

Streetlighting CMS and LED Upgrade Project

Tier 3 Full Business Case

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1 Introduction

1.1 Purpose of this report

This report outlines the proposed project to procure and install Telensa’s Central Management System (CMS) and install 3,431 Holophane LED lanterns for our streetlighting inventory.

This business case is seeking

- Approval to proceed with the project using £2,261,870 of borrowing to fund the delivery of the scheme. Based on the savings from the solution and the repayment of the loan, the estimated payback for the project is 12 years.
- Direction on which of the options should be taken in regards to the circa £34k annual costs savings.

1.2 Executive Summary

The preferred option is to procure and install Telensa’s CMS and 3,431 LED lanterns for our streetlighting inventory. This option will provide the council with an innovative control management system to enable the council to implement energy saving dimming regimes from a laptop. The upgrade of our remaining streetlights to LED will enable the effective rollout of the CMS solution and replace the remaining photoelectric cells that are no longer available on the market.

The CMS will be implemented on all our residential and main road lights across Torbay to enable a more energy efficient dimming regime to be introduced and to deliver a more capable operational system. This system can deliver significant annual energy and carbon emissions savings, whilst also delivering numerous co-benefits in terms of public health, supports tackling anti-social behaviour and local nature and biodiversity. It will also ensure that the authority has the ability to react to energy price increases. Currently we are unable to reduce our energy consumption without physically attending each lantern and replacing every driver, which is currently inefficient from a cost and time perspective

This business case seeks approval to borrow £2,261,870 (5% contingency included) to fund the delivery of the scheme. Based on the savings from the solution and the repayment of the loan, the estimated payback for the project is 12 years. A 4.5% interest rate has been assumed for the borrowing costs for the project.

Total Cost	Payback	Annual Energy Savings	Annual Repayment Costs	Annual Maintenance Costs	Remaining savings after loan repayments
£2,261,870	12 years (Q3 2038)	£292,291	£233,307	£24,467	Annual remaining Savings: £34,516

Table 1: Estimated annual savings

This business case also seeks a decision on how the financial savings made be used. 3 options are presented:

1. The £34,516 savings are reinvested into the SWISCo streetlighting teams budgets to enable them to replace streetlighting columns that are structurally unsound and in need of urgent replacement.
2. The estimated energy savings are kept within the councils budgets, this could include establishing a ring fenced fund for other future energy and carbon saving projects/initiatives.
3. The entire estimated energy savings (£292,291) are used to repay the loan to reduce the payback period, resulting in a 10-year payback period instead. This option will mean that the loan for the project is repaid at a slightly faster rate and enable the full energy savings to be achieved earlier that currently forecasted.

A joint-contract procurement was undertaken between Devon County Council (DCC) & Torbay Council in May of 2020 to appoint a supplier to undertake the supply, installation and maintenance of streetlighting apparatus located within the county of Devon, including the Torbay area. The successful contractor was appointed on 1st July 2020. The current contract expiry date is 30th September 2030.

The joint contract included a provision for the replacement of the Central Management System (CMS) via the use of a Contract Option located under Section 16 of the contract. Devon County Council have since used this option to undertake CMS replacements across Devon on multiple occasions.

Torbay Council intend to exercise the same Contract Option to replace the CMS solution currently in place within Devon County Council. Upon exercising the Section 16 Contract Option, Torbay Council will appoint Telensa Central Management System (CMS) to undertake the works as required.

Telensa are the market leaders in the UK for street lighting central management systems and are an established supplier. Devon County Council (DCC) have implemented the Telensa CMS on 80,000 streetlights, with remarkable success and have highlighted how the system helps to manage their inventory and achieve savings through dimming¹². Our current contractor Enerveo has previous experience of implementing the Telensa equipment and systems, therefore it is a product they have practical experience of installing and managing.

Any delays in getting approval to proceed/fund this project in the 2025/26 financial year will likely cause an increase in costs due to the RPIX price index changing after 1st April 2026, therefore, approval is sought to fund this solution before the start of the 2026/27 financial year.

¹ [Devon street lights to be dimmed to save millions - BBC News](#)

² [Streetlight dimming trial will cut carbon and costs - News](#)

2 Strategic Case

2.1 The case for change

2.1.1 Existing arrangement

The councils total spend on electricity and gas between April 2024 to March 2025 was £3,304,966. The energy consumption of our streetlighting made up £777,683 of this total, making it the highest consumption of electricity on our council asset list, and therefore a key asset to explore solutions to reduce the energy consumption and make financial savings. In the 2024/25 financial year, our streetlighting accounted for 504 tonnes of carbon emissions, which makes up 11% of our councils carbon footprint.

The current service model is the traditional method of lighting which is now very dated. Each existing light is an individual piece of lighting infrastructure fed by a low voltage cable. Each light has a preset lighting output which can be adjusted, which is known as dimming, but it requires the contractor to visit each light and replace the driver. The cost of this attendance and driver replacement is upwards of £120 per unit. Each light fitting has a sensor that detects light changes (dawn/dusk) and switches the light on or off. Maintenance of our lighting is both hands on and very time consuming which carries costs with it. Currently, SWISCo employ contractors to carryout night scouts on twelve preset routes in the bay to see if there are any lights out at night that may need fixing, whilst also relying on members of the public to report faults with specific streetlights, including lights that are on during the daylight hours or day 'burners'.

Our lighting inventory is currently controlled by photoelectric cells that bring the lights on when dusk falls and turn them off at dawn. The current issue for the streetlighting team is when these cells fail, the team experience "day burners", which is where a light doesn't switch off and stays on 24 hours a day, until an issue is raised and a contractor is sent to replace the cell. Depending on access to the column (often on busy main roads) and the current work stack, it can take several weeks for an operative to be able to repair the light. This leads to wasted energy and associated carbon emissions. In 2024, there were 91 day burners raised on the streetlighting system, with the average attendance time to repair these faulty streetlights being 17 days, which leads to a waste of 21.7kwh of electricity and 8.7kg of carbon emissions for one lantern.

The streetlighting team have made significant progress in updating the current inventory with LED bulbs. Over 65% of lanterns have been replaced. Since 2017/18, 1,899,561 kwh of energy and 1,203 tonnes of carbon emissions savings have been made. This is a significant reduction. There remain 3,431 that require Holophane LED lantern upgrades to bring the entire streetlighting inventory up to modern standards. However, past these lantern upgrades, the capabilities of our streetlights are limited in their ability to implement more energy efficient dimming regimes and make significant financial savings for the council.

2.1.2 Business needs – current and future

As seen in recent years, global events such as the Ukraine war have led to often erratic and fluctuating energy prices in the UK. It has become vital to be able to quickly adapt to these price rises, particularly for our key and high energy consuming assets in order to be more resilient to these external impacts.

It is also vital the Council implements innovative solutions that allow them to limit the financial impacts from these events.

Based on the current streetlighting capabilities, to change our streetlighting dimming regimes would mean an operative attending every one of our 14,794 streetlights at a cost of approximately £20 per unit. This would take 147 days to make the desired changes (based on the assumption that one operative could attend 50 units a day) and importantly, would cost the council £295,880.

As this example highlights, our current system is too slow and costly to make changes to our streetlights. Therefore, as a forward-thinking council, we need to introduce innovative technologies that gives the council the capacity to react to future events and that permit the council to implement changes that deliver energy savings through proactive actions.

As seen with other highway authorities such as Devon County Council, Somerset Council, Hampshire County Council are reducing their street lighting costs through extending the time that streetlights are turned off at night and reducing their brightness at certain times. Devon County Council began a 12-month countywide trial to amend the dimming of streetlighting in Devon, utilising Telensa's Computer Management System. Their pilot scheme will apply a dimming regime in residential areas and will run until April 2026. It is estimated to save £300,000 and 225 tonnes of carbon emission savings per annum.

2.1.3 Strategic need

2.1.3.1 Corporate & Community Plan alignment

As outlined in [Community and Corporate Plan](#), Torbay Council's vision and mission is to make the most of our assets in Torbay whilst ensuring that we are an efficient council taking a proactive approach in innovative technology to transform our services. By delivering projects that save on our expenditure to operate our assets, we can reinvest these savings into providing more funding for our core services.

Part of our mission statement is to have a strong grip on finance and reducing the costs of our high-cost services and to deliver efficiencies, for which our streetlighting is our highest energy consuming asset within the council estate. As a council, we have also committed to protecting and enhancing our natural environment within the plan.

Added to this, the priorities in the Community and Corporate Plan commit to continue to tackle Climate Change, and in line with the Council's Environment and Net Zero Policy and Climate Change Net Zero 2030 target, there is a need to bring forward projects that support a reduction in our council carbon emissions. As part of our 2030 Net Zero target, any carbon emissions that we have not reduced in our scopes 1 and 2 (carbon emissions from our streetlighting are in our scope 2), will need to be offset these emissions which are currently estimated at £75 per tonnes of carbon emissions. However this cost is likely to increase based on the availability of accredited offsetting schemes but also crucially as other local authorities and businesses also seek to offset their residual emissions to reach their Net Zero targets.

The Council has committed to exploring the opportunity to upgrade our streetlighting to deliver more energy efficient assets and to capture the potential carbon savings outlined within the [Council's Climate Change Action Plan 2024-26](#). The energy consumed by our streetlighting makes up 11% of our

current Council carbon footprint in 2024/25 (504 tCO₂e), which makes it a significant area to focus on to enable the council to achieve its Net Zero 2030 target.

