# Local Authority Carbon Management Programme

## Plymouth City Council's
## **Submission Draft (26.03.08)**
## **Strategy and Implementation Plan (SIP)**

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# Approvals

Sign-off, approvals, and document status, in accordance with the Local Authority's normal operating procedure.

Corporate Management Team (PCC) ……Date 25.03.08.
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## Foreword from the Carbon Trust

Cutting carbon emissions as part of the fight against climate change should be a key priority for local authorities - it's all about getting your own house in order and leading by example. The UK government has identified the local authority sector as key to delivering carbon reduction across the UK inline with its Kyoto commitments and the Local Authority Carbon Management programme is designed in response to this. It assists councils in saving money on energy and putting it to good use in other areas, whilst making a positive contribution to the environment by lowering their carbon emissions.

Plymouth City Council was selected in 2007, amidst strong competition, to take part in this ambitious programme. Plymouth City Council partnered with the Carbon Trust on this programme in order to realise vast carbon and cost savings. This Carbon Strategy and Reduction Plan commits the council to a target of reducing CO2 by 20% by 2013 and underpins potential financial savings to the council of around £3 million during that time span.

There are those that can and those that do. Local authorities can contribute significantly to reducing $CO_2$ emissions. The Carbon Trust is very proud to support Plymouth City Council in their ongoing implementation of carbon management.

Richard Rugg
Head of Public Sector, Carbon Trust

## Statements of Support

"Climate change has the potential to fundamentally change the way Plymouth City Council manages its buildings and delivers its services. As a local authority, we need to act now to adapt to this change and to lead by example in doing our bit to tackle global warming and its subsequent impact on everyone's lives.

We also need to ensure that whatever we do is cost effective and within recordable environmental limits. The Council's participation in the Local Authority Carbon Management Programme has given us the tools and the figures with which to manage this change and to assess both the challenge, and opportunities, of reducing our emissions.

This document sets out a welcomed and strategic five year plan that will gradually reduce the Council's carbon footprint and highlight where savings can be made in both £pounds and tonnes of carbon dioxide. It is part of our wider commitment to the nationally recognised Nottingham Declaration on Climate Change and to working in partnership to tackle climate change in Plymouth".

Councillor Michael Leaves,
Portfolio Holder (Streetscene & Environment)
Plymouth City Council.

"As a Council we are required to respond to a range of local and national challenges. A year ago, tackling climate change was one of the challenges identified in Plymouth's Corporate Performance Assessment and the 2007/2010 Corporate Plan. Since then, the challenge has been extended with the introduction of formal performance monitoring and the potential financial impact of the Carbon Reduction Commitment.

The ease with which we measure and monitor our progress as a local authority is often the result of much more than a number-crunching exercise. Nowhere is this more obvious than in the management of Plymouth City Council's carbon footprint and the steps we now plan to take to reduce our emissions by 20% by 2013.

In addition to the recognition of environmental limits and the effective management of resources, the Strategic Implementation Plan offers on-going opportunities to assess costs and save money, meet and respond to new legal and financial obligations and to lead by example as part of a wider partnership and within Plymouth's communities.

We very much welcome the guidance the LACM Programme has provided and look forward to realising our potential as a low carbon council of the future".

Nigel Pitt
Director for Regeneration,
Plymouth City Council

# Executive Summary

- Our aim is to progressively reduce our annual carbon footprint to 20% of the baseline by 2013 with the assistance of a proactively managed, corporate Carbon Reduction Plan.
- 
- Our baseline carbon footprint in 2006/07 was calculated and confirmed as **121,737** tonnes of carbon dioxide.

- The scope of the audit was wide ranging and included buildings (including schools), streetlighting and street furniture, business travel and fleet use, commuting and waste (landfilled and recycled).

- The footprint profile is typical for a large unitary authority but it should be noted that not all local authorities have submitted the detail prepared by Plymouth City Council. Many leave waste and commuting out of the audit due to the significant impact they have on the footprint itself. The profile is assessed using two database toolkits – the 'baseline' which predicts what '**might'** happen and the 'opportunities' which calculates the values of the proposals made.

- To meet our emissions reduction target of 20% by 2013 we would need to remove a minimum of 24,347 tonnes of carbon dioxide from our annual carbon account. The current plan shows that by 2013 we will be removing approximately 18,717 $tCO_2$ (assuming no new projects are added) per annum. This is a shortfall of only 5630 $tCO_2$.

**1.0 The key messages from the Carbon Management Strategic Implementation Plan (LACM SIP) are :**

**The Value at Stake (based on emissions from buildings and fleet management alone)**

- If we do nothing, annual utility and fuel costs within PCC are likely to increase from £3 million to £4.5 million by 2013 and $CO_2$ emissions will rise unchecked.

- If we apply the carbon management programme, we could reduce the total culmulative cost to PCC by a minimum of £4.3 million during the same period of 5 years, enabling a net annual saving of £1,277,000+ to the Council in 2013.

**Verified figures from the LACM Opportunities Toolkit predict :**

- In Year 1 of the SIP immediate savings of a minimum of **£73,352** have been identified from the management of buildings and the fleet.

- Overall, the Plan identifies possible savings of **9708** tonnes of $CO_2$ of which **822+** $tCO_2$* could be saved in Year 1 alone.

- The remaining **8886** $tCO_2$ will be delivered over the stated life span of each project (1 to 25 years).

* Allowing for the stated implementation and delivery times which can be up to 25 years.

- The impact of additional waste recycling will substantially augment these figures. The proposed carbon audit of our waste management function will enable us to fully assess the contribution waste makes to the Council's Carbon Reduction Plan.

- As a benchmark, the 'target investment' for effective $CO_2$ savings, suggested by the Carbon Trust , is quoted as £518/tonne[**]. Put simply, if all the projects suggested for Year 1 were to be delivered in year 1 an investment of £2,522,142 would be recommended. Professional estimates suggest large organisations should be investing 1% of their total budget in managing carbon and tackling climate change if they are to avoid future penalties.

- Identified budgets in 2008/09 (Year 1) support the delivery of 25 of the 26 selected projects. The investment in Year 1 will be **£307,200.**

- Payback periods for this investment vary from 0 years to 8.4 years in the most extreme cases (well within the 25 year life time of some projects).

- Funding of £47K still needs to be identified for a Carbon Management Project Officer. This post is vital for the successful delivery of the SIP. The introduction of assistance from SALIX may assist with this. The Year 1 investment could be matched with a 50/50 grant from this fund.
- Our aim is to be saving 20% of the emissions (from the baseline year of 2006/07) by 2013. Current predictions show that, by 2013, our annual reduction will be 18,717 tCO2 – a shortfall of only 5630.4 tCO2. Our possible progress can be shown as follows :

| Year | CO2 savings per year | Gross £ cost savings | Cumulative gross cost savings |
|---|---|---|---|
| **2008/09** | 822 | 73,352 | 73,352 |
| **2009/10** | 9356 | 510,170 | 583,522 |
| **2010/11** | 11,899 | 669,039 | 1,252,561 |
| **2011/12** | 14,789 | 724,553 | 1,977,115 |
| **2012/13** | 18,717 | 780,068 | 2,757,182 |

From the LACM Opportunities database.

- Potential savings of **21,773.98** $tCO_2$ have already been identified to support this target. The remaining tonnages would need to be found in Years 2 to 5 and could be provided by either the continuation of existing reduction projects or the introduction of new ones.

- Cumulative gross cost savings (energy costs) during this period (2008/2013) could be a minimum of **£2,757,182 per year by 2013.** These are gross cost savings and, at this stage, do not take account of operational costs.

## 2.0 Baselines :

- PCC's emissions baseline (2006/07) was 121,737 tonnes of $CO_2$.

[**] SALIX Finance for the Carbon Trust, 2007.

- The footprint profile highlights waste, staff transport (commuting), buildings and street lighting as key drivers.

- The profile is comparable to that of most large unitary authorities.

- We are now in a position to be able to progressively refine the baseline to give a more accurate picture of annual energy use and carbon emissions. This in turn will benefit reporting of NI 185 (Emissions of $CO_2$ from the LA estate).

## 3.0 Targets :

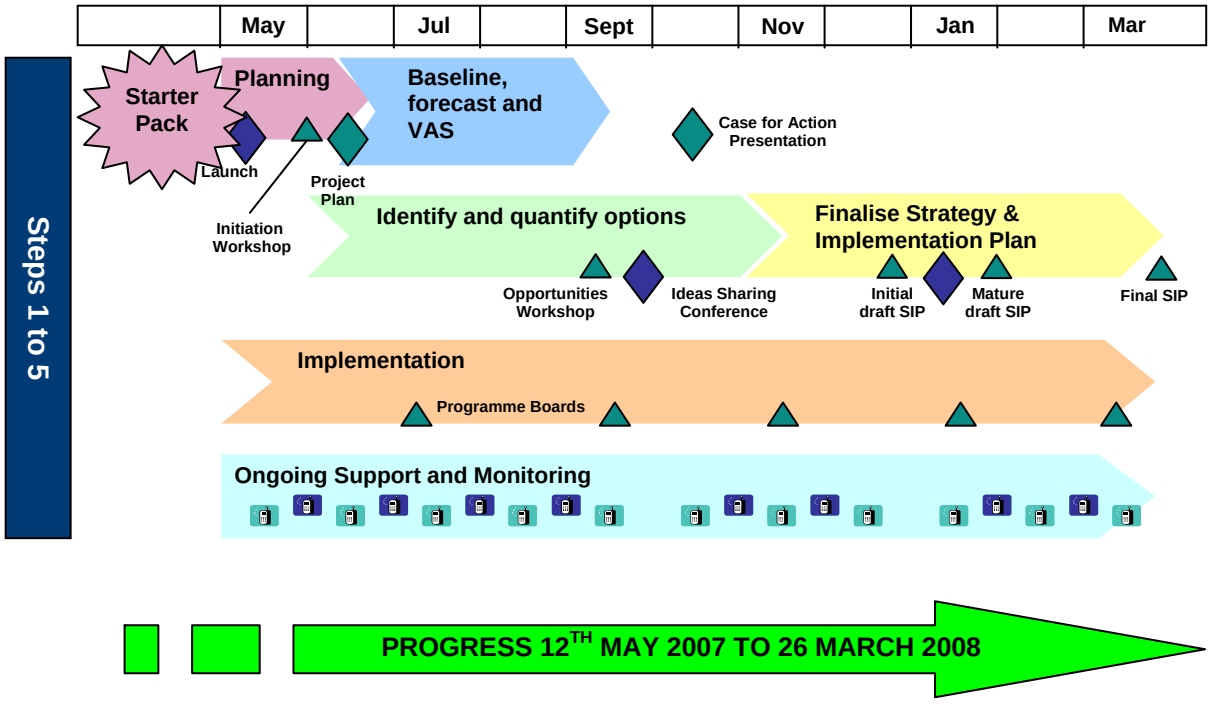
- Suggested targets are "a reduction in emissions from 2006/07 baselines of 20% by 2013 (5 years), 60% by 2020 and 80% by 2050".

- A standard 4% year on year reduction is anticipated from Year 1.

## 4.0 Achievements and Direction of Travel.

- The Council has successfully completed the five stages set out in the LACM Programme within the 10 month time scale allowed.

- The Project Plan adopted in July 07 (see below) has been completed satisfactorily.



## 5.0 Summary of predicted costs and savings at Year 1.

| | | | |
|---|---|---|---|
| **Total Estimated Capital Expenditure in Year 1** | **£ 354,200** | | |
| **Total Annual Cost Savings** | | | |
| | **08/09 savings** | **Cumulative gross cost savings 2009/2013** | |
| **Annual savings (£)** | **£73,352** | **£ 2,757,182** | |
| **Total Annual Carbon Reductions** | | | |
| | **08/09 savings** | **Predicted C reduction 2009/2013 (Opportunities toolkit** | **Identified tonnages to date** |
| **Carbon Reduction (tonnes)** | **822.00** | **Minimum of 55,583** | **21,772.98** |

# 1.0 Introduction

1.0.1 Plymouth City Council is seeking to respond to the challenge of climate change through carbon management and within acknowledged financial and budgetary constraints. Driven by a willingness to plan for future implications and to provide a positive response to issues raised by our Corporate Performance Assessment, the overall aim of this document is to prepare the Council's case for action in the context of financial and legislative planning; with expected gains in both the short and long term.

1.0.2 Plymouth City Council's Corporate Plan 2007/2010 (Section 7.2) committed the Council to the following actions :

- The completion of an 'Action Plan' that enables the City Council to prepare for the impact of climate change and the proposed climate change trading scheme (the Carbon Reduction Commitment).
- Agreed targets for emissions reductions.
- A citywide framework for action on climate change (see 'Targets and Timescales' below)

1.0.3 To meet these 'targets', the Council approached and were accepted by the Carbon Trust's Local Authority Carbon Management Plan – a 10 month, 5 step programme that has systematically audited energy use and provided a baseline, assessed the options and opportunities for reductions in emissions and costs and assisted in preparing the Strategic Implementation Plan set out in this document.

1.0.4 Developed over the last ten months, this document explains the potential effects the implementation of a carbon management programme in terms of the financial considerations and the associated environmental impact this would have on service delivery.

1.0.5 The value at stake (VAS) for Plymouth City Council is likely to rise from approximately £3 million to £4.5million over five years given that annual utility and fuel costs are likely to increase. The VAS is the difference between the predicted energy spend for 2013 continuing business as normal and the predicted energy spend for 2013 following the implementation of a carbon management programme.

1.0.6 Given our baseline footprint of 121,737 tonnes of carbon dioxide in 2006/07, we would need to remove a minimum of 24,347 tonnes of carbon dioxide from our annual carbon account to meet our projected 20% reduction target by 2013.

## 1.1 Targets and Timescales

1.1.1 Plymouth City Council and the city's Local Strategic Partnership are currently leading the development of a citywide framework for action on climate change based on the principles of the Nottingham Declaration and targets suggested by local, regional and national programmes.

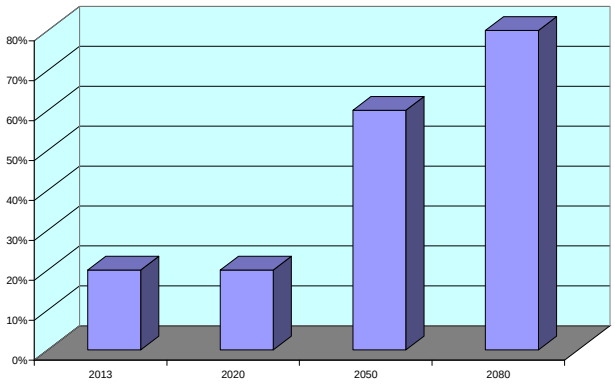
1.1.2 The Framework also reflects Plymouth existing circumstances which, taking DEFRA's 2007 estimates of carbon dioxide emissions in to account, appear to reflect a comparatively low carbon footprint. This evidence was recently supported by research undertaken by the Worldwide Fund for Nature which listed Plymouth as having one of the lowest eco-footprints in the UK. This evidence provide the city with a challenge – how to develop in to the 21st Century within established environmental limits and a low carbon economy.

1.1.3 In addition, the city is mindful of the potential impact of increases in global temperatures. Plymouth is the home of a number of climatic research centres. So, with such easy access to such compelling evidence, targets for emissions reductions have been suggested that would limit change within the 2°C suggested by national campaign organisations.

1.1.4 Subject to approval, the citywide targets for emissions reductions are therefore suggested as :

20% by 2013, 60% by 2020 and 80% by 2050.

1.1.5 Keen to lead by example, the City Council has taken these targets in to account in the development of the LACM SIP and assessed them against existing project proposals and a number of identified opportunities for years 2 to 5. These include a complete review of the carbon footprint of the city's waste management function, a similar assessment of the Council's transport options and, most significant of all, a planned move to a brand new, zero carbon Civic Centre.

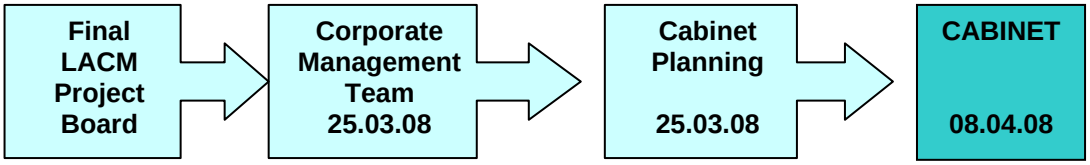



1.1.6 In response the Council's SIP allows for a reduction of 20%+ by 2013 through a rolling programme that will review and revise project opportunities on a yearly basis. The Council's approach is realistic, given existing resource and financial constraints, but optimistic.

## 1.2 Approval and Adoption

1.2.1 The commitment to Plymouth's LACM programme gained initial approval from the Corporate Management Team and Cabinet in May 2007. Progress has subsequently been monitored through the Advisory Group and Project Board with at least one further update to each of the key decision making bodies and further presentations to the Council's Departmental Management Teams and both the Conservative and Labour Groups.

1.2.2 Formal approval of the final Strategic Implementation Plan is being sought through the Council's decision making process and will be completed on 8th April 2008.



## 1.3 Embedding Carbon Management

1.3.1 The completion of the SIP has highlighted the need to embed carbon management in to the day to day delivery of services and the business planning functions of the local authority.

1.3.2 Consultation during the SIP development revealed the need to establish a formal 'carbon management policy' against which managers could justify proposals and decisions. Whilst it may prove difficult to revise the existing policies for Human Resources, IT, Procurement and staff travel, it is possible to encourage a co-ordinated response through a corporate policy on tackling climate change. A central policy would ensure greater awareness and a co-ordinated approach. The action planned to rectify this situation, is set out in Project 4 of the Implementation Plan and is closely linked to the Council's participation in a wider Action Plan for Climate Change.

