	4	4	16	Employing specialist consultants and holding a utilities forum on a regular basis	Ringway Jacobs
Development to the East	Development to the west of the junction is subsequently granted planning permission and the timescales of both projects clash leading to abortive design costs	3	3	9	Early engagement to establish respective development times	ECC / Ringway Jacobs
Difficulty in forecasting Statutory Undertakers Diversion Costs	Unknown utility costs causing inaccuracies in scheme cost estimates	5	5	25	Early engagement with the stats companies and issuing of C3 requests	Ringway Jacobs
Increased tenders	Risks on job inflate anticipated tender values due to contractors accounting for costs in bids	2	3	6	Obtain recent tender information for use as comparison	ECC / Ringway Jacobs
Informal Parking	Existing informal parking along Little Baddow Road continues and causes delays	4	2	8	Refresh of double yellow lining and parking enforcement following scheme completion	ECC / Ringway Jacobs
Invasive Species	Invasive species found on-site, additional cost for site clearance	2	3	6	Undertake Site Survey	Ringway Jacobs
Invasive species	Invasive species found on-site, additional cost for site clearance	2	2	6	Undertake Site Survey	ECC / Ringway Jacobs
ITS equipment	Existing infrastructure is not fit for purpose and new road crossings are required	2	3	6	Survey to be undertaken to ensure state of ducts is known now	Ringway Jacobs
Land acquisition	Land required outside the authorities ownership resulting in necessary land acquisition which jeopardises the scheme	4	3	12	Establish scheme footprint and existing boundary information and tailor the scheme to suit	ECC
Land requirements	Land currently leased to the Essex Wildlife Trust may be required to accommodate forward visibility splays.	5	2	10	Continually liaise with MDC to ensure their buy-in to the scheme	ECC / Ringway Jacobs
Local residents / businesses	Additional costs required to ensure the satisfaction of local residents/businesses	3	2	6	Early engagement with stakeholders to establish specific requirements and agree proposals	ECC

Noise and vibration	Claims from nearby residents on noise and vibration	2	4	8	Undertake pre-construction monitoring, Ensure contractor is aware of responsibilities	ECC
Pedestrian crossing requirements	Pedestrians may take the opportunity to cross Little Baddow Road close to the signal head when the aspect displays red for vehicles. This may require improved informal crossings	3	2	6	Ensure intent is clearly advertised to reduce possibility	ECC / Ringway Jacobs
Protected species	Unforeseen discovery of protected species	4	2	8	Undertake surveys for protected species, early site clearance	Ringway Jacobs
Safety Audit requirements	Provision of high PSV surfacing is required following safety audit incurring additional costs	4	2	8	Work with teams to reduce possibility of additional costs	Ringway Jacobs
Soft spots / voids	Soft spots/voids discovered during construction - re design required	4	3	12	Undertake timely site investigation	ECC / Ringway Jacobs
Speed Limit	The proposed speed limit change is not accepted resulting in redesign of the scheme	3	2	6	Case for a 40mph speed limit is to be robust to ensure risks associated with a higher speed limit are understood.	ECC
Stakeholder engagement and acceptance	Unable to secure stakeholder (bus operators, traders, taxis, members of the public etc) engagement and acceptance of the scheme in full	2	4	8	Continuing positive discussions with key stakeholders and ensuring early public consultation. The Maldon Local Development Plan process has gone through extensive public consultation and as part of this the highways infrastructure required has been presented. Key stakeholders have been engaged in this process and therefore the public are aware of the proposed schemes required and the importance of providing improvements along the A414 to mitigate the impact of growth. However, as the project progresses into more detail more targeted stakeholder engagement is planned along with early public consultation.	ECC
Statutory Processes – Traffic Regulation Orders	Statutory Processes – Traffic Regulation Orders	3	4	12	The provision of passenger transport improvements along the corridors will require Traffic Regulation Orders (TRO) which are subject to public consultation, however early pubic engagement will be programmed to facilitate this process.	ECC / Ringway Jacobs
Statutory Undertaker diversions	Statutory Undertaker diversions	3	3	9	As with other projects, early engagement with, and cost estimates from Statutory Undertakers will be undertaken.	Ringway Jacobs
Tender prices	Tender prices at variance with estimates and client budget leading to re-design or scheme cancellation	4	2	8	Obtain recent tender information for use in price base	Ringway Jacobs / ECC
TPO's	Cost and time overrun associated with mitigating TPO's	3	5	15	Survey Trees, discuss mitigation early	Ringway Jacobs