2.2 Objectives

The key objectives of this project are outlined below;

- The installation of 14,794 CMS telecells for each streetlight in Torbay
- Installation of 3,431 Holophane LED lanterns
- Installation of 14 Telensa base stations across Torbay
- Deliver a control management system that improves the operation and maintenance of our streetlighting assets across Torbay whilst enabling the council to implement for energy efficient dimming regimes
- Deliver £292,291 per annum of energy cost savings on the council's energy bill
- Save £14,435 per annum from no longer requiring a night scouting car
- Achieve an annual 230 tonnes reduction of carbon emissions from the reduction in energy usage and from the upgrade to LED lanterns

3 Economic Case

3.1 Options for consideration

3.1.1 Option 1 – Business as usual

3.1.1.1 Description

Option 1 is a business as usual (BAU) approach for our streetlighting inventory. Under this option, the council continues with the current streetlighting system and processes which are to manually manage our streetlighting assets. This current system is outdated and limited in its capabilities, particularly in being able to implement energy efficient dimming regimes in both a cost effective and timely manner.

3.1.1.2 Advantages

- No borrowing requirements
- No resource requirement to implement the project
- No disruption to install the new systems.

3.1.1.3 Disadvantages

By taking no action to improve the operations of our streetlighting assets, the council will be continue to be at risk to future energy price rises and unable to implement energy efficient dimming regime in a speedy manner, meaning the council will be financially impacted by any increase in prices.

This option would also mean we miss our council 2030 Net Zero target and have to finance the offsetting costs for any residual emissions from our streetlighting, which if based on the current estimated costs of offsetting per tonnes of carbon, will cost the council £37,800 per annum to offset just our streetlighting carbon emissions.

Alongside missing the potential to make £292,291 energy savings, the ability to make changes to the current dimming regime are limited and require TC current contractors Enerveo to visit each individual streetlight and make manual changes. This process must be done at cost and is often more costly than the savings made from introducing the dimming regime.

Will have to continue with the current inefficient and costly process of sending out contractors to respond to 'day burners' or other faults with individual streetlights whilst also having to continue with the night time scouting process.

3.1.1.4 Conclusion

A BAU approach won't meet the objectives of this project to deliver significant energy and carbon savings whilst also increasing the resilience of the council to future energy prices rises. It will also maintain the costly process of sending out contractors to undertake night time scouting and having to respond to day burners and other faults that are reported.

3.1.2 Option 2 – Installation of only the Holophane LED Lanterns

3.1.2.1 Description

Option 2 is to procure and install 3,431 Holophane LED lanterns for the remaining streetlight inventory that have not been upgraded as part of the current streetlighting LED replacement programme. This option would bring the remaining streetlighting inventory up to modern standards in terms of their

energy efficiency and can deliver an estimated £151,473 of annual energy savings and 127 tonnes of carbon emissions savings, for a cost of £896,968.

3.1.2.2 Advantages

This option will bring the remaining streetlights in our inventory up to modern standards and complete the upgrade of all our streetlights to Holophane LED Lanterns. This will increase the overall efficiency of our streetlights and provide £151,473 of annual energy and 127 tonnes of carbon emissions savings per annum.

3.1.2.3 Disadvantages

Whilst this option will increase the overall energy efficiency of our streetlighting, it will not provide an innovative solution to enable the council to actively manage our streetlighting assets and implement more energy efficient dimming regimes. As highlighted in the strategic case, the council needs to explore solutions that improve the resilience of our streetlighting assets to energy price rises but also enable a more efficient system that can implement changes at pace. Importantly, this option will only deliver £151,473 of annual savings compared with the potential £292,291 of annual energy savings and other co-benefits as outlined in option 3.

Added to this, the process of sending out contractors to undertake night time scouting will have to continue and over the payback period for this option, would cost us £170,332 in total to maintain this process.

This option will also miss the opportunity to maximise the savings from introducing a innovative management system that can implement a more energy efficient dimming regime remotely.

3.1.2.4 Conclusion

Whilst upgrading our remaining streetlights with LED lanterns will deliver good energy and carbon savings but crucially it will not provide our streetlighting team with a system that is able to quickly adapt our energy consumption or implement more energy efficient dimming regimes, where more significant energy savings can be made. Added to this, the current inefficient process of relying on night scouting and contractors to respond to day burners and other faults will have to continue at cost to the council.

3.1.3 Option 3 – Installation of the Holophane LED lanterns, Central Management System and a new energy efficient dimming regime

3.1.3.1 Description

Option 3 is the procurement and delivery of:

- 1) Telensa's Central Management System,
- 2) Upgrade of 3,431 streetlights to Holophane LED lanterns &
- 3) The implementation of a new dimming regime (see table 1 below).

This option can deliver £292,291 of annual energy savings and 230 tonnes of carbon emissions savings.

As outlined in option 2, currently there are 3,431 streetlights that have photoelectric cells, which are now out of date and can not be replaced unless they are upgraded with LED lanterns. In order to enable the rollout of the CMS, these streetlights will need to be upgrade to LED's. In combination with

the CMS and a new proposed dimming regime (see table 1 below), this will bring our entire streetlighting inventory up to modern standards of energy efficiency.

The Telensa CMS would be implemented through 14,794 Nodes being installed on our streetlights, which will replace the photoelectronic cell on the top of the lantern. These nodes will be linked to and communicate with 14 base stations that will be strategically installed to allow for maximum coverage across Torbay. The Nodes will then feedback into the CMS which will be accessible from a laptop and the inventory can be monitored in real time through remote access.

Through the CMS, each streetlight can be managed collectively or individually, but importantly, a dimming regime can be implemented from a laptop rather than through a manual visit, saving on time and costs. Therefore, this option also includes a new dimming regime (see table 1 below). It is proposed that the council increases dimming on main roads from 20:00 – 00:00 to 50% (from 77%) from 00:00 – 05:00. Increased dimming is also proposed in residential areas from 00:00- 5:00am to 30% (from 50%). It is through the proposed changes to our dimming regime that the significant energy savings (and carbon emissions) can be made. This gives the council the ability to make these changes remotely and in real time. Please note – The proposed dimming regime is based on a conservative approach and additional energy savings can be found through making adjustments that can be trialled once the system is implemented.

Table 2: Current and proposed dimming regime;

Current Dimming Regime					
Residential	Dusk – 22:00 = 100%	22:00 – 00:30 = Dim to 70%	00:30 – 06:00 = Dim to 50%	N/a	06:00 – Dawn = 100%
Main Road	Dusk – 00:30 = 100%	N/a	00:30 – 06:00 = Dim to 77%	N/a	06:00 – Dawn = 100%
Proposed Dimming Regime					
Residential	Dusk – 19:00 = 100%	19:00 – 20:00 = Dim to 70%	20:00 – 00:00 = Dim to 50%	00:00 – 05:00 = Dim to 30%	05:00 – Dawn = 100%
Main Road	Dusk – 20:00 = 100%	20:00 – 00:00 = Dim to 70%	00:00 – 05:00 = Dim to 50%	N/a	05:00 – Dawn = 100%

(Note – 100% means no dimming)

3.1.3.2 Advantages

This option has all the advantages of option 2. In addition, through the CMS and dimming regime, in total, this option will deliver annually £292,291 of energy savings and save 230 tonnes of carbon emissions.

Resilience to energy price rises

In addition, the CMS can provide the council with the ability to react to unexpected energy price rises or other external events in a timely and efficient manner. The council can reduce energy consumption to almost zero at the click of a button from a laptop, rather than having to send contractors to manually dim every streetlight. Added to the value of CMS, smart metering capabilities within the system can be used to move away from estimated bills, to check their accuracy and to measure the impact of energy saving initiatives.

Operational Flexibility

The CMS solution, gives the council the ability to raise or lower the lighting levels to meet the bespoke requirements of events such as the Air Show, The Electric Bay Festival, The Bay of Lights. The added value of the CMS gives the council the ability to deliver bespoke lighting requirements depending on the event, an example of this is on match days for Torquay United which has an attendance of up to 5,000 fans. The lighting levels around the ground can be raised at full time to support safe travel away from the ground and the surrounding areas.

This capability also enables us to be able to react to unplanned events, such as for police emergencies, neighbourhood evacuation, missing persons and route diversion to an accident. Emergency services will have the ability to request lighting levels be raised through contacting our streetlighting team. CMS can also deliver granular level changes to the lighting levels in neighbourhoods that are crime hotspots or in areas where residents have complaints on the current light levels within their streets.

Remote performance management and fault detection

The CMS will provide real-time data on the health and performance of individual lanterns, with faults such as lamp or driver failures being detected automatically. This also means that there is no “down time” between the light becoming faulty and for a repair job being raised on the streetlighting system or waiting for a member of the public to notify SWISCo.

Removal of nighttime scouting services

Added to the financial case for the CMS and LED upgrades, is the removal of the current night scouting car patrolling around the bay to identify faults. Currently, a scout car goes out on average six nights a month. By installing the CMS there is no longer the need for this process. The council will annually save £14,435 and approximately 2 tonnes of carbon emissions.

Ecological and Public Health benefits

There is a growing body of evidence that shows how Artificial Light At Night (ALAN) can have negative impacts on the health of both terrestrial and marine ecosystems³. The adaptable programming and control provided by the Telensa System has the potential to allow Torbay to manage street lighting more sensitively in order to protect our habitats and species.

ALAN, produced by any human-made source, can propagate into the marine environment causing light pollution – an excess of light that disrupts the natural patterns of wildlife, contributes to rising carbon dioxide levels, harms human health, and obscures the stars. Light pollution threatens ocean ecosystems by disrupting natural light-driven cycles that regulate marine life.

