CABINET

10:00	Tuesday, 22 March 2016	Committee Room 1, County Hall, Chelmsford, Essex

Quorum: 3

Membership	Cabinet Member responsibility
Councillor David Finch	Leader of the Council (Chairman)
Councillor Kevin Bentley	Deputy Leader, Economic Growth, Waste and Recycling(Vice-Chairman)
Councillor Rodney Bass	Infrastructure
Councillor Anne Brown	Corporate, Communities and Customers
Councillor Graham Butland	Health
Councillor Ray Gooding	Education and Lifelong Learning
Councillor Eddie Johnson	Highways and Transport Delivery
Councillor Dick Madden	Adults and Children
Councillor John Spence	Finance

For information about the meeting please ask for:
Judith Dignum (Secretary to the Cabinet)
03330134579 / Judith.dignum@essex.gov.uk

Essex County Council

Essex County Council and Committees Information

All Council and Committee Meetings are held in public unless the business is exempt in accordance with the requirements of the Local Government Act 1972.

Most meetings are held at County Hall, Chelmsford, CM1 1LX. A map and directions to County Hall can be found at the following address on the Council's website: http://www.essex.gov.uk/Your-Council/Local-Government-Essex/Pages/Visit-County-Hall.aspx

There is ramped access to the building for wheelchair users and people with mobility disabilities.

The Council Chamber and Committee Rooms are accessible by lift and are located on the first and second floors of County Hall.

If you have a need for documents in the following formats, large print, Braille, on disk or in alternative languages and easy read please contact the Secretary to the Cabinet before the meeting takes place. If you have specific access requirements such as access to induction loops, a signer, level access or information in Braille please inform the Secretary to the Cabinet before the meeting takes place. For any further information contact the Secretary to the Cabinet.

Induction loop facilities are available in most Meeting Rooms. Specialist head sets are available from Duke Street and E Block Receptions.

The agenda is also available on the Essex County Council website, www.essex.gov.uk From the Home Page, click on 'Your Council', then on 'Meetings and Agendas'. Finally, select the relevant committee from the calendar of meetings.

Please note that an audio recording may be made of the meeting – at the start of the meeting the Chairman will confirm if all or part of the meeting is being recorded.

Part 1

(During consideration of these items the meeting is likely to be open to the press and public)

		Pages
1	**Apologies for Absence**	
2	**Minutes**	5 - 8
3	**Declarations of Interest** To note any declarations of interest to be made by Members in accordance with the Members' Code of Conduct	
4	**Questions from the Public** A period of up to 15 minutes will be allowed for members of the public to ask questions or make representations on any item on the agenda for this meeting. On arrival, and before the start of the meeting, please register with the Committee Officer.	
5	**Lower Thames Crossing 2016 Consultation Response**	9 - 20
6	**Installation of LED Lanterns in ECC Streetlights** The Equality Impact Assessment is available on line	21 - 42
7	**Cabinet Decisions Report**	43 - 46
8	**Date of Next Meeting** To note that the next meeting will be held on Tuesday 19 April 2016 at 10.00am in Committee Room 1	
9	**Urgent Business** To consider any matter which in the opinion of the Chairman should be considered in public by reason of special circumstances (to be specified) as a matter of urgency.	

Exempt Items

(During consideration of these items the meeting is not likely to be open to the press and public)

To consider whether the press and public should be excluded from the meeting during consideration of an agenda item on the grounds that it involves the likely disclosure of exempt information as specified in Part I of Schedule 12A of the Local Government Act 1972 or it being confidential for the purposes of Section 100A(2) of that Act.

In each case, Members are asked to decide whether, in all the circumstances, the public interest in maintaining the exemption (and discussing the matter in private) outweighs the public interest in disclosing the information.

10 Urgent Exempt Business

To consider in private any other matter which in the opinion of the Chairman should be considered by reason of special circumstances (to be specified) as a matter of urgency.

MINUTES OF THE MEETING OF THE CABINET HELD AT COUNTY HALL, CHELMSFORD, AT 10.00AM ON 16 FEBRUARY 2016

Present:

Councillors	Cabinet Member responsibility
D M Finch	Leader of the Council (Chairman)
R Bass	Infrastructure
A Brown	Corporate, Communities and Customers
G Butland	Health
R Gooding	Education and Lifelong Learning
E Johnson	Highways and Transport Delivery
D Madden	Adults and Children
J Spence	Finance

Councillors J Young, M Mackrory, S Walsh, M Buckley, M Page, R Hirst, M Danvers, K Bobbin, J Knapman, M Maddocks, R Howard, J Aldridge and A Naylor also attended.

1. Apologies for Absence

Apologies were received from Cllr Kevin Bentley

The Chairman welcomed Cllr Graham Butland to Cabinet following his appointment as Cabinet Member for Health.

2. Minutes

The minutes of the meeting held on 26 January 2016 were agreed as a correct record and signed by the Chairman.

3. Declarations of Interest

Councillors Graham Butland, Anne Brown, Julie Young and Simon Walsh declared a personal interest in item 7, Decision as to whether ECC should participate in a new entity to deliver Garden Settlements in North Essex (minute 7 below refers).

Councillor Butland informed Members that as Leader of Braintree District Council he would also leave the room during the presentation of that item.

4. Public Questions

No members of the public had registered an interest in asking a question or making a statement on any of the items to be considered at the meeting.

5. Education Transport Contract Extensions and Awards 2016

The Cabinet received report FP/331/12/15 by the Cabinet Member for Education and Lifelong Learning which outlined the proposals in relation to the extension and procurement of education transport contracts totalling £15.8m which are due to expire in July 2016. These contracts represent 66% of the total value of home to school transport contracts currently in place. Authority was also sought to carry out the necessary contractual and procurement processes to ensure that suitable transport arrangements are in place for September 2016 onwards, to fulfil the Council's statutory and policy based obligations to provide transport to school for children.

The following information was provided in response to questions raised from Councillors Young, Mackrory and Danvers.

- This is an annual process to ensure contractors are in place to provide the statutory service for which the County Council is responsible.
- Recent policy changes have impacted on the requirements of the service such as the cessation of transport to faith schools.
- This package meets the statutory responsibility of providing free school transport to those who are eligible to receive it.

Resolved:

1. Agree that the Director for Commissioning: Education and Lifelong Learning is authorised to extend any home to school transport contracts which expire in July 2016 and where extension is permitted.

2. Agree that the Director for Commissioning: Education and Lifelong Learning is authorised to enter into new contracts to replace any home to school transport contracts which expire in July 2016 and where extension is not permitted or considered to be in the Council's best interests. Any such new contract is to be for one year and give the Council the right to extend.

6. Long term options for Meals on Wheels Service

The Cabinet received report FP/264/10/15 by the Cabinet Member for Adults and Children which sought agreement from Cabinet on the future of the Meals on Wheels service in Essex. The current contract for the Meals on Wheels service expires on 30 September 2016 and cannot be extended beyond this date.

The following information was provided in response to questions raised from Councillors Young, Mackrory and Danvers.

- This proposal is to extend the pilot scheme throughout the county and create an accredited list of providers to ensure the quality of the meals service.
- Feedback from families through the pilot has been very positive.
- Scrutiny has been fully involved in the process to date and Members will be kept fully appraised prior to the contract going live on 1 October 2016.
- The decline in meal take is likely to be as a result of social change and far greater choice and opportunities for individuals.

Resolved:

1. Agree that with effect from 1 October 2016 the council will support residents who require a hot meal by operating an accredited list of providers in Essex in place of a commissioned Meals on Wheels service.

2. Assess all service users of the current Meals on Wheels service and ensure that they are provided with an equivalent service via community alternatives or domiciliary care.

3. Agree that the Director for Integrated Commissioning and Vulnerable People is authorised to create and operate the accredited list of providers.

10.22am – Cllr Graham Butland left the room

---

7. Decision as the whether ECC should participate in a new entity to deliver Garden Settlements in North Essex

Councillors Butland, Brown, Walsh and Young declared a personal interest in this item (minute 3 above refers).

The Cabinet received report FP/376/01/16 by the Cabinet Member for Planning, Transport and the Environment which explained the proposals for 'garden settlements' in North Essex and sought Cabinet's on-going support, working together with the district councils of Braintree, Colchester and Tendring, to progress the idea.

The award of £640,000 of grant assistance from the Department of Communities and Local Government (DCLG) and the establishment of a Joint Shadow Delivery Board to oversee delivery of the project were noted.

Agreement in principle was sought for the Council to participate in a legal entity created for the purpose of delivering garden settlements ('a special purpose vehicle'). Cabinet was asked to agree that the Cabinet Member for Planning, Transport and the Environment may approve the final form of such an entity.

Members noted that this proposal does not yet have financial implications for the Council and that, by approving the recommendations in the report, they were not committing the Council to any financial obligations.

The following information was provided in response to questions raised from Councillors Young, Mackrory and Walsh.

