



BIRMINGHAM

BIRMINGHAM MOBILITY ACTION PLAN

**TECHNICAL WORK PACKAGE 7
MONITORING STRATEGY
NOVEMBER 2014**



Quality Management

Issue/revision	Issue 1	Revision 1	Revision 2	Revision 3
Remarks				
Date	August 2014	November 2014		
Prepared by (Company)	Julie James Liz Hurst Nicola Byrne	Liz Hurst Julie James		
Signature				
Checked by (Company)	Paul Parkhouse	Paul Parkhouse		
Signature				
Authorised by (Company)	Paresh Shingadia	Paresh Shingadia		
Signature				



BIRMINGHAM MOBILITY ACTION PLAN – TECHNICAL STUDY GROUP REPORT

Technical Work Package 7 - Monitoring Strategy

06/11/2014

Client

Birmingham City Council
1 Lancaster Circus
Queensway
Birmingham
B4 7DQ

Lead Consultant Author

Paul Parkhouse
Mott Macdonald

Executive Summary

Mott MacDonald has been commissioned by Birmingham City Council to develop a Monitoring Strategy to assess the effectiveness of Birmingham Connected in achieving its vision and associated objectives, as summarised below in Figure 0.1. Birmingham Connected is being developed according to European Sustainable Urban Mobility Plan (SUMP) guidelines and identifies priorities for public and private investment in transport infrastructure and services in Birmingham over a twenty year period.

Figure 0.1:



4. Freight network initiatives
5. Green Travel District initiatives
6. Network enhancements for people with disabilities
7. City centre initiatives
8. Birmingham Connected marketing initiatives

A Monitoring Strategy is therefore required to measure the effectiveness of Birmingham Connected, both at the desired outcome level and at the scheme output level.

This strategy has been developed, taking into account SUMP guidance, produced on behalf of the European Commission¹, utilising a series of indicators to measure progress. **Error! Reference source not found.** sets out the interrelation between the outputs used to deliver the desired outcomes and the outcome indicators which will be used to monitor and evaluate progress.

¹ Guidelines - Developing and Implementing a Sustainable Urban Mobility Plan, European Commission

Figure 1.2:



The European Commission's SUMP guidance recommends a thorough review of existing data sources to understand what data is readily available and to determine if it is applicable for monitoring the outcomes of Birmingham Connected. Extensive data is currently collected for a variety of purposes and will be utilised for Birmingham Connected, this includes journey time data, mode share data, PRISM household travel survey, accident data, public transport patronage data, traffic counts and air quality data. Where possible, we recommend making use of the existing data sets however we acknowledge the need for additional data as summarised within

Table 0.1.

Table 0.1: Additional data requirements

Data	Relevance to Birmingham Connected
Birmingham Connected People's Panel	A bespoke panel may be a more efficient method of collecting data relating to mode share, household travel diaries, physical activity levels, the perception of 'attractiveness' and awareness of Birmingham Connected
GPS public transport journey time data	To understand if Birmingham Connected has reduced public transport journey time and increased reliability
Pedestrian count data at key locations including GTDs and the city centre	To monitor the trend of pedestrian trips in specific areas
Utilisation data to understand vehicle passenger numbers and public transport patronage data	To understand levels of efficiency
Household travel diaries	To establish mode of travel by journey type and distance, origin destination data and levels of physical activity in relation to travel
Air quality data for additional locations	Additional air quality data is required at key sites including the GTDs
Traffic count and journey time data	This data should be available from the UTM system, this data should start to become available in early 2015.
Traffic surveys for additional locations	Additional traffic data is required at key sites including the GTDs
Car parking capacity/utilisation data for additional locations	Additional car park data is required at key sites including the GTDs
Cycle counts	Additional permanent cycle counters is required at key sites including the GTDs
Electric charging point usage	To determine increase in usage
Fleet data from logistics companies	To determine efficient movement of freight
Cycle hire usage	To understand usage per bike and compile origin destination data for trips made using hire cycles
GTD travel surveys	Travel surveys for organisations based within GTDs
Freight action plans	Details of the number of freight action plans and measures implemented
On street surveys	Specific locational surveys carried out on street to measure increase in the perception of attractiveness

The proposed baseline year against which to measure progress for each outcome indicator will be 2014/15. All datasets will be aligned to enable a regular assessment of performance against the baseline. The final target year for the Birmingham Connected outcomes is 2034.