³ <https://pml.ac.uk/sciencetopics/cleaner-seas/light-and-sound-pollution/>

The proliferation of short-wavelength, blue-toned white lights since the advent of energy-efficient light-emitting diodes (LEDs) in the early 2000s has compounded this issue. This type of light is strong enough to penetrate deep into coastal waters, reaching more than 40 metres beneath the surface in areas with clear water and high intensity illumination. As well as impacting the marine environment, ALAN can harm human health (with links to cancer, diabetes and sleep disorders), interfere with bird migration and lead to the death of night flying birds, as well as being a key driver of insect decline.

Alongside our rare terrestrial and marine life, parts of Torbay are within the South Devon National Landscape. The impact of light pollution and skyglow can be seen across the National Landscape. Devon County Council have taken a pro-active approach to managing street lighting within the National Landscape.

There is an increasing urgency for better management of ALAN globally. Torbay has the evidence to identify where its most sensitive and important habitats are located. This could be used in conjunction with the Telensa system to allow Torbay Council to adapt the way in which the bay is lit up, whilst being able to respond to its sensitivities and protecting our unique biodiversity and landscapes. For example, where there is a particular area of importance to the bats at Berry Head, the lighting regime nearby could be adapted to attempt to reduce its disruptive impacts. Currently this is not possible due to the limitations of our streetlightings capabilities and the dimming regime it can implement.

Timescales to deliver

The CMS and LED upgrades can be installed within six to eight months (a conservative estimate currently) which provides the ability begin making the repayments of the proposed borrowing costs.

Experienced Contractor

Torbay Councils contractor Envereo has gained practical experience in the installation of the CMS Nodes through the installation of the Telensa CMS solution for Devon County Councils streetlights with over 80,000 units installed across their inventory.

Future proofing the system

To future proof this solution, an Escrow clause has been negotiated with Telensa for a fixed fee of £2,000 per annum, the council would secure the intellectual rights to the Telensa CMS network, which is stored on the cloud and will be available to Torbay Council if Telensa were to cease operating. This clause provides a safeguard to our investment into this solution and in maintaining the potential energy and carbon savings available from this technology.

Guarantee on the CMS nodes and Base Stations

The guarantee on the 8 base station and the 14,794 CMS nodes is 10 years, which future proof any nodes that fail and need replacing during this time. The life cycle for the CMS nodes is estimated between 15 - 20 years, which provides future proofs the proposal.

Additional streetlight innovations post-CMS implementation

This business case is outlining the justification for the implementation of CMS, however due to the capabilities of CMS, there are follow up systems the council can implement to make additional energy and carbon savings. Traffic adaptive lighting can be implemented to dim the lighting on highways and main roads based on low traffic levels. Utilising real time traffic data and through a radar-based sensor

to detect the level of traffic, lighting will adjust to changes in the level of traffic. Following the successful implementation of the CMS solution, the viability of this option can be assessed.

3.1.3.3 Disadvantages

Whilst the option makes significant energy and carbon savings, further actions will be required to make our streetlighting assets completely net zero carbon emissions. The decarbonisation of the national energy system will support a gradual reduction in the carbon emissions of the electricity the council uses within both our streetlighting and council estate. However, this will be staggered as more renewable and low carbon energy sources enter the energy systems portfolio. New technologies and solution can be explored to further reduce the cost and carbon emissions of our streetlighting inventory such as solar and wind powered electrical generation on streetlights. This technology utilises renewable energy generation to power individual streetlights, reducing the capital costs to install and revenue maintenance and operating costs whilst reducing carbon emissions from onsite generation.

3.1.3.4 Conclusion

Added to all the benefits of option 2, the implementation of the CMS solution will provide our streetlighting team with the ability to make real time changes to our streetlights and importantly implement a more energy efficient dimming regime in a timely and cost effective manner. This option will deliver greater annual energy and carbon savings through the proposed dimming regime that the CMS can implement quickly once installed. Added to energy and carbon savings are the co-benefits of public health and safety and reducing the impact on our local nature and biodiversity.

The capabilities of the CMS system will also provide the streetlighting team with the ability to make granular changes from a laptop rather than the current process of contractors visiting individual streetlights, which is costly and takes time. This eliminates the current inefficiencies of the current streetlight operations whilst accelerating the cost, carbon and sustainability benefits. Added to this, through fault alerts being raised on the system, a more cost effective maintenance and repair programme will be possible and reduce the downtime of faulty lights.

3.2 Preferred option

The preferred option is Option 3 the CMS solution with LED upgrades and dimming regime. This option has all the advantages of option 2. In addition, through the CMS and dimming regime, it will deliver annually £292,291 of energy savings and save 230 tonnes of carbon emissions, operational savings, create an adaptable system and deliver a range of co-benefits including environmental and health and wellbeing.

This option costs £2,154,162 but will deliver a return on investment within 12 years (See appendix A for additional breakdown of the cash flow and cost savings) and make significant savings on the council's highest energy consuming asset.

There is an argument for funding Option 2 to install only the LED upgrades and then explore the delivery of the CMS solution later. However, this would be a missed opportunity to make more significant energy savings now for only an additional year in ROI (see payback in options table appendices 1), whilst also not providing a management system that will give us flexibility to operate

these assets on a granular scale. Added to drawbacks, are the potential added cost of retrospectively returning to the 3,431 streetlights that had been upgraded with LED lanterns.

4 Commercial Case

4.1 Procurement overview

4.1.1 Procurement undertaken

A joint-contract procurement was undertaken between Devon County Council (DCC) & Torbay Council in May of 2020. The purpose of this joint-contract was to appoint a supplier to undertake the supply, installation and maintenance of streetlighting apparatus located within the county of Devon, including the Torbay area. The procurement was undertaken as an Open Procedure due to the value of the nature of the works, and a successful contractor was appointed on 1st July 2020. The current contract expiry date is 30th September 2030.

The joint contract included a provision for the replacement of the Central Management System (CMS) via the use of a Contract Option located under Section 16 of the contract. Devon County Council have since used this option to undertake CMS replacements across Devon on multiple occasions.

Torbay Council intend to exercise the same Contract Option to replace the CMS solution currently in place within Devon County Council. This change falls within the scope of PCR 72.(1)(b)(i) where a contract can be modified for additional works, services or supplies, to be carried out by the original contractor, in order to prevent issues arising with regard to interchangeability or interoperability.

4.1.2 Preferred contractor / supplier

Upon exercising the Section 16 Contract Option, Torbay Council will appoint Telensa Central Management System (CMS) to undertake the works as required.

Telensa are the market leaders in the UK for street lighting central management systems and are an established supplier. Devon County Council (DCC) have implemented the Telensa CMS on 80,000 streetlights, with remarkable success and have highlighted how the system helps to manage their inventory and achieve savings through dimming⁴⁵. Our current contractor Enerveo has previous experience of implementing the Telensa equipment and systems, therefore it is a product they have practical experience of installing and managing. As mentioned earlier, Devon County Council have already rolled out a CMS across the county, therefore by aligning our systems with those operated by DCC will future proof Torbay if future restructures or amalgamations materialise. Added to this, DCC have also agreed to run a trial on our lanterns to assess their compatibility with the Telensa Nodes and communication with their system.

4.2 Contract value

Contract value (with ESCROW) = £18,901 per annum (subject to RPIX).

Inclusions;

- Ongoing Support Services & Training, CMS Software Maintenance, CMS Software Operation, CMS Software Hosting, Network Maintenance, Network Operation Support, Network Operation Support.

⁴ [Devon street lights to be dimmed to save millions - BBC News](#)

⁵ [Streetlight dimming trial will cut carbon and costs - News](#)

Exclusions;

- Incorrectly configured or operated hardware or software, overload of system capacities, any failure by the Customer to comply with any of its duties or obligations set out in the agreement, maintenance which makes any of the core services of the PLANet application inoperable, unusable or cause any outages.
- Direct or indirect interactions with systems that are not part of the core services of the Solution and for which the Customer is responsible. Changes to the Solution by the Customer that have not been undertaken or authorised by the Supplier.
- Governmental or regulatory restrictions; exchange rulings, court or tribunal orders or other human intervention. Any other circumstances or matters other than matters for which the Supplier is responsible pursuant to this Agreement.

4.3 Contract Overview

A contract change notice will be completed in order to make the changes mentioned above to the joint-contract.

As the project implementation develops, a change request to our Laser Energy contract will be made to ensure that the energy savings from this project are communicated and materialise as we scale up the implementation of the CMS.

4.4 Contract management

From the point of approval, Enerveo will manage the call off of stock and installation programme of the Nodes and Basestations. This will be closely monitored by the streetlighting team who will liaise regularly with Enerveo to ensure that targets are being met. Future maintenance and related works will be issued to Enerveo by the SWISCo streetlighting team. SWISCo will manage the contract with both Telensa and Enerveo on behalf of Torbay Council.

5 Financial case

5.1 Introduction

The financial case for this project is outlined in this section and the request for approval to borrow the funding needed to deliver the preferred option. Included within the total borrowing costs is a 5% contingency (£107,708) to cover any increase in costs, however given the Telensa CMS is an off the shelf package and the prices to install the LED and CMS nodes have been fixed with the contractor Enerveo, these costs are not expected to change. A 4.5% interest rate has been assumed for the cost of borrowing and to estimate the payback period.