- Members were assured the objectivity and assessment process for the A120 preferred route status is a separate issue which may be influenced but not be directly affected by this process.
- The housing strategy continues to be developed and supports the District/Borough Councils who have the primary responsibility for housing.

- There is the need to ensure there are sufficient houses across Essex for the people who wish to live in the County and support economic growth ambitions.

Resolved:

1. That Cabinet notes the successful outcome of the recent bid for grant funding from the Department of Communities and Local Government which will enable the Garden Settlements concept to be progressed and which will provide on-going support for partnership working between Colchester Borough Council, Braintree District Council, Tendring District Council and Essex County Council to deliver the project.

2. Agree that the Cabinet Member for Planning Transport and the Environment or their deputy will represent the Council, in accordance with the Council's Constitution, on the Joint Delivery Board in accordance with the Governance Structure, set out in Appendix A to report FP/376/01/16.

3. To note that the grant funding is being held by Colchester Borough Council on behalf of the North Essex Garden Settlements Project.

4. Agree that the Cabinet Member for Planning Transport and the Environment be authorised to agree to establish and participate in a special purpose vehicle for delivery of the project.

5. Agree that the Cabinet Member for Planning, Transport and The Environment will determine officer and member representation on the special purpose vehicle.

6. Note that, should there be any material changes or substantial financial investment by the Council is required, further requests will be made in accordance with the Constitution.

8. Cabinet Decisions Report

The Cabinet received report FP/373/01/16 by the Secretary to the Cabinet setting out the decisions taken by or in consultation with Cabinet Members since the last meeting.

9. Date of Next Meeting

Members noted that the next meeting of the Cabinet would take place on Tuesday 22 March 2016 at 10.00am.

The meeting closed at 10.31am.

Essex County Council

AGENDA ITEM 5

Report to Cabinet	**Forward Plan reference number:** FP/411/02/16
Date of Cabinet Meeting: 22 March 2016	**County Divisions affected by the decision:** All Divisions in Brentwood, Basildon, Rochford and Castle Point
Title of report: Lower Thames Crossing: 2016 Consultation Response	
Report by: Cllr Rodney Bass, Cabinet Member for Infrastructure	
Responsible Director: Paul Bird, Director for Commissioning: Transport and Infrastructure	
Enquiries to: Katrina Davies, Senior Policy and Strategy Adviser (Place) katrina.davies@essex.gov.uk, 03330130127	

1. Purpose of report

1.1. To approve the proposed Essex County Council (ECC) response to the public consultation by Highways England on the *Lower Thames Crossing: Route Options*, as set out in paragraphs 3.21 – 3.36.

2. Recommendations

2.1. Agree to send a response based on the principles outlined in paragraphs 3.21 – 3.36 to Highways England regarding the consultation on the *Lower Thames Crossing: Route Options*.

2.2. Agree that the Cabinet Member for Infrastructure be authorised to approve the final terms of the submission.

3. Background and proposal

3.1 This latest consultation is the next step in a project that has been ongoing for a number of years, with the previous consultation carried out in 2013. The ECC response to the 2013 consultation can be found in Appendix A.

3.2 The current consultation is non-statutory and is being collated in advance of a preferred route being chosen by the DfT, the necessary detailed design and assessments will then be completed before a Development Consent Order is sought.

3.3 In response to the DfT's 2013 consultation, ECC expressed strong support for a new crossing at location C (to the east of Gravesend). This support was based on the economic growth and job creation, positive impact on network resilience and the creation of a new strategic link between the Channel Ports and the Midlands and North.

3.4 On 26th January 2016 Highways England issued their consultation on four proposed routes for a new road crossing of the River Thames connecting Kent and Essex; known as the Lower Thames Crossing (LTX). The consultation runs until 24 Mar 2016 and seeks views and comments on the four proposed routes. The proposed ECC position is set out in paragraphs 3.21 – 3.36.

3.5 Highways England are at an early stage of the development process and more detailed work will be undertaken at the next stage of the project, and therefore, route designs are illustrative at this stage. Once a route is selected, Highways England advise that more detailed design and planning will be done, which will involve further investigation and assessment of a wide range of factors. This would include noise, air quality, land and property impacts, cultural heritage, biodiversity, landscape, water resources, construction impacts, costs and charging.

3.6 As Highways England progress the design in the next phase of the scheme, this would include developing plans to avoid or minimise impacts on local communities and the environment. Where impacts remain, Highways England will seek to mitigate them.

3.7 This next stage of assessment, design and development would be the basis for an application for a Development Consent Order granted by the Secretary of State. This would give permission for the development as a Nationally Significant Infrastructure Project. Highways England would consult on future proposals as part of the statutory planning process.

3.8 Subject to the necessary funding and planning approvals, Highways England anticipates that the new crossing would be open in 2025, if publicly funded. If private funding is also used Highways England anticipates the crossing being open by 2027.

Highways England proposed routes

3.9 Highways England are consulting on four potential routes for the LTX, shown in figure 1:

- Route 1: Location A, a bridge or bored tunnel adjacent to the existing Dartford Crossing.
- Route 2: Location C (a bridge, bored tunnel or immersed tunnel) - South of the river: using either a Western Southern Link from the A2 or an Eastern Southern Link from the M2. North of the river: from the crossing following a westerly line via the existing A1089 to the M25 between junctions 29 and 30.

- Route 3: Location C (a bridge, bored tunnel or immersed tunnel) - South of the river: using either a Western Southern Link from the A2 or an Eastern Southern Link from the M2. North of the river: from the crossing following a middle-line to the M25 between junctions 29 and 30.
- Route 4: Location C (a bridge, bored tunnel or immersed tunnel) - South of the river: using either a Western Southern Link from the A2 or an Eastern Southern Link from the M2. North of the river: from the crossing following an easterly line via the existing A127 to the M25 at junction 29.

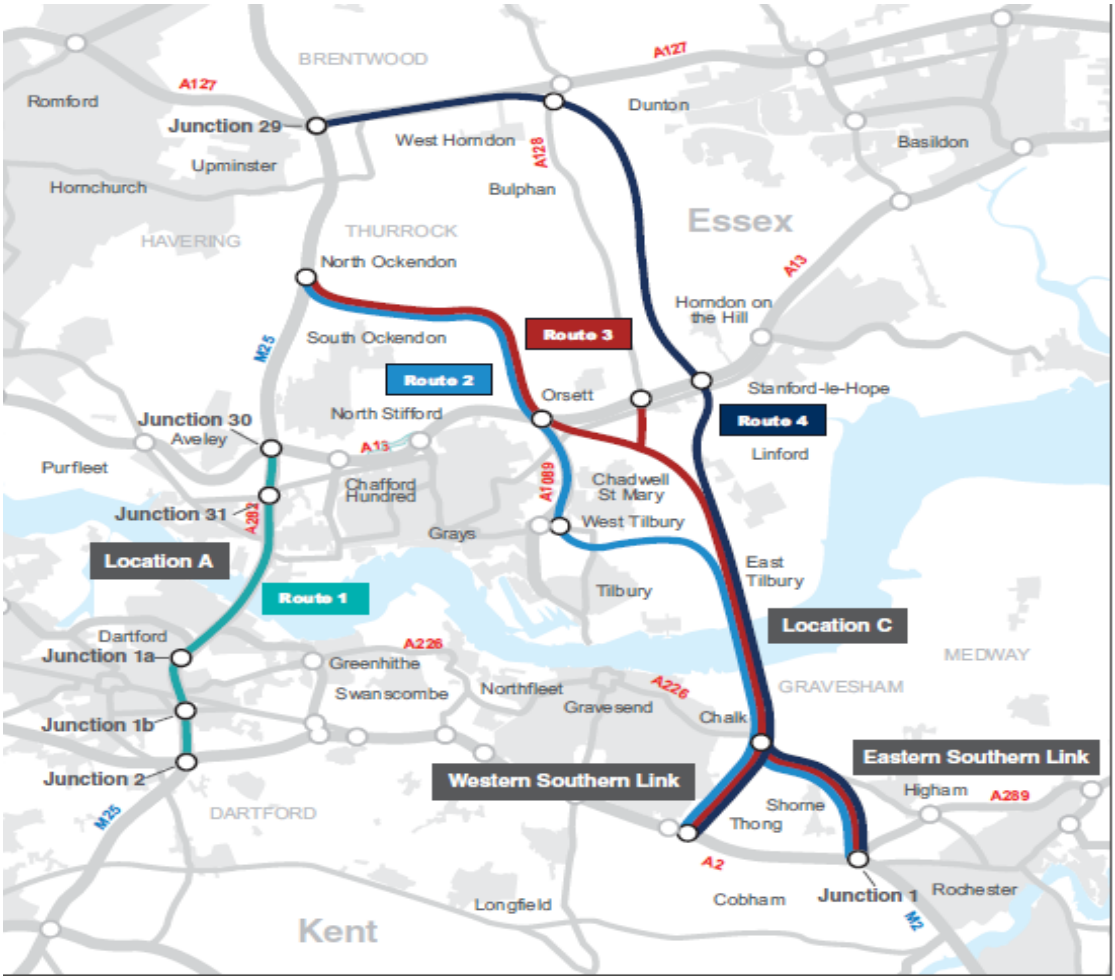

Figure 1: Potential LTX locations and routes

3.10 Highways England has indicated that a new crossing at Location A (Route 1) performs poorly against the traffic related scheme objectives. As Location A does not provide an alternative route, traffic would still be funnelled through the existing corridor from junctions 2 to 29 on the M25. Incidents at Dartford would potentially still cause long delays and severe congestion on local roads.