1.3.3 The development of a robust performance management system against which to monitor progress is also included in Project 3 of the Plan. This process – of review, revise and report – will operate on a quarterly basis with the participation of project managers and responsible officers. An annual review will be conducted against the full document. The outcome of this review will inform responses to the Carbon Trust and the calculations required to respond to NI 185 (Emissions from the Local Authority estate).

1.3.4 Again, it may prove difficult to introduce carbon management responsibilities to existing job descriptions. The role is, however, clearly defined in the job description of the Sustainable Development Co-ordinator who is also the lead officer of the LACM Programme. Subject to final agreement, the main duties and responsibilities of the post of Sustainable Development Co-ordinator includes the following " To co-ordinate the preparation of strategic sustainable development and climate change policy frameworks, strategies, actions plans and programmes – including the City Council's Sustainable Development Policy, Local Authority Carbon Management Action plan and Programme and citywide Climate Change Action Plan."

1.3.5 In addition, Project 13 specifically supports the introduction of the new post of Carbon Reduction Officer – a corporate post dedicated to ensuring the delivery of the SIP and consistent improvement across the Council. In addition, training is to be introduced in staff induction to ensure all new staff are aware of the issues (See Project 6) and, on adoption of the SIP, a set of easy to follow guidelines are to be issued to all staff thus ensuring greater awareness of what is required.

1.3.6 Those members of staff working with the financial implications of carbon management will be offered training on carbon accounting (Project 5) and all members of staff will be encouraged to take more responsibility for energy efficiency and carbon reduction through the introduction of the Carbon Stars programme (Project 1) which will build on the use of existing Carbon Trust promotional literature and posters.

1.3.7 Lastly, contingencies have been allowed for the succession of the role of Lead Officer of the LACM Programme should the need arise. The role will automatically continue through

the Sustainable Development Co-ordinator's post (assuming re-appointment is agreed) and there is every intention of developing the specific role of Carbon Reduction Officer to enable more specific definition. The Plan itself has been constructed in such a way that both Project Officers and Responsible Officers (line managers) have been identified. In the worst case scenario, all that would be required corporately would be the co-ordination of the quarterly and annual returns – a role that could be easily transferred to an appropriate department.

# 2.0 Plymouth City Council's Carbon Management Strategy

## 2.1 Context and drivers

### 2.1.1 Why establish the Local Authority's Carbon Footprint ?

2.1.2 The final months of 2006 provided numerous 'drivers' for action on climate change and the promotion of Plymouth City Council's leadership role in this respect. These drivers can effectively be subdivided in to four key themes :

- Corporate influence,
- External pressures,
- Financial implications,
- Improved Performance Management.

**a. Corporate :** The Corporate Plan 2007/2010 contained three 'targets' for action on climate change under the heading 'prepare for climate change and the proposed climate change trading scheme'. It proposed that, by March 2008, the City Council would have :

- Action plans in place for Climate Change (Corporate)
- Established a citywide framework for climate change (Citywide)
- Agreed targets for emission reductions ($CO_2$)

However, the impetus to take concerted action to deliver these targets was provided by the Corporate Performance Assessment of November 2006 and the resulting Improvement Plan which specifically targeted action on climate change under the heading of 'responding to our global responsibilities'.

By the end of 2007, these corporate influences had been enhanced by an increasing awareness of the potential costs of tackling climate change and by the introduction of new Performance Indicators (see below). In addition, enhanced public interest in local action and, specifically, the decision of the LSP, through the Wealthy Theme Group, to promote action on climate change and a low carbon economy, is a priority reinforced by the City Council's commitment. Increasingly the Council will be challenged to report on the use of resources – including energy. The delivery of this Plan will establish a clear means of managing performance and reporting on outcomes.

**b. External :** In common with every other public body, local authorities are facing the challenge of mounting evidence of the need for change. Supported initially by environmental campaigns, the emphasis grew throughout 2006 and 2007 to include Governmental reviews, national and international campaigns, the outcome of scientific

research and a significant shift in public opinion addressed primarily through the British Press. Peer pressure from local partners and regional bodies and an increasing focus on the inclusion of climate change as a performance management issue (with interest from Government Office South West and the Audit Commission) also contributed to the call for action. The final impacts in 2007 were the publication of the LGA's Climate Change Commission Report and Recommendations for action and the publication of the Pitt Report on Flooding in 2007 and the associated risks posed to local authorities. 2008 began with a visit from Tony Juniper, the Director of Friends of the Earth and a leading campaigner.

The following were amongst the most significant external impacts on Plymouth's decision to take action :

- 'Securing the Future' – sustainable development priority no 4 – climate change and energy.
- Revisions of both EU and UK policy.
- Gershon Savings requirements.
- The Stern Report (Nov 2006) and its predictions for the global economy.
- The Local Government White Paper (Section F) setting out responsibilities for local authorities as leaders.
- The Climate Change Bill – setting out the proposed legislative framework for action
- The requirements of the Carbon Reduction Commitment or 'carbon tax'.
- The LGA Climate Commission's report (Dec 2007) and its recommendations for local government action.
- The Stop Climate Chaos Campaign and the public pressure to act on climate change.
- The UN Intergovernmental Panel on Climate Change reports – Bali 2007 and the evidence it puts forward on global change.
- The extent of climate change research being undertaken here in Plymouth and its significance on the World stage. Plymouth has, for example, at least one Nobel Prize winner in the field of climate change.
- Business and partnership interests in the action being led, or taken, by the City Council.
- Proposed 'Performance Management Indicators'.

Since the introduction of the Programme, even more significant initiatives have been identified as key drivers for action including the forthcoming Carbon Reduction Commitment (carbon tax), energy use certification and the introduction of carbon monitoring in the new Performance Management Indicators for local authorities. Changes in energy pricing over the last year will also have a significant effect.

**c. Financial :** Financial impacts and implications continue to be significant in driving action on climate change and include :

- Cost efficiencies and budget reviews.
- Energy prices, security and budget management – energy prices look set to rise significantly over the five year period of the SIP.
- The drive towards sustainable procurement.
- The potential impact of the Carbon Reduction Commitment – setting out proposals for carbon trading (the carbon tax).
- The costs of adapting to climate change.

- The potential investment opportunities of a low carbon economy.

**d. Performance :** The impact of action on climate change is now extending beyond local authorities. The New Performance Framework for Local Authorities and Local Authority Partnerships sets out a single set of National Indicators against which performance (including that of the LAA) will be judged. It includes three explicit indicators for climate change plus three further linked indicators on fuel poverty, congestion and fold management. The key indicators are :

- NI 185 $CO_2$ reduction from Local Authority operations (PSA 27)
- NI 186 Per capita $CO_2$ emissions in the LA area (PSA 27)
- NI 188 Adapting to climate change

The Government focus, led by DEFRA, is now clearly on tackling climate change at a local level and expecting local authorities to respond. The inclusion of two of the three indicators (186 and 188) in Plymouth's shortlisted targets for the revised Local Area Agreement has been welcomed by GOSW and the Audit Commission. NI no 185 will continue to be supported by the ongoing LACM programme and all three, together with other related indicators from the list, will form the basis for the monitoring of the city's planned Climate Change Action Plan.

Future reporting on the use of resources, in addition to financial budgets, will also be supported by the LACM SIP as it will provide the basis upon which the relationship between energy use and costs and emissions can be assessed.

## 2.2 Vision

**By 2020, Plymouth will be recognised as "one of Europe's finest, most vibrant waterfront cities, where an outstanding quality of life is enjoyed by everyone."**

Securing the future for generations ahead : Plymouth's Sustainable Community Strategy 2007/2020.

2.2.1 Tackling climate change and moving towards a low carbon economy is a key commitment for Plymouth City Council as part of a wider partnership. Under the strategic objective of maintaining a clean and sustainable environment, a measure of success is quoted as " *levels of carbon emissions will compare well with other similar cities*." This reflects Plymouth's notably low carbon footprint (Defra emissions statistics for 2005 published in 2007) and a wider commitment to partnership working to tackle climate change. This partnership commitment was reflected more specifically in commitments made in the Council's Corporate Plan 2007/2010 (in response to the Corporate Performance Improvement Plan).

2.2.2 In response, Plymouth City Council is seeking to respond to the challenge of carbon management within acknowledged financial and budgetary constraints. The overall aim of inclusion in the LACM initiative was (and remains) to prepare the Council's case for action in the context of financial and legislative planning; with expected gains in both in both the short and long term.

2.2.3 In doing so, the Council recognises :

- The potential impact of climate change on the city.

- The need to develop cost effective solutions that benefit both corporate management and service delivery and
- The increasing need for leadership in encouraging citywide action.

2.2.4 The LACM Programme will deliver Section 7.2 of the Corporate Plan 2007/10 :

- An Action Plan that enables the City Council to prepare for the impact of climate change and the proposed climate change trading scheme (Carbon Reduction Commitment)
- A citywide framework for action on climate change.
- Agreed targets for emissions reduction.

2.2.5 The commitment of the City Council supports Plymouth's aims as a 'city of opportunity' where "by 2020, Plymouth will be one of Europe's finest, most vibrant waterfront cities, where an outstanding quality of life is enjoyed by everyone, where all can be healthy, wealthy, safe and wise."

2.2.6 These aims, set out in the Council's Corporate Plan, are, in turn, supported and shared in the Sustainable Community Strategy and Local Economic Strategy 2006/2021 which includes an aspiration for the city "where a genuine commitment to sustainable development reinforces a set of unique environmental assets" and commitments in the Local Development Framework, Local Transport Strategy and a wide variety of service specific plans and strategies.

## 2.3 Objectives and targets

2.3.1 Plymouth's draft citywide Framework for Action on Climate Change is proposing targets that enable the city to maintain its existing carbon footprint whilst encouraging low carbon growth in the local economy and greater levels of social and environmental sustainability.

2.3.2 Targets have been suggested in line with the concerns raised by the IPCC (2007) that the overall global annual mean surface temperature should not exceed 2° C above pre-industrial levels. This target, which was supported by the EU as recently as 23rd January 2008, implies that global greenhouse gas emissions should be reduced to at least 50% below 1990 levels by 2020. The EU has suggested that to achieve this, developed countries should be considering a reduction in emission of 30% by 2020 compared to 1990.

2.3.3 The proposal recognises this recommendation but also takes account of both the challenges and opportunities posed by the development of a low carbon economy. Plymouth is in an excellent position to benefit from this potential but the process or evaluation has only just started. The Leadership of the City Council and its experience of reducing emissions is therefore of great significance. The Council is therefore being recommended to adopt identical targets and the associated challenge of achieving them.

2.3.4 Our targets will be :

***In comparison with agreed baseline levels, to contribute to reducing citywide emissions of greenhouse gases by 20% by 2013, 60% by 2020 and an additional 20% (to 80%) by 2050.***

2.3.5 And

***To lead by example by striving to reduce the Council's corporate emissions by 20% by 2013 through the delivery of the Carbon Management Plan set out in this document.***

## 2.4 Strategy

2.4.1 The LACM Project Plan, formally adopted on 30th July 2007, set out the following strategic priorities for this Programme :

- Delivering commitment no 7.2 in the 2007/2010 Corporate Plan ("prepare for climate change and the proposed climate change trading scheme").
- Achieving a reduction in both the carbon emissions and costs associated with the running of the council's business and services.
- Ensuring a corporate policy mandate for action to reduce the council's carbon footprint
- Providing a strong business case for action to make physical environmental improvements, change behaviour and to implement selected efficiency measures.
- Establishing the council's own carbon footprint as a means of complementing existing and proposed citywide initiatives to identify and limit the impact of climate change.
- Providing leadership and confirming a formal commitment to seek the most appropriate means of encouraging 'carbon neutrality', with the long term aim of establishing a carbon neutral city.
- Embedding the principles of sustainable development in the council's procedures and practice as part of a wider sustainable development framework.

2.4.2 The Programme is expected to deliver the following benefits :

- A means of co-ordinating corporate action against which other plans and strategies can be assessed.
- Enabling the introduction of carbon accounting and the commitment to carbon reduction as a means of assessing performance management.
- Delivering section 7.2 of the Corporate Plan 2007/2010.
- Identifying, clarifying and enabling financial savings.
- Reducing the emissions under the direct control of Plymouth City Council and, in so doing, leading by example in reducing Plymouth's impact on climate change.
- Embedding the principles of sustainable development and the impact of carbon accounting in the council's procedures and practice as part of :
- The delivery of the Corporate Plan 2007/10 (and subsequent updates) and the Budget and Policy Framework.
- The delivery of the Sustainable Community Strategy and associated corporate plans and strategies (including the LAA)

- Improvements to service planning and delivery.

2.4.3 Following development of the Programme, the following strategic aims have emerged :

2.4.4 Plymouth City Council recognises that action to tackle climate change and the reduction of carbon emissions will contribute significantly to the delivery of a more sustainable city.

2.4.5 The Council, in partnership, will :

- Acknowledge action on climate change as a key factor in the delivery of the Sustainable Community Strategy and other key plans and strategies.
- Support and deliver a low carbon economy.
- Support and deliver the Citywide Framework on Climate Change.

2.4.6 The Council will lead by example in :

- Establishing, adopting and promoting a robust policy for action on climate change.
- Setting and delivery on robust targets for emission reductions.
- Establishing and sharing best practice methodologies in a range of services, departments, themes and circumstances.
- Reducing costs, energy use and emissions and securing a corporate approach to carbon management.
- Advising others on the implications of climate change and the benefits of carbon management.
- Raising awareness and promoting engagement in local action.
- Enabling local action and encouraging responsibility.
- Investing now to reduce costs in the future.
- Improving communication and co-ordination.
- Reducing risks and safeguarding the health and well being of local communities.
- Clarifying information and acting as a hub for support, advice and research.
- Reporting, monitoring, progressing and improving.

# 3.0 Emissions Baseline and Projections

## 3.1 Scope - Emissions Baseline and Forecast.

### 3.1.1 Methodology

3.1.2 The method used to develop the emissions baseline was the Carbon Trust's Baseline Toolkit (Phase 5). This method was chosen as it provided a cost effective and time efficient means of calculating the baseline in terms of $CO_2$ emissions and costs. It also provided development support from the Carbon Trust via Carbon Insight's consultants and the opportunity to benchmark outcomes with 145 comparable local authorities and agencies across the UK.

3.1.3 With the current volatility of the utility market it was decided to use the prediction methodologies provided with the toolkit although extensive information, available through Asset Management's energy monitoring initiative, was available for comparison. As the

Council enters in to new supply agreements and other contracts, changes to energy costs will be entered in to the calculations to provide up to date assessments for consideration.

### 3.1.4 Scope

3.1.5 Electricity and gas consumption, fuel and/or mileage figures and recorded tonnages were used (as appropriate) to provide the baseline calculation. The following were considered to be the most directly implicated costs for the baseline year.

#### 3.1.6 Direct emissions included :

- ☐ Buildings (details were drawn from the 2006/07 audit of energy use undertaken by consultants for the City Council. The list includes key administrative centres ( the Civic Centre, Windsor House and the Guildhall), leisure centres, museum buildings (including Smeaton's Tower lighthouse) and main leisure pools at the Mayflower Centre, community and outreach buildings and local depots.
- ☐ Crematoria (Weston Mill and Efford's cremators)
- ☐ Schools (87 schools from the primary, junior and secondary sectors – although it was noted that two key secondary schools were omitted.
- ☐ Street lighting
- ☐ Signs and bollards
- ☐ CCTV (City Centre)
- ☐ Traffic signals
- ☐ Fleet fuel usage (based on the two most significant depots at Prince Rock'(waste management/highways) and Outland Road (Parks).
- ☐ Known business mileage (calculated from mileage claims made)
- ☐ Commuting (calculated from 2001 Census figures and employee numbers)

#### 3.1.7 Indirect emissions included :

- ☐ The tonnages of waste landfilled and recycled were also considered as these activities contribute significantly to the carbon footprint of the local authority.

#### 3.1.8 Indirect emissions excluded.

- ☐ An estimated figure for the carbon footprint of social housing (provided by Powergen and amounting to approximately 3.2 tonnes $CO_2$ per household) was discounted as the Council is not directly responsible for the payment of tenants energy bills. A further study looking at the implications for landlord costs (communal lighting etc) will be required before this figure is included.
- ☐ Any emissions related to the provision of methane generated electricity at Chelson Meadow as this is currently contracted out. This will be reviewed in Year 1 together with implications arising from newly applied waste management policies and practice..

3.1.9 A decision was taken to develop and implement the carbon management programme based upon auditable data but, from the outset, the LACM team sought to create the most comprehensive baseline possible. This approach was taken in response to the introduction of

the Carbon Reduction Commitment and a recognised need to be able to plan for future carbon accounting requirements. Any gaps in the data are explained and will be taken account of in the final assessment. This approach also enabled the identification of actions required to improve the baseline in Year 1 of the final Strategic Implementation Plan. The Council will continue to develop ways in which additional data can be verified and included through a robust Review and Revise process.

3.1.10 The inclusion of substantial figures for waste and commuting in Plymouth's emission baseline is driven by local factors and priorities.

**3.1.11 Commuting :** Evidence from the draft Low Carbon Business Plan revealed that Plymouth City Council is served by a substantial 'travel to work area'. This was supported by Census 2001 data revealing an average commute of 13 km one way which, in turn, is explained by the city's location and topography. A commitment has been made to develop the Low Carbon Business Travel plan and to extend this to fuel use monitoring and fleet replacements within the next two years however details have yet to be agreed.

