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Director of Corporate Services: Christine Ferguson

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If calling please ask for
Louise Adamson
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Date: 2 May 2018

Dear Sir/Madam

You are invited to the following meeting:

Shetland Islands Council
Council Chamber, Town Hall, Lerwick
Wednesday 9 May 2018 at 10am

Apologies for absence should be notified to Louise Adamson at the above number.

Yours faithfully

Executive Manager – Governance and Law

Convener: M Bell
Depute Convener: B Wishart

AGENDA

- (a) Hold circular calling the meeting as read.
- (b) Apologies for absence, if any.
- (c) Declarations of Interest - Members are asked to consider whether they have an interest to declare in relation to any item on the agenda for this meeting. Any Member making a declaration of interest should indicate whether it is a financial or non-financial interest and include some information on the nature of the interest. Advice may be sought from Officers prior to the meeting taking place.

- d) Confirm the minutes of the meetings held on (i) 21 February 2018, (ii) 28 February 2018, and (iii) 7 March 2018 (enclosed).

1	Appointment of Leader <i>GL-09</i>
2	Notice of Motion re. Introduction of Car Parking Charges at Sumburgh Airport
3	Appointment of Data Protection Officer <i>CE-01</i>
4	Asset Investment Plan – Business Cases <i>CPS-03-18</i>



Shetland Islands Council

Agenda Item

1

Meeting(s):	Shetland Islands Council	9 May 2018
Report Title:	Appointment of Leader	
Reference Number:	GL-09	
Author / Job Title:	Executive Manager – Governance and Law	

1.0 Decisions / Action required:

- 1.1 That the Council appoint a Leader, with immediate effect, by the method stated in Section 4, and RESOLVE, in the event of a vote, to elect by secret ballot; and
- 1.2 In the event that the current Depute Leader is appointed as Leader, that the Council RESOLVE whether or not to appoint to the position of Depute Leader, and if so resolved, to proceed to make such an appointment, with immediate effect, and also by the method stated in Section 4, and RESOLVE, in the event of a vote, to elect by secret ballot.

2.0 High Level Summary:

- 2.1 The Council's Constitution allows for the appointment of a Leader and, if so resolved, a Depute Leader.
- 2.2 At its meeting on 18 May 2017, the Council appointed Councillor Cecil Smith as Leader, and Councillor Steven Coutts as Depute Leader. Councillor Smith resigned from his position as Leader on 8 March 2018.
- 2.3 The purpose of this report is to appoint to the role of Leader.
- 2.4 In the event that the current Depute Leader, Councillor Steven Coutts, is appointed as Leader, the Council should consider whether or not to elect a Depute Leader, and if so resolved, to proceed to make such an appointment.

3.0 Corporate Priorities and Joint Working:

- 3.1 This report has no impact on the Council's corporate priorities or on joint working.

4.0 Key Issues:

- 4.1 The role descriptions for both positions are set out in the Council's constitution, and for ease of reference, set out in Appendix 1.
- 4.2 In accordance with the Council's current Scheme of Administration and Delegations, Section 1.3, a Member appointed to the position of Leader will hold office until the next ordinary election of Councillors, unless otherwise determined by the Council in accordance with the requirements of Section 1.3 of the said Scheme.

Appointment of Leader

- 4.3 All nominations for the appointment of the Leader shall be sought prior to the first vote and no further nominations will be allowed after voting begins. Also prior to voting, each candidate shall be permitted to address the meeting as to their candidature, however no questions will be allowed.
- 4.4 Voting shall be conducted in accordance with Section 10 of the Council's Standing Orders, and as set out in paragraphs 4.5 to 4.9 below.

Appointment of Depute Leader

- 4.5 The Council's Constitution has provision for this position, and the position was agreed and first appointed to by the Council at its mid-term review of its governance arrangements on 14 May 2014.
- 4.6 If the position of Depute Leader becomes vacant, and the Council resolves to appoint a Depute Leader, all nominations for the appointment of the Depute Leader shall be sought prior to the first vote and no further nominations will be allowed after voting begins.

Council Members may wish to invite the Leader to apply their nomination in the first instance. Any additional nominations will be pursued thereafter resulting in a vote if more than one candidate emerges.

Also prior to voting, each candidate shall be permitted to address the meeting as to their candidature, however no questions will be allowed.

Method of Appointment/Voting

- 4.7 Section 10 of the Council's Standing Orders sets out the method of appointment of office bearers. When Councillors are to be appointed to any positions to be filled by the Council, and where the number of candidates nominated exceeds the number of vacancies, the Councillors to be appointed will be determined by a vote or votes in each of which Members will be entitled to vote for as many candidates as there are vacancies; but they may not cast more than one vote for any candidate.

4.8	The vote will normally be taken by a show of hands, unless the Council resolves in the case of any particular appointment to take the vote by secret ballot. It has been custom and practice for the Council to undertake such voting by secret ballot.
4.9	The name of the candidate having fewest votes will be deleted from the list and a fresh vote, or votes, will be taken. This process of elimination will be continued until the number of candidates equals the number of vacancies.
4.10	Where only one vacancy requires to be filled, and any candidate has an absolute majority of the votes, the candidate will be declared appointed. Otherwise, the name of the candidate having fewest votes will be deleted from the list. This process of elimination will be continued until one candidate has a majority of the votes.
4.11	In the case of an equality of votes the Leader or Depute Leader shall be elected by lot as between those who received equal votes and proceed on the basis that the person to whom the lot falls upon had received an additional vote.
5.0 Exempt and/or confidential information:	
5.1	None.
6.0 Implications :	
6.1 Service Users, Patients and Communities:	This report has no impact on service users, patients or communities.
6.2 Human Resources and Organisational Development:	This report has no impact on staff, health or safety.
6.3 Equality, Diversity and Human Rights:	This report has no impact on equalities, diversity or human rights and an Equalities Impact Assessment is not required.
6.4 Legal:	This report has no legal implications.
6.5 Finance:	The current allowance for the Leader is £28,236 and can be met from the existing Council Members' budget. If appointed, the role of Depute Leader is an unremunerated position.
6.6 Assets and Property:	The Leader has an allocated office within Lystina House.
6.7 ICT and new technologies:	This report has no ICT implications.

6.8 Environmental:	This report has no environmental implications, and a Strategic Environmental Impact Assessment is not required.	
6.9 Risk Management:	Failure to appoint a Leader would be in breach of the Council's Constitution.	
6.10 Policy and Delegated Authority:	The appointment of both Leader and Depute Leader are provided for within the Council's Constitution. The appointment of office bearers is a matter reserved to the Council.	
6.11 Previously considered by:	None	

Contact Details:

Jan Riise, Executive Manager – Governance and Law jan.riise@shetland.gov.uk
27 April 2018

Appendices:

Appendix 1 – Role Descriptions for the Leader and Depute Leader

Background Documents:

[SIC Constitution – Part A - Governance](#)

END

LEADER

The Leader's functions include –

- Chairing the Policy and Resources Committee
- Providing political leadership and direction for the organisation, leading the Senior Councillor Chairs
- Working across the Council to establish clear political direction
- Promoting Council interests as political leader
- Representing the Council at meetings with Ministers, CoSLA and other partners
- Responsibility at political level for the management and maintenance of the Council's reputation
- Providing the key political level link between the officer structure and political structure

DEPUTE LEADER

The Depute Leader's functions include supporting and assisting the Leader in the carrying out of their duties and functions, and to deputise for the Leader in respect of the following duties when the Leader is absent –

- chairing the Policy and Resources Committee
- representing the Council at meetings with Ministers, CoSLA and other partners.

END

Motion to be presented to Shetland Islands Council on 9th May 2018

The Shetland Islands Council expresses its extreme disappointment that no consultation was undertaken by HIAL prior to its announcement to introduce car parking charges at Sumburgh Airport.

The Council believes the proposal will have a disproportionately negative impact on Shetland residents and calls for an Islands Impact Assessment.

The Council requests that HIAL stop the implementation until it can demonstrate a proper assessment of the proposed change. This must demonstrate the alternatives HIAL considered to provide a balanced budget.

The Council calls on the Transport and Islands Minister for his support to ensure that this happens.

Signed:





Meeting(s):	Shetland Islands Council	9 May 2018
Report Title:	Appointment of Data Protection Officer	
Reference Number:	CE-01-18	
Author / Job Title:	Chief Executive	

1.0 Decisions / Action required:

1.1 That the Council RESOLVES to:

- 1.1.1 Appoint the Executive Manager – Governance & Law as the Council's Data Protection Officer;
- 1.1.2 Appoint the Director of Corporate Services, as the Senior Information Risk Owner, to act on behalf of the Council as Data Controller; and
- 1.1.3 Amend the Scheme of Delegations for Officers accordingly, noting that a refreshed Scheme of Delegations will be submitted to the Council in October 2018.

1.2 NOTE that these decisions will also extend to the relevant functions carried out by the Shetland Islands Area Licensing Board and ZetTrans, subject to their approval.

2.0 High Level Summary:

- 2.1 The General Data Protection Regulation (GDPR) is a regulation by which the European Parliament, the Council of the European Union (EU) and the European Commission intend to strengthen and unify data protection for all individuals across the whole of the EU. The primary objectives of the GDPR are to give citizens and residents control of their personal data and to simplify the regulatory environment by unifying the regulation within the EU. The GDPR will apply from 25 May 2018.
- 2.2 In addition, the Data Protection Bill is currently making its way through the UK Parliament, which will apply new data protection standards, based on the GDPR, to all general data, creating new rights for citizens and new modern rules for business. The Bill will also create a comprehensive framework for general data processing, replacing the current Data Protection Act 1998.
- 2.3 Under the new Data Protection requirements, it is mandatory for all local authorities to designate a Data Protection Officer (DPO).

3.0 Corporate Priorities and Joint Working:

3.1 The terms of this report aim to achieve the following corporate priorities:

Our Plan 2016-20:

- Our approach to managing the risks we face will have resulted in a more risk-aware organisation that avoids high-risk activities.

Executive and Corporate Services Directorate Plan

- High standards of leadership and management
- High standards of corporate governance
- Excellent standards of customer care

3.2 Data protection legislation allows for a DPO to be appointed for more than one organisation. If approved, the Council's DPO is already an appointed senior adviser to both ZetTrans and to the Shetland Islands Area Licensing Board, and therefore it will be recommended to those organisations that they appoint the Council's DPO as their own DPO. This will support joint working by ensuring continuity in terms of monitoring, advice and training for members and officers.

4.0 Key Issues:

4.1 The GDPR introduces a duty for Councils to appoint a Data Protection Officer (DPO). The DPO tasks are defined as being:

- to inform and advise about the Council's obligations to comply with the GDPR and other data protection laws;
- to monitor compliance with the GDPR and other data protection laws, and with the Council's data protection policies, including managing internal data protection activities; raising awareness of data protection issues, training staff and conducting internal audits;
- to advise on, and to monitor, data protection impact assessments;
- to cooperate with the supervisory authority; and
- to be the first point of contact for supervisory authorities and for individuals whose data is processed (employees, customers, etc.).