3.11 Highways England has also suggested that Route 1 would not provide additional connections to local roads and, by attracting more traffic to the existing corridor, congestion on the adjacent A2 and A13 would also increase.

3.12 Highways England advise that construction on Route 1 would take at least six years and would cause considerable disruption to traffic using the existing Dartford Crossing with 40mph average speed restrictions and complex traffic management affecting millions of journeys. Even when the scheme is complete, there would be limited improvement for drivers as the current 50mph speed limit and closely spaced junctions would remain.

3.13 Additionally, Highways England have calculated that a crossing at Location A would offer poor value for money and would perform poorly against other scheme objectives such as safety, noise and air quality.

3.14 Routes 2, 3 and 4 are sited at Location C, which is Highways England's preferred location. Highways England argue that Location C offers greater benefits than Location A. It would unlock significant wider economic growth and offers higher transport performance in terms of safety, capacity and resilience.

3.15 Highways England have indicated that a new crossing at Location C would provide a high quality, safer transport solution with a 70mph road providing improved journeys. Crossing capacity would increase by 70% in the opening year and, as a new route, it could be constructed without impacting the already congested Dartford corridor.

3.16 Highways England have calculated that a new crossing at Location C would draw 14% of existing traffic away from Dartford, improving journey times on the existing crossing by up to 5 minutes in peak time and improving journey times from Kent to the M25 by up to 12 minutes when using the new crossing. It would provide a clear alternative to the existing crossing when incidents occur. Traffic flows on the A2 and the A13 would also improve.

3.17 Further Highways England suggest that significant economic growth and regeneration would be enabled by connecting key areas (such as Ebbsfleet, Swanscombe and Gravesend to the south and Tilbury and wider areas of Thurrock to the north) to the national road network and improving access to jobs and services. Opportunities for new businesses are estimated to generate double the wider economic benefits at Location C compared with Location A.

Highways England proposed Route

3.18 Highways England indicate that their proposed route is a dual carriageway bored tunnel crossing with entrances and exits east of Gravesend and Tilbury (known as 'location C') connecting junction 1 of the M2 to the M25 between junctions 29 and 30, as shown in figure 2 below. Highways England has named this 'route 3'.

3.19 Route 3 is preferred by Highways England as it would provide the shortest route, the greatest improvement to journey time and, being an entirely new

road, would deliver a modern high quality road. It would also have the lowest environmental impact of the three options.

3.20 The Eastern Southern Link (in Kent) is proposed as it would provide the most direct route and the greatest improvement to journey times, as it would create a motorway-to-motorway link. Highways England recognise this proposal has significant implications for the local community.

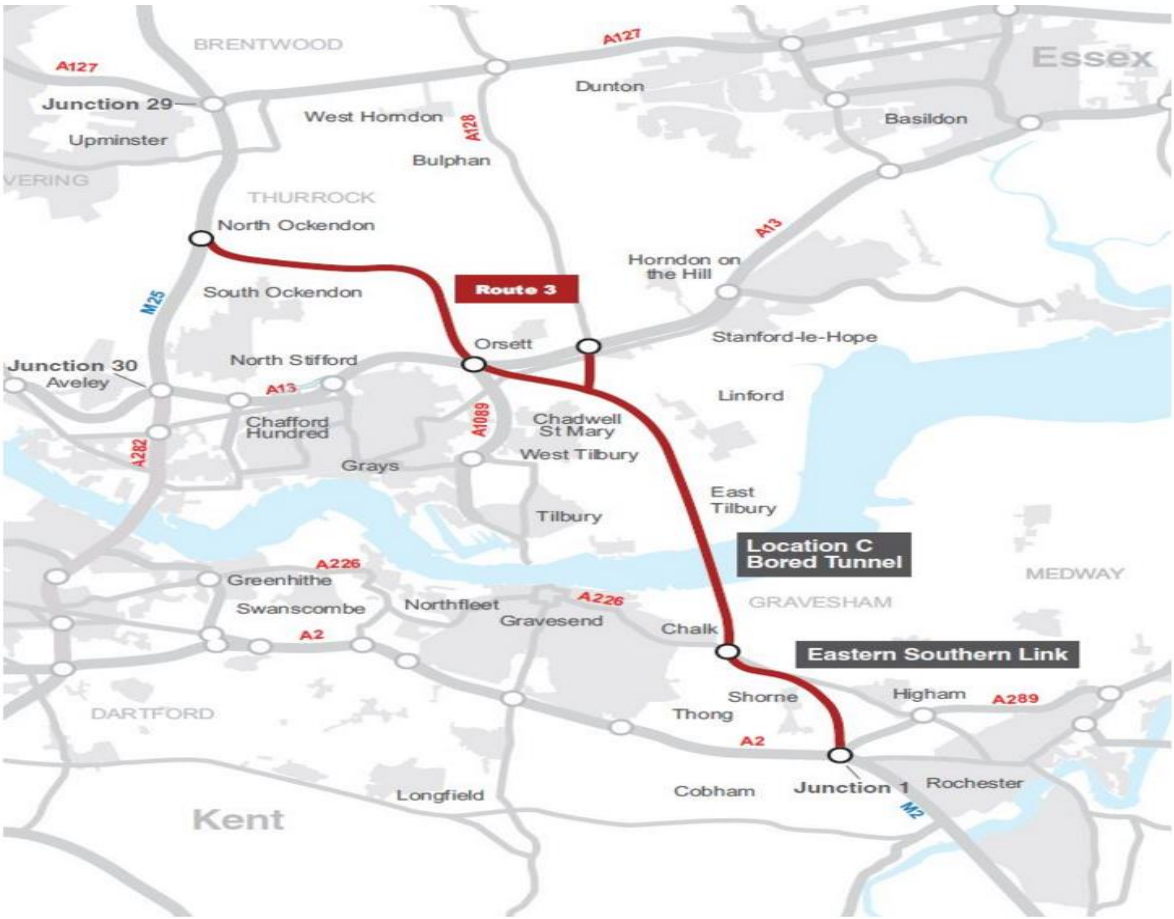

Figure 2: Highways England preferred route

Proposed ECC Response to the Highways England Consultation

3.21 Delivery of the LTX at route 3 could provide 25,000 new jobs and 21,000 new homes and deliver wider economic benefits of £1.4bn The key principles of ECC's response to the Highways England Consultation are set out below.

3.22 ECC strongly agrees with the proposal for a new Crossing at Location C, east of Gravesend and Tilbury. The reasons for this are:

Economic benefits – the economic benefits of a new Crossing at Location C are significant and this location has the greatest potential for regeneration and job creation. These benefits are of a substantially greater scale than expansion of capacity at Dartford can provide (see Table 1). A study undertaken by KPMG

in 2010 calculated that a new crossing at Location C could contribute £12.7 billion to the local economy.

Network resilience – the provision of an independent crossing built to modern standards and suitable for all users will not only radically improve the resilience of crossing the Lower Thames but also the resilience of the strategic road network (SRN) between Kent, the Midlands/North and mainland Europe.

Strategic transport benefits – the Highways England consultation documents and other studies have shown that during incidents at Dartford, traffic diverts to other crossings (notably the Blackwall Tunnel) or the long way around the M25. Providing a suitable alternative crossing point, has the dual benefit of releasing capacity at Dartford and elsewhere on the SRN. The provision of a faster, more reliable route to the Midlands and North from the Channel ports will be particularly attractive to long-distance freight traffic and will have the benefit of diverting many of these journeys away from Dartford.

	Location A	**Location C**
New Jobs	17,000	25,000
New Homes	13,000	21,000

Table 1: URS Study Economic Impacts (2012)

3.23 ECC strongly supports the proposed 'route 3', connecting junction 1 of the M2 to the M25 between junctions 29 and 30. The reasons for this are:

Economic benefits – the 2012 URS study used route 3 at location C as a base route. As indicated in Table 1 route 3 supports the long term creation of an additional 25,000 new jobs and enables the construction of an additional 21,000 new homes over the reference case. Assuming the construction of Paramount Park, Option C supports the long term creation of an additional 32,000 new jobs and enables the construction of an additional 28,000 new homes over the reference case. This modelling has not been undertaken for routes 2 and 4.

Network resilience – the 2012 study indicated that route 3 would reduce flows at the existing crossing by between 2% and 19% dependent on time of day and direction of flow (more generally about 10%).