5.2 Funding

Funding Stream	Amount	Budget Holder	Spent /Committed	Remaining
Prudential Borrowing	£2,261,870	Malcolm Coe	£0.00	£0.00
Totals	£2,261,870		£0.00	£0.00

Table 3 – Funding streams

5.3 Capital Costs (Non-Recurrent)

Description	% Fee	Value	Comments
Holophane LED lantern upgrades	40%	£896,968	Cost of purchasing and installing 3,431 Holophane LED lanterns. Installation undertaken by Enerveo.
Telensa CMS Solution	55%	£1,257,194	Cost to purchase and deliver the Telensa CMS solution. Enerveo will manage the call off of stock and installation of the CMS nodes.
Main Contract (Enerveo)		£2,154,162	Expected overall contract costs.
Contingency	5%	£107,708	A 5% contingency has been put based on the costs to deliver the solution. The Telensa CMS is an off the shelf package and therefore a set cost. However, the costs to install the CMS nodes and the LED bulbs have been costed by Enerveo based on 2025/26 RIPX figures and would change if approval is delayed until the 2026/27 financial year.
Risk budget	0%	£0	No budget has been put in place for any risks for this project.
Total	100%	£2,261,870	

Table 4 – Capital Costs

5.4 Ongoing costs (Recurring commitment)

Description	Value	Comments
Telensa Operating Cost (Annual)	- £16,901	The ongoing operating cost for access to the Telensa management system.
Cost of Power Telecells (Annual)	- £5,095	Annual energy costs of Telensa telecells.
Cost of Power Base stations (Annual)	- £471	Annual energy costs of the Telensa Base stations.
ESCROW clause (Annual)	- £2,000	Annual cost to maintain the contract clause for Torbay Council to have access to the technology and systems that supports Telensa's CMS network, which is stored on the cloud and will be available to Torbay Council if Telensa were to cease operating.
Maintenance	- £20 per faulty unit.	Any Nodes or base stations that may become inoperable will be send back to Telensa and replaced free of charge under the warranty. There would be a minimal cost of approx. £20 for the contractor to attend site.
Resource costs	- £0	All management of the CMS will be carried out "in-house" by Tom Pennicott (Street Lighting Engineer) and the Street Lighting Technician. Any updating of the system by the Contractor will be covered as part of the contract and no extra cost will be incurred.
Borrowing / Repayment	- £233,307	The borrowing costs and payback period have been based on an assumed 4.5% interest rate.
Income / Savings	£292,291 Savings	Subject to approval, any savings that may come back into the street lighting budget will be added to the major works budget and will facilitate the replacement of columns that are structurally unsound or End of Life.
Removal of contractor nighttime scouting	£14,435 savings	The removal of the current night scouting car patrolling around the bay to identify faults. By installing the CMS there is no longer the need for this process. This a saving from a current contract and
Total balance	£48,951	

Table 5 – Ongoing Costs

5.5 Tax considerations

The project has been reviewed against any tax considerations that may be

- This is a Torbay Council (TC) initiative and there is no involvement with the Devon and Torbay Combined County Authority.
- The streetlight works only relate to Torbay Council streetlighting infrastructure on TC highways.
- The works will be fully funded by borrowing – there is no expectation of grant funding.
- TC will procure the works and can reclaim VAT charged on the works to the extent that usual VAT rules apply, which includes the requirement for a valid VAT invoice addressed to TC.

5.6 Financial summary

Approved Budget (£)	Expenditure to date	Forecast to complete	Total	Remaining (Contingency)
Funding subject to approval of the business case.	£0.00	£2,154,162	£2,154,162	£107,708

Table 6 – Overall project Budget

5.7 Reinvestment of Energy Savings

Based on the proposed payback period of 12 years for the project and the annual repayment costs of £233,307 during this period, an estimated figure of £34,516 annually left over from the proposed energy savings (see table 7 below for reference). This section outlines two options for how these savings can be reinvested.

Options	Total Cost	Payback	Annual Energy Savings (Pre-Borrowing repayments)	Annual Repayment Costs	Annual Maintenance Costs	Remaining savings after loan repayments
CMS, LED Upgrade & Dimming regime	£2,154,162	12 years (Q3 2038)	£292,291	£233,307	£24,467	Annual remaining Savings: £34,516

Table 7: Estimated annual savings after the cost of annual loan repayments and maintenance costs

5.7.1 Option 1: The energy savings are invested into the streetlighting budgets to fund the replacement of columns that are structurally unsound.

Torbay's street lighting inventory is deteriorating each year due to the budget not being able to support enough column replacements. As of last year, it was calculated that it would cost over £4m to bring our inventory stock up to standard and replace all our units that are beyond their design life of 25 years, with some columns being up to 60 years old. Additional funds to support our annual budget would allow for much needed investment in our lighting infrastructure. SWISCo are beginning to implement much needed structural testing in Torbay to identify columns that are in the worst condition. KIWA have been tasked with testing all of our 8m and 10m columns that are over 10 years old. They have recently finished the Torquay route which consisted of 1,079 columns in total, with the results from these surveys outlined below;

- 677 - class 1 = Re-test within 5 years
- 309 - class 2 = Re-test within 3 years
- 57 - class 3 = Re-test within 2 years
- 14 - class 4 = Schedule for removal/replacement.
- 22 - class 5 = Immediate removal or make safe the unit.

Following these surveys, the 22 units that were identified as class 5 have been removed whilst those identified as class 4 have been flagged as scheduled for urgent replacement. To complete the replacement of these 36 columns will cost upwards of £60,000. This is before the streetlight columns in Paignton and Brixham have been tested and before surveys begin to structurally test the remaining 12,500 residential units in Torbay that require maintenance. An extra £34,516 per year coming into the street lighting budget would allow us to replace an extra 20 columns a year, which is a significant figure given the current and growing constraints that the department faces.

5.7.2 Option 2: The energy savings are kept by the Council

The council keeps the estimated energy savings to invest into other services as it sees fit. For example, the Council could choose to use the annual £34,516 savings to create a recycling fund. This would invest in financially attractive energy and carbon saving projects. The financial savings made would then be recycled back into this fund to invest in new financially attractive energy and carbon saving projects. This would create an annual budget for energy and carbon saving projects. Currently any energy / carbon projects have been reliant on one-off budgets.

5.7.3 Option 3: The energy savings repay the loan and reduce the payback period

The entire estimated energy savings (£292,291) are used to repay the loan to reduce the payback period, resulting in a 10-year payback period instead. This option will mean that the loan for the project is repaid at a slightly faster rate and enable the full energy savings to be achieved earlier than currently forecasted.

6 Management case

6.1 Governance

6.1.1 Governance arrangements

As this project is seeking endorsement from the Capital Growth Board to borrow the required funding to deliver this project and will therefore have oversight to the project's successful delivery. The project board outlined below will project manage and oversee the delivery of the project. For reporting, the SWISCo streetlighting team will report and escalate any issues to the climate initiative board.

The SWISCo streetlighting team will manage the day-to-day implementation of the project through managing Enerveo as the contractors to deliver the LED and Telensa Nodes installation.

6.1.2 Project Board

The following people have been identified who will be critical to ensuring the delivery of the project:

Table 8 – Project Board

Name	Title	Project Role / Area of Expertise
Matt Reeks	SWISCo – Managing Director	Project Sponsor
Ian Jones	Head of Highways	Senior Responsible Officer
Guy Redfern	Service Manager – Highways	Project Management
Tom Pennicott	Streetlighting Engineer	Operational Delivery
Alex Carter	Climate Strategy and Project Officer	Strategic oversight
Andrew Sherry	Principal Accountant	Financial oversight and scrutiny
Ryan Guy	Procurement & Contracts Officer	Procurement
Chris Gomm	Streetlighting Engineer & Comms/Engagement Officer	Communications
Tom Pennicott	Streetlighting Engineer	Contract manager

6.2 Key milestones

Below are the indicative key milestones for the project;

Activity	Start	End	Comments
Climate CGB approval	21/08/25	21/08/25	Climate CGB gives approval of the business case and to take forward to CGB.
CGB Approval	01/10/25	01/10/25	The CGB gives approval of the business case and to take forward to full council for the approval to borrow the required funding to deliver the project.
CAD	05/11/25	05/11/25	CAD approval to take the business case forward to Cabinet.
Cabinet approval	18/11/25	18/11/25	Cabinet approval of the business case and to borrow the required funding.
Full Council Approval	11/12/25	11/12/25	Full council approval of the business case and to borrow the required funding.
Contract Instruction	15/12/25	15/12/25	Upon exercising the Section 16 Contract Option, Torbay Council will appoint Telensa Central Management System (CMS) to undertake the works as required.
Project preparation and setup	15/12/25	13/03/26	Enverve begin project preparation for getting additional onsite gangs ready, office resources in place and update systems. Whilst also ordering the Telensa nodes and LED lanterns in tranches ready for installation,
Installation of Telensa base stations.	16/03/26	27/04/26	Installation of 14 base station in pre-designated areas within the bay prior to the rollout of the CMS nodes and lantern replacement.
Installation of Telensa nodes for all streetlights.	16/03/26	09/11/26	Between 6-8 months to install the Telensa nodes (This is a conservative timescale currently and the expectation is that this could be delivered at an accelerated rate).
Installation of Holophane LED Lanterns to 3,431 streetlights.	16/03/26	09/11/26	As part of the rollout of the CMS nodes, for the 3,431 streetlights will have Holophane LED lanterns fitted.
Go Live Date	16/11/26	16/11/26	The installation of all LED's and CMS nodes are complete and the Telensa network is available to begin implementing the proposed dimming regimes.
Project Delivered	27/11/26	27/11/26	Project is complete.

Table 9 - Key Milestones

6.3 Benefits delivery

Benefits for this scheme will be measured via the below key performance indicators:

1. Achieve the estimated £292,291 annual energy savings. Upon completion of the project, this will be measured every six months through the streetlighting energy data and the councils Laser Energy data by the streetlighting team.