4.2 The DPO tasks and duties cannot result in a conflict of interest for the DPO. DPOs are allowed to have other functions, but only where these do not give rise to conflicts of interests. The DPO cannot hold a position within the organisation that leads him or her to determine the purpose and the means of processing of personal data. Conflicting positions may include senior management positions (such as chief executive, chief financial officer, head of HR or head of IT) but also roles lower down if such positions or roles lead to the determination of purposes and means of processing.

4.3 The Executive Manager – Governance and Law has been identified by the Information Governance Board as the most appropriate person to undertake the role of Data Protection Officer within the Council. The role sits well with his current Proper Officer functions as Chief Legal Officer and Monitoring Officer.

4.4	DPOs are not personally responsible in case of non-compliance with the GDPR. The GDPR makes it clear that it is the controller or the processor who is required to ensure and to be able to demonstrate that the processing is performed in accordance with its provisions. Data protection compliance is a responsibility of the controller or the processor.
4.5	The Executive Manager – Governance and Law is currently the Council's senior decision maker in relation to personal data held by the Council, and acts on behalf of the Council as data controller or processor. As this would give rise to a conflict of interest with the role of DPO, another senior officer is required to take on the responsibility of ensuring the Council acts appropriately as a Data Controller in accordance with data protection legislation.
4.6	The Information Governance Board have recommended that the Director of Corporate Services, as the designated Senior Information Risk Owner [SIRO], should be given the role of senior decision maker in relation to Data Protection. Whilst operational and day to day management of information and compliance issues are dealt with at various levels within the Council, the SIRO has overall governance and strategic responsibilities for the Information Management Strategy, for managing all information risks and assurance measures, and for reporting or advising on such matters to the Chief Executive, CMT or the Council, [including the Council as Data Controller] as required.
4.7	Data protection legislation allows for a DPO to be appointed for more than one organisation. If the decision in this report is approved, and as the Council's DPO is already an appointed senior adviser to both ZetTrans and to the Shetland Islands Area Licensing Board, those organisations will be asked to appoint the Council's DPO as their own DPO, and other lead officers would maintain the role of adviser to the organisation as Data Controller.
5.0 Exempt and/or confidential information:	
5.1	None.
6.0 Implications :	
6.1 Service Users, Patients and Communities:	The decisions in this report should provide assurance to service users, customers, communities and employees that the Council has assigned senior responsibility for data protection compliance to officers who have the knowledge, support and authority to carry out their role effectively.
6.2 Human Resources and Organisational Development:	<p>The assignment of data protection responsibilities is regarded as complementary to, and consistent with, the current Proper Officer functions and roles of the senior officers concerned.</p> <p>There are no direct impacts on any other employees with regard to the decisions required in this report.</p>
6.3 Equality, Diversity and Human Rights:	There are no internal or external equality, diversity or human rights issues with regard to this report, and an Equalities Impact Assessment is not required.

6.4 Legal:	The appointment of a DPO is mandatory for the Council under Article 32 of Directive (EU) 2016/680 of the European Parliament. The role of the DPO will follow Article 29 Working Party Guidelines on the role of Data Protection Officers, and other guidance that may be issued by Information Commissioner.
6.5 Finance:	There are no financial implications associated with the terms of this report.
6.6 Assets and Property:	There are no implications for major assets and property associated with the decisions required in this report.
6.7 ICT and new technologies:	There are no implications for ICT or ICT systems associated with the decisions required in this report.
6.8 Environmental:	There are no implications for the local environment and a Strategic Environmental Impact Assessment is not required.
6.9 Risk Management:	Failure to appoint a suitable DPO would be a breach of legislation and cause the Council to hold a high risk of incurring fines or litigation by the supervising authorities or by a member of the public, leading to reputational and professional harm.
6.10 Policy and Delegated Authority:	The Council has reserved authority for the appointment of Proper Officers, and for making, alteration or revocation of any part of any document which forms part of the Council's Constitution, of which the Scheme of Delegations forms Part C.
6.11 Previously considered by:	The terms of this report have not previously been considered by any other committee.

Contact Details:

Maggie Sandison, Chief Executive

Chief.executive@shetland.gov.uk

2 May 2018

Appendices: None.

Background Documents:

GDPR – ICO Guidance

<https://ico.org.uk/for-organisations/guide-to-the-general-data-protection-regulation-gdpr/>

Data Protection Bill – ICO Guidance

<https://ico.org.uk/for-organisations/data-protection-bill/>

END



Shetland Islands Council

Agenda Item

4

Meeting(s):	Policy and Resources Committee Shetland Islands Council	30 April 2018 9 May 2018
Report Title:	Asset Investment Plan – Business Cases	
Reference Number:	CPS-03-18-F	
Author/ Job Title:	Robert Sinclair, Executive Manager – Capital Programme	

1.0 Decisions / Action required:

1.1 That the Policy and Resources Committee RECOMMENDS that the Council RESOLVES to;

1.1.1 Approve the proposals as described in Section 4.3 of this report for implementation with immediate effect.

2.0 High Level Summary:

2.1 This report presents two asset investment proposals for approval, which have been considered by the Council's Asset Investment Group (AIG) based on the submission of business case documentation. One is a Business Justification Case, and the other is a Full Business Case. The AIG has assessed the submissions for completeness and confirmed that a sound business case has been made in each instance.

2.2 These proposals are provisionally funded within the Council's Asset Investment Plan (AIP) 2018-23, which was approved by the Council on 14 February 2018 (Min Ref: 4/18).

2.3 The business cases are provided as appendices to this report.

3.0 Corporate Priorities and Joint Working:

3.1 The Gateway Process for the Management of Capital Projects supports our Financial Strategy, Reserves Policy and Budget Strategy. 'Our Plan 2016 to 2020' states that "Excellent financial-management arrangements will make sure we are continuing to keep to a balanced and sustainable budget, and are living within our means" and that "We will have prioritised spending on building and maintaining assets and be clear on the whole-of-life costs of those activities, to make sure funding is being targeted in the best way to help achieve the outcomes set out in this plan and the community plan".

4.0 Key Issues:

4.1 On 29 June 2016 the Council adopted a new Gateway Process for the Management of Capital Projects, drawing on national and best practice guidance, to ensure the robustness of all capital projects.

- 4.2 This revised process is based on the process developed by the Office of Government Commerce (OGC) and is in common use throughout the public sector. It applies 'Prince 2' principles to the process and is aligned with the '5-Case Model' that has been promoted to both Officers and Members through recent 'Building Better Business Case' training. A key principle in that procedure is that the Council's AIP is re-prioritised on an annual basis, however business cases can be processed at any time. By approving a Full Business Case or Business Justification Case, Members are agreeing that the project should progress to the implementation stage, subject to being prioritised and included in the Council's Asset Investment Plan.
- 4.3 A summary of the business case documents referred to are set out below, along with recommendations from the AIG:
- 4.3.1 Appendix A - Business Justification Case – Replacement Hangar Door – Tingwall Airport
- Replacement of hangar door to different design;
 - Project driven by Health & Safety risks as well as the need to maintain service;
 - Capital costs estimated at £100k in 2018/19;
 - AIG recommended approval.
- 4.3.2 Appendix B – Full Business Case – LED Upgrade of Shetland's Streetlighting Network
- Replacement of failed lighting columns and all non-LED lanterns;
 - Would incorporate dimming of streetlights between midnight and 6.00 a.m.;
 - Total project cost estimated at £2.8 million;
 - 3-year implementation programme from 2018/19 to 2020/21;
 - Although the initial financial appraisal included an element of borrowing in the Strategic Outline Case, it is anticipated, in the 5 Year Asset Investment Plan 2018-23, that the project will be fully funded by the General Capital Grant and the Spend to Save reserve.
 - AIG recommended approval.

5.0 Exempt and/or confidential information:

5.1 None.

6.0 Implications:

6.1 Service Users, Patients and Communities:	Upon completion, the proposals described in the appendices to this report will either enhance the quality and/or condition of the assets used by the Council in its delivery of services.
6.2 Human Resources and Organisational Development:	No implications arising directly from this report.
6.3 Equality, Diversity and Human Rights:	No implications arising directly from this report.
6.4 Legal:	Governance and Law provide advice and assistance on the full range of Council services, duties and functions including those included in this report.

6.5 Finance:	<p>The capital project proposals in this report have been budgeted in the 2018-23 Asset Investment Plan pending approval of the attached business cases.</p> <p>The capital cost and ongoing revenue implications of the projects are:</p> <p>6.5.1 <u>Replacement Hangar Door – Tingwall Airport</u></p> <p>Capital - This project represents capital maintenance of an existing asset and is projected to cost £100k.</p> <p>Revenue - The ongoing revenue maintenance is included in the approved maintenance budgets for Tingwall Airstrip in the Council's 2018/19 Budget Book (Min Ref: SIC 5/18).</p> <p>6.5.2 <u>LED Upgrade of Shetland's Streetlighting Network</u></p> <p>Capital - This upgrade project is estimated to cost £2.8m over the three year period 2018/19 to 2020/21.</p> <p>Revenue - The ongoing revenue costs for the Streetlighting network have been approved in the 2018/19 Budget Book (Min Ref: SIC 5/18). Once the project is fully implemented it is projected that there will be revenue savings for energy, maintenance and carbon tax of approximately £190k per year.</p>
6.6 Assets and Property:	<p>On completion, the proposals described in the appendices to this report will either enhance the quality of the Council's existing asset base or improve the efficiency and cost of operation.</p>
6.7 ICT and new technologies:	<p>No implications arising directly from this report.</p>
6.8 Environmental:	<p>All maintenance and new-build projects seek to address climate change and carbon management for example by embedding energy saving measures and environmentally friendly materials in their design. The projects described in the appendices to this report contribute directly to that objective.</p>
6.9 Risk Management:	<p>Failure to include these business case proposals in the AIP may result in unnecessary additional expenditure in the future.</p>
6.10 Policy and Delegated Authority:	<p>Approval of the financial strategy and budget framework is a matter reserved for the Council having taken advice from Policy and Resources Committee.</p>
6.11 Previously considered by:	<p>N/A</p>

Contact Details:

Robert Sinclair, Executive Manager – Capital Programme

robert.sinclair@shetland.gov.uk

16 April 2018

Appendices:

Appendix A – Business Justification Case – Replacement Hangar Door – Tingwall Airport

Appendix B – Full Business Case – LED Upgrade of Shetland's Streetlighting Network

Background Documents: None

END

Project Title:

Replacement Hangar Door –
Tingwall Airport

Business Justification Case

Version no: Draft 1.0

Issue date: 11/03/2018

VERSION HISTORY

Version	Date Issued	Brief Summary of Change	Owner's Name
Draft	11.03.2018	First draft version	C. Robertson
Draft	16.03.2018	Second draft version	C. Robertson
Final	12.04.2018	Asset Investment Reference	C. Robertson

CONTENTS – BUSINESS JUSTIFICATION CASE

1. Purpose
2. Strategic context
3. Case for change
4. Available options
5. Preferred option
6. Procurement route
7. Funding and affordability
8. Management arrangements

Appendix

BUSINESS JUSTIFICATION CASE

1. Purpose

The purpose of this business case is to seek approval of Capital Funding for £100,000 (one hundred thousand pounds) to allow the replacement of the problematic hangar door at Tingwall Airport operated by Shetland Islands Council.