Traffic Management during works	Traffic Management during works	2	3	6	ECC will ensure information is made available to the public, specifically during the construction period to ensure any traffic management plans are communicated accordingly. The Essex Traffic Control Centre will inform the public and actively manage the traffic in the area via the use of variable message signing and traffic signal control. The promotion of alternative forms of transport is a key part of the communications to ensure disruption is kept to a minimum.	ECC / Ringway Jacobs
Uncompetitive Construction Market	Large amounts of highways jobs available could increase the value of tenders offered by contractors	3	3	9	Framework being used so potential to use fixed contract rates increased	ECC
Undeclared utilities	Discovery of undeclared utilities apparatus during construction	4	2	8	Undertake GPR surveys and timely trial holes	ECC / Ringway Jacobs
Unforeseen Ground Conditions	Soft spots/voids discovered during construction - re design required	3	4	12	Undertake timely site investigation	Ringway Jacobs
Weather	Poor weather during construction delays programme	3	3	9	Build contingency into the programme and construct during summer months where possible. Consideration to be made for works that can be undertaken as fallback during poor weather	Ringway Jacobs

The Economic Case

5. Options

5.1. Please provide a description of the main options for investment, together with their relative advantages and disadvantages (a SWOT analysis)

Strengths: • Chelmsford and Maldon both have fast growing populations • Well-established partnership working with CCC and MDC • Strong and unique connectivity to the markets of London and the south-east, with onward connections to Europe and other international markets • High employment rate • Significant environmental and historical assets • Cultural and tourism appeal • Good connectivity to London	**Weaknesses:** • Major road congestion at peak times for traffic along this corridor • Restricted land availability for development in some areas • Lack of connected cycleways
Opportunities: • Fully utilise the land, labour and capital assets to achieve Chelmsford and Maldon's economic and growth potential • Large pockets of land available for housing development • Important location for housing development • Making transport links more resilient to incidents and congestion	**Threats**: • Potential decline of London as a world financial services centre • Prevailing economic conditions discourage private sector investment, including bringing forward key development sites • Public concern that growth will lead to increased congestion as a result of failure to invest in adequate infrastructure improvement

• Fully realise the potential of economic links with London, including capacity to accommodate growth to the East of London	

- ***Do Nothing***

As highlighted in earlier sections, there is already traffic congestion and poor journey time reliability along the corridor between Maldon and Chelmsford which will be further exacerbated by the forecast growth in Maldon District. Undertaking highway capacity improvements will see additional capacity along the A414, to ease current traffic flows, and to provide for future demand.

The forecast growth in Maldon (4,430 new homes and 2,000 new jobs) accentuates the need for a route based strategy and associated improvements along the route.

In preparing the LDP, a significant amount of highway modelling has been undertaken, which identified the need for mitigation on the local and wider highway network early in the plan period. The modelling has demonstrated that doing nothing would create significant pressure on junctions which are already at, or nearing, capacity, and, therefore, mitigation is essential.

For example, presently at Eves Corner there is notable delay on the A414 East and West arms in the AM and PM peak respectively. By contrast, the minor arms of the junction currently operate satisfactorily. In 2026 post-development, both A414 arms of the junction are predicted to exceed capacity in both peak periods with significant delays expected.

The schemes proposed in this business case have been identified as existing pinch points and also key junctions which require capacity enhancements to support future growth.

Access to Maldon along this key strategic route is vital to support economic growth in a sustainable manner, and, therefore, doing nothing is not an option.