This document sets out a number of tasks that should be undertaken prior to the delivery of the monitoring strategy and these are set out in the table below. Key tasks include establishing the baseline and utilising the indicators to set bespoke targets for each outcome in order to monitor and evaluate progress.



1 Introduction

1.1 Background

Mott MacDonald has been commissioned by Birmingham City Council to develop a Monitoring Strategy to assess the effectiveness of Birmingham Connected in achieving its vision and associated objectives, referred to as outcomes within this document. Birmingham Connected is being developed according to European Sustainable Urban Mobility Plan (SUMP) guidelines and identifies priorities for public and private investment in transport infrastructure and services in Birmingham over a twenty year period. At the heart of Birmingham Connected is its vision:

“To reinvent Birmingham’s transport system to meet current and future mobility challenges; facilitating strong and sustainable economic growth. The plan will change the way that people and business think about travel into and around the city. By influencing travel behaviour and embracing technological change we will reduce carbon emissions, increase safety and improve people’s lives.”

In order to achieve its vision, the BMAP Green Paper sets five key outcomes:

Equitable Birmingham – Birmingham Connected will facilitate a 21st Century transport system linking communities together and improving access to jobs and services.

Efficient Birmingham – Birmingham Connected will help to facilitate the city's growth agenda by moving people and goods in the most efficient and sustainable way possible; strengthening our economy and boosting jobs.

Sustainable Birmingham – Birmingham Connected will reduce the impacts of greenhouse gas emissions and energy consumption from transport, as well as ensuring the most sustainable use of city resources.

Healthy Birmingham – Birmingham Connected will contribute to a general raising of health standards across the city through the promotion of walking and cycling, the reduction of air pollution and improved safety for all users.

Attractive Birmingham – Birmingham Connected will contribute to enhancing the attractiveness and quality of the urban environment; in local centres, key transport corridors and the city centre.

In order to deliver these outcomes, a range of scheme-level outputs are being developed as follows:

- Public realm corridor improvements, supported by road space reallocation where necessary
- Pedestrian/cycle network improvements, supported by road space reallocation where necessary
- Public transport improvements, supported by road space reallocation where necessary
- Freight network initiatives
- Green Travel District initiatives
- Network enhancements for people with disabilities
- City centre initiatives
- Birmingham Connected marketing initiatives

The Monitoring Strategy is therefore required to measure the effectiveness of Birmingham Connected, both at the desired outcome level and at the scheme output level. The purpose of this report is to present the main elements of the Strategy proposed.

1.2 Report Structure

The report is structured as follows:



2 Guidance and Current Practice

2.1 Introduction

This section sets out relevant best practice examples and guidance for undertaking SUMP monitoring and evaluation, which has informed the development of the Birmingham Connected monitoring strategy.

2.2 Guidance

Guidance for the Monitoring and Evaluation of Sustainable Urban Mobility Plans

SUMP guidance, produced on behalf of the European Commission², sets out the need for monitoring and evaluation to be embedded at both the planning and implementation stages to ensure the overall effectiveness of the plan. Through monitoring and evaluation, difficulties can be identified and anticipated, and, if necessary, measures can be 'repackaged' in order to achieve the targets more efficiently and within available budgets.

Figure 2.1: SUMP monitoring process diagram

Source: SUMP Guidelines



Figure 2.2: Monitoring process guidelines summary

Source: Based on SUMP Guidelines

2.3 Current Practice

A review of current monitoring strategy practice has been undertaken. Full details of the review are attached in **Error! Reference source not found.**, but examples of good practice and relevance for Birmingham Connected is captured in the following summary table.