2. Strategic Context

Tingwall Airport, also known as Lerwick/Tingwall Airport, is located in the Tingwall valley, near the village of Gott -7.4 km; 4.6 ml northwest of Lerwick.

Tingwall Aerodrome has a Civil Aviation Authority Ordinary Licence (Number P614) that allows flights for the public transport of passengers or for flying instruction as authorised by the licensee (Shetland Islands Council).

The current operation is a combination of inter-island flights to Fair Isle, Papa Stour, Foula, Skerries (flights are currently suspended) and emergency flights undertaken by the Maritime Coastguard Agency and Gama Aviation.

Currently, there is a Health and Safety issue in relation to the potential failure of hydraulic rams supporting the hangar door at Tingwall Airport following a recent external inspection report.

3. Case for Change

A. Business needs

The objective is to maintain continuity and minimise disruption of air services to the outer-islands.

This development would also meet the objectives of the Corporate Plan:

"Provide quality transport services within Shetland"

"The transport services we provide are the lifeblood of these islands. They allow us all to go about our daily business and take part in community life."

"Lack of access contributes to people in remote areas feeling excluded from Shetland society."

Statutory Requirements -

The Health and Safety at Work Act 1974, places a duty on all employers "to ensure, so far as is reasonably practicable, the health, safety and welfare at work "of all their employees.

Civil Aviation Authority (CAP 168) - the grant of an aerodrome licence is governed by the Air Navigation Order, which requires the CAA to grant a licence in respect of any aerodrome in the United Kingdom if it is satisfied that the aerodrome is **safe** for use by aircraft, having regard in particular to the physical characteristics of the aerodrome and of its surroundings on the basis that it meets aerodrome licensing criteria.

Civil Aviation Authority (CAP 791) - The certification of an aerodrome is governed by Commission Regulation (EU) No 139/2014 (Aerodromes) 'the Aerodrome Regulation'. When an aerodrome receives its certificate, it is granted on the basis that it meets aerodrome certification criteria including the establishment of a Certification Basis (CB) and a management system.

The aerodrome regulation requires that all changes to aerodrome facilities and those procedures and policies that have the potential to affect the aerodromes continuing basis for certification need to be notified to the CAA.

- Health and Safety at Work Act 1974
- Civil Aviation Authority – CAP 168
- Civil Aviation Authority - CAP 791

B. Benefits

The benefits of this work would be that this work can be planned in a controlled, cost effective manner, minimising the operational impact of the service provided at Tingwall Airport.

The proposed new door has a life expectancy of 20 -25 years, with the prospect of reduced servicing and maintenance costs – supported by an extended warranty.

C. Risks

If this work is not planned and completed in a timely manner, there are significant risks to the daily operation of Tingwall Airport to the Islands of Shetland or prolonged suspension of service due to concerns that might be raised to the CAA on behalf of the current operator of the air service.

The costs and delays to service, associated with "Emergency" procurement, would far outweigh the costs of properly planned replacement and procured "goods"

4. Available Options

Option 1 - Do Nothing

Let the doors rams continue to operate until they fail – we do not have any replacement rams in stock. There are currently no technical drawings available in relation to the previous installation of the doors – external technical expertise would need to be sought for any replacement rams

Option 2 - Do Minimum

This is the same as the 'Do Nothing' option – with the additional consideration of procuring new replacement rams at a cost in excess of £30,000 (thirty thousand pounds)

Option 3 - Planned Equipment Replacement

Replace the existing door with a traditional concertina type construction in a planned manner, allowing the uninterrupted operation of the airport and its service in liaison with the CAA and the operator of the inter-island air service.

5. Preferred Option

Option 3 - Planned Equipment Replacement

Preference of this option allows for minimal disruption at Tingwall Airport and the inter-island air service.

6. Procurement Route

The work will be tendered as per the Council's contract standing orders with respect of The Public Contracts (Scotland) Regulations 2015 and Procurement Reform (Scotland) Act 2014.

7. Funding and Affordability

The total estimated funding required is £100,000 (one hundred thousand pounds) in financial year 2018/19. This project funding has been approved as part of the Council's 5 Year Asset Investment Plan 2018-23 (Min Ref: SIC 4/18) pending receipt and approval of this business case.

8. Management Arrangements

The project will be project managed by Estate Operations
All work done will be considered to minimise disruptions to the air services.
Risk assessments and method statements will be required by contractors and accepted by Shetland Islands Council before work commences.

FULL BUSINESS CASE

Project Title: The LED Upgrade of
Shetland's Streetlighting Network

Version no:

Issue date:

VERSION HISTORY

Version	Date Issued	Brief Summary of Change	Owner's Name
Draft	8.11.17	First Draft Version	Neil Hutcheson

CONTENTS – FULL BUSINESS CASE (FBC)

1. Executive summary
2. Strategic case
3. Economic case
4. Commercial case
5. Financial case
6. Management case

APPENDICES

Preferred Option 4a - NPV Calculation

1. Executive summary

1.1 Introduction

This FBC seeks approval to invest an estimated £2.8 million in the upgrading of the streetlighting associated with Shetland's public road network. The existing conventional lanterns would be replaced with more energy efficient Light Emitting Diode (LED) technology. The main benefits are significantly reduced energy use with the resulting long term cost savings and reduction in the Council's carbon footprint. An important additional benefit is the opportunity to replace a large proportion of streetlight columns that are no longer fit for purpose.

1.2 Strategic case

1.2.1 Strategic Context and Alignment with Corporate Priorities

The strategic drivers for this investment and associated strategies, programmes and plans are as follows:

- compliance with the Council's statutory duty to maintain the public road network;
- a significant reduction in energy use and costs;
- an associated reduction in the Council's carbon footprint;
- a reduction in annual maintenance costs; and
- compliance with the Council's statutory duty to achieve best value by reducing whole-life costs.

1.2.2 The case for change

The Council's streetlighting network consists of lanterns, lighting columns, cabling, ducts, feeder pillars, illuminated signs and illuminated bollards. There are 3,989 streetlights on the roads inventory spread throughout Shetland.

The relatively poor condition of the existing asset would indicate that over the years there has been an under investment in streetlight maintenance. The majority of columns were installed 25 or more years ago and are now showing the wear and tear to be expected from long-term exposure to Shetland's climate. A recent inspection has identified that there are now 1,292 columns in the worst condition category and a significant number of these have had to be cut down for safety reasons.

The existing "conventional" lanterns use at least 100% more energy than their LED equivalent so their replacement, in addition to reducing costs, would assist with meeting the Council's emission reduction targets.

The related business needs are as follows:

- to ensure that the streetlighting network is safe, fit for purpose, well maintained and reliable;
- to maximise a reduction in energy use and costs, thereby maximising the reduction in emissions;

- to maximise the reduction in the whole-life cost of the streetlighting when energy, maintenance and future column replacements are considered.

On the basis of this analysis, the potential scope for the project ranges from the replacement of lanterns with their LED equivalent only to the replacement of lanterns, failed columns and the introduction of a Central Management System (CMS) that would allow the streetlights to be dimmed.

1.3 Economic case

1.3.1 The SOC long list of options

Within this potential scope, the following options were considered using the options framework as the long list:

- Option 1 – the status quo;
- Option 2 - the ‘minimum’ scope – the replacement of all the “failed” lighting columns and the replacement of their conventional lanterns with the LED equivalent.
- Option 3 - the ‘intermediate’ scope – the replacement of all the “failed” lighting columns and the replacement of conventional lanterns with their LED equivalent over the entire network.
- Option 4 – ‘maximum’ scope – as per option 3 but with addition of the installation of part-night dimming of the streetlighting network between midnight and 6am to realise further energy and carbon savings.

1.3.2 Long List Options - Indicative economic costs

The indicative costs for the construction and 20-year lifespan of the streetlighting network for the long list options are as follows:

	Option 2 Failed columns only £000	Option 3 Failed columns all Non LEDs £000	Option 4a Failed columns all Non LEDs Dimmer Timing £000	Option 4b Failed columns all Non LEDs CMS £000
Capital Project Expenditure	2,039	2,721	2,756	2,929
<i>Current Annual Revenue Expenditure- 20 year period:</i>				
Energy	6,003	6,003	6,003	6,003
Maintenance	3,132	3,132	3,132	3,132
Carbon Reduction	848	848	848	848
Administrative Charges	575	575	575	575
<i>Cash releasing benefit - 20 year period:</i>				
Electricity Savings	(1,656)	(3,604)	(3,695)	(3,695)
CRC Saving	(244)	(539)	(552)	(552)
Maintenance Saving	(232)	(629)	(649)	(649)
Net Revenue Expenditure	8,426	5,786	5,661	5,661
Overall Net Total	10,465	8,508	8,417	8,590
Overall Net Total at Present Value	7,853	6,731	6,684	6,851

1.3.3 The preferred way forward

Based on the above analysis, the preferred way forward was to discount the options that did not allow the part night dimming of the streetlighting network. These were Options 1-3.

The main benefits of Option 4 as the way forward are that the dimming of the streetlights would maximise the reduction in the Council's energy use, costs and carbon emissions that can be achieved. This is in addition to the life extension and improvement in condition of the existing asset.

1.3.4 The short list

On the basis that the preferred way forward was agreed, we recommend the following options for further, more detailed evaluation:

- Option 4a – Replacement of All Failed Columns and Non-LED Lanterns with Photocell or Timer Dimming
- Option 4b – Replacement of All Failed Columns and Non-LED Lanterns with Central Management System Dimming

1.3.5 The preferred option

Following further investigation it has been identified that the preferred option for dimming our streetlighting is the use of timers or photocells rather than a Central Management System. The latter gives greater control of the streetlighting network but this benefit is not worth the additional cost and risks associated with this more complex technology. Therefore, the preferred option is Option 4a above.

1.4 Commercial case

1.4.1 Procurement strategy

The procurement of this project would be in accordance with the Government Procurement Agreement (WTO) and the EU Consolidated Public Sector Procurement Directive (2004).

1.4.2 Required products and services

The required products and services in relation to the preferred way forward are briefly as follows:

Products

- LED lanterns of various wattage;
- Hot dipped galvanised lighting columns of various heights;
- Streetlighting brackets;
- Ignitors, ballast resistors, capacitors, cable and other streetlighting electrical apparatus; and
- Ready mix concrete.

Services

- Roads Service staff time to prepare contract documents on approval of project;
- Civil works for the installation of replacement lighting columns;
- Electrical works for the installation of replacement LED lanterns; and
- The design of streetlighting electrical networks lighting spread/footprints (in-house).

1.4.3 Potential for risk transfer and potential payment mechanisms

The main risks associated with the scheme are as follows:

Supply

The failure of a main supplier causing a lack of resources, materials or equipment for the project.

Staff Numbers/Skill Shortage

Should the approved project require the replacement of a significant number of lighting columns then there would be a need for relatively large number of operatives to ensure that the work is completed on schedule.

Delays Due to Complaints from Public/Stakeholders

There is a possibility that works during the winter months and disruption to the provision of streetlighting could result in complaints from the public and resulting in delays in the programme as their concerns are addressed.