**3.1.12 Waste Management :** The closure of Plymouth's landfill site at Chelson Meadow continues to provide a challenge for the City Council. Initially, the Council's footprint will be increased as municipal waste is being transferred to Liskeard in Cornwall. This seven year contract will span the lifetime of the SIP. In order to reduce this burden, there are plans to increase recycling rates and, in due course, to introduce a waste to energy plant. The improved recycling rates have been included in the SIP at this stage with a view to further discussion before adoption.

## 3.2 The Baseline

### 3.2.1 Baseline Year

3.2.2 The baseline year chosen by Plymouth City Council was 1st April 2006 to 31st March 2007. Data collection within these parameters was possible in all but one case.

3.2.3 Comparable data for schools was only available for either Jan 2006 to September 2006 or Jan 2007 to 2007. In this respect the most recent records were included.

### 3.2.4 Calculated Emissions :

3.2.5 The following emissions were calculated using the Carbon Trust BaselineToolkit :

**Table 1 : Calculated Emissions (Baseline)**

| **BASELINE YEAR 2006/07 ENERGY USE** | **MEASURES** Electricity/Gas/Tonnage/Kms or Litres | **TONNES $CO_2$** |
|---|---|---|
| Buildings | Electricity 8,521 MWh<br>Gas 14,591 MWh | 6436 |
| Crematoria (Weston Mill & Efford) | Electricity 98.307 MWh<br>Gas 526.511 MWh | 149 |
| Waste (landfilled) | 104,305 tonnes | 46,624 |
| Waste (recycled) | 49,816 tonnes | 22,268 |
| Street lights | Electricity 14,538 MWh | 6252 |
| Signs and bollards | Electricity 972 MWh | 418 |
| CCTV (City Centre) | Electricity 17 MWh | 7 |
| Traffic signals | Electricity 1,009 MWh | 434 |
| Fleet (Prince Rock) | 1,040,000 litres (diesel) | 2735 |
| Fleet (Outland Road) | 60,000 litres (diesel) | 158 |
| Business mileage (known) | 4,724,530 kms/year | 997 |
| Schools | Electricity 6823.447 MWh<br>Gas 12423.227 MWh | 5295 |
| Commuting (verified estimate) | 78,851,700 kms/year | 29,964 |
| **Totals** | | **121,737** |

Notes on Data Sources :

1. Figures recorded by Asset Management (PCC) and assessed via retained energy consultants.
2. Figures recorded by Cemeteries & Crematoria Services, ERS for PCC. Supply to offices recorded separately. Gas units converted using British Gas conversion factor of x1.0226400 (volume conversion factor)x 39.1052 (calorific value factor) divided by 3.6 (KWh conversion factor).

4 & 5. Figures recorded by Waste Management at PCC for Best Value and DEFRA returns.

6,7,

8 & 9. Figures recorded by Transport, Infrastructure & Engineering for PCC.

10. Figures recorded for Fleet Management, Prince Rock Depot, PCC (based on fuel used for all vehicles within Prince Rock Fleet).
11. Figures recorded by her and ISD Teams for PCC. NB Known figures are based only on claims made. Please note a substantial amount of travelling undertaken for the Council is not claimed.
12. Proxy figures taken from Powergen report 2006/07. Notional CO2 figures based on a level 0 SAP rating rather than energy consumption. Data for landlord supplies (lifts, communal lighting etc) will need to be assessed.
13 Consultant derived figures based on consumption of gas and electricity in kWh for 9 month period Jan 07 to Sept 07. Covers 87 schools in all sectors plus tuition services. NB Two secondary schools omitted (Devonport High School for Boys and St Boniface RC School).
14 Based on Census figures (KS15 of 2001 Travel to work) giving average commute of 13.83km door to door. This is doubled to give full commuting kms. No of employees based on given no of 18100 less 20% allowed for those using other forms of transport and less a further 10% for part time workers. Assumes 5 days a week for 45 weeks a year. Employees given at 12,670 fte. Total km per year 78,851,700. Daily km equivalent to 350,452 - the moon is only 385,000 km away!

### 3.2.6 Compilation of Baseline Data

3.2.7 The data used to compile the carbon baseline was obtained from a variety of verifiable sources across the Council. In the majority of cases it is based on actual energy invoices, meter readings or formal returns. Action is planned to consolidate this

3.2.8 Using the baseline spreadsheet, these figures have been manipulated to provide a number of visual representations. Within an emissions footprint, waste and commuting dominate the figures due to their high emission factors. To give a true estimate of the impact of emissions on the City Council three graphs have been produced. The first shows the distribution of emissions taking all the sectors in to account. The second shows the impact of staff commuting once the waste figures have been disregarded and the third shows the emissions scenario once both waste and commuting have been disregarded.

**Table 2 : Plymouth City Council's Carbon Footprint (including waste and commuting data)**

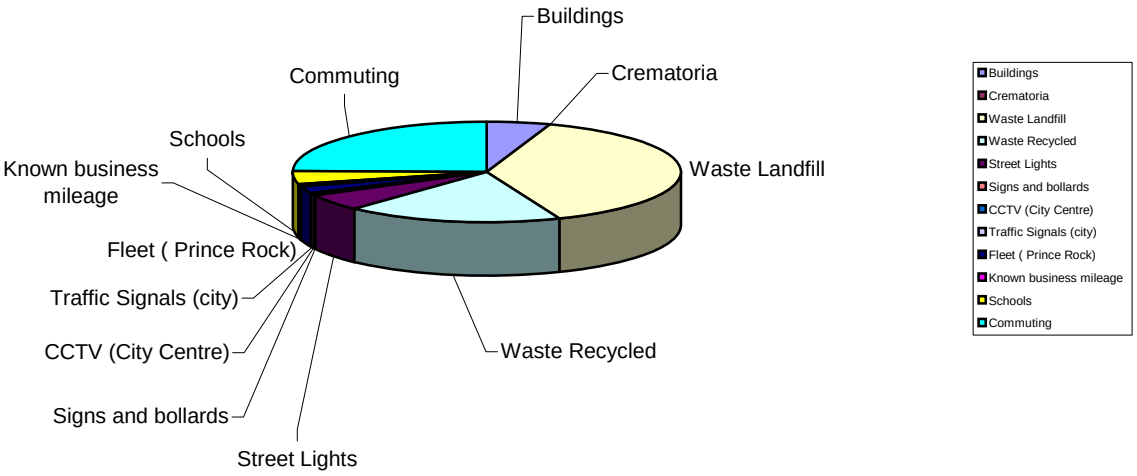



**Table 3 : Plymouth City Council's  Carbon Footprint (less waste data)**

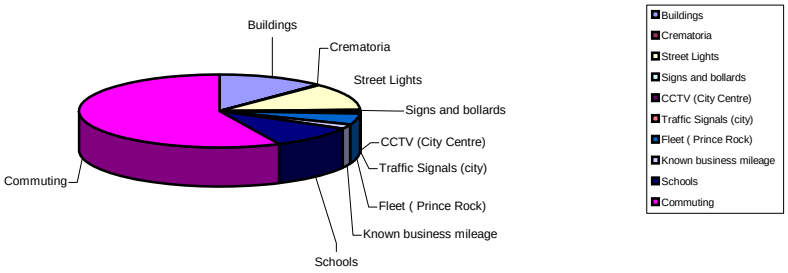
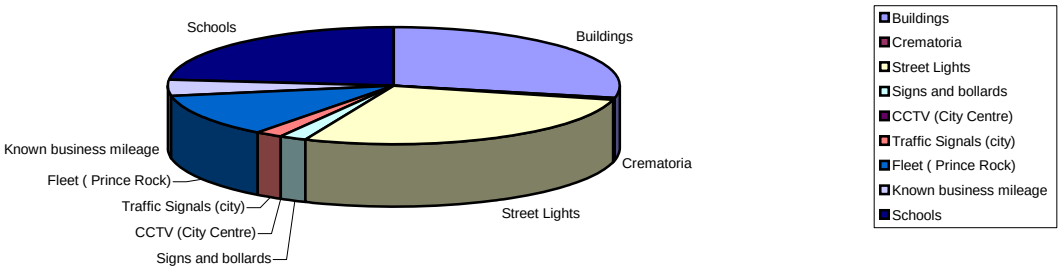



**Table 4 : Plymouth City Council's  Carbon Footprint (less waste and commuting data)**

Graphs are currently being reconfigured to allow for larger text and a consistent approach.




### 3.2.9 Data Management :

3.2.10 The collection of data to support the Carbon Management process was initially difficult as, although consultants had been engaged to provided energy use data for Council buildings, much of the related information was only available from individual officers and/or departments. The data is considered to be accurate enough to provide the baseline but some discrepancies, linked to the need for automated information recording, have been identified and will be addressed during Year 1 of the SIP.
3.2.11 The section on Performance Management included in the SIP sets out proposals to consolidate this function – therefore eliminating discrepancies and avoiding the danger of staff changes interrupting continuity. Improved communication and the management of this information using a central database will also assist this process in future. The decision to improve such continuity has been prompted by the inclusion of the LA's emissions as an indicator in the new list of Performance Indicators for Local Authorities and Local Partnerships.

3.2.12 An annual 'Review and Revise' programme will include a review of the data available with plans in Year 1 to consolidate the information and confirm both sources and accuracy. This process will also include a review of the scope of the baseline and support the insertion of previously unavailable information – such as the introduction of renewables.

## 3.3 Projections

### 3.3.1 Comparing 'Business-as-Usual' projections and the impact of a Carbon Reduction Plan.

3.3.2 The LACM toolkit enables local authorities to predict the impact of proposed carbon management plans in comparison with 'business as usual' scenarios in each case. The

energy data given in the baseline is used to predict projections for both costs and emissions. This is then referred to as the Value at Stake.

3.3.3 For Plymouth City Council the Value at Stake based on buildings and fleet travel alone, and calculated as the difference between the predicted energy spend to 2012/13 continuing business as usual and the predicted energy spend to 2012/13 following the implementation of a carbon management programme, was calculated as **£4,312, 000** and was complemented by a predicted reduction in $CO_2$ emissions. If applied in full, this would result in a net annual saving of **£1,277,000** to the Council in 2013.

3.3.4 The Business as Usual (BAU) Scenario : The chart below shows the predicted effect on the Authority's energy costs if no action is taken to control emissions. These figures allow for increases in both costs and consumption over the 5 year period of the SIP but not for the introduction of any form of carbon taxation or unexpected price rises beyond the baseline norm.

3.3.5 It shows potential increases in energy costs from just over £3million in the baseline year to just under £4.5 million in Year 5 of the SIP.

**Table 5 : Energy related costs (£,000) : Business as Usual Scenario.**

| | Baseline | | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 |
|---|---|---|---|---|---|---|---|
| | 2006/07 | 2007/08 | 2008/09 | 2009/10 | 2010/11 | 2011/12 | 2012/13 |
| **Electricity** | 772.12 | 804.73 | 838.73 | 874.16 | 911.09 | 949.58 | 989.69 |
| **Gas** | 275.77 | 287.42 | 299.56 | 312.22 | 325.41 | 339.15 | 353.48 |
| **Diesel** | | 1,055.70 | 1,113.39 | 1,174.24 | 1,238.41 | 1,306.09 | 1,377.46 |
| **Fleet km** | - | - | - | - | - | - | - |
| **Business Travel** | | 1,096.20 | 1,156.10 | 1,219.28 | 1,285.91 | 1,356.18 | 1,430.30 |
| **Streetlighting** | - | - | - | - | - | - | - |
| **CCL** | 137.23 | 140.96 | 144.78 | 148.71 | 152.75 | 156.89 | 161.15 |
| **Total** | **3,226** | **3,385** | **3,553** | **3,729** | **3,914** | **4,108** | **4,312** |

3.3.6 In comparison the following chart shows the effect on both costs and CO2 emissions if a carbon management programme were to be implemented. The predictions are based on the adopted reduction target of 20% by 2013.

3.3.7 Allowing for the implementation of the SIP, predicted cost savings of just over £3million were anticipated together with savings of 23,390 tonnes of carbon dioxide.

**Table 6 : Energy related costs (£'000): Reduced emissions scenario**

| | Baseline | | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 |
|---|---|---|---|---|---|---|---|
| | 2006/07 | 2007/08 | 2008/09 | 2009/10 | 2010/11 | 2011/12 | 2012/13 |
| **Electricity** | 772.12 | 764.30 | 756.56 | 748.90 | 741.31 | 733.81 | 726.38 |
| **Gas** | 275.77 | 272.98 | 270.21 | 267.48 | 264.77 | 262.09 | 259.43 |
| **Diesel** | | 991.82 | 982.73 | 973.72 | 964.79 | 955.94 | 947.17 |
| **Fleet km** | - | - | - | - | - | - | - |
| **Business Travel** | | 1,029.87 | 1,020.42 | 1,011.07 | 1,001.79 | 992.61 | 983.51 |
| **Streetlighting** | - | - | - | - | - | - | - |
| **CCL** | 137.23 | 133.87 | 130.60 | 127.40 | 124.28 | 121.24 | 118.28 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Total** | **3,226** | **3,193** | **3,161** | **3,129** | **3,097** | **3,066** | **3,035** |

The impact of these predictions is reflected in Tables 7 (the Value at Stake) and 8 (the carbon savings).

**Table 7 : Energy related costs (£'000): Value-at-Stake costs**

| | 2006/07 | 2007/08 | 2008/09 | 2009/10 | 2010/11 | 2011/12 | 2012/13 |
|---|---|---|---|---|---|---|---|
| **Total BAU** | 3,226 | 3,385 | 3,553 | 3,729 | 3,914 | 4,108 | 4,312 |
| **Total RES** | 3,226 | 3,193 | 3,161 | 3,129 | 3,097 | 3,066 | 3,035 |
| **VAS per year** | **0** | **192** | **392** | **600** | **817** | **1,042** | **1,277** |
| **VAS aggregated savings** | | | 584 | 1,184 | 2,001 | 3,043 | 4,320 |

3.3.8 More importantly, the Value at Stake gives a value for the tonnage of emissions reduced – a key element of the future evaluation of local authority performance and the basis for the calculation of the proposed Carbon Reduction Commitment. No revisions were made to the projections following the Opportunities process but it should be noted that these predictions are based solely on the management of the Council's buildings and fleet.

**Table 8 : Energy related carbon (tC02): Value-at-Stake**

| | 2006/07 | 2007/08 | 2008/09 | 2009/10 | 2010/11 | 2011/12 | 2012/13 |
|---|---|---|---|---|---|---|---|
| **Total BAU** | 22,439 | 22,639 | 22,841 | 23,045 | 23,252 | 23,460 | 23,671 |
| **Total RES** | 22,439 | 21,461 | 20,525 | 19,630 | 18,774 | 17,956 | 17,173 |
| **VAS per year** | **0** | **1,178** | **2,316** | **3,415** | **4,477** | **5,505** | **6,499** |
| **VAS aggregated savings** | | | **3,494** | **6,909** | **11,387** | **16,891** | **23,390** |

3.3.9 Graphically, the value of employing a carbon reduction plan becomes more obvious when the value at stake is plotted for both the business as usual and reduced emission scenarios. See tables 9 and 10 below.

**Table 9 : Graphical representation of the predicted Value at Stake.**

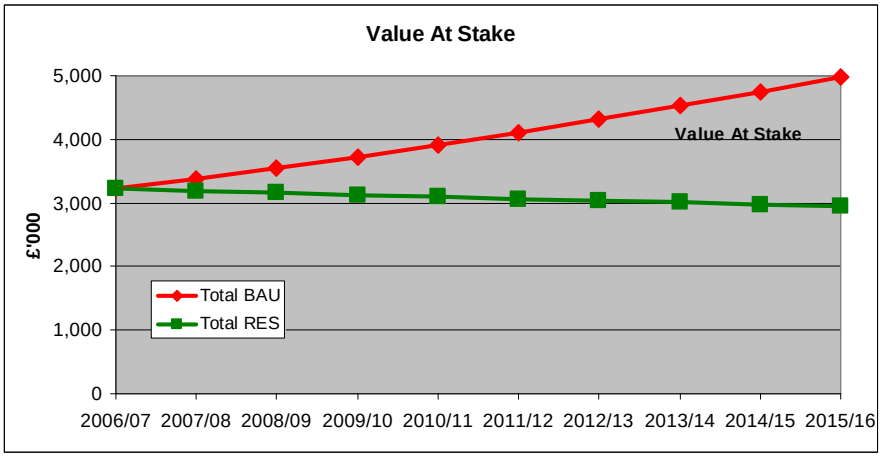
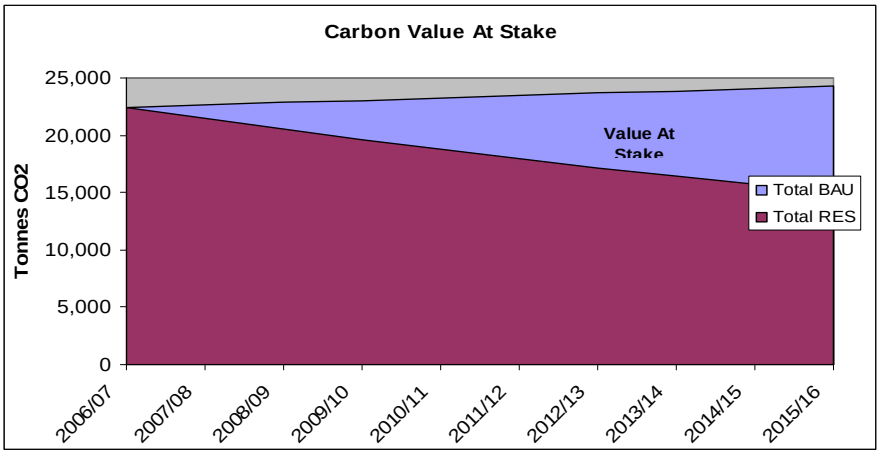


**Table 10 : Graphical representation of the predicted carbon savings.**




### 3.3.10 Using Carbon Reduction Scenarios to determine our targets :

3.3.11 Once the baseline predictions were calculated, a series of possible targets for Plymouth's SIP were compared for their suitability. The time scale was revised to identify five years between 2008/09 and 2012/13. Given the Council's circumstances, Scenario 1 (20% by 2013) was identified as the most feasible of these scenarios.

| **Scenario** | **1** | **2** | **3** | **4** | **5** |
|---|---|---|---|---|---|
| **Year/Target** | **20% by 2011/12** | **30% by 2011/12** | **40% by 2011/12** | **20% by 2020** | **60% by 2020** |
| **Total % reduction** | 20 | 30 | 40 | 20 | 60 |
| **Years (from Year 1 of 2006/07)** | 5 | 5 | 5 | 13 | 13 |
| **Year on year reduction** | 4.36% | 6.89% | 9.71% | 1.7% | 6.81% |
| **Total VAS by target date** | £2,987,539 | £4,156,066 | £5,368,600 | £1,665,088 | £4,122,305 |
| **Total VAS in target year** | £1,023,112 | £1,401,167 | £1,776,815 | £580,071 | £1,389,825 |
| **Estimated $CO_2$ savings (tonnes)** | From 1101 in Yr 1 to 5386 in Yr 5 | From 1665 in Yr 1 to 7623 in Yr 5 | From 2293 in Yr 1 to 9845 in Yr 5 | From 509 in Yr 1 to 2765 in Yr 13 | From 1647 in Yr 1 to 7556 in Yr 13 |

3.3.12 These were then compared against regional and national targets and recommendations for best practice to assess the best possible target scenario for Plymouth.