Table 2.1: Current monitoring strategy good practice examples

Project Name	Examples of Good Practice	Application for Birmingham Connected
Toulouse, France (SUMP)	Establishing a partnership monitoring commission Installing an urban development/mobility commission	



Project Name	Examples of Good Practice	Application for Birmingham Connected
	Travel pattern data for trips to workplaces, school and rail stations Travel to workplace data from the census data Travel to school data collected to review school travel plans Travel to rail stations data Carbon tool for carbon abatement	delivering the outcomes.

3 Data Source Audit

3.1 Introduction

This section of the report reviews the existing data sources that could be utilised in order to monitor and evaluate the impact of Birmingham Connected and identifies further data sources required.

3.2 Existing Data Sources

The European Commission's SUMP guidance recommends a thorough review of existing data sources to understand what data is readily available and to determine if it is applicable for monitoring the outcomes of Birmingham Connected. We set out the existing data sets in the table below, which could be utilised to



Data	Source	Timescales	Relevance for Birmingham Connected
data in Birmingham City Centre Classified traffic count data	Council (held by Joint Data Team)	ing sites within Birmingham City Centre during 2013/14	Centre. Further surveys will be required for future years

Table 3.2: Additional data requirements

Data	Relevance to Birmingham Connected
Birmingham Connected People's Panel	A bespoke panel may be a more efficient method of collecting data relating to mode share, household travel diaries, physical activity levels, the perception of 'attractiveness' and awareness of Birmingham Connected
GPS public transport journey time data	To understand if Birmingham Connected has reduced public transport journey time and increased reliability
Pedestrian count data at key locations including GTDs and the city centre	



4 Monitoring Strategy – Outcome Level

4.1 Introduction

The purpose of this section is to present the proposed strategy for monitoring Birmingham Connected against its desired outcomes.

4.2 Desired Outcomes

The BMAP Green Paper sets five key outcomes:

Equitable Birmingham – Birmingham Connected will facilitate a 21st Century transport system linking communities together and improving access to jobs and services.

Efficient Birmingham – Birmingham Connected will help to facilitate the city's growth agenda by moving people and goods in the most efficient and sustainable way possible; strengthening our economy and boosting jobs.

Sustainable Birmingham – Birmingham Connected will reduce the impacts of greenhouse gas emissions and energy consumption from transport, as well as ensuring the most sustainable use of city resources.

Healthy Birmingham – Birmingham Connected will contribute to a general raising of health standards across the city through the promotion of walking and cycling, the reduction of air pollution and improved safety for all users.

Attractive Birmingham – Birmingham Connected will contribute to enhancing the attractiveness and quality of the urban environment; in local centres, key transport corridors and the city centre.

4.3 Monitoring Approach

In accordance with SUMP monitoring guidelines, we have minimised the number of SMART indicators which will be used to represent the desired Birmingham Connected outcomes so that progress in delivering these can be assessed. Against each of these indicators, and in consultation with the client, we have proposed:

Draft indicator objective (these will be defined into measurable targets once the baseline data has been collected)

Data sources required to measure the indicator

Suggested frequency of monitoring

Appendix C provides an indicat2(l)-23(eoAd 0 g -.084 yy0oB7yAdv8c6t)-235(2(l)-4y olgoeen)]w 11.759 0 TD [Draf)-2.266 .

assessment of performance in delivering the Birmingham Connected outcomes. The final target year for the Birmingham Connected outcomes is 2034.

Section **Error! Reference source not found.** summarises the next steps required for establishing the baseline values for each indicator and projecting suitable indicator trajectories to the target value



4.5 Outcomes Indicator Table

The following table presents the indicators proposed for assessing progress against the desired Birmingham Connected outcomes.

