

Manchester City Council Report for Resolution

Report to: Neighbourhoods and Environment Scrutiny Committee - 19 July 2016

Subject: Climate Change Action Plan 2015/16 to 2019/20: Emissions Monitoring Report and Planned Actions to 2020

Report of: Deputy Chief Executive - People, Policy and Reform

Summary

Manchester: A Certain Future (MACF) is the citywide plan to reduce carbon emissions in the period from 2010 to 2020. It sets out the aim for Manchester to be a leading city for action on climate change and to have reduced its carbon emissions (CO₂) by 41% by 2020.

Manchester City Council (MCC) recognises that it has a key part to play in contributing to the delivery of the citywide carbon reduction objectives and developed a Climate Change Delivery Plan for the period 2010-20 in October 2010.

This report reviews recent progress in delivering reductions in carbon emissions and outlines actions aimed at meeting the Council's and wider city objectives by 2020.

Recommendations

That Neighbourhoods and Environment Scrutiny Committee:

1. Note recent progress to achieve a reduction in MCC's direct emissions along with the level of MCC annual emissions for 2015/16
 2. notes and comments on the attached MCC Climate Change Action Plan for the period 2016/17 to 2019/20
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Wards Affected: All

Contact Officers:

Name: Sara Todd
Position: Deputy Chief Executive (Growth and Neighbourhoods)
Telephone: 0161 234 3286
E-mail: s.todd@manchester.gov.uk

Name: Richard Elliott
Position: Head of Policy, Partnerships and Research
Telephone: 0161 219 6494

E-mail: r.elliott@manchester.gov.uk

Name: Julie McMurray
Position: Head of Client Relationships
Telephone: 0161 219 6791
E-mail: j.mcmurray@manchester.gov.uk

Background documents (available for public inspection):

The following documents disclose important facts on which the report is based and have been relied upon in preparing the report. Copies of the background documents are available up to 4 years after the date of the meeting. If you would like a copy please contact one of the contact officers above.

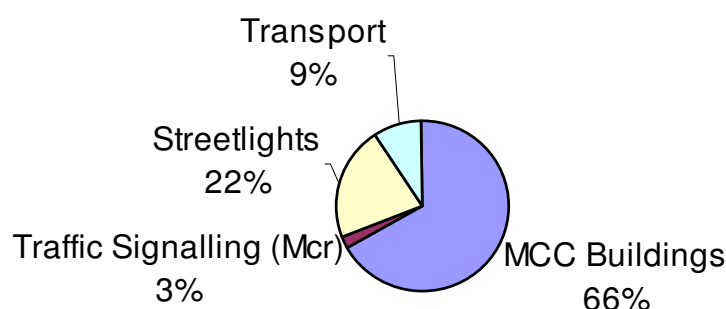
- *Manchester – A Certain Future*
- *Manchester – A Certain Future 2013 Update*
- MCC Climate Change Delivery Plan 2010-2020, Manchester City Council
- Greater Manchester Climate Change Strategy 2011-2020, Association of Greater Manchester Authorities
- MCC Annual Carbon Reduction Plan 2010/11, Manchester City Council
- MCC Annual Carbon Reduction Plan 2011/12, Manchester City Council
- MCC Annual Carbon Reduction Plan 2012/13, Manchester City Council
- MCC Annual Carbon Reduction Plan 2013/14, Manchester City Council
- MCC Climate Change Action Plan 2014/15 to 2016/17, Manchester City Council
- MCC Direct CO₂ Emissions 2013/14, Manchester City Council
- MCC Climate Change Action Plan 2015/16 to 2017/18, Manchester City Council
- MCC Direct Emissions 2014/15, Manchester City Council

1. Background and Introduction

- 1.1 Manchester: A Certain Future (MACF)¹ is the city wide climate change action plan, which calls on all organisations and individuals in the city to contribute to collective, citywide action to enable Manchester to realise its aim to be a leading low carbon city by 2020.
- 1.2 Manchester City Council (MCC) has committed to contribute to the delivery of the city's plan, and set out its commitments in the MCC Climate Change Delivery Plan 2010-20.
- 1.3 Since 2010/11 MCC has produced action plans which detail activities that will be undertaken to enable it to meet its carbon reduction targets. This report monitors progress made in 2015/16 and sets out planned actions for the remainder to the period to 2019/20
- 1.4 The CCAP commits to achieving the following objectives:
 - To reduce MCC Direct CO₂ emissions by 41% reduction by 2019/20, from a 2009/10 baseline. (The areas of activity that contribute to the baseline are set out in figure 1 below).
 - To support projects designed to reduce citywide emissions, particularly where the city council has a key or enabling role to support stakeholders and partners across the city to take action t.
- 1.5 Figure1 below demonstrates that the majority of the Council's direct emissions in 2009/10 came from our built estate (66%) followed by street lighting (22%). A smaller proportion is attributed to transport (9%) and traffic signalling (3%).