3.3.13 Once established. the predictions provided by the Baseline Toolkit were used to advise the development of the Council's carbon reduction plan. The figures were used as guidelines against which actual calculations (provided by the second Opportunities Toolkit) could be compared.

## 3.4 Past Actions and Achievements - Acting on Climate Change

3.4.1 The LACM Programme has enabled the Council to consolidate action on both carbon management and its approach to action on climate change Co-ordinated action was limited and relatively unco-ordinated until November 2006 but some, notable, successes had been recorded. These include :

- The determination of climate change as a community priority in Plymouth's Local Agenda 21 Plan.
- The City Council's response to the introduction of the Home Energy Conservation Act, the appointment , by the Housing Department, of a HECA Officer and the application of associated grant and energy efficiency awareness programmes - http://www.plymouth.gov.uk/homepage/housing/energy.htm
- The Council's commitment to the Nottingham Declaration – signed originally in 2005 and with reaffirmation of this commitment due in February 2008. http://www.energysavingtrust.org.uk/housingbuildings/localauthorities/NottinghamDeclaration/
- The Council's commitment to the Devon, Plymouth and Torbay Declaration on Climate Change and Fuel Poverty (2005) – a sub regional commitment prompted by local support for the Devon Sustainable Energy Network. http://www.dsen.org.uk/
- The Council's commitment to the development of regional strategies and, in particular, the capacity to develop renewable energy. http://www.oursouthwest.com/revision2010/ and http://www.oursouthwest.com/revision2020/
- The development, in partnership, of a review of the local implications of climate change – http://www.plymouth.gov.uk/climate_change.pdf
- The development, with the Environment & Sustainability Partnership, of two briefings on the benefits of working towards a low carbon economy http://www.plymouth.gov.uk/briefing_one_-_climate_change_4web.pdf and http://www.plymouth.gov.uk/briefing_two_-_climate_change_4web.pdf
- The publication of a broader application of climate change implications in Plymouth's Ecofootprint - http://www.plymouth.gov.uk/ecofootprint.pdf
- The development of Plymouth's Sustainable Community Strategy and its associated appendices and indicators - http://www.plymouth.gov.uk/homepage/communityandliving/plymouth2020/lspcurrentdocuments/lspsustainablecommunitystrategy.htm
- And, supporting all of the above, the Core Strategy of Plymouth's Local Development Framework

http://www.plymouth.gov.uk/homepage/environmentandplanning/planning/planningpolicy/ldf/ldfcorestrategy.htm

- And http://www.plymouth.gov.uk/homepage/environmentandplanning/planning/planningpolicy/ldf/ldfbackgroundreports/renewableenergystudy.htm
- Advice on climate change, zero carbon building and other carbon management opportunities and targets will be released in a Supplementary Planning Document later in 2008.
- Additional documents, such as the Council's Sustainable Procurement Strategy (http://www.plymouth.gov.uk/sustainable_procurement_strategy.pdf ) will also be used to guide the progressive implementation of energy efficient and low carbon options.

### 3.4.2 Tackling Change and Delivering a more Co-ordinated Approach

3.4.3 In response to questions arising from the Corporate Performance Assessment in Nov 2006, action on climate change was included in the CPA Improvement Plan 2006/07. Since then, the increased emphasis on tackling climate change at the UK Government level has been reflected in increasing levels of commitment from the Council. Specific actions on climate change were included in the 2007/2010 Corporate Plan. These prompted :

- ☐ The development of a corporate action plan to reduce PCC's emissions (the LACM SIP)
- ☐ Agreement on targets (currently proposed as 20% by 2013, 60% by 2020 and 80% by 2050 – in line with both Governmental and campaign recommendations)
- ☐ The development of a citywide framework on climate change – allowing the City Council to lead by example, this framework will be strongly influenced by the Local Strategic Partnership's Wealthy Theme group. In due course, all four partnership theme groups (Healthy, Wealthy, Safe and Strong and Wise) will be encouraged to endorse and adopt the Framework and, both collectively and individually, to contribute to a citywide action plan to tackle, mitigate and adapt to climate change.

3.4.4 From 2008 onwards, climate change will provide a key delivery mechanism for a more sustainable city through the City Council's Corporate Plan, the Sustainable Community Strategy and separate actions on climate change identified through research for the Framework. Three key themes have already emerged from this process – which is ongoing :

- ☐ **Economic prosperity** - developing a low carbon economy, staying within a low carbon footprint and tackling financial risks.
- ☐ **Environmental protection** – specifically flood risk management, resource management and biodiversity.
- ☐ **Social cohesion** – tackling fuel poverty, the health impacts of climate change, deprivation and community engagement in local and global action.

## 4.1 The Carbon Management Implementation Plan 2008/2013.

### 4.1.1 Project Implementation Plan 2008/2013 – actions and emission reduction opportunities.

4.1.2 Following extensive consultation, and working within a constrained financial remit, the following Project Implementation Plan has been drawn up to reflect a commitment to actions identified for 2008/09 and under development for 2009 onwards.

4.1.3 Plymouth's circumstances have revealed significant opportunities for future projects – including actions relating to waste management, low carbon travel, improved service planning and the embedding of carbon management in to the Council's budget planning process. These major management opportunities are in addition to the energy management option (including the development of a new Civic Centre) included in the long term plans for Asset Management.

4.1.4 The list also reflects a realistic financial commitment that will be reviewed year on year as benefits begin to accrue.

4.1.5 Lastly, named officers have been identified in terms of line management/accountability (top line) and project delivery (bottom line). Each manager in this list will be required to 'sign off' their respective projects as part of the Review, Revise and Report process planned as a means of maintaining the emphasis on carbon management.

4.1.6 The % contribution to the Yearly target has been calculated to provide a means of expressing the value of projects to the programme. At this stage 'payback' periods have not been included in the assessment. This will also be reviewed as Year 1 progresses.

### 4.2 Implementation Plan Summary.

| Project | Delivery/ Impact time (in years) | Responsible Officer(s) | Identified Implementation Costs (£) | Total CO2 Savings In tCO2 | Predicted Gross Cost savings In £ | Predicted payback period |
|---|---|---|---|---|---|---|
| **Management of Programme, Awareness, Audit & Review.** | | | | | | |
| 1. Carbon Stars Awareness Campaign | 5 | Giles Perritt Jackie Young | 500 | 352 | 31,437 | 0 |
| 2. Who will save us schools awareness programme | 1 | Giles Perritt Jackie Young | 500 | 352 | 31,437 | 0 |
| 3. Develop and introduce a Performance Management | 1 | Giles Perritt Jackie Young | 100 | 470 | 41,915 | 0 |

| Project | Delivery/ Impact time (in years) | Responsible Officer(s) | Identified Implementation Costs (£) | Total CO2 Savings In tCO2 | Predicted Gross Cost savings In £ | Predicted payback period |
|---|---|---|---|---|---|---|
| Programme for the delivery of the LACM SIP | | | | | | |
| 4. Adoption of Carbon Reduction Policy and inclusion in future revisions of the Corporate plan | 5 | Giles Perritt Jackie Young | 250 | 470 | 41,915 | 0 |
| 5. Introduction of carbon accounting training | 5 | Malcolm Coe Jackie Young | 250 | 120 | Not quantified | 0 |
| 6. Introduce basic environmental management training to key staff through induction. | 5 | tba Jackie Young | 250 | 117 | 10,479 | 0 |
| 7. Audit of use of audio and video conferencing facilities thus removing need to travel (min figs) | 1 | Giles Perritt Jackie Young | 250 | 5.5 | 384 | 0.7yrs |
| 8. Flood Risk & Climate Change Workshop and resulting report/action plan. | 1 | Giles Perritt Jackie Young | 100 | n/a | tba | n/a |
| 9. Audit and evaluation of impact of adaptation measures required by PCC. | 1 | Giles Perritt Jackie Young | 100 | n/a | tba | n/a |
| **Travel and Transport** | | | | | | |
| 10. Promoting the Green Travel Pass | 1 | Chris Sane Ben Fieldhouse | nil | 7.49 | 525 | 0 |
| 11. Promoting Devon Car Share | 1 | Chris Sane Ben Fieldhouse | nil | 7.49 | 525 | 0 |
| 12. Fuel awareness campaign – improved training, awareness, tracking and monitoring. | 5 | Jayne Donovan Garry Stainer | 100 | 116 | 42,328 | 0 |
| **Asset Management & Buildings** | | | | | | |
| | | | | | | |

| Project | Delivery/ Impact time (in years) | Responsible Officer(s) | Identified Implementation Costs (£) | Total CO2 Savings In tCO2 | Predicted Gross Cost savings In £ | Predicted payback period |
|---|---|---|---|---|---|---|
| 13. Appointment of a Carbon Management Officer (*1) | 5 | Nalin Seniveratne Chris Trevitt | 46,814 | 1174 | 104,788 | 0.5yrs |
| 14. Delivery of Energy Performance Certificate Work Programme/establish consistent means of auditing energy use. | 2 | Nalin Seniveratne Chris Trevitt | 30,000 | 2,347 | 209,377 | 0.1yrs |
| 15. Audit installation costs of half hourly metering in PCC buildings that do not currently comply. | 1 | Nalin Seniveratne Chris Trevitt | 5000 | 66 | 7,711 | 0.6yrs |
| 16. Audit ambient temperatures in PCC buildings to establish acceptable thermostatic standard. | 5 | Nalin Seniveratne Chris Trevitt | 5000 | 51 | 2,758 | 1.8yrs |
| **Home Energy Conservation/Housing** | | | | | | |
| 17. Delivery of the Home Energy Efficiency Programme 2008/09 | 1 | Frances Turner Colin Anderson | 75,000 | 508 | Not quantified | 0 |
| **Street Lighting** | | | | | | |
| 18. Replacement of footpath lighting (Year 1) | 25 | Chris Sane Paul German | 7,296 | 27 | 3120 | 2.3yrs |
| **Waste Management.** | | | | | | |
| 19. Delivery of improved recycling rates (Year 1) | 5 | Jayne Donovan Mike Carroll | 125,620 | 703.1 | Not quantified | Not stated |
| 20. Introduction of Trade Waste Recycling (pilot scheme) | 1 | Jayne Donovan Mike Carroll | 38,000 | 1788 | Not quantified | Not stated |
| 21. Audit of waste management strategy and PFI bid to include carbon management options. | 25 | Jayne Donovan Mike Carroll Jackie Young | 100 | n/a | n/a | Not stated |
| **Schools** | | | | | | |

| Project | Delivery/ Impact time (in years) | Responsible Officer(s) | Identified Implementation Costs (£) | Total CO2 Savings In tCO2 | Predicted Gross Cost savings In £ | Predicted payback period |
|---|---|---|---|---|---|---|
| | | | | | | |
| 22. Issue of Site Management Guidelines for Schools Premises. | 5 | Chris Trevitt Anna Litwinowich | 500 | 352 | Not quantified | Not stated |
| 23. School energy management audit of boiler efficiency to establish replacement strategy. | 1 | Nalin Seniveratne Mike Luffingham | 5000 | 90 | 4853 | - 12.6yrs |
| 24. School energy management – review energy efficiency of school kitchens and meals services (Year 1 – dishwasher services) | 1 | Nalin Seniveratne Chris Trevitt | 10,000 | 45 | 2462 | 4.1 yrs |
| **Leisure Services & Parks Management** | | | | | | |
| 25. Phased introduction of energy efficiency measures at PCC pools | 1 | James Coulton Kevin Thomas | 3220 | 70 | 5,629 | 0.6yrs |
| 26. Review – service planning & carbon management. Pilot study in Parks Services to include audit of land mgt practices and biomass production. | 3 | Jayne Donovan Nick Jones | 250 | 470 | Not quantified | Not stated |
| **Implementation Totals (Year 1 Projects)** | | | **354,200** | **9708.58** | **684,673** | **n/a** |
| **Known Continuing Projects** | **Years 2 – 5** | | | | | |
| Maintenance of Carbon Reduction Officer's post | Year 2 (09/10) | tba | 44,814 | 1761 | 157,183 | 0.4yrs |
| Maintenance of Carbon Reduction Officer's post | Year 3 (10/11) | Tba | 44,814 | 587min | 52,394 | 8.4yrs |
| Maintenance of Carbon Reduction Officer's post | Year 4 (11/12) | Tba | 44,814 | 587min | 52,394 | 8.4yrs |
| Maintenance of Carbon Reduction Officer's post | Year 5 (12/13) | Tba | 44,814 | 587min | 52,394 | 8.4yrs |
| Repetition of footpath lighting replacement programme | Year2 | As above | 7,296 | 27 | 3,120 | 2.3yrs |
| Repetition of footpath lighting replacement | Year3 | As above | 7,296 | 27 | 3,120 | 2.3yrs |

| Project | Delivery/ Impact time (in years) | Responsible Officer(s) | Identified Implementation Costs (£) | Total CO2 Savings In tCO2 | Predicted Gross Cost savings In £ | Predicted payback period |
|---|---|---|---|---|---|---|
| programme | | | | | | |
| Repetition of footpath lighting replacement programme | Year4 | As above | 7,296 | 27 | 3,120 | 2.3yrs |
| Repetition of footpath lighting replacement programme | Year5 | As above | 7,296 | 27 | 3,120 | 2.3yrs |
| Improved recycling rates (additional tonnage removed from landfill) – Year 2 | 25yrs | Jayne Donovan Mike Carroll | 174,357 | 774.7 | Not quantified | Not stated |
| Improved recycling rates (additional tonnage removed from landfill) – Year 3 | 25yrs | Jayne Donovan Mike Carroll | 512,407 | 2276.6 | 2277 | Not stated |
| Improved recycling rates (additional tonnage removed from landfill) – Year 4 | 25yrs | Jayne Donovan Mike Carroll | 745,822 | 3313.6 | 3314 | Not stated |
| Improved recycling rates (additional tonnage removed from landfill) – Year 5 | 25yrs | Jayne Donovan Mike Carroll | 466,025 | 2070.5 | 2071 | Not stated |
| **Sub totals Years 2-5** | | | **2,107,051** | **12,065.4** | **332,457** | |
| **Predicted totals (at Year 5) – maximum deployment of known projects.** | | | **2,461,251** | **21,773.98** | **1,017,130** | |

* : The actual cost of the Energy Efficiency Programme is boosted by external grants of £274,800 to a total of £349,800.

**4.2.1 Applying the Carbon Reduction Strategy :** Using the projections the Project List for the LACM SIP has initially been compiled to reflect the gains possible in Year 1 of a 5 Year delivery timescale and the subsequent benefits of a step change approach.

**4.2.4 Cost Effectiveness :** In Year 1 of the SIP immediate savings of a minimum of **£73,352** have been identified from the management of buildings and fleet. Cumulative gross cost savings (energy costs) during the five year implementation period could be a minimum of **£2,757,182 per year by 2013.**

4.2.5 : A key element of the analysis of the Council's carbon footprint is the evaluation of the equivalent capital expenditure required to realise the CO2 savings likely to arise from electricity and gas reduction measures. Figures from SALIX, who provide finances for carbon reduction projects based on the returns savings offer, have noted that these savings average out at £560/tCO2 for projects that reduce electricity consumption and £476/tCO2 for those reducing gas use.

4.2.6 The average investment required to realise CO2 savings is calculated to be £518/tonne of carbon dioxide produced. Using these figures as a guide, it is possible to analyse the level of investment required to meet Plymouth's emission reduction targets and to compare this with the levels proposed for Year 1 of the Plan. As a benchmark, the 'target investment' for effective $CO_2$ savings, suggested by the Carbon Trust , is quoted as £518/tonne[**]. Put simply, if all the projects suggested for Year 1 were to be delivered in Year 1 an investment of £2,522,142 would be recommended. Professional estimates suggest large organisations should be investing 1% of their total budget in managing carbon and tackling climate change if they are to avoid future penalties. The current scenario is as follows :

4.2.7 We are aiming to reducing our carbon footprint of 121,737 tonnes of CO2 in 2006/07 by 20% over 5 years or roughly 4% year on year – although such it should be noted that carbon reduction plans do not operate on a simple linear equation. A linear 4% reduction, for example, would required a saving of 4869 tonnes of CO2 which, at the quoted rate of £518/tCO2, would require an investment of £2,522,142. The cumulative impact of carbon savings needs to be taken in to account here as not all the savings will be achieved in the year of implementation.