Table 4.1: Birmingham Connected outcome indicator table

Outcome	Indicator	Indicator Objective (to be further defined once baseline is collected)	Data Source	Frequency of Monitoring	Approx. Cost
Equitable Birmingham	Increased access to jobs and services	<ol style="list-style-type: none"> 1. Increase proportion of population within 45 minutes public transport travel time of anywhere in the city from baseline 2. Increase proportion of population within access of anywhere in the city within a maximum of 2 interchanges from baseline 	Accession (PT timetable data and drive time information) and Land use/Employment data Journey time data/GPS Data.	3 years from baseline and then annually until end of Birmingham	



Outcome	Indicator	Indicator Objective (to be further defined once baseline is collected)	Data Source	Frequency of Monitoring	Approx. Cost
---------	-----------	--	-------------	-------------------------	--------------

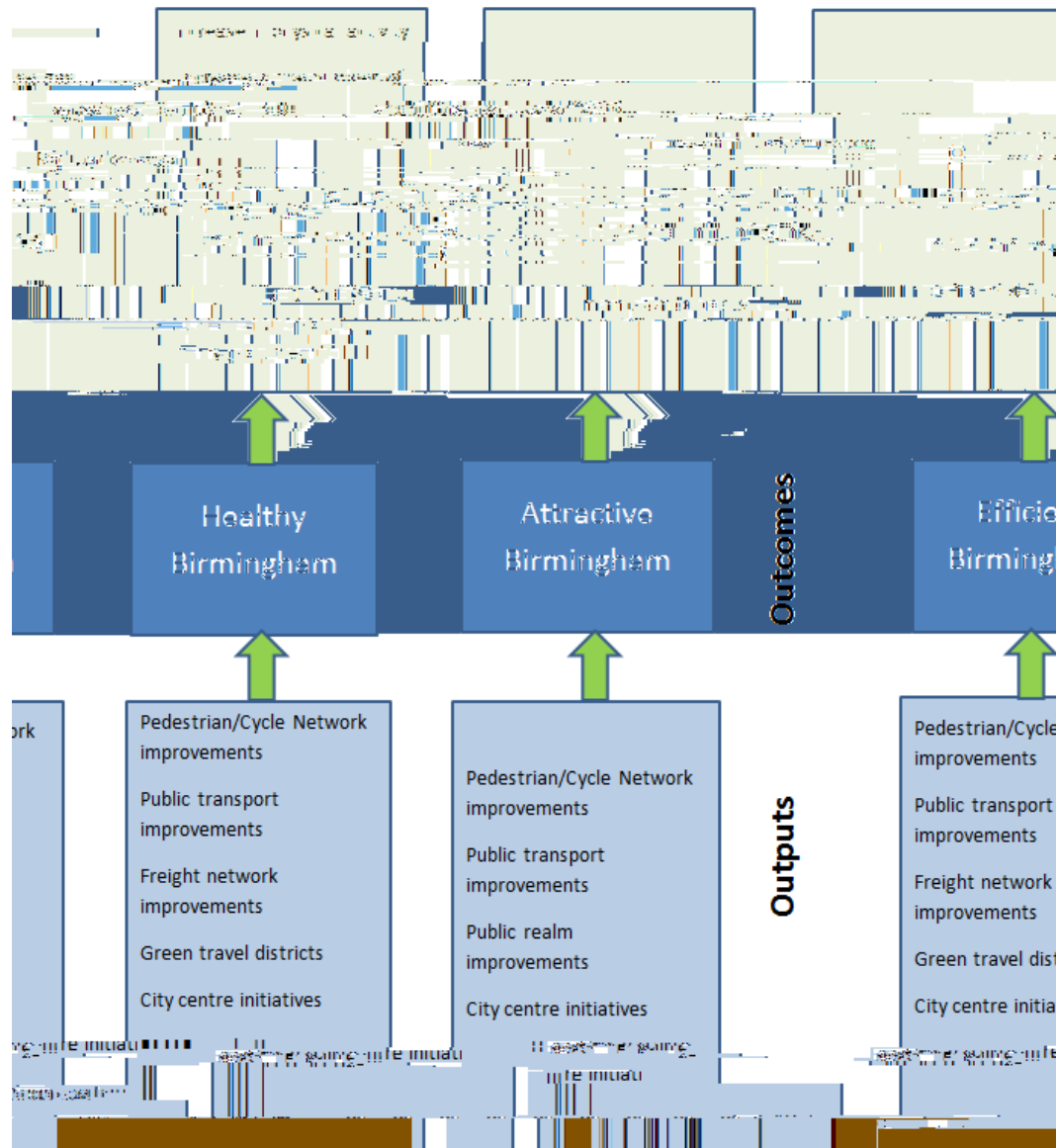


Outcome	Indicator	Indicator Objective (to be further defined once baseline is collected)	Data Source	Frequency of Monitoring	Approx. Cost
	Reduced energy consumption from transport	Increase in usage of electric vehicles.	Monitoring of Electricity charging points in Birmingham (number and usage) and logistics fleet information from operators.	Every 3 years	£20k per review
	Reduce whole life asset maintenance costs	Reduce the number of maintenance call outs from assets from the baseline	Log of maintenance of BCC assets (Amey) and annual maintenance costs	Annually	£5k per review
Healthy Birmingham	Increase in physical activity	Increase the number of trips made by walking and cycling. Reduce the total deaths preventable through physical exercise.	Household Surveys/People Panel surveys and Public Health England data	Every 3 years for surveys with Public Health England data annually	£70k+ per review*+
	Increase in the number of short trips made by active travel modes	Addressing the mode choice for short trips is a specific target for Birmingham Connected.	Household travel diaries or People Panel surveys	Every 3 years	£50k per review*+
	A reduction in air pollution	Reduction in carbon emissions by 60%	Air quality monitoring data from the 5 existing stations in Birmingham and the existing NO2 diffusion tubes located across the City.	3 years from baseline and then annually until end of Birmingham Connected programme.	£5k per review