Figure 1: MCC Direct CO₂ Emissions Baseline 2009/10

MCC Baseline Carbon Emissions Sources 2009/10



2 Progress to Date in Delivering the 41% Carbon Reduction Target

- 2.1 In order for carbon emissions associated with the Council's activities to be calculated and reported, 'activity data' such as distance travelled, kilowatt hours of electricity consumed or litres of fuel used are converted into carbon

¹ Further information on MACF and progress is available from www.manchesterclimate.com

emissions using emission conversion factors. These emission conversion factors are updated and provided each year by Government (DEFRA). (More detail regarding emissions factors is contained at appendix 3).

- 2.2 It should be noted that the Council purchases energy generated by renewable sources across its estate. The fact that we need to report Government emission factors means we are unable to take this into account when assessing our overall carbon emissions.
- 2.3 Table 1 below summarises the level of progress that has been made between 2009/10 and 2015/16 in achieving a reduction in emissions by area of activity. This data shows that overall there has been a reduction of 18.1% in overall emissions since 2009/10. This means that there is a requirement to reduce our emissions by a further 22.9% when compared with the baseline by 2020.
- 2.4 Over the year to March 2016 CO2 emissions decreased by 5.9%. This is largely due to a decrease in the calculated emissions from our buildings and street lighting due to changes in these Government emission factors.

Table 1: Carbon Emissions (kg) by Activity by Year

Activity	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	% change from baseline
MCC Buildings	47,764,131	43,892,166	41,407,195	43,063,463	39,649,699	41,192,707	38,746,420	-18.9
Traffic Signalling	1,894,023	1,661,973	1,474,507	1,310,166	890,934	733,420	644,842	-66.0
Streetlights	15,725,949	15,601,708	14,716,620	15,052,168	14,898,208	16,291,891	15,111,934	-3.9
MCC Fleet	2,863,487	2,986,009	2,589,826	2,415,510	1,682,948	1,701,589	1,142,646	-60.1
MCC Grey Fleet	1,001,324	918,211	624,799	774,219	565,709*	587,975	532,287	-46.8
MCC Taxis	135,731	138,575	113,512	76,459	48,558	51,075	37,758	-72.2
MCC Train	109,729	57,605	39,920	43,797	27,120	47,454	46,685	-57.5
MCC Air travel	78,502	52,131	60,603	89,605	141,490	89,921	166,165	111.7
MCC Car Club	5,437	8,803	9,191	8,983	9,517	8,302	7,529	38.5
Waste Collection Fleet	2,496,300	2,986,009	2,087,485	2,054,124	1,963,586	1,978,892	2,579,476	3.3
Total (kg CO₂)	72,074,613	68,303,189	63,123,658	64,888,494	59,877,769*	62,683,225	59,015,742	n/a
Change from Baseline (%)	n/a	5.2	12.4	10.0	16.9*	13.0	18.1	n/a

3 Progress to Date Against Actions in the CCAP

3.1 A summary of recent progress by area of activity is provided in sections 3.2 to 3.5 below.

3.2 **MCC Direct CO₂** : Progress includes:

- **Buildings:** Progress has been made to establish programmes and projects which will significantly reduce emissions from the buildings estate by 2020. An Estates Transformation Plan has been drafted and will be informed by Stock Condition Surveys which are currently being carried out in the operational estate. An MCC Estate Board has been established to govern activity in this area while an Estates Asset Management Steering Group has been established to manage service delivery. Energy audits have been carried out on six council buildings; Wythenshawe Forum, Gorton Cross Retail Market, Arndale New Market Hall, Manchester Art Gallery, Sharp Project and Hall Lane Resource Centre. These energy audits focus on short, medium and long term actions and demonstrate how up to 950 tonnes of carbon could be saved. Site monitoring and engagement with site / operational teams will continue throughout 2016/17 to secure savings where possible. Three new energy efficient leisure facilities, East Manchester, Hough End and Arcadia have now been built and opened to BREEAM “very good” standard. Activity on the Council’s buildings estate needs to remain a high priority to 2019/20 in order to ensure that we will meet our 41% carbon reduction target by 2020. For Members information, Appendix 2 identifies the 25 City Council buildings which produce the highest carbon emissions. It is currently estimated that the Estate needs to contribute 8% of additional savings compared with the baseline by 2020.
- **Energy:** Street lighting makes a significant contribution to our overall level of direct emissions. Despite some delays in the development of the street lighting replacement programme, based on Light Emitting Diode (LED) technology will begin in 2016/17 and be complete by 2020 saving the council an estimated 12% of our total carbon emissions. Procurement is currently underway for the Civic Quarter Heat Network which is due to be operational by 2017/18. This is anticipated to reduce MCC total emissions by a further 3.1% by 2020.
- **Transport:** Transport emissions contribute 7.1% of our total direct emissions. Considerable progress has been made to date to significantly reduce direct carbon emissions from transport. Many of the measures put in place to achieve this reduction such as the staff taxi policy and eco driver training are now ‘business as usual’ and have been successfully embedded within the Council’s processes and procedures