Strategic transport benefits – route 3 is the only option that provides a new strategic link between the Channel Ports and the Midlands and North and provides improved connectivity from Essex to these locations. Dependent upon the direction of travel and time of day 23% and 34% of travellers would chose to use a LTX at route 3 rather than the existing crossing.

3.24 The latest modelling work undertaken by Highways England suggests there will be a ten minute reduction in journey time between junction 4 on the M2 and junction 28 on the M25 via route 3.

3.25 Journey times between junction 3 and junction 28 on the M25 using the existing Dartford crossing would also be reduced by three minutes southbound and four and a half minutes northbound. Table 2 provides more information on the latest modelling.

	Western Southern Link Assumed		
	Route 2	**Route 3**	**Route 4**
Estimated construction cost (nominal)	£4.1bn to £5.8bn	£4.1bn to £5.7bn	£4.1bn to £6.2bn
Wider Economic Impacts	£1.3bn	£1.4bn	£1.7bn
Adjusted Benefit Cost Ratio	3.6	3.5	3.3
Reduction in journey time between M25 junction 3 and junction 28 using the Dartford Crossing	3 mins (s/b) 4.5 mins (n/b)	3 mins (s/b) 4.5 mins (n/b)	3 mins (s/b) 5 mins (n/b)
Reduction in journey time between M2 junction 4 and M25 junction 28 using the LTX (location c)	9 mins	10 mins	9 mins
Route length	13.8 miles	13.3 miles	15.9 miles

Table 2: Highways England Modelling (2016)

3.26 ECC supports the Western Southern Link (WSL) as preferred by Kent County Council (KCC). This is not Highways England's proposed route. The reasons for this route choice are:

- **KCC's preferred WSL** – in 2014 KCC commissioned work to design an alternative alignment because the DfT's indicative route in the 2013 consultation went centrally through Shorne Country Park. It is KCC's alignment that is referred to as the WSL in the 2016 consultation and therefore historically we have supported it.
- **Junction with the A2/M2** – the Eastern Southern Link (ESL) would terminate with the M2 at Junction 1. This is already a complex junction and using this will require a fourth level of slip roads on viaducts up to 23m high. The increase in complexity will also have possible safety implications and could lead to the whole junction locking up if there is an incident on one part of it. Conversely the WSL would create a new junction on the A2. Although this would require realignment of the A2, this could be completed with minimal disruption to the running of the A2.
- **Environmental impacts** – the WSL would mostly be located outside of the Kent Downs Area of Outstanding Natural Beauty (AONB)

whereas the ESL has a greater footprint within it, as well as impacting on the Great Crabbles Wood Site of Special Scientific Interest (SSSI) Both would have impacts on the area's heritage but the ESL would divide Shorne Parish and be in closer proximity to a number of listed buildings.

- **Traffic flows** – the choice of WSL or ESL does not have a significant impact on the total volume of traffic using the Crossing but it does influence the distribution of traffic on the existing road network. The ESL tends to attract more HGV traffic but with the WSL more light vehicles would divert from Dartford. The ESL provides more relief to the A2 west of M2 Junction 1 and to the M20 at Maidstone, but puts significantly greater pressure on the M2 west of Junction 1 compared to the WSL.

3.27 ECC will argue that it is essential that a swift decision on the preferred route option must be taken by Government following the consultation so as to minimise the uncertainty and potential blight around the potential alternative routes through the community, both north and south of the river.

3.28 If Location C is chosen, irrespective of whether the western or southern link is built, there will be an improvement in air quality at Dartford on opening year owing to the forecast 14% decrease in traffic at the existing Crossing.

3.29 The Highways England modelling has shown that no residential properties will be at risk of exceeding air quality limits on any of the Location C routes. However, full modelling will be carried out at the next stage of project development.

3.30 For noise impacts the modelling has shown a net benefit as properties close to roads where traffic flow will decrease will have a reduction in noise levels but those in the vicinity of the new road or roads where traffic volumes will increase will have likewise experience an increase in noise levels.

3.31 The proposed routes will have varying degrees of environmental impacts, most notably on Schedule Ancient Monuments; landscape and the Greater Thames Marshes Nature Improvement areas. It is recommended that the next stages and further assessments should seek to minimise the environmental implications, whilst promoting environmental mitigation, compensation and enhancement, such as biodiversity offsetting and green infrastructure. Further detailed comments shall be provided on this basis with reference to ECC environmental policies and standards.

3.32 Longer distance traffic using the new Crossing should remain on the Strategic Road Network (motorways and trunk roads) and not leak onto the Local Road Network which would cause traffic problems for ECC's roads. Therefore ECC requires more evidence before a judgement can be made on proposals for new junctions with the A13 and M25 capacity for which need to be fit for purpose. The reasons for this are:

- The new junctions will improve accessibility to Basildon, Southend and Chelmsford. It is likely that traffic on the A13 will increase as well as that on the local road network leading into the A13 including the A127. The Highways England modelling shows a decrease of around 3,100 vehicles per day on average using the A13 west of A1089 on opening year but it does not state what effect it will have east of the junction. No modelling demonstrating the effects on the local road network has been made available.
- Likewise, in the event of an incident at the junction with the M25 the alternative junction with the A13 will become the alternative route. It has not been demonstrated that the proposed junctions with the A13 can support forecast traffic flows and are future-proofed for growth.

3.33 This consultation, whilst it is focused on route options, also needs to consider the impact on existing junctions on the strategic road network. Where improvements are required as a result of the changing traffic flows created by the new Crossing then such improvements should be funded as part of the scheme to avoid future problems for the Highway Authorities. ECC has consistently argued for a number of wider network improvements and believes these must be delivered in conjunction with the LTX to mitigate current pinch points which would otherwise be exacerbated as follows:

- M25 J28 (A12 junction) - Clockwise flow from the A12 towards the crossing flows well. Butanticlockwise traffic from the crossing accessing the A12 is constrained by the need to navigate a complex signalised roundabout. This must be addressed.
- A12/A130 (Fairglen junction) - Likely to see increased traffic flow from a lower Thames Crossing and is already a major bottleneck.
- A12/A130 (Howe Green junction) - Likely to see increased traffic flow from a lower Thames Crossing. This is a major bottleneck on the A12 and is urgently in need of major improvement.

3.34 Finally, the Consultation Questionnaire asks for comments on the consultation itself. It is proposed that ECC will state:

- A range of technical information that is necessary in assessing the impacts of the proposed scheme and relative merits of the different routes has not yet been made available.
- A combination of signage, advanced information boards etc… pointing out the relevant live advantages of alternative route for the two crossing points and alternative routes to the north on the north side of the river and to the south and east on the south side of the river will be essential.

3.35 ECC has been working with other local authorities within Essex and businesses to form a consensus around the best location and route for the LTX within Essex. We have also liaised with other County Councils that border Essex including Kent, Cambridgeshire, Hertfordshire and Suffolk to understand their view and form a consensus on the best location and route for the LTX in terms of strategic traffic movements.

3.36 A formal consultation response will be approved by the Cabinet Member for Infrastructure and submitted to Highways England based on the information contained within this report and any additional partner information that officers receive in the interim period.

4 Policy context and Outcomes Framework

4.1 A Vision for Essex 2013-17 sets out the Council's aims and vision. This proposal aligns with the following aims:

- develop and maintain the infrastructure that enables our residents to travel and our businesses to grow
- support employment and entrepreneurship across our economy
- improve public health and wellbeing across Essex
- respect Essex's environment.

4.2 In February 2014 the Council adopted a new Outcomes Framework for Essex - a statement of ambition based on its Vision for Essex 2013-17 (agreed at Full Council in July 2013). The framework sets out the Council's ambitions for Essex and replaces a range of previous outcomes and objectives. This proposal aligns with the following Outcomes:

- Sustainable economic growth for Essex communities and Businesses
- People in Essex experience a high quality and sustainable environment

4.3 Provision of additional crossing capacity will drive economic growth in Essex, widening access to employment and improving the competitiveness of the Essex economy.

4.4 ECC will work with the DfT to ensure that the preferred option delivers value for money and benefits the people of Essex.

4.5 The Thames Crossing is a nationally important strategic road link connecting Essex to Kent, southern England and the Channel Ports. The construction of additional crossing capacity supports the Essex Vision: *Essex means business. We want to be a vibrant place where every individual and community has the opportunity to grow and reach their potential and play a part in our county's success* by securing the highways, infrastructure and environment to enable businesses to grow.

4.6 The Thames Crossing is essential to the delivery of the Economic Growth Strategy vision; *Essex is an economically vibrant and successful entrepreneurial county. Our economic vision is of a county where businesses and our residents can grow and fulfil their potential, making Essex the best place to live and work*. The crossing enables the efficient transport of people and goods, supports our locations for growth and is essential for the development of the ports and logistics business sector.