4.2.8 Identified budgets in 2008/09 (Year 1) support the delivery of 25 of the 26 selected projects. The investment in Year 1 will be **£307,200.** Payback periods for this investment vary from 0 years to 8.4 years in the most extreme cases (well within the 25 year life time of some projects). Funding of £47K still needs to be identified for a Carbon Management Project Officer. This post is vital for the successful delivery of the SIP. The introduction of assistance from SALIX may assist with this. The Year 1 investment could be matched with a 50/50 grant from this fund.

### 4.2.9 Meeting Targets :

4.2.10 Overall, the Plan identifies possible savings of **9708** tonnes of $CO_2$ of which **822+** $tCO_2$[*] could be saved in Year 1 alone. The remaining **8886** $tCO_2$ will be delivered over the stated life span of each project (1 to 25 years). The impact of additional waste recycling will substantially augment these figures. The proposed carbon audit of our waste management function will enable us to fully assess the contribution waste makes to the Council's Carbon Reduction Plan.

4.2.11 In Year 1 we will only make a limited reduction given the stated delivery periods expected for each project. However, using the Opportunities Toolkit and based on figures for Year 1, predicted $CO_2$ savings by Year 5 could be a minimum of 55,583 tonnes of carbon dioxide by 2013 and we would substantially exceed our planned reduction target. **21,773.98** $tCO_2$ have already been identified. The remaining tonnages would need to be found in Years 2 to 5.

4.2.12 Plymouth City Council has set a target of a 20% reduction in its emissions by 2013. To achieve this, the baseline carbon footprint of 121,737 $tCO_2$ would need to be reduced by 24,347.40.60 $tCO_2$ per annum by 2013. It is considered prudent to allow for a 5% margin of error in the delivery of the programme, given that the full list of Projects for Years 2

[**] SALIX Finance for the Carbon Trust, 2007.

[*] Allowing for the stated implementation and delivery times which can be up to 25 years.

to 5 have yet to be agreed. If Year 1 is used as a baseline, Plymouth City Council should be seeking to deliver a reduction of no less than 23,130 tCO2 (5% of 24,347.40)

4.2.13 No upper limit is suggested but, to achieve a 60% reduction by 2020, the City Council should be looking to reduce emissions by (at least) 73,042 tCO2 – a minimum increase of 48,695 tCO2 on the 2013 outcomes.

## 4.3 Timing Implementation.

| Proposed Project Year 1 | apr | may | jun | jul | aug | sep | oct | nov | dec | jan | feb | mar |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Carbon Stars Awareness Campaign | | | | | | | | | | | | |
| Adoption of Carbon Reduction Policy and inclusion in future revisions of the Corporate plan | | | | | | | | | | | | |
| Introduction of carbon accounting training (in line with beginning of budget setting timings) | | | | | | | | | | | | |
| Completion of Low Carbon Business Travel plan | | | | | | | | | | | | |
| Promoting the Green Travel Pass | | | | | | | | | | | | |
| Promoting Devon Car Share | | | | | | | | | | | | |
| Fuel awareness campaign – improved training, awareness, tracking and monitoring. | | | | | | | | | | | | |
| Delivery of Energy Performance Certificate Work Programme | | | | | | | | | | | | |
| Delivery of the Home Energy Efficiency Programme 2008/09 | | | | | | | | | | | | |
| Appointment of a Carbon Management Officer (*1) | Subject to discussion | | | | | | | | | | | |
| Replacement of footpath lighting | | | | | | | | | | | | |
| Delivery of improved recycling rates | | | | | | | | | | | | |
| Introduction of Trade Waste Recycling (pilot scheme) | | | | | | | | | | | | |
| Audit of waste management strategy and PFI bid to include carbon management options. | | | | | | | | | | | | |
| Audit of use of audio and video conferencing facilities thus removing need to travel (min figs) | | | | | | | | | | | | |
| Audit ambient temperatures in PCC buildings to establish acceptable thermostatic standard. | | | | | | | | | | | | |
| Issue of site management guidelines for schools | | | | | | | | | | | | |
| School energy management - audit of boiler efficiency to establish replacement strategy. | | | | | | | | | | | | |
| School energy management – review energy efficiency of school kitchens and meals services (washing facilities) | | | | | | | | | | | | |
| Introduce basic environmental management training to key staff through induction. | | | | | | | | | | | | |
| Phased introduction of energy efficiency measures at PCC pools | | | | | | | | | | | | |
| Develop and introduce a Performance Management Programme for the Carbon plan | | | | | | | | | | | | |
| Who will save us schools awareness programme | | | | | | | | | | | | |
| Audit installation costs of half hourly metering in PCC buildings that do not currently comply. | | | | | | | | | | | | |
| Flood risk and climate change workshop and resulting report/action plan. | | | | | | | | | | | | |
| Audit and evaluation of the impact of adaptation measures required by PCC. | | | | | | | | | | | | |
| Review – service planning & carbon management – pilot study in Parks Services. | | | | | | | | | | | | |

| | | | |
|---|---|---|---|
| Development | | Review and revise | |
| Launch | | Report | |
| Ongoing rollout | | | |

# 5.0 Implementation Plan Financing

5.1 Plymouth's circumstances reflect a difficult situation for the implementation of carbon management projects. No new monies have been identified for investment other than those already proposed as elements within the 2008/09 budget.

5.2 From the outset, the list of projects was therefore drawn up to reflect existing planned investment. There is one exception to this – the potential appointment of a Carbon Management Officer. Investment in this role remains speculative despite the pivotal role this officer would have in delivering the SIP and realising the financial savings in proposes.
The majority of this funding is drawn from internal sources with the exception of the investment made in Plymouth's Home Energy Efficiency schemes. The projected costs and savings of the SIP may be summed up as follows :

**Table 12 : Summary of predicted costs and savings.**

| | | | |
|---|---|---|---|
| **Total Estimated Capital Expenditure in Year 1** | **£ 354,200** | | |
| **Total Annual Cost Savings** | | | |
| | **08/09 savings** | **Cumulative gross cost savings 2009/2013** | |
| **Annual savings (£)** | **£73,352** | **£ 2,757,182** | |
| **Total Annual Carbon Reductions** | | | |
| | **08/09 savings** | **Predicted C reduction 2009/2013 (Opportunities toolkit)** | **Identified tonnages to date** |
| **Carbon Reduction (tonnes)** | **822.00tCO2** | **Minimum of 55,583** | **21,772.98** |

# 6.0 Stakeholder management and communications

## 6.1 Stakeholder management

6.1.1 The following have been identified as stakeholders with a key interest in delivering the SIP :

| Stakeholder Groups | Composition | Frequency of Meetings |
|---|---|---|
| Members and Staff | Plymouth City Councill's Members, officers and staff | Ongoing feedback |
| Departmental Management Teams/Senior Management Teams | 3rd tier managers and line managers responsible for feedback and delivery of projects. | Weekly |
| LACM Advisory Group<br>(Carbon Management Group) | E network of supporting officers and advisors across all departments. | As required – will be continued as an e network.<br>Progress workshop every six months. |
| LACM Project Board | Senior managers and the portfolio holder responsible for the issue. | Quarterly |
| Corporate Performance Unit | Officers monitoring PI No 185 – LA emissions of CO2 | Quarterly. |
| Corporate Management Team | Directors | Quarterly (if required) |
| SCSO Panel Working Group | Cross party membership. | To be agreed<br>From July 2008. |
| Cabinet Planning/Cabinet | Members | As required |
| Local communities, the Press and partner organisations | Variable | As required to promote the LACM Programme. |

6.1.2 Their engagement in the delivery of the SIP has been identified as essential to the success of this process.

## 6.2 Communications Plan 2008/09.

6.2.1 The delivery of the above process of stakeholder engagement relies on the application of an effective Communications Plan. This, in turn, will be reviewed annually and used to inform the whole process. It will also form the basis of information provided to external parties including the Press, local communities and interest groups, the Local Strategic Partnership, other LACM partners and case studies. The following is proposed for 2008/09

| Item | Audience | Description | Lead | Partners | D'line | Pub'n |
|---|---|---|---|---|---|---|
| Formal adoption of LACM SIP | LACM Advisory Team | Final Draft for adoption | JY | Advisory Board Members and Lead Officers. | 04/03/08 | n/a |
| Formal adoption of LACM SIP | LACM Project Board | Final Update Report | JY | Project Board Members | | |

| Item | Audience | Description | Lead | Partners | D'line | Pub'n |
|---|---|---|---|---|---|---|
| Formal adoption of LACM SIP | Scrutiny | Update report. | JY | Sustainable Communities Scrutiny and Overview Panel. | 21/01/07 | 21/02/07 |
| Delivery of the SIP | Scrutiny Working Group | Regular review of progress from 01/04/08 | JY | Scrutiny Working Group | tba | n/a |
| Formal adoption of LACM SIP | CMT | Adoption of the SIP | JY | CMT (Directors) | | |
| Formal adoption of LACM SIP | Cabinet Planning | Adoption of the SIP | JY | Cabinet Members | | |
| Formal adoption of LACM SIP | Cabinet | Adoption of the SIP | JY | Cabinet Members | 08/04/08 | 01/04/08 |
| Press Release | Press<br>General Public | Adoption of the SIP (PCC action and targets) | JY/JS | Communications Team<br>JY | 03/04/08 | 08/04/08 |
| Nottingham Declaration | CMT | Reaffirmation of PCC's commitment to the Nottingham Declaration | JY | CMT | 21/01/08 | n/a |
| Nottingham Declaration | Cabinet Planning | Reaffirmation of PCC's commitment to the Nottingham Declaration | JY | Cabinet | | |
| Nottingham Declaration | Cabinet | Reaffirmation of PCC's commitment to the Nottingham Declaration | JY | Cabinet | | 11.03.08 |
| Press Call | Press | Promotional signing of Nottingham Declaration | JY | Press<br>The Leader<br>The Chief Exec | Feb 08 | tba |
| Evening Herald Climate Change Supplements | Press & General Public | Series of four supplements on different aspects of climate change. | JY | Press<br>General Public | Feb, May, Aug and Oct 08 | tba |
| Western Morning News special | Press & General Public | Special items on Plymouth as a 'green city' linked to WMN's interest in climate change and low carbon economy | JY | Press (GD)<br>WMN Editor (AQ) | tba | |
| Promotional Events | General Public | Climate Change Event | AH | PCC Libraries and EU Service | March 08 | |
| Promotional event | General Public | Climate change conference (subject to budget) | | Various | tba | tba |
| Promotional event(s) | PCC staff | Launch of Carbon Stars awareness campaign | JY | PCC staff | World Env Day 5th June | |
| Promotional Event | Schools | Launch of the Who Will Save Us? Book give away subject to budget | JY | Schools<br>The Authors | tba | |
| Promotional event | General Public | Ice sculpture in Civic Pond – global warming, ice sheet thinning | JY | PCC<br>Uni (?) Arts Dept | tba | |
| Climate Change Framework | Scrutiny | Update report | JY | Sustainable Communities Scrutiny and Overview Panel. | 21/01/07 | 21/02/07 |
| Climate Change Framework | CMT | Adoption of the Framework | JY | CMT (Directors) | | |
| Climate Change Framework | Cabinet Planning | Adoption of the Framework | JY | Cabinet Members | | |
| Climate Change Framework | Cabinet | Adoption of the Framework | JY | Cabinet Members | 08/04/08 | 01/04/08 |
| Climate Change Framework | Wealthy Theme Group of LSP | Update report and approval if appropriate. | JY | Wealthy Theme Group | | |
| Press call | Press<br>General Public | Adoption of the SIP (PCC action and targets) | JY/JS | Communications Team<br>JY | 03/04/08 | 08/04/08 |
| Embedding Action | LSP | Action to embed implications of c mgt and climate change in the Sustainable Community Strategy and other key documents | JY | LSP<br>PCC<br>Partners<br>GOSW etc | Ongoing. | |
| Climate Change Action Plan (consultation) | General Public<br>LSP & Key Partners | Launch of action to develop Action Plan (tba) | JY | Numerous | Apr 08 | |
| Climate Change Action Plan (development and drafts) | General Public<br>LSP & Key Partners | Final drafts and adoption proposals | JY | Numerous | Sept 08 | |

| Item | Audience | Description | Lead | Partners | D'line | Pub'n |
|---|---|---|---|---|---|---|
| Climate Change Action Plan | Agreed Lead Partners and PCC | Adoption of Action Plan | JY | Numerous | Dec 08 | |
| Press Call | Press<br>General Public | Adoption and implications of Action Plan | JY | Numerous | Dec 08 | |
| Flood Risk plan | tba | Review need for a co-ordinated response to the Pitt Report and subsequent plan. tba | JY/GP | PCC<br>SWW/Env Agency<br>Police<br>Devon Fire & Rescue<br>Marine based partners (TECF etc). | tba | |
| Ongoing liaison with the Press | Press<br>General Public | Responses as appropriate to enquiries and issues arising. | JY | JY<br>Communications Team | ongoing | |
| Ongoing reporting | PCC/LSP | Responses as appropriate to enquiries and issues arising. | | | | |
| Review and Revise | PCC | Reporting on Year 1 progress | JY | | March 2009 | |

# 7.0 SIP governance, ownership and management

## 7.1 Main roles and responsibilities

7.1.1 Ongoing support will be provided for this process by the Lead Officer for Carbon Management but, as suggested, the appointment of a Carbon Management Officer is under discussion to ensure full time dedication to this role.

7.1.2 Within the City Council, the management of the delivery process can be summed up as follows :

### 7.1.3 Carbon Management Implementation Plan: Responsibility Table

(See also SIP Project List).

| | Responsible person | | | |
|---|---|---|---|---|
| **Activity** | **Executive / Member representation** | **Carbon Manager** | **LA CM core group** | **Others** |
| **Carbon Management Implementation Plan**<br>- **Set objectives**<br>- **Manage implementation plan**<br>- **Monitor and review progress**<br>- **Manage risks and issues**<br>- **Manage stakeholders and communication**<br>- **Report** | Nigel Pitt (Director of Development)<br>Councillor Mike Leaves (Portfolio Holder) | Jackie Young (Sustainable Development Co-ordinator) | LACM Advisory Group Members. | Carole Burgoyne (Asst Chief Executive)<br>Giles Perritt (Head of Continuous Improvement, Corporate Performance Unit). |
| **Financing of Carbon Management Activities** | Adam Broome (Director of Corporate Resources) | | **Finance**<br>Malcolm Coe<br>**Risk Mgt**<br>Mike Hocking | Allocated Finance Officers. |
| **Carbon Management in Buildings** | Adam Broome (Director of Corporate Resources) | | Chris Trevitt (Asset Management)<br>Ian Knight (Premises Manager) | Asset Management Team. |
| **Carbon Management in Transport** | Nigel Pitt | | **Business Travel**<br>Gill Peele<br>**Garage Management**<br>Gary Stainer<br>**Fleet**<br>Doug Smith<br>**Lighting**<br>Paul German | Ian Roddy (Asst Head of Human Resources ) |
| **Carbon Management in Waste and Streetscene** | Nigel Pitt<br><br>Jayne Donovan (Asst Director of Development) | | **Waste**<br>Mike Carroll<br>Mark Turner<br>**Parks**<br>Nick Jones | The Waste Management Strategy Team.<br><br>Parks Services. |
| **Carbon Management in Schools** | Bronwyn Lacey* (Director of | | **Asset Mgt**<br>Mike Luffingham. | Asset Management |

| | Responsible person | | | |
|---|---|---|---|---|
| **Activity** | **Executive / Member representation** | **Carbon Manager** | **LA CM core group** | **Others** |
| | Children's Services) | | | Teams. |
| **Carbon Management and community services (leisure, housing)** | Clive Turner | | **Pools**<br>Kevin Thomas<br>Dean Chard<br>**Housing**<br>Colin Anderson (HECA Officer | Community Services Teams |
| **CHP, Renewables** | | | **Home Energy**<br>Colin Anderson<br>**Planning**<br>LDF Team. | Asset Management Team members. |
| **Purchasing** | John Cremins~ | | Karen Grannum (Procurement link) | |
| **Communications and community relations** | Carole Burgoyne* | | **Communications**<br>Richard Longford<br>**Libraries**<br>Anne Henderson | Communications Team.<br>Union Representatives. |

* As a CMT member
~ As PCC's responsible officer/head of service.

## 7.2 Risks and Issues, Benefits and Reporting and Evaluation.

7.2.1 The three most significant risks (and means of mitigating them) can be identified as follows :

i. A substantial reduction in the resources available to co-ordinate and deliver the SIP, for example the loss of the Lead Officer, inability to confirm the role of Carbon Reduction Officer or a similar change in corporate circumstances.

This is difficult to mitigate as decisions would be made on the transfer or continuation of the role as the need arises. A commitment to the LACM Plan is include in the job description of the Sustainable Development Co-ordinator and would be the main focus of the CRO (if approved). There are other officers within the Council with the necessary knowledge and ability to take on this role if required.

ii. The Carbon Reduction Officer's post cannot be confirmed.

This is a substantial threat to the delivery of the SIP and the successful reduction of the Council's emissions. The proposal has the support for four key services but, to date, no funding has been identified to secure the post. Separate negotiations are to be held to establish whether the support can be found from either (a) an invest to save style fund created from the savings made or (b) the introduction of support from SALIX or a similar grant.

iii. A substantial reduction in the financial resources made available to deliver the SIP or in the officer time/resources committed to delivery.

