

Essex County Council

Essex Highways

Highways Maintenance Transparency Report Technical Annex

September 2026

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Technical Annex B

B1 - Highways maintenance funding and spending figures

B1.1 – Capital funding allocation sources

Financial year	2024-25	2025-26	2026-27 (projected)
Highways maintenance capital funding allocated through DfT	£41,022,000	£52,265,000	£54,021,000
Other DfT capital funding utilised by local authority for highways maintenance	£0	£0	£0
Other Government capital funding allocated by local authority to Highways Maintenance	£0	£0	£0
Other capital funding allocated to highways maintenance	£68,314,000	£52,652,000	£53,667,000
Total Capital funding allocated to highways maintenance	£109,336,000	£104,917,000	£107,688,000

B1.1.2 - Additional information on funding figures

In 24-25 ECC invested an additional £25 million through the Priority One programme, where 128 additional roads were resurfaced - a total of 400,000 square metres. The funds were used to deliver additional schemes across all 12 Essex districts. It was also used to tackle vegetation clearance, drainage repair, signage improvements and new lining.

B1.2 - Spending

B1.2.1 – Total spending

Please confirm that you understand the answers provided in this section (B1.2.1) relate to your compliance under the 2026-27 local highways maintenance incentive funding requirements, as set out to your authority via letter to your chief executive in April and as published online .	Yes
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Financial year	2024-25	2025-26	2026-27 (projected)
Total highways maintenance capital spend	£109,336,000	£104,917,000	£107,688,000
Total highways maintenance revenue spend	£29,221,000	£37,266,000	£37,123,000

Total spend	£138,556,000	£142,183,000	£144,811,000
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B1.2.2 - Additional information on total spending figures

An additional £8.0 million revenue allocated in 25-26 and 26-27 for various highway maintenance activities including Surfacing Repairs, Sign Maintenance, Gully Cleansing, Vegetation Clearance, Structural Assessments, Structures Maintenance, and Enforcement. This investment contributes to the Authority's Annual Maintenance Programme, which exceeds the level of DfT funding received, and also supports the design and preparation of future schemes to maintain a planned, rolling programme of works and efficient road space coordination.

B1.2.3 Spending on carriageways by type of spend in financial year 2025-26 and 2026-27 (projected)

Carriageway spend related maintenance type	Capital 2025-26	Revenue 2025-26	Capital 2026-27 (projected)	Revenue 2026-27 (projected)
Planned maintenance				
Preventative carriageway maintenance	£19,175,000	£0	£17,807,000	£0
Structural carriageway maintenance	£31,492,000	£0	£32,051,000	£0
Planned carriageway repair / patching programmes	£11,749,000	£0	£9,106,000	£0
Reactive carriageway maintenance				
Reactive carriageway repairs / patching (temporary repairs)	£0	£2,136,000	£0	£1,868,000
Reactive carriageway repairs / patching (permanent repairs)	£0	£6,649,000	£0	£11,265,000
Reactive carriageway repairs / patching (total)	£0	£ 8,785,000	£0	£13,133,000
Other carriageway-related spend	£0	£4,568,000	£0	£3,914,000
Total	£62,416,000	£13,354,000	£58,965,000	£17,047,000

B1.2.4 - Additional information on spending on carriageways by type of spend

Planned maintenance remains the primary focus of investment, with £58.9 million of capital expenditure projected in 2026-27 on preventative treatments, structural renewals and planned carriageway patching programmes.

Preventative and structural maintenance account for the majority of carriageway capital expenditure and support the Authority's objective of intervening at the optimum point in the

asset lifecycle to slow asset deterioration, extend service life and reduce future maintenance liabilities.

Revenue expenditure on planned maintenance increases in 2026-27, particularly for permanent repairs, reflecting the Authority's commitment to addressing safety defects promptly while delivering durable repairs that minimise repeat interventions and improve network resilience. Expenditure on temporary repairs is expected to reduce as a greater proportion of defects are addressed through permanent treatments.

Overall carriageway investment remains stable at approximately £76 million per annum, demonstrating sustained commitment to maintaining a safe, serviceable and resilient highway network while supporting efficient programme delivery and long-term asset management objectives.