3.3 **MCC Indirect CO₂**: Progress includes:

- In 2014/15 the Council worked with GM partners to develop a GM Social Value Evaluation Framework and Policy which will be applied to large public

sector contracts. Work has been undertaken to incorporate this into the Council's Ethical Procurement Policy which was approved by Full Council in March 2016. This activity was overseen by the MCC Ethical Procurement Task and Finish Group.

- Work has been undertaken to understand the authority's extended carbon footprint. This includes activity relating to procurement, water consumption, staff commuting and waste. These actions have now been embedded within the Council's ongoing activities in these areas.
- In 2013 the Council started to work towards achieving the WWF Timber Pledge Award and progress was made against several criteria including construction, furniture and timber fencing supplies. However, due to MCC budget and technical constraints we were unable to make progress against the recycled paper procurement criteria and as such were unable to achieve the award. However work is currently underway to review the purchasing of recycled paper as part of the new printer contract negotiations.

3.4 **Citywide Action:** Progress includes:

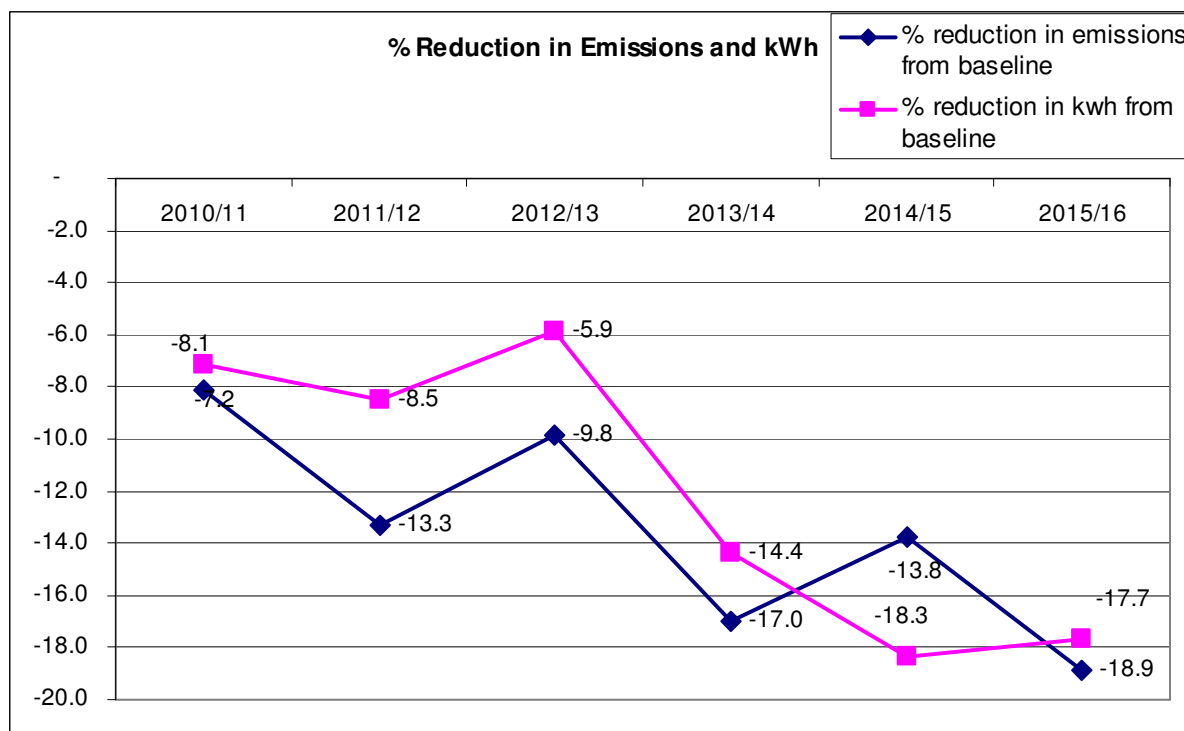
- Manchester a Certain Future has been supported by the City Council during 2015/16 and has taken a leading role in promoting the importance of taking action to address climate change. The organisation has been leading work to develop a strategy that would enable Manchester to be on a pathway to becoming a zero carbon city by 2050. MACF has also undertaken a range of activities to promote the importance of carbon reduction throughout the year. Amongst this work MACF reviewed and input into the Council's recently approved Residential Design Guidance. Other recent events have included:
 - A workshop to discuss low carbon design solutions and
 - A wide range of educational events aimed at all age ranges; and
 - Workshops on bio diversity and green and blue infrastructure solutions
- In 2015 MCC were successful in securing a €10m share of the €24m EU-funded Triangulum Smart Cities project. In 2015/16 the project commenced and had the key aim to demonstrate integration of energy, mobility and ICT systems within the Corridor area of the city. In 2015/16 progress has been made in completing the technical implementation report, procurement of cargo bikes and electric vehicles, development of the ICT infrastructure and the development of a communications plan.
- Significant investment was been secured for a range of public transport and cycling projects including £20m for the Velocity project to make cycling safer and easier cross the city-region with a particular focus on Manchester. A number of schemes including the Airport, East Didsbury and Mersey Valley cycle ways are now complete. Work has been carried out to progress the Metrolink Second City Crossing expansion works which are schedule to be complete in 2017.
- In 2015/16 the Green and Blue Infrastructure Strategy for the city was approved by Neighbourhoods Scrutiny Committee. A variety of Green and Blue projects have been ongoing throughout 2015/16 including:

- The Environment Agency was successful in their bid for €12m of funding for a Catchment Wide EU Life Bid. This will have benefits for the Irwell catchment in Manchester and the project will be supported by MCC, Groundwork and Red Rose Forest.
- Two University Research Council Natural Environment Research Council Bids worth £250,000 over two years have been successful and will look at Green Infrastructure in Gardens and Green Growth.
- 600 school children from four schools have been engaged through Lancashire WildlifeTrust Forest Schools Project. A new round of funding for 2016 has been secured (worth approximately £66,000), which will enable four more Manchester schools to benefit from Forest Schools activity.
- £1.2m and 7km footpath and access improvements along the Ashton Canal have been delivered by Canal and River Trust through the VeloCity programme.
- One hectare of Wildflower planting undertaken as part of Tale of Two Cities project engaging with over 200 people, with an additional 26 sites citywide planted by MCC as part of Clean City.

3.5 The key features of the 2015/16 data as shown in table 1 are that:

- o Emissions from energy used in the Council buildings decreased by 5.9% between 2014/15 and 2015/16. This decrease can largely be attributed to the decrease in the electricity emission factor of 6.9% between 2014/15 and 2015/16. During this period energy usage (kWhs) increased by 0.6%. This is demonstrated in figure 2 below.

Figure 2: Percentage change in buildings kWhs and CO₂ emissions from the 2009/10 baseline



- Emissions from traffic signalling have decreased by 66.0% from the baseline year in 2009/10. This very significant reduction is as a result of action across Greater Manchester to upgrade traffic signals from tungsten halogen bulbs to more energy efficient LEDs. In addition to this, old traffic signal controllers have been updated to more modern and efficient products.
- Emissions from street lighting have decreased by 7.2% between 2014/15 and 2015/16. Much of this decrease can be attributed to the decrease in the electricity emission factor as energy usage (kWhs) during this period only decreased by 0.4%. The switch to low energy street lighting (LEDs) which is programmed to commence during the current year is anticipated to reduce overall MCC emissions by approximately 12%.
- There has been an increase in emissions from air travel of 84.8% between 2014/15 and 2015/16. The level of air travel has fluctuated in recent years and last year saw an increase in the number of kilometres travelled by air for all types of journeys (domestic, short haul and long haul). The Council is involved in a number of collaborative projects with other cities many of which bring income to the city. While efforts are made to minimise travel associated with these projects, face to face meetings are often necessary. It is worth noting that air travel contributes just 0.3% of our total direct emissions.
- Emissions from transport account for 7.1% of MCC direct emissions. Overall there has been a downward trend in our transport emissions since 2009/10. In 2015/16 the waste fleet contract was awarded to Biffa and as part of this some additional MCC Fleet vehicles have been transferred to their management. This accounts for the slight increase in emissions from the waste fleet in 2015/16.