Careful discussions have ensured, as far as is possible, that the projects in the SIP are deliverable within Year 1 of the 5 Year Plan. Written confirmation from the respective responsible officers is to be obtained to support the SIP prior to final adoption by the Council.

7.2.2 The importance of co-ordination and performance management to the successful delivery of the SIP has been identified during its development and will be consolidated within a supporting 'review, revise and report' process throughout each year of the SIP implementation. This process has four key aims :

- To monitor progress towards adopted projects and improve existing monitoring processes, reporting as required.
- To formally report on the required PIs through the Corporate Plan/CPA/Local Area Agreement (a new requirement).
- To identify new opportunities and engage appropriate stakeholders in the LACM Programme.
- To embed carbon management in the function of the local authority and the Local Strategic Partnership.

7.2.3 The review process relies on a dynamic feedback loop that guarantees both communication and information. It also guarantees support for delivery and the knowledge that a policy mandate has been agreed to underpin carbon management actions in each and every Department. During the development of the SIP, the lack of such a policy mandate was

quoted a number of times and was felt to be the key barrier to progress. The removal of this barrier, with the formal adoption of the SIP, will free managers to take action within a specific remit that is, in turn, informed by the review process.

### 7.3 Performance Monitoring.

7.3.1 SIP delivery will begin with a formal commitment from each project manager and agreement of two or three simple outcomes that can be easily reported on a regular basis.

7.3.2 As the review process develops a simple but formal reporting mechanism will be developed to enable project sponsors within the SIP to report on a quarterly basis.

7.3.3 This information will be reviewed by the Project Board and reported as required. Problem solving techniques will be applied to resolve any issues arising and the outcomes of any further discussion will be reported back to the responsible officers.

7.3.4 In addition, responsible officers will be able to raise matters at any time with the lead officer and, if needed, requests for assistance, advice or information will be networked via the LACM Advisory Group.

7.3.5 In at least three stated projects, the LACM project template – audit, baseline setting, options and outcomes – will be used to further refine Plymouth City Council's carbon footprint and to support new commitments to projects within the LACM SIP.

7.3.6 In waste management this process will assist in informing a major private finance initiative. In the Parks Service this will inform the delivery of the 2008/09 Service Plan with a view to integrating carbon management at service planning levels and, corporately, the process will be used to co-ordinate commitments to a wider low carbon business travel plan resulting in further refinement of the footprint and new emission reduction initiatives for Years 2 to 5.

7.3.7 Lastly, and in keeping with the requirements of the new Performance Framework, the outcome of an energy audit will be review annually to assess overall progress and to inform the LACM Review, Revise and Report mechanism. A response to NI 185 will be required annually. Each responsible officer will be required to respond quarterly and annually in this respect.

7.3.8 The process will be integral to the management of the SIP and timed to coincide with PCC's annual Performance Management , Service and Budget Planning processes. It is therefore likely that annual reports will be produced in January or February each year.

7.3.9 : Lastly, the delivery of the SIP will be formally monitored by the Carbon Trust through the Regional Account Manager.

# Appendix A: Individual actions

| ***Project / Action 1: Carbon Stars Awareness Campaign*** | |
|---|---|
| *Description and notes* | **A high profile, central awareness campaign aimed at staff members.**<br>**The initial opportunities survey identified a very inconsistent approach to awareness of the impact of energy costs and carbon management across the Council. This project aims to consolidate this approach and to combine it with a management programme that will encourage action with localised incentives. The 'carbon star' will be used to identify sites, such as monitors and chargers, where energy could be saved. This will be combined with the use of Carbon Trust posters and a campaign of information across PCC's intranet site (Staffroom). Intermittent surveys will also be carried out to highlight the value of specific actions and to roll out the benefits of the LACM Plan. We will particularly target printers, lights, monitors, doors, windows and chargers.** |
| *Quantified costs and benefits* | **Financial investment, operational costs :**<br>£500 in cash plus officer time planned over one year.<br>**Emissions reduction**<br>Based on estimated reductions of 3% of the baseline or more as awareness is improved.<br>**Financial savings**<br>Estimated at just over £30K across a range of options.<br>**Payback period**<br>Benefits should begin to accrue almost immediately. |
| *Resources* | **Funding: Internal, external sources of funds, investment criteria to be met**<br>£500 identified from SDC's budget (2008/09)<br>Officer time to be sought from Premises Manager and other supportive staff (including the Communications Team where possible).<br>**Management: demand on management resources**<br>Limited impact expected. Project to be managed centrally. |
| *Ownership and accountability* | Project to be developed and managed by LACM Lead Officer.<br>Outcomes to be assessed and reported through stated processes and, specifically, within Departments to allow for any localised discrepancies to be tackled. |
| *Ensuring success* | ***Known key success factors*** *:*<br>Notable changes in departmental behaviour. Arrangements are to be made through IT and Premises Management to try and establish recordable data as behavioural change is notoriously difficult to monitor.<br>***Principal risks:***<br>Departmental champions leaving their posts at the Council. Champions unable to influence change due to other work priorities.<br>***Main means of risk mitigation :***<br>Regular surveys will help to maintain the pressure together with, if possible, the introduction of an incentive scheme (funding to be sourced).<br>Continual reinforcement of the message from central co-ordinating point. |
| *Performance / success measure* | Difficult to assess but it is estimated that the implementation of an awareness campaign could lead to a 3%+ reduction in energy use across the Council. This will be tested in Year 1 and the plans revised accordingly. |
| *Timing* | To be launched on World Environment Day (June 5th) 2008.<br>Campaign will run concurrently with the LACM delivery, reporting on progress in Jan/Feb of the following year. |
| *Sources of information and guidance* | Council website to be identified in due course.<br>Carbon Trust posters and best practice guides.<br>Experience of existing staff in conducting awareness campaigns. |

| ***Project / Action 2 : 'Who will save us ?' Schools awareness campaign.*** | |
|---|---|
| *Description and notes* | **This is a very simple project aimed at getting a copy of 'Who Will Save Us ?' by Rebecca Morch in to every school in Plymouth. Rebecca is already working with a number of local authorities (including Devon County Council) to establish carbon projects with the children. Once the books have been distributed, individual schools will be encouraged to contact Rebecca for details of more specific projects. For more information see www.rebeccamorch.co.uk** |
| *Quantified costs and benefits* | **Financial investment, operational costs :**<br>£500 allowed.<br>**Emissions reduction**<br>Estimated at 3% of the baseline or more as awareness is improved.<br>**Financial savings**<br>Subject to options taken by schools but minimum estimated at 3% per project applied.<br>**Payback period**<br>Subject to projects applied by the schools. |
| *Resources* | **Funding: Internal, external sources of funds, investment criteria to be met**<br>£500 identified from SDC's budget (2008/09) – 137 schools at £2.99 per book plus distribution.<br>**Management: demand on management resources**<br>This is part of a partnership project with the author aimed at raising awareness within schools and complementing action being taken by local premises managers, teaching staff and school councils. |
| *Ownership and accountability* | LACM Lead Officer will be responsible for purchase and distribution.<br>Individual schools will be responsible for contacting the Author.<br>The Author will liaise with the LACN Lead Officer to confirm which, if any, schools have taken up the opportunity. |
| *Ensuring success* | **Known key success factors** :<br>The number of Plymouth schools taking an interest in the wider project associated with the book.<br>**Principal risks:**<br>Schools having little time or resources to take up the project.<br>Schools with other citizenship priorities (not an uncommon occurrence in inner city schools).<br>**Main means of risk mitigation :**<br>Project will be reinforced through Children's Services. |
| *Performance / success measure* | Difficult to assess but it is estimated that the implementation of an awareness campaign could lead to a 3%+ reduction in energy use within each school taking up the option. This will be tested through case studies in Year 1 and the plans revised accordingly. |
| *Timing* | To be launched on World Environment Day (June 5th) 2008.<br>Campaign will run concurrently with the LACM delivery, reporting on progress in Jan/Feb of the following year. |
| *Sources of information and guidance* | The Who will Save Us ? website at www.rebeccamorch.co.uk |

| ***Project / Action 3:*** **Performance Management Programme for the SIP (Review, Revise and Report)** | |
|---|---|
| *Description and notes* | **The development of an ongoing means of reporting progress towards the SIP delivery and the feedback of data for NI 185 of the Performance Management Framework for Local Authorities.** |
| *Quantified costs and benefits* | **Financial investment, operational costs :**<br>Limited – is mainly a matter of officer time. £100 allowed for misc costs such as printing or document handling if required.<br>**Emissions reduction** : The heightened profile is likely to ensure a 4%+ reduction in emissions.<br>**Financial savings :** Estimated at approximately £42K if savings are delivered on target.<br><br>**Payback period** : Immediate impact – continuous improvement. |
| *Resources* | **Funding: Internal, external sources of funds, investment criteria to be met :**<br>Identified as officer time (LACM Lead Officer) but £100 allowed from SDC's 2008/09 budget for misc expenditure.<br>**Management: demand on management resources**<br>Limited – seen as a means of formally reporting on the progress of the LACM over time. |
| *Ownership and accountability* | A key element of LACM project delivery. To be lead by the LACM Lead Officer and reported as per the structure set out and accountable to the Project Board.<br>In addition, the data collected here will be fed in to the monitoring process required for the management of NI 185. |
| *Ensuring success* | **Known key success factors** :<br>Completion and reporting of quarterly reports and annual energy management update.<br>**Principal risks:**<br>Availability of data – the collection of energy data requires consolidation and confirmation.<br>Poor reporting from project managers.<br>Incompatibility with template chosen by DEFRA for NI185 monitoring (even though it is supposed to be based on the Carbon Trust's LACM toolkit).<br>**Main means of risk mitigation :**<br>Re affirmation of the importance of monitoring to the success of the projects. |
| *Performance / success measure* | Progress towards the achievement of annual targets as measured for NI 185 |
| *Timing* | Process to be agreed by June 08 (first quarterly update).<br>Then quarterly reporting for LACM means.<br>Collection of data to be agreed for NI185. |
| *Sources of information and guidance* | Carbon Trust LACM Toolkit(s)<br>Performance Monitoring Framework Guidance – final version due Feb 08. For response from 01.04.08 onwards. |

| ***Project / Action 4 : Adoption of carbon management policy and inclusion in future revisions of the Corporate Plan.*** | |
|---|---|
| *Description and notes* | **Identified as a key driver for action on carbon management. Many departments were willing to act but were unsure if they had a policy mandate to do so. This project will embed carbon management in to the central planning processes of the Council's annual improvement cycle.** |
| *Quantified costs and benefits* | **Financial investment, operational costs :**<br>Limited to officer time.<br>**Emissions reduction**<br>Estimated at 4% of the baseline or more as mandate for action is realised.<br>**Financial savings**<br>Estimated at approx £42K across a range of options.<br>**Payback period**<br>Benefits should begin to accrue almost immediately. |
| *Resources* | **Funding: Internal, external sources of funds, investment criteria to be met**<br>Identified as officer time (LACM Lead Officer) but £100 allowed from SDC's 2008/09 budget for misc expenditure.<br>**Management: demand on management resources**<br>Limited – seen as a means of formally reporting on the progress of the LACM over time. |
| *Ownership and accountability* | Project to be developed and managed by LACM Lead Officer.<br>Accountable to Project Board.<br>Outcome to be reported through Cabinet for adoption as Council Policy (possibly as part of a wider commitment to improved sustainable development and environmental management). |
| *Ensuring success* | ***Known key success factors*** *:*<br>Adoption of the proposed policy by Cabinet and agreement with lead officers in key departments (i.e. Asset Management, Procurement etc etc).<br>***Principal risks:***<br>Policy is seen as an additional burden to current priorities and therefore not welcomed.<br>Policy is not seen to reflect political aspirations.<br>***Main means of risk mitigation :***<br>Policy will be drafted with the inclusion of key players from across the Council and referred through the Project Board before being confirmed through Central Management and Cabinet. |
| *Performance / success measure* | Difficult to assess but it is estimated that the implementation of the policy could lead to, at least, a 0.5%+ reduction in energy use across the Council. This will be tested in Year 1 and the plans revised accordingly. |
| *Timing* | Development of policy to begin asap.<br>Adoption before the end of 2008. |
| *Sources of information and guidance* | Existing LACM information.<br>Background data from the Carbon Trust (case studies etc).<br>Best Practice support from networks across the country. |

| ***Project / Action 5 : Introduction of Carbon Accounting Training*** | |
|---|---|
| *Description and notes* | **Identified as a key driver for action on carbon management. Again, many departments were willing to act but were unsure how to assess financial budgets and accounts against the calculations needed for carbon management. This project will assist in embedding carbon management in to the central planning processes of the Council's annual improvement cycle and will initially be trialled with Parks Services and Waste Management in support of their PFI bid for funding.** |
| *Quantified costs and benefits* | **Financial investment, operational costs :**<br>£250 identified for supporting materials, otherwise officer time.<br>**Emissions reduction**<br>Estimated at 0.5% of the baseline or more as ability to compare projects is realised.<br>**Financial savings**<br>Not calculated at this stage.<br>**Payback period**<br>Not calculated at this stage. |
| *Resources* | **Funding: Internal, external sources of funds, investment criteria to be met**<br>Identified as officer time (LACM Lead Officer) but £250 allowed from SDC's 2008/09 budget for misc expenditure.<br>**Management: demand on management resources**<br>The project aims to embed carbon management skills within departments and, particularly, with finance officers. |
| *Ownership and accountability* | Project to be developed and managed by LACM Lead Officer.<br>Accountable to Project Board.<br>Outcome to be reported through CMT if required.<br>NB : It is hinted that, in future, Chief Executives will be required to sign off carbon accounts in the same way as the financial accounts of the local authority are signed off today. If this is introduced, a small team within the Council will be required to create this account in accordance with guidelines. |
| *Ensuring success* | ***Known key success factors*** *:*<br>Adoption of carbon accounting techniques in key departments.<br>Success in securing funding for projects that are assessed for their impact on carbon management as well as finance.<br>***Principal risks:***<br>Accounting is seen as an additional burden to current priorities and therefore not welcomed.<br>***Main means of risk mitigation :***<br>Carbon accounting has the support of the Head of Finance who, ultimately, will be responsible for signing off financial assessments and funding bids.<br>Will be a significant requirement if the Council qualifies to pay the Carbon Reduction Commitment. |
| *Performance / success measure* | Difficult to assess but it is estimated that the implementation of increased awareness could lead to a 0.5%+ reduction in energy use across the Council. This will be tested in Year 1 and the plans revised accordingly. |
| *Timing* | Suitable training to be sourced asap.<br>Training sessions – early summer 2008.<br>Applications :<br>To waste management PFI bid – Spring 2008.<br>To Parks Services Service Planning – ongoing throughout 2008.<br>To Council's budget setting process – from Autumn 2008 for 2009/10 budgets. |
| *Sources of information and guidance* | Existing LACM information.<br>Background data from the Carbon Trust (case studies etc).<br>Best Practice support from networks across the country. |

| ***Project / Action 6 : Introducing Basic Environmental Management Training through Induction.*** | |
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| *Description and notes* | **Identified as an option for embedding carbon management at all levels from the outset. If a presentation cannot be arranged (due to time constraints), a set of guidelines for corporate carbon management will be issued to each new employee. NB These guidelines will also be made available on PCC's intranet and website.** |
| *Quantified costs and benefits* | **Financial investment, operational costs :**<br>£250 identified for supporting materials, otherwise officer time.<br>**Emissions reduction**<br>Estimated at 0.5% of the baseline or more as ability to compare projects is realised.<br>**Financial savings**<br>Estimated approx £10.5K based on the additional care new staff would take in applying energy use etc.<br>**Payback period**<br>Not calculated at this stage. |
| *Resources* | **Funding: Internal, external sources of funds, investment criteria to be met**<br>Identified as officer time (LACM Lead Officer) but £250 allowed from SDC's 2008/09 budget for misc expenditure.<br>**Management: demand on management resources**<br>The project aims to embed carbon management skills within departments at all levels. |
| *Ownership and accountability* | Project to be developed and managed by LACM Lead Officer with the assistance of the Corporate Training Team.<br>Accountable to Project Board.<br>Outcome to be reported through CMT if required. |
| *Ensuring success* | **Known key success factors** :<br>Adoption of carbon management techniques in all departments.<br>**Principal risks:**<br>Inclusion in induction training rejected as a non-priority.<br>**Main means of risk mitigation :**<br>Ensuring the Carbon Management Policy is adopted asap as this would set the precedent for priorities. |
| *Performance / success measure* | Difficult to assess.<br>Numbers trained will be recorded.<br>It is estimated that the implementation of the increased awareness could lead to a 0.5%+ reduction in energy use across the Council. This will be tested in Year 1 and the plans revised accordingly. |
| *Timing* | Suitable training to be sourced asap.<br>Training sessions – early summer 2008. |
| *Sources of information and guidance* | Existing LACM information.<br>Background data from the Carbon Trust (case studies etc).<br>Best Practice support from networks across the country. |