B2 – Highway Maintenance Activity (Surface Treatments and Repairs)

B2.1 – Road resurfacing and surface treatments

Financial year	Road receiving preventative road surface treatments (length, km)	Road receiving planned structural maintenance (length, km)	Area receiving planned repair / patching programmes	Area receiving reactive repair / patching (permanent methods)	Area receiving reactive repairs/ patching (temporary methods)
2025-26	136.531 km	111.835 km	115,088 m ²	4,498 m ²	886 m ²
2026-27 projected	138.861 km	80.089 km	129,746m ²	n/a	n/a

B2.1.1 – additional information on surface treatments and repairs

Does table B2.1 reflect all your carriageway-related road surface treatments & repair activities (for example, including pothole repairs)? If no , please add further information on any other types of treatments (planned to be) delivered and their extent in the table below.	Yes
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B2.1.2 – Further information and context

Please note that 2025/26 'Area receiving planned repair / patching programmes' figure in table B2.1 includes 68,367m ² of carriageway patching works that were not included within the 'Carriageway Work Done' survey submitted by Essex on 15/05/26.	
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B3 – Pothole repairs

B3.1 – Pothole/Defect intervention criteria

Pothole/Defect category name (as used by your authority)	Minimum investigatory or definitional threshold (e.g. depth, area, width – include units)	Additional risk or contextual factors considered (e.g. road hierarchy, traffic levels, location in carriageway)	Target response time – make safe	Target response time – permanent repair
Priority 1 (S1)	Minimum measurements 100mm across in two perpendicular directions; ≥ 50mm depth lowest point	Location in highway, road hierarchy, user, local facilities, consequence, likelihood of interaction.	2 hours	2 hours
Priority 2 (S2) PR Network	Minimum measurements 100mm across in two perpendicular directions; ≥ 50mm depth lowest point	Location in highway, road hierarchy, user, local facilities, consequence, likelihood of interaction. .	2 working days	2 working days
Priority 2 (S2) Local Network	Minimum measurements 100mm across in two perpendicular directions; ≥ 50mm depth lowest point	Location in highway, road hierarchy, user, local facilities, consequence, likelihood of interaction. .	5 working days	5 working days
Priority 3 (S3)	Minimum measurements 100mm across in two perpendicular directions; ≥ 50mm depth lowest point	Location in highway, road hierarchy, user, local facilities, consequence, likelihood of interaction. .	Defect to be considered for repair as part of a planned maintenance programme	Defect to be considered for repair as part of a planned maintenance programme
Priority 4 (S4)	Minimum measurements 100mm across in	Location in highway, road hierarchy, user, local facilities, consequence,	Presumption not to undertake repair within a	Presumption not to undertake repair within a

	two perpendicular directions; $\geq$ 50mm depth lowest point	likelihood of interaction. .	stated time period	stated time period
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B3.2 – Number of potholes filled

B3.2.1 - Number of potholes filled in 2025-26 (estimate)	14,857
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B3.2.2 - Of these how many do you estimate were resolved using each of the following approaches?

Planned repair / patching programmes	Planned structural maintenance programmes	Reactive repair using temporary repair methods	Reactive repair using permanent repair methods
7,559	2,119	1,037	4,142

B3.2.3 - Additional information on numbers of potholes resolved, by treatment type

Treatment types are a combination of conventional hand patching, machine patching and temporary make safe repairs.

CAUTION FOR READERS – Authorities have different criteria for identifying potholes and different methodologies for counting how many they have filled or resolved. Summing the figures in the above table across authorities will therefore not provide a reliable estimate of the total number of potholes filled across England.

B3.3 - Prices of pothole interventions

Unit / average cost of a permanent pothole repair on your network (reactive)	£ 128.00	Unit / average cost of a temporary pothole repair on your network (reactive)	£ 188.49
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B3.3.1 - Additional information on pothole prices (optional)

Reported costs represent average direct repair costs across the authority's highway network and include labour, materials, plant, traffic management and associated operational activities. Unit costs vary depending on factors such as road classification, location, site conditions, defect size and traffic management requirements. Temporary repair costs may be higher than permanent repairs where emergency response attendance, out-of-hours working, multiple visits or additional traffic management arrangements are required. Costs are calculated using financial and operational data from highway maintenance service delivery activities.

B3.4 - Defect repair quality

ID	Question	Yes / no
3.4.1	Do you set requirements to those delivering repairs about the longevity of both a) planned repairs / patching and b) reactive repairs using permanent methods?	Yes
3.4.2	If yes, do you base your material and process specifications on these longevity requirements?	Yes
3.4.3	Do you regularly monitor the appropriateness of the carriageway interventions chosen by your workforce or contractor and the quality of work delivered?	Yes
3.4.4	If yes, do you systematically record information about expected and delivered longevity of repairs?	Yes

B3.4.5 - Evidence Summary

Carriageway repairs are randomly audited by Maintenance personnel through a dashboard system within ECC's Confirm platform. This allows works to be selected at random six months after completion and reviewed on site to gauge quality and longevity of the repair. Successful audit reports are uploaded onto Confirm within work packs. Failures are noted and remedial works are undertaken.