4 Future Actions to 2020

- 4.1 The Council still has a challenge if it is to meet the 41% target by 2020, but with a combination of action to introduce more energy efficient street lighting, coupled with action to improve the energy efficiency of the Council's operational estate, this should be achievable.
- 4.2 A summary of the planned key actions to 2019/20 is provided below. The full plan is included at Appendix 1.
- 4.3 **MCC Direct CO₂**: It is recognised that more needs to be done around our operational estate in order to reach the 41% reduction target by 2020. As such the plan to 2019/20 has a large focus on building actions.
- 4.4 Energy consumed within the Council's operational buildings estate contributes 66% (from 2009/10 baseline) of MCC direct CO₂ emissions. It is therefore of critical importance that the Council takes action in this area. Between now and 2020 we will implement a suite of actions which aim to reduce fuel consumption and consequent emissions. These will include:

- The implementation of an Estates Transformation Programme which includes the completion of operational estate stock condition surveys to inform Asset Management Programme and carbon savings
- The development of processes to ensure that carbon savings are embedded within and are a priority of the Estate Asset Management Programme.
- Continuing to undertake rationalisation of identified council buildings and calculating the carbon savings that will result from this.
- Implementing 'quick win' actions from energy audits carried out at Wythenshawe Forum, Gorton Cross Market, Arndale New Market, Manchester Art Gallery, Sharpe Project and Hall Lane Resource Centre. We will also undertake a cost benefit analysis to understand the viability of implementing medium and long term actions.
- Investigation of the use of a variety of funding opportunities, such as Salix Finance to improve the energy efficiency of the buildings estate. (Salix Finance provides 100% interest-free capital finance to the public sector to improve building energy efficiency and reduce carbon emissions. The finance model is based on the 'pay as you save' principles where the repayments do not exceed the savings made from the energy efficiencies carried out).

- 4.5 Many of our most carbon intensive buildings form part of our Leisure Estate. These buildings are valuable assets in our communities and are often used for a range of activities and are open for long hours. As such it is essential we ensure that they are as energy efficient as possible. With our partners we will investigate the potential to carry out energy efficiency improvements utilising a variety of funding models.
- 4.6 The street lighting LED replacement programme will commence in 2016/17 and be complete by 2020 and will enable us to decrease our total emissions by 12%. This will make a major contribution to deliver the required level of savings by 2020.
- 4.7 The Civic Quarter Heat Network project is currently being procured and will be complete by 2018. This will help us to reduce our total emissions by a further 3.1% by 2020.
- 4.8 **Citywide Action:** There are several actions where the council's role and contribution is key to the successful reduction of citywide climate change. The council has both a strategic and enabling role in the city that will have an indirect benefit through helping to create the right environment and culture within which action on climate change can be delivered by all stakeholders in the city. These actions include supporting Manchester a Certain Future to deliver citywide climate change actions; further development of the city centre heat network programme; work with Greater Manchester partners to deliver more energy efficient solutions to service delivery; delivery of the Triangulum smart cities projects and improvements to pedestrian and cycling facilities all have a potential role to play.

5 Zero Carbon Manchester 2050

- 5.1 In January 2016 the Our Manchester Strategy 2016-25 was published and sets out the vision for Manchester to become a liveable and low carbon city which will:
- Continue to encourage walking, cycling and public transport journeys
 - Improve green spaces and waterways including them in new developments to enhance quality of life
 - Harness technology to improve the city's liveability, sustainability and connectivity
 - Develop a post-2020 carbon reduction target informed by 2015's inter-government Paris meeting, using devolution to control more of our energy and transport
 - Argue to localise Greater Manchester's climate change levy so it supports new investment models
 - Protect our communities from climate change and build climate resilience.

- 5.2 The plan also includes the below objective:

'Manchester will play its full part in limiting the impacts of climate change... and by 2025 will be on a path to being a zero carbon city by 2050'.

- 5.3 Manchester is one of the first cities in the world to make this commitment and are doing so because our future success is intrinsically linked with the future wellbeing of the local and global environment.
- 5.4 The Council will need to play its part in contributing to a zero carbon Manchester by 2050 and as such actions will be developed between now and 2020 to ensure that we are on the right path to meet these commitments.
- 5.5 The city intends to work with MACF and others partners to develop a clear process to be on target to deliver this objective.

6 Governance, Delivery and Performance Management

- 6.1 Every directorate, service, team and individual member of staff has a role to play in the delivery of this plan. Over the life of this plan, the Council will publish its carbon emissions performance on a quarterly and annual basis. It will also publish a report on a quarterly basis detailing progress against the actions outline in the CCAP'
- 6.2 All reports will be published on the MCC website at www.manchester.gov.uk/climatechange

7 Summary

- 7.1 To date direct MCC carbon emissions have fallen 18.1% from the 2009/10 baseline. As such a further 22.9% or 16,492 tonnes of CO₂ per annum, needs to be saved between now and 2020.