2. Achieve the Estimated annual carbon savings of 230 tCO₂e. Upon completion of the project, this will be measured every six months through the councils Laser Energy data by the climate Change team.
3. Operational cost savings from a reduction in night scout patrols and fault call outs by contractors. Upon completion of the project, this contractor service will cease, and the savings will be guaranteed.
4. Enables the flexible and remote management of our entire streetlighting inventory from one laptop.
5. Provides the opportunity for supplementary dimming regimes to be piloted that can deliver additional energy and carbon savings.
6. Provides the opportunities to implement supplementary streetlighting technologies that provide additional operational capabilities and energy savings.
7. Reduced impact on marine biodiversity and nature from artificial streetlighting.
8. Reduce the number of public complaints about the brightness of streetlights in residential areas. The streetlighting team currently receive complaints data monthly. Upon completion of the project, this data can be reviewed by the streetlighting team to assess the number and frequency of complaints monthly.
9. Future proofs our streetlighting assets pending local government restructure.

6.4 Risk management

Risks will be reviewed and managed using a standard risk matrix. The initial risks identified and their mitigations at this stage have been provided in E.

6.5 Communications & Stakeholder engagement

6.5.1 Communications plan.

Given the nature of this project and impact on a public service, an extensive communications package will need to be delivered to ensure that all members of the public are aware and given full details of the CMS and the estimated energy and carbon savings. This includes highlighting the numerous co-benefits that CMS provides such as;

- Annual reductions in energy consumption and carbon emissions
- Reduce the impact of ALAN on our unique biodiversity and landscapes in the Bay
- Reduce the impact on public health
- Reassurance on safety considerations

6.5.2 Objectives

The aim of this campaign is:

- to inform residents, councillors and wider stakeholders in Torbay to ensure they are aware of the new street lighting scheme and know the benefits of the new system.
- To promote Torbay's wider work to improve energy and cost efficiency and support the councils targets to tackle Climate Change.
- Maximise positive publicity opportunities throughout the process from decision making to implementation of the new lighting system.

6.5.3 Audience

We will target the following groups to provide feedback:

- Deputy Leader Councillor Chris Lewis (Cabinet lead for Climate Change)
- Councillors
- local residents in Torbay
- Climate Partnership partners (Member organisations including private, public and voluntary and community sector)
- community partnerships
- Brixham Town Council
- SWISCo
- Devon and Cornwall Police
- Devon and Cornwall Police and Crime Commissioner.

6.5.4 Strategy

6.5.5 What is the messaging?

- Torbay will benefit from its entire street lighting inventory being upgraded to state-of-the-art LED which will significantly improve the energy efficiency of our streetlights and lower our council carbon emissions but, importantly also save money in the long term, saving thousands of pounds over its lifetime.
- Our entire street lighting inventory will be centrally controlled by Telensa's Control Management System (CMS). This system will enable the council to control the brightness of individual streetlights via a laptop and be able to adapt the brightness at the touch of a button.
- Better, more modern streetlighting will also help address anti-social behaviour and reduce the impact on our biodiversity across the Bay from artificial streetlighting.
- A key outcome from the project is that the estimated energy savings from the project can be reinvested into our council budgets to deliver further improvements to our council infrastructure and services.
- The new lighting is one of a number of key infrastructure projects to help reduce the Council's carbon emissions as part of our Climate Change Action Plan.

Note: these are all the proactive key messages to promote the positive benefits of the scheme; we will also need 'reactive' lines to take if asked by media/public etc about things like brightness / dimming of the lights, e.g:

The new scheme allows us to vary the brightness of the lights across the Bay at the touch of a laptop button, whereas before we have always had to change the brightness of individual lights. Therefore, if a resident or other stakeholder contacts us with any concerns about a light being dim or needing adjusting, we can do this very quickly and easily.

6.5.6 What are we going to do?

- 5 November - Business case goes to CAD – Cabinet and Directors will receive information about the project.

- 18 November – Cabinet – this is the point where the project will become public knowledge so we will coincide the main initial publicity at this point. There will be a Members Briefing to all Councillors (email newsletter update), press release sent out to local media, included on the News page on our website, article in One Torbay and Staff News, social media posts across our channels including Facebook, LinkedIn, Nextdoor and Instagram.
- 16 March 2026 – Installation of the new lighting – follow up opportunity for ‘work in progress’ photos, video etc for use on social media and in our newsletters.
- 16 November 2026 – Go live date – Press release, photo opportunity with councillors and staff/contractors, article in One Torbay, social media posts, Members Briefing to update councillors that the project is now live.

6.5.7 What channels will we use?

- Initial decision: Members Briefing to all Councillors (email newsletter update)
- press release sent out to local media, included on the News page on our website
- article in One Torbay and Staff News
- social media posts across our channels including Facebook, LinkedIn, Nextdoor and Instagram.
- Later milestones: Installation of the new lighting – follow up opportunity for ‘work in progress’ photos, video etc for use on social media and in our newsletters.
- Go live date – Press release, photo opportunity with councillors and staff/contractors, article in One Torbay, social media posts, Members Briefing to update councillors that the project is now live.

6.5.8 Implementation

When	What	Who
13 Oct	Draft comms plan and business case goes to CAD? (check)	Chris Gomm
5 November	Business case goes to CAD – Cabinet and Directors will receive information about the project.	Chris Gomm
18 November	Cabinet – this is the point where the project will become public knowledge so we will coincide the main initial publicity at this point.	Chris Gomm
18 November	Members Briefing to all Councillors (email newsletter update),	Chris Gomm
18 November	press release sent out to local media, included on the News page on our website	Chris Gomm
18 November	article in One Torbay and Staff News	Chris Gomm
18 November	social media posts across our channels including Facebook, LinkedIn, Nextdoor and Instagram.	Chris Gomm
16 March 2026	Installation of the new lighting – follow up opportunity for ‘work in progress’ photos, video etc for use on social media and in our newsletters.	Chris Gomm
16 November 2026	Project go live date – Press release, photo opportunity with councillors and staff/contractors, article in One Torbay, social media posts, Members Briefing to update councillors that the project is now live.	Chris Gomm

6.5.9 Scoring/Evaluation

INPUTS (This is the work you do before or during the	OUTPUTS (What is delivered and audience reached)	OUTTAKES (responses to content – what qualitatives can be measured i.e.	OUTCOMES (What is the result you want? How will you
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campaign planning).		no. of consultations completed, no. of webpage hits, press coverage)	know the campaign has been a success?)
Communications planning	Facebook and Twitter posts	Reach on our corporate social media channels including Facebook and Twitter (shares, likes, retweets).	Supporting Torbay Council's Climate Change Action Plan
Insight	Press releases		Energy efficiency, cost savings in long term
Audience segmentation	Internal communications messages	Conversion rate / click-throughs from our social media channels through to corporate website.	Public awareness of new lighting scheme
Researching channels and opportunities	GovDelivery bulletins – One Torbay, Staff News etc	Feedback and sentiment from followers on our Facebook and Twitter channels.	Enhancing the council's reputation and credentials as energy efficient and using state of the art technology
Liaising with communications leads in partner organisations.	Partner organisations sharing our messages and engaging with the Review via their own channels.	Press coverage	
Graphic design for social media posts and other channels		Increase in subscribers to e.g. One Torbay etc	
Drafting content		Increase in the number of people doing what? e.g enquiring about becoming a foster carer	

6.6 Equality Impact Assessment

The Council has a public sector duty under the Equality Act 2010 to have 'due regard' to advancing equality of opportunity between those persons who share a relevant protected characteristic and persons who do not share it. The Act also seeks to eliminate discrimination, harassment and victimisation. It is important that you carefully and thoroughly consider the different potential impacts that the decision being taken may have on people who share protected characteristics. The dimming regime aligns with Torbay Council's sustainability goals but must be implemented with care to avoid exacerbating inequalities. Through inclusive engagement, smart technology, and targeted mitigation, the Council can ensure the project supports both environmental and community wellbeing.

An Equality Impact Assessment (EIA) has been carried out and can be found in Appendix F. A summary of the equality impact assessment for the project;

- Age – Older people may feel less safe walking in dimly lit areas, particularly in the evenings during the winter months. Young people may be more active at night and affected by reduced

visibility. However, there is no evidence that the proposed changes would lead to an increase in actual crime, however they may result in an increased fear of crime.

- Disability - This group could be potentially negatively impacted in terms of sensory implications with reduced or no lighting. This could affect people with sensory processing disorder, autism, those that are partially sighted, or blind. Mitigation for these needs include that lighting can be adjusted at short notice to improve the experience of disabled people, and feedback from members of the public will be responded to as appropriately.
- Gender Reassignment - LGBTQ+ individuals may feel more vulnerable in poorly lit areas due to risk of harassment. As part of the proposed dimming regime, the prioritisation of lighting in known safe spaces and community hubs can be implemented, with community feedback being used to refine lighting where required.
- Religion - Some religious groups may be disproportionately affected due to cultural practices (e.g., late-night worship). Added to this, some minorities may fear increased discrimination which has a detrimental impact to their ability to go to places of worship. The lighting around places of worship or cultural centres can be provided with bespoke lighting without compromising safety and equality.
- Race - People from minority ethnic groups may feel less safe at night or fear incidents of discrimination particularly with rising cases of hate crime for refugees and asylum seekers. The lighting around places of worship or cultural centres can be provided with bespoke lighting without compromising safety and equality.
- Sex – All groups could potentially be negatively impacted by the dimming of streetlighting due to risk of violence and harassment in particular on women. To reduce the potential impact, the streetlighting can be maintained on key pedestrian routes and transport hubs such as train stations, bus stops and taxi ranks.
- Sexual Orientation - Potential impact of increased hate crime / violence towards those who identified their sexuality as either lesbian, gay, bisexual or other terms. As part of the proposed dimming regime, the prioritisation of lighting in known safe spaces and community hubs can be implemented, with community feedback being used to refine lighting where required.