While development in Maldon will finance a number of infrastructure improvements, via S106 contributions, the value of this works will affect the viability of developments. Therefore, the LEP / ECC funded package will increase the likelihood of development coming forward.

With the Maldon Local Development Plan being found unsound, the certainty of securing funding from developers for strategic schemes is reduced, so there is even greater need to secure funding via the LEP to provide the schemes which are identified in the business case to mitigate the impact of growth along the route.

There are maintenance requirements along the corridor, as identified in the County Council's regular maintenance strategy. However, maintenance works cause disruption on-route and ideally, therefore, improvement works should be planned alongside to address current and future capacity issues. If the maintenance work is not undertaken now, it will still be required within the next three years which will cause major disruption along the route, rather than being coordinated with the package of improvement works. There will also be more development by this stage with increased traffic using the route and subsequently more vehicles affected by the disruption.

If the County Council do not provide improvements to this corridor, as outlined in the package of measures in 1.1 above, then the area will not see investment and growth, and this will be to the detriment of existing road users and residents.

- ***Do Minimum***

As noted in the 'Do Nothing' option, investment along the A414 corridor is essential to support growth and development in the Maldon District. Therefore, capacity improvements are proposed at Eves Corner, along with the Limebrook Way and Spital Road junctions on the approach to Maldon, as outlined in section 1.1.

At Eves Corner, assessments of three different configuration options for upgrading the junction have been undertaken, each with the desire to prioritise A414 movements as the principal strategic route: a staggered priority junction; signalised crossroads; and pre-signals arrangements on Little Baddow Road and Mayes Lane. Pre-signals were the preferred option to be taken forward as the best solution to improve traffic flows along the A414, to limit rat-running and to provide bus priority opportunities. It is a more cost effective

solution than full signalization, as minimal changes will be required to the existing street furniture; the layout along the A414 would remain the same, with changes only required on the minor roads. This proposal is therefore included in the Do Minimum situation.

At the Limebrook Way / A414 junction, the mitigation measures proposed provide a nil detriment situation in the future scenario with forecast growth in place. The key improvements of implementing two lane exits onto the A414 north and west, in addition to lengthened flares on the A414 west and Limebrook Way approaches, are therefore required in the Do Minimum situation.

At the Spital Road / A414 roundabout, the mitigation measures proposed provide a nil detriment situation in the future scenario with forecast growth in place. The key improvements of implementing a dedicated straight ahead lane from the A414 south to the A414 north, in addition to a two lane exit onto the A414 south, are therefore included in the Do Minimum situation.

- ***Do Something (best and final option; least net present cost option; highest risk adjusted NPV option; etc)***

The Do Minimum options should be taken forward into the Do Something scenario:
- Improvements to the current layout of the A414 Well Lane junction through significant resurfacing, along with resurfacing between Well Lane and Eves Corner;
- Pre-signals arrangement at Eves Corner on the minor approaches to the junction to provide additional capacity and improve peak time traffic operations on the primary route (the A414) to ease current traffic flows, limit rat-running and to provide for future demand (with the opportunity to provide bus priority measures).
- Implementing two lane exits onto the A414 north and west, in addition to lengthened flares on the A414 west and Limebrook Way.
- Widening to provide a dedicated northbound lane, in addition to widening, to allow for a two lane exit onto the A414 southbound at the Spital Road / A414 junction;

The additional capacity improvements outlined below are also required in the Do Something scenario:
- Widening to provide two entry lanes on all four approaches to the A414 / Limebrook Way junction.
- Widening of the north and southbound approaches to the A414 / Spital Road junction

The Oak Corner junction could have also been included in this package, but, as improvements are not due to be implemented there until 2026, it was felt that the three nominated junctions would take priority.

This package should ideally be paired with other network improvements in the Maldon area, such as a route management strategy for the B1019 corridor from Heybridge to the A12 at Hatfield Peverel. This could include improvements at the junctions of B1019 Langford Road / B1018 Heybridge Approach, and B1019 Maldon Road / B1137 (The Street) in Hatfield Peverel, as well as looking into a potential new access from the B1019 onto the A12.