Recent revision of contract specification, specifically carriageway patching and haunching, new folio drawing provided, and method statement. This will improve the repair quality and longevity.

B3.4.6 - Additional information

Client team randomly select some defects to review compliance with all associated processes from identification of schemes through to completion of works.

B3.5 - Public reporting system for defects and other issues

ID	Question	Answer
3.5.1	Are defect reports from the public routinely used as an input into maintenance planning and inspection regimes?	Yes
3.5.2	Do you inform users about the outcomes from their feedback, including when no action is to be taken?	Yes

B3.5.3 - Evidence Summary

ECC actively uses reports from members of the public as an important source of intelligence to support highway maintenance activities. Defect reports submitted through online channels, customer contact services, elected members and other stakeholders are assessed and, where appropriate, inform inspection priorities, risk-based maintenance decisions and forward works planning.

Feedback mechanisms are in place to keep customers informed of investigation outcomes and proposed actions, including where no intervention is required and the reasons for that decision. Information from public reports is analysed to identify recurring issues, emerging trends, geographic hotspots and potential asset performance concerns.

B3.5.4 - Tools used for reporting

The public can report potholes and other defects in Essex primarily through the [Essex Highways Tell Us Portal](#), which is the dedicated tool managed by Essex County Council.

This custom-built GIS (Geographic Information System) web map portal allows users to drop a pin on a live digital map to log a defect. Location data can be entered using postcodes, precise co-ordinates, or What3Words addresses.

B4 – Maintenance of highway structures

B4.1 Highway Structures

ID	Question	Answer
4.1.1	Number of highway structures on your highway network	1,605
4.1.2	Number of highway structures with interim measures in accordance with CS470 applied?	88
4.1.3	Number of structures due a General Inspection in 2025-26 in accordance with CS450	810
4.1.4	Number of General Inspections carried out in 2025-26	810
4.1.5	Number of structures due a Principal Inspection in 2025-26 in accordance with CS450	79
4.1.6	Number of Principal Inspections carried out in 2025-26	73

B5 – Asset Management

B5.1 - Asset Management Strategy and Policy

5.1.1	Please confirm that you understand the answers provided in this section (B5.1) relate to your compliance under the 2026-27 local highways maintenance incentive funding requirements, as set out to your authority via letter to your chief executive in April and as published online.	Yes
5.1.2	Please provide a link to your authority's published highways asset management policy and strategy.	
	https://www.essexhighways.org/uploads/road-strategies/highways-and-transportation-asset-management-policy-2025.pdf https://www.essexhighways.org/uploads/road-strategies/highways-and-transportation-asset-management-strategy-2025.pdf	
5.1.3	Please provide the date it was last reviewed or updated	Date: July 2025
5.1.4	Please provide proof of the review or update.	
	The Council undertook a review of its Highway Asset Management Strategy and Highway Asset Management Policy in 2025 to ensure they remain current, aligned with national guidance, and support the Council's asset management objectives. Approval of the review was provided by the Cabinet Member for Highways, Infrastructure and Sustainable Transportation via email correspondence, demonstrating Member oversight and endorsement of the Council's asset management approach.	
5.1.5	If your asset management policy or strategy has not been reviewed or updated since 1 August 2024, please confirm that it will be reviewed or updated by 30 September 2027 and provide a brief timetable for doing so.	
	<i>Not applicable</i>	

B5.1.6 - Further context (optional)

ECC maintains a structured asset management framework that aligns highway asset stewardship with corporate priorities and national best practice. The updated Asset Management Policy and Strategy reinforce a risk-based, whole-life approach to managing highway infrastructure, supporting the delivery of safe, reliable and sustainable services. They provide a clear link between corporate objectives, customer expectations, levels of service and investment decisions.

The review undertaken in 2025 strengthened the emphasis on network resilience, climate adaptation, carbon reduction and evidence-based decision making, ensuring that highway asset management continues to support the long-term needs of residents, businesses and communities across Essex. The strategy also supports transparent governance, performance monitoring and data-driven investment planning, helping to maximise value from available funding while maintaining and improving network condition and service outcomes.