Weather Conditions

Inclement weather, especially, in the winter months could result in delays to electrical and concrete works with associated additional costs.

These could potentially be tied down contractually within the deal and associated payment mechanisms as follows:

Supply

Ensure that alternative suppliers have been identified so that materials or services can be sourced elsewhere at the earliest opportunity.

Staff Numbers/Skill Shortage

The works will have to be tendered as there are insufficient resources “in-house” to undertake the project and continue with the “day to day” road maintenance that the Roads Service is required to provide.

Delays Due to Complaints from Public/Stakeholders

The works programme must take account of the likelihood of complaints resulting from lengthy disruptions to lighting provision. The more time consuming works such as column replacements must be scheduled out with the long winter nights. Communication with the affected road users and stakeholders would be required at an early stage.

Weather Conditions

The works programme must also consider the timing of the most weather sensitive works and schedule them to the summer months.

1.4.4 Accountancy Treatment

The agreed accountancy treatment is that the preferred option would result in the completed asset being held on the Council's balance sheet as a non-current asset under International Accounting Standard (IAS) 16 - Property Plant & Equipment and International Public Section Accounting Standards Board (IPSAS) 17 - Property Plant & Equipment.

1.5 Financial case

The financial implications of the preferred option 4a - replacement of all failed columns and non-LED lanterns with photocell or timer dimming, are as follows:

1.5.1 Summary of financial appraisal - impact on Expenditure & Income Account

	2018/19 £000	2019/20 £000	2020/21 £000	Ongoing Per year from 2021/22 £000
Capital Expenditure	853	1,037	866	0
Net Revenue Cost	423	326	252	233
Total Expenditure	1,276	1,363	1,118	233
Funded by:				
General Capital Grant	(527)	(635)	(596)	0
Spend to Save Reserve	(326)	(402)	(270)	0
Total Funding	(853)	(1,037)	(866)	0
Overall Net Total	423	326	252	233

1.5.2 Overall affordability and Balance Sheet implications

The proposed capital cost of the project is £2.8m over the 3-year construction period. The approved Asset Investment Plan 2018-2023 includes a potential project budget for Streetlighting LED Upgrade of £2.8m for this project subject to approval of the Full Business Case.

The funding of this project is proposed to be £1.1m from the Council's Spend to Save Scheme Reserve and £1.7m from the General Capital Grant from the Scottish Government.

Once the capital project is complete, the impact on the Income & Expenditure Account will be a reduction in revenue costs for Roads Service of approximately £190k per annum.

There will be an increase in the value of Long Term Assets on the Balance Sheet of approximately £2.8m.

1.6 Management case

1.6.1 Project management arrangements

Roads Service staff time, with costs met from existing streetlighting budgets, will be allocated to ensure the successful development of the scheme.

1.7 Recommendation

The recommendation of this Full Business Case is that Option 4a - Replacement of all failed columns and all non-LED lanterns plus dimmer timing, is approved to proceed to delivery during the period 2018/19 to 2020/21.

Signed:

Date:

**Senior Responsible Owner
Project team**

2. The Strategic Case

2.0 Introduction

This Full Business Case (FBC) is for upgrading of the streetlighting associated with Shetland's public road network. The existing conventional lanterns would be replaced with more energy efficient Light Emitting Diode (LED) technology.

The main benefits are significantly reduced energy use with the resulting long term cost savings and reduction in the Council's "carbon footprint." An important additional benefit is the opportunity to replace a large proportion of our streetlight columns that are no longer fit for purpose.

This FBC has been prepared using the agreed standards and format for business cases which is the Five Case Model, which comprises the following key components:

- the **strategic case** section. This sets out the strategic context and the case for change, together with the supporting investment objectives for the scheme
- the **economic case** section. This demonstrates that the organisation has selected a preferred way forward, which best meets the existing and future needs of the service and is likely to optimise value for money (VFM)
- the **commercial case** section. This outlines what any potential deal might look like
- the **financial case** section. This highlights likely funding and affordability issues and the potential balance sheet treatment of the scheme
- the **management case** section. This demonstrates that the scheme is achievable and can be delivered successfully in accordance with accepted best practice.

With reference to the Strategic Outline Case (SOC) which was previously presented for approval, the main changes which are now incorporated into the Full Business Case are that the figures are updated for the passage of time and it is no longer proposed that the project will be part funded from borrowing. It is now proposed that the project will be funded partly from the Spend to Save Reserve and the rest from the General Capital Grant from Scottish Government. This affects the cashflow figures and affordability.

2.1 Organisational overview

This provides an updated overview of the Council and makes the case for investment in the Streetlighting project, with particular reference to purpose, structure, and operational environment.

2.2 Business strategies

Council's Corporate Plan – "Our Plan"

The priorities listed in the Council's "Our Plan" include:

- "Provide quality transport services within Shetland;"

- “There will be transport arrangements in place that meet people’s needs and that we can afford to maintain in the medium term;” and
- “We will have a clearer understanding of the options and the investment needed to create a sustainable internal transport system over the next 50 years.”

The condition of the streetlighting network has direct implications for these priorities and failure to maintain it will mean that these objectives are not met.

“Our Plan” also lists 20 things the Council “aims to achieve by 2020.” These include:

- “to prioritise spending on building and maintaining assets and be clear on the whole-of-life costs of those activities, to make sure funding is being targeted in the best way to help achieve the outcomes set out in this plan and the community plan;”
- “we will have reduced the effect we have on the local environment, particularly reducing carbon emissions from our work and buildings;”
- “more money will be going towards “spend to save” initiatives, providing resources to fund innovative ways of working that save money but help us achieve our desired outcomes.”

Local Outcome Improvement Plan (LOIP)

Development of a sustainable public road and streetlighting network contributes to the “Shetland has sustainable economic growth and all our people have the chance to be part of island life” and “Make the best use of existing assets, infrastructure and human capital for sustainable socio-Economic development” sections of the Local Outcome Improvement Plan. It also contributes to the Corporate aim to use resources sustainably.

The outcomes from the LOIP also include “Shetland stays a safe place to live, and we have strong, resilient and supportive communities.” Improvements to the reliability of the streetlighting network would, in certain areas, have direct implications for road safety. The LED upgrade would also contribute to the “Resource and Energy” priority of the “We deliver all our services in an environmentally sustainable manner to safeguard and enhance our outstanding environment which underpins all our actions and our economic and social well-being” outcome.

National Strategy

The Council has a statutory duty under the “Roads (Scotland) Act 1984” to “provide and maintain lighting for roads, or proposed roads, which are, or will, be maintainable by them and which in their opinion ought to be lit.” Unfortunately, the streetlighting maintenance budgets are insufficient to allow the immediate replacement of all of the removed columns and compliance with this duty.

The “Climate Change (Scotland) Act 2009” imposes ongoing duties on the Council. In exercising its functions the Council must act (a) in the way best calculated to contribute to the delivery of emissions reduction targets, as specified in the Act, (b) in the way best calculated to help deliver any programme setting out Scottish Ministerial objectives in relation to adaptation to climate change and associated matters and (c) in a way that it considers is most sustainable.

The “Local Government in Scotland Act 2003” places a duty on local authorities to secure best value.” The Act goes on to state, “the local authority shall discharge its duties under this section in a way which contributes to the achievement of sustainable development.”

The Government has designated energy efficiency as a National Priority. Streetlighting is a high-energy user. Our current streetlighting requires frequent maintenance and is not of the most energy efficient type. The proposed improvements would reduce our energy usage and reduce our carbon footprint in terms of Council policy to support the Council's Carbon Management Plan. The replacement of conventional lanterns with the more energy efficient LED's is an "easy hit" in delivering the national carbon reduction agenda. Implementing these changes locally means the Council will be supporting the national and local carbon reduction agenda and would also be seen to be delivering the national energy efficiency priority agenda.

2.3. Other organisational strategies

The Roads Service no longer uses conventional lanterns when undertaking repairs to or replacements of existing streetlighting infrastructure. This is funded in part by revenue maintenance budgets but mainly by funding through the Council's Asset Investment Plan.

2.4 Investment objectives

The investment objectives for this project are as follows:

- investment objective 1: the replacement of failed streetlighting columns to ensure that the Council is meeting its statutory duties to maintain the public road network and to provide streetlighting where it considers it to be necessary.
- investment objective 2: the replacement of conventional lanterns with LED technology to reduce the Council's streetlighting energy use by over 50%.
- investment objective 3: the replacement of conventional lanterns with LED technology to reduce the carbon emissions resulting from the Council's streetlighting, and associated Carbon Reduction Commitment (CRC), costs by over 50%.
- investment objective 4: to minimise the "whole life cost" of the project so that the Council meets its duty to secure "best value."

2.5 Existing arrangements

This section describes the existing situation with regard to the investment – the status quo.

The existing arrangements are as follows:

- Streetlighting lanterns and columns replacements are allocated a place on a 5-year programme with capital funding through the Council's "Asset Investment Plan (AIP)." The locations where streetlighting needs to be replaced are identified by the Roads Services' Lighting Engineer/Technician with the works undertaken "in-house." A recent condition inspection of the columns has shown that 1,292 of the 3,989 columns on the streetlighting inventory are in the poorest condition categories with a further 600 in the second category.
- The civils works are undertaken by Roads Service roadworkers and the electric installations by Estate Operations electricians.

- The majority of the lanterns currently used in Shetland's streetlighting network use either sodium, metal halide or mercury lamps (bulbs) otherwise known as conventional lanterns.
- Conventional lanterns are also less reliable than LED technology, not least because lamps (bulbs) have to be replaced every 3 to 5 years as they fail. This means that the inspection and maintenance costs, funded from revenue, are significantly greater for conventional lanterns.

Table 1: existing costs - Streetlighting

2018-19 Budget	Energy	Maintenance	Renewals & Replacements	Carbon Tax & Admin	Total
Revenue	£268,200	£95,000	£18,000	£41,166	£422,366
Capital	-	-	£200,000		£200,000
Duration of contract	in-house	in-house	in house & annually tendered	n/a	

2.6 Business needs

This section provides a detailed account of the problems, difficulties and service gaps associated with the existing arrangements in relation to future needs.

- In recent years the available funds and staff resources have not been sufficient to meet the level of column replacements required. The reason being that the majority of these columns were installed in a short period approximately 25 years ago and are now, at the same time, showing the level of wear and tear to be expected from long term exposure to Shetland's climate. The consequence is that a large number of columns have had to be removed for safety reasons.
- The conventional lanterns are significantly less energy efficient than their LED equivalent with the result that the energy budget for streetlighting is £268,200 for 2018/19 compared to a predicted £85,000 following an LED upgrade.
- The resources currently available for the maintenance of our streetlighting network are insufficient, primarily due to the poor condition of the columns. There are insufficient funds to meet the cost of all the replacements. However, if the money was available there are insufficient roadworkers or electricians to undertake the required work, especially if this is to be done in a short period to ensure that the Council meets its statutory duties.
- The Scottish Futures Trust (SFT) recently published a report that assesses the potential investment need and benefits of a pan Scotland implementation of LED lighting. The

report forecast, “an investment in LED streetlighting of £298m could generate potential savings in the region of £1.3bn over a 20 year operational period before allowing for financing costs. These savings decrease to £900m if funded through Public Work Loans Board (PWLb) and £780m if funded through private finance.” The savings are generated from energy savings (62%) and maintenance savings (36%). The investment would result in a 67% reduction in energy consumption and 1.35m tonnes of carbon saved over the 20-year analysis period.

2.7 Potential business scope and key service requirements

This section describes the potential business scope and key service requirements for the project in relation to the above business needs.

Minimum Scope

The replacement of all the streetlighting columns that have failed or are no longer fit for purpose in order to ensure the safety of road users.

Intermediate Scope

This would be as per the minimum scope but with the replacement of conventional lanterns with LED's in order to reduce the Council's energy use, energy costs and carbon emissions.

Maximum Scope

This would be as per the intermediate scope but with additional measures used to maximise the reduction in energy use, energy costs, carbon emissions and maintenance/inspection costs.

The options within these ranges are considered within the economic case.

2.8 Main benefits criteria

This section describes the main outcomes and benefits associated with the implementation of the potential scope in relation to business needs.

Satisfying the potential scope for this investment will deliver the following high-level strategic and operational benefits. By investment objectives these are as follows:

Table 2: investment objectives and benefits criteria

Investment objectives	Main benefits criteria by stakeholder group
Investment objective 1	A safe and reliable public road network for road users.
Investment objective 2	A more energy efficient streetlighting network allowing the Council to make cost savings.
Investment objective 3	A reduction in the Council's carbon emissions and associated CRC costs as required by local and national policy.
Investment objective 4	To minimise the “whole life costs” costs of the project thereby ensuring “best value” for the Council and road users.

There are no dis-benefits applicable.

2.9 Main risks

The main business and service risks associated with the potential scope for this project are shown below, together with their counter measures.

Table 3: risks and counter measures

Main Risk	Counter Measures
Design: insufficient resources	The design required is minimal as for most of the streetlighting circuits the new LED lanterns would be a like for like replacement for the existing lanterns when considering the lighting spread/footprints.
Development <ul style="list-style-type: none"> • supplier • timescale 	The development of the project including the preparation of tender documents would be done "in-house." The required staff with relevant knowledge and experience would be available, similar contracts have been tendered recently.
Operational risks <ul style="list-style-type: none"> • supplier • availability • performance • operating cost • project management 	<p>The market for LED technology is increasing with manufacturers producing a greater range and ever more efficient lighting. Therefore, the maintenance and/or renewal of LED lanterns should not be an issue in future. The new LED's will be more reliable, more efficient and give improved performance over the conventional lanterns. The unit cost of electricity may not increase as predicted. Since the cost savings resulting from reduced energy use are required to make the repayments on the "loan" required for the project this would affect the net cost of the project. However, the energy inflation figure used in the calculations is the median from the energy cost projection figures published by the government's Department for Energy and Climate Change.</p> <p>The streetlighting on completion of the project will continue to be managed by the Roads Service. Since it would be in a better condition than ever before this will be less onerous than previously.</p>
Termination risks	Ensure that interested contractors are properly vetted.

2.10 Constraints

The project is subject to the following constraints:

- the works must be done over a 3 year period to ensure that the Council is meeting its statutory duty to maintain the road network;

- the project must be tendered as there is insufficient staff resources “in-house” to undertake this level of work;
- the contract shall not include the supply of the main materials (lanterns and columns) so that the Council can utilise the Scotland Excel procurement framework;
- the work will be done year round so weather may be a constraint during the winter but this is to be addressed with careful programming of the more weather dependent tasks.

2.11 Dependencies

The project is subject to the following dependencies that will be carefully monitored and managed throughout the lifespan of the scheme:

- the general public’s and residents awareness of the project achieved through good communication;
- the supply of columns and lanterns that must be ordered timeously and held in stock prior to commencement of the works;
- the performance of the contractor, which will be monitored on a daily basis by the lighting engineer/technician and roads inspectors.

3. The Economic Case

3.1 Introduction

In accordance with the Capital Investment Manual and requirements of HM Treasury's Green Book (A Guide to Investment Appraisal in the Public Sector), this section of the FBC documents the wide range of options that have been considered in response to the potential scope identified within the strategic case.

3.2 Critical success factors (CSFs)

The following key CSFs for the "LED Upgrade of Shetland's Streetlighting Network" project were agreed by staff from the Council's Road Service and Carbon Management Section. The attendees included the Asset and Network – Team Leader, the Carbon Management – Team Leader, the Streetlighting Engineer and the Council's Energy Manager. These CSFs have been used alongside the investment objectives for the project to evaluate the long list of possible options.

- CSF1: business needs – how well the option satisfies the existing and future business needs of the organisation.
- CSF2: strategic fit – how well the option provides holistic fit and synergy with other key elements of national, regional and local strategies.
- CSF3: benefits optimisation – how well the option optimises the potential return on expenditure – business outcomes and benefits (qualitative and quantitative, direct and indirect to the organisation) – and assists in improving overall VFM (economy, efficiency and effectiveness).
- CSF4: potential achievability – the organisation's ability to innovate, adapt, introduce, support and manage the required level of change, including the management of associated risks and the need for supporting skills (capacity and capability). Also the organisation's ability to engender acceptance by staff.
- CSF5: supply side capacity and capability – the ability of the market place and potential suppliers to deliver the required services and deliverables.
- CSF6: potential affordability – the organisation's ability to fund the required level of expenditure – namely, the capital and revenue consequences associated with the proposed investment.

3.3 The long-listed options

The evaluation of the long-listed options was undertaken in accordance with how well each option met the investment objectives and CSFs.

The long list of options for this investment was generated by the Roads and Carbon Management staff using the options framework. This generated options within the following key categories of choice:

Scoping options – choices in terms of coverage (the what)

The choices for potential scope are driven by business needs and the strategic objectives at both national and local levels. In practice, these may range from business functionality to geographical, customer and organisational coverage. Key considerations at this stage are 'what's in?' 'what's out?' and service needs. **See 3.4 below.**

Service solution options – choices in terms of solution (the how)

The choices for potential solution are driven by new technologies, new services, new approaches, and new ways of working, including business process re-engineering. In practice, these will range from services to how the estate of an organisation might be configured. Key considerations range from 'what ways are there to do it?' to 'what processes could we use?' **See 3.5 below.**

Service delivery options – choices in terms of delivery (the who)

The choices for service delivery are driven by the availability of service providers. In practice, these will range from within the organisation (in-house), to outsourcing, to use of the public sector as opposed to the private sector, or some combination of each category. The use of some form of public private sector partnership (PPP) is also relevant here. **See 3.6 below.**

Implementation options – choices in terms of the delivery timescale

The choices for implementation are driven by the ability of the supply side to produce the required products and services, VFM, affordability and service need. In practice, these will range from the phasing of the solution over time, to the modular, incremental introduction of services. **See 3.7 below.**

Funding options – choices in terms of financing and funding

The choices for financing the scheme (public versus private) and funding (central versus local) will be driven by the availability of capital and revenue, potential VFM, and the effectiveness or relevance/ appropriateness of funding sources. **See 3.8 below.**

3.4 Scoping options

3.4.1 Introduction

In accordance with the Treasury Green Book and Capital Investment Manual, the status quo has been considered as a benchmark for potential VFM.

A large number of options and permutations are possible; however, within the broad scope outlined in the strategic case, the following main options have been considered:

- Option 1 – the status quo
- Option 2 – the 'minimum' scope – the replacement of all the "failed" lighting columns and the replacement of their conventional lanterns with the LED equivalent.
- Option 3 – the 'intermediate' scope – the replacement of all the "failed" lighting columns and the replacement of conventional lanterns with their LED equivalent over the entire network.

- Option 4 – ‘maximum’ scope – as per option 3 but with addition of the installation of dimming of the streetlighting network between midnight and 6am to realise further energy and carbon savings.

3.4.2 Long List Options - Indicative economic costs

The indicative costs for the construction and 20 year lifespan of the streetlighting network for the long list options are as follows:

	Option 2 Failed columns only £000	Option 3 Failed columns all Non LEDs £000	Option 4a Failed columns all Non LEDs Dimmer Timing £000	Option 4b Failed columns all Non LEDs CMS £000
Capital Project Expenditure	2,039	2,721	2,756	2,929
<i>Current Annual Revenue Expenditure- 20 year period:</i>				
Energy	6,003	6,003	6,003	6,003
Maintenance	3,132	3,132	3,132	3,132
Carbon Reduction	848	848	848	848
Administrative Charges	575	575	575	575
<i>Cash releasing benefit - 20 year period:</i>				
Electricity Savings	(1,656)	(3,604)	(3,695)	(3,695)
CRC Saving	(244)	(539)	(552)	(552)
Maintenance Saving	(232)	(629)	(649)	(649)
Net Revenue Expenditure	8,426	5,786	5,661	5,661
Overall Net Total	10,465	8,508	8,417	8,590
Overall Net Total at Present Value	7,853	6,731	6,684	6,851

Option 1: the status quo

Continued Use of the Asset Investment Plan (AIP)

This option would see the continued use of capital funding from the “Asset Investment Plan” to replace conventional lanterns and failed columns.

Advantages

Relative to the other listed options this does not have any advantages.

Disadvantages

The main disadvantages are that:

- the Asset Investment Plan historically included approximately £200k of funding allocated to streetlighting replacement and renewals each year. This has on average allowed the replacement of 90 columns and lanterns per year with funds also allocated to other works such as new cabling. This means it would take 14 years to replace the 1,292 columns in the worst condition categories. A number of columns in category 2 will, of course, deteriorate during this period to the point where they also need to be replaced. Therefore, it would be many years before the Council was meeting its duty to maintain the road and streetlighting network unless additional funding is provided over and above that allocated from the AIP;
- there would be a continued requirement of at least £200k annually from the AIP for many years increasing with inflation as required by construction inflation;
- the potential energy savings and related cost reductions that could be achieved by using more energy efficient lighting will not be realised for many years;
- the slow delivery of column replacements would be reflected in the slow delivery of lantern upgrades and a failure to meet local and national policy on the reduction of carbon emissions;
- the reduction in maintenance and inspection costs that could be realised with the installation of new streetlighting apparatus would not be achieved in the near future meaning that together with the failure to reduce energy costs the “whole life cost” of the streetlighting network would not be minimised;
- since this option is the status quo the supply capacity and capability is in place at the moment although difficulties in recruiting staff may make this more difficult in future.

Conclusion

This option would not meet any of the investment objectives for a number of years resulting in a failure to meet priorities and aims listed in the Council’s Corporate Plan. Local and national policies on carbon reduction would not be met and parts of the network may even deteriorate to a point where the lack of lighting becomes a safety issue meaning we fail to meet our statutory duty to maintain lighting where assess it to be necessary.

Option 2: do minimum

Replacement of “Failed” Lighting Columns and Their Lanterns Only

This option would see the replacement of the 1,292 columns that are currently in the worst condition category. The opportunity would be taken to replace the conventional lanterns on these columns with their LED equivalent. This would mean there would be a total of 1,787 LED lanterns in the streetlighting network, equating to nearly 45% of the total.

Advantages

The main advantages are that:

- the project would reduce energy costs by £1.7m over a 20-year period so would go some way to achieving “best value” for the Council. However, options 3 and 4 would result in a greater reduction in energy use.
- LED lanterns are more reliable than their conventional equivalent and do not require the replacement of lamps (bulbs) so there would be a projected maintenance saving of £232K over a 20 year period.
- the project would reduce carbon emissions by 5,162 tonnes over a 20 year period but not by as much as options 3 and 4, meaning that it only partly meets the “Climate Change (Scotland) Act 2009” and its requirement that the Council must act “in the way best calculated to contribute to the delivery of emissions reduction targets.”
- the “in-house” staff have experience of project managing contracts for the supply of similar streetlighting repairs and replacements.
- the project would be achievable as a number of local contractors have expressed an interest in contracts for similar works that have been tendered in the past 2 years.
- “spend to save” funding which is allocated to projects of this type, that will result in long-term cost savings may be available for the replacement of lanterns only.

Disadvantages

The main disadvantages are that:

- the project cost, at £2m has the lowest capital requirement of the options but would still leave lanterns in need of upgrading.
- following the 3-year construction period there would still be 2,202 lanterns in need of upgrading. The £200,000 per year capital funding through the “Asset Investment Plan” would allow approximately 400 new lanterns to be installed per year meaning that it would take another 5 ½ years for the LED upgrading to be completed. (This takes account of the costs of replacing the 40 to 50 columns per year that would continue to deteriorate from a category 2 condition). The full cost savings from the reduction in energy use will not be realised until the end of this period.
- the decision to replace only a percentage of the lanterns would mean that the carbon emission reductions achievable from the LED replacements would not be maximised. A further 5,467 tonnes of carbon savings could be achieved by replacing all the lanterns in a 3 year period.
- the reduction in maintenance and inspection costs that could be realised with the installation of all the new lanterns would not be achieved in the near future meaning that together with the failure to fully reduce energy costs the best possible “whole life cost” of the streetlighting network would not be realised.
- the capital funding required for lighting apparatus renewals and replacements would not be reduced until financial year 2026/27 when all the LED lanterns are in place.

Thereafter, only £100,000 per year would be needed to replace the 40 to 50 columns that deteriorate each year.

Conclusion

This option would be beneficial in that it would replace all of the “failed” columns and would upgrade a significant percentage of the lanterns for relatively little initial capital cost. However, it would not replace all the lanterns until 2026 and a significant level of funding would still be required from the “Asset Investment Plan.” This is unacceptable as it would mean that the Council is not meeting a number of its statutory duties, not least the need to reduce its carbon footprint. Therefore, this option has been discounted.

Option 3: intermediate

Replacement of All “Failed” Columns and All Non-LED Lanterns

This option would replace the 1,292 columns that are currently in the worst condition category. The entire streetlighting network, that currently has conventional lanterns, would also have these replaced with their LED equivalent. This would mean a requirement to replace 3,494 lanterns, a further 2,202 than option 2.

Advantages

The main advantages are that:

- this option would allow the installation of all new lanterns in a 3-year period meaning that the Council would be reducing its maintenance and inspection liability, so meeting its statutory duty to maintain the road network.
- all of the new lanterns would be the more energy efficient LED type so the Council would be meeting its duty to achieve “best value” and to reduce carbon emissions.
- the project cost, at £2.7m has the lowest initial capital requirement of the options that achieve full lantern replacement.
- the project would reduce energy costs by £3.6m over a 20 year period so would achieve a significant reduction in the “whole-life-cost” of the streetlighting network and “best value” for the Council. However, option 4 would result in a greater reduction in energy use depending on the outcome of a consultation exercise on the dimming of the streetlights.
- LED lanterns are more reliable than their conventional equivalent and do not require the replacement of lamps (bulbs) so there would be a projected maintenance saving of £629K over a 20 year period.
- the project would reduce carbon emissions by 10,629 tonnes over a 20-year period yielding a further £539k reduction in CRC costs.
- the “in-house” staff have experience of project managing contracts for the supply of similar streetlighting repairs and replacements.

- the project would be achievable as a number of local contractors have expressed an interest in contracts for similar works that have been tendered in the past 2 years.
- the capital funding required for lighting apparatus renewals and replacements would also be reduced by 50% to £100,000 per annum following the 3-year construction period. The remaining capital funding would be required to replace the 40 to 50 columns per year that are expected to deteriorate from a category 2 condition in the years following the project.

Disadvantages

The main disadvantages are that:

- this option does not include the dimming of streetlighting so does not maximise the energy savings and carbon emission reductions that could be achieved.
- the failure to maximise energy use also means that the “whole life cost” of the streetlighting network is not minimised and therefore “best value” for the Council is not fully realised.

Conclusion

This option completely meets three of the four investment objectives and partly meets the fourth in that it significantly reduces the “whole-life-cost” of the streetlighting network but not by as much as is achievable. It satisfies the duty to maintain the road network and the strategic aims of the Council to reduce costs and carbon emissions. The project is achievable as there is sufficient experience “in-house” and in contracting in Shetland. The project is affordable as the loan repayments would be funded from the cost savings resulting from less energy use. Therefore, this remains a possible option.

Option 4: maximum

Replacement of All “Failed” Columns and All Non-LED Lanterns plus Dimming

This option is the same as option 3 but with the addition of dimming the streetlights between midnight and 6am. There would be an increase in “construction” costs but the energy, carbon and long-term cost savings would be greater.

Advantages

The main advantages are that:

- this option would allow the installation of all new lanterns in a 3-year period meaning that the Council would be reducing its maintenance and inspection liability, so meeting its statutory duty to maintain the road network.
- all of the new lanterns would be the more energy efficient LED type so the Council would be meeting its duty to achieve “best value” and to reduce carbon emissions.

- the concerns of the public regarding the “burning” of streetlights throughout the night all year round would be addressed.
- the project would reduce energy costs by £3.7m over a 20-year period so would achieve the greatest reduction in the “whole-life-cost” of the streetlighting network, of any of the projects, and “best value” for the Council would be fully realised.
- LED lanterns are more reliable than their conventional equivalent and do not require the replacement of lamps (bulbs) so there would be a projected maintenance saving of £649K over a 20 year period.
- the project would reduce carbon emissions by 10,911 tonnes over a 20-year period yielding a further £552k reduction in CRC costs.
- the “in-house” staff have experience of project managing contracts for the supply of similar streetlighting repairs and replacements.
- the project would be achievable as a number of local contractors have expressed an interest in contracts for similar works that have been tendered in the past 2 years.
- the capital funding required for lighting apparatus renewals and replacements would also be reduced by 50% to £100,000 per annum following the 3-year construction period. The remaining capital funding would be required to replace the 30 to 40 columns per year that are expected to deteriorate from a category 2 condition in the years following the project.

Disadvantages

The main disadvantages are that:

- the project cost, at £2.8m has the highest initial capital requirement of the options that achieve full column replacement.
- a political decision is required to approve the dimming of streetlights between midnight and 6am.

Conclusion

This option completely meets all four of the investment objectives. It satisfies the duty to maintain the road network and the strategic aims of the Council to reduce costs and carbon emissions. The project is achievable as there is sufficient experience “in-house” and in contracting in Shetland. The project is affordable as the loan repayments would be funded from the cost savings resulting from less energy use. Since it achieves the greatest cost savings and carbon emission reductions it is the preferred option.

3.4.2 Overall conclusion: scoping options

The table below summarises the assessment of each option against the investment objectives and CSFs.

Table 5: summary assessment of scoping options

Reference to:	Option 1	Option 2	Option 3	Option 4
Description of option:	the status quo	Minimum – replace “failed” columns and their lanterns only	Intermediate – replace “failed” columns and all lanterns	Maximum – replace “failed” columns and all lanterns with dimming
Investment objectives				
1 – Maintain Network	x	?	✓	✓
2 – Reduce energy use	x	?	✓	✓
3 – Reduce CO ₂ emissions	x	?	✓	✓
4 – Minimise “whole life cost”	x	x	?	✓
Critical success factors				
Business need	x	?	✓	✓
Strategic fit	x	x	✓	✓
Benefits optimisation	x	?	?	✓
Potential achievability	✓	✓	✓	✓
Supply-side capacity and capability	✓	✓	✓	✓
Potential affordability	✓	✓	✓	✓
Summary	Discounted	Discounted	Possible	Preferred

Option 1: the status quo

This option has been discounted because it does not satisfy the Council’s duty to maintain the road network.

Option 2: do minimum

This option has been discounted because it does not meet the Council’s duty to achieve “best value” and “to exercise its functions in the way best calculated to contribute to the delivery of emissions reduction targets” for at least 5 ½ years.

Option 3: intermediate

This option would deliver the replacement of all “failed” columns, significant energy use reductions, carbon emission reductions and thereby “best value” for the Council. This is not the preferred option because it does not achieve the full cost and emission reductions that are achievable.

Option 4: maximum

This option is preferred because it achieves the full cost and emission reductions that are possible.

3.5 Service solution options

3.5.1 Introduction

This range of options considers potential solutions in relation to, option 4, the preferred scope.

The range of options that have been considered are:

- Option 4a – the use of photocells/timers to part-night dim the streetlighting between midnight and 6am.
- Option 4b – the use of a Central Management System (CMS) to enable variable dimming or the switching-off of any streetlight or combination of streetlights as and when required via wireless or radio communication.

Option 4a

Photocell/Timer Part-Night Dimming

This option is for the part night dimming of streetlighting between midnight and 6am with timers or photocells that have factory set timings but also measure the change in night length and automatically transition between Greenwich Mean Time and British Summer Time.

Advantages

The main advantages are that:

- the ongoing maintenance costs of the photocells/timers would be less than for the CMS controlled dimming as there would be no issues with radio links, wireless or software and no need for the “specialists” required to maintain the CMS apparatus.
- the photocell/timer option would be more reliable for the reasons given above.
- the unit cost of purchasing the photocell/timer and its installation at £10 per lantern is considerably less than that required for a CMS so this option would secure “best value” for the Council and minimise “whole life cost” of the network.
- the installation and maintenance of photocells is already done by the Council’s electricians as part of the maintenance of the streetlighting network.
- there are a number of manufacturers and suppliers that have been supplying this type of photocell to other larger local authorities for a number of years.
- no services other than the supply of the photocell/timer are required from a contractor and/or consultant.

Disadvantages

The main disadvantages are that:

- the photocell/timer control means that the timing of the dimming is factory set and cannot be altered at a later date without replacing the photocell.

- the photocell/timer option, unlike CMS, does not have the additional benefit of remotely monitoring the network and automatically reporting faults thereby enabling savings to be made in the inspection regime.

Conclusion

This option meets all the business objectives not least because it will be relatively easy to maintain and as a result should be reliable. This should ensure that the network can be maintained to the required standard. It does lack the flexibility and additional benefits of the CMS alternative but with lower purchase and installation costs it is the preferred option.