5.2. Recommended Option: What is the preferred option – and why?

The preferred option is the Do Something option. This will ensure improvements are made to the key junctions that will improve journey time reliability and improve the resilience of the A414 corridor.

A route management strategy for the B1019 corridor remains on the SE LEP priority list.

*5.3. Provide key information on transport performance indicators, where applicable **

**The scheme promoters are encouraged to use the existing datasets and model outputs to provide this information. The preference would be to use a spreadsheet type of analysis to provide information in the above table.*

5.4 Transport scheme assessment approach

5.4.1 Provide a brief description of a (spreadsheet-based) modelling and appraisal methodology as well as detail of data source used

5.4.2 List all assumptions made for transport modelling and appraisal

See Appendix B1

5.4.3 Provide key positive and negative impacts of the schemes in the table below as described in the Appraisal Summary Table and Social Distribution Impact analysis, where it is appropriate, supported by evidence.

Category of impacts	Quantified/Qualitative impact	Large Beneficial to Large Adverse
Economy	Business users and providers Reliability Regeneration Wider Impacts	Small Beneficial Small Beneficial Small Beneficial Small Beneficial
Environment	Noise Air Quality Greenhouse gas Landscape Townscape Heritage Biodiversity Water Environment	Small Beneficial Small Beneficial Small Beneficial Neutral Neutral Neutral Neutral Neutral
Social	Commuting & Other users Accidents Physical Activity Journey Quality Reliability Option and non-use values Security Access to Services Affordability Severance	Small Beneficial Small Beneficial Medium Beneficial Medium Beneficial Medium Beneficial Neutral Medium Beneficial Small Beneficial Neutral
Public Accounts	Cost to broad transport budget Indirect tax	Neutral

The scheme promoters are NOT required to use Tuba type appraisal analysis. If any scheme promoter is interested in estimating value for money then a spreadsheet based analysis should be undertaken.

Value for Money Statement

	Present Values in 2010 prices and values
PVB	**9,148,676**
PVC	**4,345.872**
NPV = PVB - PVC	**4,802,804**
Initial BCR = PVB / PVC	**2.11**
Adjusted BCR	**Non adjusted**
Qualitative Assessment	**See Note on Economic Assessment – Appendix B1**
Key Risks, Sensitivities	**See Note on Economic Assessment – Appendix B1**
VfM Category	**High**

Commercial Case

6. Procurement Route

Define the approach taken to assess commercial viability.
Briefly describe the procurement strategy. Set out the timescale involved in the procurement process to show that delivery can proceed quickly.

Procurement Strategy

The eastern Highways Alliance and SMARTe and the Highways Agency Framework have all been used extensively in prior major projects eg Army and Navy Improvements.

Construction of the schemes will be delivered through the Essex Highways Service Direct Delivery Framework using supply chain partners.

The benefits via this route are:-

- Early involvement with the contractor.
- Use of Supply Chain partners who are familiar with the delivery of smaller complex projects under tight deadlines.
- Flexibility and opportunity to accelerate the delivery of smaller elements through the 'Walk, Talk and Build' process, thus increasing confidence in project delivery timeframe.
- The utilisation of the Framework is endorsed by the ECC procurement team.

Essex County Council have undertaken numerous procurement processes for major schemes. Recent major schemes have included Harlow Second Avenue / A414 improvement, Basildon Nethermayne widening, and Chelmsford Army and Navy roundabout improvement, all as part of successful DfT Pinch Point funding bids. These schemes required procurement processes to appoint a principal construction contractor with adherence to restricted timescales to complete the construction works, whilst fulfilling CDM duties and Health and Safety Regulations.

Risk Allocation

ECC will bear all risk for the project as part of its role as Highways Authority.

Maintenance

All highway improvement works implemented will be inspected annually and maintained by the Highway Authority.

Financial Case

- ***Total cost of the project***

List here the elements of gross costs, excluding optimisation bias.
Please provide the date the prices for the cost estimate is based on (e.g. Q1 2014)

The cost estimates are taken from a technical feasibility report.
The scheme cost estimates for the A414 Chelmsford to Maldon RBS have been derived using the Ringway Jacobs Cost Estimating Tool which is based upon commercially benchmarked data. The rates used, reflect construction projects of a similar size and nature, and are at current day prices (3rd Quarter 2014).

	* Cost Estimate status (E; F; D; T)	2015/16 £000	2016/17 £000	2017/18 £000	2018/19 £000	2019/20 £000	Total £000
Procurement Cost }	D						
Feasibility Cost }	D	240	125				365
Detail Design Cost	D	250	193				443
Management Cost	D	90	91				181
Construction Cost	D	700	838				1,538
QRA	D	410	410				820
Other – Stats	D	280	200				480

Other – Inflation		30	56				86
VAT (if appropriate)							
Sub-total Non-Works		1,020	875				1,895
Sub-total Works		980	1,038				2,018
TOTAL COST		**2,000**	**1,913**				**3,913**

*E = Broad estimate, D = Detailed estimate, T = Tender price, F= Feasibility estimate

- ***Source of funding***

List here the amount of funding sought

Funding Source	**2015/16 £000**	**2016/17 £000**	**2017/18 £000**	**2018/19 £000**	**2019/20 £000**	**Total £000**
LGF	1,000	1,000				2,000
Private Developers						
Borrowing						
Income						
Other (insert as many rows as required)						
Local Contribution Total – ECC	1,000	913				1,913
Other Funding						
TOTAL FUNDING	**2,000**	**1,913**				**3,913**

Please note that the totals for funding should match with the total for project cost.

Type of Funding	**Funding Source**	**Please identify how secure the funds are**	**When will the money be available**
Public	LGF	Allocated in Growth Deal subject to this business case	2015/16
	Borrowing		
	Income		
	Other		
	Local Contribution Total (leverage)	ECC funding contribution has S151 approval and has been allocated within the 2015/16 and 2016/17 Capital Programmes	
Private	Please list all developers		
	Private Developers Total		
	Other Funding ECC Capital Funding	Secure - Allocated in ECC Capital Programmes 2015/16 and 2016/17	2015/16

6.1. Affordability gap

- ***Is there an affordability gap?***

No. SE LEP LGF funding subject to draw down following approval of this business case.

ECC funding for schemes allocated LGF funding within the SELEP Growth Deal was approved by the Capital Programme Member Board and Section 151 Officer in October 2014, with funds allocated to an Economic Transport block, held within the ECC Capital Programme for 2015/16 and subsequent years, and available for draw down following SE LEP funding approval for specific schemes.

Management Case - Delivery

7. Delivery

7.1. Provide high level information about arrangements that will ensure delivery of this

project

- **Project plan**

	Feasibility work	Detailed design	Procurement	Start of construction	Completion of construction
Limebrook Way (aka Morrisons)	Q4 - 2014/15	Q2 - 2015/16	Q3 - 2015/16	Q4 - 2015/16	Q3 - 2016/17
Eves Corner	Q4 - 2014/15	Q3 - 2015/16	Q4 - 2015/16	Q1 - 2016/17	Q2 - 2016/17
Spital Road	Q3 - 2014/15	Q4 - 2014/15	Q1 - 2015/16	Q2 - 2015/16	Q4 - 2015/16
Well Lane	Q4 - 2014/15	Q4 - 2015/16	Q1 - 2016/17	Q2 - 2016/17	Q4 - 2016/17

- **Project management arrangement**

Background

This plan outlines the project structures and processes that will be used to govern activities.

Project Organisation

The organisation to deliver the scheme is indicated in Figure 1 below. The roles and responsibilities of the parties indicated in the figure are described in the following paragraphs.

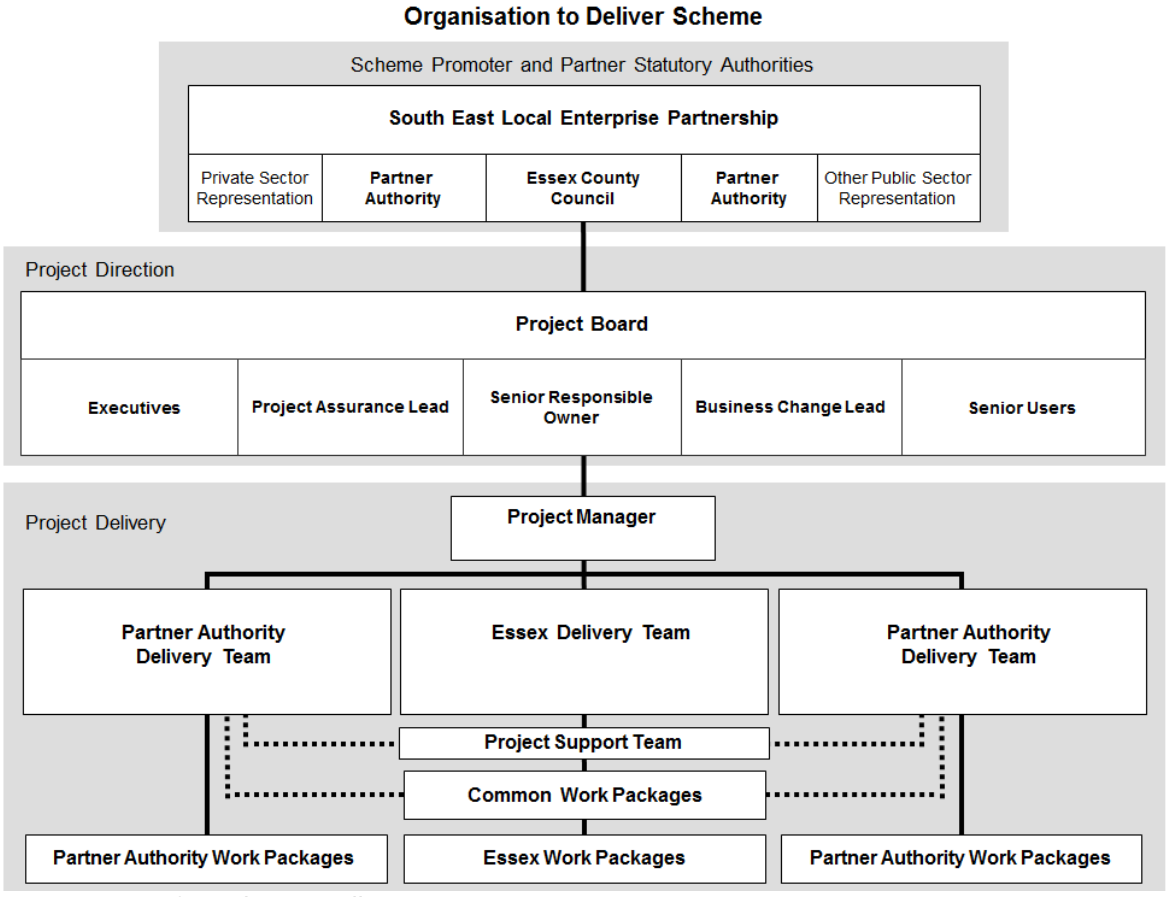

Figure 1: Arrangements for Scheme Delivery

Roles of Key Interested Parties:

South East Local Enterprise Partnership Board (SE LEP) – brings together senior officers and transport portfolio holders of the partner statutory authorities promoting the scheme. Essex County Council acts as the lead authority for the scheme and provides the project's Senior Responsible Owner.

The arrangements between the statutory authorities promoting the scheme are in the process of being formalised through a joint working partnership agreement. This sets out the basis for governance of the project and for the financial contributions to be made by each party.

Project Board – is responsible for the direction and overall management of the scheme. The Project Board is chaired by the Senior Responsible Owner and made up of the Executive and Senior User for each of the partner statutory authorities, the Project Assurance Lead and the Business Change Lead. These roles are defined below. Project Board meetings are normally held every six weeks. The Project Manager reports regularly to the Project Board, keeping members informed of progress and highlighting any issues or concerns.

- The responsibilities of the Project Board include:
- Setting the strategic direction of the project, in the context of local policies and the work of the SE LEP
- Defining the scope and setting the timescales for major project milestones
- Approving the appointment of the Project Manager
- Providing the Project Manager with the strategy and decisions required to enable the scheme to proceed to programme and resolve any challenges
- Securing necessary approvals through the partner statutory authorities
- Approving the project scope of work, programme and budgets, as well as any subsequent changes
- Signing off completion of each stage of the project and authorising the start of the next stage
- Monitoring project risks and taking any appropriate action to mitigate risks.

Delivery Teams – reporting to the Project Manager, the Delivery Teams (one for each partner statutory authority) are responsible for organising and delivering work packages on the highways under the authority's jurisdiction. The Essex Delivery Team has the additional responsibility for common work packages.

Project Support – this team is responsible for project administration, including document control, project team communications, arranging meetings, updating plans, and chasing up the completion of actions.

Individual Roles:

Senior Responsible Owner (Paul Bird, ECC) – has ultimate responsibility and delegated authority for ensuring effective delivery of the scheme on time and on budget.

Project Manager (Hannah Neve, ECC) – is the individual responsible for organising, controlling and delivering the scheme. The Project Manager leads and manages the project team, with the authority and responsibility to run the project on a day-today basis. She also is assigned the task of running and updating the risk register and organising the monitoring of the delivery of the programme objectives in line with the strategy outlined in the Monitoring Spreadsheet previously submitted to the LEP.

Executives – represent the group in each partner statutory authority with responsibility for obtaining funding for the scheme (Chris Stevenson, ECC) and securing resources to deliver it (Danny Stanesby, ECC). In Essex County Council, this is the Transport Strategy and Engagement Group (Alan Lindsay, ECC).

Senior Users (David Forkin, ECC) – represent the group in each partner statutory authority who will oversee the future day-to-day operation of the scheme.

Project Assurance Lead (Erwin Deppe, Ringway Jacobs) – provides an independent view of how the scheme is progressing. Tasks include checking that the project remains viable in terms of costs and benefits (business assurance), the users' requirements are being met (user assurance), and that the project is delivering a suitable solution (technical assurance).

Resources to support this project will be prioritized to ensure efficient delivery at the earliest opportunity.

Stakeholders

- The Maldon Local Development Plan process has included extensive public consultation and, as part of this, the highways infrastructure required has been presented. Key stakeholders have been engaged in this process and, therefore, the public are aware of the proposed schemes required and the importance of providing improvements along the A414 to mitigate the impact of growth.
- As the projects progress into more detail, more targeted stakeholder engagement is planned.
- Public consultation to secure public engagement and buy in will also be required, and any outcomes of this consultation will need to be taken into account in the design and construction process.

Liaison with key stakeholders (such as bus operators, nearby schools, developers, land owners, Chelmsford City Council, and Maldon District Council) will be essential to ensure engagement and buy in, and also to ensure our work programmes are suitably aligned.

- A Communication Plan has been drafted which sets out the stakeholder management and engagement strategy. It is delivered through a combination of communications, marketing and PR that directly supports the scheme. Key stakeholders have been identified (such as Danbury Parish Councils, schools, residents etc) and a process for how we engage and communicate with them. For example, the Project Team are going to offer to meet the Parish Council and school to discuss the scheme in more detail, and to provide them with the opportunity to make comments on the proposals.
- A dedicated communications resource will be available to the team to help develop communications strategies, plans and communication templates.
- Communication is a key item on the agenda for the Project Team's monthly progress meeting.