Key aspects of highways asset management approach

B5.2 - Asset data

Asset type	Asset inventory held? (None / partial / full)	Condition data held? (None / Partial / Full)
Carriageways	Full	Full
Footways and cycleways	Full	Full
Structures	Full	Full
Drainage assets	Partial	Partial
Street lighting	Full	Full
Traffic signals	Full	Full

5.2.1 - Further context (optional)

ECC ensures alignment through an integrated, data-led asset management approach. Full inventory is held on all asset systems except for some parts of the drainage network. The gaps within the drainage network (e.g. CKD Combined Kerb and Drainage) are gradually being mapped through cyclical cleanses and added into the MAP16 system. There are also early conversations with Inspection based AI providers to develop CKD identification protocols.

B5.3 – Asset data integration and management

B5.3.1 – Asset data integration

How is asset inventory and condition data for your key highway assets primarily managed?
(please indicate one option with an X)

Discrete spreadsheets or documents held by individual teams	
Multiple digital platforms with limited integration	
A single digital platform or a set of connected platforms used across the highways service	
Other (please set out in further context)	X

B5.3.2 - Further context (optional)

ECC manages highway asset inventory and condition data through a range of specialist asset management systems, each aligned to specific asset groups. Road and footway data are primarily held in Confirm, supported by Route Reports and XA. Street lighting data are managed in Mayrise, structures data in BridgeStation, and drainage data in Map-16. These systems provide the authoritative source of inventory and condition information for their respective assets, supporting inspection, maintenance, lifecycle planning and performance reporting. Data are maintained by the relevant service areas in line with established asset management processes and are used collectively to inform highway asset management decisions across the network.

B5.4 – Lifecycle planning and investment decision-making

ID	Question	Yes / No
5.4.1	Do you use lifecycle plans for carriageways to support maintenance investment decisions?	Yes
5.4.2	Do you use lifecycle plans for footways to support maintenance investment decisions?	Yes
5.4.3	Do you use lifecycle plans for structures to support investment decisions?	Yes

B5.4.4 - Evidence Summary

ECC adopts a lifecycle planning approach across its highway asset groups, including carriageways, footways and structures, to support evidence-based maintenance and investment decisions.

For carriageways and footways, lifecycle planning is embedded within the Highway Asset Management Framework and informs the development of annual and medium-term maintenance programmes. Asset condition data collected through SCANNER surveys, visual inspections, safety inspections and other asset management systems is used to assess current condition, predict future deterioration, evaluate treatment options and determine the most cost-effective intervention at the appropriate point in the asset lifecycle. This approach enables ECC to maximise asset life, minimise whole-life costs and target investment where it delivers the greatest network benefit.

For structures, lifecycle planning is undertaken through the management of bridges, culverts, retaining walls and other highway structures. Investment decisions are informed by principal inspections, general inspections, structural assessments and risk-based asset management processes. Maintenance needs assessments and forward works programmes are used to prioritise interventions and allocate funding efficiently across the structures portfolio.

Lifecycle plans are reviewed and updated using the latest condition, performance and inventory data to ensure that investment decisions remain aligned with asset condition, risk, service levels and corporate objectives. This process supports ECC's asset management strategy by enabling long-term forecasting of maintenance requirements and helping to achieve sustainable outcomes from available funding.

B5.5 – Performance monitoring and continuous improvement

ID	Question	Answer
5.5.1	Do you have a defined set of key performance indicators (KPIs) to monitor the outcomes of your highways asset management approach?	Yes
5.5.2	Are these KPIs reviewed on a regular basis (at least annually)?	Yes
5.5.3	Are KPI trends used to inform maintenance planning, prioritisation or changes to forward programmes or investment decisions?	Yes
5.5.4	Have you conducted a value for money review or peer review of your service in the last 3 years	Yes

B5.5.5 - Evidence Summary

Each year a selection of service areas for benchmarking and market testing is jointly selected and agreed between ECC and its main contractor. Benchmarking selection is based upon a minimum of 15% of the annual value the outcomes of goods and services delivered under this contract. These services are then compared with those provided on other contracts. The ECC Technical Contract Manager has confirmed the client has completed these reviews.

Market Testing exercises are reported to the Strategic Board and are also conducted to demonstrate that the procurement process provides economically advantageous offers from the open market for the provision of goods, works, or services

An example of the KPI trends are the road condition KPIs; mid-band failure or partial failure would initiate an increase in the surface dressing budget and works to ensure the mid-band condition is kept to the required outcome to ensure minimal movement into red band condition..

B6 - Maintaining footways and cycleways

ID	Question	Answer
6.1.1	Do you have a defined footway hierarchy (e.g. based on footway function and usage levels) that underpins a risk-based approach to inspection frequencies and maintenance programmes?	Yes
6.1.2	For 2026-27, please provide the length of footways that you have earmarked for structural maintenance / reconstruction / renewal	7.9 km
6.1.3	For 2026-27, please provide the length of footways that you have earmarked for preventative maintenance treatments	41.1 km
6.1.4	Are priority footways and cycleways included in your winter service (e.g. gritting or snow clearance), and in a routine programme for keeping them clear of overgrown vegetation and debris (e.g. sweeping, cutting back)?	Yes
6.1.5	For 2026-27, are you planning to deliver structural or preventative maintenance to cycleways which is not yet covered as part of your carriageway maintenance programmes or footway maintenance programmes (e.g. segregated cycleways that are not shared with pedestrians or motorists). If yes, please set out the length of such cycleways that you have earmarked for:	Yes
	a. Structural maintenance / reconstruction (in km)	2.0 km
	b. Preventative maintenance treatments (in km)	0.0 km

B6.1.6 - Please provide any brief additional information you consider helpful in explaining your approach to maintaining footways and cycleways

Condition and safety inspections are undertaken at scheduled intervals. All footways/cycleways are subject to at least one inspection per year, some up to twelve times per year based on their status within the footway hierarchy. Identified defects are assessed using a risk-based methodology, with repair response times prioritised according to the severity of the defect and the level of risk posed to users. Maintenance activities include localised repairs, surface treatments, resurfacing and reconstruction works, informed by condition data, lifecycle planning and available funding.

This approach supports the long-term, cost-effective management of approximately 6,000 kilometres of footways, including shared-use cycleway facilities, while maintaining safe and serviceable infrastructure for pedestrians and cyclists.

B6.1.7 - Evidence Summary

ECC maintains footways and cycleways through a risk-based asset management approach in line with its Highways Maintenance Policy, Highway Infrastructure Asset Management Plan (HIAMP), and Carriageways, Footways & Cycleways Maintenance and Inspection Strategy. Footways and cycleways are categorised using defined network hierarchies, with inspection frequencies and maintenance priorities determined by asset use, risk, and condition.

For Winter Maintenance, District Councils are mobilised to clear priority footways in snow events, as outlined through the ECC Highways Winter Maintenance Strategy Street Cleansing is completed by the District Councils on a routine basis with priority footways receiving a more frequent cleansing regime. In addition to this, ECC has an enforcement process in place for tackling overgrown vegetation highlighted by inspections and ad hoc reporting.

B7 – Drainage

ID	Question	Answer
7.1.1	Please provide an estimate of your drainage maintenance expenditure split (in percentages) between:	
	a) Reactive (incident- or failure-driven) maintenance	30%
	b) Planned maintenance (routine/cyclical and/or risk-based)	70%
7.1.2	Does your authority utilise a digital drainage management platform, covering asset inventory, inspection history, sensor data, and risk scoring?	Yes
7.1.3	Do you maintain a record of locations where drainage issues are known to cause or contribute to carriageway deterioration or surface water ponding?	Yes
7.1.4	Do you utilise smart sensors or other remote monitoring technologies to monitor performance of your drainage assets. If yes please provide some high level information in bullet points below	Yes
	<i>Our pump stations connected to subway and underpass assets allow for assisted drainage and have a mixture of two telemetry/monitoring systems:</i> <i>9 Sites are equipped with a 'Seer Junior' telemetry system. The status of the pumps can be monitored remotely via a cloud-based portal. Where information such as the pump run time, temperature, pump trip status, high</i>	

	level alarm can be viewed. In addition, the system sends email alerts in the event of a power failure or high-level alarm. - We then have 22 sites with an older 'Text-Tel-Junior' monitoring system. It does not use any software or an online portal. When an alarm occurs, the unit simply calls and sends SMS messages to a programmed phone number(s). ECC maintains a digital drainage asset management system (MAP16) which records asset inventory, inspection history, condition information and maintenance records. This enables drainage assets to be managed using a risk-based approach and supports evidence-led investment and maintenance planning. - This platform shows every gully asset that is maintainable by ECC as well as site history and if there is a defect following a cleanse. - If the drain isn't working the asset will be a different colour on the map and this can be filtered, we also have our own heat map of flooding areas within the area - Smart sensors are positioned along with cameras on sites that are high risk and when triggered are drained by pumps. - If the sensor raises an alert this will provide the Device I.D, date/time, red alert level and the alert measure.
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B7.1.5 - Evidence Summary

ECC adopts a predominantly preventative approach to highway drainage management, with approximately 70% of drainage maintenance expenditure directed towards planned maintenance activities and 30% towards reactive maintenance. This supports the Council's wider asset management strategy of identifying and addressing drainage risks before they result in asset failure, carriageway deterioration or safety issues.