4.7 The Thames Crossing also supports 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

5 Financial Implications

5.1 There is a strong probability that any of the preferred routes could increase traffic volumes on other parts of the Essex road network. However, the specific impact will be in part dependent on other improvements along the network and patterns of local development. Traffic modelling will be needed to ensure that the impact of local development schemes is fully understood.

6 Legal Implications

6.1 None at this time.

7 Staffing and other resource implications

7.1 None

8 Equality and Diversity implications

8.1 The Public Sector Equality Duty applies to the Council when it makes decisions. The duty requires us to have regard to the need to:

(a) Eliminate unlawful discrimination, harassment and victimisation and other behaviour prohibited by the Act. In summary, the Act makes discrimination etc on the grounds of a protected characteristic unlawful.

(b) Advance equality of opportunity between people who share a protected characteristic and those who do not.

(c) Foster good relations between people who share a protected characteristic and those who do not including tackling prejudice and promoting understanding.

8.2 The protected characteristics are age, disability, gender reassignment, pregnancy and maternity, marriage and civil partnership, race, religion or belief, gender, and sexual orientation. The Act states that 'marriage and civil partnership' is not a relevant protected characteristic for (b) or (c) although it is relevant for (a).

8.3 The proposal for a new crossing may have equalities implications, however the recommendations in this report concerns only a response to consultation and the eventual decision will not be one that is taken by ECC. Therefore a Section 2 Equality Impact Assessment is not considered necessary.

8.4 Equality and diversity impacts will be considered by Government as they progress the preferred crossing option.

9 List of Appendices

(available at www.essex.gov.uk if not circulated with this report)

9.1 FP/221/06/13, *Lower Thames Crossing – Submission of ECC response to DfT consultation* (available online)

10 List of Background Papers

All background papers available from:
https://highwaysengland.citizenspace.com/cip/lower-thames-crossing-consultation

Essex County Council

AGENDA ITEM 6

Report to Cabinet	**Forward Plan reference number:** FP/355/12/15
Date of Meeting: 22 March 2016	**County Divisions affected by the decision:** All Divisions
Title of report: Installation of LED Lanterns in ECC Streetlights	
Report by Councillor Rodney L Bass - Cabinet Member for Infrastructure	
Responsible Director: Paul Bird - Director for Commissioning: Transport and Infrastructure	
Enquiries to Julian Sanchez – Commissioning Delivery Manager - Julian.Sanchez@essex.gov.uk	

1. Purpose of report

1.1 Cabinet is asked to agree a proposal to invest £9.222m which would be spent on the replacement of approximately 19,000 sodium street lanterns with more efficient LED lanterns. These lanterns are those which are lit all night under the Council's part night lighting scheme. The proposal will save the council an estimated £24m in energy, maintenance and carbon taxes over a 20 year period. Part of this investment, £4.350m would be forward funded by an interest free Salix loan under a government scheme.

1.2 Cabinet is asked to agree that the work can be directly awarded to Ringway Jacobs.

2. Recommendations

2.1 Agree that up to £9.222m can be spent on the installation of LED lighting units on the basis of the savings projections contained in this report.

2.2 Agree to commission the work directly from Ringway Jacobs subject to a requirement that they will undertake a competitive tender for materials and labour is undertaken when sub-contracting the work.

2.3 Delegate to the Director for Commissioning: Transport & Infrastructure authority to:

(a) determine the technical specification; and

(b) issue an order to Ringway Jacobs.

3. Background and proposal

3.1 The Council has undertaken a pilot to evaluate the use of LED technology as a replacement for the existing lanterns to monitor the energy savings predicted as a result of a switch to LED (Phase One). The pilot sought to establish whether it is prudent to roll out the wider use of LED lighting.

3.2 The Phase One pilot results have demonstrated energy and maintenance savings broadly in line with forecasts and lessons were learned regarding people's experience of the new lighting.

3.3 The Council is now reconsidering the wider use of LED technology, the cost of which will in part be supported by an interest free loan from Salix, a Government funded not-for-profit body.

3.4 In light of these facts, it would seem prudent to prioritise the next tranche of replacement streetlamps in the lights which use most energy. These are the 14% of lights which are lit all night because they meet the exemption criteria in the Council's part night lighting scheme. Lights are lit all night because, for example, they are in a town centre location or needed for safety reasons. This applies to around 19,000 lights and would cost around £9.222m to install. The financial benefits of this project are set out in section 5 of the report.

3.5 Given the scale of the project, it is recommended that the project is implemented in stages and a mechanism is established to capture feedback received through customer services and stakeholder engagement, which will then be considered by a technical panel. The panel will identify the optimal calibration of the new lighting to reflect local factors; and will balance these against safety and traffic management requirements to achieve an outcome which is both publicly acceptable and meets lighting standards for road safety.

3.6 The Council has a long term contract with Ringway Jacobs. Under this contract the Council is able to award the work directly to Ringway Jacobs, although it is not required to do so. It is proposed that the Council should award the work to Ringway Jacobs because:

(a) Benchmarking work shows that the price that the company proposes to charge compares favourably with our market intelligence. The company have indicated that they will undertake a competitive tendering process for materials and labour in order to achieve good value for money and thus deliver the cost saving benefits to the council for the lowest price.
(b) The company has contracts with other local authorities for similar works; this has the potential to drive down costs.
(c) The company have indicated that they can deliver the project within a timescale which delivers the council on-going savings to the revenue budget.

(d) Ringway Jacobs is already responsible for street light maintenance under the current contract. Therefore if a light fails there can be no argument about who is responsible for the defect.

3.7 The intention is to achieve project delivery by early 2018. This would depend on the availability of labour and materials. No difficulties with this timetable are anticipated and opportunities to compress delivery times to bring forward the benefits will be explored.

4. Policy context and Outcomes Framework

4.1 This decision relates most closely to the Commissioning Strategy and Outcome: People in Essex experience a high quality and sustainable environment and to the indicator "Cost of Energy' which relates to the amount that is spent on energy. Furthermore, the decision relates to parts of the Essex Vision (2013-2017) which commits ECC to:

- **Spend taxpayers' money wisely**: This project focuses is on keeping our running costs low so we can invest into people and communities. Our services must be sustainable in the long term.

- **Develop and maintain the infrastructure** that enables our residents to travel and businesses to grow.

5. Financial Implications

5.1 The total capital cost of this project is £9.222m which includes a contingency of £400,000. There is an existing allocation within the capital programme for this investment. This will save the authority an estimated £24.063m in energy, maintenance costs and carbon tax reduction over a 20 year period, based upon a best estimate of energy price inflation of 3.2%. After offsetting costs of debt there will be net saving of £12.525m. The project will be delivered over a 2 year period from 2016/17 through 2017/18 and this delivers a payback over 10 years and a return on investment of 115% by year 20. An overview of the investment required and the savings achieved by implementing this project can be seen in the Project Financial Statement below.

5.2 An interest free loan is available from Salix to the value of £4.350m. Salix is a not for profit organisation funded by the Department for Energy and Climate Change and the Department for Education which has been established to enable public sector organisations to take a lead in tackling climate change by increasing energy efficiency. The Salix loan will be paid back within 5 years. ECC will need to fund the remainder of the capital investment £4.872m as well as repaying the Salix loan.

The average borrowing costs and split of the funding source for this project can be seen in the Project Financial Statement below.

Project Financial Statement

	£000 Total
Total Project Costs Inc Contingency	**9,222**
Funded by:	
0% SALIX Loan	4,350
ECC Funding	4,872
Total Funding	**9,222**

Impact of Investment	**Average annualised Savings £000**	**Savings over 20 years £000**
Energy Savings	1,001	20,015
M'tce savings	112	2,234
Carbon Reduction	91	1,815
Total Savings	**1,203**	**24,063**
Loan Repayment charges (Borrowing Costs & Minimum Revenue Provision (MRP*))	**(577)**	**(11,538)**
	-	
Total - (cost)/saving	**626**	**12,525**

*** MRP - Local authorities are required to set aside prudent sum towards capital expenditure financed by borrowing.**

This proposal will generate gross cashable saving with the summary of Energy, Maintenance and Carbon Savings below

Maintenance cost savings

- In total ECC currently spend £240,000 pa on revenue maintenance of street lights.
- This project will reduce maintenance by £111,700 pa or £2.234m over 20 years, due to more efficient bulbs.

Carbon reduction

- In total ECC currently spend £150,000 pa on carbon taxes for street lights. Lower consumption will reduce the tax by £90,000 pa which is a 60% reduction. This equates to a saving of £1.815m over 20 years.

Energy cost savings

- ECC currently spend £3.900m pa on energy costs relating to street lighting.
- All night lighting electricity consumption is estimated to be reduced by 7,225 MWh (63%) as a result of this proposal.

- The reduction in the cost of electricity to ECC equates to £20.000m over 20 years, assuming RPI growth of 3.2% after the two year fixed price expires in 2018.