As part of the ongoing mitigation activities, the following actions will be undertaken following the implementation of the CMS;

- Regular review of complaints and feedback;
- Adjust lighting schedules based on seasonal changes; &
- Ongoing engagement with affected communities

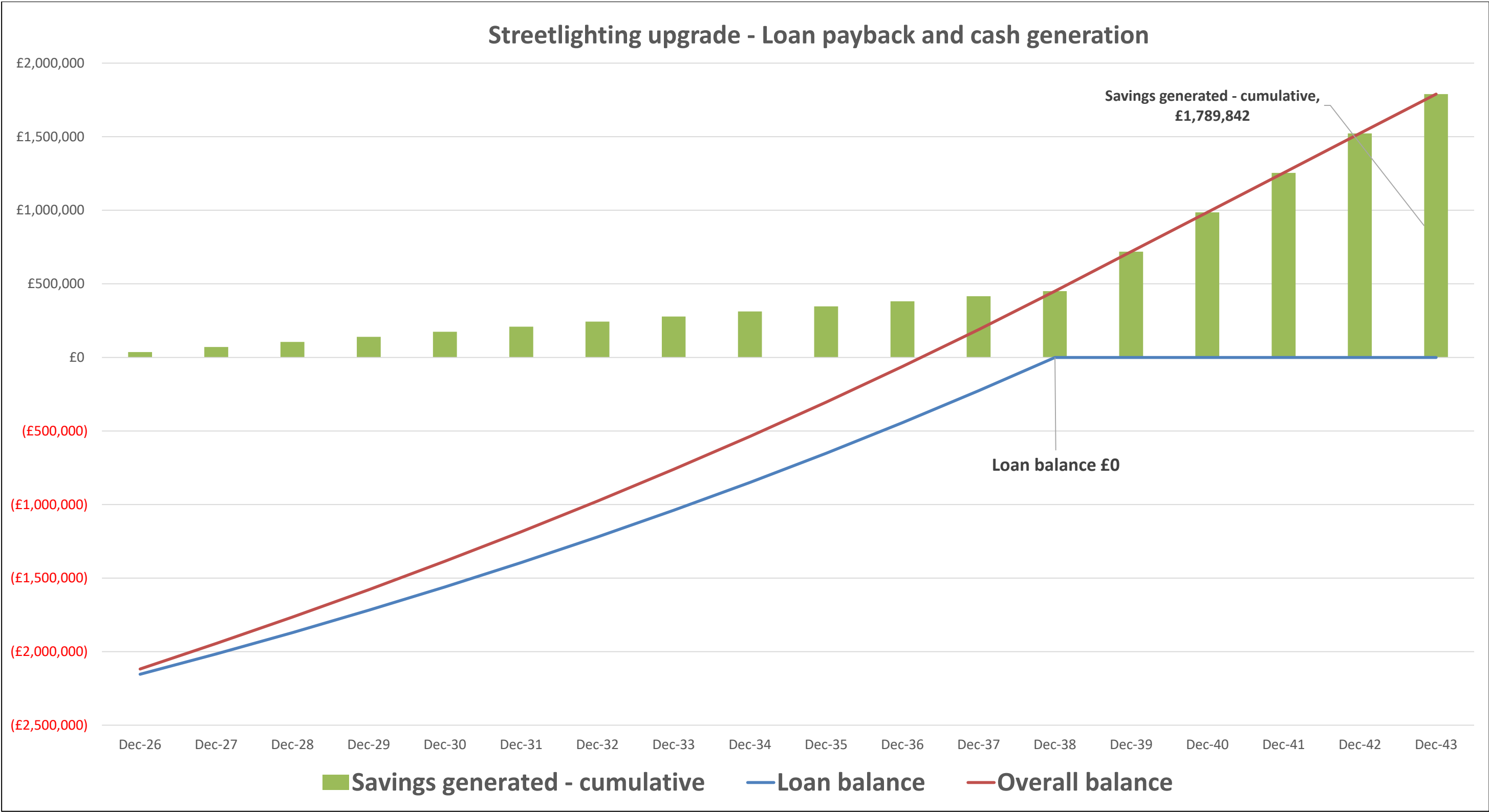
Appendix A. Options cost summary

The below table outlines the options being assessed and their indicative costs, however it’s a key point to note that the payback in years is without the cost to borrow the required funding and the interest rates which are applied therefore impacting on the payback of this project based on the potential financial savings.

Table 10 – Option Cost Summary

Options	Description of option	Total costs install	Annual maintenance p/annum	Energy Savings (£) p/annum	Energy Savings (Kwh) p/ annum	Carbon Saving (tCO2e) p/ annum	Co-benefits
Option 1	Business As Usual (BAU)	£0	£0	£0	0	0	N/A
Option 2	Installation of only the LED lanterns.	LED Lanterns = £896,968 Total Cost = £896,968	£0 (10 Year warranty on the LED bulbs) Scout Car investigations = £14,435 Total annual costs = £14,435	LED Lanterns = £165,908 Total energy savings (minus annual maintenance costs) = £151,473	LED Lanterns = 572,098 kwh per annum Total Kwh savings = 572,098 kwh per annum	LED Lanterns = 127 tCO2e Total carbon savings = 127 tCO2e per annum	Significant energy and tCO2e savings.
Option 3	Installation of the LED lanterns and the CMS solution which will enable a more energy efficient dimming programme to be implemented. Also allows for further dimming regimes to be trialled and deliver further energy savings.	CMS Nodes = £1,210,726 LED Lanterns = £896,968 Total Cost = £2,154,162	Telensa Operating Cost = £16,901 Escrow = £2,000 Cost of Power Telecells = £5,095 Cost of Power Base Stations = £471 Total annual costs = £24,467	LED Lanterns = £165,908 Dimming = £150,850 Savings from scout car investigations = £14,435 Total energy savings (minus annual maintenance costs) = £292,291	LED Lanterns = 572,098 kwh per annum Dimming = 460,035 kwh per annum Total Kwh savings = 1,032,133 kwh per annum	LED Lanterns = 127 tCO2e Dimming =103 tCO2e Total carbon savings = 230 tCO2e per annum	Significantly improved streetlighting system, which enables flexible dimming regimes to be implemented whilst delivering energy savings. Operational cost savings from a reduction in scout car investigating faults. Significant tCO2e savings. Biodiversity and nature benefits. Public Health benefits.

Appendix B. Return on Investment for CMS and LED upgrade solution



Appendix C. Costs breakdown - Telensa Central Management System (CMS)

Item;	Cost;
Supply of 14 x Telensa Base stations @ £5676 each =	£79,464
Supply of 6830 x Telensa Node (Conduit) @ £72 each =	£491,760
Supply of 4241 x Telensa Node (NEMA) @ £68.40 each =	£330,030
Telensa Operating Cost x 1 @ £16,901 per annum (subject to RPIX)	£22,497
Installation of 14 x Telensa Basetations @ £106.54 =	£1,493
Installation of 4767 x Telensa Node (Conduit) @ £35.04 (5m & 6m columns) =	£167,036
Installation of 4463 x Telensa Node (NEMA) @ £15.57 (5m & 6m columns) =	£69,489
Installation of 2133 x Telensa Node (Conduit) @£43.80 (8m & 10m columns) =	£93,425
ESCROW =	£2,000
Total Cost:	£1,257,194

Appendix D. Costs Breakdown for Holophane LED Lantern Upgrades

Item;	Cost;
3,431 Holophane LED Lanterns to install on; - Main Road units: 742 - Residential units: 2,689	£896,968
Total Cost:	£896,968

Appendix E. Project Risks

Risk ID	Risk Description	Impact Description	Likelihood	Impact	Level of Risk Scoring	Type of Risk	Risk Owner	How will the risk be managed and/or mitigated?
1	Project doesn't receive approval to borrow the required amount of funding to deliver the project.	The FBC and the approval to borrow the funding isn't received which means that the project can't be take forward to deliver.	2	4	8	Funding	AC/GR/TP	Development of the business case to highlight the significant energy & carbon savings plus = the operational, public health & nature/biodiversity benefits.
2	Installation of the CMS/ new lanterns impacts the day-to-day operations of the streetlighting	There is a disruption or impact on the residential and main roads as a result of the installation of the CMS nodes and LED lanterns.	1	4	4	Physical installation of the CMS nodes and LED lanterns	TP / GR	The works will be conducted in the day to avoid disruption to streetlighting operations. Installation of the solution will look to avoid busy periods on main roads to limit the impact to traffic. The Enerveo teams have experience in installation of the CMS Nodes and LED bulbs.
3	Any detrimental impact to public health and safety from the proposed dimming regime that is implemented for our streetlights.	Members of the public are adversely impacted by the dimming of streetlights on main roads and in residential areas.	2	3	6	Public Health and Safety	TP/GR	Where there are areas of public disorder or anti-social behaviour, the streetlights in these areas can raise their illumination to help support police, security and emergency services.
4	Any delays in getting approval to proceed/fund this project in the 2025/26 financial year will likely cause an increase in costs due to the RPIX price index changing after April 2026.	The costs of delivering and installing the solution will likely increase due to the RPIX price index change that will occur from April 1 st 2026.	3	4	12	Costs / Delays	IJ / GR	Aim to present the business case and receive approval to borrow he necessary funding prior to the end of the 25/26 financial year.
5	The public aren't communicated with extensively about the project and the proposed dimming regime that is proposed to be implemented on residential and main roads. .	Members of the public aren't made aware of the proposed dimming of streetlights and there is confusion or concern when they notice a change in the brightness of streetlights.	2	3	6	Public Awareness	GR/ TP / CG	Once the CMS nodes are installed, a trial pilot can be undertaken to assess if the public notices any changes to the lighting levels in residential or main road areas.