Option 4b

Central Management System Dimming

This option is for the part night dimming of streetlighting between midnight and 6am using a Central Management System. This system would remotely manage and control the output of individual streetlights, using a combination of wireless communication service (GPRS) and radio frequency. Each streetlight could be dimmed to match the specific requirements of the surrounding area throughout the night. At the user's instruction, such as in the event of an emergency, lighting points can be brought back up to full brightness from either a computer, laptop, tablet or smartphone. Every streetlight within the network can also be remotely monitored, with any faults being reported to the specified user via e-mail.

Advantages

The main advantages are that:

- it is proven technology and has been used in many streetlighting networks in this country and around the world.
- there is the potential to reduce energy use and carbon emissions even further as each individual light could be dimmed or even switched-off as and when required. Therefore, in the summer months advantage could be taken of the summer dim with lights in certain areas being switched-off completely rather than burning through the night.
- the ability to monitor each streetlight would reduce the time taken to do inspections and inspection costs. This would be beneficial as it would free our limited staff resources to undertake other duties.

Disadvantages

The main disadvantages are that:

- the fact it uses a radio link and wireless technology makes it more complex and perhaps more susceptible to faults than the photocell/timer alternative so it is likely to be less reliable.
- the initial and maintenance costs are more than for the photocell/timer alternative.

- the additional benefits do not outweigh the additional costs of the CMS so this option would not minimise the “whole-life-cost” of the project.

Conclusion

This option meets all the business objectives and has a number of additional benefits. However, there are concerns regarding its complexity and reliability. Therefore, on balance the benefits do not warrant the additional costs and increased complexity of the installation and maintenance of the CMS.

3.5.2 Overall conclusion: service solutions options

The table and narrative below summarises the assessment of each option against the investment objectives and CSFs.

Table 6: summary assessment of service solutions options

Reference to:	Option 4a	Option 4b
Description of option:	Photocell/Timer Dimming	Central Management System Dimming
Investment objectives		
1 – Maintain Network	✓	?
2 – Reduce energy use	✓	✓
3 – Reduce CO ₂ emissions	✓	✓
4 – Minimise “whole life cost”	✓	?
Critical success factors		
Business need	✓	✓
Strategic fit	✓	✓
Benefits optimisation	✓	✓
Potential achievability	✓	?
Supply-side capacity and capability	✓	✓
Potential affordability	✓	?
Summary	Preferred	Possible

Option 4a

This option is preferred because it would achieve all of the objectives and success factors and realise almost all the savings that could be made.

Option 4b

This option is possible rather than preferred because of concerns regarding its reliance on a radio link and wireless technology that will be more complex to install and maintain.

3.6 Service delivery options

3.6.1 Introduction

This range of options considers the options for service delivery in relation to the preferred scope and potential solution.

The ranges of options that have been examined are:

- In-house
- Outsource
- Strategic partnership.

In-house

In-house Delivery by Roads and Building Services Staff

This option is for the “in-house” design and civil works by Roads Service staff and electrical work by Building Services electricians.

Advantages

Relative to the other listed option this does not have any advantages.

Disadvantages

The main disadvantages are that:

- there are currently insufficient roadworkers employed by the Council to undertake these additional works and continue the day to day maintenance requirements.
- this option is not practicable or achievable so cannot meet the Council’s strategic objectives or make a return on expenditure.
- there is insufficient capacity within the Council to undertake the civil works required for this project.
- this option may not be affordable due to the potential cost implications of delaying more routine maintenance works.

Conclusion

This option would not be achievable due to a lack of staff resources.

Outsource

In-house Design and Electrical Works with Civil Works by Contractor

This option is for the “in-house” design by Roads Service staff and electrical works by Building Services with the civil works being tendered.

Advantages

The main advantages are that:

- this option would source additional workforce to undertake the project while allowing the Council's roadworkers continue with the more routine but essential maintenance.
- it would enable the project to be completed within 3 years thereby ensuring that the Council was meeting its statutory duty to maintain the road network.
- it would allow the Council to achieve its strategic goals of cost and carbon emission reductions in a relatively short 3 year period.
- it ensures that the project is achievable.
- there is sufficient capacity in Shetland to undertake this type of work as shown by the expressions of interest in contracts for similar works tendered in the past 2 years.
- the cost estimates for the project were based on the rates that were submitted with the tenders referred to above.

Disadvantages

Relative to the other listed option this does not have any disadvantages.

Conclusion

This is the only viable option as the necessary staff are not available "in-house."

Strategic partnership

Not applicable.

3.6.2 Overall conclusion: service delivery options

The table below summarises the assessment of each option against the investment objectives and CSFs.

Table 7: summary assessment of service delivery options

Reference to:	Option	Option	Option
Description of options:	<i>In-house</i>	<i>Outsource</i>	<i>Strategic partnership</i>
Investment objectives			
1 – Maintain Network	x	✓	n/a
2 – Reduce energy use	x	✓	n/a
3 – Reduce CO ₂ emissions	x	✓	n/a
4 – Minimise "whole life cost"	x	✓	n/a
Critical success factors			
Business need	x	✓	n/a

Strategic fit	?	✓	n/a
Benefits optimisation	x	✓	n/a
Potential achievability	x	✓	n/a
Supply-side capacity and capability	x	✓	n/a
Potential affordability	?	✓	n/a
Summary	Discounted	Preferred	n/a

In-house

This option has been discounted because the required roadworkers are not available “in-house.”

Outsource

This option is preferred because it is the best way to source the staff required to undertake the civils works.

Strategic partnership

Not applicable.

3.7 Implementation options

3.7.1 Introduction

This range of options considers the choices for implementation in relation to the preferred scope, solution and method of service delivery.

- 3 Year Contract
- Phased over a Longer Term Contract

3 Year Contract

Civil and Electrical Works Phased Over a 3-Year Period

This option assumes that all the column and lantern replacements and upgrades would be delivered within 3 years. The works would be programmed so that less expensive and less time consuming lantern replacements are done early to maximise savings. The programme would also take account of disruption in the winter and avoid scheduling column replacements at this time.

Advantages

The main advantages were detailed in option 4 above.

Disadvantages

The main disadvantages are that:

- the works because they are done in a relatively short time will be more disruptive.
- undertaking the works in a short period means that the further advances in technology, and even more efficient lanterns that are likely to be manufactured, in the near to mid-term will not be available to this project.

Conclusion

This option is preferred because it realises the benefits of energy and carbon savings etc. more quickly meaning greater cost savings and better value for the Council.

Phased over a Longer Term Contract

Civil and Electrical Works Phased Over a Longer Period

This option assumes that the implementation of the column and lantern replacements would be phased over a longer period in what would effectively be a “term maintenance contract.”

Advantages

The main advantages are that:

- the works would be less disruptive because there is more scope to programme replacements out with the winter months.
- in the latter years of the contract it is likely that there will be improved, even more energy efficient, lanterns available to the project.

Disadvantages

The main disadvantages are that:

- it would take a considerable period of time for the Council to meet its statutory duty to maintain the road network.
- it would also take some time for the Council to meet its duty to achieve “best value” and to reduce carbon emissions.
- it would take a number of years for the concerns of the public regarding the “burning” of streetlights throughout the night and all year round to be addressed.
- the project may not be achievable as there is uncertainty as to whether local contractors would be interested in a “longer term” contract.
- beneficial funding options may not be available for longer term contracts.

Conclusion

This option is discounted because the benefits of the project would be reduced and only achieved at a much later date.

3.7.2 Overall conclusion: implementation options

The table below summarises the assessment of each option against the investment objectives and critical success factors.

Table 8: summary assessment of implementation options

Reference to:	Option	Option
Description of options:	"3-Year Contract"	Phased Over a Longer Period
Investment objectives		
1 – Maintain Network	✓	x
2 – Reduce energy use	✓	?
3 – Reduce CO ₂ emissions	✓	?
4 – Minimise "whole life cost"	✓	x
Critical success factors		
Business need	✓	x
Strategic fit	✓	?
Benefits optimisation	✓	x
Potential achievability	✓	✓
Supply-side capacity and capability	✓	✓
Potential affordability	✓	✓
Summary	Preferred	Discounted

3 Year Contract

This option is preferred because it maximises the benefits of the project by realising cost and carbon savings at an earlier date.

Phased Over a Longer Period

This option is discounted because the Council's statutory duty to maintain the road network would not be met for a lengthy period.

3.8 The long list: inclusions and exclusions

The long list has appraised a wide range of possible options.

Table 10: summary of inclusions, exclusions and possible options

Options	Finding
1.0 Scope	

1 the status quo	Discounted - because it does not satisfy the Council's duty to maintain the road network.
2 Minimum - replace "failed" columns and their lanterns only	Discounted – because it does not meet the Council's duty to achieve "best value" and "to exercise its functions in the way best calculated to contribute to the delivery of emissions reduction targets" until 5 ½ years have passed.
3 Intermediate - replace "failed" columns and all lanterns	Possible - because it would deliver the replacement of all "failed" columns, significant energy use reductions, carbon emission reductions and thereby "best value" for the Council.
4 Maximum - replace "failed" columns and all lanterns with dimming	Preferred – because it achieves the full cost and emission reductions that are achievable.
2.0 Service solutions	
4a Photocell Part-Night Dimming	Preferred – because it would achieve all of the objectives and success factors and realise almost all the savings that could be made.
4b Central Management System Dimming	Discounted - because of concerns regarding its reliance on a radio link and wireless technology that will be more complex to install and maintain.
3.0 Service delivery	
In-house	Discounted – because the required roadworkers are not available "in-house."
Outsource - tendered	Preferred – because it is the best way to source the staff required to undertake the civils works.
Strategic partnership	Not applicable.
4.0 Implementation	
"3 Year Contract"	Preferred – because it maximises the benefits of the project by realising the cost and carbon savings at an earlier date.
Phased Over a Longer Period	Discounted - because the Council's statutory duty to maintain the road network would not be met for a lengthy period.
5.0 Funding	
Private Funding	Not applicable
Public Funding	Preferred.

3.9 Short-listed options

3.9.1 Overview

The 'preferred' and 'possible' options identified in table 6 were carried forward into the short list for further appraisal and evaluation. All the options that were discounted as impracticable were excluded at this stage.

Based on this analysis, the recommended short list for further appraisal were as follows:

- Option 4a – Replacement of All Failed Columns and Non-LED Lanterns with Photocell Dimming

- Option 4b – Replacement of All Failed Columns and Non-LED Lanterns with Central Management System Dimming

3.10 Summary of Preferred Option

The following summarises the preferred option scope, service solution, delivery, implementation and funding source:

Scope	Maximum - Replacement of all the “failed” lighting columns and the replacement of conventional lanterns with their LED equivalent over the entire network with addition of the installation of dimming of the streetlighting network between midnight and 6am to realise further energy and carbon savings.
Service Solution	The use of photocells/timers to part-night dim the streetlighting between midnight and 6am.
Delivery	Outsource - In-house design with civil works by contractor.
Implementation	Civil and electrical works phased over a 3-year period
Funding Source	Public funding

4. The Commercial Case

4.1 Introduction

This section of the FBC outlines the proposed deal in relation to the preferred option outlined in the economic case.

This is for the “LED Upgrade of Shetland’s Streetlighting Network” over a 3-year period under an “Infrastructure Conditions of Contract (Minor Works Version).”