| ***Project / Action 7 : Improved use of audio and video conferencing facilities*** | |
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| *Description and notes* | **The opportunities process identified a real opportunities to reduce the amount of travelling undertaken to attend conferences and meetings. Plymouth's peripheral location means, at least, a three and a half hour train trip for a meeting in London (approx 280 miles/450km) and, invariably, an expensive overnight stay. Other trips often involve air travel within the UK. Reducing the need to travel would save on accommodation costs, on the carbon footprint of travel and would address an improved work/life balance for those involved.**<br>**Opportunities to share audio and video conferencing facilities have been identified at GOSW and the University. In addition many presentations are now webcast or pod cast.**<br>**Our experience of the webinars and teleconferences used in the LACM programme has prompted us to review where, if at all, changes could be made to current practice.** |
| *Quantified costs and benefits* | **Financial investment, operational costs :**<br>Mainly officer time but £250 allowed for mis costs. To be sourced from the SDC's 2008/09 budget).<br>**Emissions reduction** :<br>Based on an estimated reduction of 5 tonnes minimum.<br>**Financial savings :**<br>Identified as £1600 plus subject to number of trips saved and arrangements made.<br>**Payback period** : Calculated at 0.7 Years. |
| *Resources* | **Funding: Internal, external sources of funds, investment criteria to be met**<br>£250 sourced from 2008/09 budget if required.<br>**Management: demand on management resources**<br>Review to be undertaken by LACM Lead Officer. |
| *Ownership and accountability* | Considered part of the core LACM Programme.<br>To be reported through the Project Board as required. |
| *Ensuring success* | **Known key success factors** :<br>Number of options sourced and costs of use.<br>Number of conferences/meeting completed using this process and an estimate of the carbon miles saved.<br>**Principal risks:**<br>Departments fail to respond to planned survey.<br>Facilities not available to share or are too expensive to hire.<br>Webcasts etc not compatible or stalled by firewalls.<br>Events considered too important to miss.<br>**Main means of risk mitigation :**<br>To be assessed. |
| *Performance / success measure* | Currently calculated on the basis of a minimum of 40 trips to London, 20 to Bristol and 20 to Exeter. The research will determine the extent to which travel is undertaken. |
| *Timing* | To be surveyed late Summer 2008. |
| *Sources of information and guidance* | Departmental survey.<br>Support and advice from partner organisations with audio and video conferencing facilities. |

| ***Projects / Actions 8 and 9 : Flood risk and climate change workshop and an audit an evaluation of the impact of adaptation measures required by PCC*** | |
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| *Description and notes* | **The development of the LACM Programme contributes essentially to the mitigation of climate change impacts in the city. Additional adaptation costs have also been identified (such as additional grass cuts). These, in turn, will have an impact on the financial stability of the services involved and the extent to which the LACM Programme will save money.**<br>**Flood risk in particular has been identified as a risk that needs to be assessed and related back to the way services are applied. Actions 8 and 9 will clarify how such risks will contribute to the overall delivery of improved carbon management and the Council's responses to tackling climate change.** |
| *Quantified costs and benefits* | **Financial investment, operational costs :**<br>Officer time identified together with support from partner agencies (Environment Agency etc).<br>**Emissions reduction** :<br>Not calculated at this point.<br>**Financial savings :** To be assessed.<br>**Payback period** : n/a |
| *Resources* | **Funding: Internal, external sources of funds, investment criteria to be met**<br>n/a<br>**Management: demand on management resources**<br>LACM Lead Officer to lead on delivery of workshop and review of requirements. |
| *Ownership and accountability* | Considered to complement the LACM Programme and the Council's contribution to the citywide Action Plan for Climate Change.<br>To be reported through the Project Board as required. |
| *Ensuring success* | **Known key success factors** :<br>Delivery of Draft Flood Risk & Climate Change Action Plan<br>Assessment of potential costs to the Council.<br>**Principal risks:**<br>Unavailable data<br>Lack of participation from key partners/services.<br>**Main means of risk mitigation :**<br>Establishing a good working relationship with partner organisations as Plymouth's Climate Change Action Plan is developed.<br>The need to respond to the Pitt Report on Flood Risks. |
| *Performance / success measure* | a. A formal response to the Pitt Report on Flood Risks.<br>b. An evaluation of the potential costs of adapting to climate change. |
| *Timing* | Workshop to be completed Spring 2008.<br>Evaluation to be completed by Dec 2008 as part of Action Plan development. |
| *Sources of information and guidance* | Varied. |

| ***Projects / Actions 10 and 11: Promoting the Green Travel Pass and Devon Car Share Schemes.*** | |
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| *Description and notes* | **Initial actions to reduce PCC's impact on travel are being promoted through these schemes.**<br>**The Green Travel Pass encouraged more staff to use public transport and to leave their cars at home.**<br>**The Devon Car Share Scheme encourages those living beyond the city boundaries to car share. NB Despite Plymouth's location no equivalent scheme for those living in Cornwall seems to exist.** |
| *Quantified costs and benefits* | **Financial investment, operational costs :**<br>This is a partnership project. No financial input is recorded.<br>**Emissions reduction** :<br>Identified at approximately 5 tonnes for each scheme in Year 1 (LACM toolkit based on consultants estimates – see below)<br>**Financial savings :**<br>Estimated as £2,254 per scheme in Year 1.<br>**Payback period** : n/a |
| *Resources* | **Funding: Internal, external sources of funds, investment criteria to be met**<br>*Details to be obtained from PCC Transport.*<br>**Management: demand on management resources**<br>The schemes are promoted by PCC's Transport Team. |
| *Ownership and accountability* | Managed by PCC's Transport Team.<br>Progress will be sought and and reported via the LACM Project Board. |
| *Ensuring success* | **Known key success factors** :<br>Number of take ups recorded.<br>**Principal risks:**<br>Poor communication<br>**Main means of risk mitigation :**<br>Consistent promotion and good PR across the year. |
| *Performance / success measure* | Estimates are based on consultants figures of :<br>a. 4350 people reducing their travel by 5 miles a day (Green Travel Pass)<br>b. Savings of 41,000 miles in Year 1. |
| *Timing* | To be rolled out over 2008/09. |
| *Sources of information and guidance* | http://www.plymouth.gov.uk/homepage/transportandstreets/carsharing.htm |

| ***Project / Action 12 : Fuel awareness, training and monitoring.*** | |
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| *Description and notes* | **The development of the LACM Baseline has prompted the Council's Fleet Manager to review how, when and where Council vehicles are utilised. In addition to the replacement of the Council's waste collection fleet (using much more eco-friendly vehicles), monitoring processes are to be introduced to assess fleet use and any reductions in fuel use/emissions that can accrue. This will be accompanied by training and new guidelines for staff. As the complexity of Job Evaluation will limit what can be done to tackle commuter travel until 2009/10, PCC's initial emphasis will be on reducing the impact of business travel and the fleet.** |
| *Quantified costs and benefits* | **Financial investment, operational costs :**<br>Officer time identified – LACM Lead Officer and Garage Manager (Princerock).<br>**Emissions reduction** :<br>Estimated as 116 tonnes of $CO_2$ based on reduced fuel usage (by 20% overall over 5 years) and 3% annually through awareness and improved monitoring.<br>**Financial savings :** Estimated at approximately £42K (from Fleet Review documentation).<br>**Payback period** : tba |
| *Resources* | **Funding: Internal, external sources of funds, investment criteria to be met**<br>To be supported by officer time but £100 identified for misc items if needed.<br>**Management: demand on management resources**<br>LACM Lead Officer to work with Garage and Fleet Managers to identify options for cost and emissions reductions. |
| *Ownership and accountability* | Asst Director of Environmental Services : Jayne Donovan<br>Garage Manager : Garry Stainer.<br>(Management details to be agreed but research will be undertaken within departments and co-ordinated centrally by the LACM Lead Officer.<br>To be reported through the Project Board as required.<br>Additional reporting via Waste Mgt Departmental Management Team). |
| *Ensuring success* | **Known key success factors** :<br>Improved baseline against which to assess reductions.<br>Identified reductions in fuel use and corporate mileage.<br>Assessment of potential costs to the Council.<br>Audit of the change from existing fleet to replacement vehicles.<br>**Principal risks:**<br>Unavailable data<br>Lack of participation from key partners/services.<br>**Main means of risk mitigation :**<br>Establishing a good working relationship with those using the vehicles. |
| *Performance / success measure* | a. Identified reductions in fuel use and corporate mileage.<br>b. Assessment of potential costs to the Council.<br>c. Audit of the change from existing fleet to replacement vehicles. |
| *Timing* | Audit to be completed Summer 2008-02-19 Training before Spring 2009 if required. |
| *Sources of information and guidance* | Depot Managers (Princerock and Outland Road)<br>Distribution companies<br>Fleet management and hire companies (to identify vehicle capacities and impact of use). |

| ***Project / Action 13 : Appointment of a Carbon Management Officer*** | |
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| *Description and notes* | **The delivery of the LACM Programme has provided the evidence required to support the appointment of a full time officer to drive the delivery of the SIP and support the embedding of carbon management practice in PCC's day to day service delivery. At present this proposal is speculative – further discussion is required to establish whether the budget can be found to make this appointment in Year 1.** |
| *Quantified costs and benefits* | **Financial investment, operational costs :**<br>Likely to be in the range of £47K including costs of advertising and appointment. £45K in years 2 to 5.<br>**Emissions reduction** :<br>In addition to driving the delivery of many of the projects in the SIP, it is estimated that the role itself could assist in reducing energy use (and the associated emissions) by 15% in line with best practice on environmental management systems.<br>**Financial savings :**<br>Estimated at approx £94K in Year 1 and up to £315K in successive years as projects are developed and delivered.<br>**Payback period** : Calculated at 0.5 years |
| *Resources* | **Funding: Internal, external sources of funds, investment criteria to be met**<br>No funding secured to date. This would be a new post.<br>**Management: demand on management resources**<br>To be agreed. |
| *Ownership and accountability* | To be agreed |
| *Ensuring success* | **Known key success factors** :<br>PCC has recently lost successive Energy Managers and the post they delivered. Their role in supporting energy monitoring and auditing is notably missed and needs to be re-established and linked with carbon management duties.<br>**Principal risks:**<br>That the funding cannot be found to support the post.<br>**Main means of risk mitigation :**<br>Evidence of the value of reducing emissions. This is an argument we need assistance with. This project is the only project without a dedicated budget in 2008/09. |
| *Performance / success measure* | Tba |
| *Timing* | Tba |
| *Sources of information and guidance* | Asset Management job descriptions.<br>Benchmarking opportunities with the Carbon Trust LACM partners. |

| ***Project / Action 14 : Delivery of Energy Performance Certification and consistent means of auditing energy use.*** | |
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| *Description and notes* | **The project will ensure PCC meets its obligations across its estate and establishes a consistent means of auditing energy use for the purposes of calculating and reviewing the annual returns for NI 185. The project will also update the Council's current (poorly published) Energy Policy.** |
| *Quantified costs and benefits* | **Financial investment, operational costs :**<br>Estimated at £30,000K (in the Asset Management budget).<br>**Emissions reduction** :<br>Estimated at 2347 tonnes if delivered to plan.<br>**Financial savings :**<br>Estimated at £209,377 in Year 1 due to the opportunities arising from improved energy management.<br>**Payback period** : Calculated at 0.1 years |
| *Resources* | **Funding: Internal, external sources of funds, investment criteria to be met**<br>£30K agreed in Asset Management budget.<br>**Management: demand on management resources**<br>Programme to be completed by Asset Management. |
| *Ownership and accountability* | **Responsible Officer : Nalin Seniveratne**<br>**Project Officer : Chris Trevitt, Asst Head of Asset Management.**<br>Project to be delivered by Asset Management.<br>Progress to be reported through the Project Board. |
| *Ensuring success* | **Known key success factors** :<br>Completion of the EPC process.<br>**Principal risks:**<br>Lack of trained operatives to complete the programme.<br>**Main means of risk mitigation :**<br>Not known |
| *Performance / success measure* | Completion of the process by 1st October 2008. |
| *Timing* | 1st October 2008. |
| *Sources of information and guidance* | To be agreed. |

| ***Project / Action 15 : Auditing installation costs of half hourly metering in PCC buildings that do not currently comply.*** | |
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| *Description and notes* | **Not all of PCC's buildings will qualify for EPCs but some of those that will are not currently monitored automatically. This project is linked with the completion of the EPC process set out above and will be essential in gauging whether, or not, the Council will qualify to pay the Carbon Reduction Commitment. Current estimates suggest the Council's energy use (on the basis of existing automatic metering) is 0.72MW under the stated DEFRA threshold.** |
| *Quantified costs and benefits* | **Financial investment, operational costs :**<br>Estimated at £5000<br>**Emissions reduction** :<br>Estimated at 66 t?CO2/year<br>**Financial savings :**<br>Estimated at £7711 less any legislative costs for non compliance.<br>**Payback period** : calculated at 0.6 years |
| *Resources* | **Funding: Internal, external sources of funds, investment criteria to be met**<br>To be met by Asset Management.<br>**Management: demand on management resources**<br>To be undertaken by the Asset Management Team |
| *Ownership and accountability* | Responsible Officer : Nalin Seniveratne, Head of Asset Management,<br>Project Lead : Chris Trevitt. Asst Head of Asset Management. |
| *Ensuring success* | **Known key success factors** :<br>Completion of the system and provision of evidence for the CRC payment (or otherwise).<br>**Principal risks:**<br>Installation timing and costs.<br>**Main means of risk mitigation :**<br>Ensuring systems are completed on time. |
| *Performance / success measure* | Completion of the system and provision of evidence for the CRC payment (or otherwise).<br>Evaluation of CRC obligations |
| *Timing* | To be completed by 01.04.09. |
| *Sources of information and guidance* | Defra guidelines on CRC. |

| ***Project / Action 16 : Establishing an acceptable ambient thermostatic standard for PCC buildings.*** | |
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| *Description and notes* | **Although PCC's Civic Centre is due to be located at some point within the 5 year SIP, the range and age of buildings used by the Council, together with the differing boiler systems, means that a comfortable ambient temperature is often difficult to achieve. This project will audit the potential for agreement on this and, where possible, its application.** |
| *Quantified costs and benefits* | **Financial investment, operational costs :**<br>Estimated at £5000.<br>**Emissions reduction** :<br>Estimated at 51 tonnes of CO2 per year.<br>**Financial savings :**<br>Estimated at £2758 per annum basic saving but subject to the audit outcomes and the management of the poorest performing sites.<br>**Payback period** :<br>Calculated at 1.8 years. |
| *Resources* | **Funding: Internal, external sources of funds, investment criteria to be met**<br>Agreed by Asset Management<br>**Management: demand on management resources**<br>To be led by Asset Management |
| *Ownership and accountability* | Responsible Officer : Nalin Seniveratne, Head of Asset Management,<br>Project Lead : Chris Trevitt. Asst Head of Asset Management. |
| *Ensuring success* | **Known key success factors** :<br>Energy savings and improvements in room comfort.<br>**Principal risks:**<br>Buildings and systems prove too old or expensive to replace.<br>**Main means of risk mitigation :**<br>Relocation of the Civic centre.<br>Responding to the worst performing sites first. |
| *Performance / success measure* | Energy savings and improvements in room comfort.<br>Agreement on an applicable standard ambient temperature. |
| *Timing* | Audit within 1 year |
| *Sources of information and guidance* | ? |

| ***Project / Action 17 : Delivery of the Home Energy Efficiency Programme.*** | |
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| *Description and notes* | **Plymouth has enjoyed notable success with its Home Energy Conservation work and the development of an Affordable Warmth Strategy for the city. This project will report on the progress and impact of the Home Energy Efficiency programme in 2008/09 and the contribution it makes to emission reductions and the alleviation of fuel poverty amongst the most vulnerable communities.** |
| *Quantified costs and benefits* | **Financial investment, operational costs :**<br>Estimated at £75K to PCC, with additional grants of £274,800 to complete delivery of the HECA programmes.<br>**Emissions reduction** :<br>Estimated at 508 tCO2 in Year 1 ( 219 tonnes through Insulate Plymouth, 155 tonnes through Plymouth Healthy Homes and 134 tonnes through HEAT Plymouth).<br>**Financial savings :**<br>Estimated as approximately £76K – the key beneficiaries here will be the householders.<br>**Payback period** : |
| *Resources* | **Funding: Internal, external sources of funds, investment criteria to be met**<br>£75K secured from PCC's Housing budget<br>£274,800 secured in additional grants (for Plymouth Healthy Homes, Insulate Plymouth and HEAT Plymouth).<br>**Management: demand on management resources**<br>To be delivered by the Home Energy Conservation Officer within the Housing Dept.<br>To be reported through the Project Board as part of the LACM SIP. |
| *Ownership and accountability* | Asst Director of Community Services : Frances Turner<br>Home Energy Conservation Officer : Colin Anderson |
| *Ensuring success* | **Known key success factors** :<br>Targets set out in Plymouth's Affordable Warmth Strategy.<br>**Principal risks:**<br>Over subscription to the schemes.<br>**Main means of risk mitigation :** |
| *Performance / success measure* | NI 187 : Fuel Poverty. (Tackling fuel poverty - % of people receiving income based benefits living in homes with a low energy efficiency rating.) |
| *Timing* | Delivery between 01.04.08 and 31.03.09. |
| *Sources of information and guidance* | NI 187 : Tackling fuel poverty - % of people receiving income based benefits living in homes with a low energy efficiency rating.<br>http://www.plymouth.gov.uk/homepage/housing/energy.htm |

| ***Project / Action 18 : Replacement of footpath lighting.*** | |
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| *Description and notes* | **Analysis of PCC's street lighting plan shows that although street lighting contributes a significant amount to the carbon footprint, there is very little that could be done to mitigate this impact. Actions that can be taken are already in progress. With this in mind, this project considers the on demand replacement of footpath lighting with bulbs that use half the energy.** |
| *Quantified costs and benefits* | **Financial investment, operational costs :**<br>Estimated at approximately £7.3K as a basic replacement programme.<br>**Emissions reduction** :<br>Estimated at 27 tonnes in Year 1.<br>**Financial savings :**<br>Estimated at approximately £3.1K in Year 1.<br>**Payback period** : Calculated at 2.3 Years. |
| *Resources* | **Funding: Internal, external sources of funds, investment criteria to be met**<br>Funding identified in Street Lighting budget.<br>**Management: demand on management resources**<br>To be delivered by the Street Lighting Team. |
| *Ownership and accountability* | Asst Director of Development : Chris Sane<br>TIE Engineer : Paul German |
| *Ensuring success* | **Known key success factors** :<br>Recorded energy efficiencies.<br>**Principal risks:**<br>Vandalism<br>**Main means of risk mitigation :**<br>Regular maintenance. |
| *Performance / success measure* | Recorded energy efficiencies. |
| *Timing* | Rolling replacement programme over Year 1. |
| *Sources of information and guidance* | PCC Transport, Infrastructure & Engineering Services. |