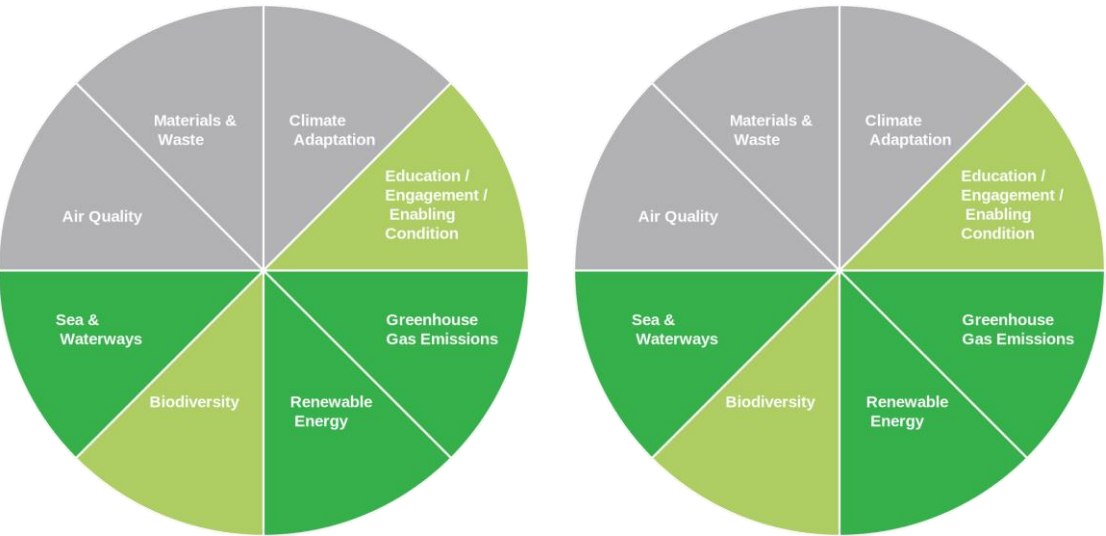
Appendix F. Equality Impact Assessment

Protected characteristics under the Equality Act and groups with increased vulnerability	Data and insight	Equality considerations (including any adverse impacts)	Mitigation activities	Responsible department and timeframe for implementing mitigation activities
Age	18 per cent of Torbay residents are under 18 years old. 55 per cent of Torbay residents are aged between 18 to 64 years old. 27 per cent of Torbay residents are aged 65 and older.	Younger and older people may feel less safe at night. The Office for National Statistics (ONS) found in the Crime Survey for England and Wales 2016, that perceived perception of victimisation varies by age. They found that: • Those aged 16-24 years tended to underestimate victimisation amongst their age group • Those ages 25-34 years produced a better estimate of their likelihood of experiencing victimisation • Individuals 35 years and older tended to overestimate their likelihood of victimisation, when compared to victimisation rate Public perceptions of crime in England and Wales - GOV.UK For the calendar year 2023, the total number of collisions within Torbay in 2024 were 150 for all types, which was down from 191 for 2023 - Road Casualty Reduction Reports - Torbay Council. Older people may feel less safe walking in dimly lit areas, particularly in the evenings during the winter months. Young people may be more active at night and affected by reduced visibility. However, there is no evidence that the proposed changes would lead to an increase in actual crime, however they may result in an increased fear of crime - Switching off street lights at night does not increase car crashes and crime UCL News - UCL – University College London	Any negative impacts can be quickly remedied through the capabilities of the CMS system. During the early evening and to support the nighttime economy, bespoke lighting regimes can be implemented for town centre areas in particular taxi areas, road crossings and any other areas that require additional lighting. In addition, higher lighting levels can be put in place in areas with high footfall or near care homes, schools and youth centres.	Highways team – SWISCo
Carers	At the time of the 2021 census there were 14,900 unpaid carers in Torbay. 5,185 of these provided 50 hours or more of care.	No effect anticipated. Should there be any issues raised around equality once the lighting regime is in place, can be quickly remedied through the capabilities of the CMS system.	n/a	
Disability	In the 2021 Census, 23.8% of Torbay residents answered that their day-to-day activities were limited a little or a lot by a physical or mental health condition or illness.	This group could be potentially negatively impacted in terms of sensory implications with reduced lighting. This could affect people with sensory processing disorder, autism, those that are partially sighted, or blind. Mitigation for these needs include that lighting can be adjusted at short notice to improve the experience of people with disabilities, and feedback from members of the public will be responded to as appropriately. For vulnerable road users, such as pedestrians, cyclists, motorcyclists, Horse riders, Users of mobility devices, there may an impact in terms of risk from reduced lighting on roads. In terms of road accidents in Torbay, the number of collisions have dropped from 191 in 2023 to 150 in 2024 - Road Casualty Reduction Reports - Torbay Council. This group may have concerns that this will increase their risk of road accidents and collisions from a reduction in lighting particularly on road crossing, ramps and other accessibility routes. However, the proposal to retain lighting, albeit at a reduced level, should help	Any negative impacts or disruptions for those with disabilities within specific streets can be reported to SWISCo who can adjust the streetlighting on a street-by-street basis to accommodate any specific lighting needs. Added to this, the lighting for road crossings, ramps, bus stops and other key accessible routes can have additional lighting to ensure safety of all users but can be adapted for those with disabilities to ensure they meet minimum standards for accessibility. To monitor the impacts, complaints and feedback can be monitored to adapt any lighting requirements within specific areas.	Highways team – SWISCo

		reduce the adverse impacts to some extent.		
Gender reassignment	In the 2021 Census, 0.4% of Torbay's community answered that their gender identity was not the same as their sex registered at birth. This proportion is similar to the Southwest and is lower than England.	Trans individuals may be disproportionately impacted by this decision as due to their risk of hate crime. They may feel more vulnerable in poorly lit areas due to risk of harassment. There were 151 incidents of hate crime that were gender reassignment orientated in Devon in 2024. Hate Crime Annual Equality Report 2024 Devon & Cornwall Police	Any negative impacts can be quickly remedied through the capabilities of the CMS system. As part of the proposed dimming regime, the prioritisation of lighting in known safe spaces and community hubs can be implemented, with community feedback being used to refine lighting where required.	Highways team – SWISCo
Marriage and civil partnership	Of those Torbay residents aged 16 and over at the time of 2021 Census, 44.2% of people were married or in a registered civil partnership.	No adverse impacts are anticipated. Should there be any issues raised around equality once the lighting regime is in place, can be quickly remedied through the capabilities of the CMS system.	N/a	
Pregnancy and maternity	Over the period 2010 to 2021, the rate of live births (as a proportion of females aged 15 to 44) has been slightly but significantly higher in Torbay (average of 63.7 per 1,000) than England (60.2) and the South West (58.4). There has been a notable fall in the numbers of live births since the middle of the last decade across all geographical areas.	No adverse impacts anticipated. Should there be any issues raised around equality once the lighting regime is in place, can be quickly remedied through the capabilities of the CMS system.	N/a	
Race	In the 2021 Census, 96.1% of Torbay residents described their ethnicity as white. This is a higher proportion than the South West and England. Black, Asian and minority ethnic individuals are more likely to live in areas of Torbay classified as being amongst the 20% most deprived areas in England.	People from minoritised ethnic groups may feel less safe at night or fear incidents of discrimination particularly with rising cases of hate crime for refugees and asylum seekers. Hate crime, England and Wales, year ending March 2024 - GOV.UK In Torbay in 2024/25, there were 39 reports of hate crime that were race oriented, up 9 from 2023/24. However, from Devon and Cornwall police figures for 2023, of the 2,100 hate crimes reported, over 48% were motivated by race highlighting that this a major issue for the area. Hate crimes motivated by hostility towards race accounted for the largest proportion, with 1,246 crimes — a 26% increase from the previous year - Hate Crime Annual Equality Report 2024 Devon & Cornwall Police	Any negative impacts from the proposed dimming regime can be quickly remedied through the capabilities of the CMS system. The lighting around places of worship or cultural centres can be provided with bespoke lighting without compromising safety and equality.	Highways team – SWISCo
Religion and belief	64.8% of Torbay residents who stated that they have a religion in the 2021 census.	In 2024/25, there were 2 reports of religion-oriented hate crimes reported in Torbay. However, from Devon and Cornwall Police figures for 2023, of the 2,100 hate crimes reported, 128 were religion or belief motivated. Some religious groups may be disproportionately affected by the change in lighting due to cultural practices (e.g., late-night worship). Added to this, some minoritised ethnic communities may fear increased discrimination which has a detrimental impact to their ability to go to places of worship.	Any negative impacts from the proposed dimming regime can be quickly remedied through the capabilities of the CMS system. The lighting around places of worship or cultural centres can be provided with bespoke lighting without compromising safety and equality.	Highways team – SWISCo
Sex	51.3% of Torbay's population are female and 48.7% are male	All groups could potentially be negatively impacted by the dimming of streetlighting due to risk of violence and harassment in particular for women.	There is an unequal chance of impact on women suffering increased harassment and violence as a result of this project. To reduce the potential impact, the streetlighting can be	Highways team – SWISCo