ECC also maintains records of locations where drainage defects contribute to surface water ponding, flooding risk or carriageway deterioration, allowing targeted interventions to be prioritised where drainage performance is known to impact network condition, resilience and user safety.

To further improve network resilience, Essex has adopted remote monitoring technology and smart sensing solutions at selected locations to provide real-time information on drainage and flooding performance. Data from these systems is used to identify emerging issues, support operational decision-making during severe weather events and improve the effectiveness of maintenance planning.

B7.1.6 – Further context on approach to drainage asset management

Drainage performance is monitored alongside wider highway asset management activities through routine inspections, customer reports, condition intelligence, flood-risk assessments and programmed maintenance reviews. This integrated approach enables ECC to target investment effectively, reduce whole-life maintenance costs, minimise disruption to road users and improve the long-term resilience of the highway network.

B8 – Skills and training

ID	Question	Answer
8.1.1	Do you have an up-to-date training and development plan for those responsible for highways asset management in your authority?	Yes
8.1.2	Do you or your main highways contractors support professional development through a recognised professional training scheme (e.g.	Yes

	Institution of Civil Engineers (ICE) or Institution of Highway Engineers (IHE))?	
8.1.3	Does your authority contribute towards the cost of professional membership or professional development required for relevant highways roles?	Yes
8.1.4	Do you employ a professionally qualified engineer (e.g. Chartered Engineer (CEng) or equivalent competence) with responsibility for the management of highway structures (either in house or through a contracted arrangement)?	Yes
8.1.5	Does your authority define competence requirements for key highways asset management roles and take steps to address any identified gaps (either directly or through contractual arrangements)?	Yes
8.1.6	Do you or your main contractors support early career development in your local area, for example through apprentice schemes, traineeships or pre-apprenticeship programmes, sponsored qualifications (e.g. HNC/HND, degree, MSc), graduate schemes etc	Yes

B8.1.7 - Evidence Summary

The roles / functions described in B8.1.1 - 8.1.6 above, sit largely within the Highways function, delivered by Ringway Jacobs on behalf of ECC. Ringway Jacobs, has held Gold Membership of the 5% Club since 2022 and has maintained its Gold status for four consecutive years, demonstrating our commitment and dedication towards supporting early careers, with more than twenty apprentices based within Highways at ECC. Of these, eight individuals are currently participating in the Civil Engineering Level 6 rotation scheme, which was established in 2024 to provide broad experience across different areas of the business and support professional development.

Highways have also hosted Design T Level students in partnership with Colchester Institute over the past few years, welcoming three students in 2024/25 and a further three students in 2025/26. In addition, we provide ad hoc work experience placements to help young people gain insight into the industry and support employability skills. We also recruit graduates and support their development through the Institution of Civil Engineers (ICE) professional development pathway.

Job specifications exist for every role, and training plans are reviewed annually.

B8.1.8 – Further context on skills/training (optional)

ECC recognises that maintaining a skilled and competent workforce is essential to the effective management of highway assets. Competency requirements are defined through role profiles and job specifications, with annual reviews used to identify training needs, development opportunities and succession planning requirements.

Professional development is supported through a combination of technical training, accredited qualifications, professional institution membership, mentoring and practical experience. Staff are encouraged to work towards professional registration and membership of relevant organisations, including the Institution of Civil Engineers (ICE) and the Institution of Highway Engineers (IHE).

Through the partnership with Ringway Jacobs, we continue to invest in future talent through apprenticeships, graduate programmes, T Level placements, work experience opportunities and structured development pathways. These initiatives help to build the skills and capability needed to support the long-term management, maintenance and improvement of Essex's highway assets.

B9 – Adapting roads to withstand climate pressures

Climate and environmental factors, such as heavy rainfall, prolonged heat, and freeze-thaw cycles, are integral to effective highways asset management, as they influence asset performance, deterioration rates and long-term resilience. Understanding both the impacts of a changing climate and the carbon implications of maintenance activities supports better decision-making, helping authorities to optimise durability, manage risk and deliver best whole life value from their assets.

ID	Question	Yes/no
9.1.1	Have you updated your asset management policy and strategy to reflect the increased probability of extreme-weather and/or geohazards now and in the future?	Yes
9.1.2	Have you identified your resilient network and agree this with senior decision-makers	Yes
9.1.3	If yes when did you last update this.	May 2025
9.1.4	Have you identified locations that are repeatedly affected by extreme weather (e.g. flooding, heat damage, storms)?	Yes – formally recorded
9.1.5	Which climate-adaptation measures are currently implemented on your network?	
	- Targeted drainage upgrades or maintenance	Yes
	- Natural flood management / SuDS	Yes
	- targeted slope / ground stability / landslip mitigation	Yes
	- Heat-resilient materials or surface treatments	Yes
	- Tree planting / shading for heat management	Yes
	- Other (please specify)	No
	- None of the above	No
9.1.6	Have you measured and benchmarked the greenhouse gas emissions from your highways maintenance service using a recognised industry standard? Or do you have arrangements in place to do this, such as by signing up to the DfT funded ADEPT Carbon Leadership Programme.	Yes
9.1.7	Have you formally engaged with the DfT funded ADEPT live labs 2 Programme, to understand what lessons your authority can utilise to increase the efficiency of your operations and support decarbonisation efforts?	Yes

B9.1.8 - Evidence Summary

ECC has been implementing climate adaptation measures through its Climate Adaptation Strategy and supporting Decarbonisation Strategy, embedding resilience within highway asset management. Priority Routes 1 (PR1) form the Council's resilient network and receive the highest maintenance priority to support access to key services, communities and economic activity during extreme weather events and emergencies.

ECC also participated in the ADEPT Carbon Leadership Programme (2025/26), completing carbon footprint and best-practice assessments to establish a baseline for highway maintenance emissions and identify carbon reduction opportunities. Participation enabled ECC to benefit from methodologies and best practice developed through the ADEPT Live Labs 2 programme.

B9.1.9 - Further context on your adaptation / resilience activities

Addressing the requirement for carbon emissions reduction in highway activities remains a priority issue for Essex Highways. An 'ECC Essex Highways Decarbonisation Strategy is published on the Essex Highways website.

Additionally, Ringway Jacobs have achieved PAS2080 compliance and measures such as carbon training, steering groups, and implementation of a carbon calculation tool as part of work processes, have been implemented across the contract to support this compliance.

Nature is viewed as key ally for carbon emissions sequestration, and accordingly addressing other environmental sustainability issues, such as the requirement for improvements to biodiversity, water management, assisting with green infrastructure growth targets and supporting Local Nature Recovery, also remain a priority. An 'ECC Essex Highways Strategy for Managing Green Estate' is published on the ECC highways website.

ECC continues to embed carbon management into highway service delivery through participation in the ADEPT Carbon Leadership Programme, carbon reporting and benchmarking activities, and the development of project-level Carbon Management Plans and whole-life carbon assessments. Ringway Jacobs supports this approach through its PAS 2080-accredited carbon management framework. These initiatives have improved understanding of carbon hotspots within highway maintenance operations and informed the identification of efficiency and decarbonisation opportunities across the service.

B10 – Innovation

ID	Question	Yes / No
10.1.1	Do your procurement and contracting approaches encourage and reward innovative practice?	Yes
10.1.2	Can you demonstrate that innovative materials and practices are regularly reviewed and, where appropriate, integrated into business as usual operations?	Yes
10.1.3	If you have conducted innovation trials, have you shared the findings of these publicly or with professional networks?	Yes

10.1.4 - Evidence Summary

A Technical Working Group exists in the contract to review and adopt any new innovations in the industry for future use in the highway. Terms of reference are in place and Permitted Pavement Options Appendix 7/1 has been reviewed and actively updated as trials are approved for BAU.

Innovations are recorded in the Innovation Register, one of the elements required to secure a five-year contract extension.

B10.1.5 - Further context on your innovation activities

ECC actively promotes innovation through established governance arrangements, including a Technical Working Group that assesses emerging materials, technologies and delivery practices. Innovation opportunities are reviewed against safety, operational, environmental and whole-life cost considerations before adoption.

Furthermore, the contract encourages continuous improvement and requires innovations to be captured within an Innovation Register, supporting knowledge sharing and contract performance objectives. Successful innovations are incorporated into business-as-usual

activities where benefits are demonstrated. ECC also works collaboratively with industry partners, professional networks and suppliers to trial and evaluate new approaches that improve service delivery, efficiency, asset performance and customer outcomes.

10.2 – Examples of innovations that have been adopted

Some of the innovations adopted by ECC over recent years include:

- *LED street lighting conversion programme.*
- *AI-powered highway inspections and automated route reporting.*
- *Drone-based bridge and highway structure inspections.*
- *Fuel Spill Digester (FSD) biological fuel spill treatment.*
- *Roadmender pothole repair system*
- *Exactrak – Winter Maintenance GPS route provider and salt dispersal system.*
- *Digitisation of site base operations forms*
- *Stats portal – Utility provider apparatus plans request internal system*
- *Iline culvert lining*
- *ESRI GIS Mapping*
- *Essex highways website and report it tool*
- *Graphene trial – Essex were first to trial Graphene in Hot Rolled Asphalt*

B11 – Working with utility companies to reduce disruption to road users

ID	Question	Yes / No
11.1.1	Do you routinely monitor and enforce utility works quality as part of your streetworks management?	Yes
11.1.2	Have you undertaken a senior-endorsed assessment of whether a lane rental scheme would be suitable for your area?	Yes
11.1.3	Do you seek input from utility companies when determining your highways maintenance programme to help reduce disruption?	Yes
11.1.4	Have you conducted and published a permit scheme evaluation within the last three years?	Yes
11.1.5	Have you conducted a traffic sensitive review in the last three years?	Yes

11.1.6 - Evidence Summary

ECC undertakes a proactive approach to monitoring and managing utility works, completing over 45,000 inspections annually. The authority has undertaken feasibility studies into the introduction of Lane Rental and an initial review with Senior Officers has placed this on hold pending the outcome of local government devolution arrangements, which may allow individual devolved areas to determine their own approach.

Information to support the management and coordination of works is gathered from a range of sources, including utility companies, with collaborative working arrangements in place to enable data collection and site activities to be undertaken safely. An independent evaluation of the ECC Permit Scheme is currently being carried out by an external organisation, with completion expected in the coming months.

In addition, data collected through GeoPlace is being used to support the identification and designation of new traffic-sensitive streets, with implementation targeted for April 2027, subject to a successful consultation process.

B11.1.7 - Further context

ECC works closely with utility companies, neighbouring authorities and other stakeholders to reduce network disruption and improve the coordination of street and road works.

Through the permit scheme, proactive inspections, regular liaison meetings and collaborative planning, opportunities are identified to combine activities, reduce repeat excavations and minimise impacts on road users. Performance information is used to challenge poor compliance and drive continuous improvement. The Council remains committed to adopting best practice in street works management and will continue to review measures that improve network efficiency, customer experience and the long-term condition of the highway asset.

B12 – Managing highways maintenance contracts effectively

ID	Question	Yes / No
12.1.1	Does your authority retain in-house technical capability to independently assess maintenance interventions proposed by contractors?	Yes
12.1.2	Do you routinely analyse actual unit costs (for example £/m ² of road surface treatments, or £/pothole repair) for core highways maintenance activities delivered under contract and compare them against benchmarks or historic performance?	Yes
12.1.3	Do you have defined KPIs for your highways maintenance contract(s), and are they actively monitored by your authority to manage performance?	Yes
12.1.4	If reactive pothole repairs are delivered by a contractor, do your contracting arrangements incentivise single-visit permanent repairs where it is safe and appropriate to do so?	Yes

12.1.5 - Evidence Summary

ECC has historically operated through an integrated partnership model, with council staff embedded within Highways alongside contractor staff to provide governance, oversight and technical input rather than relying solely on contractor recommendations.

The authority maintains robust client-side assurance and oversight arrangements for highway maintenance activities. Throughout delivery, ECC monitors schemes from initial selection through to completion and final account settlement, providing assurance that works have been undertaken in accordance with approved specifications and contract requirements. This oversight includes verification of quantities delivered, reconciliation of material usage and orders against contractor claims, review of cost and valuation records, and scrutiny of any changes arising during construction.

ECC maintains a formal performance management framework for its highways service, including defined Key Performance Indicators (KPIs) covering service delivery, asset management, safety, quality, customer outcomes and efficiency. Performance is actively monitored through regular reporting, contract management and governance processes. KPI results are reviewed by both the Council and its delivery partners to identify trends, drive continuous improvement and ensure that maintenance activities are delivered in accordance with contractual requirements, asset management objectives and value-for-

money principles. There is a specific KPI for right first time fix, which is incentivised for good performance with penalties for poor performance.

B12.1.6 - Further context

ECC retains an informed client function with in-house highway engineering, asset management and contract management capability. This enables the authority to independently review, challenge and approve maintenance recommendations and investment priorities proposed by delivery partners. Decisions are supported through asset condition data, lifecycle modelling, whole-life costing, risk-based prioritisation and performance monitoring.

The Council is further strengthening its client-side capability through its future highways operating model, which will increase in-house oversight, decision-making and technical assurance functions.