| ***Project / Action 19 : Delivery of improved recycling rates.*** | |
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| *Description and notes* | **Plymouth's current waste management arrangements support the introduction, by necessity, of improved recycling rates. We have chosen to retain the footprint of waste in our baseline because of its significance and are aiming to undertake a much more detailed audit of the carbon footprint of our waste proposals as Year 1 progresses.**<br>**This project will record the increases in recycling achieved and their impact on related carbon emissions and associated costs.**<br>**NB PCC has offered its support to DEFRA's working group on the carbon footprint of waste. Our view is that the current process is not refined enough to provide clear distinction between the values of waste landfilled and waste recycled.** |
| *Quantified costs and benefits* | **Financial investment, operational costs :**<br>Costs estimated at £125,620 in Year 1 – the programme will run for five years.<br>**Emissions reduction** :<br>Estimated at 703tCO2.<br>**Financial savings :**<br>Not stated as yet – outcome of ENTEC research awaited.<br>**Payback period** : |
| *Resources* | **Funding: Internal, external sources of funds, investment criteria to be met**<br>Funded by PCC Waste Management.<br>**Management: demand on management resources**<br>To be delivered by PCC Waste Management Teams. |
| *Ownership and accountability* | PCC Waste Management.<br>Reporting to Project Board as part of the LACM SIP.<br>Additional reporting through PCC processes. |
| *Ensuring success* | **Known key success factors** :<br>tba<br>**Principal risks:**<br>tba<br>**Main means of risk mitigation :** |
| *Performance / success measure* | Recycling rates that meet targets set. |
| *Timing* | Roll out over Years 1 to 5. |
| *Sources of information and guidance* | Plymouth Waste Management Strategy Documents.<br>Consultancy reports from ENTEC.<br>http://www.plymouth.gov.uk/homepage/environmentandplanning/rubbishandrecycling.htm<br>http://www.plymouth.gov.uk/homepage/environmentandplanning/jointwastepartnership.htm<br>NI 185 : % reduction in CO2 emissions of the local authority (related to waste – see project 21)<br>NI 186 : Per capita CO2 emissions in the LA area (related to waste – see project 21)<br>NI 188 : Planning to adapt to climate change. (related to waste – see project 21)<br>NI 191 : Residual household waste per household<br>NI 192 : % household waste sent for reuse, recycling and composting.<br>NI 193 : % of municipal waste landfilled. |

| ***Project / Action 20 : Introduction of Trade Waste Recycling Project (pilot 2008/09)*** | |
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| *Description and notes* | **The aim is to pilot the removal of 4000 tonnes of reusable trade waste from the waste stream with the associated cost and emissions benefits. See above for link with wider waste management projects.** |
| *Quantified costs and benefits* | **Financial investment, operational costs :**<br>Estimated at £38K for the pilot project.<br>**Emissions reduction** :<br>Estimated at 1788 tCO2 in the LACM database.<br>**Financial savings :**<br>To be evaluated at the end of the pilot study.<br>**Payback period** :<br>*tba* |
| *Resources* | **Funding: Internal, external sources of funds, investment criteria to be met**<br>To be met by PCC Waste Management.<br>**Management: demand on management resources**<br>To be managed by PCC Waste Management. |
| *Ownership and accountability* | Asst Director for Environmental Services : Jayne Donovan.<br>Waste Management Officers : Laura Schamotta |
| *Ensuring success* | **Known key success factors** :<br>• The extent to which collections of trade waste meet (or exceed) the estimated 4000 tonnes projected for the Year 1 pilot study.<br>• The % reduction of waste going to landfill as a result.<br>• The % reduction in the carbon footprint of recycling as a result.<br>**Principal risks:**<br>• Costs and on going application.<br>**Main means of risk mitigation :**<br>• Good quality promotional activities encouraging uptake of the scheme and its benefits. |
| *Performance / success measure* | The removal of 4000 tonnes (or more) of trade waste from the waste stream in Plymouth.<br>The contribution made to waste and recycling performance indicators.<br>The contribution this makes to achieving the LAA targets. |
| *Timing* | To be rolled out over Year 1 as a pilot project. |
| *Sources of information and guidance* | PCC Waste Management.<br>NI 193 : % of municipal waste landfilled.<br>Plymouth's Local Area Agreement. |

| ***Project / Action 21 : Carbon management audit of waste management strategy and PFI bid.*** | |
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| *Description and notes* | **See above – the significance of Plymouth's waste management practices has prompted a more detailed audit of their carbon footprint. This will be especially significant in relation to bids for funding.** |
| *Quantified costs and benefits* | **Financial investment, operational costs :**<br>Officer time to be allocated.<br>**Emissions reduction** :<br>The aim of this project is to be able to quantify and evaluate the actions required as a result of the implementation of Plymouth's new Waste Management Strategy. By way of example, the recent replacement of our refuse trucks will result in a lower impact on Plymouth's environment. Using the LACM methodology we were able to calculate the baseline of our current mileage (455,000 miles or 732,232km/year or 732 tonnes of CO2) and use this as a measure against which the performance of the new trucks can be assessed. Other impacts to be considered will be the transfer of waste from Plymouth to Liskeard during the period of transition from landfill to waste disposal technology and the potential of introducing waste to energy technologies.<br>**Financial savings :**<br>To be evaluated as part of the audit.<br>**Payback period** :<br>Estimated at between 5 and 50 years. |
| *Resources* | **Funding: Internal, external sources of funds, investment criteria to be met**<br>Officer time – to be agreed.<br>**Management: demand on management resources**<br>To be led by LACM Lead Officer with assistance from specialists in Waste & Street Services. |
| *Ownership and accountability* | Asst Director of Development : Jayne Donovan (Lead Officer)<br>Waste Management Project Officer : Mike Carroll |
| *Ensuring success* | **Known key success factors** :<br>The ability to calculate the carbon footprint of future waste management activities.<br>A baseline 'carbon audit' for use in funding applications and future strategy determination.<br>**Principal risks:**<br>The scope of the activities and, possibly, the lack of data specific enough to assess in this respect.<br>**Main means of risk mitigation :**<br>An excellent working relationship with the Waste Management team and their consultants. |
| *Performance / success measure* | Will arise from the audit. |
| *Timing* | To be completed by Dec 2008. |
| *Sources of information and guidance* | Plymouth Waste Management Strategy Documents.<br>Consultancy reports from ENTEC.<br>http://www.plymouth.gov.uk/homepage/environmentandplanning/rubbishandrecycling.htm<br>http://www.plymouth.gov.uk/homepage/environmentandplanning/jointwastepartnership.htm<br>NI 185 : % reduction in CO2 emissions of the local authority.<br>NI 186 : Per capita CO2 emissions in the LA area<br>NI 188 : Planning to adapt to climate change.<br>NI 191 : Residual household waste per household<br>NI 192 : % household waste sent for reuse, recycling and composting.<br>NI 193 : % of municipal waste landfilled. |

| ***Project / Action 22 : Issue of Site Management Guidelines for Schools Premises.*** | |
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| *Description and notes* | **Guidelines are being published to advise the managers of schools premises on best practice in environmental management. These will be complemented later in 2008 by Guidelines on applying carbon management techniques. Although it is unlikely that the production of these guidelines will result in significant savings, they are an essential element of the technical awareness required to embed carbon management in performance management, the policies and procedures of the Council and the roles of a variety of premises managers.** |
| *Quantified costs and benefits* | **Financial investment, operational costs :**<br>Estimated at £500 for physical production but otherwise officer time.<br>**Emissions reduction** : Estimated at a minimum of 352 tonnes based on the assumption that greater awareness is more likely to result in positive action to reduce energy use and emissions.<br>**Financial savings :** Estimated at £31,437 per year allowing for reduced energy use.<br>**Payback period** : Not assessed. |
| *Resources* | **Funding: Internal, external sources of funds, investment criteria to be met**<br>To be met by Asset Management from existing funds.<br>**Management: demand on management resources**<br>Managed by Asset Management. |
| *Ownership and accountability* | Asst Head of Asset Management : Chris Trevitt<br>PIC Support Officer, Property Services : Anna Litwinovich. |
| *Ensuring success* | **Known key success factors** :<br>Dissemination of the booklet/guidelines to all schools.<br>**Principal risks:**<br>Guidelines are not supported.<br>**Main means of risk mitigation :**<br>Training to complement the guidelines (to include carbon management) planned for June 2008. |
| *Performance / success measure* | Dissemination of the booklet/guidelines to all schools. |
| *Timing* | Allocation : By June 2008.<br>Training : By June 2008 |
| *Sources of information and guidance* | Various – includes pointers to assistance available from other services. |

| ***Project / Action 23 : School energy management – audit of boiler efficiency to establish replacement strategy.*** | |
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| *Description and notes* | **The boiler systems in Plymouth schools are all of differing ages. This simple project aims to audit the existing boilers with a view to establishing an energy efficient replacement strategy that maximises energy savings and emissions reduction. In principle, many of the schools have aging and badly controlled boilers. This audit will allow the installation, in sequence, of new, highly efficient boilers with modern controls. In theory this should result in huge savings in gas usage, costs and tonnes of CO2.** |
| *Quantified costs and benefits* | **Financial investment, operational costs :**<br>Awaiting evaluation - a provisional funding bid has a small amount of PCC capital (to allow feasibility studies, etc.) but otherwise assumes the use of 'prudential borrowing' based on cost savings through reduced energy consumption and schools' own investment of their 'devolved formula capital'.<br>**Emissions reduction** : To be evaluated during the audit.<br>**Financial savings :** To be evaluated from the audit outcome.<br>**Payback period** : Will be informed by the audit. |
| *Resources* | **Funding: Internal, external sources of funds, investment criteria to be met**<br>See above – outcome of budget bid awaited.<br>**Management: demand on management resources**<br>To be managed by the schools team from Asset Management. |
| *Ownership and accountability* | Asst Head of Asset Management : Chris Trevitt.<br>Client Services Manager, Children's Services Team : Mike Luffingham. |
| *Ensuring success* | **Known key success factors** :<br>Completion of the proposed audit.<br>**Principal risks:**<br>Small amount of capital funding is disallowed.<br>Funding is not agreed from investment proposals or from internal budgets in schools.<br>**Main means of risk mitigation :**<br>Evidence of the value of possible savings arising as a result of the audit. |
| *Performance / success measure* | Evidence of potential savings. |
| *Timing* | To be completed in 2008/09 in preparation for the 2009/2010 budget (Nov 08). |
| *Sources of information and guidance* | PCC Asset Management. |

| ***Project / Action 24 : School energy management – review energy efficiency of school kitchens and meals service.*** | |
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| *Description and notes* | **The potential to streamline the energy efficiency of school kitchens and the school meals service was highlighted in the response to the Opportunities Workshop. Further to this suggestion, research was undertaken in to potential energy efficiency projects. The first of these is described below for consideration in Year 1 of the SIP.**<br><br>**Dishwasher use in Primary Schools – energy, efficiency and ease of use : The project proposes to replace the sterilizer units in 30 local Primary Schools with a Hobart AM900 unit with associated savings on energy and carbon dioxide.** |
| *Quantified costs and benefits* | **Quantified figures given (estimated costs used in SIP and listed in brackets)**<br>**Financial investment, operational costs :**<br>The cost of installing a sterilizing sink would normally be £2000. The installation costs of a Hobart AM900 would be £4500 x 30 or a total of £135,000. However the AM900 is 80% more efficient than a sterilizer sink. (Estimated at £10K)<br>The running costs of these would be 30 x £3636 (for 195 days/year) or £109,000 per annum.<br>**Emissions reduction** : 30 unit total savings in Carbon would be 5.4 tonnes of CO2 per annum. Over a five year period the total savings in carbon would be 5.4 t x 5 (years) or 27 tonnes. (Estimated at 45tCO2per annum)<br>**Financial savings :** Total estimated savings £92,160.00 per annum.(Estimated at £2462)<br>**Payback period** : If attached to the schools electricity budget, this would be between 18 months and 2 years. Calculated at 4.1 years. |
| *Resources* | **Funding: Internal, external sources of funds, investment criteria to be met**<br>To be proposed as a possible invest to save project in 08/09.<br>**Management: demand on management resources**<br>To be managed by Asset Management. |
| *Ownership and accountability* | Asst Head of Asset Management : Chris Trevitt.<br>M&E Engineer : Paul Harris (PCC Asset Management). |
| *Ensuring success* | **Known key success factors** :<br>The potential for this project has been fully assessed in terms of cost and risk.<br>**Principal risks:**<br>The investment is not deemed to be feasible in 2008/09.<br>**Main means of risk mitigation :**<br>The provision of comparative data on savings in terms of both costs and tonnes of CO2. |
| *Performance / success measure* | Achievement of the 80% efficiency savings estimated in the quotes received. |
| *Timing* | Installation to be completed in 2008/09. |
| *Sources of information and guidance* | PCC Asset Management. |

| ***Project / Action 25 : Phased introduction of energy efficiency measures at PCC pools.*** | |
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| *Description and notes* | **At least one of Plymouth's main pools is to be replaced during the lifetime of the SIP with a new, start of the art Life Centre. Monitoring of the energy used at the remaining pools began in Nov 2007 as a result of discussions centred on the SIP development. Results to date show large discrepancies in the costs of energy per kWh and energy use. In addition to auditing energy use with a view to improving performance, a number of energy efficiency measures will be introduced over the next five years.**<br><br>**The first of these will tackle the 'wrapping' of pool filters to reduce heat loss and improve efficient energy use – known means of saving energy and reducing emissions.** |
| *Quantified costs and benefits* | **Financial investment, operational costs :**<br>The agreed financial investment is £3220.<br>**Emissions reduction** : Estimated at 70 tonnes of CO2 in the year following installation (to be monitored).<br>**Financial savings :** Estimated at 4,579 – a net payback of £1359 (subject to any agreement on stabilizing energy costs for the pools involved).<br>**Payback period** : Calculated at 0.6 years. |
| *Resources* | **Funding: Internal, external sources of funds, investment criteria to be met**<br>Funding secured from Community Services budget 2007/08.<br>Monitoring to be applied throughout 2008/09.<br>**Management: demand on management resources**<br>Installation and monitoring to be regularly reviewed by Pools staff. |
| *Ownership and accountability* | Head of Leisure Services : James Coulton<br>Pools Manager : Kevin Thomas. |
| *Ensuring success* | **Known key success factors** :<br>Achievement of the estimated savings from the use of filter wraps.<br>**Principal risks:**<br>Filter wraps are inadequate for the task required of them.<br>Monitoring regimes are insufficient to register any change.<br>**Main means of risk mitigation :**<br>Both unlikely – wraps are to be professionally installed and monitoring has been introduced as a regular management requirement. |
| *Performance / success measure* | Achievement of the estimated savings from the use of filter wraps. |
| *Timing* | To be reviewed over 1 year with major reporting in March 2009. |
| *Sources of information and guidance* | Pools Services. |

| ***Project / Action 26 : Review of Parks Services Service Plan to embed carbon management auditing and best practice.*** | |
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| *Description and notes* | **The 2008/09 Parks Services Service Plan will be adopted in late March. This service would appear to have a substantial carbon footprint – including fuel use, staff travel and grass cutting – as well as being a focus on adaptation to climate change in terms of services, planting, planning and habitat management. A number of projects have been proposed for Year 2 of the SIP, including the potential to provide biomass (as woodchippings) from an increased amount of coppicing across the Council's estate. However, before specific proposals are made, the Department has asked to be included in a pilot study to determine exactly what its carbon footprint is and how this might influence future revisions of its service plan and associated land management practices.** |
| *Quantified costs and benefits* | **Financial investment, operational costs :** £250 to cover report production if required. Otherwise a limited amount of officer time and expertise.<br>**Emissions reduction** : Estimated at 470 tonnes per year due to the high % reductions in levels of fuel use and business mileage that will be addressed. The audit will evaluate and confirm this.<br>**Financial savings :** Estimated at 41,915 – again due to the high % reductions in levels of fuel use and travel.<br>**Payback period** : To be audited. Subject to the element of the project the payback period could range from almost immediate savings to 100 years for coppicing and offset planting options for broadleaved woodland areas. |
| *Resources* | **Funding: Internal, external sources of funds, investment criteria to be met**<br>The resources required to complete this will be found from benefit in kind via officer time.<br>**Management: demand on management resources**<br>Limited to a short series of data workshops and analysis. |
| *Ownership and accountability* | Asst Director of Development : Jayne Donovan<br>Head of Parks Services : Nick Jones<br>Lead Officer : Jackie Young. |
| *Ensuring success* | **Known key success factors** :<br>A section by section assessment of the impact of Parks Services and an associated carbon account for each budget within these.<br>**Principal risks:**<br>Officer time limited due to other duties.<br>**Main means of risk mitigation :**<br>A planned approach to data gathering. |
| *Performance / success measure* | A section by section assessment of the impact of Parks Services and an associated carbon account for each budget within these. |
| *Timing* | To be completed by September 2008. |
| *Sources of information and guidance* | Parks Services Service Plan and Budget. |