	An increase in road safety	Birmingham has signed up to a target to reduce the number of KSI to an average of 394 per annum between 2011 and 2015: a reduction in 17.3% on the current level. Continue to maintain a reduction in KSI throughout Birmingham Connected programme.	Stats 19 data	3 years from baseline and then annually until end of Birmingham Connected programme.	£5k per review

5 Monitoring Strategy – Output Level

5.1 Introduction

Figure 5.1: Birmingham Connected Outputs, Outcomes and Indicators Logic Map



5.3 Monitoring Approach

As is the case for the outcome monitoring, monitoring of outputs will be based on a few key SMART indicators that best represent the aims of each output measure. Against each of these indicators, we have then proposed:

- Draft indicator targets
- Data sources required to measure the indicator
- Alternative data sources
- Proposed monitoring frequency
- Approximate cost estimate

The resulting outcomes indicator table is presented below. Section **Error! Reference source not found.** also describes the next steps required for developing this table into a detailed Monitoring Strategy.

5.4 Outputs Baseline and Target Years

Where possible, the output baseline year will be aligned to the outcome baseline year of 2014, but we acknowledge the need to tailor this to each intervention, particularly those which are associated with new infrastructure. For example, the baseline year for a new Sprint bus route would be the year implementation starts followed by the target in year five after opening. Baseline and target years will be set as part of the monitoring strategy devised for each output measure.



5.5 Outputs Monitoring Strategy Tables

The following tables present the indicators proposed for assessing progress against scheme-level outputs.

Public Realm Corridor Initiatives

Table 5.2: Proposed public realm corridor improvement indicators

Indicator	Outcome supported					Target/Aspiration	Data	Alternate data	Frequency of monitoring	Approx. Cost
	Equitable	Efficient	Sustainable	Healthy	Attractive					
Perception of public realm				J		Improvement to the per-				

Freight Network Initiatives



Table 5.5: Proposed monitoring indicators for freight network initiatives

Indicator	Outcome Supported					Target/Aspiration	Data	Alternate data	Frequency of Monitoring	Approx. Cost
	Equitable	Efficient	Sustainable	Healthy	Attractive					



Outcome Supported						
Indicator		Target/Aspiration	Data	Alternate data	Frequency of Monitoring	Approx. Cost



	Outcome Supported
Indicator	



Indicator	Outcome supported					Target/Aspiration	Data	Alternate data	Frequency of monitoring	Approx. Cost
	Equitable	Efficient	Sustainable	Healthy	Attractive					

car parking within the City Centre

Birmingham Connected **Marketing Initiatives**

Table 5.9: Proposed monitoring indicators for marketing initiatives

Indicator	Target/Aspiration	Outcome Support-ed			Frequency of Monitoring	Cost
		Data	Alternate data			

959 307.97

6 Monitoring Resource Requirements

6.1 Introduction

The monitoring and evaluation of Birmingham Connected will provide an essential management tool which will track progress and demonstrate value for money, highlighting any lessons learnt for future funding decision making. Taking this into account, we set out our approach to the implementation of the strategy, highlighting the suggested implementation approach, the governance structure for overseeing the delivery of the strategy, the reporting process and the proposed budgetary requirements.

6.2 Implementation and Governance

As recommended in the SUMP guidance, we propose that the monitoring strategy is delivered by a body or organisation which is independent of the Birmingham Connected project team. This body would be responsible for overseeing the implementation of the strategy, utilising relevant existing data where appropriate, and managing specific Birmingham Connected data collection exercises. In addition to this, the body will report on progress and set out planned activities to the Birmingham Connected project board on a quarterly basis.

6.3 Reporting

We recognise the need to regularly report on progress in order to identify problems, highlight potential successes and provide an opportunity for any re-adjustments. We suggest that an annual report is submitted to the Birmingham Connected project board which sets out a meta-evaluation of the monitoring activities undertaken, highlighting progress in achieving any interim targets and monitoring progress in delivering each of the Birmingham Connected outcomes.

It is important to note that the monitoring strategy should not be regarded as a static document; it should evolve



Scenario 2: A medium level of funding for monitoring and evaluation based upon 2.5% of the overall Birmingham Connected budget of £2bn.

Scenario 3: A low level of funding for monitoring and evaluation based upon 1% of the overall Birmingham Connected budget of £2bn.

Table 6.1: Proposed Birmingham Connected Funding Scenarios

Funding scenario	Approx. Budget
High level of funding	£100m
Medium level of funding	£50m
Low level of funding	£20m

7 Next Steps

This monitoring strategy sets out a number of tasks that should be undertaken prior to the delivery of the strategy and these are set out in the table below.

Table 7.1: Pre-implementation tasks

Task	Detail	Timescales
Establish a baseline	A consistent baseline year is required to allow for the meta evaluation of Birmingham Connected and to meas-	

Appendix A Current Practice Examples

Monitoring and evaluation guidance for SUMP's, Toulouse, France

Monitoring and evaluation needs to be built into a Sustainable Urban Mobility Plan (SUMP) as essential management tools to keep track of the planning process and measure implementation. It also allows people to learn from the planning experience, understand what works well and less well, which will help for future SUMP's. With their PDU, the city of Toulouse set initiatives that should assure an accurate monitoring of the success of the PDU.

Background

Monitoring and evaluation of both the planning process and of the implementation of the measures are crucial to the effectiveness of a SUMP. Monitoring and evaluation mechanisms help to identify and anticipate difficulties in the preparation and implementation of the SUMP, and, if necessary, to “repackage” measures in order to achieve targets more efficiently and within the available budget. It will also provide proof of the effectiveness of the plan and its measures. This allows those responsible for the actions to justify where money was spent.

The reporting should ensure that the results of the evaluation feed back into the public debate, thus enabling all



LSTF Monitoring and Evaluation

Baseline and Year 1 Outcomes

The following network-wide data is used for a baseline to show change:

Unemployment Data;

Number of WorkWise Passes Issued;

Public Transport Patronage Data (Bus, Train and Metro);

Bus Reliability and Punctuality Data;

Public Transport Customer Satisfaction Data;

Safer Travel Police Partnership Crime Monitoring Data;

Accident Data;



Local Transport Plan 3

SMART (**S**pecific, **M**easurable, **A**chievable, **R**elevant and **T**ime-Related) and other principles have guided the target detail, including:

- Progress against targets can be updated regularly (usually annually)

- Performance can be monitored at a more disaggregated level than Metropolitan

- Area-wide (e.g. District, area or route) to help focus delivery

- Data to support the targets is robust and is expected to continue to be available for the foreseeable future;

- Targets are predominantly indicators of 'outcome' (e.g. a change in travel behaviour) rather than an 'output' (e.g. provision of infrastructure)

- Measures are proposed in the LTP Implementation Plan that would contribute to improved performance.

Birmingham and Solihull LEP SEP Transport Package

Monitoring and Evaluation

Benefit Realisation Management - This ensures all projects and programmes maximise benefits at project inception and that these benefits are realised as the project is developed and implemented. Benefit realisation tables have been generated to quantify the benefits, the actors and stakeholders that stand to benefit, the agency responsible, timescales and key indicators to identify whether the benefit has been realised. The scale of Benefit Realisation Management will be proportional to the scale of the project in question.



Birmingham Core Strategy

Monitoring

The main mechanism for reporting on Core Strategy performance will be the Annual Monitoring Report (AMR). The Planning and Compulsory Purchase Act 2004 requires local planning authorities to produce an AMR every year, providing an assessment of the implementation of the Local Development Scheme, and the extent to which policies and proposals in local development documents are being successfully implemented.

The AMR will also identify actions that need to be taken to rectify any issues raised through the monitoring process. This could include actions needed, either by the Local Authority or its partners, to improve delivery. Alternatively, it might identify a need for a partial or full review of one of the Development Plan Documents.

The following is a list of the key indicators currently monitored in relation to the city-wide policies:

Climate Change and Sustainability

SP7 - Number of new homes meeting Code for Sustainable Homes Level 6 and commercial developments meeting BREEAM Standard Excellent.

SP8 - Number of new homes connected to a Combined Heat and Power Scheme.

Employment and Centres

SP12 – Loss of Core Employment Areas to non-employment Uses

SP13 – Development on Regional Investment Sites

SP14 – Development on sites within the Central Technology Belt

SP15 – New employment development and the supply of employment land as compared to minimum reservoir targets

SP18 – Total Amount of floorspace for town centres uses

SP18 – Town Centre Uses over 1,000 square metres within a centre

Housing

SP23 – Net additional dwellings

SP24 – A five and ten year supply of housing

SP27 – Gross Affordable Housing Completions

SP29 – Net Additional Pitches (Gypsies and travellers)

Connectivity

SP33 - Percentage of trips by public transport into the city centre

SP36 - Percentage of new residential development with access to a range of services including 15 minute walk from the nearest GP and local shops, 10 minute walk from a primary school and 20 minute walk from a secondary school.

Waste

SP42 – Reduction in the amount of waste sent to landfill

SP43 – Development of new waste management facilities

Quality of life

SP45 – Net loss/gain in the amount of public open space and public and private playing fields

SP45 – Percentage of new dwelling completions within reasonable walking distance of public open space

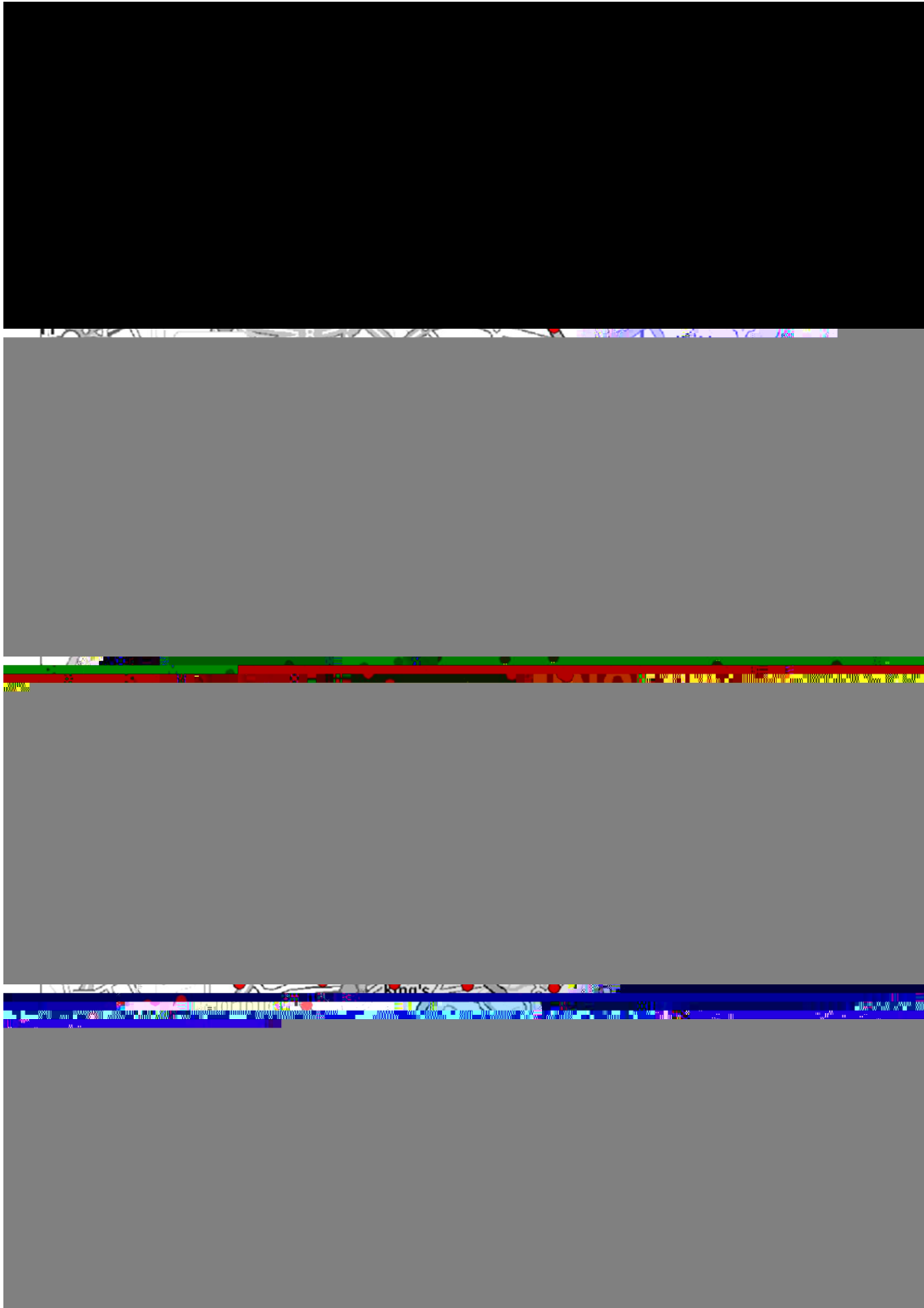
SP49 – Change in areas and populations of biodiversity importance, including change in priority habitats and species (by type) and change in areas designated for their intrinsic environmental value including sites of international, national, regional or sub-regional significance.

Birmingham Low Carbon Transport Strategy

The Birmingham Low Carbon Transport Strategy is in partnership with the Birmingham Environment Partnership (BEP) and Centro. This strategy will be monitored through the BEP's Annual Carbon Savings reporting.



Appendix B Available Automatic Traffic Counts 2014



Appendix C Potential Cost of Monitoring Programme

Outcome	Indicator	Indicator objective (to be further defined once baseline is collected)	Potential Cost
Equitable Birmingham	Increased access to jobs and services	1. Increase proportion of population within 45 minutes public transport travel time of anywhere in the city from baseline	£5k per review
	Increased community linkages	2. Increase proportion of population within access of anywhere in the city within a maximum of 2 interchanges from baseline	£5k per review
Efficient and sustainable movement of people		1. No increase in car trips from baseline	£25k+ per review (approx. 100 2 week ATCs)
		2. Increase in public transport reliability	£5k per review
		3. Increased highway reliability from the baseline	£5k per review
		4. Increase in sustainable travel modes	£70k+ per re-
Efficient Birmingham			

is Report Has Been Prepared by the Birmingham Connected Technical Study Group



www.birmingham.gov.uk/connected