4.2 Required services

These are as follows:

Products

- LED lanterns of various wattage;
- Hot dipped galvanised lighting columns of various heights;
- Streetlighting brackets;
- Ignitors, ballast resistors, capacitors, cable and other streetlighting electrical apparatus;
- Photocells or Central Management System; and
- Ready mix concrete.

Services

- Roads Service staff time to prepare contract documents on approval of project;
- Civil works for the installation of replacement lighting columns;
- Electrical works for the installation of replacement LED lanterns;
- Installation of a Central Management System; and
- The design of streetlighting electrical networks lighting spread/footprints (in-house).

4.3 Potential for risk transfer

This section provides an initial assessment of how the associated risks might be apportioned between the Council and the appointed contractor.

The general principle is to ensure that risks should be passed to ‘the party best able to manage them’, subject to value for money (VFM).

The table below outlines the potential allocation of risk.

Table 11: risk transfer matrix

Risk Category	Potential allocation		
	Public	Private	Shared
1. Design risk	✓		n/a
2. Construction and development risk		✓	n/a
3. Transition and implementation risk		✓	n/a

4. Availability and performance risk		✓	n/a
5. Operating risk	✓		n/a
6. Variability of revenue risks	✓		n/a
7. Termination risks	✓		n/a
8. Technology and obsolescence risks	✓		n/a
9. Control risks	✓		n/a
10. Residual value risks	✓		n/a
11. Financing risks	✓		n/a
12. Legislative risks	✓		n/a
13. Other project risks	✓		n/a

4.4 Proposed contract lengths

There will be three contracts each 1 year in length and running concurrently over a 3 year period.

4.5 Proposed key contractual clauses

The following are the key clauses for this project taken from the Infrastructure Conditions of Contract (ICC):

- Clause 22 – Damage to Persons and Property;
- Clause 63 – Completion of the Works;
- Clause 72 - CDM Regulations;
- Clause 77 – Possession of the Site;
- Special Requirements in Relation to SEPA and Public Utilities.

4.6 Personnel implications (including TUPE)

It is anticipated that the TUPE – Transfer of Undertakings (Protection of Employment) Regulations 1981 – will not apply to this investment as outlined above.

4.7 FRS 5 accountancy treatment

The preferred option 4 detailed above would result in the completed asset being held on the Council's Balance Sheet as a non-current asset under International Accounting Standard (IAS) 16 – Property Plant & Equipment and International Public Sector Accounting Standards Board (IPSAS) 17 – Property Plant & Equipment.

5.0 The Financial Case

5.1 Introduction

The financial implications of the preferred option 4a - replacement of all failed columns and non-LED lanterns with photocell or timer dimming over the 20-year life of the assets, are as follows:

	2018/19 £000	2019/20 £000	2020/21 £000	Ongoing Per year from 2021/22 £000
Capital Expenditure	853	1,037	866	0
Net Revenue Cost	423	326	252	233
Total Expenditure	1,276	1,363	1,118	233
Funded by:				
General Capital Grant	(527)	(635)	(596)	0
Spend to Save Reserve	(326)	(402)	(270)	0
Total Funding	(853)	(1,037)	(866)	0
Overall Net Total Cost	423	326	252	233

5.2.1 Revenue Implications

The revenue savings over the 20-year life of the project are:

- reduced energy costs £3.695m;
- reduced Carbon Reduction Commitment (CRC) costs £0.552m;
- reduced maintenance costs £0.649m;
- additional energy reductions due to dimming £0.091m;
- additional CRC reductions due to dimming £0.014m;
- additional maintenance savings due to dimming £0.020m.

The reduction in energy costs accounts for the predicted increase in electricity costs over the next 20 years. The energy inflation figure used in the calculations is the median from the energy cost projection figures published by the government's Department for Energy and Climate Change. The CRC scheme is mandatory for local authorities. It requires participants to buy allowances for every tonne of carbon they emit relating to electricity. Hence, the significant savings to be made as a result of introducing LED lanterns. The current conventional lanterns are less reliable than LED technology, not least because lamps (bulbs) have to be replaced every 3 to 5 years as they fail. This means that there are significant inspection and maintenance costs, funded from revenue, to be achieved by converting to LED lanterns. This is in addition to the costs currently incurred by the reactive maintenance to old lighting columns that are about to fail. These savings are all increased by the part-night dimming of the lighting. The dimmed lighting uses less energy and therefore requires less carbon allowance payments. It also prolongs the life of the lighting apparatus in the column

such as drivers and ballast resistors. The further reductions are relatively minor but achieve the Council's policy to optimise savings and carbon reductions.

5.3 Capital Implications

The capital implications consist of the following expenditure during the construction phase:

- replacement cost of conventional lanterns with LED's £1.090m;
- replacement cost of "failed" lighting columns £1.606m;
- fitting of timers for part-night dimming £0.060m.

A further implication would be a reduction in the funding allocated from the Asset Investment Plan for the renewal and replacement of lighting apparatus. It is expected that following the 3-year construction period this funding would be reduced by 50% to £100,000 per annum. The remaining £100,000 of AIP funding would be required to replace the 40 to 50 columns per year that are expected to deteriorate from a category 2 condition in the years following the project.

5.4 Cost Breakdown

The works will be done over a 3-year period with £853K, £1,037K and £866 spent in each year. The project costs for the various elements of the project including the works, fees and recharges are listed below:

Works Description	Year 1 £	Year 2 £	Year 3 £
Civil Works – Contracted (Removal and Installation of Columns, New Bases, Cable Runs)	405,500	546,000	441,600
Electrical Works – "In House" by Building Services Recharges (Removal and Fitting of Lanterns, Connections, Disconnections Etc)	77,000	95,000	82,200
Electrical Works - "In House" by Building Services Recharges (Installation of Timers)	5,000	6,200	5,500
Streetlighting Design – "In House" by Roads Service (met from existing budgets)	0	0	0
Supervision of Civil Works – "In House" by Roads Services Recharges	6,800	8,500	7,200
Supervision of Electrical Works – "In House" by Building Services Recharges	5,500	6,800	5,900
Columns Purchase through Scotland Excel (or Alternative if Lower Rate can be Sourced)	64,000	46,300	40,100
Lanterns Purchase through Scotland Excel (or Alternative if Lower Rate can be Sourced)	284,000	322,000	278,000
Timers Purchase through Scotland Excel (or Alternative if Lower Rate can be Sourced)	5,200	6,200	5,500
Overall Totals	853,000	1,037,000	866,000

5.5 Balance Sheet Implications

There will be an increase in the value of Long Term Assets of approximately £2.8m on the Council's Balance Sheet.

5.6 Overall affordability

The proposed capital cost of the project is £2.8m over the 3-year construction period. The approved Asset Investment Plan 2018-2023 includes a potential project budget for Streetlighting LED Upgrade of £2.8m for this project subject to approval of the Full Business Case.

The funding of this project is proposed to be £1.1m from the Council's Spend to Save Scheme Reserve and £1.7m from the General Capital Grant from the Scottish Government over the three years of the project.

Once the capital project is complete, the impact on the Income & Expenditure Account will be an average reduction in revenue costs for Roads Service of approximately £190k per year.

6. The Management Case

6.1 Introduction

This section of the FBC addresses in detail how the project will be delivered successfully.

6.2 Programme management arrangements

The scheme will be managed by the Council's Roads Service as the works are for the upgrading of the Council's streetlighting that is an integral part of the public road network. The project will take 3 years to complete with the civil works undertaken by a contractor with the design, supervision and electrical works undertaken "in-house." The intention is to tender three separate contracts for the civil works, one for each year of the project. The tender documents, based on recent contracts for similar works, would be prepared by the Design Section of the Roads Service. They would be assisted by the Council's Procurement Service with their preparation and the tendering process.

The electrical works will be undertaken by the Council's Building Services under a Service Level Agreement. This will avoid the inevitable duplication of work that would occur with a private contractor who would require assistance from Building Services when locating apparatus and cable locations. The fact that the Building Services electricians are familiar with the network and apparatus also means that costs are likely to be less. The supervision of the electrical works would be done by the Building Services Maintenance Supervisor. The lighting columns, lanterns, timers and other lighting apparatus would be procured directly through Scotland Excel or an alternative supplier if a less expensive rate can be sourced. This would be the most cost effective option for the Council.

6.3 Project management arrangements

Roads staff who are experienced at managing ICE and Infrastructure Conditions of Contract (ICC) contracts will manage the project. These staff also have knowledge of the civil and electrical works required for this project and will be assisted by the Streetlighting Engineer/Technician.

6.3.1 Outline project reporting structure

There shall be a pre-contract meeting at which the successful tenderer shall present all required documentation relating to insurances and tax certificates. He shall present his/her management structure for the contract, identifying responsibility for general management, valuation and safety matters. The agenda will include specification, management, valuation, systems for invoicing and payment, safety and a programme of monthly progress meetings. The Principal Contractor shall, at the progress meetings, provide the Engineer with a report detailing progress made and expected completion date.

6.3.2 Outline project roles and responsibilities

Client:	Dave Coupe, Executive Manager- Roads, Shetland Islands Council
Principal Designer:	Ian Smith, Shetland Islands Council, Roads Service
Principal Contractor:	to be appointed prior to construction phase.
Engineer:	Neil Robertson, Network Engineer, Shetland Islands Council, Roads Service

6.3.3 Programme

The programme for the project is as follows:

Tender Preparation 1	May 2018 (1 month)
Electrical SLA	May 2018 (1 month)
Tender Period 1	June 2018 (1 month)
Contractor Mobilisation 1	July 2018 (2 weeks)
Year 1 Works - Columns	July to October 2018 (12 weeks)
Substantial Completion and Snagging 1	October 2018
Retention Period 1	October 2018 to October 2019 (1 year)
Year 1 Works – Lanterns	July to March 2018 (9 months)
Tender Preparation 2	January 2019 (1 month)
Tender Period 2	February 2019 (1 month)
Contractor Mobilisation 2	March 2019 (2 weeks)
Year 2 Works - Column Replacements	May to September 2019 (6 months)
Substantial Completion and Snagging 2	October 2019
Retention Period 2	October 2019 to October 2020 (1 year)
Year 2 Works – Lantern Replacements	April to March 2019 (12 months)
Tender Preparation 3	January 2020 (1 month)
Tender Period 3	February 2020 (1 month)
Contractor Mobilisation 3	March 2020 (2 weeks)
Year 3 Works - Column Replacements	May to September 2020 (6 months)
Substantial Completion and Snagging 3	October 2020
Retention Period 3	October 2020 to October 2021 (1 year)
Year 3 Works – Lantern Replacements	April 2020 to March 2021 (12 months)
Completion of Works	March 2021

6.4 Use of special advisers

Special advisers have been used in a timely and cost-effective manner in accordance with the Treasury Guidance: Use of Special Advisers.

Details are set out in the table below:

Table 13: special advisers

Specialist Area	Adviser
Financial	n/a
Technical	Scottish Futures Trust – Streetlighting National Efficiency Programme
Procurement and legal	n/a
Business assurance	n/a
Other	n/a

Signed:

Date:

**Senior Responsible Owner
Project Team**