Risk Management

A proactive risk management procedure is in operation, including a quantified risk assessment approach, which ensures that risks are continuously identified, owners assigned and mitigation measures put in place. Regular reviews check the status of each risk and regulate their control and mitigation. Project procedures also require that should the likelihood or severity of risks be identified as increasing by this process, responsibility for its mitigation is escalated upwards through the project management chain to ensure that this is achieved.

All risks are currently owned by the partner authorities. As the project develops it is expected that some of these risks will be transferred to contractors constructing the infrastructure. In addition, Essex County Council uses a proprietary online Risk Register to assess levels of risk and to track the progress of the risk management strategy for the scheme. The §151 Officer also has access to this system. Risks are categorised into five main areas, i.e.:

- Project and programme risks related to delivery;
- Consultation and stakeholder acceptance;
- Reputational risks to the project partner authorities (and ultimately the contractors and service providers);
- Statutory Processes; and
- Financial and funding risks.

Benefits Realisation Plan Summary

	Benefits	Performance Indicator	Type*	When Delivered	Responsibility for Delivery	How Measured	Success Management
1.	**Economy:** Improve the economic efficiency and reliability of the local road network by reducing congestion on the main arterial roads.	SEP	DFB	Completion of full scheme	ECC / CCC Scheme Project Managers	Measure pre-scheme peak period traffic flows, journey times baseline figures compared to post-opening. After surveys within 3 months and then 1 year after scheme opening. Surveys on existing & new network.	Based on PRINCE II Project Management principles. Project team will use established best practices for this type of scheme.
2.	**Economy:** Encourage more people to use sustainable travel.	SEP	DFB	Completion of full scheme	ECC / CCC Scheme Project Managers	Measure bus usage data - pre-scheme compared to post-opening – 3 months and 1 year after.	Based on PRINCE II Project Management principles. Project team will use established best practices for this type of scheme.
3.	**Sustainability:** Improve sustainability by encouraging higher bus use.	SEP	DFB	Completion of full scheme	ECC / CCC Scheme Project Managers	Measure bus usage data - pre-scheme compared to post-opening – 3 months and 1 year after.	Based on PRINCE II Project Management principles. Project team will use established best practices for this type of scheme.
4.	**Economy:** Provide improved journey times between Maldon and Chelmsford.	SEP	DFB	Completion of full scheme	ECC / CCC Scheme Project Managers	Measure car peak period traffic flows, journey time baseline figures. Surveys within 3 months and then 1 year after scheme opening.	Based on PRINCE II Project Management principles. Project team will use established best practices for this type of scheme.
5.	**Accessibility:** Facilitates access from Maldon to Chelmsford and vice-versa.	SEP	DFB	Completion of full scheme	ECC / CCC Scheme Project Managers	Conduct specific journey time surveys once scheme is complete – 3 months after.	Based on PRINCE II Project Management principles. Project team will use established best practices for this type of scheme.
6.	**Safety:** Improve safety by providing better journey times with less opportunities for stop-start motoring.	SEP	DNFB	Completion of scheme	ECC / CCC Scheme Project Managers	Pre-scheme accident baseline figures compared to post opening. After data collection within 1 year after scheme opening. Figures from ECC accident data base to be supplied by Essex Police.	Based on PRINCE II Project Management principles. Project team will use established best practices for this type of scheme.

7.	**Environment:** Ensure compliance with international, national, regional and local plans, policy and legislation.	ECC / CCC Locally Defined	IB	During design and on completion of full scheme	ECC / CCC Scheme Project Managers	All current and proposed legislation & policies will be adhered to. Full consultation with all key local stakeholders during process.	Project team will use established best practices for this type of scheme.
8.	**Environment:** Minimise project programme slippages and delays through the early identification of environmental / topographical issues.	ECC / CCC Defined	DFB	During design and on completion of full scheme	ECC / CCC Scheme Project Managers	Monitor progress regularly (weekly) against programme until completion of scheme.	Undertake early Environmental and Topographical checks to avoid later issues. Project team will use established best practices for this type of scheme.

- **Contingency plans (if applicable)**

N/A