- 7.2 This document provides a clear plan as to the activity that we need to take to achieve these savings including:
- Delivering the street lighting LED replacement programme which will reduce our total emissions by 12%;
 - Delivering the Civic Quarter Heat Network which will reduce our total emissions by 3.1%, and:
 - Continued building energy efficiency programmes which, it is estimated will save at least the remaining 8%.
- 7.3 Alongside work to reduce the Council's direct emissions work will continue alongside Manchester a Certain Future and other partners to work towards a reduction in carbon emissions across the city.

Appendix 1: MCC Climate Change Action Plan 2016/17 to 2019/20

Action	Further Detail and Milestones	Responsibility	Completion date	Total Estimated CO ₂ savings (tonnes) to 2020
INTERNAL (MCC) DIRECT CO₂ EMISSIONS				
ENERGY				
1. Deliver the Street Lighting LED replacement programme	<ul style="list-style-type: none"> <u>2016/17</u>: Procurement complete and first phase of installation commences. Installation figures set as milestones* (see below) 12 months - 12,000 18 months - 23,000 24 months - 34,000 30 months - 45,000 36 months - 56,625 <u>2019/20</u>: Installation complete by - September 2019 <p>* subject to change as subject to contract negotiations which are currently taking place.</p>	Commercial Director	2019/20	8,400 tonnes
2.	<ul style="list-style-type: none"> 			
BUILDINGS				

<p>3. MCC Estate Transformation Programme</p>	<p>The Estates Transformation programme will consist of various actions undertaken to reduce emissions from the MCC operational Estate. These will include:</p> <ul style="list-style-type: none"> • <u>2016/17</u>: Explore the opportunity of using a variety of finance models to make energy efficiency improvements to the buildings estate. • <u>Ongoing</u>: use completed stock condition surveys to inform Asset Management Programme which details where carbon savings will be made 	<p>MCC Estates Board and Head of Client Relationships, Strategic Development Directorate</p>	<p>Ongoing</p>	<p>5,900 tonnes</p>
<p>4. MCC Estates Rationalisation Plan</p>	<ul style="list-style-type: none"> • <u>2016/17</u>: Development of an Estates Rationalisation Plan. • <u>Ongoing</u>: Continue to undertake rationalisation of identified council buildings whilst calculating carbon savings. 	<p>MCC Estates Board and Head of Client Relationships, Strategic Development Directorate</p>	<p>Ongoing</p>	
<p>5. Where financially viable implement suggested actions from Energy Audits and evaluate impact on energy consumption and carbon emissions</p>	<ul style="list-style-type: none"> • <u>2016/17</u>: Implement 'quick win' actions from energy audits carried out at Wythenshawe Forum, Gorton Cross Market, Arndale New Market, Manchester Art Gallery, Sharpe Project and Hall Lane Resource Centre • <u>2017/18</u>: Undertake cost benefit analysis of longer term energy audit savings to determine in implementation is viable. 	<p>MCC Estates Board and Head of Client Relationships, Strategic Development Directorate</p>	<p>2017/18</p>	

<p>6. Deliver carbon savings from the MCC operational estate. Leisure Facilities</p>	<ul style="list-style-type: none"> • <u>2016/17</u>: Explore the opportunity of using a variety of finance models to make energy efficiency improvements to the leisure estate. • Develop a reporting process which demonstrates emissions per visitor number. • <u>2017/20</u>: Implement any identified energy efficiency across the leisure estate where appropriate. • <u>Ongoing</u>: Work in Partnership with GLL and Eastlands Trust to deliver Environment and Energy Plans for their sites. 	<p>Head of Community and Cultural Services</p>	<p>Ongoing</p>	
<p>7. Develop and deliver a MCC Operational Buildings Carbon Reduction Plan</p>	<p>Use data from the returned Stock Condition Surveys, the Estates Transformation Programme & Rationalisation Plan and energy audits to produce a MCC Operational Buildings Carbon Reduction Plan that sets carbon savings from specific building activities. This will enable us to:</p> <ul style="list-style-type: none"> • Assess progress on a quarterly and annual basis to 2020 target for carbon reductions arising from the above activities. • Understand any 'gap' in meeting the carbon reduction target and to formulate options for further reductions to achieve the target. • Effectively monitor and evaluate buildings projects and programmes to determine key activities that contribute 	<p>MCC Estates Board and Head of Client Relationships, Strategic Development Directorate</p>	<p>Ongoing</p>	<p>N/A</p>

	to carbon savings and enable replication of best practice			
8. Ways of working	<p><u>Ongoing:</u></p> <ul style="list-style-type: none"> The MCC Estate Board will continue govern the buildings carbon reduction plans to 2020 and beyond and identify resource for actions as required Ensure that carbon reduction activities are embedded in the day to day management and running of buildings to secure further carbon savings Work in partnership with GMCA to access funding mechanisms 	MCC Estates Board and Head of Client Relationships, Strategic Development Directorate	Ongoing	N/A
OTHER				
9. Zero Carbon Manchester 2050	Work with MACF and the Our Manchester Forum to develop a process to ensure that we are zero carbon by 2050	Head of Policy, partnerships and Research	2020	N/A
CITYWIDE CLIMATE CHANGE ACTION: PROJECTS AND PROGRAMMES				
10. Reduce citywide carbon emissions by 41% by 2020.	<ul style="list-style-type: none"> Support MACF in the delivery of city wide climate change objectives and projects where appropriate. 	MACF	2020	N/A
11. Reduce citywide emissions from domestic buildings	<ul style="list-style-type: none"> Work with the GM Low Carbon Hub to support residents to reduce domestic CO₂ emissions. 	MACF Buildings Group	2016-20	N/A

<p>12. Reduce citywide emissions from energy: Energy Company</p>	<ul style="list-style-type: none"> Support the Greater Manchester Combined Authority to identify new mechanisms, including options for Manchester and Greater Manchester-level solutions; agree the preferred option(s); continue to share information with Core Cities, including on the establishment of Energy Service Companies. 	<p>Head of Policy, Partnerships and Research</p>	<p>2015/16</p>	<p>Subject to outcome of work with GMCA</p>
<p>13. Reduce citywide emissions from energy: Identify and develop additional heat network clusters in Manchester</p>	<p><u>2016/17</u></p> <ul style="list-style-type: none"> Complete master planning for heat network opportunities at Piccadilly Station (Network Rail). Commence delivery of regional level project development with Salford and Trafford. Commercial support (GM Low Carbon Project Development Unit) provided to St Johns scheme being developed by Allied London. <p><u>2017/18 onwards</u></p> <ul style="list-style-type: none"> Development of detailed business cases for above projects, moving into delivery. Identification and investigation of further cluster opportunities. 	<p>Strategic Director, Strategic Development</p>	<p>2016-20</p>	<p>To be determined subject to outcome of feasibility studies and funding applications</p>
<p>14. Deliver the Triangulum smart cities project</p>	<ul style="list-style-type: none"> <u>2015/16</u>: Commence delivery of the Triangulum Smart Cities project; Produce overall project plan and detailed technical feasibility studies for 	<p>Head of Policy, Partnerships and Research</p>	<p>2015-20</p>	<p>Targets include:</p> <ul style="list-style-type: none"> Art Gallery:15% reduction in CO₂ emissions.

	<p>energy and mobility.</p> <ul style="list-style-type: none"> • <u>2016/18</u>: Commence installations: <ul style="list-style-type: none"> – Energy optimisations at Manchester Art Gallery and Ellen Wilkinson(UoM) – Installation of renewable technologies at Birley Fields campus.(MMU) – Installation of PV panels on Ellen Wilkinson (UoM) and Birley Fields (MMU) – Development of a central energy control system with MMU, UoM , MCC. – Replacement of Diesel estate fleet with EVs at MMU and UoM. – Trial use of electric assist cargo bikes as part of estate vehicle fleet at MMU and UoM. 			<ul style="list-style-type: none"> • Ellen Wilkinson: 15% reduction in CO₂ emissions. • Birley Fields: Generation of 1500 megawatt hours of renewable energy. • Generation of 65,000 kWh / annum of electricity from PV's.
15. Work with Transport for Greater Manchester to deliver a range of citywide transport improvements	<p>A large number of projects are in development and delivery, with further information available from www.tfgm.com. Priority projects include:</p> <ul style="list-style-type: none"> • Extension of 20mph zones; • Delivery of new Metrolink extensions; • Cycle hubs and Velocities programme; and • New delivery models for bus services linked to the Bus Services Bill. • Smarter choices activity aimed at delivering behaviour change. 	Head of Policy, Partnerships and Research	Ongoing	To be quantified where possible

<p>16. Work with partners to increase access in the city to sustainable food.</p>	<ul style="list-style-type: none"> • <u>2016/17</u>: Commission the Growing Manchester Programme for 2017. • Apply for the Sustainable Food Cities Accreditation • <u>Ongoing</u>: Continue to work with the Manchester Food Board to deliver food related actions 	<p>Assistant Director, Public Health</p>	<p>Ongoing</p>	<p>To be quantified where possible</p>
<p>17. Sustainable events</p>	<ul style="list-style-type: none"> • <u>2016/17</u>: Continue to build on work to date to understand and improve the environmental performance of MCC events, establish a plan for embedding sustainability throughout the Council's events activities; refresh the Green Events Guide • <u>2017/18</u>: Implement the sustainable events plan 	<p>Head of Events</p>	<p>Ongoing</p>	<p>To be quantified where possible</p>
<p>18. Green and Blue Infrastructure</p>	<ul style="list-style-type: none"> • Continue to Work with a range a partners across the city to coordinate and deliver the Manchester Green and Blue Infrastructure Strategy and a range of Green and Blue projects. 	<p>Head of Policy, Partnerships and Research</p>	<p>Ongoing</p>	<p>To be quantified where possible</p>
<p>19. Participate in the Core Cities Adaptation Group to help adapt the city to climate change, including identification and delivery of actions for MCC</p>	<ul style="list-style-type: none"> • Work with Core Cities where relevant to review MCC Business Plans in term of preparedness for climate change. 	<p>Head of Policy, Partnerships and Research</p>	<p>Ongoing</p>	<p>N/A – enabling action</p>
<p>20. Embedding carbon reduction objectives in policy-making</p>	<ul style="list-style-type: none"> • Manchester Strategy 2015-25: work with the Our Manchester Forum to 	<p>Head of Policy, Partnerships and</p>	<p>2015/16</p>	<p>N/A – enabling action</p>

	<p>implement the Manchester Strategy 2015-25, including defining how the city will transition to a low carbon economy, and establishing the required performance management framework to monitor progress against the strategy's priorities</p> <ul style="list-style-type: none">• Manchester Local Plan: establish the preferred approach for the review and update of Manchester's Local Plan, including links to the work of the GMCA on the GM Spatial Framework	Research		
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Appendix 2 – Top 25 MCC Carbon Producing MCC Buildings in 2015/16

Number	Site Name	Total CO₂ Emissions in 2015/16
1	Manchester Aquatics Centre (GLL)	2883
2	Town Hall	2711
3	Town Hall Extension / Central Library	2551
4	Wythenshawe Forum	2491
5	Abraham Moss Centre	1614
6	East Manchester Leisure Centre (GLL)	1551
7	Moss Side Leisure Centre (GLL)	1422
8	National Cycling Centre and BMX (Eastlands Trust)	1378
9	Gorton Depot (Hammerstone Road)	1236
10	Heron House	781
11	Arndale New Market Hall	741
12	Sharp Project Media Centre	794
13	Manchester National Squash Centre Regional Arena (Eastlands Trust)	650
14	North City Fitness And Family Centre	589
15	National Football Museum	579
16	Hough End Leisure Centre (GLL)	545
17	New Smithfield Wholesale Market	505
18	Wenlock Way Offices (Fujitsu)	499
19	Alexandra House (Moss Side Centre Offices)	388
20	Belle Vue Athletics	380
21	Hooper Street Depot	368
22	Manchester Art Gallery	321
23	Gorton Cross Retail Market New	293
24	Daisy Works Computer Centre	275
25	Wythenshawe Market Hall/Outdoor Supp (The Birtles	188

Appendix 3: Emissions Factors

- It is essential that the Council has a robust baseline for 2009/10 against which to monitor CO₂ emissions and progress against the plan. The baseline has been developed building on Government methodology for producing annual greenhouse gas emissions reports. Emissions factors are revised annually by Government to enable more accurate reporting, for example to take in to account the decarbonisation of National Grid electricity.
- In 2014 DEFRA significantly increased the emissions factor for electricity consumption, transmission and distribution, (after several years of this falling), by 11% compared to the previous year. This change saw an increase in emissions from our buildings and street lighting.
- In 2015 DEFRA reduced the electricity emission factor from the 2014 figure by 6.9%. As such this has reduced our emissions from buildings and street lighting.
- DEFRA have advised that the electricity emission factor will change from year to year as the fuel mix consumed in UK power stations changes, and as the proportion of net imported electricity also changes. As such these annual changes can be large as the factor depends very heavily on the relative prices of coal and natural gas as well as fluctuations in peak demand and renewables. This has resulted in an increase in carbon emissions being reported from MCC buildings despite a fall in energy use over the same period.
- It is worth noting that the Council purchases 100% renewable electricity but under current government policy MCC cannot receive the carbon saving benefits of this tariff.
- Future Council carbon reduction plans and reports will continue to apply the latest emissions factors, in line with guidance from DEFRA².

² www.ukconversionfactorscarbonsmart.co.uk