		In the UK, 74% of all victims of domestic abuse and sexual violence crimes recorded by police in the year ending March 2020 were female. This national picture roughly aligns with the figures in Torbay between 2018-21, with 72% of victims being female. - final-post-consultation-version-with-foreword-210223.pdf	maintained on key pedestrian routes to provide additional lighting. Gender-based safety audits can be undertaken to get views on where additional lighting is required. In conjunction with this, working with community safety teams and consider lighting near transport hubs such as train stations, bus stops and taxi ranks.	
Sexual orientation	In the 2021 Census, 3.4% of those in Torbay aged over 16 identified their sexuality as either Lesbian, Gay, Bisexual or, used another term to describe their sexual orientation.	Potential impact of increased hate crime / violence towards the LGBT+ community In 2024, 17% of reported hate crime in Devon was sexual orientation motivated, with 9 hate crime reports in Torbay during the same period. Hate Crime Annual Equality Report 2024 Devon & Cornwall Police / Torbay Hate Crimes and Incidents – Q4 2024-25	Any negative impacts can be quickly remedied through the capabilities of the CMS system. As part of the proposed dimming regime, the prioritisation of lighting in known safe spaces and community hubs can be implemented, with community feedback being used to refine lighting where required.	Highways team – SWISCo
Armed Forces Community	In 2021, 3.8% of residents in England reported that they had previously served in the UK armed forces. In Torbay, 5.9 per cent of the population have previously served in the UK armed forces.	There may be an impact on those in the Armed forces community who have disabilities and require additional support.	Any negative impacts can be quickly remedied through the capabilities of the CMS system. Any negative impacts or disruptions within specific streets can be reported to SWISCo who can adjust the streetlighting on a street-by-street basis to accommodate the needs of those with disabilities. Added to this, the lighting for road crossings, bus stops and other key areas will have additional lighting to ensure safety of all users but can be adapted for those with disabilities.	Highways team – SWISCo
Additional considerations				
Socio-economic impacts (Including impacts on child poverty and deprivation)		No effect anticipated.	n/a	
Public Health impacts (Including impacts on the general health of the population of Torbay)		Positive Impact – The reduction in lighting pollution has been shown to reduce the impact on public health and wellbeing - Light at Night and Disrupted Circadian Rhythms Alter Physiology and Behavior Integrative and Comparative Biology Oxford Academic	n/a	
Human Rights impacts		No effect anticipated. We need to ensure that human rights are protected. In particular, that people have: • A reasonable level of choice in where and how they live their life and interact with others (this is an aspect of the human right to ‘private and family life’). • An appropriate level of care which results in dignity and respect (the protection to a private and family life, protection from torture and the freedom of thought, belief and religion within the Human Rights Act	n/a	

		A right to life (ensuring that nothing we do results in unlawful or unnecessary/avoidable death).		
Child Friendly	Torbay Council is a Child Friendly Council, and all staff and Councillors are Corporate Parents and have a responsibility towards cared for and care experienced children and young people.	There is a potential impact of reduced lighting on young people's journeys to school and could impact on their choices about evening activities, which may mean an increase in social isolation for some. Whilst the streetlights will be dimmed, albeit at a reduced level, should help reduce the adverse impacts to some extent.	Any negative impacts can be quickly remedied through the capabilities of the CMS system. The retention of lighting around schools and public spaces, albeit at reduced levels, will mitigate the impact on making these spaces available to young people to access.	Highways team – SWISCo



Appendix G. Climate Impact Assessment

Streetlighting LED & CMS upgrade project Climate Impact Assessment

Before Mitigations After Mitigations

Section 1 – Assessment Summary

Project Summary:

This project seeks to upgrade our remaining streetlights to LED Holopahane Lanterns and to procure Telensa’s Control Management Sytem (CMS). The CMS will be implemented through 14,794 Nodes being installed on our streetlights, which will replace the photoelectronic cell on the top of the lantern. The CMS will be implemented on all our residential and main road lights across Torbay to enable a more energy efficient dimming regime to be introduced and to deliver a more capable operational system. This system can deliver significant annual energy and carbon emissions savings, whilst also delivering numerous co-benefits in terms of public health, supports tackling anti-social behaviour and local nature and biodiversity.

Assessment Final Summary:

Overall, this project will have a positive impact due to the focus of this project to make annual energy and carbon savings through improving the energy efficiency of our street lights. Added to this are the benefits to the reduced impact on our local biodiversity, nature and marine life from a reduction in ALAN lighting.

Total Score Before Mitigations: -8

Total Score After Mitigations: -8

Estimate Scheme Cost: £2,261,870

Overall Mitigation Budget: £

Section 2 – Assessment Overview

Assessment ID: CIA162

Assessment Author: Alex Carter

Is this a Capital Project: False Project Category: Other; Streetlighting Project Subcategory:

Project Directorate / Service Area: Transport & highways

Section 3 – Greenhouse Gas Emissions Details

Greenhouse Gas Emissions Score: -2

Greenhouse Gas Emissions Score Justification: Through the upgrade of the old lanterns to to LED Holophane Lanterns, an estimated annual carbon emission saving of 127 tonnes can be made. Whilst through the implementation of the proposed dimming regime that the CMS can provide, an additional 103 tonnes of carbon emission savings per annum can be saved. Additional carbon emission savings can be explored through additional dimming regimes once the CMS is implemented.

Greenhouse Gas Emissions Score Mitigated: False Greenhouse Gas Emissions Constraints:

Greenhouse Gas Emissions Revised Score:

Greenhouse Gas Emissions Revised Score Justification:

Greenhouse Gas Emissions Mitigation Budget:

Section 4 – Renewable Energy Details

Renewable Energy Score: -2

Renewable Energy Score Justification: The implementation of this project will lead to significant energy reductions from the energy efficiency of the LED lanterns and from the capability of the CMS to implement more energy efficient dimming regimes. The ultimate benefit is that both of these proposal will reduce the energy consumed and the carbon emissions of our streetlighting inventory.

Renewable Energy Score Mitigated: False **Renewable Energy Constraints:**

Renewable Energy Revised Score:

Renewable Energy Revised Score Justification:

Renewable Energy Mitigation Budget:

Section 5 – Biodiversity Details

Biodiversity Score: -1

Biodiversity Score Justification: There is a growing body of evidence that shows how Artificial Light At Night (ALAN) can have negative impacts on the health of both terrestrial and marine ecosystems . The adaptable programming and control provided by the Telensa System has the potential to allow Torbay to manage street lighting more sensitively in order to protect our habitats and species. Torbay has the evidence to identify where its most sensitive and important habitats are located. This could be used in conjunction with the Telensa system to allow Torbay Council to adapt the way in which the bay is lit up, whilst being able to respond to its sensitivities and protecting our unique biodiversity and landscapes. For example, where there is a particular area of importance to the bats at Berry Head, the lighting regime nearby could be adapted to attempt to reduce its disruptive impacts. Currently this is not possible due to the limitations of our streetlightings capabilities and the dimming regime it can implement.

Biodiversity Score Mitigated: False **Biodiversity Constraints:**

Biodiversity Revised Score:

Biodiversity Revised Score Justification:

Biodiversity Mitigation Budget:

Section 6 – Sea & Waterways Details

Sea & Waterways Score: -2

Sea & Waterways Score Justification: There is a growing body of evidence that shows how Artificial Light At Night (ALAN) can have negative impacts on the health of both terrestrial and marine ecosystems . The adaptable programming and control provided by the Telensa System has the potential to allow Torbay to manage street lighting more sensitively in order to protect our habitats and species. ALAN, produced by any human-made source, can propagate into the marine environment causing light pollution – an excess of light that disrupts the natural patterns of wildlife, contributes to rising carbon dioxide levels, harms human health, and obscures the stars. Light pollution threatens ocean ecosystems by disrupting natural light-driven cycles that regulate marine life.

Sea & Waterways Score Mitigated: False **Sea & Waterways Constraints:**

Sea & Waterways Revised Score:

Sea & Waterways Revised Score Justification:

Sea & Waterways Mitigation Budget:

Section 7 – Air Quality Details

Air Quality Score: 0

Air Quality Score Justification: No impact or changes from the installation of the LED's or the CMS solution. Air Quality Score Mitigated: False Air Quality Constraints:

Air Quality Revised Score:

Air Quality Revised Score Justification:

Air Quality Mitigation Budget:

Section 8 – Materials & Waste Details

Materials & Waste Score: 0

Materials & Waste Score Justification: The replacement of the old lanterns to LED Holophane lanterns will create waste as a result. However, the life cycle of the LED lights are 15 years whilst the CMS nodes lifespan is between 15-20 years, which will limit the replacement of faulty equipment and reduce the waste created.

Materials & Waste Score Mitigated: False Materials & Waste Constraints:

Materials & Waste Revised Score:

Materials & Waste Revised Score Justification:

Materials & Waste Mitigation Budget:

Section 9 – Climate Adaptation Details

Climate Adaptation Score: 0

Climate Adaptation Score Justification: The CMS capabilities enables the council to adjust the streetlighting across Torbay to react to any weather events.

Climate Adaptation Score Mitigated: False Climate Adaptation Constraints:

Climate Adaptation Revised Score:

Climate Adaptation Revised Score Justification:

Climate Adaptation Mitigation Budget:

Section 10 – Education / Engagement / Enabling Details

Education / Engagement / Enabling Condition Score: -1

Education / Engagement / Enabling Condition Score Justification: This project will highlight the efforts being taken by the council to increase the energy efficiency of our streetlighting and reduce wasted energy whilst supporting our target to become net zero by 2030 as a council and the 2050 target for Torbay. As part of the communications for this project, we will be able to communicate the climate emergency, energy efficiency and the nature/biodiversity benefits.

Education / Engagement / Enabling Condition Score Mitigated: False **Education / Engagement / Enabling Constraints:**

Education / Engagement / Enabling Condition Revised Score:

Education / Engagement / Enabling Condition Revised Score Justification:

Education / Engagement / Enabling Mitigation Budget: