

January 2016

# Colchester Borough Council

## Carbon Management Plan 2016-2020

DRAFT







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## Foreword from Cllr Tim Young

I am pleased to introduce Colchester Borough Council's new Local Authority Management (LACM) Plan for 2016-2020 which provides information about our approach to reducing our carbon emissions, and identifies what we are aiming to achieve up to 2020.

Colchester Borough Council is leading the way in Carbon Management, cutting emissions and energy costs by over 30% since 2008. This puts the Council in the top 10% of UK councils for carbon reduction. In 2015 the Council set a new target to reduce its carbon emissions by 40% from its baseline year of 2008. These are challenging times for local government and, in particular Colchester as the population of the borough is set to grow from 180,420 to 193,806 residents by 2020. The projects identified within the new LACM plan will be delivered against a backdrop of a significant reduction in funding for local government. Colchester Borough Council has undergone a transformational review of its services and delivery, and working more sustainably will help us to be less reliant on Central Government funding.

The LACM plan 2016-2020 sets out how we intend to work across Council services to achieve our targets and environmental strategic priorities. Through the delivery of the LACM plan we will demonstrate how the Council is leading by example by working in a cost effective way, using resources wisely and reducing the environmental impact of our operations.

The increasing importance of environmental issues means that Colchester Borough Council has a key role to play at a local and regional level in promoting carbon reduction in energy, travel, operational and building management.

Cllr Tim Young  
Portfolio Holder responsible for Environmental Sustainability  
Colchester Borough Council



## Foreword from the Carbon Trust

Cutting carbon emissions as part of the fight against climate change should be a key priority for local government – by getting your own house in order and leading the wider municipality by example. The UK government and Committee on Climate Change have identified local authorities as key to delivering carbon reduction across the UK in line with Climate Change Act targets, and the Carbon Trust's Public Sector Carbon Management programme is designed in response to this. It helps public bodies to save money on energy, whilst also reducing the risk of dangerous climate change.

Colchester Borough Council worked with the Carbon Trust in 2015 in order to develop a carbon plan through to 2020. This updated Carbon Management Plan commits the Council to a target of reducing CO<sub>2</sub> by a further 4.4% between 2015 and 2020 in order to achieve a total reduction of 40% between 2008 and 2020, and underpins potential financial savings to the organisation of around £88,400 each year by that date.

There are those that can and those that do. Public bodies can contribute significantly to reducing CO<sub>2</sub> emissions. The Carbon Trust is very proud to support Colchester Borough Council in their on-going implementation of carbon management.

A handwritten signature in black ink that reads 'T. Pryce'.

Tim Pryce  
Head of Public Sector, Carbon Trust

## Executive Summary

The development of a new Local Authority Carbon Management (LACM) Plan is a key deliverable of the Environmental Sustainability Strategy 2015-2020, and will complement the strategy to ensure the Council does all it can to meet a 40% carbon reduction target by 2020. This will assist the Council to work as efficiently as possible across all its services, operations and buildings.

The last LACM Plan 2008-2012 exceeded its 25% carbon reduction target and work carried out during the development of this Plan achieved a 32.6% carbon reduction by 2012. The LACM Plan carried out 2008-2012 saved the Council 3,305 tonnes of CO<sub>2</sub>e and achieved almost £800,000 of financial savings over those four years (when compared against business as usual). The projects identified and implemented during this time were considered 'quick win projects' where investment was relatively low in comparison to the forecasted financial and carbon savings.

The development of a new LACM Plan has therefore been more challenging than the first, the opportunities presented this time were sometimes outside the scope of the LACM Plan, but these findings have not been wasted as they are now key deliverables within refreshed or new Council strategies such as waste and procurement.

Although the first LACM Plan successfully ended in 2012, the Council has continued to take carbon reduction into consideration when developing new projects. The carbon savings from this work have been captured in the annual greenhouse gas report which provides an overview of continued efforts to cut carbon emissions.

During 2014/15 Colchester Borough Council saw a small increase in carbon emissions, but in relation to the population rise in Colchester of 176,008 residents in 2012/13 to 180,420 in 2014/15, the increase is significantly lower than it would have been if mitigating action had not been taken. Carbon saving projects implemented during 2012-2015 achieved a 35.6% carbon reduction towards the Council's 40% reduction target and it is this that provides the Council with a starting point for the new LACM Plan. The 2014/15 carbon figures used as the starting point for the plan are 6,533tCO<sub>2</sub> and £1,666,516.

The population in Colchester is set to rise to 193,806 by 2020. This means that if the Council were to carry on with business as usual, without taking any mitigating action Colchester Borough Council could see a potential increase in carbon emissions of 11% by 2020 compared to current levels. With the work being implemented through this Plan and the Environmental Sustainability Strategy, Colchester Borough Council is confident that it will achieve its target of 40% reduction (from 2008 baseline) by 2020.

This plan identifies seven priority projects, costing some £190,000 to implement and collectively saving £88,000 per year, giving a simple payback of under 3 years. To implement all of the projects defined in the plan will cost approx. £440,000, of which the above £190,000 for the priority projects has already been allocated. Implementing all of these projects could save up to 46% versus the 2008 baseline. Delivery of the plan will be monitored by the LACM Project Team and reported annually to the Project Board (SMT) and the Portfolio Holder with a responsibility for Sustainability.

## 1 Introduction

The first Local Authority Carbon Management (LACM) Plan was developed for the period of 2008-2012 and the Implementation Plan was adopted by Cabinet in March 2008. The Council's target was to reduce CO<sub>2</sub> emissions by 25% by 2012. This provided the Council with the challenge of decreasing its annual tonnes of CO<sub>2</sub> to 6,975 tonnes CO<sub>2</sub> by 2012. The cumulative value at stake was equal to £2.2 million.

### **The benefits of a Carbon Management Plan are to:**

- Reduce Council costs of energy, water and fuel use, in addition to waste generation.
- Demonstrate leadership to our partners and local community.
- Protect the environment and limit our impact on climate change.
- Comply with legislation such as the Carbon Reduction Commitment Scheme.

The Council's new LACM Plan 2016-2020 takes into account the lessons learned (See Appendix D) from the previous Plan and summarises the results of the work undertaken in partnership with The Carbon Trust during 2015/16. The following LACM Plan sets out the action that Colchester Borough Council will take to 2020 to reduce its carbon emissions and associated costs.

### **This LACM Plan highlights:**

- The sources of Colchester Borough Council's carbon emissions.
- Sets out our baseline figures for 2008.
- Establishes a target to reduce emissions from this baseline.
- Sets out a timetable of actions to achieve the desired reductions up to 2020.
- The key internal management arrangements and reporting mechanisms that will be used to maintain the LACM Plan's presence and influence within Colchester Borough Council's corporate structure.
- The key priority projects which, if implemented, will help the Council to meet its 40% carbon reduction target.

The process to develop a new LACM Plan commenced in April 2015, following a five step process as outlined below:





## 2 Carbon Management Strategy

### 2.1 Our drivers and priorities for reducing carbon emissions

Climate change is globally recognised as one of the greatest environmental and economic threats faced by national governments and individuals. The COP21 conference in Paris in 2015 set out a global commitment to reduce emissions in order to limit warming to no more than 2 degrees, and highlighted a vital role for local, city and subnational governments in achieving this. Colchester Borough Council is determined to play a full part in delivering on this collective responsibility to reduce carbon emissions. The rising cost of energy also creates a shorter term opportunity to create financial savings through energy efficiency actions. The new LACM 2016-2020 takes into account a range of local and national drivers. These drivers are detailed in the LACM Evidence Base and include:

#### National drivers:

- UK Government Legislation
- National Performance Indicators
- Energy and Fuel Costs
- Climate Change Response
- EU Energy Performance of Buildings Directive



#### Local drivers:

- Our role as a Community Leader
- The Council's commitment to delivering the 5 year Environmental Sustainability Strategy
- Providing a Healthy and Comfortable Working Environment

For more information see Section 9 (Appendix C)

## 2.2 Objectives

### OUR AMBITION

**“To lead by example in securing a low carbon future for the residents and businesses of the Borough and ensuring that the impacts of climate change within our control are minimised.”**

### OUR TARGET

**Our aim is an ambitious target of a 40% reduction in the Council's carbon emissions by 2020 based on the baseline of 2008.**

**This is equates to 443 tonnes of CO<sub>2</sub> from 2014/15 levels.**

#### **The Council's strategic objectives for its Local Authority Carbon Management (LACM) Plan 2016-2020 are as follows:**

- Reduce carbon emissions from our buildings through both the use of technology and behaviour change.
- Take account of carbon emissions and the opportunities to make carbon savings in future contracts
- Improve the way Council services record carbon savings by developing monitoring systems to capture robust and accurate emissions data.
- Inspire staff and member participation by integrating the Council's Carbon Management Programme into mainstream Council activities, Council policy and performance management systems.

#### **Colchester Borough Council can influence wider scope 3 emissions, which are outside the scope of this Plan, in other ways including:**

- Implementing a greener procurement process by working with partners and suppliers to identify opportunities for making carbon savings in the delivery of services and future contracts.
- Delivering a wider engagement campaign to support the reduction of carbon emissions from commuting and business travel; promoting walking, cycling, public transport and car sharing; investigating ways of reducing the need to travel; and widening the scope to capture indirect emissions arising through contracts, such as Council fleet vehicles.
- Learning from other organisations' experience of carbon management by signing up to Climate Local; and from lessons learned from the last Carbon Management Plan in which ended in 2012.
- Acting to protect the environment by raising awareness of the Council's new LACM Plan and our successes, which will demonstrate to residents, businesses and communities the benefits that can be realised, both now and for the future, through a more sustainable way of living and working.

#### **Impact beyond the scope of the Plan**

Much of the environmental sustainability work the Council does has impacts outside the scope of LACM 2016-2020. The Council takes an influencing and leadership role and recognises that it is not always possible to capture carbon saved from projects outside the scope of the Plan. This work is however reflected in the Council's overall emissions, which are published in the annual greenhouse gas emissions report. The Council's aim is to lead by example and encourage residents, communities, businesses, third sector and delivery partners to take positive action to support the environmental improvement of Colchester, recently signing up to Climate Local. This includes but is not exclusive to:

#### **Reducing CO<sub>2</sub> emissions on our roads:**

- The Cycle Colchester Training and Events Programme;
- Implementing a transportation policy linked to new development;
- Colchester Travel Plan Club;
- Colchester Station Travel Plan;

- 'Better Town Centre' focussing on traffic reduction in the town centre.

Reducing CO2 emissions of buildings beyond Council owned property:

- Community Initiatives Warm Homes' project, and other community based projects to help reduce fuel poverty;
- Business Green Doctor Project;
- Promoting ECC Eco-schools projects and helping schools to access technical and fundraising advice through Solar Schools;
- Colchester Borough Council housing stock improvement programme, with 3000 Energy Performance Certificates completed on our own housing stock and Installation of 386kWp Photo-Voltaic (PV Solar) panels by 2016;
- Big Community Switch for local residents and businesses to access cheaper energy bills;
- Private Sector Housing promotion of grants and use of enforcement powers;
- Zone Warden Community engagement events with regular 'coffee and chat' sessions to support vulnerable residents with energy efficiency in the home;
- Energy Efficiency training for frontline staff, local organisations and voluntary groups;
- Partnership event with third sector partners to deliver 'Green Open Homes' open homes events in 2014 and 2015;
- Working with private sector landlords to support them in the provision of energy efficient housing for tenants through the delivery of a Leading Landlords sustainability event in 2014;
- Community projects focussing on reducing excess winter deaths and fuel poverty, offering vulnerable people an alternative way to switch energy suppliers (for those without access to a computer).
- Supporting the development of local Community Energy projects, delivering a Community Energy seminar in Colchester in 2014.

Reducing CO2 emissions generated through waste:

- Highlighting opportunities to divert waste from landfill by taking part in food waste trials, and then implementing across the borough in 2014;
- Local Community Zone Teams behaviour change work, such as recycle week, and '3R's' project work to promote the benefits of Reducing, Reusing and Recycling;
- Working with ECC on the Waste busters project, which reinforces recycling and reuse as well as composting.

### 3 Emissions baseline and projections

The carbon baseline (or inventory) is a record of the Council's approximate carbon emissions in a chosen year (known as our baseline year). Targets and performance in reducing emissions are measured against this figure as a percentage of the baseline value. This section outlines what parts of the Council's emissions are included in the baseline, what year has been chosen as the baseline and how the Carbon Trust has calculated that baseline.

This emissions baseline will be used to monitor and measure changes in emissions resulting from the carbon-saving initiatives identified in this Plan.

#### Scope and data sources

There are three main areas over which the Council has direct control, and these can be addressed via the Local Authority Carbon Management Plan:

- Scope 1: Emissions refers to the amount of CO<sub>2</sub> the council has emitted directly from fossil fuels for example through gas boilers and diesel used in fleet vehicles.
- Scope 2: Emissions refers to the amount of CO<sub>2</sub> the council has emitted through the use of electricity.
- Scope 3: Emissions refers to the amount of CO<sub>2</sub> the Council has emitted indirectly through business travel.

#### 3.1 Baseline year

The Council has followed the Government's guidance on how to measure and report greenhouse gas emissions since 2008, and uses 2008 as the base year. Targets and performance in reducing emissions are measured against this figure as a percentage of the baseline value.

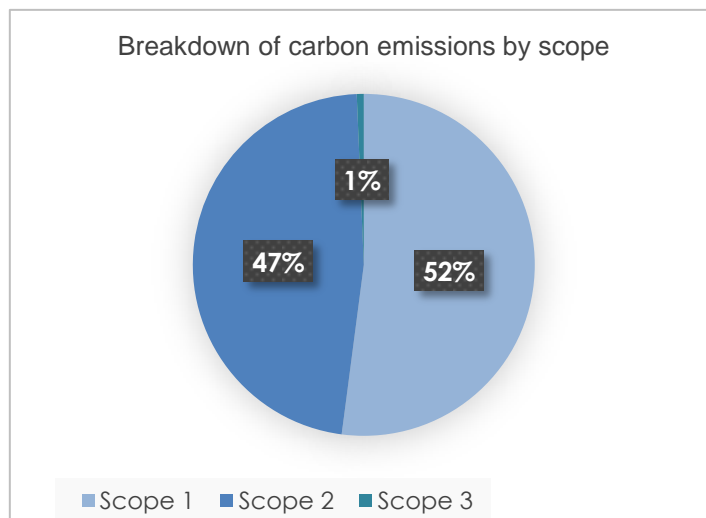
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***The total carbon baseline for 2008 was 10,150 tCO<sub>2</sub>e with an associated cost of £1.72m***

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The majority of emissions in 2008 were produced in approximately equal amounts from electricity and fossil fuel consumption, with only 1% resulting from Scope 3 business travel.

Business Travel continues to be the Council's lowest contributor to CO<sub>2</sub> emissions.

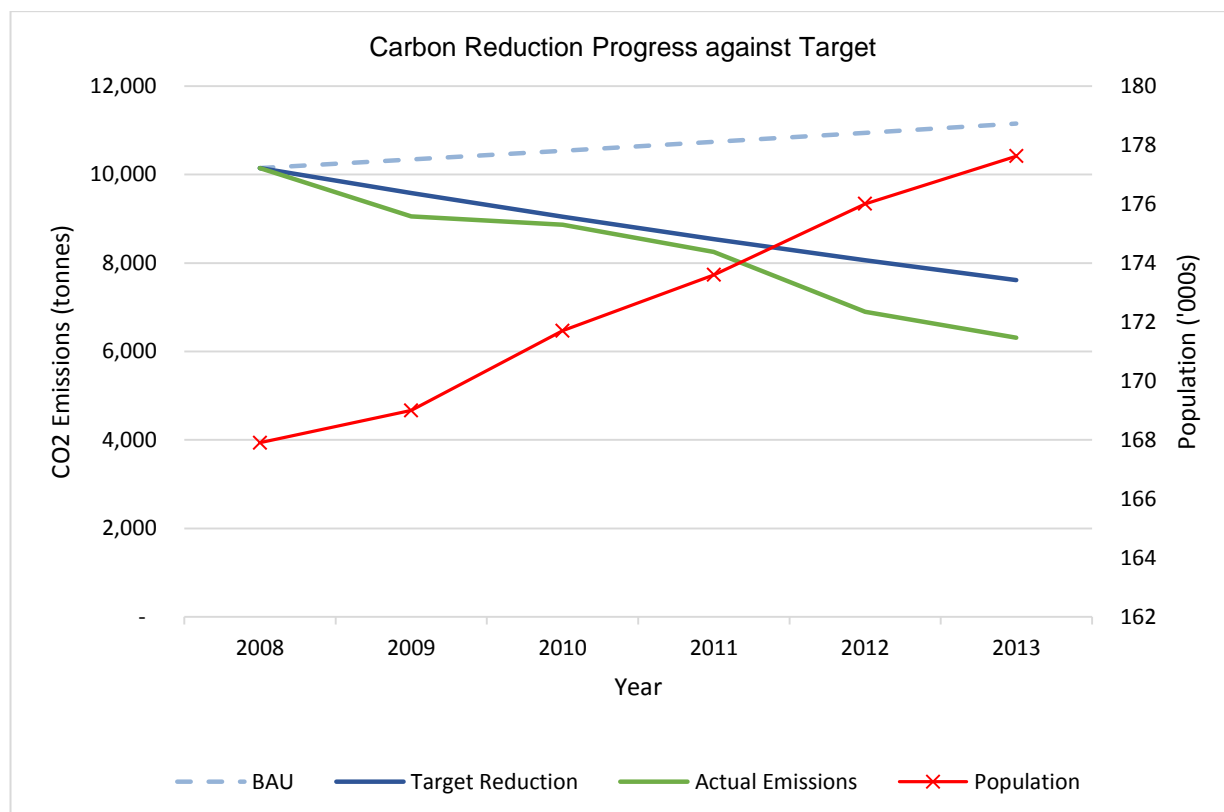


**Figure 1**



### 3.2 The Local Authority Carbon Management Plan 2008 to 2012

The Council successfully implemented the LACM 2008-2012, and continued to monitor carbon emissions to 2013/14 so the final impact of the Plan could be measured. The table below illustrates how the delivery of this work led to significant carbon and energy savings. The Council surpassed the 25% reduction target by 2012 despite the population of Colchester growing by approximately 1.2% per annum.



**Figure 2**

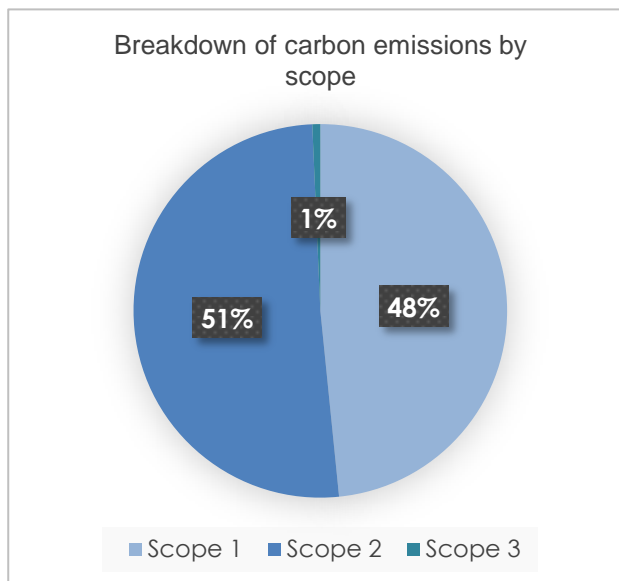
During the period from the Council's baseline year of 2008, to the financial year 2013/14, carbon savings of 32.6% have been achieved through a variety of different projects, including:

- Refurbishment of the fitness pool at Leisure World.
- Installation of "PowerPerfector" voltage optimisation equipment at the top ten electricity usage sites.
- Replacement of cremators at Colchester Crematorium.
- Upgrade of lighting within multi-storey car parks.
- Upgrade of Building Energy Management Systems.

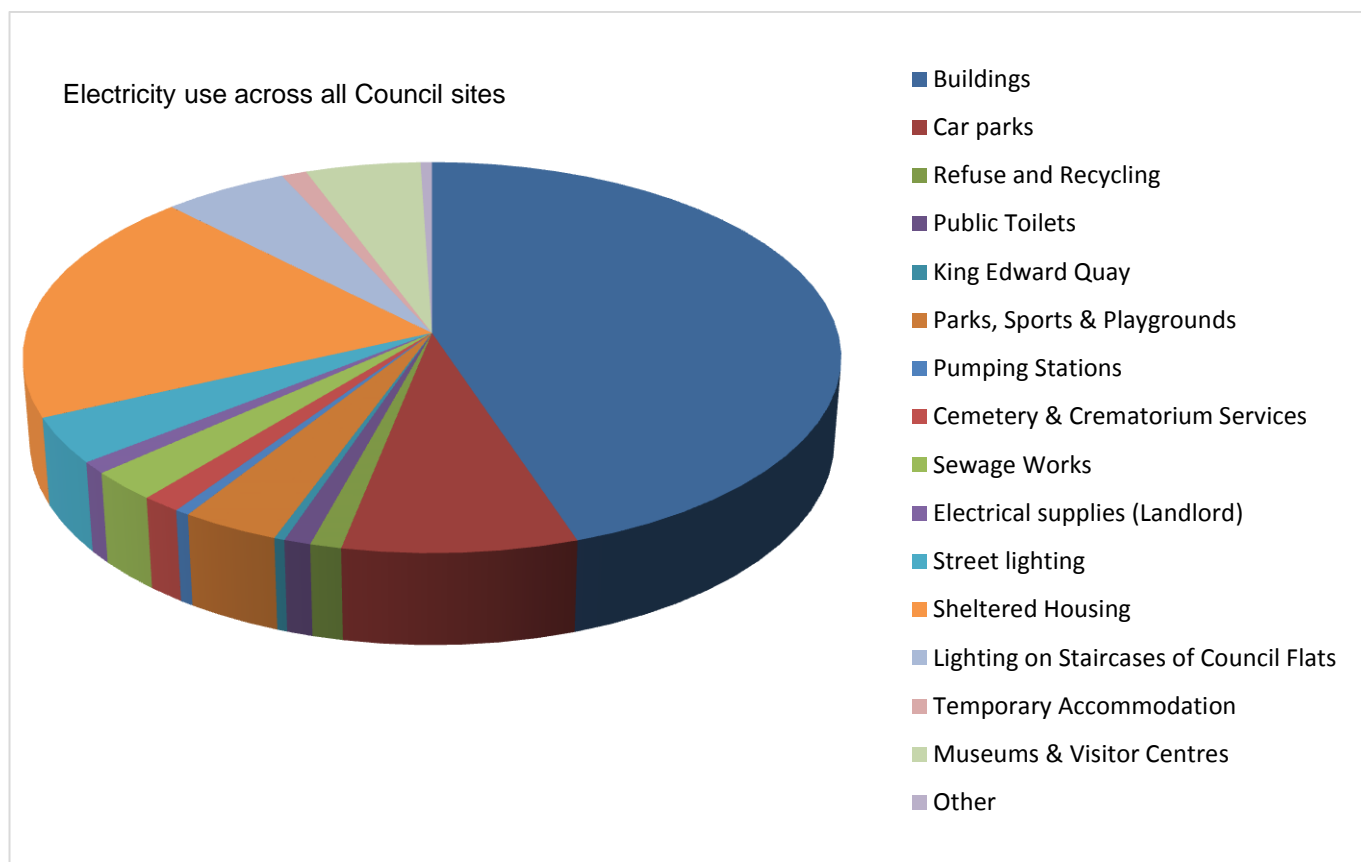
### 3.3 Understanding our most recent emissions performance

In order to develop a successful LACM Plan up to 2020, the Council needs to understand its current emission performance. In 2014/15, the total carbon emissions from scopes 1, 2 & 3 came to 6,533 tonnes, costing £1,666,516 – a 35.6% reduction over the 2008 baseline. This is a very good performance when compared to other UK councils. The majority of the emissions came from electricity consumption across the Council's sites, shortly followed by natural gas consumption. The scope 3 emissions measured, come from business travel and make up only 1% of the total.

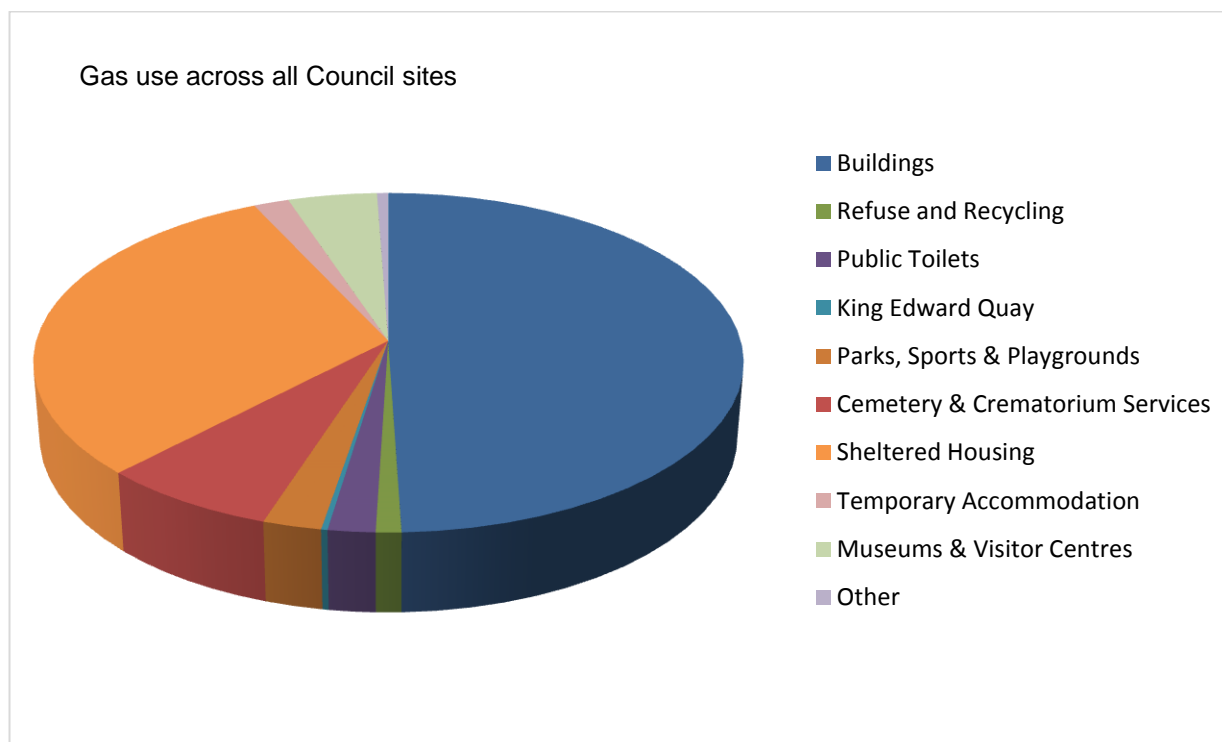
The emissions arising from electricity and natural gas consumption are predominantly from Council buildings. Of these, Leisure World is the largest contributor, using 5% of all electricity consumed and 33% of all natural gas. This makes it a key target area for identifying projects to reduce carbon emissions.



**Figure 3**



**Figure 4**



**Figure 5**

During 2014/15 Colchester Borough Council saw CO<sub>2</sub> emissions increase to 6,533tCO<sub>2</sub> compared to 6,313 in 2013/14. This is due to an overall increase in gas consumption; increased electricity use in specific areas; and changes to the carbon factors that were used to calculate emissions in 2014/15. The increase in energy consumption occurred primarily in sports pavilions, floodlighting on sports grounds, lighting in public areas such as staircases and public parks. This, although negatively impacting on greenhouse gas emissions, does indicate more residents are using public facilities and that the Council has reacted to concerns around community safety by installing additional lighting where required in parks and public spaces. The Council understands that a balance must be met to continue efforts in reducing its carbon emissions without compromising services or community safety.

The data collected in the last greenhouse gas report confirmed that the Council has continued to reduce energy use in car parks, at the cemetery and crematorium and sheltered housing schemes. This is as a result of the installation of more energy efficient equipment/ technology. Without these measures a significantly higher increase in carbon emissions would have occurred.

### 3.4 Projections and Value at Stake

The business-as-usual (BAU) scenario shows the calculated growth in carbon emissions and related costs that Colchester Borough Council would experience if it does nothing to reduce consumption. The BAU scenario includes assumptions on how the Council's consumption might increase and also what increases in energy tariffs it is likely to experience. If the Council does not take any action, emissions are likely to increase over time, as activities become more energy intensive. This increase in the BAU scenario is based on the following assumptions:

- BAU Increase in demand for all non-transport emission sources, 0.7%, source Department for Business Innovations and Skills (DBIS).
- BAU increase in demand for Fleet, 0.7%, source DBIS.
- BAU increase in demand for Commuting, 1%, source 2010 and 2013 internal commuting survey.

- Price increases: 2.5%.

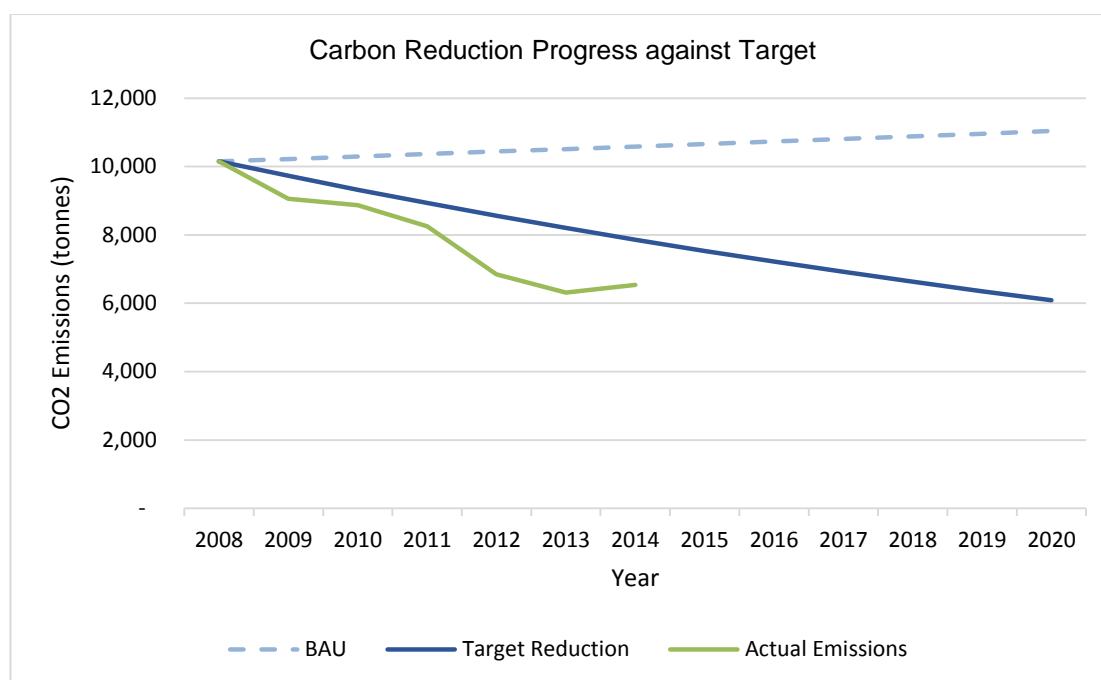
The reduced-emissions-scenario (RES) shows what the yearly carbon emissions would be if the Council hit their target and also what the yearly energy costs would be. The capital costs of projects required to meet the target are not included in this analysis, but the Carbon Trust have carried out a separate discounted cash flow analysis to show financial returns (see section 5).

The Value at Stake (VAS) is the year-on-year difference between the BAU and RES scenarios. The Value at Stake shows the potential savings, or avoided cost, from implementing the new LACM Plan and hitting the carbon reduction target against the alternative of doing nothing (BAU).

The capital costs of projects required to meet the target are not included. The Value at Stake is a useful high level analysis, as it can be produced early on in the process of developing the LACM Plan and helps make the case for action. However, the detail the Carbon Trust has developed on savings and costs from specific projects in section 5 is more granular than this analysis.

### 3.4.1 Business as usual growth and value at stake from 2008

Under this scenario (*Figure 6*), the Council's BAU emissions are projected to increase from 10,150 tonnes in 2008 to 11,036 tonnes by 2020, a rise of 886 tonnes. The green line shows the actual emissions which, barring a small recent rise from 2013-14 that tracks BAU growth, are well ahead of the target reduction by 2020. To meet the final target will potentially require an actual reduction of **4,900tCO<sub>2</sub>**



**Figure 6: Carbon 'Value at stake': 4,900tCO<sub>2</sub>**

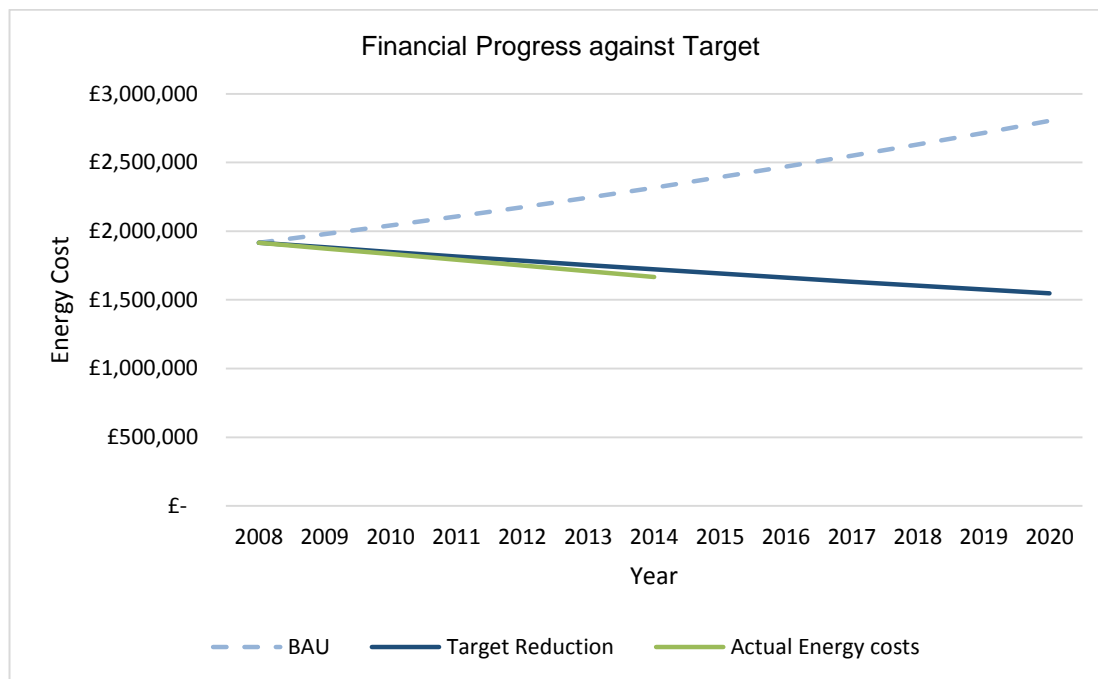
Accounting for BAU growth shows that the council have probably achieved even greater savings since 2008 than taking the baseline from the 2008 starting point.

**Note:** The priority projects outlined in this plan should achieve a 40% saving by 2018 without factoring in BAU. This is due to the following factors:

- Additional CBC officer time will be allocated to assess any BAU increase in emissions and will be mitigated through additional efficiencies or by bringing forwards other projects
- Implementation of Council digital strategies, with more focus on self-serve and getting online, will decouple services from BAU growth
- Some key areas of BAU growth such as waste collection and staff travel are not covered directly by this plan, but are being managed to minimise carbon increase



- Building rationalisation is expected to continue to counteract BAU growth
- Further projects have been identified that the Council hopes to implement beyond 2018



**Figure 7: Financial 'Value at stake': £1,256,000**

Figure 9 shows that if the 2020 target is met, 'value at stake' savings of **£1,256,000** per year will be realised compared with a scenario where no action on carbon was taken since 2008.

## 4 Carbon Management Projects

This section of the Plan lists and prioritises the opportunities for carbon emissions savings and sustainable practices that are critical to ensuring Colchester Borough Council achieves the five-year reduction target of 40% (from baseline year 2008).

### Key messages for this section:

#### Establishing a starting point for the new LACM plan:

- Through carbon reduction projects already carried out, the Council has already achieved 35.6% towards the 40% carbon reduction target.
- Work completed from 2012/13 to 2014/15 required an investment of £773,082 and offered an annual return of £191,324, securing an annual carbon saving of over 900 tonnes of CO<sub>2</sub>.

#### Developing the new LACM plan:

- The top 4 priority projects costing £52k, (*"Table 3"*) are scheduled for delivery in 2017/18
- 3 further priority projects will be delivered in 2016/17. It would cost £138k to complete this work and this would deliver an additional 2.5% CO<sub>2</sub> reduction by the end of 2016.
- The completion of these projects in 2016/17 and 2017/18 is predicted to meet the Council's 40% reductions target. All projects from 2018/19 – 2020 are aspirational and offer the Council an opportunity to exceed its target (by up to 46%).
- The average payback period of projects in this plan is 13.2 years, while the priority projects have a payback of under 3 years.

### Project Identification:

The projects in the new LACM Plan were identified through a Project Identification Workshop, led by the Carbon Trust, which identified carbon reducing opportunities across all service areas. Information on individual projects was then collected to produce one project register. Once the projects were identified the Carbon Trust carried out an energy survey of the Council's sites to assess the viability of the larger scale projects. The Carbon Trust quantified the projects to understand the high level costs and benefits of each of them. A scoring system was developed to prioritise projects by creating a ranking system using 'rate of return' (30% weighting) and 'carbon saving' (70% weighting).

### Establishing a starting point for the new LACM Plan:

The Council's Greenhouse gas emissions report helped to capture the carbon savings actually made through projects delivered since the last Plan ended. Analysis of the most recent greenhouse reporting figures showed that the Council had achieved an actual carbon saving towards its target of 35.6%; the Carbon Trust has therefore recommended that this be the starting balance to carry forward to the new LACM Plan 2016-2020. Details of the projects completed during this period are detailed in the next section 'Projects completed during 2012-15'.

#### 4.1 Projects: completed during 2012-2015

This section includes details of projects that were given approval, budget allocation and were completed after the last carbon management Plan ended in 2012, but before March 2015.

These projects continue to deliver both carbon and financial savings during the lifetime of the LACM Plan, and will contribute towards the final carbon reduction target set by the Council for 2020.

The work completed during this timeframe means the Council is making an annual saving of 914 tCO<sub>2</sub> and £191,324 per annum.

Project Description	Cost		Annual Savings (yr 1)		Pay back (yrs)
	Capital	Operational	Financial (Gross)	tCO <sub>2</sub>	
Rationalisation of offices: Angel Court building removed from use	£ -	£ -	£69,876	367	0
Installed solar PV schemes	£593,550	£ -	£59,268	165	10.0
CHP upgrade at Leisure World	£179,532		£62,087	382	2.9
Upgrade to laptops/tablets	£-	£-	£93	0.5	0.0
<b>Total</b>	<b>£773,082</b>	<b>£-</b>	<b>£191,324</b>	<b>914</b>	<b>3.2</b>

**Table 1**

**Key messages for this section:**

- The carbon savings captured from the 2008-2012 LACM contributed towards a 32.6% carbon reduction, which will count towards the overall total 40% carbon reduction target.
- Between 2012 and March 2015, the projects in the table above were completed, this means the Council has theoretically made 9.0% further savings towards our 40% carbon reduction target. However, due to other factors such as increases in grid emissions and BAU growth these savings may not all have been seen, however it is important to note that the greenhouse gas emissions would have risen considerably more than it did in 2013/14 and 2014/15 without this work being carried out.
- Between 2012 and 2014 a reduction of 3.0% was captured and confirmed. As 2015 emissions will not be available until the next report is prepared in July 2016 the Council has used the 3.0% additional reduction to calculate the new Plan's starting point.

## 4.2 Prioritised Project Register

The first table in this section shows a list of projects prioritised by a weighting factor of carbon saving (70%) and financial saving (30%). This has enabled the Council to assess the level of investment required to meet its carbon reduction target, and the potential to exceed its target by 2020.

Projects identified with the highest combined savings have been prioritised for delivery as follows:

### 2016/17 prioritised projects:

- Priority 5: Lighting upgrade : LED conversion Leisure world
- Priority 8: Zonal and PIR upgrade (Leisure World)
- Priority 9: Insulate roof of sports hall in Leisure world

These three priority projects that will be ready for delivery in 2016/17 will cost £138,000 to complete, will deliver a 2.5% CO<sub>2</sub> reduction towards the 40% reduction target and provide the Council with an annual saving of £49,300.

### 2017/18 prioritised projects:

- Priority 1: LED Stairway lighting in sheltered homes
- Priority 17: Install new gas plaque heaters in sports hall in leisure world
- Priority 3: VSD's on pumps and motors Leisure World
- Priority 4: VSD's on pumps Town Hall

These four priority projects outlined above are not scheduled for delivery until 2017/18 as further viability work is required. A budget of £51,600 will allow the Council to carry out this work, which will offer a further annual financial saving of £39,100 and a contribution of 2% towards the carbon reduction target.



#### 4.3 Prioritised Project Register (projects shown in green scheduled for implementation first)

Priority	Project Description	Cost		Annual Savings (yr 1)				<sup>1</sup> IRR	Est CO2 savings running total	Budget Year
		Capital	Operatio nal	Financia l (Gross)	tCO <sub>2</sub>	Payback £ value (years)	Payback £per tCO <sub>2</sub>			
Balance carried forward to new Plan									35.6%	
1	LED Stairway lighting in Sheltered Housing	£7,600	£0	£15,800	80.96	0.5	93.7	215.60 %	36.4%	2017/18
2	Install new gas plaque heaters in sports hall in Leisure World	£19,000	£0	£10,800	55.42	1.8	342.9	60.65%	36.9%	2017/18
3	VSD's on pumps and motors-- Leisure World	£22,200	£0	£11,100	56.94	2.0	389.5	53.63%	37.5%	2017/18
4	VSD's on pumps-- Town Hall	£2,900	£0	£1,400	7.4	2.1	389.5	53.63%	37.6%	2017/18
5	Lighting upgrade : LED conversion Leisure world	£102,000	£0	£43,900	225.5	2.3	453.9	45.12%	39.8%	2016/17
6	Pool Covers – Leisure World	£50,000	£0	£18,500	109.5	2.7	456.7	38.55%	40.9%	2018/19
7	Heat recovery in AHU Leisure world	£108,000	£0	£23,400	120.0	4.6	897.7	23.35%	42.1%	2018/19

<sup>1</sup> IRR – Internal Rate of Return

8	Zonal and PIR upgrade Leisure World	£27,700	£0	£4,300	22.1	6.4	1256.6	11.60%	42.3%	2016/17
9	Insulate roof of sports hall in Leisure World	£7,900	£0	£1,100	6.9	7.0	1138.7	15.88%	42.3%	2016/17
10	Replace ac units in Leisure World	£62,700	£0	£8,000	41.3	7.8	1517.1	12.32%	42.8%	2019/20
11	Destrat fan for Town Hall	£7,900	£0	£500	2.9	16.7	2710.7	1.18%	42.8%	2019/20
12	Update Fans in Leisure Centre AHUs with EC drives	£20,000	£0	£1,300	6.5	15.8	3090.2	-5.31%	42.8%	2019/20
13	Electric vehicles to replace vehicles run on petrol for short journeys	£15,500	£225	£787	1.8	19.7	8561.5	0.00%	42.9%	2020
14	Solar PV St Johns Car Park	£517,500	£ -	£39,587	98.2	13.1	5269.0	5.80%	43.8%	2020
15	Solar PV (279kWp) St Mary's Car Park	£577,530	£ -	£35,430	109.6	16.3	5269.0	3.66%	44.9%	2020
16	Solar PV (62.5kWp) Rowan House Car Park	£153,135	£ -	£10,785	26.8	14.2	5723.1	0.00%	45.2%	2020
17	Replacement of gas peak boilers at Leisure World	£170,000	£0	£5,200	32.0	32.6	5297.5	-1.86%	45.5%	2020
18	Town Hall boiler upgrade (gas)	£100,000	£0	£2,700	16.6	37.0	6037.0	-2.91%	45.7%	2020
19	Town Hall Boiler Replace with biomass (additional cost)	£250,000	£11,622	£5,900	36.3	42.4	6887.8	3.79%	46.0%	2020
20	Replace chiller and cooling Plant Town Hall	£30,000	£0	£1,238	6.4	24.2	4718.7	0.69%	46.1%	2020



21	Biomass Boiler upgrade at Mile End sports ground (or alternative renewable such as GSHP)	£125,000	£1,415	£1,200	8.7	48.6	14342.0	-6.03%	46.2%	2020
22	Rationalisation of CBH offices	£0	£0	£330	1.7	0.0	0.0	0.00%	46.2%	2020
	TOTAL	£2,376k	£13k	£243k	£1k				46.20%	

**Table 2**

#### 4.4 Priority Projects for implementation (Budgets agreed)

The Council has agreed to allocate £190K over two years to fund LACM projects for 2016/17 and 2017/18 in order to deliver the 40% reduction target shown in table 3:

Financial Year	Projects	Total cost to deliver LACM Projects per annum	Total annual saving £	Payback Period (Years)	Total annual saving <sup>2</sup> tCO <sub>2</sub>	Target reached
2016/17	Priority 5, 8 & 9	138,000	49,300	2.8	255	38%
2017/18	Priority 1 to 4	51,600	39,100	1.3	201	40%

**Table 3**

Some of the remaining projects in the priority register are included as part of the Council's Repair and Renew Capital investment programme. If a boiler breaks down or light fittings need replacing in the Council's buildings the most energy efficient option will be considered, so it is highly likely that through BAU maintenance works that further savings will be realised.

#### 4.5 Aspirational Projects

Further opportunity to exceed the 40% carbon reduction target is possible through the remaining aspirational projects in 2018/19 and 2019/2020. Considerable investment would be required for these projects so further work must be done to check viability and saving opportunities, and this testing and analysis work will be carried out throughout the lifetime of the Plan.

Year	Estimated Investment Required	Total annual saving £	Payback Period (Years)	Total annual saving tCO <sub>2</sub>	Target reached
2018 (Priority 6&7)	160,000	41,900	3.8	230	42%
2019 (Priority 10-12)	90,000	9,800	9.2	51	43%
*Opportunities up to 2020 are small win projects (Priority 13-22)	A further 1.9 million of investment would be needed	103,200	25.0	338	46%

**Table 4**

There are

#### 4.6 Summary of Milestones for embedding and delivery of LACM 2016-2020

Key dates/timeline	Milestones
16 March 16	LACM Plan to Cabinet

<sup>2</sup> tCO<sub>2</sub> = tonnes of CO<sub>2</sub>





April 2016	<p>Implementation of 2016/17 LACM Priority Projects:</p> <ul style="list-style-type: none"> <li>• Roles and responsibilities allocated for monitoring and evaluation of the new Plan.</li> <li>• Highlight reports copied to LACM PM</li> <li>• Monitoring system put into place to capture carbon savings and actual costs</li> </ul>
May 17	<p>Reporting on 2016/17 LACM Priority Projects:</p> <ul style="list-style-type: none"> <li>• Project Sponsor Update</li> <li>• SMT (Project Board) Update</li> <li>• PH Update</li> <li>• Achievements and Targets met in MIB (to all Cllrs)</li> </ul>
April/ May 17	<p>Implementation of 2017/18 LACM priority Projects:</p> <ul style="list-style-type: none"> <li>• Feasibility work and costs completed</li> <li>• Procurement of contractors completed</li> <li>• Project register and targets updated (according to viability work completed)</li> <li>• Finance complete validation work with Project Managers to check investment on track with budget allocation.</li> <li>• Highlight reports copied to LACM PM</li> </ul>
October 18	<p>Reporting on 2017/18 LACM priority Projects:</p> <ul style="list-style-type: none"> <li>• Analysis of savings (identify if on target to meet 40% reduction) and opportunity to exceed target.</li> <li>• Review of other projects delivered through Repair and Renew Capital funding.</li> <li>• Review of other projects on priority register and opportunity for delivery and inclusion in the Plan.</li> <li>• Project Sponsor Update</li> <li>• SMT (project Board) Update</li> <li>• PH Update</li> <li>• Achievements and Targets met in MIB (to all Cllrs)</li> </ul>
October 19	<p>Review of aspirational projects:</p> <ul style="list-style-type: none"> <li>• Progress on viability and cost</li> <li>• Populate project register and update LACM Plan for projects to be included.</li> <li>• Highlight reports on all projects completed to date.</li> </ul>
January 2020	<p>Reporting achievements so far:</p> <ul style="list-style-type: none"> <li>• Review LACM Plan</li> <li>• What went well</li> <li>• What didn't go so well</li> <li>• Meeting targets</li> <li>• Analysis of carbon and financial savings</li> <li>• Target met to be reported</li> <li>• Future aspirations to be identified</li> <li>• Review systems in place to continue work to capture on-going work and savings through carbon reduction projects.</li> </ul>
April 2020	<p>Presentation of final findings:</p> <ul style="list-style-type: none"> <li>• Project Sponsor Update</li> <li>• SMT (Project Board) Update</li> </ul>

	<ul style="list-style-type: none"> <li>• PH Update</li> <li>• Achievements and Targets met in MIB (to all Cllrs)</li> <li>• Leadership Team presentation</li> <li>• Progress report published online</li> <li>• Report findings shared with CBC staff and partners</li> <li>• PR to summarise results</li> </ul>
May – July 2020	Review Carbon Management Planning going forward and align with ESS review & Climate Local.

**Table 5**

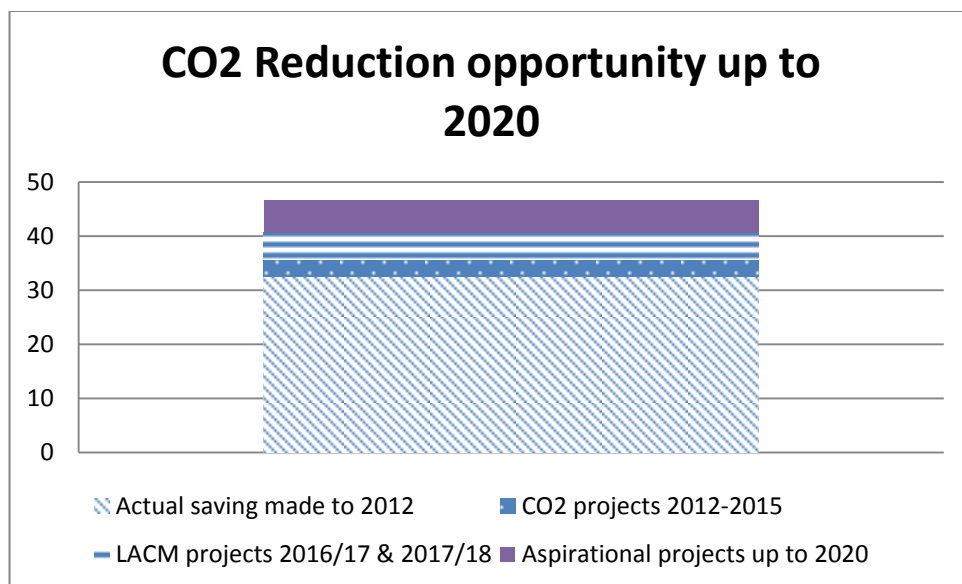
#### 4.7 Projected achievement towards target

If the new LACM Plan meets expectations, the Council expects to achieve a 40% reduction by financial year 2017/18. We know that if the Council uses more energy, and increases its CO<sub>2</sub> emissions through delivery of increased services, that it is possible for the carbon saved from delivery of this Plan to be cancelled out, so careful annual monitoring against actual greenhouse gas emissions is required.

It is important to recognise that regardless of some of the carbon being lost to increased use elsewhere that the CO<sub>2</sub> emissions would be far greater without projects that work to reduce carbon emissions.

The following chart 'CO<sub>2</sub> Reduction Opportunity up to 2020' illustrates:

- The actual savings the Council made during the last LACM Plan 2008-2012
- The carbon savings realised between Plans in 2012-2015
- Expected carbon savings through delivery of funded projects during 2016/17 and 2017/18
- The opportunity to exceed the 40% reduction target through delivery of aspirational projects from 2018/19 and 2019/20.



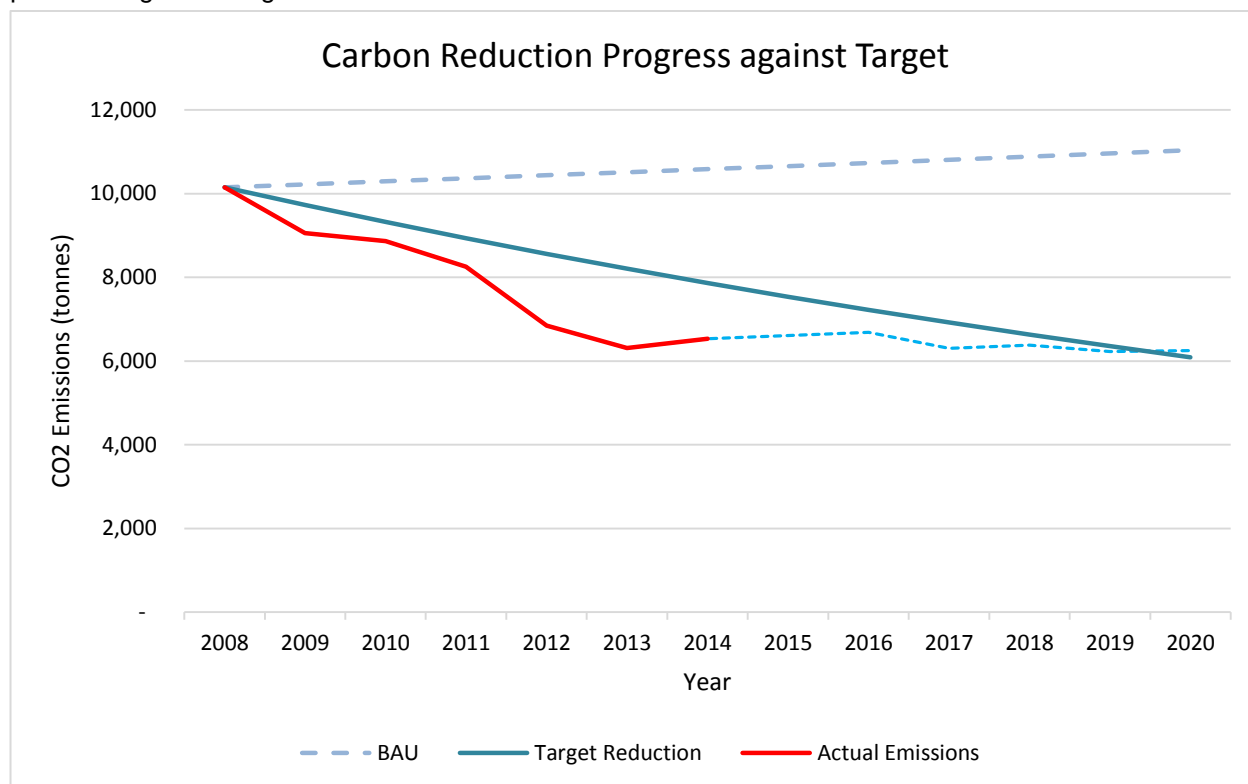
**Figure 8: Shows potential reduction in carbon (%)**

#### Road Map to 2020

The graph below (Figure 9) shows predicted business-as-usual (BAU) emissions and the target emissions from 2008 to 2020. The 'forecast from actual emissions' (blue dotted line) shows the emissions reductions from the projects scheduled in the duration of this Plan. This plot includes the effect of BAU forces (excluding population growth), so for example if in year three no additional projects were implemented the emissions would then trend back along the BAU line. Also the impact of project

life is included, so if a short life project is finished (e.g. awareness raising) before the end of the programme (and not maintained or repeated) the trend would show a stepwise increase in emissions.

By including these effects the Carbon Trust is trying to model some of the real life factors that may impact on the Council's ability to meet its target. Because of these additional factors the plot does not directly agree with a simply summed list of the carbon saving impact of the projects. Please see section 3.4.1 (*Business as usual growth and value at stake from 2008*) for more details on how the council plan to mitigate BAU growth.



**Figure 9: Forecast emissions against target (factoring in BAU growth)**

## 5 Implementation

This section covers the main elements required to move from Planning to implementation. Here the Council considers its financing strategy, governance structure, monitoring and reporting mechanisms. The following section outlines the activities that will help Colchester Borough Council to embed carbon management and drive the changes in behaviour that will maintain a long-term approach to making sustained savings and following low carbon practice.

### 5.1 Carbon Management Plan Financing

In Section 4 the Council has described the projects that will be implemented to achieve the target; Capital and revenue costs have been identified for 2016/17 and 2017/18 priority projects. This section summarises the funding required year by year, describes where it will come from and identifies any gaps where funding may not yet be secured.

### 5.1.1 Financial costs and sources of funding

To implement all the projects identified in this plan will cost £ 2.4 million of which £190,000 has been allocated, for delivery of projects in 2016/17 & 2017/18.

When all the projects in 2016/17 & 2017/18 are completed it will result in estimated annual financial savings / cost avoidance of £88,400 a year, a payback period of under three years, and an expectation of meeting the 40% reduction target

Remaining projects in the priority register for delivery in 2018/19 and 2019/20 remain aspirational, but if delivered will result in additional estimated annual financial savings / cost avoidance of £51,700 a year.

If all the projects left for delivery in 2020 are completed it will result in additional estimated annual financial savings / cost avoidance of £103,200.

If all the projects outlined in the plan are implemented it will result in estimated annual financial savings / cost avoidance of £243,300. The overall payback period of all the projects in this plan is 9.7 years

In order to deliver the 40% target, investment is required of c£190k over 2016/17 and 2017/18. There are estimated recurring annual revenue savings of £88,400 from these projects once implemented.

Whilst capital resources are limited the Council has agreed to accommodate this cost alongside other identified pressures through the Council's main Capital Investment Fund. The Council expects that in addition to this work some funding from the Colchester Borough Council Repair and Renew Fund will be drawn on where maintenance works are required which result in additional carbon savings.

Further investment in aspirational LACM projects can be considered in later years alongside other capital requirements.

#### **Funding can be delivered from five main sources:**

LACM projects that are outside the implementation Plan for 2016/17 and 2017/18 will need a business case to request suitable funding. Funding can be delivered from five main sources and these are outlined below:

1. **CBC Revenue Funding** – where projects cost less than £10k, and there is no new asset or extension to the life of an asset. This funding is made available from the annual revenue budget.
2. **CBC Capital Programme** – this funding makes use of capital receipts or borrowing (see below). The project would usually cost in excess of £10k and produces a new asset, or extends the life of an existing asset. These projects require formal approval as part of the CBCs capital programme.
3. **Borrowing**



The Council is able to borrow to invest in capital works and assets so long as the cost of that borrowing is affordable and in line with principles set out in a professional Prudential Code, endorsed by the Chartered Institute of Public Finance and Accountancy. Borrowing can be an appropriate option where there is a case made to "invest to save". Any borrowing would need to be viewed alongside the Council's overall capital programme and treasury management strategy.

4. **CBC Repairs and Renewals (R&R) Provision** – where annual revenue contributions are made towards the longer term maintenance projects of council buildings and major Plant or equipment. These works are identified within a 10 year rolling Building Maintenance Plan.
5. **External Grants** – where the Council is able to bid for specific funding for individual projects. The majority of projects in this LACM Plan are in connection to Council buildings so it is unlikely that grant funding applications will be made to deliver this Plan.

The decision on which funding source is suitable will be applied on a project by project basis after 2017/18 priority projects have been delivered. Each project will need to go to the Council's Finance Team for validation, and then depending on the level of investment required, it is likely that they will need to go through the Council's governance process



### Delivery of 2016/17 Priority Projects

Three priority projects will be ready for delivery in 2016/17 will cost £138,000 to complete, it will deliver a 2.5% CO2 reduction towards the 40% reduction target and provide the Council with an annual saving of £49,300. The tables in this section provide details on where the funding is coming from and the accrued saving opportunity up to 2020.

2016/17 Priority Projects	Start Date	Completion Date	CBC Capital Programme	TOTAL
5: Lighting upgrade: LED Conversion Leisure world	2016	2017	£102,000	£102,000
8: Zonal and PIR Upgrade Leisure World	2016	2017	£27,700	£27,700
9: Insulate roof of sports hall in Leisure World	2016	2017	£7,900	£7,900
<b>TOTAL</b>			<b>£138,000</b>	<b>£138,000</b>

**Table 6: 2016/17 Priority Projects**

### Financial Impact of 2016/17 projects

Once all priority projects for 2016/17 are implemented as planned, the estimated impact on the Councils financial position is highlighted in the following table:

Table Showing Summary of Total Spending and Accrued Savings based on Delivery of 2016/17 Priority Projects				
Initial Estimated Capital Expenditure		£138,000		
Initial Estimated Revenue Expenditure		£0		
	2016/17	2017/18	2018/19	2019/20
Annual Estimated Savings (£)	£49,300	£49,300	£49,300	£49,300
Annual Estimated Savings – Revenue Account	£0	£0	£0	£0
Cumulative estimated Savings	£49,300	£98,600	£147,900	£197,200
Cumulative Savings – Revenue Account	£0	£0	£0	£0

**Table 7**

By the end of the Plan, the cumulative savings for projects implemented in 2016/17 will reach c£197,200.

### Delivery of 2017/18 Priority Projects

The projects identified for delivery in 2017/18 have not yet been subjected to the same detailed level of assessment so they will not be ready for delivery until 2017. However, estimates are available, and based on these; the projects below sit at the top of the Priority Project List because they show the greatest potential for carbon and financial savings. The potential financial impacts for 2017/18 are presented in the table below:

2017/18 Priority Projects	Start Date	Completion Date	CBC Capital Programme	TOTAL
11: LED stair lighting in sheltered homes	2017	2018	£7,600	£7,600
3a: Install new gas plaque heaters in sports hall in leisure world	2017	2018	£19,000	£19,000
8a: VSD's on pumps and motors Leisure World	2017	2018	£22,200	£22,200
8b: VSD's on pumps Town Hall	2017	2018	£2,900	£2,900
			£51,700	£51,700

**Table 8**

### Financial Impact of 2017/18 projects

Once all priority projects for 2017/18 are implemented as Planned, the estimated impact on the Council's financial position is highlighted in the following table:

Table Showing Summary of Total Spending and Accrued Savings based on Delivery of 2017/18 Priority Projects				
Initial Estimated Capital Expenditure		£51,700		
Initial Estimated Revenue Expenditure		£0		
	2017/18	2018/19	2019/20	
Annual Estimated Savings (£)	£39,100	£39,100	£39,100	
Annual Estimated Savings – Revenue Account	£0	£0	£0	
Cumulative estimated Savings	£39,100	£78,200	£117,300	
Cumulative Savings – Revenue Account	£0	£0	£0	

**Table 9**

### 5.1.2 LACM 2016-2020 Summary

Given the estimates of CO<sub>2</sub> savings for priority projects 2016/17 and 2017/18 are fairly conservative it is feasible that the Council's 40% reduction target will be met in full by the end of 2017/18.

- The 2016/17 projects go some way to achieving the value at stake by delivering savings of £197,200 to 2020 or 38% of the overall target.
- 2017/18 projects will deliver an additional £117,300 and meet the 40% reduction target two years ahead of plan
- If 2018/19 and 2019/20 aspirational projects are undertaken concurrently then up to a further £93,600 could be saved in the period. This could deliver savings of 43% overall, exceeding the councils target of 40%
- There will likely be additional carbon emissions outside the scope of this plan that will need to be identified and mitigated as they arise (Business As Usual growth)

### 5.1.3 Assumptions

Key assumptions underlying our financial projections are that energy price prices by 2020 will be negligible:

- Electricity cost of 9.0p (based on 2015/16 prices)
- Gas cost of 3.0p (based on 2015/16 prices)

### 5.1.4 Benefits / savings – quantified and un-quantified

	Budgets approved		Aspirational	
	2016/17	2017/18	2018/19	2019/20
Annual cost saving	49,300	39,100	41,900	9,800
Annual CO2 saving	255	201	230	51
% of target achieved	38%	40%	42%	43%

**Table 10: How investment will be linked to CO2 targets and financial savings**

## 6 Embedding Carbon Management across Colchester Borough Council

Using the embedding matrix in the Appendix, section 7, the following areas have been identified as key areas of focus and will be explored further in this section where necessary:

- **Policy:** CBC carbon reduction targets are set out in the Environmental Sustainability Strategy and the LACM is agreed by Cabinet.
- **Responsibility, Data management and Monitor/ Evaluate:** The Council understands that close monitoring is needed to keep check of progress against target and is considering the allocation of resources needed to ensure data is managed and used to evaluate the Councils position
- **Comms and training** – Communication of the plan and its progress has been comprehensively addressed across the council and to its residents. Full details are in section 6.4

### Leading up to the implementation of a new LACM

Change Action taken	Governance	When completed
Adoption of the Councils first Environmental Sustainability Strategy	Approved by full Council	Jan 2015
Became a signatory to LGA Climate Local	Approved by full Council	Sept 2015
Approval to develop a new LACM 2016-2020	Approved by Leadership Team	Sept 2015

**Table 11: Work carried out to date to embed carbon management****Proposed actions up to 2020**

Recommended Change Action	Owner	Complete by
Allocation of resources to monitoring; analysing; reporting on; and updating the LACM	Project Sponsor	March 2016
LACM Comms Plan and engagement campaign (Appendix A )	Sustainability & Projects Officer	2016 - 2020
Building Resilient Communities Event	Sustainability & Projects Officer	2016/17
New engagement campaign to incorporate LACM (to include film and new web page)	Sustainability & Projects Officer	2016/17

**Table 12: Planned work to further embed carbon management****6.1 Project Management of Colchester Borough Council's carbon management Plan**

The Senior Management Team (SMT) has supported the development of the Plan by acting as the Project Board. This has ensured that Portfolio Holders have been briefed and understand which projects have been put forward to be included in the Plan.

The Project Team is made up of representatives from Colchester Borough Council and Colchester Borough Homes. This has enabled us to look at opportunities across Council buildings, services and operations, as well as bringing a diverse range of knowledge and expertise to the development of the Plan.

As the Project moves into implementation the Project Team members have changed to ensure that each service area has an opportunity to feed into the implementation of the LACM Plan. This has ensured that Services and Portfolio Holders are fully aware of each Services opportunity to make savings, and each Council's Service has a commitment to delivery of projects after the Plan is agreed by Cabinet.

The structure for development of the Plan is as follows:

- Tier 1 – CBC Senior Stakeholders (Leadership Team)
- Tier 2 - Project board (SMT)
- Tier 3 – Project Manager (Sustainability & Projects Officer) / Project Team (Officers and Managers from across the services)
- External Consultant: Carbon Trust (Lead on stakeholder engagement, assessing project opportunities and completing final report).

Succession Planning and managing risk is outlined in section 7.3, along with a structure chart for project management.

## 6.2 Monitoring and reporting

### Data and monitoring

The following actions have been agreed with regards to data and monitoring:

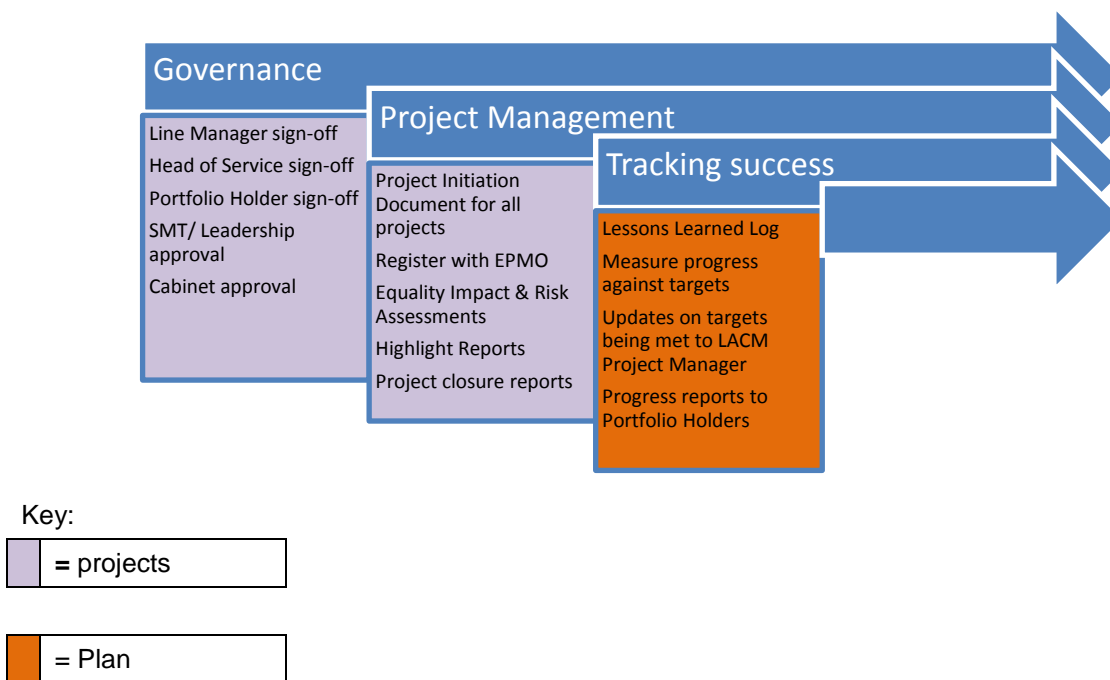
ID	Change Action	Owner	When complete
	All projects within the Plan are to be taken through the Corporate approval and EPMO process.	Individual Project Managers	For every LACM Project up to 2020
	Work with EPMO to ensure that LACM associated projects are linked by project reference, so that outcomes can be reported by way of monthly highlight reports using the RAG status.	LACM Monitoring EPMO Manager	May 2016 – system in place
	Collate information and data to provide regular summaries on achievements of the LACM Plan up to 2020	LACM Monitoring	Stages and reports due detailed in section 4.6
	New Digital Project that will support the automation of the collection of staff business journey information. This will improve data collection in order to inform future projects that contribute to reducing carbon emissions.	People & Performance/ EPMO	By end of 2020
	Activities to facilitate and improve the data collection, and frequency of collection on individual projects (e.g. meter installation)	Individual Project Managers	For every LACM Project up to 2020

**Table 13**



### 6.3 Reporting and Evaluation

The following process has been developed by the Project Team and signed off by Project Board for governance, project management and tracking success:



**Figure 10**

Once the plan is agreed by Cabinet the Project Team will meet to develop a monitoring system. It is expected that each Service representative will collect information on carbon saving projects and individual project managers will assess the actual carbon savings for each project. The information will be collated and reported on an annual basis to SMT acting as project board and to the Portfolio Holder.

## 6.4 Communications Plan

A wider engagement campaign has been developed to bring together sustainability work across the Council, the campaign details are outlined in Appendix A, Section 1. The following summarises the intended communications actions specifically for the new LACM Plan, their approximate timing and details of who is responsible. Engagement with external partners and the community will occur later in the LACM Plan, but are listed here for information.

Stakeholder Name/Group	Notes	Key Messages	Means of Communication	Responsibility	Timetable
Cabinet and Ward Councillors		<ul style="list-style-type: none"> <li>- What the LACM means to CBC overall</li> <li>- What Cllrs can do to help</li> <li>- Key milestones and achievements (general)</li> <li>- Announcements regarding successes and specific stories</li> <li>- Announcement of delivery of priority projects</li> <li>- Details and outcomes from the wider engagement campaign</li> </ul>	<ul style="list-style-type: none"> <li>- Cabinet presentation</li> <li>- Face-to-face</li> <li>- MIB (Email)</li> <li>- Individual Portfolio Holder Briefing</li> </ul>	<ul style="list-style-type: none"> <li>- LACM Project Team reps</li> <li>- Sustainability &amp; Projects Officer (LACM PM) / Carbon Trust</li> <li>- PH Briefings by service area (Project team)</li> </ul>	<ul style="list-style-type: none"> <li>- Cabinet March 16</li> <li>- Comms March 16 – April 2020</li> </ul>
Leadership Team		<p>Informing senior stakeholders:</p> <ul style="list-style-type: none"> <li>- The LACM and list of projects have been prioritised for delivery in 2016/17 and 2017/18.</li> <li>- Not all projects identified will be delivered, but those that have budget allocation will help the Council to meet the carbon reduction target.</li> <li>- Savings likely from the delivery of the Plan (both financial and carbon savings).</li> <li>- The implications for the Council if BAS.</li> <li>- Overview how we Plan to engage with residents and staff over the lifetime of the Plan.</li> </ul> <p>Once the Plan is adopted:</p> <ul style="list-style-type: none"> <li>- Details of LACM projects under the Portfolio Holders responsibility.</li> </ul>	<ul style="list-style-type: none"> <li>- Individual Portfolio Holder Briefing</li> <li>- Leadership presentation</li> </ul>	<ul style="list-style-type: none"> <li>- Sustainability &amp; Projects Officer (LACM PM) / Carbon Trust</li> <li>- PH Briefings by service area (Project team)</li> </ul>	<ul style="list-style-type: none"> <li>- PH updates leading up to November meeting.</li> <li>- Leadership Team November 2015</li> </ul>
LACM Project Board		<p>For sign-off of the Plan:</p> <ul style="list-style-type: none"> <li>- Project register outlines the opportunities (financial and carbon savings)</li> <li>- Plan summarises the actions and phases for the delivery of the Plan.</li> <li>- Projects prioritised using</li> </ul>	<ul style="list-style-type: none"> <li>- Presentation to SMT</li> <li>- Update all HoS (SMT) on specific projects for delivery (Project team)</li> </ul>	<ul style="list-style-type: none"> <li>- Sustainability &amp; Projects Officer (LACM PM)</li> <li>- HoS updates by service area (Project team)</li> </ul>	

<b>Table 14</b>	<p>weighting of carbon saving (70%) and financial saving (30%)</p> <p>Once the Plan is adopted:</p> <ul style="list-style-type: none"> <li>- Key milestones and achievements.</li> <li>- What the PB can do support the roll out of projects in their service area.</li> <li>-</li> </ul>
<b>All Staff</b>	<p>Always use #greenercol</p> <ul style="list-style-type: none"> <li>- The LACM and what it means to CBC and staff</li> <li>- What staff can do to help</li> <li>- Key milestones and achievements (general)</li> </ul> <ul style="list-style-type: none"> <li>- Spotlight article/s Hub</li> <li>- Induction (new process)</li> <li>- #greenercol awareness week (TBC)</li> </ul> <ul style="list-style-type: none"> <li>- Communications Business Partner</li> <li>- HR Business Partner (for induction process)</li> <li>- Sustainability &amp; Projects Officer (LACM PM) for development of content for induction</li> <li>- Sustainability &amp; Projects Officer (LACM PM) for development of capturing sustainability work through EPMO and project management</li> <li>- Updates on progress by service area (Project team)</li> </ul> <p>Spotlight/Hub announcement article: March 2016</p> <p>Spotlight/Hub articles: Ongoing as and when milestones are achieved</p> <p>#greenercol: Staff Awareness Week June 2016 (TBC)</p>
<b>Media</b>	<p>Segment by local and specialist publications</p> <p>Always use #greenercol</p> <ul style="list-style-type: none"> <li>- Announcement of CBC's LACM Plan</li> <li>- Key milestones and achievements (general)</li> <li>- Announcements regarding successes &amp; specific stories</li> <li>- Announcement of priority projects being implemented.</li> </ul> <ul style="list-style-type: none"> <li>- PR (email)</li> <li>- Twitter (social media)</li> </ul> <ul style="list-style-type: none"> <li>- Communications Business Partner</li> <li>- Sustainability &amp; Projects Officer (LACM PM)</li> <li>- Updates on progress by service area (Project team)</li> </ul> <p>March 2016 onwards</p>
<b>Sector</b>	<p>Always use #greenercol</p> <p>Research awards and enter any suitable</p> <ul style="list-style-type: none"> <li>- Key milestones and achievements</li> <li>- Innovation and setting an example, raising the profile of CBC as a leading carbon cutting council</li> </ul> <ul style="list-style-type: none"> <li>- Twitter (social media)</li> <li>- Award entries</li> <li>- Individual Portfolio Holder Briefing</li> </ul> <ul style="list-style-type: none"> <li>- Communications Business Partner</li> <li>- Sustainability &amp; Projects Officer (LACM PM)</li> <li>- Updates on progress by service area (Project team)</li> </ul> <p>March 2016 onwards</p>
<b>Residents</b>	<p>Always use #greenercol</p> <ul style="list-style-type: none"> <li>- The LACM and what it means</li> <li>- Key milestones and achievements (general)</li> <li>- Announcements regarding successes of priority projects and specific stories</li> <li>- Announcement of priority projects being implemented</li> </ul> <ul style="list-style-type: none"> <li>- Twitter and Facebook (social media)</li> <li>- Online <a href="http://www.colchester.gov.uk/greenercol">www.colchester.gov.uk/greenercol</a></li> <li>- '#greenercol' generic print and signage</li> <li>- Gov Delivery e-newsletters ('Green Living', 'Borough News' and 'Home View')</li> </ul> <ul style="list-style-type: none"> <li>- Communications Business Partner</li> <li>- Sustainability &amp; Projects Officer (LACM PM)</li> <li>- Updates on progress by service area (Project team)</li> </ul> <p>March 2016 onwards</p>

## APPENDICES

### 7 Appendix: Embedding Carbon Management

#### 7.1 Carbon Management Matrix

	POLICY	RESPONSIBILITY	DATA MANAGEMENT	COMMUNICATION & TRAINING	FINANCE & INVESTMENT	PROCUREMENT	MONITORING & EVALUATION
5 <b>BEST</b>	SMART Targets signed off Action plan contains clear goals & regular progress reviews Strategy launched internally & to community	CM is <b>full-time</b> responsibility of a <b>few</b> people CM integrated in responsibilities of <b>senior</b> managers VC support Part of <b>all</b> job descriptions	Quarterly collation of CO <sub>2</sub> emissions for all sources Data externally verified M&T in place for: • Buildings • Waste	All staff & students given formalised CM: • Induction • Training Plan • Communications CM matters <b>regularly</b> communicated to: • External community • Key partners	<b>Granular &amp; effective</b> financing mechanisms for CM projects Finance representation on CM Team Robust task management mechanism Ring-fenced fund for carbon reduction initiatives	Senior purchasers consult & adhere to ICLEI's Procura+ manual & principles Sustainability comprehensively integrated in tendering criteria Whole life costing Area-wide procurement	Senior management review CM process Core team regularly reviews CM progress Published externally on website Visible board level review
4	SMART Targets developed but not implemented	CM is full-time responsibility of an individual CM integrated in to responsibilities of department managers, not all staff	Annual collation of CO <sub>2</sub> emissions for: • Buildings • Transport • waste Data <b>internally</b> reviewed	All staff & students given CM: • Induction • Communications CM communicated to: • External community • Key partners	Regular financing for CM projects Some external financing Sufficient task management mechanism	Environmental demands incorporated in tendering Familiarity with Procura+ Joint procuring between HEIs or with LAs.	<b>Core</b> team <b>regularly</b> reviews CM progress: • Actions Profile & Targets • New opportunities quantification
3	Draft policy Climate Change reference	CM is part-time responsibility of a few people CM responsibility of department champions	Collation of CO <sub>2</sub> emissions for limited scope i.e. buildings only	Environmental / <b>energy</b> group(s) give ad hoc: • Training • Communications	Ad hoc financing for CM projects Limited task management No allocated resource	Whole life costing occasionally employed Some pooling of environmental expertise	CM team review aspects including: • Policies / <b>Strategies</b> • Targets • Action Plans
2	No policy Climate Change aspiration	CM is part-time responsibility of an individual No departmental champions	No CO <sub>2</sub> emissions data compiled Energy data compiled on a regular basis	Regular poster/awareness campaigns <b>Staff</b> given ad hoc CM: • Communications	Ad hoc financing for CM related projects Limited task coordination resources	Green criteria occasionally considered Products considered in isolation	Ad hoc reviews of CM actions progress
1 <b>Worst</b>	No policy <b>No</b> Climate Change reference	No CM responsibility designation	Not compiled: CO <sub>2</sub> emissions Estimated billing	No communication or training	No internal financing or funding for CM related projects	No Green consideration No life cycle costing	No CM monitoring

## 7.2 Communicating the Plan through the Council's Sustainability Campaign

### COLCHESTER - A Leading Carbon Cutting Council

#### #greenercol

#### Why the Council wants to do it

The delivery of such a marketing campaign will meet Leadership Team's requirements to go beyond our own achievements and 'engage with the wider community' to have a 'borough wide impact'.

This campaign supports a number of key sustainability projects:

- Delivery of priority 2 in the ESS.
- Signing up to Climate Local (with a focus on community engagement and Council Leadership).
- Marketing the Council's environmental efforts
- A route to delivering the LACM messages to the wider public and supporting communities to take their own action.

The campaign will focus on how CBC intend to lead by example and engage communities.

#### What will the new campaign look like:

**COLLABORATE, COMPANIES, CONSIDERATE, COMMUNITIES, COORDINATE, COOPERATE, COLLECT, CONTROL.**

#### Online Focus

The campaign will be accessible mainly online – keeping use of paper to a minimum to ensure sustainability is at its core.

The campaign will focus around the hashtag #greenercol and around key words beginning 'CO' which will be reflected in all mediums.

The campaign will centre on a signposting webpage featuring a number of buttons enabling users to see and explore the breadth of the work around carbon saving that CBC facilitates and supports.

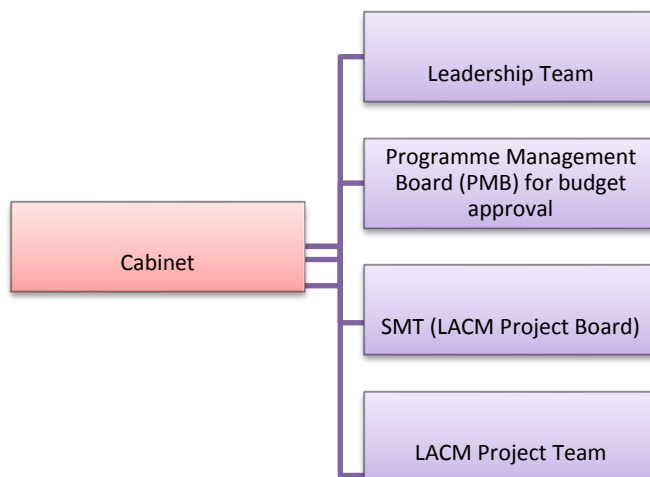
The campaign will link projects across the Council that are contributing to the delivery of the ESS, Climate Local Action Plan and the LACM 2016-2020.

Each button will be linked to specific documents and/or other existing web pages from [www.colchester.gov.uk/sustainability](http://www.colchester.gov.uk/sustainability)

CONTROL	COLLECT	COOPERATE
<p>Take control of your energy costs by taking part in the Big Community Switch and find out about current energy efficiency initiatives.</p> <ul style="list-style-type: none"> <li>➤ Big Community Switch</li> <li>➤ Find your Zone Team</li> <li>➤ Warm Homes information</li> </ul>	<p>The Council collects and monitors its performance. Find out how we are doing in cutting carbon emissions.</p> <ul style="list-style-type: none"> <li>➤ Greenhouse gas report</li> <li>➤ HECA</li> <li>➤ Climate Risk Assessment</li> <li>➤ LACM 2008-12</li> <li>➤ LACM 2016-2020</li> </ul>	<p>The Council's strategies and policies are aligned to address and identify action to improve environmental sustainability, some of the Council's key environmental strategies can be found here</p> <ul style="list-style-type: none"> <li>➤ Environmental Sustainability Strategy (ESS) 2015-2020.</li> <li>➤ New Air Quality Strategy</li> <li>➤ Waste strategy</li> </ul>

<p><b>COORDINATED</b></p> <p>Colchester Borough Homes manages the Council's housing stock and we work side-by-side to improve the energy efficiency of homes and buildings.</p> <ul style="list-style-type: none"> <li>➤ Worsnop case study</li> <li>➤ CBH link to energy initiatives page</li> </ul>	<p><b>COMMUNITY</b></p> <p>The Council delivers a range of community events with sustainability in mind.</p> <ul style="list-style-type: none"> <li>➤ Green open homes</li> <li>➤ Leading landlords</li> <li>➤ Community Energy event</li> </ul>	<p><b>COMMITTED</b></p> <p>The Council has committed to reduce the impact from its own buildings, services and operations; as well as help build resilient communities. Our public commitment was signed by the Leader of the Council in September 2015.</p> <ul style="list-style-type: none"> <li>➤ Signing up to Climate Local (2015)</li> <li>➤ The Nottingham Declaration 2008-12</li> </ul>
<p><b>COMPANIES</b></p> <p>The Council wants to share good practice and support local organisations to become greener and more responsible for their own environmental management. The Council will only work with suppliers and partners that meet high green standards. Find out more about being a supplier to the Council or how to reduce the impact of your organisation on the environment.</p> <ul style="list-style-type: none"> <li>➤ ISO environmental accreditation for SMEs (ECC Scheme)</li> <li>➤ Reduce energy bills through make it cheaper (iChoosr)</li> <li>➤ Join the Travel Plan Club</li> <li>➤ Buy and sell local</li> </ul>	<p><b>COMMUTE</b></p> <p>Sustainable transport methods include walking, cycling and using public transport, find out more about the schemes and offers available to improve the way you travel.</p> <ul style="list-style-type: none"> <li>➤ Cycle routes and maps</li> <li>➤ 'Loveurcar' scheme</li> </ul>	<p><b>CONSERVATION</b></p> <p>The Council could not achieve what it does without the help of its key community partners.</p> <ul style="list-style-type: none"> <li>➤ Enform</li> <li>➤ Essex Wildlife Trust</li> <li>➤ Abberton Rural Training</li> <li>➤ Maintaining a healthy tree population in Colchester can help to store carbon and improve the environment.</li> <li>➤ Highwoods Big Garden Project</li> </ul>





*CBC Structure Chart: LACM Management*

### 7.3 Succession Planning

It is important to consider what will happen should key individuals involved in the delivery of the carbon management Plan leave their post. The Project Sponsor is Head of Commercial Services and therefore has overall responsibility to make sure the progress of the Plan is reported to senior stakeholders and that the projects within the Plan are delivered. The Head of Service will be in a position to maintain key resources and work with CBC's Senior Management Team to ensure resources where possible, from across all services are secured to deliver the Plan up to 2020. The project register and other key information such as the baseline tool is stored in a shared 'Sustainability Folder' and accessible by the LACM Project Sponsor and Project Owner so folders can be easily relocated if required.

### 7.4 Risk, issues and benefits of individual project management

- All projects and key opportunities will be administered via Individual Project Managers and strategically monitored by the Sustainability & Projects Officer.
- Significant Project Reporting Criteria has been set to provide clear guidance on what projects must be reported to senior management on a regular basis. The corporate criteria for project reporting is that **any** major project that involves resources from more than one Service group, expenditure over £100k, and/or significant change.
- Larger projects will be administered by Project Managers and their Heads of Service.
- Risks and Issues will be highlighted and explored by individual Project Managers and their Head of Service.
- Energy saving benefits delivered by projects and key opportunities will be measured by individual project Managers and collated and reported to Sustainability & Projects Officer and Project Sponsor.
- Sustainability & Projects Officer and Project Sponsor will in turn report benefits to SMT, Portfolio Holder with responsibility for Sustainability, and the wider Council.

## 8 Appendix: Definition of Projects

2016/17	Priority 5 & 8 (project 4)
Description and notes	<b>Lighting upgrades in Leisure World</b> <ul style="list-style-type: none"> <li>• LED Conversion</li> <li>• Zonal and PIR upgrade</li> </ul>
Quantified costs and benefits	<b>Benefits:</b> <ul style="list-style-type: none"> <li>• Better light quality</li> <li>• Less requirement for engaging staff</li> <li>• Financial savings: £ 48,200 per annum</li> <li>• Payback period for LED upgrade is 2 years, and 6 years for the zonal PIR.</li> <li>• CO2 Emissions reduction: [ 259.1 ] tonnes of CO2</li> <li>• 6.40 % of target – the percentage of your CO2 saving target will this project annually contribute</li> </ul> <b>Funding:</b> <ul style="list-style-type: none"> <li>• Project cost, e.g. the initial cost of implementing the project £ 129,700</li> <li>• Operational costs, e.g. annual maintenance or running costs £ 0</li> </ul> <b>Source of funding:</b> <ul style="list-style-type: none"> <li>• Budgeted from council funds 2016/17.</li> </ul>
Resources	<b>To deliver the project:</b> CBH Corporate Facilities Management Team External Contractors Essex Procurement Hub
Ownership and accountability	<b>Project owner:</b> Head of Corporate Facilities CBH  <b>Portfolio Holder:</b> Cllr Cory  <b>Process to get project signed off:</b> <ul style="list-style-type: none"> <li>• Project Sponsor (HoS)</li> <li>• PH</li> <li>• SMT (as LACM Project Board)</li> <li>• Leadership</li> <li>• Cabinet</li> </ul>
Ensuring success	<b>Key success factors:</b> Funding secured <b>Principal risks:</b> Budget cuts that affect funding
Performance / success measure	Electricity usage data supplied by Energy Bureau Service On site monitoring by Technical Manager
Timing	Completion: April 2016

2016/17	Priority 9 (project 5)
Description and notes	<b>Insulate roof of sports hall in Leisure World</b> <ul style="list-style-type: none"> <li>Insulate roof of Leisure World Sports Hall to current building regulation standard.</li> </ul>
Quantified costs and benefits	<b>Benefits:</b> <ul style="list-style-type: none"> <li>Better room temperature and comfort for users</li> <li>Financial savings: £ 1,100 per annum</li> <li>Payback period: [ 7 ] years</li> <li>CO2 Emissions reduction: [ 6.9 ] tonnes of CO2</li> <li>0.20 % of target – the percentage of your CO2 saving target will this project annually contribute</li> </ul> <b>Funding:</b> <ul style="list-style-type: none"> <li>Project cost, e.g. the initial cost of implementing the project £ 7,900</li> </ul> <b>Source of funding:</b> <ul style="list-style-type: none"> <li>Budgeted from council funds 2016/17.</li> </ul>
Resources	<b>To deliver the project:</b> CBH Corporate Facilities Management Team External Contractors Essex Procurement Hub
Ownership and accountability	<b>Project owner:</b> Head of Corporate Facilities CBH  <b>Portfolio Holder:</b> Cllr Cory  <b>Process to get project signed off:</b> <ul style="list-style-type: none"> <li>Project Sponsor (HoS)</li> <li>PH</li> <li>SMT (as LACM Project Board)</li> <li>Leadership</li> <li>Cabinet</li> </ul>
Ensuring success	<b>Key success factors:</b> Funding secured <b>Principal risks:</b> Budget cuts that affect funding
Performance / success measure	Electricity usage data supplied by Energy Bureau Service On site monitoring by Technical Manager
Timing	Completion: April 2016

2017/18	Priority 1 (project 11)
Description and notes	<b>Transfer to LED Stairway lighting in sheltered homes</b> <b>Project Manager:</b> Matt Armstrong <b>Service:</b> CBH Asset Management <b>Description of the project:</b> Replacement to LED light fittings in communal areas of sheltered schemes. This will be carried out as repair/ renewal is required, over time frame of 2016 -2018.
Quantified costs and benefits	<b>Benefits (if known) Using the project register</b> <ul style="list-style-type: none"> <li>Financial savings: £ 15,800 per annum</li> <li>Payback period: [ 0 ] years</li> <li>CO2 Emissions reduction: [ 84.7 ] tonnes of CO2</li> <li>2.10 % of target – the percentage of your CO2 saving target will this project annually contribute</li> </ul> <b>Funding</b> <ul style="list-style-type: none"> <li>Project cost, e.g. the initial cost of implementing the project £7,600</li> <li>Operational costs, e.g. annual maintenance or running costs £0</li> <li>Source of funding: 100% of costs will be met by the Capital Investment Programme</li> </ul>
Resources	<b>To deliver the project:</b> Project delivered using current resources
Ownership and accountability	<b>Project Sponsor:</b> Yvonne Day <b>Project owner:</b> Matt Armstrong <b>Portfolio Holder:</b> Tina Bourne <b>Process to get project signed off:</b> <ul style="list-style-type: none"> <li>SMT (as LACM Project Board)</li> <li>Capital Monitoring Group</li> <li>Project Sponsor</li> <li>Head of Asset Management</li> </ul>
Ensuring success	N/A
Performance / success measure	Electricity usage collected (by scheme) by Smith Bellerby
Timing	<ul style="list-style-type: none"> <li>start date: 2016</li> <li>completion date (when it will deliver savings): 2017</li> <li>interim deliverable / decision points</li> </ul>

2017/18	Priority 17 (project 3a)
Description and notes	<b>Install/ replace a gas boiler &amp; the gym heaters at Leisure World</b> <b>Project Manager:</b> Lee Spalding <b>Service:</b> CBH Corporate Facilities Management <b>Description of the project:</b> To replace gas peak boilers, and install new gas plaque heaters in the gym, both on the Leisure World site.
Quantified costs and benefits	<ul style="list-style-type: none"> <li>• <b>Financial savings:</b> £ 16,000 per annum</li> <li>• <b>Payback period for heaters in gym:</b> 2 years (please note that there is no pay back from installation of gas peak boilers)</li> <li>• <b>CO2 Emissions reduction:</b> 89.9 tonnes of CO2</li> <li>• 2.20 % of target –</li> </ul> <b>Funding</b> <ul style="list-style-type: none"> <li>• <b>Project cost,</b> £189,000 (£170,000 for gas peak boilers + £ 19,000 for gym heaters)</li> </ul> <b>Source of funding:</b> From council budget where not covered by R&R
Resources	<b>To deliver the project:</b> CBH Corporate Facilities Management Team External Contractors Essex Procurement Hub
Ownership and accountability	<b>Project owner:</b> Head of Corporate Facilities CBH <b>Portfolio Holder:</b> Cllr Cory <b>Process to get project signed off:</b> <ul style="list-style-type: none"> <li>• Project Sponsor (HoS)</li> <li>• PH</li> <li>• SMT (as LACM Project Board)</li> <li>• Leadership</li> <li>• Cabinet</li> </ul>
Ensuring success	Funding is key barrier. Council have backed funding of measures to meet 40% target
Performance / success measure	Gas usage data supplied by Energy Bureau Service On site monitoring by Technical Manager
Timing	<ul style="list-style-type: none"> <li>• start date: TBC</li> <li>• completion date (when it will deliver savings): 2017</li> </ul>

2017/18	Priority 3 & 4 (projects 8d and 8c)
Description and notes	<b>Upgrade VSDs</b> <b>Project Manager:</b> Lee Spalding <b>Service:</b> CBH Corporate Facilities Management <b>Description of the project:</b> Put variable speed drives on all pumps and motors at leisure world and town hall
Quantified costs and benefits	<ul style="list-style-type: none"> <li>• <b>Financial savings:</b> £ 16,000 per annum</li> <li>• <b>Payback period for heaters in gym:</b> 2 years</li> <li>• <b>CO2 Emissions reduction:</b> 64.3 tonnes of CO2</li> <li>• <b>0.7 % of target –</b></li> </ul> <b>Funding</b> <ul style="list-style-type: none"> <li>• <b>Project cost,</b> £12,500</li> </ul> <b>Source of funding:</b> From council budget where not covered by R&R
Resources	<b>To deliver the project:</b> CBH Corporate Facilities Management Team External Contractors Essex Procurement Hub
Ownership and accountability	<b>Project owner:</b> Head of Corporate Facilities CBH <b>Portfolio Holder:</b> Cllr Cory <b>Process to get project signed off:</b> <ul style="list-style-type: none"> <li>• Project Sponsor (HoS)</li> <li>• PH</li> <li>• SMT (as LACM Project Board)</li> <li>• Leadership</li> <li>• Cabinet</li> </ul>
Ensuring success	Funding is key barrier. Council have backed funding of measures to meet 40% target
Performance / success measure	Gas usage data supplied by Energy Bureau Service On site monitoring by Technical Manager
Timing	<ul style="list-style-type: none"> <li>• start date: TBC</li> <li>• completion date (when it will deliver savings): 2017</li> </ul>



2016/17	Priority 5 & 8 (project 4)
Description and notes	<b>Lighting upgrades in Leisure World</b> <ul style="list-style-type: none"> <li>• LED Conversion</li> <li>• Zonal and PIR upgrade</li> </ul>
Quantified costs and benefits	<p><b>Benefits:</b></p> <ul style="list-style-type: none"> <li>• Better light quality</li> <li>• Less requirement for engaging staff</li> <li>• Financial savings: £ 48,200 per annum</li> <li>• Payback period for LED upgrade is 2 years, and 6 years for the zonal PIR.</li> <li>• CO2 Emissions reduction: [ 259.1 ] tonnes of CO2</li> <li>• 6.40 % of target – the percentage of your CO2 saving target will this project annually contribute</li> </ul> <p><b>Funding:</b></p> <ul style="list-style-type: none"> <li>• Project cost, e.g. the initial cost of implementing the project £ 129,700</li> <li>• Operational costs, e.g. annual maintenance or running costs £ 0</li> </ul> <p><b>Source of funding:</b></p> <ul style="list-style-type: none"> <li>• Budgeted from council funds 2016/17.</li> </ul>
Resources	<p><b>To deliver the project:</b></p> <p>CBH Corporate Facilities Management Team</p> <p>External Contractors</p> <p>Essex Procurement Hub</p>
Ownership and accountability	<p><b>Project owner:</b> Head of Corporate Facilities CBH</p> <p><b>Portfolio Holder:</b> Cllr Cory</p> <p><b>Process to get project signed off:</b></p> <ul style="list-style-type: none"> <li>• Project Sponsor (HoS)</li> <li>• PH</li> <li>• SMT (as LACM Project Board)</li> <li>• Leadership</li> <li>• Cabinet</li> </ul>
Ensuring success	<p><b>Key success factors:</b></p> <p>Funding secured</p> <p><b>Principal risks:</b></p> <p>Budget cuts that affect funding</p>
Performance / success measure	<p>Electricity usage data supplied by Energy Bureau Service</p> <p>On site monitoring by Technical Manager</p>
Timing	Completion: April 2016

2016/17	Priority 9 (project 5)
Description and notes	<b>Insulate roof of sports hall in Leisure World</b> <ul style="list-style-type: none"> <li>Insulate roof of Leisure World Sports Hall to current building regulation standard.</li> </ul>
Quantified costs and benefits	<b>Benefits:</b> <ul style="list-style-type: none"> <li>Better room temperature and comfort for users</li> <li>Financial savings: £ 1,100 per annum</li> <li>Payback period: [ 7 ] years</li> <li>CO2 Emissions reduction: [ 6.9 ] tonnes of CO2</li> <li>0.20 % of target – the percentage of your CO2 saving target will this project annually contribute</li> </ul> <b>Funding:</b> <ul style="list-style-type: none"> <li>Project cost, e.g. the initial cost of implementing the project £ 7,900</li> </ul> <b>Source of funding:</b> <ul style="list-style-type: none"> <li>Budgeted from council funds 2016/17.</li> </ul>
Resources	<b>To deliver the project:</b> CBH Corporate Facilities Management Team External Contractors Essex Procurement Hub
Ownership and accountability	<b>Project owner:</b> Head of Corporate Facilities CBH  <b>Portfolio Holder:</b> Cllr Cory  <b>Process to get project signed off:</b> <ul style="list-style-type: none"> <li>Project Sponsor (HoS)</li> <li>PH</li> <li>SMT (as LACM Project Board)</li> <li>Leadership</li> <li>Cabinet</li> </ul>
Ensuring success	<b>Key success factors:</b> Funding secured <b>Principal risks:</b> Budget cuts that affect funding
Performance / success measure	Electricity usage data supplied by Energy Bureau Service On site monitoring by Technical Manager
Timing	Completion: April 2016

2017/18	Priority 1 (project 11)
Description and notes	<b>Transfer to LED Stairway lighting in sheltered homes</b> <b>Project Manager:</b> Matt Armstrong <b>Service:</b> CBH Asset Management <b>Description of the project:</b> Replacement to LED light fittings in communal areas of sheltered schemes. This will be carried out as repair/ renewal is required, over time frame of 2016 -2018.
Quantified costs and benefits	<b>Benefits (if known) Using the project register</b> <ul style="list-style-type: none"> <li>Financial savings: £ 15,800 per annum</li> <li>Payback period: [ 0 ] years</li> <li>CO2 Emissions reduction: [ 84.7 ] tonnes of CO2</li> <li>2.10 % of target – the percentage of your CO2 saving target will this project annually contribute</li> </ul> <b>Funding</b> <ul style="list-style-type: none"> <li>Project cost, e.g. the initial cost of implementing the project £7,600</li> <li>Operational costs, e.g. annual maintenance or running costs £0</li> <li>Source of funding: 100% of costs will be met by the Capital Investment Programme</li> </ul>
Resources	<b>To deliver the project:</b> Project delivered using current resources
Ownership and accountability	<b>Project Sponsor:</b> Yvonne Day <b>Project owner:</b> Matt Armstrong <b>Portfolio Holder:</b> Tina Bourne <b>Process to get project signed off:</b> <ul style="list-style-type: none"> <li>SMT (as LACM Project Board)</li> <li>Capital Monitoring Group</li> <li>Project Sponsor</li> <li>Head of Asset Management</li> </ul>
Ensuring success	N/A
Performance / success measure	Electricity useage collected (by scheme) by Smith Bellerby
Timing	<ul style="list-style-type: none"> <li>start date: 2016</li> <li>completion date (when it will deliver savings): 2017</li> <li>interim deliverable / decision points</li> </ul>

2017/18	Priority 17 (project 3a)
Description and notes	<b>Install/ replace a gas boiler &amp; the gym heaters at Leisure World</b> <b>Project Manager:</b> Lee Spalding <b>Service:</b> CBH Corporate Facilities Management <b>Description of the project:</b> To replace gas peak boilers, and install new gas plaque heaters in the gym, both on the Leisure World site.
Quantified costs and benefits	<ul style="list-style-type: none"> <li>• <b>Financial savings:</b> £ 16,000 per annum</li> <li>• <b>Payback period for heaters in gym:</b> 2 years (please note that there is no pay back from installation of gas peak boilers)</li> <li>• <b>CO2 Emissions reduction:</b> 89.9 tonnes of CO2</li> <li>• 2.20 % of target –</li> </ul> <b>Funding</b> <ul style="list-style-type: none"> <li>• <b>Project cost,</b> £189,000 (£170,000 for gas peak boilers + £ 19,000 for gym heaters)</li> </ul> <b>Source of funding:</b> From council budget where not covered by R&R
Resources	<b>To deliver the project:</b> CBH Corporate Facilities Management Team External Contractors Essex Procurement Hub
Ownership and accountability	<b>Project owner:</b> Head of Corporate Facilities CBH <b>Portfolio Holder:</b> Cllr Cory <b>Process to get project signed off:</b> <ul style="list-style-type: none"> <li>• Project Sponsor (HoS)</li> <li>• PH</li> <li>• SMT (as LACM Project Board)</li> <li>• Leadership</li> <li>• Cabinet</li> </ul>
Ensuring success	Funding is key barrier. Council have backed funding of measures to meet 40% target
Performance / success measure	Gas usage data supplied by Energy Bureau Service On site monitoring by Technical Manager
Timing	<ul style="list-style-type: none"> <li>• start date: TBC</li> <li>• completion date (when it will deliver savings): 2017</li> </ul>

2017/18	Priority 3 & 4 (projects 8d and 8c)
Description and notes	<b>Upgrade VSDs</b> <b>Project Manager:</b> Lee Spalding <b>Service:</b> CBH Corporate Facilities Management <b>Description of the project:</b> Put variable speed drives on all pumps and motors at leisure world and town hall
Quantified costs and benefits	<ul style="list-style-type: none"> <li>• <b>Financial savings:</b> £ 16,000 per annum</li> <li>• <b>Payback period for heaters in gym:</b> 2 years</li> <li>• <b>CO2 Emissions reduction:</b> 64.3 tonnes of CO2</li> <li>• <b>0.7 % of target –</b></li> </ul> <b>Funding</b> <ul style="list-style-type: none"> <li>• <b>Project cost,</b> £12,500</li> </ul> <b>Source of funding:</b> From council budget where not covered by R&R
Resources	<b>To deliver the project:</b> CBH Corporate Facilities Management Team External Contractors Essex Procurement Hub
Ownership and accountability	<b>Project owner:</b> Head of Corporate Facilities CBH <b>Portfolio Holder:</b> Cllr Cory <b>Process to get project signed off:</b> <ul style="list-style-type: none"> <li>• Project Sponsor (HoS)</li> <li>• PH</li> <li>• SMT (as LACM Project Board)</li> <li>• Leadership</li> <li>• Cabinet</li> </ul>
Ensuring success	Funding is key barrier. Council have backed funding of measures to meet 40% target
Performance / success measure	Gas usage data supplied by Energy Bureau Service On site monitoring by Technical Manager
Timing	<ul style="list-style-type: none"> <li>• start date: TBC</li> <li>• completion date (when it will deliver savings): 2017</li> </ul>

## 9 Appendix: Evidence Base

### 9.1 National Drivers

#### UK Government Legislation

The Stern review published October 2006, sets the economic scene against which we must measure our Climate Change actions, the report was quite clear that “the cost of inaction will be far higher than tackling climate change now” The Draft Climate change bill has 4 key elements:

#### Gershon Efficiency/Cost Savings

Measures to increase energy efficiency will reduce energy costs, which is particularly important for the future given the predicted increases in energy prices.

#### Energy and fuel costs

Unless we had taken action to reduce energy and fuel consumption dramatically, the Council’s combined energy and fuel bill could have been in the region of £2.2 million by 2012.

Section 3.3 shows the projected energy costs for the “business as usual” model against the “reduced emissions” achieved.

The National Framework of Performance Indicators for Local Authorities is now voluntary, and details of how this influences greenhouse gas emissions is outlined in the Evidence Base for this report.

#### Climate Change Response

The issue of Climate Change continues to grow in importance and is a focus for action in national and regional strategies. There is an increasing expectation for Councils to take action on this issue and the LACM Plan roll out between 2008 - 2012 formed the first part of the Council’s response to Climate Change.

Through refreshment of the Plan in 2014-15 we will be able to forecast future achievements through carbon savings and more accurately calculate how much financial savings can be made to the Council.

Refreshment of the LACM Plan is included in the delivery Plan of the new environmental sustainability strategy and is linked to other key deliverables such as:

- Signing up to LGA Climate Local in September 2015.
- Considering sign up to the Covenant of Mayors in 2016/17 (if appropriate as the scheme has recently changed and needs to be looked at in detail).

#### EU Energy Performance of Buildings Directive (EPBD)

Since April 2008 public buildings over 1000m<sup>2</sup> gross internal floor area have been required to carry a Display Energy Certificate (DEC) and all newly built and leased buildings have been required to have an Energy Performance Certificate (EPC) issued at time of sale or change of tenancy.

As of 9th July 2015 the part of the Directive dealing with DECs has been extended to include all public buildings over 250m<sup>2</sup>. DECs for buildings between 250m<sup>2</sup> and 999m<sup>2</sup> are valid for a period of 10 years pending any significant changes being made to the building. However, DECs for buildings over 1000m<sup>2</sup> still require their DECs to be renewed annually.

Since the introduction of the EPBD the energy performance of our buildings has become very visible to all building users and visitors.

## 9.2 Local Drivers

### 9.2.1 Lessons Learned

The Council recognises the importance of climate change mitigation to limit the magnitude and/or rate of long-term global warming on the borough. Examples of mitigation include switching to low-carbon energy sources in our own buildings and housing stock; reducing energy consumption; reducing car travel and promoting car sharing opportunities.

Carbon management has been a specific focus area for the Council since 2008 and energy management is a priority for Council buildings, services and operations. The Council has now delivered seven years' worth of carbon saving projects which helped us to identify what works and has meant we exceeded our 25% carbon reduction target in 2012.

Since 2012 the Council has used the successful outcomes of the LACM to continuously develop services and projects across the Council that support the wider agenda of cutting carbon and environmental sustainability.

#### Community Leadership

Local Authority Carbon Management is carried out to reduce the impact from the Council's own buildings, services and operations. It is more difficult to capture carbon savings from anything outside of the Council's control. The Council is able to influence partners and suppliers by asking them to follow a good practice; look favourably on green accreditation such as ISO14001; and encourage companies supplying goods and services to conform to a green procurement process. Beyond that we can only lead by example and offer support, CBC's focus for this Plan is therefore:

- To install energy efficiency measures which reduce the amount of energy used by the Council.
- To retrofit owned buildings so that heat is not lost, buildings are easier to control in temperature and those in charge of heating and cooling are trained and manage the systems effectively.
- To monitor and manage the amount of fuel the Council uses through a fleet management system; by recording miles and calculating the most efficient routes the Council can ensure use of minimal amounts of fuel in services such as waste collection.
- To ensure the Council runs a fuel efficient fleet of vehicles, replacing with electric where viable. The fleet is committed to a fleet contract up until 2017 where these factors will be taken into consideration for renewal.
- To look at opportunities for energy generation on Council owned buildings and car parks so to reduce energy costs dramatically in publically used spaces.
- To monitor and manage ICT systems so that they run as efficiently as possible, so include technology that automatically switches to 'power off' if idle, and with screen saving settings.

#### Colchester's Environmental Sustainability Strategy

A new Environmental Sustainability Strategy (ESS) was adopted in January 2015 and will be rolled out until March 2020, a key deliverable of the strategy is the develop a new Carbon Management Plan to run alongside it. There are two strategic priorities for the ESS as follows:

1. **Community Leadership** by reducing the environmental impact of Colchester Borough Council's Buildings, Services and Operations  
Key objectives include:
  - Reducing energy use
  - Supporting our staff to be greener
  - Improving our housing stock.
2. **Building resilient communities** by working with Colchester's Residents, Businesses and Third Sector Organisations. Key Objectives include:
  - Supporting local communities to help them become more resilient to climate change
  - Creating opportunities to reduce energy costs and use in our communities
  - Working to reduce fuel poverty.

The Strategy is a live document that seeks to achieve its aims and objectives through the implementation of a 5 year Delivery Plan.



## Community Engagement

A new community awareness raising campaign is being designed to run alongside the ESS and LACM up to 2020; this is outlined in more detail in the Communications Section

of the LACM Plan. The campaign will fit within a wider Place Marketing Strategy and be underpinned by the ESS. The campaign is designed to address issues outside the scope of the LACM Plan such as reducing waste and encouraging green procurement practices. The online campaign will help residents, businesses and third sector groups to navigate their way to environmental sustainability information.

## Healthy and Comfortable Working Environment

Carbon Management initiatives often include the uplifting of building fabric and services including more efficient insulation, heating, natural ventilation and lighting. These and other energy efficiency measures can create a better working environment and create more comfortable conditions for Council Staff leading to increased productivity

## The National Framework of Performance Indicators for Local Authorities

Colchester Borough Council reports on its Greenhouse Gas emissions using NI 185: Carbon dioxide emissions reduction from local authority operations (which exactly what the LACM Programme is focussed upon).

During 2014/2015 Colchester Borough Council saw an increase in CO<sub>2</sub> emissions of 6,533 compared to 6,313 in 2013/2014. This is due to an overall increase in gas consumption; increased electricity use in specific areas; and changes to the carbon factors that were used to calculate emissions in 2014/15.

The data collected confirms that the Council has continued to reduce energy use in car parks, the cemetery and crematorium and sheltered housing schemes. Most of these sites have had energy efficient measures installed during the delivery of the last LACM 2008-2012, so we are able to confirm that they are having an on-going positive impact.

Increases in energy use are significant in sports pavilions, floodlighting on sports grounds, lighting in public areas such as staircases and public parks. This, although negatively impacting on greenhouse gas emissions, does indicate more residents are using public facilities; that we have reacted to community safety where additional lighting was required in parks and public spaces; and suggests an increased participation in sports as Pavilions have in some cases doubled the amount of energy they are using due to longer opening hours and increased activities by clubs.

Other factors that have contributed to the increase in emissions for 2014/15 include:

- An increased conversion rate from 0.44238 Kg Co<sub>2</sub> in 2013/14 to 0.49426 Kg Co<sub>2</sub> in 2014/15 for electricity use. If the conversion rate had stayed the same for electricity there would have been a reduction in electricity use by 217.35 Kg CO<sub>2</sub>; instead, using the new conversion rate we have an increase of 107.33 Kg Co<sub>2</sub>.
- An increase in the conversion rate for gas from 0.18366 to 0.184557 Kg Co<sub>2</sub> this year. Even if the conversion rate had stayed the same there would have been an increase in consumption.
- Additional buildings under Council ownership have been included, and may play a part in increased gas and electricity use.
- The Council has implemented projects over the last few years to make their own buildings and housing stock more energy efficient. While this contributes to the reduction of fuel poverty it can potentially contribute to increased energy use in shared and communal areas.
- The intensity measurement has increased due to fewer full time members of staff being employed in this period than previous years.

The Council has successfully reduced the impact of staff travel from 49 tonnes of CO<sub>2</sub> in 2013/14 to 45 tonnes of CO<sub>2</sub> in 2014/15. This could be down to more car shares, and efficient travel Planning by staff. Per capita emissions for Colchester residents are being calculated from the baseline year 2008 to 2015. The Council took part in the LACM programme which gave a target to reduce emissions from Council buildings and operations by 25% by 2012. This target was exceeded and the programme effectively ended in 2012/13. The Council are now in the process of developing a new Plan which will support

carbon reduction up to 2020. The development and implementation of a new LACM programme is a result of the adoption of the Council's first Environmental Sustainability Strategy for 2015-2020.

The Head of Commercial Services is responsible for the achievement of the new LACM and the Council's new carbon reduction target of 40% (from baseline) by 2020.

Link to the GHG report <http://www.colchester.gov.uk/greenhousegasreport>

### **Corporate Buildings Energy Policy**

Our first LACM Programme successfully ended in 2012, this highlighted the need for a corporate standard for energy use and management within our buildings. The production and agreement of a standard policy will enable carbon emissions from buildings to be tightly controlled.

### **The Natural Environment:**

In addition to this the Council maintains low carbon areas of green space through the Countryside and Country Parks service to protect and enhance local wildlife; CBC also understands the value of protecting and maintaining trees in the borough as this can work to store carbon and clean the air, it is envisaged that in the future trees will have a more important role to play in improving and stabilising air quality in the borough.

### **Renewable Energy for Council Buildings**

In the LACM 2008-12 the Council investigated the potential for the installation of renewable energy sources to power Council buildings; this included a review of owned buildings, as well as ensuring that any new build or retrofit works incorporated renewable energy elements. This led to a large scale housing stock improvement project. The Council does not have a Planning policy in place that insists on renewable energy, but the Council encourages developers to look at the opportunities available to them for installation of energy efficient homes.

## **10 Appendix: Summary of LACM 2008-2012 and implemented projects**

The completion of the 2008-2012 LACM Plan provided the Council with lots of lessons.

### **What went well:**

- Political and senior management support.
- General awareness and cross council working.
- Progress was effectively monitored.
- Adoption of the LACM Plan 2008-12 and implementation of those key projects from the Plan, including the refurbishment of fitness pool; staff awareness campaign; installation of time control for vending machines; and installation of 'PowerPerfactor' at top electricity usage sites.
- Inclusion of other projects across Council (that were not specifically Planned to be part of LACM) such as Biofuel in refuse fleet, fuel additive in refuse fleet; and refurbishment of public toilets.

### **What didn't go so well:**

- Some projects identified during project identification proved not to be viable, this included use of a snooze button on computers; installation of 'EcoFlow'; and draught sealing of the Town Hall windows.
- Financial savings made had been absorbed by increased energy costs.
- Many projects relied on external or significant internal funding, this meant there were barriers to delivering projects including a heating upgrade at Colchester Castle and upgrades for office lighting.
- There was a lack of external media interest in successes of the project.
- Maintaining momentum with staff awareness and behaviour change.

### **Staff Travel Plans**

Staff Travel Plan objectives were delivered by the end of the last LACM as follows:

- An ongoing programme of staff travel events and information on the Council's Intranet (the "Hub")
- Further improvements to facilities for cyclists and walkers in corporate buildings
- Development of the car share website

- Tax free public transport tickets
- Bus travel discounts

### **Business Travel Review**

All of the travel Plan measures identified in the LACM 2008-12 are in place. A programme of reviews, to look at business travel as part of the overall development of the staff travel Plan, elements that were reviewed included:

- Reduction in total number of car parking spaces
- Car parking spaces provided for a limited number of days per week
- Car parking spaces provided only for registered car sharers
- Taxi contracts and bus use for staff travel within the borough
- Team bus passes
- Pool cars
- Flexible and home working strategy (linked with ICT strategy)

Since 2008 CBC introduced FAXI with regards to car sharing and regularly hold events to promote walking and cycling. These are all detailed and promoted via the staff Hub. This year (2015) our facilities for cyclists/walkers have been improved tremendously at Rowan House and also at Leisure World and Shrub End. We are shortly due to receive cycle work stations which will be fitted at all three locations mentioned.

Implementing these projects has decreased staff business travel by car, and offers more sustainable means of transport for staff. The financial savings made are now utilised for the promotion of more sustainable modes of transport, awareness raising workshops and staff training in areas such as safe cycling to overcome some of the worries and fears such modal shifts may present.

## **11 Appendix: Additional Projects LACM 2016 – 2020**

### **11.1 Fleet Management**

During the lifetime of the LACM there are a number of areas within fleet management that could be addressed, these include but are not limited to the following:

- i. Review of pool car policy.
- ii. Use of more electric/hybrid vehicles where possible.
- iii. Driver training in more efficient/eco driving (will also reduce accident costs).
- iv. Fuel additives such as chemecol.
- v. Increase in level of biofuel from sustainable sources.

The Fleet contract is in place until 2017 so some of these matters for review will not be possible until the Plan is well underway.

### **11.2 Procurement**

A new Procurement Strategy is in place (2015-2017 v3.0) that includes references to the LACM Strategy document. Whole life costing is the recommended practice for all procurements.

Under current legislation, Council Officers must take corporate social responsibility into account when conducting procurement. Responsibility lies with all relevant officers and there is still a degree of culture change required to embed this firmly into practice.

### **11.3 ICT**

There is significant potential to address carbon emissions via the use of ICT and the way it is managed and the policies implemented, these include:-

- Dissemination of software to permit auto shutdown of PC's after being inactive for a specified period.
- Technology to reduce server room footprint and energy requirements.
- Increased use of teleconferencing.
- Increase in online transactions.
- Flexible working.

During I.T. upgrades in 2015 two energy saving outcomes that have occurred:

- 1) The Wyse boxes deployed to most office desktops power themselves off after two hours.
- 2) The monitor screen savings settings were reduced

#### **11.4 Waste Minimisation Plan**

A new waste strategy is being formulated that will re-emphasise the Council's commitment to managing waste. The Council, along with all other waste collection and disposal authorities in Essex are members of the Essex Waste Partnership.

A review of the Joint Municipal Waste Management Strategy for Essex is underway which will ensure it meets new requirements since its adoption 6 years ago, it reflects progress in terms of the waste infrastructure and the levels of recycling performance achieved.

#### **11.5 Indirect savings and R&R**

Depending on the impact of Business as Usual (BAU) it may take longer to complete the 40% target. Action taken to deliver efficient Council Services will mitigate the BAU impact as follows:

- Implementation of Council digital strategies, with more focus on self-serve and getting online, so that as services need to grow to support population growth more customers are accessing Council services in a different way.
- Some services such as waste collection may need to grow but this will all be within the borough of Colchester and efficient route collections are in place to ensure minimal fuel consumption.
- Staff travel only accounts for 1% of Council carbon emissions, this is being looked at to see if there is any further ways of reducing this over the lifetime of the plan.
- Projects within the LACM Plan for delivery in 2018-2020 may be brought forward either due to the need to replace or repair, or from Portfolio Holders bringing specific projects forward for delivery.
- Allocating CBC Officer time to tracking the plans progress, so work can be done to update stakeholders regularly, and amend the plan (if required) to get to target.

## 12 Appendix: Prioritised projects project reference numbers

Each of the prioritised projects have unique reference numbers outlined below

Priority	Ref	Project Description
1	11	LED Stairway lighting in Sheltered Housing
2	3b	Install new gas plaque heaters in gym in Leisure World
3	8d	VSD's on pumps and motors-- Leisure World
4	8c	VSD's on pumps-- Town Hall
5	4a	Lighting upgrade : LED conversion Leisure world
6	7	Pool Covers – Leisure World
7	6c	Heat recovery in AHU Leisure world
8	4b	Zonal and PIR upgrade Leisure World
9	5	Insulate roof of gym in Leisure World
10	6a	Replace ac units in Leisure World
11	6d	Destrat fan for Town Hall
12	6b	Update Fans in Leisure Centre AHUs with EC drives
13	NA	Electric vehicles to replace vehicles run on petrol for short journeys
14	2	Solar PV St Johns Car Park
15	2	Solar PV (279kWp) St Mary's Car Park
16	1	Solar PV (62.5kWp) Rowan House Car Park
17	3a	Replacement of gas peak boilers at Leisure World
18	8a	Town Hall boiler upgrade (gas)
19	8b	Town Hall Boiler Replace with biomass (additional cost)
20	6e	Replace chiller and cooling Plant Town Hall
21	10	Biomass Boiler upgrade at Mile End sports ground (or alternative renewable such as GSHP)
22	NA	Rationalisation of CBH offices