5.2 The energy industry is a volatile market and extremely complex to try to predict. The reduction in the cost of electricity to ECC equates to £20.000m over 20 years, assuming RPI growth of 3.2% after the two year fixed price expires in 2018. However, the anticipated savings could be higher or lower, but reduced consumption mitigates the risk of volatility impacting upon the Council's finances.

5.3 The revenue savings presented within this report are included within the MTRS.

Non–financial benefits

5.4 Within the Commissioning Strategy, there is a specific energy strategy which sets out the commissioning intention to 'buy better, use less, generate more (see details below) for ECC, Essex residents and Essex Businesses'.

- Buy Better, there are opportunities for local authorities to more effectively purchase energy as well as influence local residents and businesses in the way they buy energy
- Generate More - Whilst local authorities can not directly control the cost of energy they can play an active role in tackling consumption levels across public, private and residential properties.
- Use Less - Local authorities are taking a range of roles in local energy generation be that through the establishment of an Energy Services Company; joint ventures with local communities or commercial groups and providing support so that businesses and community groups can establish community generation energy schemes

6 Legal Implications

6.1 ECC is not required to provide street lighting in most circumstances but in practice it provides a large number of lights.

6.2 The proposal to award the work to Ringway Jacobs is in accordance with the contract and procurement law but the Council should only take these steps if it is satisfied that this is likely to be the best value for money. The arguments advanced by Place Commissioning are set out in section 3 of the report.

7. Staffing and other resource implications

7.1 There are no staffing, property or other resource implications as a result of this decision, as it is delivered within existing resources and contracted arrangements.

8 Equality and Diversity implications

8.1 Section 149 of the Equality Act 2010 creates the public sector equality duty which requires that when ECC makes decisions it must have regard to the need to:

(a) Eliminate unlawful discrimination, harassment and victimisation and other behaviour prohibited by the Act

(b) Advance equality of opportunity between people who share a protected characteristic and those who do not.

(c) Foster good relations between people who share a protected characteristic and those who do not including tackling prejudice and promoting understanding.

8.2 The protected characteristics are age, disability, gender reassignment, pregnancy and maternity, race, religion or belief, gender and sexual orientation.

8.3 The equality impact assessment indicates that the proposals in this report will/will not have a disproportionately adverse impact on any people with a particular characteristic.

9. List of Appendices

(available at www.essex.gov.uk if not circulated with this report)

Equality Impact Assessment

10. List of Background Papers

Evaluation of pilot.

(Any request for any background papers listed here should be made to the person named at the front of the report who will be able to help with any enquiries)

Review of LED Replacement Strategy Phase One

November 2015

Executive Summary

The pilot has been a success with 1562 units installed. This has formed the basis for a review to confirm that the business projections / assumptions have been achieved.

The following aspects have been reviewed:

- Installation Costs
- Energy and Carbon Savings
- Maintenance Savings
- Public Feedback
- Lessons Learnt

Looking at the installation costs there was a significant reduction in cost due to the materials being purchased at lower rates. The labour costs increased due to the accelerated program and the need to carry out the works at night time. However the costs were still 25% lower than originally projected and this information will be used in the phase two business case.

The energy saving assumptions have been in line with what was projected and is within 1% accuracy and due to the change in profile (50% / 25% light reduction) we are now seeing an 5% increase in savings by end of year 2.

Due to pressure on the revenue funding for the street lighting budget only £186k can be identified for all night lights. We can no longer show the savings for routine maintenance. It must be noted that if the lanterns are not changed to LED there would be an increase in lights out and additional capital / revenue would then be required to resolve the issue. We can however show that the reactive maintenance profile over 25 years is 8% greater than projected.

There was a number of public complaints relating to the LED brightness and there are a number of lessons learnt that will be put in place to ensure that the public perception of the brightness is managed and that shields are incorporated into the lanterns at the beginning to reduce glare in areas of concern.

Overall the pilot has been a success and we have a lot of information that will be used to ensure that phase two will be a success in terms of savings and public satisfaction.

Introduction

This report looks at the Essex LED pilot that undertook replacing 1720 lanterns to LED units in the following areas:

- Stansted Mountfitchet
- Burnham Town
- Maldon Town
- Great Dunmow
- Saffron Walden
- Colchester Town

The new LED implementation adopted a variable lighting profile to ensure that the LED replacement program achieves the maximum savings. The three stage variable lighting strategy proposed was:

- Stage one - 100% light output at 05:00 – 20:00
- Stage two - reduce to 70% light output at 20:00 – 00:00
- Stage three - reduce to 50% light output at 00:00 – 05:00

The business case projected that there would be a saving of **£2.94m** over 25 years. The Energy Saving were projected in year one saving to be **£64k** and **£94k** in year two once the full installation had taken place.

Table 1 – Business Case Quantities

Existing to be Replaced	Totals	New Installation	Totals
100 SON ST	137	Ampera Midi 32x 64W	374
100 SON ST	20	Ampera Midi 48x 97W	1,022
135 SOX LL	8	Ampera Maxi 80x 162W	240
135 SOX ST	51	Ampera Maxi 128x 253W	84
150 SON ST	743		
150 SON LF	228		
250W SON	240		
400W SON	84		
90 SOX LL	118		
90 SOX ST	91		

The commission was given mid-December 2014 and to ensure that we could deliver the project the lanterns were ordered before the designs were carried out. This meant that we could not tailor the designs to ensure the lowest wattage lantern could be used in each area. The designs needed to use the Central Management System (CMS) to reduce the output of the lanterns.

Due to the installation process it took up to two weeks for the new lanterns to be configured to the CMS system. During this period the lanterns were running at full output which may have been conceived by some members of the public as being too bright. A decision was therefore taken by the cabinet member to reduce the output to 50% (25% for Great Dunmow) which was actioned in April.

Installation

1720 columns were selected for conversion to LED and by April 1562 LED lanterns (92%) were installed with 158 units remaining.

Through the design process it was identified that there were some lanterns that could not be installed due to concrete columns. This is because they have passed their expected design life and a decision was made not to install a possibly heavier LED lantern as this could cause the column to have a catastrophic failure. However since phase one we have identified that one of our supply chain partners have the ability to test these columns using a specialist method to determine if they are suitable for the new units and it is proposed that we will use this process for phase two.

The remaining lanterns will be utilised at appropriate location during this year capital programme including the upgrade of junction 7 of the M11/A414.

Table 2 – Actual Quantities

Existing to be Replaced	Totals	New Installation	Totals
100 SON ST	145	Ampera Midi 48x 73W	361
100 SON ST	41	Ampera Midi 48x 97W	484
135 SOX LL	18	Ampera Maxi 64x 127W	452
135 SOX ST	59	Ampera Maxi 80x 162W	191
150 SON ST	688	Ampera Maxi 128x 253W	74
150 SON LF	92		
180 SOX ST	16		
250W SON			

	246
400W SON	67
90 SOX LL	118
90 SOX ST	72

Installation Costs

Looking at table 3 it can be seen that the business case average cost per unit was £506 and the actual cost is £376. The reduction in cost was significantly helped due to combined purchasing with our other contract in Hertfordshire. This negated the increase in labour costs that were incurred when the site visits were undertaken through the hours of darkness due to the program being brought forward and the need to complete within two months. A breakdown of the installations costs are shown in *Appendix A*.

Table 3 – Installation Cost Comparison

	Business Case Costs	Average Cost / Unit	Actual Costs	Average Cost / Unit
Labour	£ 46,560.10	£ 29.81	£ 65,274.24	£ 41.79
Material	£ 719,132.30	£ 460.39	£ 493,699.00	£ 316.07
Traffic Management	£ 25,304.40	£ 16.20	£ 28,001.19	£ 17.93
Total	£ 790,996.80	£ 506.40	£ 586,974.43	£ 375.78

The design, supervision and project management were in line with what was expected. Table 4 shows the total cost comparison.

Table 4 – Project Cost Comparison

	Business Case Costs	Actual Costs
Design Cost	£ 40,866	£ 36,968
Supervision / Management	£ 30,323	£ 29,349
Overhead Fee	£ 41,521	£ 34,266
Installation / Materials	£ 790,996	£ 586,974
Total	**£ 903,706**	**£ 687,557**

Energy Saving

Looking at the projected energy increase the cost per kWh was **10p** up to March 2016. The forecast increase provided by ECC will be **10.42p** giving a total increase of 4.03%. Which shows a higher increase in energy saving than projected.

We can now see that the original projection using the Department of Energy and Climate Change (DECC) are closer to the actual increase. Essex County Council officers are carrying out an assessment to show the potential range in increase for the second phase of the LED project.

Table 5 – Energy Increase Comparison

Energy inflation rate as below and then 3.2% thereafter (Based upon RPI figures provided by ECC).

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9
ECC Inflation Forecast based on RPI	0.00%	2.90%	3.20%	3.10%	3.20%	3.20%	3.20%	3.20%	3.20%
Actual	**0.00%**	**4.03%**							

Looking at the business case and the lanterns that were actually installed it can be seen that the reduction in energy has exceeded the forecast for year one due to the accelerated program and that levels were reduced further to 50% and 25% in Great Dunmow.

Original Profile

Although there has been a decision to reduce the lighting levels, it is important to compare the savings that would have been achieved under the original variable lighting regime.

In year one the projected savings in the business case (1720 units) was **46%** (642,270 kWh). With the 1562 units that were installed under the accelerated program we would have saved **62%** (786,515 kWh).

In year two the projected savings in the business case (1720 units) was **66%** (923,940 kWh). With the 1562 units that were installed we would have saved **65%** (815,559 kWh). As 92% of the original numbers were the savings reduce from **£94k** (1720 units) to **£87k** just under 8% which demonstrates that this is in-line with the projections using the installed 1562 units see tables 6- 8.

It can be seen that the business case assumptions are within 1% accuracy.

Actual Profile

As there was a decision to reduce the light levels even further, this has increased the savings that were originally projected. For year one the cost savings increase to **66%** and a reduction of 860,416 kWh.

In year two the projected savings also increase to **71%** (891,714 kWh) giving a total cost saving of **£93k**.

Overview

Looking at table six which shows the projected saving and actual to date. It can be seen that there is an additional **£9k** saving this is due to the additional request to reduce the light output further.

Table 6 - Year 1 Savings to date:

	Column1	Business Case - 1720 units	Installed - 1562 - Original profile	Installed - 1562 - 50% / 25%
	Existing	669,922 kWh	605,357 kWh	605,357 kWh
	New	361,758 kWh	243,133 kWh	209,082 kWh
	Saving	**308,164 kWh**	**362,224 kWh**	**396,275 kWh**
Cost	**Existing**	£66,992	£60,536	£60,536
	New	£36,176	£24,313	£20,908
	Saving	**£30,816**	**£36,222**	**£39,627**
	Percentage	**46%**	**60%**	**65%**

Table 7 – Year 1 - Projections to year end (March 2016)

		Business Case - 1720 units	Installed - 1562 - Original profile	Installed - 1562 - 50% / 25%
Consumption	**Existing**	1,396,238 kWh	1,262,617 kWh	1,262,617 kWh
	New	753,969 kWh	476,102 kWh	402,201 kWh
	Saving	**642,270 kWh**	**786,515 kWh**	**860,416 kWh**
Cost	**Existing**	£139,611	£126,262	£126,262
	New	£75,457	£47,610	£40,220
	Saving	**£64,154**	**£78,652**	**£86,042**
	Percentage	**46%**	**62%**	**68%**

Table 8 – Year 2 Projections

	Column1	Business Case - 1720 units	Installed - 1562 - Original profile	Installed - 1562 - 50% / 25%
Consumption	Existing	1,396,238 kWh	1,262,617 kWh	1,262,617 kWh
	New	472,298 kWh	447,058 kWh	370,903 kWh
	Saving	**923,940 kWh**	**815,559 kWh**	**891,714 kWh**
	Percentage	**66%**	**65%**	**71%**
Cost	Existing	£143,659	£131,565	£131,565
	New	£49,353	£44,706	£38,648
	Saving	**£94,306**	**£86,859**	**£92,917**
	Percentage	**66%**	**66%**	**71%**

Carbon Savings

As seen above the carbon savings have also been higher than projected in year one and the year two saving are in line with what was projected.

Table 9 – Year 1 - Projections to year end (March 2016)

	Business Case - 1720 units	Installed - 1562 - Original profile	Installed - 1562 - 50% / 25%
Cost per tonne	**18**	**18**	**18**
Existing Tonnes	732.47	662.37	662.37
Existing Cost	**£13,184**	**£11,923**	**£11,923**
New Tonnes	495.15	249.76	210.99
New Cost	**£8,913**	**£4,496**	**£3,798**
Cost Saving	**£4,272**	**£7,427**	**£8,125**

Table 10 – Year 2 Projections

	Business Case - 1720 units	Installed - 1562 - Original profile	Installed - 1562 - 50% / 25%
Cost per tonne	18.58	20	20
Existing Tonnes	732.47	662.37	662.37
Existing Cost	£13,605	£13,247	£13,247
New Tonnes	250.80	234.53	194.58
New Cost	£4,660	£4,691	£3,892
Cost Saving	£8,945	£8,557	£9,356

Maintenance Savings

The original business case provided maintenance savings based on industry information for failures and routine maintenance. Due to pressure on the revenue funding for the street lighting budget only £186k can be identified for all night lights. However whilst we can no longer show the savings for routine maintenance it must be noted that if the lanterns are not changed to LED there would be an increased in lights out and additional capital / revenue would then be required to resolve the issue.

For year one we will still meet our maintenance savings through the reduced reactive maintenance. The reactive maintenance saving over 25 years using the same inflation rates as in the business case would increase by 8%.

Table 11 – Year 1 Projections

	Business Case Projection Year One	New Projection
Routine Maintenance	£ 7,855	£ 0
Reactive Maintenance	£ 13,065	£ 13,921
Post Retro		
Routine Maintenance	£ 1,647	£ 0
Reactive Maintenance	£ 13,065	£ 7,517
Savings		
Routine Maintenance	£ 6,209	£ 0
Reactive Maintenance	£ 0	£ 6,404

Table 12 –Projections over 25 Years

	Business Case Projection 25 years	New Projection
Routine Maintenance	£ 294,039	£ 0
Reactive Maintenance	£ 489,066	£ 521,077
Post Retro		
Routine Maintenance	£ 152,267	£ 0
Reactive Maintenance	£ 259,280	£ 281,382
Savings		
Routine Maintenance	£ 141,772	£ 0
Reactive Maintenance	£ 229,785	£ 239,695

Public Feedback

The LED pilot in some areas has confirmed that the perception of the lights were too bright even though lighting levels have been reduced in accordance with the latest British Standard. This is due the light source being of a white light which provides a better colour rendition. This means you can see defined colours better. This public perception is a problem that is faced all across the UK not only for LED but for fluorescent and other white light sources. There is normally an initial surge of complaints which tends to reduced once the residents become used to the change. It is also worth noting that LED's also have a higher discomfort glare when looking directly at the light source which adds to the perception of being brighter.

The street lighting team received 16 responses from Members and the public and all of these related to the perceived brightness of the LED's. Unfortunately to ensure that the number of lanterns were minimised and the installation could be brought forward, the lanterns were ordered before the design was carried out. This meant that there are a number of lanterns that were installed initially to bright and once connected to the central management system the lights would then reduce to the required output. Unfortunately in some cases once the perception was that they were too bright this was hard to mitigate the problem. A log of the issues reported can be seen in Appendix B.

Cllr Bass had also had a number of complaints about the levels of lighting and requested that the lights were reduced to 50% (25% in Great Dunmow), this was actioned in April. This will be reviewed through the winter months and will provide information for the variable lighting profiles for phase two.

Lessons Learnt

Planning

There was a request to install the first phase of the LED replacement program before the end of the financial year. This highlighted a need for more time to prepare and plan for the proposed phase two to ensure that issues such as concrete columns, over lighting, bracket fixings etc. can be resolved before the installation phase.

Concrete Columns

We have now identified through our supply chain partners that we can now test columns to determine their suitability for the proposed LED lanterns. However the liability would still remain with the Authority. The main failure for concrete columns are where the bracket joins the shaft so only concrete columns that have steel sleeves fitted will be assessed as part of the second phase. Concrete column which do not have a "sleeve" will be replaced.

Light Control

Lantern Tilt

Originally the lanterns were installed with a 5 degree tilt however a number of complaints were resolved by reducing this tilt to 0 degrees. The second phase would ensure that all lanterns were installed at 0 degree where possible. However there are some situations where the existing bracket tilt is 15 degrees and we can only reduce the lantern tilt to –10 degrees. In these situations where there is still a 5 degree tilt we will wait for public feedback before taking any further action.

The supply chain partner will be required to confirm all locations where 0 degree tilt is not achievable during the installation phase.

Internal Shield

There were a number of reported issues with light spill, for the second phase of the project there is the option to include an internal shield in the lantern. This does affect the lighting output but for all residential areas the design team will ensure that these are used, where possible, as standard. This will also help reduce light into residential properties.

Also a number of shields will need to be ordered to ensure that when there is a compliant where the shields have not been already fitted, the supply chain partner will be able to install a shield quickly to resolve the public concern.

Variable Lighting Review

Due to a number of complaints with regard to the lights being too bright, received by various members, there was a request to the street lighting team to reduce the light output to 50%

(25% in Great Dunmow). This can be evaluated to determine whether the authority would like to continue light below the levels recommended in the British standards.

As this request happened in the summer months this has not, until now, operated during peak traffic flow period. During the winter months the peak traffic flows are in the hours of darkness this means that there is a higher number of moving vehicles and pedestrians and in turn is harder to assess the road dynamics. The British standards recommended increasing the light levels in these times aids road users to evaluate these conflict more easily. We recommend that accident data for roads within phase one are analysed over a 2 year period to determine whether these levels are suitable throughout this peak traffic period. This could form the basis for a further reduction across the Authority.

For phase two it is recommended that the proposed profile to increase the light output when lights are in operation during the peak traffic hours (rush hour) is followed. We can then monitor the public perception, if feedback is that the level is too high then we can assess whether the light output can be reduced safely.

It is important to note that across the UK when authorities have changed to a white light source like Cosmopolis, LED, etc. the public perception is that the lights are too bright even though lighting levels have reduced. This is due the lighting providing a better colour rendition meaning that you can see defined colours better and improves visibility. There is normally an initial surge of complaints which tends to reduced once the residents become used to the change. For phase two we are looking to promote a 4 week period following the installation of the LED lantern to allow the public to get use to the new lighting. Once this period has passed we will then review any responses we receive.

Business Case Costing

The pilot has demonstrated that there are some variances in the installation costs and we will ensure that the business case for phase two can be refined to ensure that the costs are in line with the lessons learnt in phase one.

Appendix A - Actual Installation Costs

Description Of Work	Qty	Unit	Rate	Total	Comments
Lanterns Wired Up At Springfield Depot Approx. 40 No Units A Night Man & A Van	1562	Nr	£ 4.65	£ 7,263.30	ESL Ltd
Lanterns Wired Up That Had To Be Changed At Springfield Depot. 40 No Units A Night Man & A Van	270	Nr	£ 4.65	£ 1,255.50	ESL Ltd
Lanterns Installed On Columns That Has To Be Rewired. 30 No Unit A Night Man & MEWP	140	Nr	£ 7.57	£ 1,059.80	ESL Ltd
Existing Lanterns Removed From Street lighting Column And Returned To Springfield Depot. 30 No Unit A Night Man & MEWP - Including Revisits	1720	Nr	£ 10.09	£ 17,354.80	ESL Ltd
To Remove And Install Brackets Various Size Brackets And Locations	324	Nr	£ 12.11	£ 3,923.64	ESL Ltd
Collect and install lanterns - Including Revisits	1720	Nr	20.01	£ 34,417.20	ESL Ltd
Various Lighting Columns Brackets	302	Nr	£ 44.91	£ 13,562.00	The amount from Requisitions
Various Lighting LED Lantern	1562	Nr	£ 247.19	£ 386,104.60	The amount from Requisitions
Conduit Dimming Telecell	1562	Nr	£ 45.90	£ 71,695.80	The amount from Requisitions
2.5 Flex Cable	20306	m	£ 1.10	£ 22,336.60	
Traffic Management	1	Nr	£ 28,001.19	£ 28,001.19	The amount from Requisitions
Total				**£ 586,974.43**	
Prorated Unit Rate				**£ 375.78**	

Appendix B - Project Feedback

Date	Name	Address/Location	Details of Complaint	Details of Complement	Action
5/3/15	Resident 1	Cambridge Road Stansted	Opposite – property, check lantern tilt, intrusive	Likes the scheme overall as improves security	Reduce the tilt to 0 degree use spirit level – if still not at 0 degrees then report back the bracket diameter. Reduce the light to 50%
9/3/15	Resident 2	North Street , Great Dunmow Cm6 1ba	Light opposite shining window		Reduce the tilt to 0 degree use spirit level – levels reduced as per original design outputs
9/3/15	Resident 3	East Hill Colchester opposite Belgrave / priory road.	Light opposite is shining in the window		Reduce the tilt to 0 degree levels reduced as per original design outputs use spirit level
18/03/15	Cllr Margaret Fisher	Bergholt Rd and North Station Rd are the two streets	Could engineers please reduce the level of lighting please		Lights reduced to 50%
27/03/15	Resident 4	Pyms Road O/S number 64	light has been installed, it's incredibly bright and is not turning off with part night lighting, staying on all night.		Levels reduced to 50% and convert back to part night lighting
27/03/15	Resident 5	O/S No 302. This is a new development but showing as open field on the map. MILL ROAD	Two of the street lamps on the roundabout is far too bright as it penetrates a child's front bedroom window and keeps her awake. Requesting shades to cover the glare.		Levels reduced to 50%
30/03/15	Resident 6	Colchester Road, outside house number 10	LED version and is far too bright and also stays on all night.		Levels reduces to 50%
31/03/15	Resident 7	Godfrey way / facing B184	Light shining through window Reduce tilt to	Now happy with the	Reduce the tilt to 0 degree use spirit level and dim light

			0 and add shield to roundabouts	levels	further
31/03/15	Resident 8	Hansalls butcher shop 5A high street	The bright street lights in Maldon. Tilt one more down	Now happy now that the lantern is correctly tilted	Reduce the tilt to 0 degree use spirit level
09/04/15	Resident 9	Straight Road, Lexden Colchester Essex	LED lights at an adjacent junction to our property and the resulting misery it is causing.		Light Output reduced to 50%
10/04/15	Resident 10	King George's Place,	My flat shining directly into my lounge looks like daytime		Levels reduces to 50%
10/04/15	Resident 11	The Courtyard, Spital Road, Maldon Essex	Light shining into all windows		Levels reduces to 50%
13/04/15	Resident 12	opposite 41 Parsons Heath, Colchester	front louvre fitted to the LED		Tilt down to 0 degrees levels reduced as per original design outputs
	Cllr Harris	4 & 6 Blackheath	LED are too bright		Lights reduced to 50%
28/04/15	Members Enquiry	10 Willow Road Great Dunmow?			Lights reduced to 25%
15/06/15	Cllr Fisher and Cllr Turrell	Lights not dimmed			Confirmed that the lights are dimmed

Essex County Council

AGENDA ITEM 7

Report to Cabinet	**Forward Plan Reference Number** **FP/397/02/16**
22 March 2016	**County Divisions affected by the decision:** All
Decisions taken by or in consultation with Cabinet Members	
Report by: Secretary to the Cabinet **Enquiries to:** Judith Dignum, 033301 34579	

The following decisions have been taken by or in consultation with Cabinet Members since the last meeting of the Cabinet:

Leader

FP/400/02/16 Appointments to the Cabinet and Delegations of Executive Functions

Deputy Leader & Cabinet Member for Economic Growth, Waste & Recycling

FP/410/02/16 Braintree District Industrial Estate Improvements

FP/367/01/16* Offer of Grant: Skills Capital – Specialist Equipment

FP/432/03/16 Tendring SME Growth Fund

Cabinet Member for Infrastructure

FP/326/12/15* Beaulieu Railway Station HA32259: Commissioning of Network Rail GRIP Stage 2

Cabinet Member for Highways and Transport Delivery

FP/403/02/16 Local Highway Panel Scheme Approval – Colchester

FP/404/02/16 Local Highway Panel Scheme Approval – Chelmsford North

FP/405/02/16 Local Highway Panel Scheme Approval – Brentwood

FP/414/02/16 DC3447 Consultation on Proposed 40 MPH Speed limit at B1026 Layer Road, Layer de la Haye (Priority Route 2)

FP/415/02/16 Fairglen Interchange – Traffic Management Improvements – Yellow Box Junction

FP/427/02/16 Issue the English National Concessionary Travel Scheme for financial year 2016/17

Cabinet Member for Finance

FP/213/08/15* Funding Approval of Outline Business Case for the use of Moulsham Lodge, Chelmsford, CM2 9EL for housing

FP/398/02/16 Minor Works at ACL Basildon (Woodworking & Silversmithing)

FP/371/01/16* University of Essex Innovation Centre (Phase 1) – Grant of Monies for Technical Drawings for the Construction of an Innovation Centre at the University of Essex Knowledge Gateway

FP/424/02/16 Passenger Transport Dynamic Purchasing System – Release of funding

FP/426/02/16 Drawdown from Transformation Reserve: People Commissioning Restructuring Project

FP/429/02/16 Delivery of an Integrated and Streamlined Place Operations Service - Release of Funding

Cabinet Member for Corporate, Communities and Healthy Living

Cabinet Member for Education and Lifelong Learning

FP/412/02/16 Re-Appointment of School Governors to Represent the LA Schedule 270

FP/299/11/15* Determination of admission arrangements for Community and Voluntary Controlled schools for 2017/18

FP/298/11/15* Adoption of Schemes to co-ordinate pupil admissions to primary and secondary school in 2017/18

FP/425/02/16 Appointment of School Governors by Essex LA Schedule 404

FP/428/02/16 Re-Appointment of School Governors by Essex LA Schedule 271

FP/396/02/16* Future delivery of specialist alternative provision for pupils with Social, Emotional and Mental Health needs

Cabinet Member for Adults and Children

FP/349/12/15* Procurement of Independent Mobility Assessment Provision of Blue Badges

Cabinet Member for Transport, Planning and the Environment

FP/399/02/16 Getting Around in Essex: Procurement of New Local Bus Network

Cabinet Member for Health

*** Key Decisions**